

AN AMPLE UNDERSTANDING REGARDING PROPER IMPLEMENTATION OF ENVIRONMENTAL SAFEGUARDING FOR ON-GOING CONSTRUCTION ACTIVITIES IN THRIVING BANGLADESH

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ABSTRACT

Construction is an integral part of modern society, shaping cities, economies, and overall quality of life. It provides the infrastructure and space needed for economic growth, accommodates population growth, and contributes to the well-being of individuals and communities. But, development will be sustainable only when human as well as environmental protection will be confirmed while implementing the construction works. It astonishes that management and implementers are showing excessive apathy for environmental protection and ultimately worker health. Here in the current study, the risks of the construction sites (fifteen critical issues) are simply outlined, along with the justifications (ten individuals' bottlenecks). Managing these risks (eleven directions) is also illustrated from very practical and achievable angles. This study is just like the concept note of the research and he has an idea to publish a detailed guideline for proper implementation of environmental protection for ongoing construction activities in the booming Bangladesh.

Key words: An ample understanding, implementation, safeguarding, construction activities.

1. Introduction

1.1 Background of the research: Our Almighty Creator, Lord of all worlds "Allah rabbul alamin" has developed the environment of the planet for the benefit of all genome including humans. The environment provides all the facilities to sustain humans on this planet. Although the planet is crucial to human survival, we are solely responsible for the continued destruction of our environment. It's kind of the best history for superior amensalism. Once man feels the importance of construction activities for his life in peace and happiness.

1.2 Importance of construction works for human existence: Construction is an integral part of modern society, shaping cities, economies, and overall quality of life. It provides the infrastructure and space needed for economic growth, accommodates population growth, and contributes to the well-being of individuals and communities. The construction industry contributes significantly to the GDP of many countries, and its growth is often seen as a sign of economic prosperity. Without a well-developed infrastructure, economic growth and development will be severely hampered. Construction projects not only provide physical structures, but also contribute to improving the quality of life for individuals and communities. Building schools, hospitals, and other public facilities enhances access to essential services and promotes social well-being. Additionally, construction projects with a focus on sustainability and energy efficiency help reduce environmental impact and create a healthier living environment. By creating safe and functional spaces, construction enhances the well-being and well-being of society as a whole. Urbanization through construction leads to the development of cities and towns that become centers of economic activity and cultural exchange. However, it is essential to ensure that construction is carried out sustainably, taking into account the environmental impact and the welfare of affected communities.

1.3 Constructions overview around the world: Global infrastructure spending is expected to increase from \$4 trillion annually in 2012 to more than \$9 trillion annually by 2025. Between 2014 and 2025, the world is expected to spend approximately \$78 trillion on infrastructure (Oxford Economics, 2024). Roads and power account for 75-85% of the total infrastructure value. The composition of

infrastructure varies by income bracket. For example, roads are the primary infrastructure in low-income countries, while electricity is the primary infrastructure in middle-income countries (WB, 2013). The Asia-Pacific market is expected to account for nearly 60% of global infrastructure spending by 2025. Western Europe's share is expected to shrink to less than 10%.

- 1.4 Overview of constructions in Bangladesh:** Infrastructure development is an important driver for sustainable economic growth in Bangladesh. The country's infrastructure needs include roads, bridges, highways, land and sea ports, oil refineries, grain silos, marine and river dredging, transportation infrastructure and port development. The World Bank estimates that Bangladesh would need to spend between \$7.4 billion and \$10 billion annually by 2020 to improve its electricity networks, roads and water supplies (BIDA, 2019). The Dhaka Chamber of Commerce and Industry estimates that Bangladesh will need to invest nearly \$25 billion annually until 2030 to meet its infrastructure needs (ITA, 2022). In May 2023, the construction cost index in Bangladesh was 6.01%, which made it more expensive to build public and private projects (BBS, 2024). The budget for river bank erosion and protection in Bangladesh for the period 2023-2024 was allocated to be Taka 10,244,180,000. The budget for 2024-2025 is expected to be Taka 11,268,600,000, and the budget for 2025-2026 is expected to be Taka 12,395,460,000 (MoWR, 2023). The Road Transport and Highways Division (RTHD) and the Local Government Engineering Department (LGED) are the main government agencies that build and maintain roads and bridges in Bangladesh. The RTHD received a budget of BDT 34,062 crore in the Annual Development Program (ADP) for the fiscal year 2023-2024. The third terminal at Hazrat Shahjalal International Airport (HSIA) in Dhaka, Bangladesh, is estimated to cost BDT 21,398 crore (US\$1.8 billion). To meet the expenditure, the Bangladesh government contributed BDT 5,257 crore, while the Japan International Cooperation Agency (JICA) provided the remaining funding. The third terminal includes: a 226,000 square meter passenger terminal; a 41,200-square-foot cargo building; a 5,900 square meter VVIP complex; a multi-storey parking garage with a tunnel; a new import and export cargo complex and a platform for 37 aircraft. This third terminal will increase the airport's passenger handling capacity from 8 million to 24 million per year, and cargo handling capacity from 200,000 to 500,000 tonnes per year.
- 1.5 Ecological abasement in construction sites:** Construction is carried out to shape creating an attractive environment and providing consumable facilities for human welfare, but it is sad that the ecology is seriously disrupted due to unsecured construction activities. Ultimately, humans will have to suffer from the ecological imbalance and unsafe workplace. Several studies have shown that the environmental impact of construction is significant, contributing to almost half of climate change around the world.
- 1.6 Necessities of the research:** Indeed the development is essential for human wealth & environmental protection. Development will be sustainable only when human as well as environmental protection will be confirmed while implementing the construction works. It astonishes that management and implementers are showing excessive apathy for environmental protection and ultimately worker health. Even the learned or trained management is not very aware of the protection of the environment and the health prospects of the workers. Therefore, this short article is explored to ensure proper implementation of environmental protection for ongoing construction activities in booming Bangladesh.
- 1.7 Ethics of the research:** Ethics starts and ends with a researcher. The personal moral code of a researcher is the strongest defiance against unethical behavior (Neuman and Lawrence, 1997). Before, during and after conducting a research, a researcher has opportunities to think about research actions and to consult his or her conscience. Ethical research depends on the integrity of the individual researcher and his or her values. "If values are to be taken seriously, they cannot be discarded and will guide to draw a concrete decision. They determine who will be investigated for what purpose and in whose service" (Sagarin, 1973). In the current study, the ethical standard was strictly followed at every stage of research.

2. Methodology of the research

The study is a collective research based on researcher's experiences while implementing environmental protection for various construction activities carried out in Bangladesh since 2009. Moreover, aspects of the natural environment with distinctive features of its structure have been scientifically analyzed and assessed. Some of the useful literatures on the environmental impacts of construction in Bangladesh written by leading researchers are listed as introductory readings. The author used modern technologies to collect facts of research, which helped to arrive at even more accurate decisions and opinions regarding environmental safeguarding for construction activities in thriving Bangladesh.

3. Results and Discussion

3.1 Major construction categories in Bangladesh: Various types of construction activities take place throughout the year. Such types of constructions can be noted as follows: i) construction of air port, ii) run way construction, iii) building construction, iv) construction of industry/factory/tools industry, v) bridge construction, vi) power plant construction, vii) port construction, viii) jetty construction, ix) tunnel/sub-way construction, x) road construction/maintenance, xi) rail line construction including railway bridge, xii) construction of dyke/embankment, xiii) water and sewerage line, xiv) river training, xv) construction of polders, xvi) construction of rubber dam, xvii) ship construction, xviii) terminal construction, xix) boat construction, xx) sluice gate construction, xxi) construction of water reservoir, xxii) EPZ construction, xxiii) construction of economics zone, xxiv) fly over/over bridge/foot over construction and xxv) walk way/park/eco-tourism/other public facilities etc.

3.2 The required environment, health and safety (EHS) documents for construction sites: i) Environmental management frame work (EMF), ii) Initial environmental examination (IEE), iii) Environmental and social impact assessment (ESIA), iv) Social, land and resettlement action plan (SLRAP), v) Small ethnic community development framework (SECDF), vi) Environmental management plan (EMP), vii) Risk assessment and management, viii) Occupational health safety (OHS) manual, ix) Emergency preparedness response plan, x) Incidence response, and xi) EHS compliance as well as non-compliance books.

3.3 Risk and hazards in construction sites: There are risks associated with construction sites. Without construction work, we cannot move forward, but the thing is that we are so reluctant about environmental protection and health safety during construction. The serious risks can be documented as follows: i) emissions from machinery and equipment, ii) creation of noise/vibration, iii) soil degradation by waste and effluent, iv) cutting down vegetation, v) throwing waste into water, vi) burning waste in the open air, vii) falls from height, viii) electric shock, ix) careless movement of objects, x) haphazard storage of chemicals, xi) limited use of personal protective equipment, xii) long/continuous working, xiii) unsafe traffic, xiv) lack of hygiene facilities and xv) ultimately death of workers and communities.

3.4 Bottlenecks for environmental management: We have laws/rules/regulations and also construction/building codes. Ethics are well mentioned in EHS documents, but remain somewhat in focus. Hence the researcher explored some bottlenecks are as follows; i) There are some learned resources who believe that EHS is a problem in meeting development partner's requirements and only in documentation. These are the crucial challenges for proper enforcement of safety requirements; ii) The use of unskilled personnel is another problem; iii) EHS expertise must face greater challenges by limited budget to maintain the standard level of safeguards; iv) The lack of a separate logistics facility for the safeguard team is a challenge; v) Delaying the deployment of the safeguard team can impact EHS practices; vi) Debt to the national standard is a serious sticking point; vii) Involving a safeguard officer in other work seriously hinders the level of standard; viii) Limited disclosure of safeguards also hampered the quality of safeguards at the community level; ix) Some managers believe that security practices will hinder work progress; it's just bad ethics and nothing more. The reality is that frequent practices of the safety component will ensure proper implementation of construction

activities and x) Terms of Reference (ToR) formulated by other expertise can also create complexity in safeguard implementations. Of course, there are some green projects in Bangladesh that can be memorized. The World Bank-funded project titled “Coastal Embankment Improvement Project, Phase 1 (CEIP-1)”, implemented by the Bangladesh Water Development Board (BWDB), is one of the best examples of this. Moreover, the safeguard team is always committed to maintaining a good form of EHS practices through their utmost skills and well-managed mechanism.

3.5 Tips for proper implementation of environmental safeguarding: Constructions are essential for our better placement; once again, environmental imbalance is critical to our sustainability. Therefore, the researcher tried to get some tips on the correct implementation of environmental protection. i) The post of EHS/Safety officers is to be reserved in manpower lists for all upcoming projects; ii) The involvement of EHS experts can be confirmed from the starting phase of projects; iii) Safety practices should be implemented from the mobilization phase onwards; iv) ToR, prepared by an environmental specialist and allocated judicial budget for environmental mitigation works, will accelerate the implementation of the safety guarantees, v) Sufficient budgets for EHS training, uses of PPE and management of pandemic situations are to be included in Environmental mitigation items for all upcoming projects; vi) The ethics and attitude of the resources should be promoted towards proper implementation of EHS practices; vii) “Safety is urgent for ours, for the planet and for constructions” is the key philosophy around the world; viii) Everyone must realize that safety comes first and is of course for family purposes; ix) The management wing must provide space for securing activities, x) Environmental laws/regulations/rules/building code/guidelines are to be obeyed from mind and xi) Dedicated EHS corner is to be installed for wider accessibility to the documents and resources.

Conclusion

Construction is an integral part of modern society, but environmental management is at the top of the priority list. Therefore, the researcher tried to establish a general scenario for environmental protection practices for different construction sites in Bangladesh. In fact, the study is the result of the researchers' experiences gained from various construction works since 2009. Here in the current study, the risks of the construction sites are simply outlined, along with the justifications. Managing these risks is also illustrated from very practical and achievable angles. This study is just like the concept note of the research and he has an idea to publish a detailed guideline for proper implementation of environmental protection for ongoing construction activities in the booming Bangladesh.

Utilization of the research

The guidelines of the research can be followed by environmental specialist/expertise, environmental firm, environmental consultant and individuals who believe that proper implementation of environmental protection for ongoing construction activities never hinders the progress of the work, but rather is essential for our sustainability and the desired progress of the work around the world.

References

- BBS. 2024. Construction cost on the rise. Statistical Year Book of Bangladesh. Bangladesh Bureau of Statistics. Ministry of Planning, Government of People's Republic of Bangladesh.
- BIDA (Bangladesh Investment Development Authority), 2019. Construction Materials Industry. www.bida.gov.bd.
- ITA (International trade Administration), 2022. Infrastructure Development and Engineering Services.
- MoWR (Ministry of Water Resources), 2023. Government of People's Republic of Bangladesh.
- Neuman, W. and Lawrence. 1997. Social Research Methods: Qualitative and Quantitative Approaches. United States of America: Allyn and Bacon Publishing Co. Pvt. Ltd.
- Oxford Economics, 2024. Capital project and infrastructure spending Outlook to 2025.
- Sagarin, S. 1973. Values of Social Research (3rd ed.) Oxford: The Free Press.
- WB (The World Bank), 2013. Investing in Infrastructure. Policy research working paper.