

SEA APPROACH

SEA of hydropower on the mainstream Mekong

SEA as a credible process

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- SEA reports need to be credible and to have authority – otherwise decisions makers will ignore them
- To be credible the report must be balanced.
- It must describe the development risks and opportunities in an objective way.
- It must indicate where there is a divergence of views on strategic issues and give reasons for the conclusions it draws.
- Over the next two days we will need your input and guidance in improving the SEA impact assessment report to ensure that it is credible so that decision makers will take it seriously

The need for stakeholder involvement

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- There are a number of reasons why having your strong input at this stage of the SEA is especially important in achieving balance:
 - (i) Major changes are involved if the LMB mainstream proposals were to proceed;
 - (ii) The assessment of impact on key issues is confronted with extreme uncertainties;
 - (iii) The planned developments and the SEA involve a wide range of expert judgments, values and assumptions about the future

Development leads to change

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- **Change:** In this case the change will:
 - affect all LMB countries
 - affect all LMB riparian communities and local government areas
 - lead to long term gains/benefits
 - lead to permanent losses
- Who gains and who loses? – who, where and how
- **Uncertainty:** Dealing with situations of extreme uncertainty
- **Expert judgments:** Decisions need to be made based on:
 - the best available information and analysis (often limited and of uncertain reliability)
 - expert judgments on the levels/ranges of risk

In major developments benefits often more readily defined than risks

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- The benefits become evident in commercial and economic terms from the early stages
- EIA often comes late in the planning process when economic benefits are already well defined
- The definition of risks or negative impacts is not as easy
- They are often hard to express in economic or commercial terms and difficult to integrate with economic decisions
- SEAs are often confronted with situations where benefits are relatively well enunciated and expressed in economic terms while the risks are unclear, unsubstantiated and indirect

SEA impact assessment approach (1)

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- Staged approach – analysis, documentation and consultation at each stage
- **Scoping** – strategic themes and issues identified
 - What are the most important issues of concern to sustainable development and use of the mainstream Mekong?
 - How can those issues be categorized and prioritized – ie given strategic focus?

SEA impact assessment approach (2)

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- **Baseline** – projected baseline and trend analysis
 1. What have been past trends for each of the key issues?
 2. What will the trends look like when projected to 2030?
 - other trends and drivers are considered
 - without mainstream projects

Baseline assessment

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Objectives

- identify and analyse the main trends associated with the strategic themes in the past, and then project the trends forward into a future without mainstream dams.
- The SEA works with a projected baseline to 2030

PAST	CURRENT	FUTURE
MRC BDP Baseline (1986-2000)	MRC BDP Definite Future Scenario (< 2015)	MRC BDP LMB 20 year scenario <u>without</u> LMB mainstream dams (<2030)

SEA impact assessment approach (3)

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□ **Impacts**

1. Will the mainstream projects affect the trends in key issues?
 2. Will those affects provide benefits and/or costs?
 3. Will those affects enhance or reduce sustainability?
- SEAs are a form of sustainability analysis – where economic, social and biophysical trends and effects are considered

SEA impact assessment approach (4)

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□ **Mitigation**

1. how will the most important risks (negative effects) be avoided?
 2. how will the most important benefits (positive effects) be enhanced?
 3. how will the negative effects that can't be avoided be mitigated?
- At this stage we are dealing with impacts– not mitigation

Impact assessment (1): significance

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- Focus on key strategic issues defined by stakeholders
- Impact of mainstream projects on projected trends in the key issues:
 - Large negative impact
 - Negative impact
 - No impact
 - Positive impact
 - Large positive impact
 - Both positive and negative impacts
 - Not relevant

Impact assessment (2): sustainability

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- Impact of the mainstream projects on sustainability
- SEA sustainability objectives defined through stakeholder workshops and review of government policies
- One or two sustainability objectives identified for each strategic theme
- The impact question – “what effect will the mainstream projects have on achieving the sustainability objective”?

Impact assessment (3): example

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Theme/ Key Issues	Sustainability objective	
Theme: Fisheries	Maintenance and enhancement of diversity and productivity of fisheries resources	
	Score	Comments and reasons for score
1. Changes in long distance migration		
2. Changes in fish species biodiversity		
3. Changes in fish production		

Impact assessment (4) - example

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Theme/ Key Issues	Sustainability objective	
Theme: Energy and power	Ensuring a secure and diverse energy supply from renewable resources without losses in sustainability of social and natural systems	
	Score	Comments and reasons for score
1. Achieving energy security		
2. Meeting national energy demands		
3. Meeting local energy needs		

Impact assessment (5) - example

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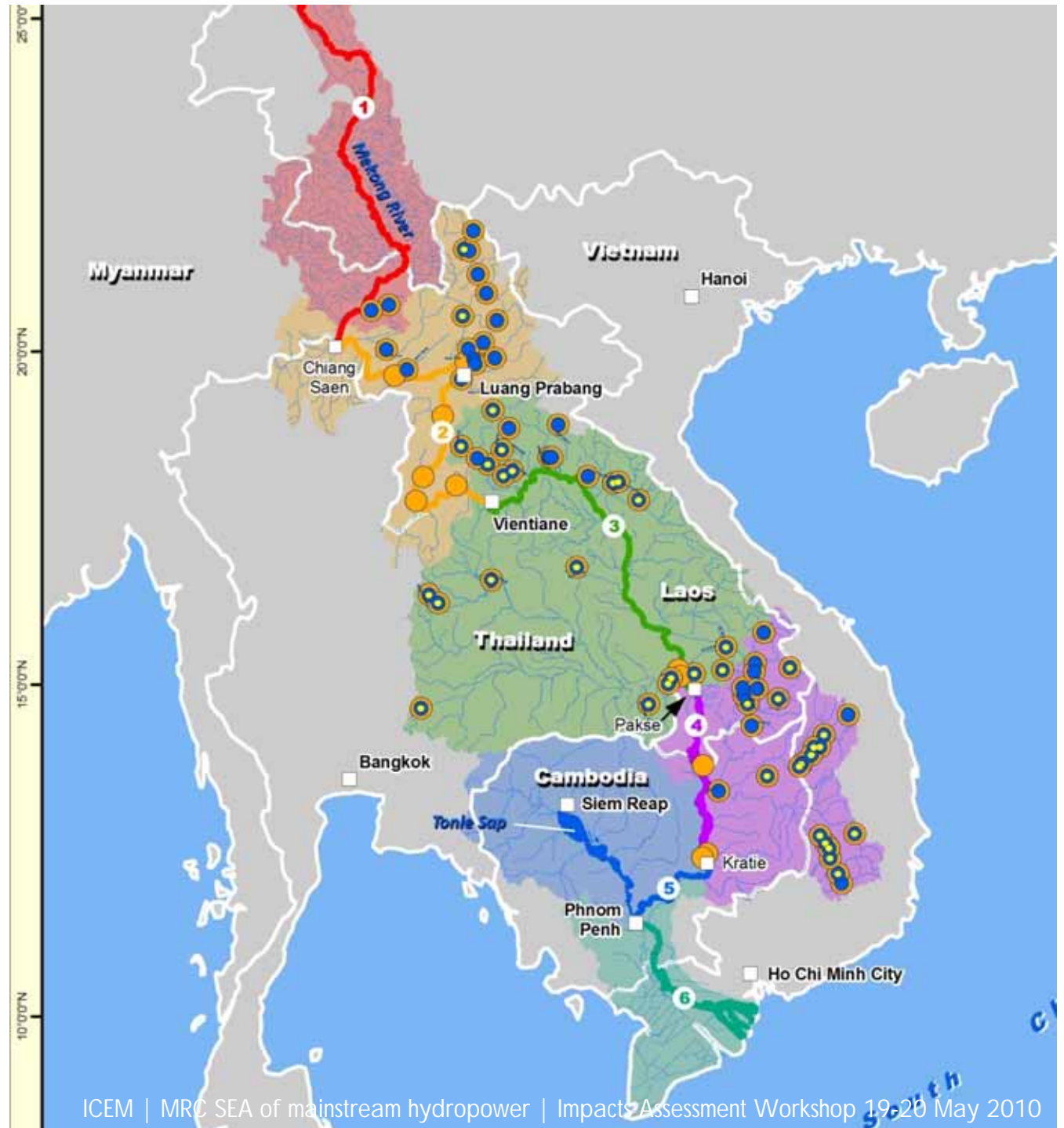
Theme/ Key Issues	Sustainability objectives	
Theme: Terrestrial ecosystems and agriculture	1) Maintenance of terrestrial ecosystems for conservation of biodiversity, connectivity and ecosystem services 2) Maintenance and enhancement of diversity and productivity of agricultural systems	
	Score	Comments and reasons for score
1. Habitat loss and degradation		
2. Changes in Land use		
3. Changes in irrigated agriculture		
4. Changes in River bank gardens		

Geographic/spatial level of focus

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- *REGIONAL*: upper and lower segments of the river but focuses on transboundary concerns and the socio-economic and natural system linkages between the LMB countries.
- *NATIONAL*: The LMB countries – Cambodia, Lao PDR, Thailand and Vietnam – and the effects of mainstream projects on each of their distinctive economies, and social and natural systems. The 12 proposed projects are assessed against national interests and development priorities of the four LMB countries.
- *HYDRO-ECOLOGICAL ZONES* Assessing *THE PROJECTS* within 6 hydro-ecological zones. The zones have distinctive bio-physical characteristics.

Mekong mainstream hydro- ecological zones



Hydro-ecological zones

Hydro-ecological zone		Mainstream projects	
1	Lancang River	Existing, under construction and planned mainstream dams in China	
2	Chiang Saen to Vientiane	1. Pak Beng, 2. Louangprabang 3. Xayaburi	4. Pak Lay 5. Sanakham, 6. Pak Chom
3	Vientiane to Pakse	7. Ban Koum 8. Latsua	
4	Pakse to Kratie	Latsua (downstream) 9. Don Sahong	10 Thakho 11. Stung Treng 12. Sambor
5	Kratie to Phnom Penh		
6	Phnom Penh to S.China Sea		

Sensitivity analysis

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- *GROUPING OF MAINSTREAM PROJECTS*: the SEA conducted “sensitivity analysis” which examined the LMB mainstream projects in three distinctive groups:
 1. The cascade of 6 dams upstream of Vientiane in Lao PDR
 2. Middle Mekong dams in Lao PDR
 3. Lower Mekong dams in Cambodia
- Each thematic chapter presents the findings of the impact assessment according to those various geographic levels of focus.

Other impact assessment methods used

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- Macro-economic analysis and valuation
- Social and demographic analysis
- GIS analysis of natural and social system effects
- GHG comparative analysis
- Extreme event risks analysis
- Energy and power analysis
- Species population dynamics and migration patterns analysis for fish

SEA: Phasing

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The steps involved in the SEA are:

1. SCOPING May 09 – October 09:
 - ▣ Definition of key strategic themes and issues of concern to Mekong mainstream development
2. BASELINE ASSESSMENT November 09– April:
 - ▣ Past, current & future trends to 2030 without the LMB mainstream dams
3. IMPACTS (opportunities & risks) ASSESSMENT April 10 – May 10:
 - ▣ Future trends to 2030 with the mainstream dams
4. AVOIDANCE, ENHANCEMENT & MITIGATION June 10 – July10:
 - ▣ Regional, national and local solutions which avoid negative impacts, enhance benefits and where unavoidable mitigate risks

SEA sustainability objectives (1)

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- Hydrology and Sediment
 - Maintenance of natural patterns of sediment transport and deposition in flood plains and the Delta
- Aquatic ecosystems
 - Maintenance of aquatic ecosystems for conservation of biodiversity, connectivity and ecosystem services
- Terrestrial and agriculture
 - Maintenance of terrestrial ecosystems for conservation of biodiversity, connectivity and ecosystem services
 - Maintenance and enhancement of diversity and productivity of agricultural systems
- Fisheries
 - Maintenance and enhancement of diversity and productivity of fisheries resources

SEA sustainability objectives (2)

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- Social
 - Ensuring the wellbeing of vulnerable and minority groups
 - Maintaining a vital (living) cultural diversity (ways of living) and heritage of importance to riparian communities
- Economics
 - Ensuring equitable distribution of economic benefits including long term support to vulnerable effected groups and areas
 - Ensuring that economic development follows the precautionary principle – (in situations of high uncertainty of impact take the cautious approach)
- Energy
 - Ensuring a secure and diverse energy supply from renewable resources without losses in sustainability of social and natural systems
- Climate change
 - Maintaining and improving options and capacities to adapt to climate change