

## Green Growth through Strategic Environmental Assessment in Bangladesh

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### Abstract

It is vital that Bangladesh decouples its economy from the harmful environmental outcomes of the economic growth pathway it is pursuing currently. So it is significant that green growth is pursued with the aim of unlocking Bangladesh from its unsustainable development pathway to more sustainable as well as an inclusive one through the application of strategic environmental assessment (SEA). The article seeks to emphasize the role of SEAs could play in supporting the green growth in Bangladesh. The paper addresses the environmental assessment and overview of SEA in Bangladesh. It explores the enabling factors for SEA and challenges of SEA. The empirical basis for the paper, has drawn on experiences gained from a recent practice of SEA to support green growth in different sector of different country. With the aim of the green growth, promote the use of SEA in the national and sector development plans and strategies, as well as in decisions and actions relating to environmental goods and services. Bangladesh as an effective environmental assessment system with the application of SEA is still faraway reaching but through increasing awareness, learning and research, donor pressure and proper initiative by government it is achievable.

**Keywords:** Strategic environmental assessment; Green growth; Bangladesh; Application; Sustainable

### Introduction

In the face of pressing environmental and economic challenges, national as well as international attempts to promote green growth while a new origin of growth have been increasing in recent years. Building on this momentum can assist to speed up progress towards poverty reduction and sustainable development through, for instance, the use of natural resources more sustainably, efficiencies in energy use and evaluation of ecosystem services [1]. Its system of growth creates green jobs, improves economic vitality as well as protects the environments [2]. Structured as a “component” of [3], “pathway to” [4], or a fewer ambiguous “child” of sustainable development, collectively green growth is: (1) a framework of explanatory and descriptive concepts and (2) a perspective plan intended to support policies that counterbalance the short-term financial costs of greening growth of economic by highlighting the benefits of environmental defense for economic growth [3,5-11]. According to the OECD, green growth is “the fostering of growth and development while ensuring that natural assets continue to provide the environmental resources and services on which human well-beings relies” [12]. UNEP defines green growth simply as “resource-efficient, low-carbon, climate-resilient & and socially inclusive growth”, and also uses the (interchangeable) term “green economy” [12]. The World Bank has defined green growth as “a strategy for promoting economic growth while adding an ecological quality to existing economic processes and creating additional jobs and income opportunities with a minimal environmental burden” [12].

The green growth approach is an internationally recognized one for sustainable growth of economics, which has also been developed in South Asian countries. With the stable growth of the global economy, merely the way to get divest of the dilemma is to improve emission reduction and resource utilization efficiencies without harmful the economic growth. While we can see, the United States of America has put forward “a green New Deal” as well as passed the American Climate and Energy Security Act (ACESA). Japan has formulated in general planning of “green development strategy”. The European Union has declared its “2020 Strategy” and green growth taken as the core strategy of boosting the competitiveness of European countries. There is no doubt that green growth has been the inevitable option of human beings as well as the green economy will guide to a new pattern of the worldwide economy [13].

As a third world country green growth is important in Bangladesh.

As compared to a vast population, resources are limited, so it is hard to balance demand and supply. The country depends on textile for economic growth, and this is considered unsafe owing to new countries completing its role yet. Therefore, to save and protect our economy as well as environment green growth is needed in Bangladesh. A green growth is low carbon, socially inclusive and resource efficient. The key option is green growth to maintain an environment, but go faster development. In a green growth, growth in income as well as employment should be driven by private and public investments that reduce pollution and carbon emission, enhance resource and energy efficiency, and prevent the loss of ecosystem services and biodiversity. The green growth term is used widely in Bangladesh, but it described poorly in strategy frameworks and national planning. Bangladesh government does not have a separate strategy for addressing green growth, but rather several initiatives that together contribute to structuring the government’s approach.

Several core plans as well as strategies deal with various green growth aspects. The policies for economic development and growth as set out in the Perspective Plan Bangladesh (2010–2021) and the Seventh Five-Year Plan (2015–2020), with explicit “green” elements. The promotion of green growth as well as sustainable development is articulated by the Five Year Plan document. This Plan identifies the negative externalities of fast economic growth and industrialization, though visible turns down in biodiversity, deforestation, damage of fisheries and wetlands, reduction of soil nutrient, desertification as well as salinity intrusion. The Plan further admits that there is a ‘window of opportunity’ for halting the environmental degradation process by pursuing strategic acts that generate green growth as well as minimize the climate change adverse effects simultaneously [14]. Therefore, SEA

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can assist Bangladesh government for achieving green growth as a policy support instrument.

In principle, there are many policy tools available for the generation of green growth, including the property rights formation, environmental laws as well as funds for innovation and tools that assist set right the signals of price related to the use of resource and pollution. However, policy makers frequently have a hard time enforcing and enacting appropriate policies, for example, pollution as well as resource taxes. The main question of this paper is whether subjecting policy procedures to extended analysis as well as stakeholder engagement- by SEA- can assist in addressing the challenges connecting to component of green growth and make easy implementation of policy tools that would create growth greener.

This article attempts to analysis the role of SEA as well as “SEA like” tool for achieving green growth in Bangladesh. The paper as well reflects on the experience exposed from the practice of SEA of different countries at different sector levels, draw attention to its application for inclusive green growth as a promising instrument. There is a lack of recognized information concerning the application of environmental assessment, especially SEAs within Bangladesh. This would need additional work to widely assess recent development in SEA practices. Research is also needed to enhance measure the costs and benefits, and develop evidence-based support of services of ecosystem in extensive green growth as well as reduces the vulnerability of climate change with the application of SEA. There are some knowledge gaps which I think is significance attending to future work.

## Literature Review

### Concept of SEA and its role in green growth

Over the last 20 years SEA has emerged as one of the most famous procedures for environmental mainstreaming [15]. Striking a balance among the need to gain socio-economic growth as well as sustainably use and to conserve of natural resources has turned into a pressing requirement internationally, especially in developing nations. SEA integrates and recognizes environmental, economic and social considerations into plans, policies and programs (PPPs) is an effective and recognized planning instrument in more than 90 countries across the world [16]. Recently, numerous developing countries have adopted regulations or legislation on SEA, and the application of SEA is increasing quickly [1,17]. SEA provides a sound base planned in support of informed decision-making concerning sustainability [18-22]. Rather than being a particular methodology or tool, the OECD describes SEA as “analytical and participatory approaches to strategic decision-making that aim to integrate environmental considerations into policies, plans and programs, and evaluate the inter linkages with economic and social considerations” [23]. SEA can contribute to the incorporation of environmental considerations into main policy documents, for example Poverty Reduction Strategy Papers (PRSPs) and strategies as well as budget for main economic sectors [24]. Most commonly planning is an instrument to which SEA has been applied in numerous countries [25]. Most SEAs have been carried out for land use plans and programs. SEAs are the formal requirements of land use planning in the countries are USA, Australia, Canada, UK, New Zealand, the Netherland, Germany, Italy and South Africa [26-30]. The use of SEA in the support of regional development plans within the Asian countries for example, China, Hong Kong, Taiwan, Korea, Indonesia and Malaysia [25,31,32]. SEA has been applied in policies sparsely but recently in developing countries its use has increased mainly to integrate environmental considerations of sectors that are environmentally sensitive such as transport, mining and forestry. A number of banks and development agencies use SEA

to enhance the incorporation of environmental considerations in development procedures they support [33]. For instance, the World Bank has experience as of supporting SEAs in a varied set of countries sector reforms since the early 1990s [34,35]. Further climate change may encourage the application of SEA in policy as well as sector development. Such as, the Forestry Carbon Partnership Facility and UN REDD utilize policy SEA approaches in the country strategies, preparation for the reduction of forest degradation and deforestation [36,37]. It provides long-term assess and forecast of environmental and socio-economic implications of PPPs. SEA is an important tool for the improvement of sustainable infrastructure policies and also a policy tool for achieving green growth.

In June 2012, building on the findings of the strategy of green growth, a draft report (for consultation at Rio+20) on Green Growth and Developing countries released by the OECD [38]. The draft report (section 3.5) recognizes SEA as a main mechanism for integrating environment and development interests in pursuing a strategy for green growth. SEA has a critical role in the tiered approach. Retief et al. [39] argue that “SEA was introduced primarily to improve efficiency in a pressured public sector decision-making context, in particular through a tiered system where strategic level environmental information could give a basis for easy and quick project-level decision-making. SEA is a key, as well as should be incorporated into an obligatory process through legislation and sustainably planning framework that is based on obvious green criteria or principles” [40].

### Fisher discusses two major roles of SEA in “greening” decision-making

**SEA for offering for “green” information:** “Green” information is supposed to be given by SEA in particular during the report of the environmental baseline, assessment and identification of various choices in conditions of their environmental impacts, the detection of impact importance for all of them and interpretation of ways to avoid, reduce, diminish or reimburse remaining impacts as well as the formulation of suggestions. Usually, whilst the provisions of SEA add suggestions for definite environmental issues to be considered, often there are no obligatory (e.g. legal) requirements, and the option of related factors is left to the evaluator discretion. For this reason various environmental issues/aspects have been observed to take varying degrees of interest in SEA [41].

“Greening” in SEA may be addressed by various methodological approaches. It was demonstrated by Fischer [42], who found that various environmental elements (e.g. air, water, fauna and flora) were evaluated in different methods, based on e.g. qualitative and quantitative methods as well as techniques. The choice of a specific method may depend on particular sectoral traditions (e.g. modelling of planning of transport and overlie mapping of planning of land use). However, in the European Union (EU), more recently, the function of (quantitative) GIS (Geographic Information System) has been strengthened, especially in link with the INSPIRE Directive (2007/2/EC), an infrastructure established by the EU for spatial information [43]. SEA provides a process that enables “green” aspects to be measured more systematically in PPP and project making - by providing for a participatory and systematic decision-support procedure that can either structure or accompany the underlying PPP and project. In this perspective, certain procedural steps are supposed to make sure particular tasks are addressed at various points of that procedure.

**Greening results through SEA:** SEA is required as policies, plans, programs and projects (PPPPs) often tend to provide inadequate consideration to “green” aspects. It aims to be effective; SEA should lead

to change to or within a PPPP or even an associated PPPP. Changes can be whichever direct or indirect in nature. SEA can have some more “short to medium term direct impacts” on a PPPP by changing particular decisions (a) within the PPPP it is evaluating and (b) potentially as well in other associated PPPPs for additional environmentally sustainable output/outcomes. According to Nitz and Holland [44], changes may occur in terms of e.g. (i) concrete “design”, (ii) environmental management conditions/commitments, (iii) planned activities, and in conditions of (iv) an implementation of certain PPPP endorsement terms. Direct impacts are generated through a participative and systematic process that influences and gives for environmental (“green”) information. In addition, within a tiered SEA and system of PPPP, higher tier SEA can have a direct impact toward on lower tiers, e.g. SEA may lead to project EIA (Environmental Impact Assessment) which is capable to address better with cumulative as well as induced impacts. SEA may also have more “medium to long term indirect impacts” in several ways. For instance, leading to change values or attitudes of those engaged in the process or changes in traditional routines of institutions.

To encourage the case to apply SEA in support of achieving a shift to a green growth, understandable case evidence is required to demonstrate how SEA has effectively and usefully influenced particular PPPs. From the professional literature a number of the empirical evidence on the greening effect of SEA summarizes by Fischer [41] (Box 1).

SEA	EIA
In decision making level it applied to policy, plan and program.	In decision making level it applied to specific project.
It occurs at strategic level and take place at an early stage of strategic planning with broad perspective.	It occurs at project level and takes place at an early stage of project planning with narrow perspective.
It provides good strategy and the approach is proactive.	It provides good design and the approach is more active.
It focuses on the issues of sustainable development.	It focuses on the definite impacts on the environment.
It gives multi-phase, iterative process and feedback loops.	It gives distinct, linear process and clear beginning with end (e.g. from feasibility study to approval).
It may not be documented formally.	It prepares of an environmental impact assessment document with prearranged format plus content is normally mandatory. For monitoring baseline reference provided by this document.
It gives emphasis on gathering balanced environmental, economic and social objectives in policies, plans and programs. Includes detecting macro-level development effects.	It gives emphasis on mitigating social and environmental impacts of a specific projects, other than detection of a number of project opportunities, counterbalances, etc.
It incorporates concern of cumulative impacts inherently and it is macroscopic.	It incorporates limited assess of cumulative impacts and it is microscopic. Often limited to stage of a specific projects, does not cover the regional development scale or multiple projects.

Box 1. Evidence of SEA influence

- Therivel and Minas [45] reflected SEA application in English local land use planning on environmental /sustainability appraisal. They found that in general, 70% of all appraisals had led to concrete changes of plan, increased from 50% found throughout an earlier study [46].
- Fischer [47] analyzed 60 SEAs for spatial and transport PPPs from the UK, Germany and the Netherlands. In the transport sector, the application of SEA had led to a significantly larger concern of explicit sustainability targets, objectives as well as proposed measures.
- Learning the potential of SEA from a study where three case studies from the UK, Italy and Germany, each of the SEAs had led to concrete changes in the fundamental plans [48,49]. In Germany, regional spatial plan case, for instance, the SEA had resulted for raw material removal changing in between 5% and 10% of the areas. In addition, arose the changes of 13 land use (about 4% of total recommended changes), based on comments prepared for the duration of SEA consultation [46]. Moreover, in the three countries, SEA was identified to have led to changes in institutional customs and values [50].

**Table 1:** Comparison between strategic environmental assessment (SEA) and environmental impact assessment (EIA).

## Discussion

### Environmental assessment in Bangladesh

Bangladesh is a sufferer of environmental problems both in locally and regionally, as well as worldwide problems. The key environmental concerns for Bangladesh are enormous natural disaster, deforestation, land degradation, deteriorating water quality, salinity, industrial wastes, release of untreated sewage and unplanned urbanization and so on [51-60]. The Government of Bangladesh (GoB) is dedicated to take on environmental assessment for every new development of private or public project and management plans, prepare mitigation, and monitoring with a view to preventing or minimizing possible negative environmental impacts. The GoB realizes the value of environmental sustainability as the base for long term development in the country.

The first environmental initiatives in Bangladesh were taken as of the Stockholm Conference on Human Environment in 1972. According to the conference the GoB funded, after propagating of the Water Pollution Control Act, 1973, a project primarily targeted for the control of water pollution and also the Bangladesh Wild-life (Preservation) Act, 1973 and the Environmental Pollution Control Ordinance 1977. The United Nations World Commission on Environment and Development [61] and its Brundtland Report had a strong influence in figuring the development and environmental activities in Bangladesh [62]. In the late 1980s, the importance of environmental issues was gradually increased by the GoB. Formation of a separate ministry, the Ministry of Environment and Forest (MoEF), in 1985 the creation of the Department of Pollution Control, and in finally, in 1989 and the renaming, restructuring and extension of the Department of Environment (DoE) are major Government actions.

Until 1995 there was no legal requirement on conducting environmental impact assessment (EIA). In the late 1980s, undertaking of EIA on a voluntary base by donor agencies carried out EIA for a

In developing countries the increasing need for SEAs is most likely because of the rising burden of project-level EIAs. There is an increasing realization that conducting SEA earlier in the process of decision-making will address a number of policy issues that know how to stall the EIA procedure later, at the project-level [24]. It is a very general question is that the existing tool EIA cannot be performed completely to assess the policies, plans and programs because EIA focuses on a better implementation of specific actions, but does not frame or orientate the target. Alternatively, SEA focuses on the earlier conditions in which the actions are added. It aims to make sure that due concern is given to environmental as well as probably other sustainability features in PPP making more than the project level. Table 1 represents the comparison between SEA and EIA.

### Lessons from international green growth best practices through SEA

The following Table 2 sets out some successful SEA case studies in a national or sector level programs in relation to green growth activities in different countries. These experiences give lessons learned, show the practical benefit of taking up green growth through SEA, and give a proven channel of how to take on sustainable policies while part of a strategy of green growth.

Drive area	Case	output	References
Policy formulation and planning process	SEA for integration of environmental considerations in national policies- The World Bank's studies "Pakistan's green growth Non-Lending Technical Assistance (NLTA)."  <b>Objective:</b> To mainstream environmental sustainability in industrial sector of Pakistan.	The NLTA established that one of the obstructions to a good quality, environmental performance was the reluctance of industrial firms to obey the national environmental rules. It analyzed the linkages between good quality, environmental practices and export markets and suggested policy interventions in which the establishment of common Effluent Treatment Plants (ETP) for industry and improvement of infrastructure for quality control to enhance green and clean industrial activity in Pakistan.	[17,51]
Pricing policy based on transport energy policy and town planning	Strategic assessment of fuel taxation in energy conservation and CO <sub>2</sub> reduction for road transportation: a case study from China.  <b>Objective:</b> To assessment of fuel pricing and CO <sub>2</sub> reduction from road transportation.	Application of a strategic transport, energy policy based on an integrated assessment and analysis of the empirical correlation among prices of fuel and consumption of energy in road transportation and how will suitable taxation of fuel with increasing prices of fuel, affect conservation of energy and reduction of CO <sub>2</sub> of China's road transport sector in future? Town planning another strategic step is to incorporate public transportation. The result indicates that strategically used of fuel taxation can be a very useful tool to reduce the demand of China's gasoline and emissions of CO <sub>2</sub> in the long run.	[52]
Hydropower planning	In Vietnam, The use of SEA regarding the hydropower plan of the Quang Nam Province from 2006 to 2015.  <b>Objective:</b> To think about a cumulative assessment of a 80 environmental, economic and social, issues connected to sustainable development.	There were drawn of four dangerous strategic concerns such as integrity of ecosystems, economic development, water supply, minority groups impacts on ethnic. Overall, the SEA demonstrated that the scale and pace of the planned hydropower development was not at sustainable levels. Furthermore, several strategic level recommendations connecting to the incorporated management of the basin made by the SEA. Still the SEA ex-post assessment of a completed plan demonstrated its usefulness in highlighting the concerns of strategic and detecting opportunities for improving sustainability.	[33]
Adaptation strategy	SEA was conducted on the Multi-Annual Adaptation Strategy of the sugar cane sector in Mauritius.  <b>Objective:</b> In order to ensure environmental integrity.	The SEA concluded that a positive input to the environment make from the strategy, several risks were also detected, such as the increased demand of transport for harvested sugar cane as well as the water pollution sources. The SEA recommended actions to optimize ecological performance of sugarcane farming as well as monitoring indicators for the planned environmental management technique. One of the success issues includes identifying the economic benefit of SEAs to safe support as of industries.	[33]
Mining policy	West Africa Minerals Sector Strategic Assessment (WAMSSA).  <b>Objective:</b> To create important impetus for regional coordination of mining policy in the union of Mano River.	By a multi stakeholder policy discussion the assessment encourages the adoption of a strategic, permanent framework of multi stakeholder for dealing with mineral sector policy, cluster focused and improvement decisions; environmental governance strengthening; regional management of the Upper Guinean Forest; local level benefits, increasing in mining areas; as well as improve governance of mineral sector and social accountability.	[37]
Biofuel development	SEA for biofuel development in Colombia.  <b>Objective:</b> To evaluate the indirect synergistic and cumulative effect of Colombian biodiversity and environment that may effect from the improvement of biofuel production.	The SEA pointed to a fruitful production system for example, those in the Tunaco region where the small manufacturer of palm oil trees keeps a proportion of 70/30 (palm oil/present production of whole land availability) to assure the maintenance of local expanded production.	[53,54]
Tourism Planning	Advancing green growth in the tourism sector: The case of Hue, Vietnam.  <b>Objective:</b> To adopt the principle of sustainable tourism development.	Sustainable tourism is a main component of the United Nations Strategic Orientation for Sustainable Development in Vietnam. The concept acknowledged the importance of conserving the resources of tourism, the natural environment, cultural values and biodiversity, and require for increased involvement of, as well as advantage to, local communities. A new tourism model has introduced by the City of Hue that follows the principles of sustainable development under its "Hue-A Homeland of Happiness" plan (2010-2020). Hue's development direction highlights the importance of a dream for sustainable growth.	[55]
Technical assistance	SEA for industry sector Himachal Pradesh, India.  <b>Objective:</b> To identify priority industrial pollutant and economic instrument to minimize industrial waste.	The SEA technical assistance involved a consultative process to obtain feedback on priority industry and pollutants and to assist in information collection. The SEA complements a World Bank development Policy Loan (DPL) that addresses "Inclusive Green Growth": the DPL seeks to provide policy and programmatic support to promote environmentally sustainable industrial development by reducing pollution of existing industrial plants and to promote cleaner source of economic growth.	[56]
Basin ecosystem conservation	SEA for Congo Basin Ecosystems Conservation Support Program.  <b>Objective:</b> To contribute to the concentrated and sustainable management of resources of the forest as well as protected areas in place of biological ecosystem and diversity of the Central African sub-region, for the happiness of the populations and the planet ecological balance.	When the Congo Basin forests are conserved and sustainably managed, the forest populations, expected at about 5.8 million residents, and indeed the total earth will enjoy the programs economic and financial performance which is based on the reality that the forest generates favorable conditions for plant, animal and agricultural production (cattle-rearing and fishing) by its function of regulating the biological and climate system rhythms mainly by the absorption of carbon dioxide (CO <sub>2</sub> ). Another benefit is the creation of permanent and temporary jobs from the program.	[57]

Conservation project	SEA of the India Eco-Development project. <b>Objective:</b> To strengthen the conservation of biodiversity by community involvement.	It provided direction on options for better protected area managing and effectual strategies for maximizing the intended conservation and community benefits. In this way, it acted as a "sounding board" to prevent or mitigate significant potential impacts where possible and facilitate continuous improvement in overall project performance. [58]
Urban plans	SEA for Gilgit Master Plan. <b>Objective:</b> To achieve a balance of social, environmental and economic.	The SEA was undertaken for Gilgit Master Plan to attain a balance of environmental, economic and social objectives. Once approved as well as noticed, the master plan will provide as the basis for urban development for the future of Gilgit city. [59]

**Table 2:** Main outcomes of SEAs conducted to support green growth.

project to build an embankment around the capital city of Dhaka when it flooded in 1991. In truth, the culture of EIAs was started voluntarily by donor agencies or NGOs because of the connotation for foreign financial support.

Bangladesh country statement for United Nations Conference on Environment and Development (UNCED) have been prepared by the Ministry of Environment & Forests in October 1991, where environmental impact assessment (EIA) has been identified as a management tool for sustainable development of the country [62]. In line with the general recommendations of the Rio Earth Summit, the National Environmental Policy was framed in 1992 for the protection of the environment in Bangladesh [63]. The National Environment Policy, 1992 first incorporated the condition to require EIAs for every new public and private projects [64]. The Government of Bangladesh and the International Union for Conservation of Nature and Natural Resources (IUCN), made a draft National Conservation Strategy in 1992 [65] that also proposed obligatory provision of EIA for development activities. In 1993, the formation of the National Environmental Committee which was headed by the Prime Minister, deals with environmental issues at the central level. The government of Bangladesh enacted the Environmental Conservation Act (ECA) in 1995, and it was effective from June 1, 1995. Section 12 of ECA specifies that "No industrial unit or project shall be established or undertaken without obtaining environmental clearance from the Director General, DoE, in the manner prescribed by the rules" [66] (p. 1, Clause 2f of Section 20) entails that rules be made to "evaluate, review the EIA of various projects and activities, and procedures be established for approval" [67]. To meet up these obligations, Environmental Conservation Rules (ECR)'97 was promulgated. Though it is the liability of the proponent to accomplish an EIA of development proposal, the accountability to review EIAs for the purpose of issuing Environmental Clearance Certificate (ECC) rests on DoE [66].

ECR'97 (Rule 7) classifies projects and industrial units into four categories depending on location and environmental impact for the purpose of issuance of ECC as are -Green, Amber-A, Amber-B, and Red. All projects and existing industrial units and proposed projects and industrial units, that are regarded to be low polluting are categorized under "Green" and shall be approved Environmental Clearance. For proposed projects and industrial units falling in the Amber- A, Amber-B and Red Categories, firstly a site clearance certificate and after that an environmental clearance certificate will be issued.

According to Rahman and Aina [68] in Bangladesh the current EIA system is not adequate even to make sure environmental sustainability at the project level let only promote environmental consideration at the strategic level. The main lacking is in legislation power of EIA, systematic appropriateness of current EIA system, public participation and institutional capacity [63]. Indeed, ad-hoc based systems are followed by DoE for providing environmental clearance certificate of non-industrial project. On the other hand SEA is inherently appropriate for taking care of non-industrial project actions. The

current environmental impact assessment system may be improved by supporting EIA at the strategic level. In this perspective the DoE has a important role to play by liaising with the different policymaking bodies and plan to make sure the environmental sustainability of policies, plans and programs.

### SEA in Bangladesh

In the early 1970s as the SEA concept was established in the USA, the environmental assessment of PPPs has been instituted into the lawful frameworks of governments at national level, development banks and international organizations across the world [69-71]. However, the expand of SEA accelerated quickly from that point eventually, partly due to three vital triggers: (1) The donor agencies, including the World Bank inspiring SEA practices in the context of development co-operation, (2) the transposition and adoption of the European SEA Directive and (3) the negotiation and adoption of the SEA Protocol to the Espoo Convention [69].

Bangladesh has no formal legislation or regulation for SEA. But with the support of donor agency it appeared in 2006 as a country environmental analysis (CEA) for integration of environmental considerations in national policies by the World Bank and "The Bangladesh CEA that was primarily intended to integrate environmental concern to improve the environmental content of the final Poverty Reduction Strategy Papers (PRSP) and to strengthen the environmental foundation for the sequence of adjustment poverty reduction strategy credits expected over the next several years, also included the Second Urban Air Quality Project, the Indoor Air Pollution Technical Assistance Project and the Dhaka Environment Management Project, which is tackling rapid urban growth" [72,73].

The first Policy SEA of Dhaka metropolitan development plan in Bangladesh carried out in 2007. The SEA was designed to give for holistic urban development to strategizes and direct the preparation as well as implementation of Detailed Area Plans (DAPs) of Dhaka city. The assessment called for planning of land use on prioritizing basis through identification of eco-sensitive areas, strengthening capacity of planning and stakeholder involvement in urban planning [74]. By this SEA as a principle audience the RAJUK (Rajdhani Unnayan Karttripakha), government of Bangladesh are benefited from the strategic planning guidelines and government agencies such as department of environment (DoE), Ministry of Housing and Public Works, and sectoral agencies like the Dhaka Water and Sewerage Authority, Bangladesh Water Development Board and bodies of local government includes Pourashavas, Dhaka City Corporation are also benefited by improving a healthier approval of the environmental challenges as well as opportunities related with the execution of urban plans on a range of levels [75].

Another policy SEA for Bangladesh Sundarbans performed by the World Bank in 2012 and the thrust area of this SEA was "Trans Boundary Cooperation for reducing climate change vulnerability" and the objective of the SEA was to improve strategies for reduction

of vulnerability. Strategic guidance was offered by the SEA for co-management of natural property and poverty reduction by institutional alterations as well as cooperation between India and Bangladesh. The SEA also promoted bilateral discussion among India and Bangladesh on the communal ecosystem of Sudarbans [73].

SEA, as a cumulative environmental assessment has also been reflected in the coastal zone development planning in Bangladesh. The SEA for Coastal Embankment Improvement Project (ongoing) [73] engages the bringing up to date the ecological baseline and using extensive modeling to detect present as well as future storm surge levels affecting the embankment stability over the period of 20-25 years. The advantages derived from various environmental assessment cases across the countries and sectors give a strong confidence about the vast prospective of SEA applications.

### Enabling factors for SEA

There are some enabling factors seem to have favored in the application of SEA in Bangladesh. There is no formal legislation for SEA in Bangladesh though it has performed SEA by the concern of the MoEF (Ministry of Environment and Forests) of the government of Bangladesh with the aid of donor agencies. In Bangladesh, the SEA practices progressive trend was seen in institution centered, impact-centered as well as policy SEAs include the instruments such as CEA or sectoral or cumulative environmental assessment and regional environmental assessment in different year by the World Bank mentioned in earlier and it is one of the driving force of the SEA studies and capability of Bangladesh. Meanwhile, notable improvement of SEA implementation in Bangladesh has been highlighted on incorporating the environmental concern in the improvement of ministerial policies and sectoral policies for sustainable development which was reported by Victor and Agamuthu [76]. Other factors add to the rising body of “international guidance on SEA” [16,33,73,77,78] and the attempt of the external agencies in constructing regional capacities. Among of these the more recent one is the “Indo-German initiative for promoting SEA in land use planning in India” [16,79]. Country green growth strategy will support the national SEA application. The scope of the SEA in Bangladesh is being further extended by the development of a common SARC (South Asian Regional Cooperation) on SEA capability building and the integration of sustainability evaluation in the SEA framework. In 2013, The South Asian Environmental Conference held at Islamabad, Pakistan had a whole session dedicated to the topic “SEA – Is South Asia ready for it?” [80].

### Key challenges for SEA

One of the main limitations for SEA in Bangladesh is the absence of legislative frameworks obligating SEA as a planning and assessment tool in all types of development. According to Victor and Agamuthu [76], legislation gaps and inclusive environmental assessment method are the primary problem and in the decision-making process, there is the absence of transparency, which is a secondary problem detected in a SEA implementation in Bangladesh. Because the system of transparent decision-making is one of the very significant factors in the getting of any sustainability lead efforts and it can make sure good governance. In environmental decision, there is absence of public participation which is the third problem for SEA implementation [76]. Absence of institutional framework for effectual interagency collaboration and coordination is also a vital challenge for SEA application. Political framework situations are another factor that affects SEA in Bangladesh. Therefore, absence of the political commitment as well as community awareness of the need for sustainable growth have also been identified as factors slowing the rise of SEA [16,60,76,81-86].

Other challenges are vast data gaps in terms of local and regional information as well as data on its socioeconomic sectors, adequate research gaps, lack of recognized information, capacity building, funding and there are lack of SEA practice are the significant hurdle towards the expansion of SEA. It seems that the SEA practice speed in Bangladesh has been slowed down through reluctance of ministries to have their PPPs evaluated and subjected to alert environmental view. This may be as a result of the current imperatives for instant takings from quick economic growth. Moreover, the advantages of strategic planning or strategic thinking are not well perceived among planners. With the application of the current planning model, planning in the majority sectors is done in project-mode not strategic. Therefore, the current model of planning in Bangladesh is also a major hurdle to the development of SEA as a planning instrument.

### Conclusion

Bangladesh is chosen owing to considerable and looming to environmental and economic risks. It is one of the most vulnerable places to climate change, and has a professed high potential to benefit from economic growth that is inclusive, diversified as well as enhances the environment. Bangladesh also faces pressure from the immense rising population, poverty, a largely casual economy, and rising inequality. In addition, there is wide-ranging political vision with an attendant will to diversify and accelerate development. Green growth is a sustainable growth strategy environmentally that struggle for economic growth along with recognizing the significance of natural capital, upholding the ecosystem integrity and biodiversity. Also, green growth supports the efficient use of natural resources; it is clean, because it minimizes pollution as well as environmental impacts, furthermore, it is resilient, because it accounts hazards induced from nature and for the function of environmental management with natural capital in avoiding physical disaster. Therefore, it is important to pursue green growth with the aim of unlocking Bangladesh from its pathway of unsustainable growth to a more sustainable with inclusive development one. But the question is that how to reach green growth goals. SEA is a key to support countries achieve the green growth goals by enhancing decision-making with integrating green growth principles into countries PPPs, overturning the losses of environmental degradation and repealing poverty accordingly.

At the turning point of a growth nexus, with Bangladesh scheduling to achieve the position of middle income country by 2021, the adoption of a sustainable and balanced growth strategy is essential. It is crucial that the country change to growth strategy that, make sure accelerated and continued economic growth, simultaneously remaining efficient use of its natural resources, to stop costly and irreversible social and environmental destruction for future generation. Green growth is the track by which this can be achieved with the application of SEA.

The concept of green growth is crowd momentum and will help in moving forward countries towards attaining sustainable development. More and more countries are conducting experiment with and generating skill of SEA as an instrument to integrate environmental consideration in PPPs. It is high time to start up this experience to support the green growth journey to turn green in a strategic approach.

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