Developing Disaster Impact Assessment Tool & Guidelines Towards Making Public Investment Resilient

A Review of Policy & Practices

An Executive Summary for DIA National Workshop

Prepared & presented by

Md. Syeedul Haque

Development Planning Specialist

As part of the Assignment under the National Resilience Programme (NRP)
Programming Division, Planning Commission

NRP-PD, Planning Commission
&
UNDP, Dhaka, Bangladesh
November 2020

EXECUTIVE SUMMARY

INTRODUCTION AND BACKGROUND

Despite the considerable progress in combating natural and other types of disasters, Bangladesh's vulnerability to disasters, especially in a changing climate scenario, has remained a big concern for the development practitioners. The Government wants to ensure well-being of society, economy and the environment through development initiatives; but the risks associated with disasters, including climate variability, have already challenged development gains and future goals. Therefore, development must be resilient to assure the expected well-being, which calls for mainstreaming disaster and climate risks into the development planning processes to sustain and secure the country's investments.

In this context, government decided to introduce Disaster Impact Assessment as an *'ex-ante'* tool for assessing, formulating, processing and implementing development projects to achieve desired level of resilience in making development sustainable. The Standing Order on Disasters (SODs) of 2019 has incorporated DIA as an essential tool for disaster risk reduction, and makes responsible Bangladesh Planning Commission to include DIA into development project proposals (DPPs) for gender responsive, disability inclusive and risk informed development planning.

Key rationale for the development and introduction of DIA should be seen in mainstreaming purpose of integrating knowledge and information on potential disasters in the process of 'Risk-informed planning'. To this end, DIA can be used as an 'ex-ante' tool for: **firstly,** to screen proposed development projects on the basis of an analysis that should answer- (i) whether a proposed project is threatened or to be impacted by existing disaster risks, or (ii) the project itself can increase the intensity, frequency and extent of existing risks, or (iii) it can even generate new risks in an area of development; and **secondly**, to suggest appropriate actions or effective *'countermeasures'* that would be required at each stage of project formulation, appraisal and implementation.

The Programming Division part of the National Resilience Programme (NRP)- a joint initiative by multiple GoB Ministries and development partners with technical support from UNDP- has taken the initiative for developing the 'DIA Framework' along with necessary guidelines and policy recommendations for institutionalizing DIA into the current development practices of the government and private sector development partners. It is expected that using of such tool for national level disaster and climate risk assessment in Bangladesh would be scaled-up and provide the way for greater resilience in the society.

OBJECTIVES AND METHODOLOGY

In the above backdrop, the overall objective of the study was, to provide technical support in developing DIA tool and guideline, conduct capacity building activities for the government officials, including pilot test model trainings, and finally providing necessary policy recommendations for institutionalizing DIA in the existing planning process.

The methodology followed an interactive consultative process within the context of existing practices, institutional settings and overall policy guidance in relation to Disaster Risk Management (DRM), involving following key steps:

- Desk Research and Review: based on national/international policy framework and available literature, DRR practices, projects and programs. International best practices from Sri Lanka, Australia, South East Asia and South America were also considered.
- Key Informant Interviews (KIIs): with officials from relevant MDAs to understand their needs, roles and processes, as well as challenges and opportunities in mainstreaming DRR and CC issues into development planning process.
- Workshops/Consultations: feedback from 3 stakeholder consultations, 2 meeting of DIA Technical Committee, and a national dissemination workshop.
- Piloting & Training: piloting of DIA tool and framework developed and conducting model training workshops for relevant officials from government and the private sector.
- Finalization of DIA Framework and Policy recommendations: reflecting feed-back from all consultations and discussions.

However, the process faced two major limitations, one- time and resources appeared not enough to cover the broader aspects of such a multi-sectoral issue, and go for haunting 'on-field' data and information, thereby making the study primarily relying on secondary sources; and the second- the unprecedented situation arisen out of the coronavirus pandemic had affected much of the workflow, particularly on pilot testing of the 'DIA Framework' developed as well as on model trainings, and eventually caused substantial delay to the whole process.

FINDINGS FROM REVIEW AND DISCUSSION

- **Conceptual issues: DIA and EIA**

In general, DIA should be a comprehensive but simple process to assess potential disaster threats that the development intervention can create in the development site. In an ideal situation, given necessary time and resources, DIA should assess the value of impact of potential disasters at the designing phase of a project together with the cost of humanitarian activities, recovery, rehabilitation and reconstruction that could be brought by such development interventions. This means that the anticipated costs/impacts should also accommodate social, environmental and cultural costs due to potential damage by the development interventions. In such a context, DIA can be defined as a methodology to assess development projects from the view point of disaster risk reduction by identifying improvement points of the projects, in order to make the project sensitive to disaster risks as part of risk informed planning (JICA 2012). This definition was, however, largely based on the experience of developing a DIA tool for the transport sector in Sri Lanka.

However, definitions and processes for Environmental Impact Assessment (EIA) and the Disaster Impact Assessment (DIA) are being looked into by the professionals from their respective organizational perspectives, which gives rise to the debate whether to merge DIA within the current practices of EIA or to introduce it as a separate *'ex-ante'* tool for project appraisal purpose. It is apparent that the international 'Frameworks' (such as, SFDRR 2015-2030 and Paris Agreement of 2015) for DRR and CC are being carried out on their own ways

which are compartmentalized in nature and contents. But there is a strong need for integration at the national level in between environmental and disaster impact assessment interventions in a way to address real consequences or impacts coming from both these phenomena. Although conceptually EIA can lead to an overall risk reduction process including disaster mitigation, but integration may obviously help achieve better results, specially at local and national levels.

- **Global practice and methodology**

Taking into consideration of the above definitions, a comprehensive DIA tool with associated manual had been developed and practiced in Sri Lanka since 2012 with the technical and financial support from JICA. However, this tool was basically developed for the Road Transport sector considering local contexts and experiences in relation to DRR. More details of this tool have been discussed in the 'DIA Framework' developed so far under this assignment.

The Economic Commission for Latin America and the Caribbean (ECLAC) has been a pioneer in the field of disaster assessment and in the development and dissemination of a disaster assessment methodology. A comprehensive manual titled, *'Handbook for Disaster Assessment'* prepared and published by ECLAC in 2014, with active collaboration from the Pan American Health Organization (PAHO) and partial funding from the JICA and UNDAP, has got an approach that involves estimating the effects of a disaster on assets (damage) and economic flows (losses and additional costs) and takes account of the economic, social and environmental impacts of disasters. Unlike the Sri Lankan one it covers all the major relevant sectors of the economy. It also addresses cross-cutting issues such as gender and the environment.

Integration of DIA within the process of EIA has been practiced by the Caribbean Development Bank (CBD, 2015) with few additional requirements for the purpose of addressing natural hazards without having any structural change to the EIA process itself. On the other hand, ODI (2014) prepared handbook for use by Australian Department of Foreign Affairs and Trade (DFAT) staffs for integrating disaster risk reduction, environment and climate change adaptation and mitigation into Australian aid projects, programmes and investments. However, given the current GoB institutional settings and implementing jurisdictions for both EIA and DM affairs, which involves a number of legal and policy instruments on both sides, it is hard to accommodate such an integration approach, at least in the short- to medium-term.

The EU risk assessment and mapping guidelines for disaster management (EU, 2010) recognizes that maps can contain effective information on hazards, vulnerability and risks of a particular area and thereby support the assessment process. The approach is, in principle, based on covering 'multi-hazard' and 'multi-risk' for all the natural and man-made disasters. Indeed, this methodology largely support and substantiates the initiative taken by the Programming Division in 2017-2018 with the technical and financial support of ADB towards generating hundreds of maps for 10 major hazards in Bangladesh considering the local context of disaster management. This database can also be utilized by the Disaster Risk

Information Platform (DRIP) being initiated to be established at the Planning Commission under the NRP-PD part.

- **Bangladesh context: DIA within existing policy, legal and institutional frameworks**

In our current practice, incorporation of disaster and climate change related risks is limited in all stages of development planning in Bangladesh. Disaster impact assessment is mainly limited to post disaster estimation of direct losses and damages. However, the country has entered into a new era of development initiatives which needs more rigorous exercises on impacts of disasters and climate risks to sustain development results and achieve required level of resilience. Thus, Bangladesh looks for such an 'ex-ante' tool like DIA to have necessary 'countermeasures' for all development initiatives given the importance of linkages between disaster and development at all levels of planning processes.

The government identified mainstreaming disaster risk management (DRM) into our development planning process as one of the key priorities (CDMP 2010). All the subsequent GoB policies and plans (like Delta Plan 2100, Perspective Plan 2010-2021, NPDM 2010-15, and the 7th FYP 2016-2020) are in consistent with the 'risk reduction path' for development initiatives following the global framework and commitments like SFDRR and SDGs, which appears as the rationale for including DIA in the SOD 2019. In continuation with this policy regime, DIA and the guidelines would serve as an aid for identifying long-term nature and extent of disaster risks for the purpose of project screening to establish and enhance knowledge base within the government system.

Nevertheless, Bangladesh has got specific sets of legal instruments for disaster management (like Disaster Management Act of 2012 and subsequent Regulations), as well as water (Water Resources Planning Act 1991 and Water Act 2012) and environment (Bangladesh Environmental Conservation Act 1995 and subsequent Regulations of 1997) interventions, which equally imply to DRM issues. All these legal frameworks/instruments have the common purpose of protecting natural resources and public investment towards well-being of people and the society, which have been well-aligned to DIA objectives and purpose.

The existing institutional mechanism consists of National Disaster Management Council (NDMC) and the inter-ministerial Disaster Management Committee (DMC) at the national level, while other DMCs for field level operation from the Divisional down to the Upazilla levels for administering and coordinating disaster management activities throughout the country. The SODs, however, serve as a set of well-constructed executive orders and directives for the purpose of handling any such emergencies within the country. On the other hand, project formulation and appraisal functions in the public sector are being governed by the 'Guidelines of 2016' issued by the Ministry of Planning, which provide the provisions of integrating risk reduction and mitigation measures into the Development Project Proforma/Proposal or DPP format through using the DIA tool and guidelines.

- **Revisiting Policies and Practices**

An analysis has been made based on desk review and consultations through the KII process to establish linkages between the policies and practices in relation to the following issues:

EIA and the DIA:

There has been a debate that whether current practices of EIA, following the relevant policy and legal frameworks, can merge DIA, or introduction of DIA should be a separate process. The consultations, however, emphasized on developing and introducing DIA as a separate but simple and comprehensive 'ex-ante' tool to be integrated within the development planning process; more specifically in the formulation and appraisal of individual projects to follow the *'risk reduction'* path, so that it can put additional value to the existing DPP formulation and processing functions.

Approach, Process and Level of DIA Intervention:

Majority of the stakeholders including DPs suggest to go for a *'system-wide approach'* that can bring desired results, otherwise they fear it would not work; for example, it is not the road alone that causes the problem, but the 'whole system' of road management which brings back it. It was found that agencies like LGED has already practicing 'Build-Back-Better' approach following the SFDRR (2015-2030) in association with and technical support from UNOPS considering 'failure analysis' while going for new construction or reconstruction activities. Nevertheless, the approach for addressing different types of disasters like, man-made or natural may differ with different sets of assessment indicators and criteria.

The process for DIA introduction should not be a static one, rather having a dynamic nature, so that it can accommodate subsequent change(s) as and when necessary. According to the perception of development practitioners, the existing government 'Guidelines for the Preparation, Processing, Approval and Revision of Development Projects in the Public Sector' of 2016 may include the 'DIA Framework' in the form of 'checklist' or 'template' to address the issues relating to disaster management. In addition, 'cost-benefit' analysis for risk reduction interventions or suggested 'countermeasures' should also be the 'part-and-parcel' of the proposed checklist. The process should also take into account a number of other important aspects of DIA applicability, which are: categorization of projects by sectors or geographical areas; inclusion of gender and other cross- and multi-sectoral issues; and coordination and synchronization of actions among different stakeholder institutions from the view point of their respective policy and legal frameworks, etc.

Several levels of DIA intervention may be considered, e.g. National Level: to intervene policies, plans and strategies, and Local Level: to prepare operational plans for local level actions or contingencies as well as pre- or post-disaster recovery. DIA can also be applicable to all three levels of: macro and sectoral policies and plans, and investment levels. The most common use of DIA would the 'investment level' for projects and programs, where there are two layers of prospective users, one- who initiate project proposals, i.e. at the 'planning and preparation level', and the second- who review and recommend project proposals, i.e. at the 'appraisal level'. It was thought that the application of DIA would be appropriate at the project-program level, even not for projects of all Sectors at the beginning, which means a selection of 'Sectors' through piloting may be needed to start with; while 'rolling-out' could be done gradually through expanding 'sectors' and 'geographical' areas.

Guiding principles for project formulation and appraisal:

There has been a general consensus among the stakeholders that DIA integration process should take place within the country's macro development guideline principles. Apart from 7th and 8th FYPs, the Delta Plan was also referred to have *'hot spots'* with hazard classification that can provide a spatial guidance for area wise project interventions. The MoDM&R has taken the policy decision to continue for building more cyclone shelters and resilient housing in vulnerable areas during the 8th Plan period; the houses to be built would be expanded vertically to reduce pressure on the country's already scarce land resource. It is also suggested that the DIA tool should address the Goal 13 of SDGs and SFDRR 2015-2030 in parallel to the national policy guidelines in order to contribute to the overall objective of achieving sustainability in our development endeavors.

In addition, implications of sectoral plans, policies and legal frameworks are supposed to be 'well-aligned' in a way that there should not be any conflict among those while implementing DIA, rather should complement or supplement the whole process. Moreover, a good number of 'policy directives' are coming out of the ECNEC process while approving development projects/programs to address disaster management and risk mitigation. Relevance and effectiveness of such 'policy directives' in achieving desired 'resilience objective' of the development initiatives were highlighted and much emphasis was given to follow those in preparing DPPs.

However, in most of the cases, DPPs prepared by respective agencies remain very much 'elementary' in respect of responding to the relevant 'provisions' made in the DPP format (i.e. Sections 24.3 and/or 31.0/30.0) concerning risk reduction and mitigation measures. It is thought that such a situation appears mainly due to the low capacity and, therefore, capacity strengthening both at the institutional and personal levels has been raised as a major development issue. Carrying out 'feasibility study' as per government instruction as well as using digital databases and GIS technology may contribute immensely to curve this situation for making successful DRM interventions.

Strengthening capacity for addressing DRM:

Capacity issue, at both institutional and personal levels, has been in the discussion as a major factor for not having full benefits or desired results in DRM interventions despite having an excellent set of *'institutional framework'* backed by necessary policies, guidelines and legal instruments in place. Although this Report largely concentrates on the issues came out of the Consultation process in relation to the 'institutional capacity' strengthening, but it was felt that the issue of 'personal level capacity building' should also be addressed seriously in realizing institutional goals, particularly through *'on-the-job'* trainings and motivational campaigns in order to increase the overall performance level.

However, recent initiatives by the government to increase field level expansion of DDM and WARPO through necessary reorganization will certainly capacitate those organizations for better handling of DRM issues. Besides, developing 'template' for the feasibility study, establishment of DRIP at the Planning Commission, and strengthening monitoring on DRR/DRM issues by IMED and the MDAs would have a positive impact on institutional capacity strengthening in this regard.

Addressing gender responsiveness:

It is important to address diversified risks, vulnerability, capacity and need of women, children, person with disabilities and disadvantageous groups separately while collecting information and feed into the DIA process. Collection of SADDD (Sex, age, disability disaggregated data) must be an integral part of DIA. For example, information on loss and damage (specifically loss related to income, livelihood) must consider SADDD and needs involvement of MoWCA and the DWA to get their views and gender analysis lenses. Gender related issues may be integrated with disaster and other risk reduction and mitigation related Sections, like 24.3 and 31.0/30.0 in the DPP format. UN Women is providing technical support to produce 'Protocol for SADDD' to BBS, formulation of 'Gender Marker' to LGED and revision of 'Gender Responsive Guideline' for the DPP format to the MoWCA and PC. These three initiatives have immense scope to interlink to ensure integration of Gender issues into the DIA process.

Risk transfer and residual risk:

Changing nature of disaster and development risks should be considered while applying DIA tool and guidelines, especially in a changing climate environment. Risks can be transferred, for example, sludge disposal and management are equally important while dredging rivers, unless done the associated risks could bring new or additional hazards. Moreover, the issue of *'residual risk'* that remains even after applying a tool like DIA is very important and should be taken into account in the decision-making process. This issue has been, however, well addressed under respective heading of 'DIA Framework' developed under this initiative.

Directives for PPP and G2G projects:

In the current GoB system, Public Private Partnership (PPP) and Government-to-Government (G2G) projects are not being considered by the ECNEC process. Since PPP and G2G modalities, including private sector involvement, are becoming more and more important for economic development of the country, there should be some mechanism or directives for these projects to be risk informed in order to have greater resilience in the society.

Disaster education:

As disaster management in Bangladesh involves 'whole of the society', the education system must not be 'left-out' of that. It was found during the study that inclusion of DM in the school curricula has already been taken by the government where students are learning about disaster and its mitigation measures from Class VI (Level 6) of their formal education. This move should be continued and gradually coverage can be extended to all levels of education.

Polythene, bio- and health hazards:

Time has come to recognize these types of hazards in the national DRM agenda, for example, polythene has already been creating major problem in Bangladesh, impacts of which can remain in the environment for long time, which calls for strong actions against polythene. Recent example of constructing STPs for reducing risks of biological hazards may also be taken into DM policies. The most striking example of the unprecedented situation arisen from the *'coronavirus'* outbreak which led to the on-going 'Global Pandemic' has shown how a 'health hazard' can jeopardize the whole world. Indeed, it has become indispensable for Bangladesh now to recognize and consider the issues relating to health hazards from the view point of disaster management in the country.

Development partners' perspective:

Development Partners working in Bangladesh have got 'policy priority' in disaster management and climate change affairs. However, there seems some sort of 'compartmentalization' in their actions or engagements in the fields of DM and CC following the global 'frameworks' exist for the same, such as SFDRR and UNFCCC respectively. It was found that some of the DPs working for both DRR and CC together (e.g. the WB), while others do that through separate 'cluster' arrangements (like ADB, UNDP). Nevertheless, they have got their *'own frameworks'* for doing this but all of them kept DM and CC agenda on their 'priority portfolio' either through 'components' within large investment (mostly structural) projects or through smaller technical support service (non-structural) projects. Both ADB and WB used to keep certain amount of their investment reserved for risk reduction and emergency purposes. In fact, all of their projects are subject to have 'risk screening' before having final approval (i.e. following *'ex-ante'* process). However, the screening process is mostly done through SIA/SEA or EIA which include disaster risks, but as such a 'DIA tool' is not in place. It appears that an 'integration' and 'harmonization' of the actions on DPs end would have positive impact on Bangladesh's journey towards achieving resilient development.

Inter-Agency Coordination and Harmonization

The issue of inter-agency cooperation and coordination has got top priority among all the Consultations, since DRM appears to be highly multi-sectoral, and not only involves the government system but equally does for the whole of society including non-government and private sector operators as well as the DPs working in Bangladesh. In most of the cases line agencies are operating with their own agenda/initiatives resulting in *'stand-alone'* projects, for example, there has been no effective interaction or consultation among the DAE and BWDB in case of suitable cropping pattern for the affected areas. Therefore, effective coordination and harmonization of efforts among all stakeholder partners have been suggested not only at the project or activity level but also at the policy and sectoral levels.

THE 'FRAMEWORK' FOR DIA

Key elements of 'DIA Framework' developed under the present initiative of NRP-PD are highlighted below for better understanding of its scope and use as an *'ex-ante'* tool for project proponents and appraisers:

- **Scope of the 'Framework':**

The 'Framework' developed so far is basically targeted for the application of DIA at the "Project Level" to address relevant Sections (i.e. 24.3 and 30.0/31.0) of the DPP format. At the initial stage 'scope' has been kept limited for 'infrastructure projects' only through providing a list of prospective infrastructures and probable hazards. However, the 'Framework' recognizes the 'scale-up' opportunity for DIA application in other sectors, as well as at the policy and program levels.

- **Steps to be followed for conducting DIA:**

Following six steps are to be followed for conducting the DIA of a development project/intervention as identified in the 'Framework':

Step-1: Locating/classifying the 'project': As the first step, project area or 'site' has to be located on available 'risk or hazard map' to identify and assess the severity of hazard(s), if any, in order to classify proposed projects into different categories (such as red, yellow or green), and to follow respective design guidelines to make the project resilient. The 'Framework' refers to a list of Districts facing potential threats from ten major hazards on the 'risk maps' prepared by the Programming Division in 2018 with technical assistance from ADB.

Step-2: Identifying impact of hazards: The second step would be to report on the impacts of hazard(s) on the proposed project. The 'Framework' mainly refers to 'structural' interventions with service consideration, and provided a long list of impacts on major infrastructures in Bangladesh for different types of hazards as a guideline. The probability of whether the intervention (structures) can impact over the area or environment and may create new hazard(s) should also be considered and reported in this step. Examples of such 'risk transfer' could be constructing a road that may cause 'water logging', or building embankment that may flood the 'unprotected' area, etc.

Step-3: Proposing 'countermeasures': One of the most important part of DIA process is to propose 'countermeasures' for risk reduction towards making a project resilient. The third step would identify 'required countermeasures' in response to the impacts reported by Step-2. The 'Framework' provides good example of cyclone shelter project with multiple indicators within a Matrix that can guide common users. However, such "Matrices" can be developed further to expand and extend DIA coverage for other projects and areas, which demonstrates the 'scale-up' opportunity of the 'DIA Framework'.

Step-4: Assessment of 'Resilience': The fourth step of DIA should consider and assess the level of 'resilience' that might be shown by a project immediately after facing a disaster; which can be done by a number of indicators, some of which are mentioned in the 'Framework' as: i) Emergency DM Plan- e.g. in case of a building collapse there needs to have an 'evacuation plan'; ii) Service Continuity Plan- e.g. a school needs to resume 'schooling' as soon as possible after a flood, while the building was used as a flood shelter; iii) Time of Recovery- e.g. if a project takes longer 'rehabilitation time' after facing a disaster (a damaged polder for example) then it causes prolonged sufferings to the people or inhabitants of the project area. Thus, it becomes extremely important for a project to have an 'assessment of resilience' during its design and appraisal phases.

Step-5: Estimating 'Cost of DRR': The cost of DRR should be estimated and reported in the fifth step of DIA, e.g. may be in terms of percentages to the total project cost. It might have implications to the decision making process and ideally should include in an 'incremental' way (e.g. in case of erosion protection cost for a road construction) or the full cost of a project to address DRR (e.g. in case of constructing a cyclone shelter or embankment). The cost estimation may ideally be reported on the basis of 'unit cost', i.e. how much would be the cost for sheltering a person, while constructing a cyclone shelter.

Step-6: Reporting 'residual risk': As 'risks' cannot be eliminated entirely, it becomes important to report on the 'residual risk' to facilitate comparison with the cost of DRR while appraising a project. For example, if a building is designed to withstand earthquake with a

magnitude of 7.0 in the Richter scale, then the probability of earthquake above 7.0 needs to be reported.

- **Outcome of the Piloting**

Piloting of the 'DIA Framework' developed has been done with newly proposed projects from LGED for rural road construction. Although it was not possible to go for a *'face-to-face'* presentation due to COVID19 pandemic restrictions, effective discussion held with a group of LGED Engineers on the virtual (Zoom) platform. The 'framework' was vetted by the participants as 'workable' and observed as 'useful to prepare DPP' which is the basic target for this application. The pilot put much emphasis on the availability of *'on-line'* platform to identify project location in the risk and hazard maps. Categorization of projects, measuring resilience and doing the feasibility, etc. were major issues among many others which came out of the pilot process. However, for the purpose of 'real life' application of the DIA tool and guidelines it would be necessary to conduct more such pilots and review for further improvement and effectiveness.

- **Implications to 'Risk Informed' Planning**

The DIA tool and guidelines developed so far is the first of its kind in the history of disaster management in Bangladesh. Naturally it might not fulfil all our expectation within the given limitations and prevailing conditions. However, it can at least start the process and demonstrate the job of 'risk informed planning' in practice among the development practitioners. This might do *"half of the task",* but *"the rest half"* should be carried forward through institutionalizing DIA practice in our development planning process with sufficient mainstreaming efforts. Thus, implication of this 'DIA Framework' to the 'risk informed planning' initiative would be: ***"it is the beginning, and not the end"***.

INSTITUTIONALIZING DIA: KEY RECOMMENDATIONS & WAY FORWARD

- **Major issues:**
  - Inclusion of DIA, as a 'checklist/template', into the GoB Guidelines (2016) for project formulation and processing, which is being revised by the MoP.
  - Consideration of 'cost-benefit analysis' for risk reduction interventions as part of such checklist or template.
  - Integration of DIA along with 'feasibility study' as per government instruction within the standard "Template" being developed by the MoP.
  - Addressing 'capacity development' need both at the institutional and personnel levels.
  - Coordination & Harmonization of activities: among all *'stakeholder institutions'* in regard to development projects, as well as research findings, modelling, sharing of data & information, etc.
- **Key Recommendations:**
  - ✓ DIA tool can be linked-up with DPP/TAPP formats in the form of *'checklist'* to address *'risks' & 'countermeasures'* to be included in relevant sections of 24.3 & 31/30.
  - ✓ *'Categorization*' of projects for DIA might be appropriate, but should be done in a way that project proponents do not have any opportunity to avoid or bypass the process.

- ✓ Initially DIA may be piloted to selected sectors (like Water, Roads, Power, etc.) and geographical areas (like coastal belt, river erosion, etc.) based on risk assessment and vulnerability. Gradual *'rolling-out'* may be done on the basis of pilot results.
- ✓ DIA should also address to women, children and disadvantageous groups who got special needs during disaster time. *'Gender Issues*' may also be integrated with DPP/TAPP's relevant sections (i.e. 24.3 and 31/30).
- ✓ PPP, G2G and Private-sector projects also need to be *'risk informed'* through *some kind of mechanism or directives* considering their contribution to the growing economy. Government may enforce to include DRR measures for all development projects/programs to achieve greater resilience in the society.

- **Way forward:**

⇨ ***Implementing the 'DIA Framework'***

Introduction of 'DIA Framework' into the development planning process and 'practicing' through pilot projects or programs in targeted or selected sectors & geographical areas. The strategy for implementing DIA should take a path in consistent with project formulation and appraisal functions.

⇨ ***Mainstreaming DIA into the Planning Process***

Establishing 'Focal Points' for DIA mainstreaming in relevant institutions to facilitate coordination of DRM interventions. Mainstreaming activities like awareness program, consultation, seminar, etc. should go through the 'DRM FP Process' for wider participation of actors from both public and private sector organizations.

⇨ ***Building Capacity at Personal and Institutional Levels***

Successful integration of DIA needs to have 'technical expertise' or 'skill' on its application that has to be supported by sufficient 'on-the-job' trainings & 'motivational campaigns', through dedicated programs with 'standardized modules' involving all levels of participation.

⇨ ***Transferring Knowledge through Documentation, Publication and Dissemination***

Proper documentation of the DIA process, relevant information and publications should be treated as 'knowledge product' & 'knowledge transfer instrument/vehicle' to support 'capacity building' activities, as well as for dissemination to potential users in order to contribute in DIA institutionalization process.

⇨ ***Managing Integration within the existing Institutional Settings***

Initiating DIA integration process within the existing institutional settings following policy guidance from the national and sectoral levels.

e.g. Programming Division can establish following two important links:

i) Integration with 'Climate & Disaster Risk Screening' tool consisting of "Risk Atlas" prepared under the ADB project; and,

ii) integration with new ADP Database Management System.

CONCLUSION

The current development agenda of Bangladesh is highly focused in achieving SDGs, Paris Climate Agreement and SFDRR in association with national level policies, plans and strategies.

In such an expediting development phase, Bangladesh needs to have specific tools like DIA to address disaster and climate related risks and hazards for making its development resilient. Indeed, the interactive consultative process followed has provided unique opportunities to update and enrich knowledge on relevant processes and practices of addressing DRM in the country context. Specially, the impressive suggestions came out of the Consultations and KIIs have immensely benefitted the process of 'DIA Framework' development. It is hoped that the DIA tool and associated guidelines would be helpful to end users in addressing and mitigating disaster risks while planning and implementing projects and programs towards achieving sustainable development.

REFERENCE

ADB Guideline (2017): Disaster Risk Assessment for Project Preparation: A Practical Guide.

Caribbean Development Bank (2015): Updated Sourcebook on the Integration of Natural Hazards into the Environmental Impact Assessment Process. Incorporating Disaster and Climate Risk Reduction into the Project Cycle.

DDM (2015): National Progress Report on the Implementation of the Hyogo Framework for Action (2013-2015).

DMC & JICA DiMCEP (2012): Disaster Impact Assessment – Checklist System for Road Sector. Sri Lanka.

EU (2010). Risk Assessment and Mapping Guidelines for Disaster Management. Brussels.

GoB, GED, Planning Commission (2012): Perspective Plan of Bangladesh 2010-2021: Making Vision 2021 a Reality.

GoB, GED, Planning Commission (2013): National Sustainable Development Strategy (NSDS), 2013.

GoB, GED, Planning Commission (2015): 7th Five Year Plan - FY 2016-2020: Accelerating Growth, Empowering Citizens.

GoB, GED, Planning Commission (2018): Bangladesh Delta Plan 2100: Bangladesh in the 21st Century (Abridged version), October 2018.

GoB, Programming Division, PC & NARRI Consortium (2016): Trends of Disaster Related Public Fund Allocation in Bangladesh: An analysis of ADPs during 6th Five Year Plan period (FY 2011- FY 2015).

GoB, Programming Division, PC & ADB, (2018): Establishing a Climate Risk Screening System for Mainstreaming Climate Change Adaptation into National Development Budgeting Activities.

GoB, Programming Division, PC & UNDP (2018): Scoping of Integrations of Waterlogging Risk Reduction into Planning and Budgeting Processes.

GoB, MoDM&R (2012): Disaster Management Act, 2012.

GoB, MoDM&R (2017): National Plan for Disaster Management 2016-2020: Building Resilience for Sustainable Human Development.

GoB, MoDM&R (2019): Standing Orders on Disasters (SODs)- Revised.

GoB, MoE&F (1995): Bangladesh Environment Conservation Act, 1995.

GoB, MoE&F (1997): Bangladesh Environment Rules, 1997.

GoB, MoP (2016): Guidelines for the Preparation, Processing, Approval and Revision of Development Projects in the Public Sector (the Green Book) – the Green Book.

GoB, MoWR (1992): Water Resources Planning Act, 1992.

ODI (2014): A how-to Handbook- Integrating Disaster Risk Reduction, Environment and Climate Change Adaptation and Mitigation into Australian Aid Projects, Programmes and Investments.

Rahman, R. (2020): Developing Disaster Impact Assessment (DIA) Tool for Public Investment: DIA Framework. A draft final report submitted as the DRR Specialist under NRP/UNDP contract.

UN (2015): Sendai Framework for Disaster Risk Reduction (SFDRR), 2015-2030.

UN (2015): Transforming Our World: The 2030 Agenda for Sustainable Development-SDGs, 2015-2030

UNFCCC (2015): Adoption of the Paris Agreement on Climate Change.