

## INTRODUCTION TO ENVIRONMENTAL IMPACT ASSESSMENT

Previous courses have introduced participants to both the vast natural resources of the Mekong River Basin (MRB) and the threats to these resources resulting from continued development pressures as a result of rapid population and economic growth. Complicating environmental management in the Basin is the fact that the MRB is home to some of the poorest people in the world. Poverty forces people to over-exploit local natural resources, or harvest beyond what a particular resource can sustain. When people cannot access clean water or feed their children, consideration of ecosystem health and sustainable levels of harvest understandably becomes very low on the list of priorities. Another consideration is that environmental managers in the MRB may not want to impose strict environmental impact assessment (EIA) requirements on much-needed potential foreign investment projects. Yet the Basin's forests, water supplies, soils and fisheries will suffer further degradation if economic growth is continually placed above sustainable resource management.



If properly planned, economic growth may reduce poverty and lead to a higher quality of life. It may also reduce pressure on the environment and lessen environmental degradation. However, unregulated and unplanned economic growth can have the opposite effect. Pressure on the environment often increases and environmental degradation may occur at faster rates. This leads to the reduced sustainability of ecological and economic systems.

Planning economic growth in a way that adequately considers resource needs and limitations can be extraordinarily difficult. The developed countries of the world, whose people do not face the poverty prevalent in many parts of the MRB, continue to make mistakes in their environmental and economic development policies. Sustainable energy use and protection of natural resources are sometimes just too easy to sacrifice when faced with substantial immediate financial gain.

To expect the poorer countries of the MRB to adopt the same resource management strategies as the wealthier, developed nations of the world is unrealistic. However, riparian countries of the MRB can and are increasingly adopting tools from developed countries which can help them make large strides in achieving more sustainable management of natural resources and provide for enhanced protection of the environment. One of the most promising environmental management tools being applied in the Basin is the subject of this course

### ENVIRONMENTAL IMPACT ASSESSMENT OVERVIEW

Environmental impact assessment is a planning and management tool that provides environmental managers and decision makers in the MRB with a way to predict and reduce the environmental impacts of a proposed development project or activity, on just about any scale. Realistically, it is expected that increasing economic development and population growth in

the MRB will result in some environmental degradation. Notwithstanding, EIA gives riparian countries more of an opportunity to select and understand the types and degree of environmental impacts that they are willing to accept as development continues. Environmental or public health disasters can be prevented, and potentially environmentally damaging activities such as industrial development can be contained within specifically zoned areas thereby allowing other areas to remain unharmed.

The outcome of an EIA assists government decision makers, environmental managers and local communities to determine whether a project should be implemented, and in what form. EIA cannot make a final decision, but it is an essential tool for those that do. Some characteristics of EIA are included in Table 1.

EIA is both a decision-making process and a proactive management tool. It is structured to anticipate, analyse and disclose the ecological consequences associated with proposed activities. The aim of EIA is to balance the environmental interest in the larger context of social and economic development. Overall, EIA seeks to ensure that potential problems are foreseen and addressed at an early stage in a project's planning and design. The assessment report should provide information on the environmental, social and economic changes that would result from the proposed activity. This information, when presented to decision makers and the project's planners, can be used to shape the project such that its expected benefits can be achieved without causing serious environmental degradation. An accurate EIA can

greatly influence where and how a project is sited, the project's size, the technologies employed and the area served or affected by the project. Specifically, an EIA accomplishes the following:

- Identifies the sources of environmental impacts from the project (both during initial construction and during operation) and examines valued environmental components (VEC) which could potentially be impacted
- Predicts the likely environmental impacts of projects on the identified VECs using methods that are quantitative, qualitative or a combination of the two
- Finds ways to reduce the unacceptable impacts and enhance the positive contributions of the project by recommending mitigation measures or by exploring alternatives, such as a change in the capacity, technology, design, or site location
- Presents to decision makers and other concerned parties the results of impact identification, prediction and assessment with options of suggested measures of mitigation and monitoring.

**Table 1** Some basic characteristics of EIA

<b>PURPOSE</b>	<ul style="list-style-type: none"> <li>• Ensure the wise use of natural resources</li> <li>• Assist in pursuing wise development by evaluating alternatives, improving proposal design and enhancing social aspects of the project</li> <li>• Evaluate the rationale behind the proposed development.</li> <li>• Identify measures for eliminating or reducing potential impacts</li> <li>• Enable informed decision making</li> </ul>
<b>OBJECTIVES</b>	<ul style="list-style-type: none"> <li>• Ensure that potential environmental effects are considered before decisions are made</li> <li>• Promote sustainable development</li> <li>• Contain adverse environmental effects within known, specific boundaries</li> <li>• Provide opportunity for public involvement in the decision-making process</li> </ul>
<b>IMPORTANT ELEMENTS</b>	<ul style="list-style-type: none"> <li>• Should apply to all types of activity (projects, policies and programs)</li> <li>• Consideration of changes over various time and spatial scales</li> <li>• Consideration of social and cultural viewpoints in addition to scientific opinions</li> <li>• Identify and communicate potential impacts to concerned people and encourage thoughtful discussion and problem solving</li> </ul>
<b>BENEFITS</b>	<ul style="list-style-type: none"> <li>• Promotes better planning and leads to more responsible decision-making</li> <li>• Increases likelihood of public acceptance of controversial projects</li> <li>• Saves time and money in the long run: reduces approval time and the need for corrective action</li> </ul>

It is important to mention that while EIA generally starts at the individual project level, it also can be implemented beyond that. The same principles that guide the assessment of environmental impacts for a single project are used to determine broader cumulative impacts to the environment as is done in undertaking a cumulative effects assessment (CEA). Cumulative impacts are those impacts that are likely to arise from one project in combination with other projects that already have been (or will be) carried out. The individual impacts might be small, but when added together, they could conceivably have widespread adverse environmental effects. In addition, EIA principles can be used to evaluate the effectiveness of a particular environmental policy or resource management strategy as part of a strategic environmental assessment (SEA). Both SEA and CEA will be covered in greater detail in later courses.

## A BRIEF HISTORY OF EIA

Environmental impact assessment was originally conceived in the late 1960s as a policy and management tool for both planning and decision making. It was expected to assist in the identification, prediction and potential reduction of foreseeable environmental consequences of proposed projects or other development activities. EIA took some time to be acknowledged as a legitimate planning tool as it was initially viewed as a hindrance to economic development.

Two significant pieces of legislation were adopted that lent great credibility to the EIA process. In 1969, the United States enacted the National Environmental Policy Act (NEPA), which mandated EIA for a number of project types. NEPA basically launched EIA into worldwide use as a number of countries adopted their own impact assessment guidelines during the 1970s through

the 1990s. New Zealand's Resource Management Act of 1990 was also pivotal in the acceptance of EIA as a legitimate planning tool, as it was the first piece of legislation to address the principle of sustainable use of natural resources. Due in large part to the broad acceptance of these two seminal pieces of legislation, many countries have followed suit in adopting their own EIA legislation which requires assessments of certain types of projects and activities while embracing sustainable development principles. EIA was acknowledged as a requirement of many countries' natural resource development policies (Sadler and Verheem, 1996).

#### **Example of Broadened Scope for EIA**

Whereas the government of Canada seeks to achieve sustainable development by conserving and enhancing environmental quality and by encouraging and promoting economic development that conserves and enhances environmental quality;

Whereas environmental assessment provides an effective means of integrating environmental factors into planning and decision-making processes in a manner that promotes sustainable development;

Whereas the Government of Canada is committed to exercising leadership within Canada and internationally in anticipating and preventing the degradation of environmental quality and at the same time ensuring that economic development is compatible with the high value Canadians place on environmental quality.

*Introduction to the Canadian Environmental Assessment Act*

### **THE BENEFITS OF ENVIRONMENTAL IMPACT ASSESSMENT**

The MRB has vast potential for economic development in fisheries, agriculture, aquaculture, forestry mining and hydropower. The regional and world demand for development of the MRB's natural resource sectors will continue to rise. In many cases, proposed development projects and activities will negatively impact the people and natural environment of the Basin. Perhaps the greatest benefit EIA offers MRB riparian countries is increasing control over the use of their own natural resources. No matter where a new project proposal comes from (e.g., international industry, government agencies, or donor countries), EIA gives environmental managers and decision makers the power to require environmental protection measures. Projects that are assessed against a solid EIA framework can meet the needs of local populations and support the sustainable use of the Basin's natural resources.