

The Use of Environmental Impact Assessment and Strategic Environmental Assessment to Mainstream Climate Change into Development Projects, Programs, Plans, and Policies in Asia

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Abstract: *There is a growing trend around the world to integrate climate change into environmental impact assessments (EIAs) and strategic environmental assessments (SEAs), but Asia is really lagging behind global good practice in this regard. Advanced nations and multilateral agencies have realized that climate change can not only impact on development projects (thus requiring specific mitigation/adaptation measures) but also projects can have an impact on greenhouse gas emissions, and therefore affect the global climate change phenomenon. The reasons for not addressing climate change as part of EIA/SEA are also vanishing, as downscaling climate models is increasingly available from reputable institutions and developing countries don't need to develop their own modeling capabilities, and the models are becoming increasingly reliable and convergent. The reasons for integrating climate change into EIAs/SEAs are also becoming stronger as the impacts of climate change on sea level rise, extreme climate events, heat waves etc. are already present and only going to become worse throughout the lifetime of the average development project. The secondary effects on infrastructure, agriculture, urban facilities, and human wellbeing are also becoming clearer and need to be addressed in project design, with EIAs a particularly valuable tool for improving project design, and not just an administrative or regulatory requirement. Asia needs to become more proactive in integrating climate change considerations into all development projects in virtually all sectors, and there are already some good lessons from global practice to emulate.*

1. Introduction

Much of the guidance on how to conduct environmental impact assessment (EIA) and strategic environmental assessment (SEA) dates back to the 1970's and 1980's, when climate change was not regarded as the serious concern that it is today. In many ways, mainstreaming climate change is similar to the issue of biodiversity in EIAs and SEAs—complex, lacking long-term data, uncertain changes, and sometimes lacking a clear understanding of how a project could create impacts. Climate change is one of those unique issues where a project can affect the environment, as well as the environment can affect the project.

In general, Asian countries have lagged behind best international practice in integrating climate change into EIAs. Accordingly, this paper attempts to document current best practice from around the world in grappling with this complex task. As this field is relatively new it will not be the last word, but for practitioners it will help identify what needs to be done; and for researchers it will identify some of the key information gaps requiring additional research.

2. Current Practice in Asia

At the Asia EIA Conference 2016, in Aichi-Nagoya, Herath Gunatilake, ADB, highlighted how the United Nations Framework Convention on Climate Change, the Paris Agreement and the Sustainable Development Goals (SDGs) would change the development landscape in Asia-Pacific. For implementation of these goals, EIA remains essential but SEA and cumulative impact

assessment (CIA) will become increasingly important tools for adapting to the challenges posed by climate change.

In his keynote address, Stephen Lintner stressed that implementation of nationally determined contributions (NDCs) to implement the Paris Agreement on climate change will also impact on national strategies and priorities in Asia, linked to improved resilience in development. Accordingly, there is clear recognition throughout Asia that climate change is an important issue and it will affect development strategies, plans and projects. Unfortunately, this recognition has not yet translated into a significant shift in EIA operational procedures in most countries.

Current practice in selected Asian countries in relation to integrating climate change into EIA is briefly outlined below.

2.1 Philippines

In 2011, the Environment Management Bureau in the Philippines prepared a set of guidelines entitled “EIA Technical Guidelines incorporating Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) Concerns (EIA DRR/CCA Technical Guidelines)”. In addition to promoting DRR and CCA at the project level, the Guidelines were also intended to streamline EIA requirements under the Philippine Environmental Impact Statement procedure. Climate projections prepared by PAGASA (the meteorological agency) for 2020 and 2050 are to be used for the modelling, studies and assessment needed for the EIA reports. Training for EIA practitioners is also provided by EMB and required for EIA team members. Several ASEAN countries are trying to link DRR and climate change, so it is sensible to cover both aspects in EIAs, where appropriate.

2.2 Cambodia

Cambodia initially embarked on development of an EIA Law that would have included a specific section on climate change. Subsequently, however, it was decided to draft a Natural Resources and Environment Code as part of a broader reform agenda. According to NGO representatives, the draft Code (now more than 400 pages long) will contain sections on environmental protection, biodiversity conservation, protection and management of cultural heritage, and environmental assessment. Reference will also be made to climate change among other issues. Exactly how climate change will be addressed in EIAs under the new Code is uncertain, however, at this stage. Amendments envisioned by the Ministry of Environment include public participation, SEA, health impact assessment, climate change risk assessment, cumulative impact assessment, and transboundary impact assessment, but several of these provisions are regarded as sensitive and difficult to enforce, especially where other ministries are involved. The Code is intended to be passed by Cabinet late in 2017.

2.3 Vietnam

In 2014, Vietnam revised its Environmental Protection Law, with some significant changes to the sections on SEA and EIA in Chapter II. Issues related to timelines, responsibilities, changes in location, scale, capacity or technology that adversely affect the environment are dealt with in the section on EIA. A significant change, and perhaps a harbinger or how other ASEAN countries might react, is a complete chapter on climate change. Chapter IV is the first legislation in Vietnam to respond to climate change mitigation and adaptation. In 2015, the revised law was followed up with implementing decrees and circulars, plus technical guidelines. Although it is still early days,

Vietnam has showed significant leadership on SEA and has clearly identified climate change as a major development threat (particularly in its extensive river deltas). Therefore, it is expected that Vietnam will quickly mainstream climate change into its EIA procedures.

2.4 China

China has about 3 decades of experience in implementing EIA, although it is widely regarded as being an ineffective tool to prevent widespread environmental damage in the country (He 2013). Some of the challenges in integrating climate change into China's EIA system, which might also apply in other countries, are as follows:

- Generally, EIAs assess if a project has an impact on pollution discharges, but greenhouse gases (GHGs) are not normally regarded as pollutants in China;
- EIAs generally assume that the environment is unchanging, so it is not necessary to assess the impact of a changing environment on the project;
- Scientific uncertainty about climate change makes it difficult to predict the impact of an individual project on the climate or, vice versa, the impact of climate change on the project;
- Most decision makers are not familiar with decision making under conditions of uncertainty and therefore may lay open contestable decisions to court challenges;
- It is not easy to determine if the cumulative effects are due to multiple projects or to natural climate variability, but cumulative effects could compound the effects of a specific project; and
- Climate change is an issue that is institutionally handled by the National Development and Reform Commission, rather than the Ministry of Environment Protection, creating some institutional barriers to integration of climate change into EIAs.

Currently China's EIA Law assesses impacts on land, water, air and soil pollution, without considering their potential impacts on climate change (He 2013). Therefore, effective integration of climate change considerations into the ambit of EIAs in China may require amendment to the current legislation as well as modifications to the current institutional arrangements. Fundamentally, there is sufficient flexibility in the EIA procedures to allow this integration to take place, but it will take significant political will to make it happen.

3. Recommendations

Recommendation 1 – Include climate change in EIAs as one of the environmental factors that will influence environmental outcomes. In principle, based on experience in some Asian countries and elsewhere in the world, there is no reason for an EIA to exclude climate change as one of the factors that will influence the environmental outcomes of projects. If sea levels rise, then coastal properties may be flooded more frequently. If temperatures continue to rise agricultural crops might fail in a proposed irrigation project. If rainfall increases, landslides may affect road and railway projects. These are the normal kinds of factors that are addressed in EIAs with or without climate change. It does require a bit more analysis and there is additional uncertainty involved, but it should be a standard item at the screening and scoping stage of an EIA.

Recommendation 2 – Include climate change as a significant factor in most SEAs. It is probably a little more problematic for an EIA to cover the impact of a single project on the global climate, unless it is a massive power station or extreme deforestation, but it is entirely reasonable to record the contribution of the project to GHG reduction, especially where there is a national target as a reference point. It is much more relevant, however, to include the cumulative impacts of a

development plan or a sector plan/program on future climate change and to find appropriate mitigation and/or adaptation measures. The environmental impacts of plans, programs and policies are best dealt with through SEAs, and equally the climate change impacts of plans, programs, and policies can be assessed using the SEA (and cumulative impact assessment) tool.

Recommendation 3 – In consideration of alternatives, as part of the normal EIA procedure in most countries, look for the low carbon or climate-proof alternative. An often overlooked feature of EIA is its potential to improve project design, often by pointing to a more environmentally sound alternative than the initial project concept envisaged by the project proponent. By factoring climate change into the decision-making process, a long-term sustainable alternative may meet the same needs or services as the initial project design for little or no additional cost.

Recommendation 4 – At the EIA screening stage, consider using a vulnerability assessment to determine if any people or assets in the project area are already being affected by climate change (or will be affected in the future) and if the proposed project will cause more or less damage. Opportunities should be taken to use the proposed project to minimize or reduce the expected damage from climate change.

Recommendation 5 – Use available downscaled climate models rather than attempting to generate localized projections for each project¹. One of the reasons given for excluding climate change from EIAs is the unavailability of climate projections at the project level and the inapplicability of global models for impacts at the project level, along with the massive amount of uncertainty that accompanies current models. Fortunately, this situation is changing rapidly and the unavailability of data should not be a reason to exclude climate change from EIAs, even in countries with no domestic capacity to downscale global models.

4. Conclusions

There is growing concern around the Asia-Pacific region about the long-term impacts of climate change, especially in vulnerable small island developing states and archipelagic countries in the region. At the level of development plans, programs, and policies, SEA should be conducted as a matter of course, so that possible environmental problems can be identified before implementation and appropriate mitigation measures can be designed, funded, and implemented. As climate change will be a significant factor in determining future development outcomes, incorporation of climate change impact assessment, hazard mapping, cumulative impact assessment, and vulnerability assessment as parts of the SEA tool kit should be embodied in revised environmental and planning legislation and regulations. Crash courses in the use of these tools and continuously updated guidance manuals are needed for government officials and EIA/SEA practitioners.

Screening of projects for potential impacts of climate change will be essential, especially for projects with long lives, such as roads or railways, as the past climate conditions are no longer suitable for the design of climate sensitive infrastructure. For all projects, the section of EIAs that examines possible alternatives should always look for the low carbon alternative or the climate proof alternative that will contribute to longer term sustainable development than the business as

¹ Such as: <https://www.data.gov/climate/portals/>; <https://www.climatechangeinaustralia.gov.au/en/climate-projections/about/modelling-choices-and-methodology/downscaling-ccia-2015/>; <http://www.worldclim.org/>

usual project design or technology. In principle, integration of climate change into EIA is not in any way in conflict with the original intent of EIAs, which is to avoid environmental damage and ensure that projects contribute to sustainable development.

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