

## RESEARCH

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# Can climate finance in Bangladesh be helpful in making transformational change in ecosystem management?

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## Abstract

**Background:** Bangladesh is widely recognized to be one of the most climate vulnerable countries in the world and climate change issues are being one of the major focuses of the government and other development agencies of Bangladesh. One of the most vulnerable aspects in climate change is the fragile ecosystems in Bangladesh. Climate finance is perceived as key enabling factor to protect the fragile ecosystems in Bangladesh from climate change impacts.

**Results:** This paper examined the extent current policy and financial instruments in Bangladesh under broader purview of 'climate finance' that can protect the fragile ecosystems from climate extremes. The existing public policy discourses regarding climate change finance of Bangladesh neither significantly address the issue of ecosystem approaches of climate change adaptation nor identify restoration or protection of ecosystem as a key adaptive capacity of the vulnerable population and related social, economic, built and natural systems. There are also no financial instruments designed under different climate funds that potentially can address the needs of ecosystem.

**Conclusions:** This fact reminds the way institutional culture in general and culture of policy making in Bangladesh is determined by the powerful minorities in a business-as-usual institutional architectures.

**Keywords:** Climate finance, Climate change, Ecosystem management, Transformational change

## Background

Climate change is altering our planet. Extreme weather patterns like: floods, droughts, and cyclones will increase regularity. In general government set public budget, so that the country can adapt to or mitigate the impacts of climate change. These expenditures are called climate change finance.<sup>1</sup> To use domestic and international funds for climate change more efficiently the government can take 'a whole of government' approach. More efficient use of existing climate funds (both domestic and international) can make a brighter future, improved lives and more actable and resilient development (UNDP 2014) or the transformational change in the ecosystem management. Transformational

change indicates the ensuring means of continually responding, adapting and innovating (Sharma 2013).

Climate finance usually stimulates the innovative national planning that links climate resilience with more sustainable and equitable (IIED: Briefing 2013) transformational development. Climate finance covers local, national and international finance, whether drawn from public, private or alternative sources. Its overall aim is to help developing countries plan and implement climate adaptation, mitigation strategies which can lead to the protection of fragile ecosystems due to climate change all around the world. This is linked with the integration of climate change consideration with development planning and implementation which indicates the continuation, adaption and innovation of essential changes especially in those countries which have vulnerable ecosystem management due to climate change.

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<sup>1</sup> Finance is the management of money through specialist institutions (Hart 2014).

Bangladesh is considered to be one of the most vulnerable countries to climate change because of its geographical location and physiographic features, and low capacity to adapt to change.<sup>2</sup> The country is prone to a multitude of natural hazards and vulnerable to the adverse impacts of future change in climatic conditions (Department of Environment, Bangladesh 2009). One of the most vulnerable aspects in climate change is the fragile ecosystems in Bangladesh. Different ecosystems are highly exposed to cyclone, sea level rise, coastal flooding, flash flood, intense riverine floods, droughts and other climatic extremes.

In recent years therefore, whilst climate change policy is a new element in national policy and development partner support of Bangladesh and it is being framed within these broader policy contexts (General Economics Division, Planning Commission, Bangladesh & UNDP 2009). Recognizing the uncertainties and inadequacies of international adaptation finance from both multilateral and bilateral sources, the Government of Bangladesh established two national funds: the Bangladesh Climate Change Trust Fund (BCCTF) and Bangladesh Climate Change Resilience Fund (BCCRF), for implementing the programs under BCCSAP<sup>3</sup> (Bangladesh Climate Change Strategy and Action Plan).

In Bangladesh it is expected now to see the visible transformational changes in the ecosystem management by exercising genuine ownership and control over the financial resources. The proper climate financing mechanism is an important subject to scrutiny by parliaments, and other domestic accountability institutions and civil society. The present paper focuses the policy and financial mechanisms in Bangladesh under the purview of 'climate finance' that can protect the fragile ecosystems from climate extremes and it can lead to the transformational change in the ecosystem management of the country.

### Challenges of ecosystem management in current development and climate change context of Bangladesh

The ecosystem of Bangladesh can be divided broadly into three types, such as: aquatic ecosystem, soil ecosystem and forest ecosystem. There are also some ecological zones in Bangladesh, such as different Agro Ecological (AEZ)<sup>4</sup> and bio-ecological zones. The evident changes in climate of Bangladesh affect natural resources, such as water, forests, and grasslands and make ecosystems<sup>5</sup> fragile. The damaging effects of climate change are floods, salinity intrusion, and droughts what are found to drastically affect the crop productivity almost every year. Due to climate change, fresh water is becoming scarce, sea level is rising, river banks are wearing down, and chances to earthquake have increased. Considering these factors, we can say that ecosystem in Bangladesh is not on state of equilibrium (blogspot.com 2009).

Changes in such ecosystems generally have social and economic effects which are generally detrimental. The socio-economic effects of climate change therefore arise from interactions between climate and society and how these in turn affect both natural and managed environments. Traditionally, in Bangladesh, climatic variations have provided opportunities (resources) and imposed costs (hazards), depending on how society adapted to the environment. In the drive for modernization, evolving technologies and economical and social structures alter existing systems and make many sectors and groups in the ecosystems more vulnerable to significant variations in climate and sea level Ericksen et al. (1993).

The ecosystem management concept is the heart of managing sustainability. When the issues of safeguarding species or managing living resources come, we generally focus on the ecosystem management to make sure that these continue to function. The strategic goals and objectives of future coping mechanisms in the ecosystems of Bangladesh are to reduce unfavourable effects of climate change including variability and extreme events and promote sustainable development.

<sup>2</sup> Changes in the climate of Bangladesh have been observed. Such as: summers are becoming hotter, monsoon irregular, untimely rainfall, heavy rainfall over short period causing water logging and landslides, very little rainfall in dry period, increased river flow and inundation during monsoon, increased frequency, intensity and recurrence of floods, crop damage due to flash floods and monsoon floods, crop failure due to drought, prolonged cold spell, salinity intrusion along the coast leading to scarcity of potable water and redundancy of prevailing crop practices, coastal erosion, river-bank erosion, deaths due to extreme heat and extreme cold, increasing mortality, morbidity, prevalence and outbreak of dengue, malaria, cholera and diarrhea, etc. (Department of Environment, Bangladesh 2009).

<sup>3</sup> The BCCSAP is a part of the overall development strategy of the country and the main policy paper of Bangladesh in climate change adaptation and mitigation. The BCCSAP is a 10 years programme (2009–2018) to build the capacity and resilience of the country to meet the challenge of climate change. It is expected that the BCCSAP will be an integrated part of national development policies, plans and programmes.

<sup>4</sup> Agro-Ecological Zones of Bangladesh determined on basis of some definite characteristics and they are physiography (it is defined as soil parent materials and land forms of a particular area), hydrology (it is determined on the basis of water holding capacity of soil and the water level of agricultural land), cropping pattern, season (it is done on the basis of the depth and duration of seasonal flooding in a particular area), soil types and tidal activity. There are 30 Agro-Ecological Zones in Bangladesh. This 30 AEZ are sub divided into 88 agro-ecological sub regions. Again these are divided into 535 agro-ecological units (blogspot.com 2013).

<sup>5</sup> Ecosystem of Bangladesh includes all living and non-living things, such as: people, animal, forest, land, river, Bay of Bangle (blogspot.com 2009).

### Case: climate change impacts in the Barind tract, Bangladesh

Barind, also called Barind tract, geographic region in parts of northwestern Bangladesh and north-central West Bengal state, India. The Barind tract covers the Rajshahi, Natore, Chapai-nawabganj, Naogaon, Dinajpur, Rangpur, Pabna, Bogra and Joypurhat districts of Bangladesh and the Maldah district of West Bengal. Except for the wet season extreme temperature prevails in this region. About 80 % people of Bangladesh are directly or indirectly dependent on agriculture and Barind tract is the most favorable agricultural section of Bangladesh Global Britannica (2015).

Impacts of climate change are visible in the Barind tract in the form of temperature variations, erratic rainfall patterns with low monsoon rains, the decrease of the duration of rainy season, heavy rainfall occurs within a short period, increased number of cyclones and droughts, prevalence of rough weather and gradually low down of ground water level (Rahman and Rayhanul Islam 2014).

Adverse impacts of climate change have triggered recurrence of natural calamities in the high Barind tract posing a serious threat to the overall farming system as well as the living conditions of people. A large number of water bodies and wetlands have become derelict in the region due to lack of adequate rainfall posing a serious threat to the biodiversity, especially the livelihood of the poor and marginal people, of the area. The existing agricultural system has started facing a serious threat because of the climate change (Fig. 1).

The effects of climate change on agriculture and other sectors are already evident in this region. Severe droughts tell us to understand the climate change in this study area of the high Barind tract. In this severe drought prone area, the variations of production of Aus, Aman and Boro rice have been found due to climate change. Temperature fluctuation and monthly total rainfall variations are observed. The gradually decreasing ground water level is also a great concern in this rice productive area (Rahman and Rayhanul Islam 2014).

### Challenges of ecosystem management in Bangladesh

Successful ecosystem management requires advances in ecological understanding and thereby offers cutting-edge research opportunities. Ecosystem management challenges ecologists to go beyond rhetoric and test current theory in a real-world landscape laboratory (Meyer and Swank 1996).

Bangladesh is recognized to be one of the most highly vulnerable to climatic manifestations (short-term and long-term impacts of climate change) due to its unique geographic location, like dominance of floodplains, low

elevation from the sea and lastly the socio-economical characters like high population density, high levels of poverty, and overwhelming dependence on nature. Unfortunately, the country's future is now trapped between the melting Himalayas in the north and the encroaching Bay of Bengal to the south.

Like many other LDCs, Bangladesh is a low-lying coastal country that shares similar challenges regarding ecosystem management.

Major challenges of ecosystem management in Bangladesh are:

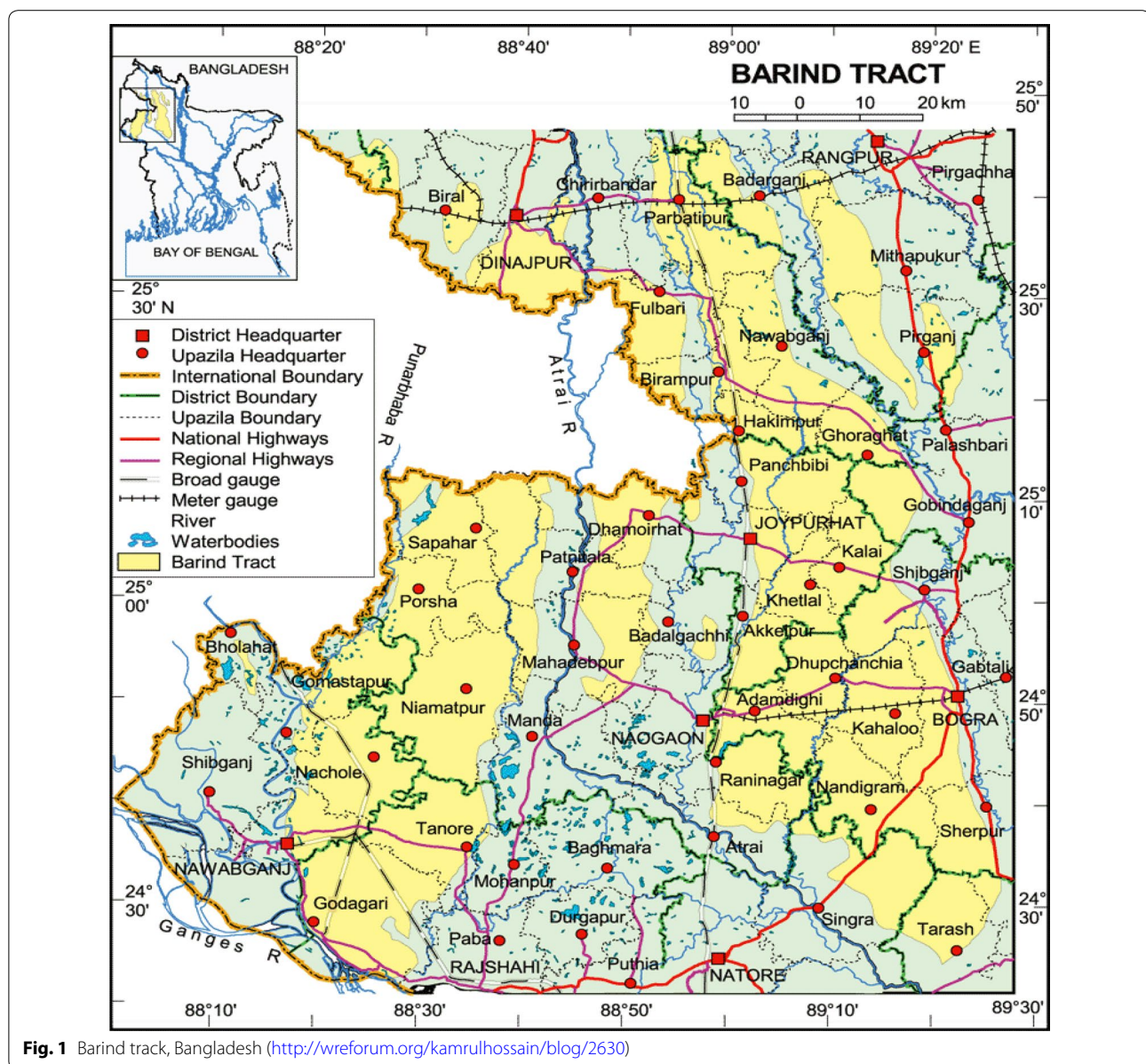
1. Large population.
2. Susceptibility to natural disasters.
3. Vulnerability to external shocks.
4. Excessive dependence on international trade and foreign aid.
5. High transportation and communication costs.
6. Disproportionately expensive public administration and infrastructure.
7. Little opportunity to create economies of scale.
8. Improper management of resources: atmospheric protection, combating deforestation, protecting fragile environments, conservation of biodiversity, control of pollution.
9. Lack of proper means of implementation: technology, transfer, education.
10. Improper institutional framework.
11. Lack of political commitment from developed countries.
12. Ecological challenges during goal setting.
13. Ecological challenges in evaluating management options.

The building blocks of climate change policies of Bangladesh stand on four pillars: natural infrastructures, socio-economic infrastructure, physical infrastructure and institutional infrastructure. Progress made in reducing greenhouse gas emissions is disappointing. Convention commitments to address current impacts and future risks from global warming through support for reducing vulnerability and adaptation measures is yet to materialize in a manner that will match current and future priorities. Funding through communication costs, disproportionately expensive public administration and infrastructure, and little opportunity to create economies of scale. An efficient and practical approach would be a hybrid that incorporates the best features of tradable permits and emissions taxes.

### The institutions and institutional culture in policy making for ecosystem management in Bangladesh

Bangladesh has long been active in the UNFCCC process and a series of policy and institutional changes





undertaken by the government in recent years. Bangladesh produced its National Adaptation Program of Action (NAPA) in 2005 and was a lead player on NAPAs in the UNFCCC. The Government of Bangladesh (GoB) prepared the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) in 2008/2009 to provide strategic direction on climate change. Prior to BCCSAP formulation, GoB formulated a number of national and sectoral strategies and action plan including the national water management plan, the national biodiversity strategy and action plan for Bangladesh and national environmental management plan including climate viabilities (Planning Commission, Ministry of Planning, Bangladesh 2012).

#### Climate change policies in Bangladesh for ecosystem management

The key climate policy developments in Bangladesh include:

- National Adaptation Programme of Action (NAPA) (2005 and revised 2009).
- Bangladesh Climate Change Strategy and Action Plan (BCCSAP) (2009).
- Outline Perspective Plan (OPP).
- Sixth Five Year Plan (SFYP).
- Climate Change Trust Act, 2010.

- Climate Change Unit in Ministry of Environment and Forests.
- Climate Change focal points established in relevant ministries.
- (Planning Commission, Ministry of Planning, Bangladesh 2012).

Bangladesh has taken several steps in recent years to embed climate change in national policy making for ecosystem management, and as regards policy and strategy making process in Bangladesh, experience so far suggests that most policies are driven by expert and bureaucrats, again following a top-down process. While participation of stakeholders has significantly increased, quality of participation of poor people appears to have remained unsatisfactory (Planning Commission, Ministry of Planning, Bangladesh 2012).

**Vital institutions in climate change policy making of Bangladesh**

**Ministry of Environment and Forest, Bangladesh (MoEF)**

Planning, regulation and coordination of environmental and forestry programmes are the major activities of MoEF. Ministry of Environment and Forest also

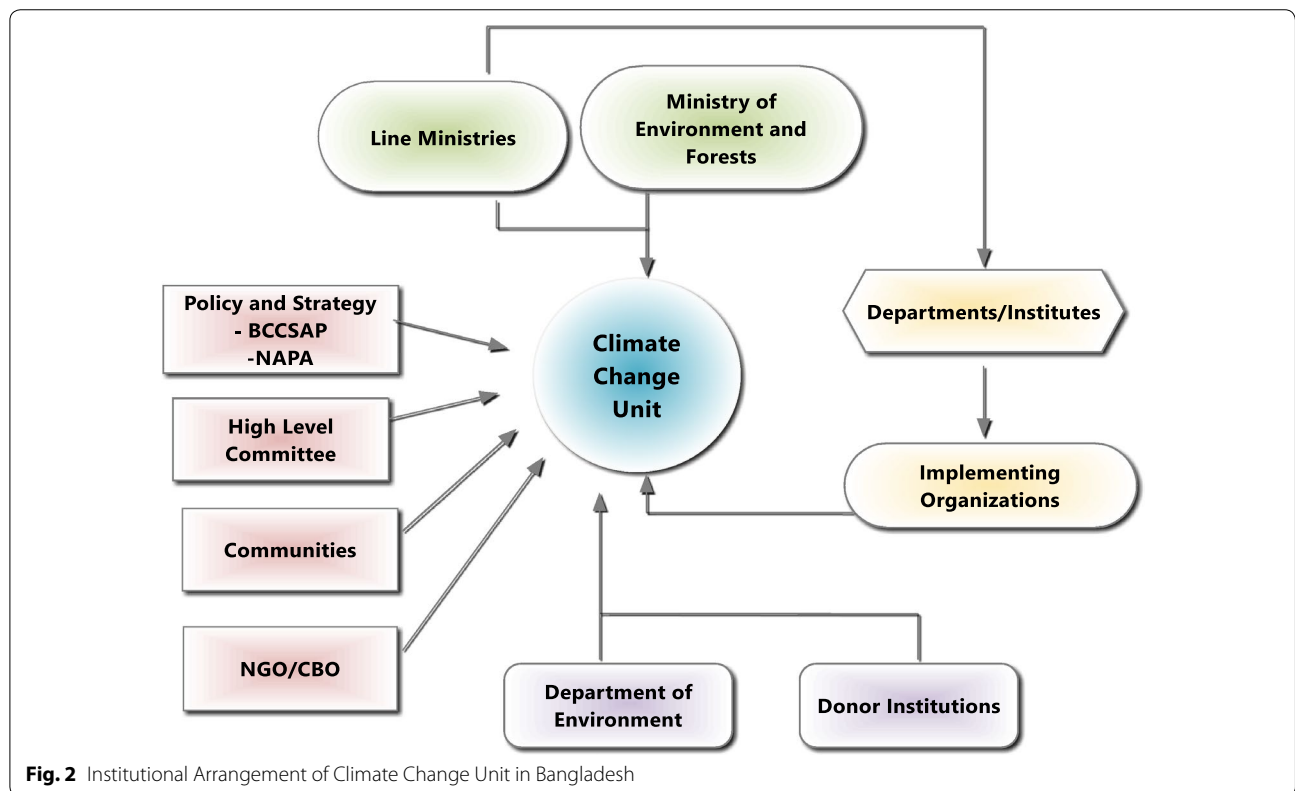
undertakes actions regarding ecosystem management, to reduce climate change impacts in different sectors. The activities of MoEF in climate change aspects include formulation of policies for climate change adaptation and mitigation, and they are entrusted to spend to address climate change impacts (Planning Commission, Ministry of Planning, Bangladesh 2012).

**Department of Environment (DoE)**

The Department of Environment engaged to protect environment from development activities. Besides, it put special emphasis in undertaking actions in areas related to ecosystems management of Bangladesh. The climate change cell undertook research on climate change modelling and impacts scenarios. Department of Environment arranged necessary actions to produce national communication papers in order to facilitate MoEF, so that Bangladesh Government as member of UNFCCC could submit the report to fulfil its commitment (Planning Commission, Ministry of Planning, Bangladesh 2012) (Fig. 2).

**Aid and financial mechanisms**

In Bangladesh, around 50 % of the development expenditure is resourced by aid. Further aid has helped to promote and finance a number of policy reform initiatives



**Fig. 2** Institutional Arrangement of Climate Change Unit in Bangladesh

which have been important in supporting the economic development of the country. However, under the overarching Bangladesh Development Forum (BDF) a number of working groups have been established to facilitate coordination, including one on environment and climate change under the MoEF. These moves are supported to various levels by most of the development partners. MoEF formed a committee. Further it was jointly agreed that funds would be increased for climate change (Hedger 2011).

### Culture in policy making for ecosystem management in Bangladesh

There is an operational structure in the ecosystem management of Bangladesh regarding climate change adaptation (CCA) and disaster risk reduction (DRR) concerns. This operational structure includes policy formulation (sectoral strategies and policies), planning (sectoral plan), resource allocation (sectoral budget envelope) and programme implementations (sectoral programmes). The actors and stakeholders play an important role in the formulation of policies, strategies and plans because on these policy formulation procedures, the resource allocation system depends. Policy and strategy making process in Bangladesh, experience so far suggests that most policies are driven by expert and bureaucrats, again following a top-down process.

For the ecosystem management in Bangladesh, a high level of integration with existing government institutions, policies and programs exists. But in Bangladesh the ecosystem management policies are primarily driven by sector policy rather than proper strategy which are usually driven by top-down process (where the voices of the frontline people are not acute). It is managed within the existing institutional structures of government and is delivered substantially as a component of existing programs. Different stakeholders and policy makers have different characteristics, purpose, ideologies, and conflicting interests. The political climate and the political economy play an important role in the formulation and implementation of policies in ecosystem management. So we can see that the vulnerability issues of the frontline people are not always adequately reflected in the need policies. It is seen that the main concern in the policies usually reflect the ideological and conflicting interests of the stakeholders.

### Climate finance and policy making of climate finance in Bangladesh

#### Climate finance

To use domestic and international funds for climate change more efficiently the government of Bangladesh can take 'a whole of government' approach. This is

when a range of ministries work closely to plan how and where money is spent. But it is not too easy. Collaboration between ministries is needed here to relate budget management to relate with climate change for planning, spending, better monitoring, efficiency, and transparency. International funds are available to combat with climate change initiatives. More efficient use of existing climate funds (both domestic and international) can make a brighter future, improved lives and more actable and resilient development (UNDP 2014).

Principles of climate finance:

- Direct access and vulnerability focus.
- Do not harm.
- Respective capability.
- Additionality.
- Adequacy and precaution.
- Predictability.
- Transparency and accountability.
- Equitable representation.
- Visible outcome/measurable (Khan 2011).

Within the climate policy and action context, both adaptation and mitigation involves management of the natural physical system or the interface between this and human systems (such as agriculture, health, disaster management etc.) this naturally involves additional and incremental finance requirement to make development climate change resilient now and for the future while undermining continued economic growth and development in a sustainable manner (Table 1).

### Climate finance framework of Bangladesh

In the existing development planning process, projects are approved by the Planning Commission, Ministry of Planning, and then the executing agency implements them. But for climate change projects, the MoEF applies for support from either of the two main funds and the application is reviewed by the climate change cell. If the

**Table 1 Climate finance timeline**

Date	Happening
11 Dec 1997	Kyoto protocol signed
9 May 1992	The UNFCCC was opened for signature
3–14 June 1992	UNFCCC Negotiated in Earth Summit in Rio de Janeiro
21 Mar 1994	UNFCCC entered into force
16 Feb 2005	Kyoto protocol came into effect
18 Dec 2009	Copenhagen Accord signed in the COP 15
29 Nov–10 Dec 2010	COP 16 held in Cancun, Mexico
Mar 2014	UNFCCC had 196 parties



project is below US\$250 million it will not need to go to the Executive Committee of National Economic Council (ECNEC), which is the highest authority for approving development activities. In this case, the Ministry of Planning can approve it directly, to avoid delay and increase flexibility.

#### **Bangladesh Climate Change Trust Fund (BCCTF)**

Bangladesh allocated US\$100 million for the 2010–2011 financial year to implement the BCCSAP. In early 2009, the government approved a policy for the fund and the Climate Change Trust Fund Act was passed in 2010, of the total amount, 66 % can be spent on projects related to climate change and the balance for emergencies.

#### **Bangladesh Climate Change Resilience Fund (BCCRF)**

This fund consists of US\$110 (annually) million from the EU and Denmark, Sweden, Switzerland and the UK to support implementation of the BCCSAP.

#### **Pilot Programme for Climate Resilience (PPCR)**

This is one of the three climate investment funds administered by the World Bank: US\$11 million was approved in October 2010—US\$50 million as grants and the balance as concessional loans.

These funds support different types of mainstreaming. The government budget supports more integrated climate resilience. The climate funds are stand-alone and support pilot projects under BCCSAP. The Pilot Programme for Climate Resilience is also in parallel to existing systems, supporting projects in line with BCCSAP but this money is not being managed by the trust funds and this reduces synergy (Pervin 2013).

#### **Politico-economic landscape of climate finance in Bangladesh**

- Currently, the main responsibility of the implementation of climate related funds lies with the lead institution MoEF. This ministry plays a leading role in the maintenance of BCCTF and BCCRF. These two funds are the main funding sources of present climate finance of Bangladesh. So we can see that this ministry has the leading role in the incorporation of these funds. But according to the CPEIR, 37 ministries/divisions have some link with climate change related activities either of non-development or of development nature or both. The reason which works behind the leading role of MoEF is the rule of the Allocation of Business among the Different Ministries and Divisions (1996, revised up to August 2000), the planning, regulation and coordination of environmental and forestry programmes are the major activities of Ministry of Environment and For-

est Cabinet Division, Government of the People's Republic of Bangladesh (2000, 2013). Climate change has been seen as the environmental issue here, so the leading ministry to deal with the climate finance is the MoEF. But now days, climate change issues are being seen as the development issue (no more environmental issue).

- As we discussed that the 37 ministries/divisions have some link with climate change related activities either of non-development or of development nature or both, then the climate finance issues should be governed by the Planning Ministry. Because when any issue is the matter of the involvement of more than one ministry that should be the matter of the Ministry of Planning and should follow the development budgetary procedures. So here comes the issue of decentralizing the role of MoEF in the maintenance and allocation of BCCTF and BCCRF. Here comes importance proposed Climate Fiscal Framework which proposes to incorporate the roles of different ministries, Ministry of Planning and the Ministry of Finance to manage the climate finance sector of Bangladesh by proposing the method Climate Expenditure Tracking Framework Module (Finance Division, Ministry of Finance, Government of the People's Republic of Bangladesh, 2014).

#### **Upcoming green climate fund**

The establishment of GCF was first discussed at the 15th Conference of the Parties (COP 15) to the UNFCCC held in Copenhagen in 2009. Copenhagen Accord, the political outcome of COP 15, took note on the establishment of 'Copenhagen Green Climate Fund' with a goal of jointly mobilizing US\$100 billion dollars a year by 2020. This fund aimed at providing scaled-up, new and additional, predictable and adequate funding to the developing countries through a variety of sources, including public and private sources (Lattanzio 2014).

The GCF is to promote the paradigm shift towards low-emission and climate-resilient development pathways by providing support to the developing countries to limit or reduce their greenhouse gas emissions and to adapt to the impacts of climate change, taking into account the needs of those developing countries particularly vulnerable to the adverse effects of climate change.

The fund will finance fully agreed and incremental costs for activities in order to enable and support enhanced action on adaptation, mitigation, technology development and transfer, capacity building and the preparation of national communications by the developing countries. The fund also includes a private sector facility (PSF) to finance private sector directly or indirectly on adaptation

and mitigation activities in national, regional and international level.

As per the Climate fund update 2014, the total amount of pledges and contributions to the GCF Trust Fund amounted to US\$35.65 million. Of this amount, twelve contributors have deposited a total amount of US\$33.61 million GCF Trust Fund (Lattanzio 2014).

Bangladesh has played a key role at the UNFCCC process over the years within the LDCs group. As a result, the country has been nominated to represent the LDCs in the Green Climate Fund Board to put forward views of the groups in the deliberations and decisions to be taken by the GCF board.

GCF has been established to support both adaptation and mitigation activities and has created opportunity for climate vulnerable countries such as Bangladesh to build resilience to the adverse impacts of climate change. The fund also facilitate to undertake effective approach in order to attain low carbon development pathways as stated in climate strategies like Bangladesh Climate Change Strategy and Action Plan (BCCSAP).

### **The potentials of transformational development in ecosystem management with climate finance**

An effective response to climate change that assures a sustainable development pathway will require a fundamental transformation towards low carbon, climate-resilient societies.

Within the climate finance regime of Bangladesh, there is increased consent that proper financial and capacity support will be helpful to have transformational development in ecosystem management. Transformational development would be a structural change that will alter the interplay of institutional, cultural, technological, economic and ecological dimensions of a given system of the ecosystem management of Bangladesh. It will unlock new development paths, including social practices and world-views (Mersmann and Wehnert 2014).

Here come the issues of the aspects of coordination within the government, for the transformational development through climate finance. There should be three types of coordination for the better climate financing in our country for transformational development in ecosystem management and those are:

- Policy coordination: the achievement of balanced influence between sector policy and climate change policy. This should be the role of the Planning Commission.
- Technical coordination: This role lies with MoEF at the moment and has evolved from an environmental mandate.

- Financial and performance coordination: This role lies with Finance Division and is implemented via the MTBF which acts as the governance and performance management mechanism, as well as matching resources to policy. So the Finance Division should play a crucial role in the coordination of funding.

So the synergies between institutional roles and responsibilities for climate change planning need to be encouraged.

Transformational development through climate finance would represent the holistic approaches to planning and selection of interventions of ecosystem management, by relying on multi-stakeholder dialogues as a basic premise; using different kinds of interventions, whether projects, programmes or policy packages; and exemplifying good practice in three important procedural stages: (1) defining the problem scope and the wider system; (2) identifying the state of the system in relation to a given problem; and (3) integrated planning for a transformational ecosystem portfolio.

For transformational development regime in ecosystem management a large number of systems and domains are necessary. Not only will technical systems in very different sectors have to be changed, but, more fundamentally, established approaches to mitigation and adaptation will have to be challenged, and, if necessary, themselves transformed. Not every solution will be successful, but every approach will trigger more learning processes that will give answers to some very basic questions: where has change towards sustainable development been successful; where is it not; and why? In consequence, this also means a transformation of development through climate finance for ecosystem management of Bangladesh.

The extent of benefits reaped from merging climate change and economic development strategies will depend on the policy interventions of Bangladesh for climate financing and donors are also making certain crucial changes in the way they operate towards the transformational development in the ecosystem management of Bangladesh:

1. From patchwork funding to integrated, scaled-out finance. Bangladesh will need to actively mobilize and pool funds to achieve economic transformation along with climate resilience.
2. From top-down to bottom-up planning. Government must shift away from the top down, technocratic planning processes that they and donors are most comfortable with. These are largely driven by a few powerful stakeholders priorities and agendas, and



may not result in greater resilience or wellbeing at household and local levels.

3. From donor led to country driven: Donors need to develop new ways of working with Bangladesh when climate finance is involved, as country ownership is proving crucial for stimulating innovative approaches that ensure climate change becomes a mainstream issue in governance and development. At the same time, Bangladesh needs to implement effective systems for managing funds, monitoring progress and providing accountability to citizens to the transformational development.
4. Iterative planning: Monitoring, reporting and verification is already an integral part of climate change mitigation approaches, and countries need similar systematic ways to appraise how climate adaptation investments contribute to development objectives. Through robustly assessing early investments, Bangladesh will be able to judiciously incorporate climate adaptation in national development.
5. Goals and targets for transformational development should explicitly acknowledge that reducing climate vulnerability helps achieve goals on poverty, food security and other basic development priorities. At the same time, international climate change debates and initiatives should give more attention to ensuring they benefit development. Both international climate change processes and international agendas on poverty reduction and sustainable development can learn from the innovative ways individual countries are bringing together these issues, and the funding to address them, at national levels. To support these synergies, climate finance instruments should be designed and governed in ways that aim to deliver such co-benefits, thereby helping achieve globally agreed development goals (IIED: Briefing 2013).

#### **Climate fiscal framework for sustainable climate financing for ecosystem management**

At present there is a need of the climate change expenditure tracking for the better management of the funds. 'The Climate Fiscal Framework' can be a solution of the present gaps in the management of climate financing in Bangladesh. The Climate Fiscal Framework recommends a set of climate codes for Bangladesh to track climate change expenditures for policy analysis and reporting, and estimate long term climate finance needs of Bangladesh through identifying potential climate related public expenditures across Government Ministries. In our country the intra-government coordination mechanism is a limitation. Bureaucracy appears to have hindered progress in this regard which points towards a real imperative in developing these.

Under the present conditions of the climate finance of Bangladesh, the development of a national climate fiscal framework is a high priority to ensure allocative efficiency and effective transaction of strategy to both policy and budgets. The framework should recognize the following as critical factors:

- The risks, roles and responsibilities that should be allocated to each institutional sector within Bangladesh including Central Government, Local Government, Donors, NGOs, households and the private sector.
- The allocation of funding responsibilities to all aspects of climate finance and activity.
- The need for a focal point financial framework that ensures the long term sustainability of funding streams.
- Ensuring that long terms plans in a revised and BCCSAP can be funded or prioritized for funding on a rational basis within a climate fiscal framework.
- The capacity on an HR and institutional basis to implement the framework on a sustainable and achievable basis.

In March 2014, under the Finance Division of Ministry of Finance of Bangladesh, the Climate Fiscal Framework was proposed for the better management of climate finance of Bangladesh. The Government of Bangladesh needs to manage climate related challenges by adopting budget priorities, pricing policies, and financial market rules. So Bangladesh needed to formulate Climate Fiscal Policy (CFP) to study and map out fiscal issues in regard to climate change which was first laid down in BCCSAP (2008) and subsequently revised in BCCSAP (2009). The proposed Climate Fiscal Framework is a tool to ensure that CFP (BCCSAP 2009) is implemented in a transparent and sustainable way in the long run. CFF attempts to develop a framework:

- For tracking climate related expenditures.
- To estimate potential costs of long term financing needs to combat adverse effects of climate change.
- To elaborate the role of GoB towards managing climate finances to retain the path to sustainability.
- To identify institutional weakness and skills gap with recommendations for further development in the Planning Commission and Finance Division in developing long term revenue expenditure plans in accordance with CPEIR and BCCSAP.

Climate Fiscal Framework is the prerequisite for achieving the objectives of climate change policy. The budgetary policy framework is a key element of the CFP framework

as it is used to create better conditions for achieving the overall objectives of climate fiscal policy without jeopardizing public finances.

The proposed Climate Fiscal Framework is a new introduced framework which proposed to incorporate the roles of the related ministries in the policy making procedures of the climate change finance in our country.

### Conclusion

The paper focused the policy and financial mechanism of climate finance in Bangladesh which has the potentials to protect the fragile ecosystems (such as the Barind track) from climate extremes and this can lead to the transformational change regarding the ecosystem management of the country.

Climate finance is perceived as key enabling factor to protect the fragile eco-systems in Bangladesh from climate change impacts. Although, climate finance response of Bangladesh is primarily driven by sector policy rather than climate strategy. It is managed within the existing institutional structures of government and is delivered substantially as a component of existing programs. As a result, climate strategy is often not recognized in the Ministry Budget Framework (MBF) with its strategic objectives, performance monitoring and evaluation framework, by high climate spending government agencies.

This paper examined the extent current policy and financial instruments in Bangladesh. Government of Bangladesh has accorded high priority to address short, medium and long term climate change issues. To successfully manage the ecosystem related challenges, which are arising out of climate change, establishment of an appropriate funding mechanism framework has become a necessity for the transformational development of the country.

In conclusion this could be said that, a separate mechanism needs to be in place that will clearly demonstrate the degree of importance assigned by the country on addressing climate change related issues in terms of the budgetary allocation for the ecosystem management which will lead to the transformational development. Such a mechanism will also help track public expenditure and make priority decisions in regard to the provision of development investment made in the most vulnerable areas and sectors.

### Competing interests

The author declares that she has no competing interests. This paper has been written from the personal interest of author from the partial findings of the MSS Thesis of Author, when she was the student of University of Dhaka (Year: 2013).

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