

ENVIRONMENT ASSESSMENT TOOLS FOR IMPROVING THE SUSTAINABILITY OF DEVELOPMENT IN THE MEKONG REGION

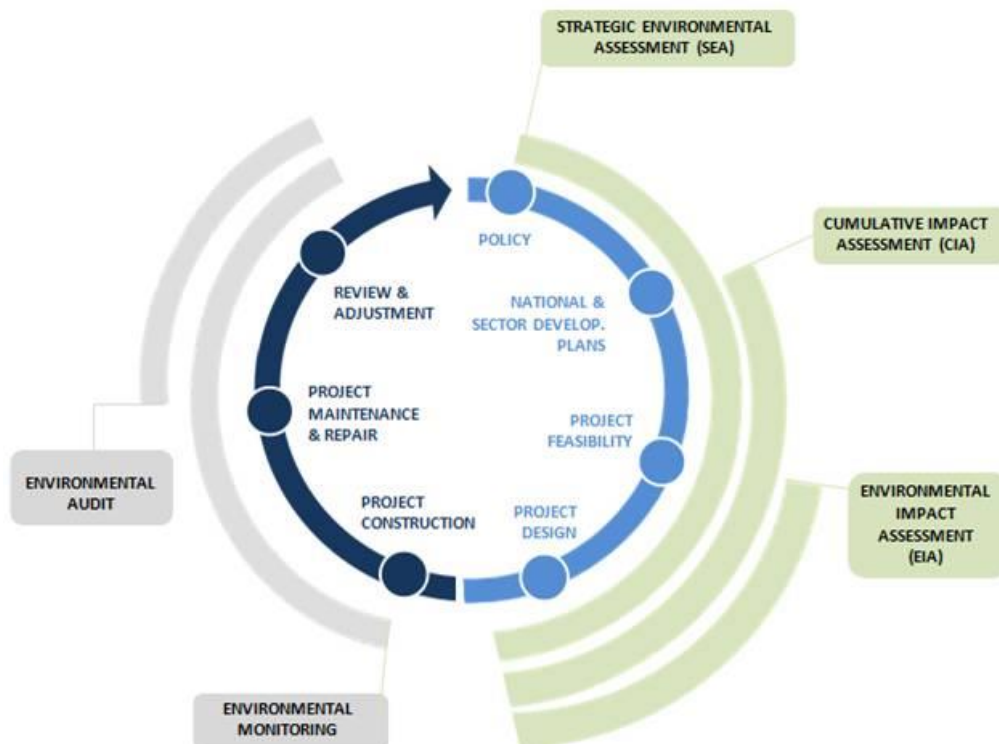
INTRODUCTION

This brief introduces the main environmental assessment tools now used in the Mekong region with some commentary on their effectiveness. The tools aim to influence development decisions and to improve development sustainability. There are four broad categories - *Strategic Environmental Assessments (SEAs)* which consider broad development policy and plans and *Environmental Impact Assessments (EIAs)* of various kinds which focus on specific projects. Once a development is underway, *environmental monitoring* is required to keep track of compliance with the environmental and social safeguards agreed during the planning stage (as part of an environmental management plan for the project). *Environmental audits (EAs)* are not as common but are recognised in national legislation in

Vietnam, Thailand and China. Audits report on the overall performance of a development against a safeguards framework and its environmental management plan – they ask is the plan being implemented effectively and is it producing the desired results?

These environmental assessment tools are applied at different stages of the development planning and implementation cycle and so serve different purposes (Figure 1). They have great potential to engage NGOs and civil society in development decisions from policy through to specific projects. In the Mekong region they are not meeting that potential. To date assessment processes have been relatively closed to all but government and expert involvement – despite growing NGO agitation for a more open, transparent and participatory approach.

Figure 1: Application of environmental assessment tools in the development cycle





A trend in the region is for NGO’s and universities to initiate assessments, studies and surveys so their advocacy relating to developments is better informed. That trend is particularly strong in Thailand where NGOs have prepared EIAs and even conducted SEAs. NGO advocacy through environmental assessment tools is also developing rapidly in Vietnam and China – the only countries in the region to have regulations for mandatory SEAs. In most cases SEAs and EIAs are conducted by university and semi government institutes, initiated and contracted by government agencies.

There is a growing private sector capacity and involvement in conducting project related EIAs. In Vietnam hundreds of EIAs are prepared each year involving local environment companies and university centres of various kinds - although the quality of assessments is not consistent and the capacity of local government to properly review them is limited. The assessments act more to capture only the most serious potential impacts.

Environmental monitoring is largely conducted by university entities on contract from government. Only large development projects have capacity to manage their own monitoring programs –thousands of manufacturing units throughout the region operate without effective environmental review and with little oversight. Yet, there is a steady move to require as a condition of licencing greater private sector investment in environmental management plan implementation and self-monitoring and reporting.

Also, NGOs and local communities are being involved to some extent in environment monitoring and auditing in all countries of the region but not systematically.

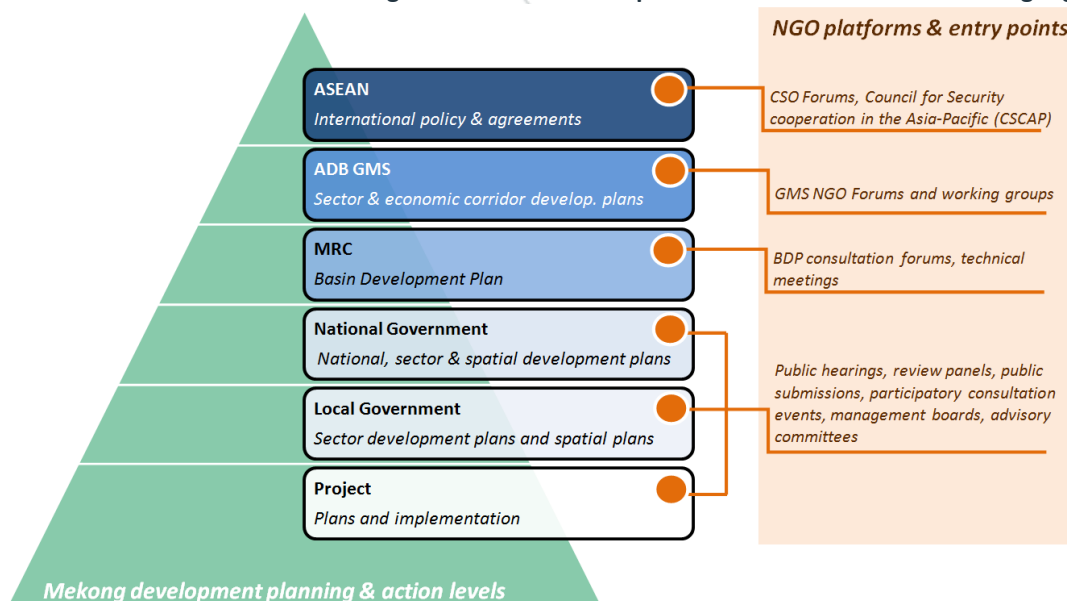
SEAS AND EIAs

Many development strategies and plans have broad reaching socio-economic and environmental implications that cannot be adequately or efficiently captured in the context of project-specific environmental impact assessment.

Strategic Environmental Assessment, which includes assessments of cumulative impacts, addresses the broader strategic issues usually relating to more than one project and defines approaches for managing them. SEAs follow similar steps to EIA but have much larger boundaries in terms of time, space and subject coverage. SEAs serve as an umbrella level of analysis that feeds more specific EIAs and improves their quality. SEAs can use many methods from the environmental assessment tool box including cumulative assessment, comparative analysis of options, spatial analysis, trend analysis, institutional analysis and other forms of special studies to fill information gaps. SEA’s should be tailored to the needs of the target policy or plan and stakeholders.

They could be conducted to enhance sustainability in regional wide policy and plan frameworks, even at the level of ASEAN agreements and for the various sector plans at GMS level (Figure 2).

Figure 2: Potential environmental integrated levels in development decisions within the Mekong region



For example, ICEM conducted an SEA of the GMS Power Development Plan commissioned by ADB (ICEM 2014). The MRC could profitably adopt SEAs as a tool for regular use in improving sustainability in the Basin Development Plan and for critical regional policy issues such as the SEA into mainstream hydropower on the Mekong River conducted by ICEM for MRC (ICEM 2010). National and sector plans of various kinds can be subject to SEAs – ICEM conducted one of the first SEAs in the LMB into the Vietnam Power Development Plan commissioned by the World Bank (ICEM 2007). Also, sub-national river basins and the need for integrated planning are an appropriate target for SEAs to better inform and help shape basin management plans. ICEM conducted an SEA of the Vu Gia Thu Bon River Basin in Quang Nam Province of Vietnam in which cumulative assessment and trend analysis played an important role (ICEM 2008).

Vietnam requires SEAs of plans at all levels of government and across all sectors. China's regulations require that a sector or area wide SEA be conducted before any development project can proceed – i.e. a project must be implemented within a plan and policy framework that has benefitted from an SEA.

When addressing a development plan or a number of proposed projects within a shared area (eg a river basin), SEAs can lead, for example, to revisions and adjustments to the development “plan” and its implementation including (i) area wide and cross sectoral mitigation, (ii) additional more detailed assessments and studies, (iii) overarching environmental and social safeguards and zoning to ensure valuable assets are maintained and enhanced, (iv) innovations to planning and management procedures and (v) assessment on a wider range of options to meet development goals.

SEAs are an analytical and participatory approach that aims to integrate environmental, economic and social considerations into policies, plans and programmes to achieve sustainability. SEAs can:

- Assess an **existing** policy, plan or programme to improve environmental and socio-economic performance in on-going implementation, or
- Assess a policy, plan or programme **which is to be revised** to guide adjustments to its revised form, or
- Contribute to preparing a **new** policy, plan or program so that it addresses environmental and socio-economic concerns as it takes shape.

SEAs are a flexible tool that can have different forms. They can be initiated by government or NGOs. They can focus only on environmental impacts or integrate environmental, social and economic dimensions of sustainability. They can engage a broad range of stakeholders or be limited to expert evaluation and they can be conducted in a short time frame or over a long period. To be most effective, SEAs are best carried out as part of the policy, plan or program formulation, and are based on quick appraisal techniques so that results remain fresh and relevant to planning and decision making. SEAs are much less effective as a “stand alone” procedure, a one-off event or as a “mega-EIA” which cannot be replicated as a normal part of the planning process.

SEA might be applied to an entire sector (such as a national or regional policy on water resources management for example) or to a geographical area (for example, as part of a regional environment or river basin planning process). SEA does not replace or reduce the need for project-level EIA (although in some cases it can), but it can help to streamline and focus the integration of environmental concerns into decision-making, often making project-level EIA a more effective process. *SEA is proactive and ‘sustainability driven’, whilst EIA is largely reactive to the flow of development initiatives expressed as projects proposals.*

Environmental Impact Assessment (EIA) is a tool used to identify the environmental, social and economic impacts of a project prior to a decision to proceed with implementation. It aims to predict environmental impacts at an early stage in project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the predictions and options to decision-makers. By using EIA both environmental and economic benefits can be achieved, such as smooth project implementation, avoided treatment and clean-up costs and the need for retrofitting and redesign, and reduced delays from unanticipated regulatory hurdles.

EIAs as a development planning tool have significant limitations. They come late in the planning process. They usually occur when decisions and commitment to a project are well advanced. They are site specific, project specific and often “sub-project” specific, for example, being applied separately to the various components of a hydropower development such as dam and reservoir, transmission lines, access roads and resettlement areas. In the Mekong region it

normal practice to break down major road and transmission line proposals into shorter sections for separate EIA – even those funded through ADB or the World Bank, especially where they cross international boundaries. EIAs in the region have limited consideration of economic and social issues, they rarely deal thoroughly with consideration of alternatives (e.g. sites or technologies), and they are particularly weak in consideration of cumulative impacts with development in other sectors or areas. They rarely deal with analysis of long term impacts.

To make up for those limitations some countries have applied expanded versions of EIA often of donor funded projects – such as *Environmental and Social Impact Assessment (ESIA)*. Thailand has introduced *Environmental and Health Impact Assessments (EHIA)* for 11 types of projects including land allocation, mining, industrial estates, petrochemical industry, mineral processing, manufacturing, disposal or modification of radioactive substances, aviation transportation systems, ports, dams and reservoirs and thermal power plants. The size of project subject to an EHIA within each category is defined.

Cumulative impact assessment (CIA) is an important part of SEAs and EIAs of large projects. CIA is the assessment of the multiplier or cumulative impacts of more than one project or action across a geographic area or in the same area over time. With some notable exceptions such as the SEA of mainstream hydropower (ICEM 2010), SEA of the GMS Power Development Plan (ICEM 2014) and EIA of the Nam Thuen II Hydropower Project in Lao PDR (ADB 2004), cumulative assessment is not practiced in the Mekong region.

Environmental monitoring and auditing

Monitoring and auditing help determine whether the predicted impacts and proposed mitigation measures occur as defined in the Environment Management Plan normally formulated as an output of an EIA process. They verify compliance with the EMP including safeguard frameworks, to ensure that unforeseen impacts or failed mitigation measures are identified and addressed in a timely fashion.

In the Mekong region, the pace and scale of development is so great that governments, NGOs and affected communities are focusing their attention in a reactive fashion on new projects as they arise. There are two challenges with this approach. Often decisions are already made once a project proposal comes on to the environment agency or NGO radar - so potential

influence is constrained. Also, it means that little attention and resources go to ensuring that agreed avoidance, enhancement and mitigation measures are being implemented once a development proceeds.

Compliance and enforcement are the weakest part of the development cycle in the region leading to extensive unwanted impacts and degradation. One of the most important tasks for an environment agency and a civil society network seeking to hold a project accountable is to effectively document the impacts of a project. Having well-presented and convincing evidence is often the key to helping managers and decision makers recognize that problems exist and need to be addressed.

Environmental monitoring and auditing are critical entry points to influence the sustainability and equity of development projects. They can lead to stricter enforcement of existing safeguards and management commitments. They can lead to modification of design, retrofitting and new safeguards to address unforeseen impacts. And they can identify areas where additional study and assessment are required to fully understand impacts and management requirements.

Once implementation of a development project has commenced, a program of environmental monitoring is needed with regular points at which a comprehensive audit is conducted. The proponent agency and private sector developer has a critical role to play in monitoring and auditing. Both those requirements should have been defined and agreed in the earlier environmental assessments conducted prior to implementation. The monitoring and audit is a sustainability performance evaluation. The process asks – Are the environmental and social safeguards being implemented along with other provisions of the environmental plan? – Are they effective and what is required to improve performance? Audits follow similar steps as other methods in the environmental assessment family.

ENVIRONMENTAL ASSESSMENT STEPS

SEA, EIA and even environmental auditing follow a similar phased assessment and reporting process with consultation, analysis and documentation at each step (Figure 3).

Figure 3: Steps in the environmental assessment process



At each of those steps the key questions to be addressed are:

Scoping

In the first step the coverage or scope of the assessment is defined. The scoping identifies the main themes and key issues to be targeted by asking (i) What are the most important issues of concern to development and conservation in the area? and (ii) How can those issues be categorised and prioritized – i.e. given strategic focus?

Baseline assessment

The second step involves gathering information in the area on the key development issues and analysing their past trends and current status. The main questions to be addressed are (i) What have been past trends for each of the key issues, and (ii) What will the trends look like when projected forward without the plan or project when other trends and drivers are considered.

Impact assessment

In the third step the impacts (risks and opportunities) of the proposed plan or project on the key development issues are assessed. The main questions to be addressed are (i) Will the plan or project affects the trends in the key issues, (ii) Will those affects provide benefits and/or costs, and (iii) Will those affects enhance or reduce sustainability?

Avoidance, enhancement and mitigation

The fourth step involves defining measures to avoid or mitigate the negative effects of the plan or project and to enhance their benefits. The main questions to be considered are (i) How will the most important risks (negative effects) be avoided, (ii) How will the most important benefits (positive effects) be enhanced, and (iii) How will the negative effects that can't be avoided be mitigated – i.e. be reduced?

The process is similar across assessment methods – but the detailed inputs and tools feeding the process will differ depending on resources, capacities and the requirements of the assessment. For example, as part of the sensitivity and trends analysis, the MRC SEA of mainstream hydropower drew from original

modelling of hydrology and sedimentation, and climate change under various scenarios conducted by MRC programs. The original research going to support the Basin Development Plan on fisheries, water quality, socio-economic conditions and navigation also fed into the assessment. Other methods applied by the SEA included macro-economic analysis and valuation, social and demographic analysis, GIS analysis of natural and social system effects, GHG comparative analysis, extreme event risks analysis and energy and power modelling and analysis, and species population dynamics and migration patterns analysis for fish. That SEA also considered development alternatives.

Normally it is not the function of an SEA team to “stand in the shoes” of development planners with original research and definition and assessment of different strategic development options – but in the Mekong region where there are so many gaps in information and plans, most often that proves necessary. The European model of short and sharp SEAs which function as check that a wide range of formal sustainability requirements have been met in policies and plans is difficult to apply when so much of the foundation analysis on which they are constructed is lacking.

CONCLUSION

SEAs, EIAs and subsequent environmental monitoring and auditing are essential tools in the development control process. They are all practiced to varying degrees in the Mekong region. There has been deep experience with EIAs over several decades and all six Mekong countries have frameworks of regulations and rules for their application. Only in China and Vietnam are SEAs conducted as an essential contribution to development planning. Thailand has informal guidelines and some agencies such as the Royal Irrigation Department have commissioned SEAs of controversial development proposals. Environmental monitoring effort is inconsistent and often only point source. Environmental audits are rarely conducted.

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