INTRODUCTION TO ENVIRONMENTAL IMPACT ASSESSMENT

MEKONG RIVER COMMISSION
MRC
FOR SUSTAINABLE DEVELOPMENT

Course Learning Objectives

At the end of this course you should be able to:

- Define and state the purpose of environmental impact assessment (EIA)
- Specify the benefits of EIA
- Identify challenges relating to the application of EIA in the Lower Mekong Basin (LMB)
- Identify the potential role and applications of EIA in environmental protection in the Mekong River Basin (MRB)

Lesson Learning Goals

At the end of this lesson you should be able to:

- In your own words, explain the purpose and benefits of EIA
- Differentiate among types of environmental assessment practices in terms of scope and intent
- Explain the underlying principles of EIA
- Discuss the role of EIA in supporting sustainable environmental management decision making

What is EIA?

- A process which attempts to identify and predict the impacts of proposals, policies, programs, projects and operational procedures on the biophysical environment and on human health and well-being
- It also interprets and communicates information about those impacts and investigates and proposes means for their management
- A planning and decision-making tool to protect the natural environment and, thereby, protect human societies

Why do EIA?

- Promotes better planning and leads to more responsible decision making; ensures that renewable and non-renewable resources are used wisely
- Evaluates the rationale behind proposed projects and activities; are there alternatives to a proposed project or activity?
- Assists in pursuing sustainable development by evaluating alternatives means of undertaking proposed projects and activities

Why do EIA? (Cont'd)

- Assessment outputs facilitate informed decision making; anticipated environmental impacts can be weighed against economic benefits and other social gains in deciding whether to approve or reject proposals
- Helps to identify and understand environmental impacts early in the project cycle; predicted impacts can be mitigated before they occur
- Provides opportunity for input from interested parties; increases likelihood of public acceptance

Why is EIA Needed?

- The natural environment is the foundation of the world economy and our social well-being
- Past development practices have severely degraded the natural environment and wasted scarce resources
- Increasing development pressures (e.g., industrialization, urbanization, and resource use) will inevitably accelerate environmental degradation unless sustainable environmental management practices are adopted

Sustainable Development

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

(Brundtland Commission)

Example Sustainability Criteria

- Maintenance of habitat and ecosystems
- Preservation of native plant and animal species
- Preservation of cultural values
- Reclamation and re-use of waste water
- Wastewater disposal within assimilative capacity
- Groundwater extraction within sustainable yield
- Productive use of fertile soils
- Prevention of erosion

Sustainability Criteria (Cont'd)

- Application of clean technology
- Waste recycling or use
- Material utilization allowing recycling or re-use
- Energy efficiency/Use of renewable energy sources
- Public acceptability/Involvement of the community
- Full cost recovery for goods or services
- Equitable cost-benefit distribution

Evolution of EIA

Pre-1970s: Introduction of some pollution control regulations

Early 1970s: Initial EIA development, focus on the biophysical environment (e.g., air, water, flora, fauna, climate)

1970: US NEPA called for:

- Environmental review of all government actions
- Public input into project formulation
- Informed decision making
- This process became known as EIA

Evolution of EIA (Cont'd)

1970s to 1980s: Expanded scope for EIA beyond just biophysical to include integrated assessment of social, health, and economic issues

Mid to late 1980s: Cumulative effects increasingly examined in support of policy and planning

Mid 1990s: Towards sustainability (e.g., strategic environmental assessment, biodiversity)

Evolution of EIA (Cont'd)

- Over the last 30 years the EIA process has become increasingly more holistic; assessments have broadened to consider all aspects of proposed projects and activities
- Assessments routinely examine:
  - Biophysical
  - Health
  - Risk and uncertainty
  - Social
  - Economic

EIA Requirements in Cambodia

- EIA administered under the Law on Environmental Protection and Natural Resource Management, 1996
- Sub-decree on EIA Process promulgated in 1999 defines project types and size thresholds subject to EIA
- Additional EIA regulations are needed, but the National Environmental Action Plan is a positive step forward

EIA Requirements in Lao PDR

- No EIA enabling legislation currently exists
- Several draft EIA process documents have been prepared
- National Environmental Action Plan, adopted in 1993, serves as a framework policy document for environmental protection
- Current EIA process is informal and *ad hoc*

EIA Requirements in Thailand

- EIA administered under the Enhancement and Conservation provisions of the National Environmental Quality Act (NEQA), 1992
- 29 project types require an EIA (e.g., dams and reservoirs, major industrial developments)
- The NEQA distinguishes between private and public sector projects
- Primary EIA focus is pollution control, not natural resources protection and management

EIA Requirements in Vietnam

- EIA administered under the Law on Environmental Protection, 1994
- A number of additional regulations further govern EIA and give considerable power to the EIA process
- Project screening thresholds include:
  - project size (i.e., small-scale or medium-to-large scale)
  - project type (e.g., mining, aquaculture, fertilizer plants, oil exploration and drilling)

Types of EIA

Project-level EIA: narrow-perspective; examine potential environmental impacts of a single project or activity

Cumulative effects assessment (CEA): broadens assessment to examine potential impacts of multiple projects from the viewpoint of valued environmental components (VECs)

Strategic environmental assessment (SEA): widest focus involving systematic evaluation of potential impacts of policies, plans and programs (PPP)

EIA Core Values

Sustainability:	The EIA process will provide necessary environmental safeguards
Integrity:	The EIA process will conform with established standards; underlying science is credible and decisions are justified
Utility:	The EIA process will provide balanced, accurate information for decision making

EIA Guiding Principles

Participation:	Appropriate and timely access by all interested parties
Transparency:	All decisions should be open and accessible
Certainty:	Process and timing agreed in advance and followed by all
Accountability:	Decision makers and project proponents are responsible for their actions

EIA Guiding Principles (Cont'd)

Credibility:	Assessments are professional and objective
Cost-effectiveness:	Environmental protection is achieved at the least cost
Flexibility:	Process is adaptive and responsive
Practicality:	Information and outputs are usable in decision making and planning

EIA Operational Principles

EIA should be applied to:

- all development projects and activities likely to cause significant adverse impacts or potential cumulative effects

EIA should be undertaken:

- throughout the project cycle, beginning as early as possible
- in accordance with established procedures
- to provide meaningful public consultation

EIA Operational Principles (Cont'd)

EIA should provide the basis for:

- environmentally-sound decision making in which terms and conditions are clearly specified and enforced
- the development of projects and activities that meet environmental standards and management objectives
- an appropriate follow-up process with requirements for monitoring, management, audits, and evaluation

EIA Operational Principles (Cont'd)

EIA should address:

- all related and relevant factors, including social and health risks and impacts
- cumulative and long-term, large-scale effects
- design, siting and technological alternatives
- sustainability considerations including resource productivity, assimilative capacity and biological diversity

EIA Operational Principles (Cont'd)

EIA should result in:

- accurate information on the nature, likely magnitude and significance of potential effects, risks and consequences of proposals and alternatives
- a relevant report for decision making; including qualifications on conclusions reached and prediction of confidence limits
- ongoing problem solving and conflict resolution throughout the process

Integration of EIA into the Decision-Making Process

Timing:	EIA conducted early in the project cycle
Disclosure:	EIA results disclosed to all interested parties
Weight:	EIA results are considered by decision makers
Revisions:	Plans revised to include feasible mitigation measures or a less damaging alternative

Integration of EIA into the Decision-Making Process (Cont'd)

Mitigation: Agreed-upon mitigation measures are implemented and monitored for effectiveness

Monitoring: Post-project, follow-up monitoring of impacts conducted and results acted upon

Characteristics of Effective EIAs

Completeness:

- all significant impacts considered
- all relevant alternatives examined

Accuracy:

- appropriate forecasting procedures
- appropriate evaluation procedures

Clarity:

- all interested parties can comprehend issues

Getting it Wrong

Examples of badly executed EIA include:

- Terms of reference are poorly drafted; potentially serious issues are not assessed and adverse environmental impacts occur
- Delays in project approval and cost increases occur when EIA is commenced too late in the project cycle (i.e., must back-track to retrofit equipment or re-design project)
- EIA report is incomplete or not scientifically-defensible resulting either in project rejection or extended delays to address deficiencies

Concluding Thoughts

Important points to remember are:

- EIA is a structured process to anticipate, analyse and disclose environmental consequences associated with proposed projects or activities
- EIA seeks to ensure that potential problems are foreseen and addressed such that project benefits can be achieved without causing serious environmental degradation
- Done correctly, EIA can be a powerful environmental management tool