

Integrating Climate Change Consideration into Environmental Impact Assessment Process in the Maldives

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Abstract: Threats posed by climate change to low-lying islands such as the Maldives is very real and imminent. Although the Maldives hardly contributes to climate change, the Maldives would be one of most severely affected countries in the world due the undesirable effects of climate change. To combat the causes and adapt to the impacts of climate change, several environmental management techniques are being used worldwide. In modern day environmental management, one of the principal tools employed to address climate change risks and adaptation requirements is the Environmental Impact Assessment (EIA). In the Maldives, the EIA process encompasses, stages such as screening, scoping, impact assessment and report preparation, decision making and implementation and monitoring. Each of these stages contains the elements required to mitigate and minimize impacts of climate change through the development project. This article will highlight how climate change adaptation and mitigation techniques are integrated and addressed in the current regulatory EIA process in the Maldives, and how the process can further be enhanced to be in line with internationally recommended guidelines. In terms of regulatory framework and guidelines, EIA process in the Maldives is on par with the international standards, however the implementation and associated monitoring require further attention and improvements.

1. Introduction

The significant, long-term variation in the global climate is believed to be the biggest threat to the small low-lying island states around the world. According to literature, ninety per cent (90%) of the Small Island Developing States (SIDS) are in the tropics, meaning that they are prone to extreme weather events, such as tropical storms coupled with dramatic fluctuations in weather conditions, for instance, flooding, storm surges, changes in rainfall patterns and other ecological shifts. In addition to this, the detrimental effects of climate change, such as increasing temperatures leading to coral bleaching, are already being seen on the reefs of these islands.

Climate change has become one of the most frequently discussed environmental issues worldwide (Ogden & Inns 2008); however, there is just a little consensus concerning Environmental Impact Assessment's (EIA) role in addressing this global problem (Curtis et al.2005). EIA is envisaged as a key instrument in combating climate change by pre-eminent environmental conventions such as the 'United Nations Framework on Climate Change Convention,' (UNFCCC) and Kyoto Protocol. As per these agreements, adaptations to minimize greenhouse gas emissions, impact on health, economy and

environment and adaptation responses to climate change effects must be addressed in the EIA process.

Maldives being a small low-lying island state, contributes a petite fraction of global carbon dioxide and greenhouse gas emissions, yet the country will be among the first few to suffer from the deleterious impacts of climate change. There is perhaps not much that the Maldives can do in terms of prevention of climate change, however, it is a matter of adapting to the reality of climate change and taking necessary actions to mitigate the impacts of climate variations. It was in the year 2001 that a vulnerability assessment was undertaken for the first time to make the Maldives resilient and adaptable to the detrimental impacts of climate change, and the study was documented in 2006 as the 'Maldives National Adaptation Program of Action' (NAPA) (MEEW 2006). NAPA is an action plan aimed at helping to adapt to the drastic changes in the sea level, damages to the coral reefs, variations to global temperature, effects of severe storms and variations in rain fall patterns. Furthermore, the Maldives Climate Change Policy Framework (MCCPF), which proposes the strategic policies that the government and other relevant stakeholders are required to consider to respond to climate change impacts from the year 2015 to 2025, was also developed for a similar cause (MEE 2015).

Besides Maldives being a signatory to the UNFCCC and Kyoto Protocol, the constitution of the Maldives decrees that the fundamental responsibility of protecting the environment lies with the State. Environmental Protection and Preservation Act (1993) mandates that EIA process be completed and gained approval before a

project that could have a significant impact on the environment is carried out. EIA report preparation process is laid out and regulated by the 'Regulation on Preparation of Environmental Impact Assessment Report 2012' (MEE 2012), which is administered by the Environmental Protection Agency (EPA) of the Maldives. The regulation stipulates climate change adaptation and mitigation requirements to the extent prescribed by UNFCCC and Kyoto Protocol. It must be, however, noted that the EIA process is not completely under the jurisdiction of the EPA. The Ministry of Tourism holds jurisdiction over EIA process with regard to the tourism related projects under the Maldives Tourism Act (MoT 2015).

2. Overview of the Stages of EIA Process in Maldives

Current rules pertaining to the EIA process already encompass climate change requirements.

There are 5 broad stages to the process:

2.1. Screening

This stage decides whether or not a particular developmental project triggers an EIA. Where likely impacts of a project are not clearly identified, an initial environmental examination is prepared to determine whether the project warrants an EIA. On the other hand, if the project is expected to have a mild impact on the environment, an Environmental Management Plan is required. Such a plan explains the best practices that need to be followed to avoid, minimize and manage the impacts during the construction and operational stage of

the project so that they are environmentally acceptable.

2.2. Scoping

This stage concludes the content and scope of the EIA report, which moreover identifies the significant issues and impacts to be reflected upon during the assessment. EIA scoping does not specifically address climate change. However, as per the 'Terms of Reference' (ToR) (established for impact analysis subsequent to the scoping meeting), the baseline data of climate parameters such as rainfall, temperature, hydrography and hydrodynamics and other related information on the existing environment of the area affected by the project must be presented in the EIA report in such a way that the obtained data will be usefully applied to future monitoring programs. Data collected during this stage would undoubtedly assist future climate change impact analysis of the Maldives.

2.3. Impact Assessment and Report Preparation

This involves the assessment of the identified impacts and significance of such impacts, which will ultimately be used by the EPA to decide whether or not to approve the project. The EIA is produced as a formal document, known as the 'Environmental Impact Assessment Report' (EIA report), which sets out factual information concerning the project, comprising the information outlined in the ToR. The project must be evaluated and tested against a range of climate scenarios including hazard vulnerability, such as risk of hurricanes, vulnerability of the project area to flooding and storm surges, and need to be presented

in the EIA report. In addition to the technical information, the report must also have a non-technical summary presented in a succinct non-technical format targeted to the general public.

2.4. Decision Making

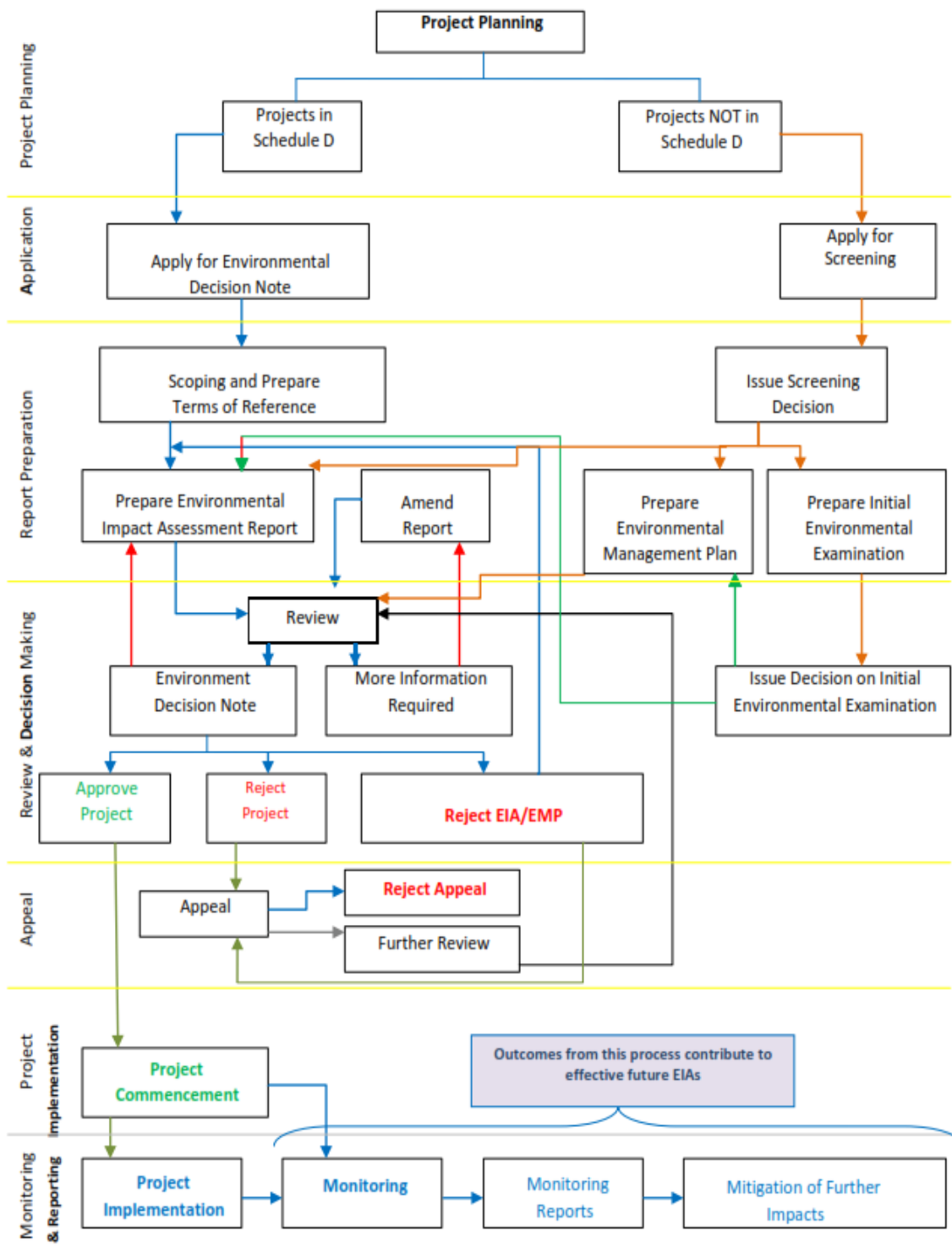
The reviews from EIA reviewers and technical personnel from the EPA, together with any other information which is relevant to the EIA of the project, and any comments made by the public are taken into account by the EPA in deciding whether or not to grant consent for the proposed project. The final decision by the EPA is published on the EPA's website and is available to the public. Despite limited technical expertise on climate change available in Maldives, ways to mitigate the negative impacts and adaptation to the changes in the climate are considered in the EIA process in the Maldives.

2.5. Implementation and Monitoring

The following come within the ambit of implementation and monitoring.

- Evaluating how recommendations made in the EIA report and decision's condition are implemented
- Establishing the baseline conditions
- Measuring impact caused during the construction phase of the project
- Confirming whether all the conditions are met within the acceptable limits
- Bridging the links to environmental plans
- Regular monitoring and evaluation

Flow Chart Outlining the Process for the Issuance of an Environmental Decision Note



3. Challenges and Way Forward

Like many other developing countries, EIA process is relatively a recent requirement in the Maldives. The current EIA process in the Maldives is carried out in a fragmented manner, and the process is distant from perfection as the relevant mandate is shared between the EPA and the Ministry of Tourism. Ministry of Tourism looks after EIA process of the tourism related projects, under the Tourism EIA Regulation (MoT 2015). Since the Ministry of Tourism's primary mandate is the development of tourism sector, the Tourism Ministry is expected to have an interest in tourism related projects. Hence, it is dubious whether the Ministry of Tourism could carry-out the EIA process impartially and effectively.

Political instability, lack of awareness among the stakeholders and lack of environmental conscience among the general public have all lead to unique challenges in enforcing the requirements of the EIA reports. Consequently, the benefit of incorporating adaptation and mitigation measures in the EIA reports may have little or no positive impact.

In the Maldives, EIA process outside of the tourism boundary is regulated by the EPA which is one of the constituent institutions of the Ministry of Environment and Energy (MEE). Although the EPA has some vested powers, the decision of the EPA can be overruled by the Minister responsible for MEE. Over the years, this has presented some unique challenges where professional decisions were replaced by political power. Given the political structure, the EPA of the Maldives needs to be a statutory body free from political influence. There have been cases where the mangrove eco-systems were not given the due protection through

the EIA process due to undesirable political influence. Mangrove eco-systems are considered as incredible long-term carbon sinks and offer a unique and highly efficient approach to climate change mitigation and adaptation, especially for coastal communities (Colls et al. 2009 & Vong et al. 2011).

Furthermore, lack of human resource and technical expertise in the field of climate change modelling is of great concern. EIA consultants, EIA reports with in-depth study and other technical persons are short in supply, and have become significant factors contributing to progressively decrease the quality of the EIA reports. EIA consultants are regulated by the EPA, however it is a process in need of review and revamp. Moreover, it is noted that climate related reliable data availability is insufficient to analyze the impacts of climate variation on the developmental projects.

Additionally, due to the fact that Maldives is spread over a thousand very small islands of which only around 200 scarcely populated inhabited islands, one of the bottlenecks in the development of Maldives has always been the transportation between the islands. Well prepared EIA reports with all the recommended mitigation and adaptation measures, may not have the desired impact if the project is not well inspected and monitored by the EPA, and transportation cost and logistical arrangements for inspection of such projects have always been an immense challenge for the EPA.

4. Conclusion

In conclusion, climate related factors must take priority over all other factors in

determining the shape of an EIA. Climate change is taken into account in the existing EIA process of the Maldives. However, improving and fine tuning of the existing EIA process will lead to improved climate change mitigation and adapting techniques, and increased resilience to the impacts of climate change. It must also be noted that, lack of adequate knowledge of stakeholders on specific climate related factors addressed in EIA, and undue political influence are hindrances to ultimate goal desired from the whole EIA process. Moreover, domestic legal instruments must be amended, if the need be, so that sufficient prominence is particularly given to the areas of climate change mitigation and adaptation in the EIA procedures.

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