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SEA SUMMARY OVERVIEW

REGIONAL MITIGATION ASSESSMENT WORKSHOP
Ho Chi Minh City
28-29 June 2010



SEA OF HYDROPOWER ON THE MAINSTREAM MEKONG

Broad aims of the SEA

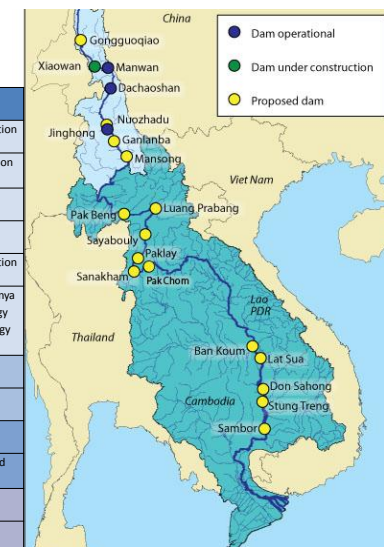
- To improve the sustainability of development decisions – including to help avoid or minimise their negative economic, social and environmental effects and improve benefits
- To ensure that leaders are well informed about the positive and negative effects of strategic options – ie that they are aware of the consequences and risks of their decisions before they make them

The context for the SEA

- The SEA is contributing to a decision-making process relating to 12 hydropower schemes proposed for the mainstream Mekong River
- These are sovereign decisions of Cambodia (2 proposals) and Lao PDR (10 proposals)
- There is a commitment to notify, consult and seek to reach agreement with neighbours
- Opinions differ on the benefits and costs – within governments, within the international community and within the NGO community
- There are many remaining gaps and uncertainties in our knowledge about the costs and benefits

Proposed LMB mainstream hydropower projects

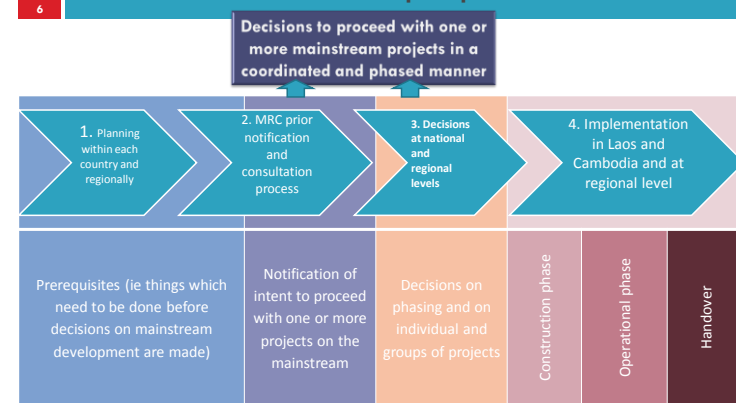
No.	MAINSTREAM PROJECT	DEVELOPER
1	Pak Beng	China: Datang International Power Generation
2	Luang Prabang	Vietnam: PETROVIETNAM Power Corporation
3	Xayaburi	Thailand: SEAN & Ch. Karnchang Public
4	Pak Lay	China: CEIEC & Sino-Hydro
5	Xanakhom	China: Datang International Power Generation
6	Pak Chom	Thailand/Laos: Joint feasibility study by Panya consultants on behalf of Ministries of Energy in Thailand and Ministry of Mines and Energy in Lao PDR
7	Lat Sua	Thailand: Italian Thai Asia Corp. Holdings
8	Ban Koum	Thailand: Charoen Energy & Waters Asia
9	Don Sahong	Malaysia: Mega First
10	Thakho	France: Compagnie Nationale du Rhone and EDL
11	Stung Treng	Vietnam
12	Sambor	China: Southern Power Grid



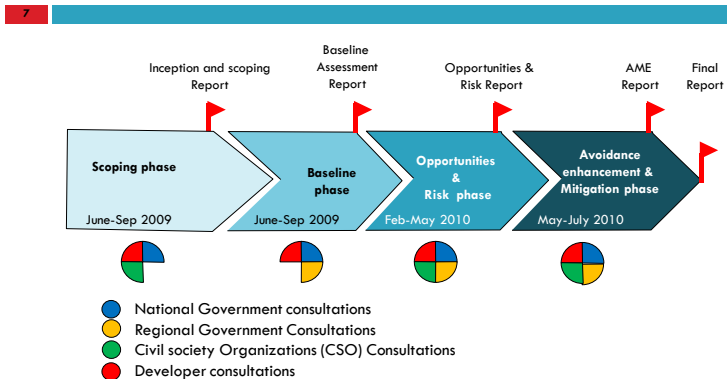
Two basic questions confronting leaders

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1. What needs to be done before decisions relating to the mainstream projects can be made responsibly? – ie with assurance that:
 1. Benefits outweigh the costs,
 2. Benefits can be equitably distributed
 3. Most costs can be offset or compensated
 4. Conditions set for development can be enforced
 2. What needs to be done once decisions are made? – ie to avoid or minimise the negatives and to enhance the positives

Planning and implementation process for LMB mainstream projects



SEA phases



SEA workshops

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1. MRC SEA Working Group Inception Workshop ~20-30ppl | 18 May 2009 | Vientiane
 2. SEA Vietnam National Scoping Workshop ~40-50ppl | Xx June 2009 | Hanoi
 3. SEA Vietnam CSO Scoping Workshop ~30ppl | Xx June 2009 | Hanoi
 4. SEA Lao PDR National Scoping Workshop ~30- 40ppl | Xxx July 2009 | Vientiane
 5. SEA Lao PDR CSO Scoping Workshop ~10-20ppl | Xxx July 2009 | Vientiane
 6. SEA Cambodia National Scoping Workshop ~40-50ppl | Xxx July 2009 | Phnom Penh
 7. SEA Cambodia CSO Scoping Workshop ~10-20ppl | Xxx July 2009 | Phnom Penh
 8. SEA Thai National Scoping Workshop ~30-50ppl | Xx August 2009 | Bangkok
 9. SEA Thai CSO Scoping Workshop ~50-60ppl | Xx August 2009 | Udorn Thani
 10. SEA Regional Baseline Workshop ~80-90ppl | 26-27 Jan 2010 | Phnom Penh
 11. SEA Regional Impacts Assessment Workshop ~100-120ppl | 13-14 May 2010 | Vientiane
 12. SEA Regional Avoidance, Enhancement & Mitigation Workshop ~100ppl | 28-29 June 2010 | Ho Chi Minh City

SEA approach: scoping (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 approach: impact assessment (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 approach: baseline assessment (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?
 - ▣ Without mainstream projects
 - ▣ When other trends and drivers are considered

SEA approach: analysis of avoidance, mitigation and enhancement (4)

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- **Avoidance, mitigation and enhancement**
- Questions to be addressed:
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 – ie be reduced?

Definitions: Avoidance

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AVOIDANCE means the complete avoidance of one or more possible adverse impacts

For example:

- i. **If the Lao cascade projects go ahead:** The Lao optimization study led to the reduction in dam heights in the cascade which avoided flooding of Thailand by Pak Beng
- ii. **Not to proceed** with any mainstream projects would avoid all risks associated with the developments
- iii. **Deferment:** postponement of the decision to proceed to allow for technological and institutional innovations and studies which might allow for some risks to be avoided.



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Definitions: Enhancement

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ENHANCEMENT means improving the benefits derived from project development.

[related to improving development effectiveness, management of risk, regional and local distribution of benefits].

For example:

- i. **Assure adequate provision of electricity supply from LMB mainstream projects for local domestic use** (i.e. demonstrated link to rural electrification poverty alleviation - energy poverty).
- ii. **Promote or strengthen appropriate institutional cooperation arrangements to ensure cooperative management of transboundary risks,** mitigation management, compliance verification, sharing of benefits, etc.). Consider a Mekong Fund as a financing and equalizing mechanism.



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Definitions: Mitigation

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MITIGATION means the reduction in the intensity or coverage of an impact if one or more projects go ahead.

[related mainly to the regional distribution of adverse impacts and related transboundary impacts.]

For example:

- **Sequence LMB mainstream dam development** to reduce, minimize and defer the highest potentially significant livelihood impacts in view of consensus livelihood impacts are highest for lower schemes, especially in terms captive fisheries and sediment, sediment-nutrient impacts).
- **Ensure effective institutional arrangements for coordinated operation** of reservoirs forming cascades (e.g. operation in low flows periods, flood management, sediment flow, emergency preparedness measures, etc.).



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Integration of sustainability

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- SEA concerned with 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 and mitigation questions:
 - “what effect will the mainstream projects have on achieving the sustainability objectives?”
 - “What mitigation measure can improve application of the sustainability objectives?”

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

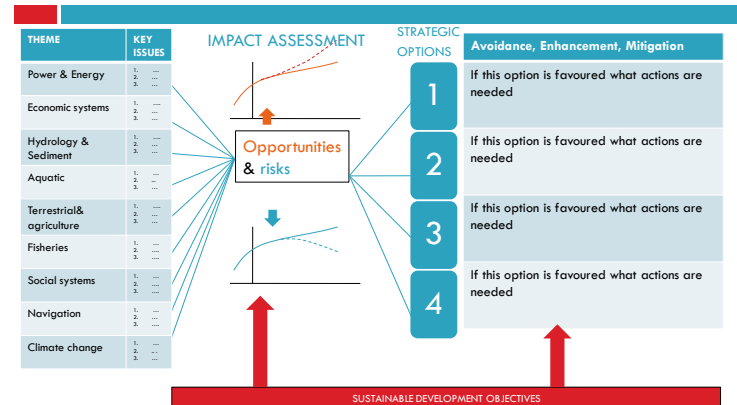
SEA sustainability objectives (2)

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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

Impact assessment example

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		

SEA Avoidance, enhancement, mitigation process



Strategic options for LMB mainstream development

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- 1 • Not to proceed with the mainstream projects
 - 2 • Defer a decision on whether or not to proceed and in what form and circumstances
 - 3 • Proceed with mainstream development on a gradual phased basis
 - 4 • Proceed with rapid development of all 12 projects



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- 2 • Defer a decision on whether or not to proceed and in what form and circumstances

Three possibilities:

1. Decisions to defer in Laos and Cambodia (regional consensus)
2. Decision to defer in Laos
3. Decision to defer in Cambodia

□ Issue: Duration of deferment – eg 5 or 10 years

Main costs?

- Laos: Postponement of export earnings and direct investment
- Cambodia: Continuing problems in meeting domestic power demand

Implications?

- Cambodia – Support in exploring power alternatives
- Provides breathing space for decision makers to be better informed of the costs and benefits and tradeoffs
 - Regional actions
 - National actions



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- 1 • Decide not to proceed with the mainstream projects

Three possibilities:

1. Decisions not to proceed with mainstream projects in Laos and Cambodia (regional consensus)
2. Decision not to proceed with LMB mainstream projects in Laos
3. Decision not to proceed with LMB mainstream projects in Cambodia

Main costs?

- Laos: Loss of potential export earnings and direct investment
- Cambodia: Concerns for long term domestic power supply

Mitigation?

- Development of power supply alternatives
- Economic adjustment package



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- 3 • Proceed with mainstream development on a gradual phased basis

Many possibilities:

1. With 12 projects, implies some form of regional guidance and consensus on desirable phasing when economic, social and environmental factors are considered – ie a “triple bottom line” ranking and optimisation

2. It may mean one country proceeds while another country defers

□ Issue: Extended construction impacts over entire phasing period

Main costs?

□ Cumulative losses in other sectors, uses and natural/social systems as projects proceed

□ A proportion of mainstream power, export earnings and foreign investment forgone

Implications?

- Provides opportunity for learning and feedback for improved mitigation
- Provides opportunity to avoid most serious impacts



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- Proceed with rapid development of all 12 projects

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Three possibilities:

1. Decisions to proceed with rapid development in Cambodia
2. Decisions to proceed with rapid development in Laos
3. Decisions to proceed with rapid development in both Laos and Cambodia

□ Issues:

- Development pace and order driven largely by market – and developers capacity to deliver project packages
- May involve extended construction period

Main costs?

- Cumulative economic, social and environmental costs associated with individual and cascades of projects

Implications?

Challenges with effective oversight and enforcement of avoidance and mitigation

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Possible categories of measures for each strategic option

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A range of measures at regional or national level including for example:

- Institutional structural innovations
- Policy and procedural innovations
- Additional studies where there are knowledge gaps or uncertainties
- Capacities that may need to be strengthened
- Actions required to improve management and enforcement

What we need to do at this workshop

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- Discuss each of the strategic options and their implications
- Define what needs to be done in the case of each strategic option – ie if Cambodia decides to adopt strategic option “X” what actions need to be taken?
- On a national working groups basis, recommend a strategic option (s) and the reasons for and implications of that choice