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Economic Assessment Methodology of the Basin-wide Development Scenario

Presentation Outline

- Purpose of economic assessment;
- Development objectives and key economic indicators;
- General approach to economic assessment;
- Identification of cost benefit for development scenarios;
- Data required for economic assessment;
- Work programme

Purpose of Economic Assessment

- Estimate economic benefits and costs of proposed interventions for each BDP development scenarios;
- Assess whether the proposed investments will generate adequate incremental net benefits per annum;
- Evaluate impact on economic growth and employment within the LMB economy;
- Determine the distribution of economic benefits and costs between riparian countries.

Key Economic Indicators

Specific development objectives	Key economic indicator	Unit
Increase hydropower production	Incremental installed capacity Incremental power generated Incremental net economic value of hydropower	MW GWh/year US$ million
Increase irrigated agricultural production	Incremental irrigated area Incremental crop production Incremental net economic value from agriculture	'000 ha '000 ton US$ million
Improved navigation	Incremental navigable days by class Incremental net economic value of river transport	'000 boat-days US$ million
Decrease damage and losses due to floods	Maximum flood water reduction Average area flooded annually > max 0.5m depth Incremental net economic value of flood mitigation	m '000 ha US$ million
Increase fisheries production and maintain productivity of capture fisheries	Incremental annual capture fish catch Incremental annual aquaculture production Incremental net economic value of fisheries	'000 ton '000 ton US$ million

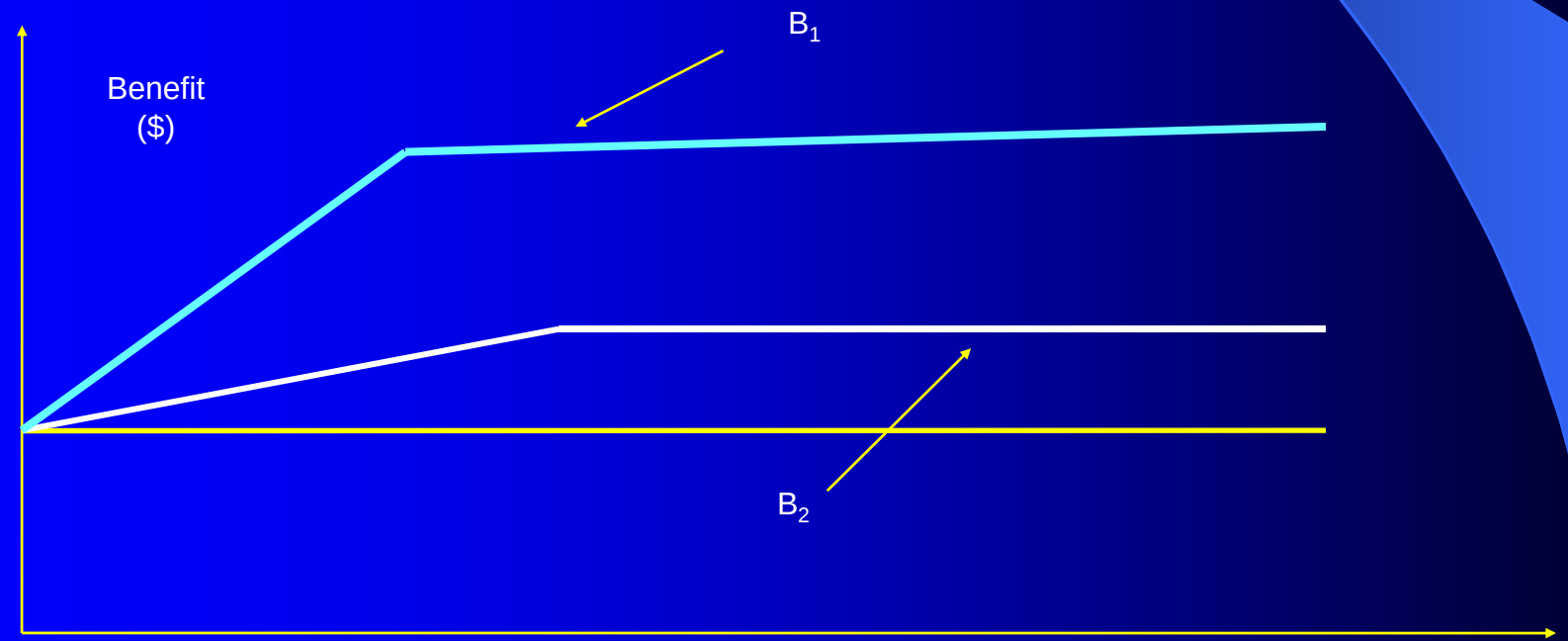
Key Environmental and Social Indicators

Specific development objectives	Key environmental and social indicator	Unit
Maintain wetland productivity and ecosystem services	Incremental wetlands with required depth & duration Incremental net economic value of wetland habitats	'000 ha US$ million
Manage saline intrusion in the Mekong Delta	Area in Mekong Delta within threshold of salinity levels Incremental net economic value of area within threshold	'000 ha US$ million
Minimise channel effects on bank erosion	Incremental area at risk from erosion Net economic value of land and assets at risk	'000 ha US$ million
Conservation of biodiversity	Incremental area of suitable habitats Incremental net economic value of habitats	'000 ha US$ million
Increased employment in water related sectors	Incremental number of people engaged in agriculture, fisheries and water related service industries	'000
Ensure all LMB countries benefit from development of water resources	Aggregate incremental net economic benefits by LMB country	US$ million

General Approach to Economic Assessment

- **Conventional analytical methods will be applied using BDP data sets (hydropower/irrigation database) and results of others assessments;**

- **Incremental (or marginal) approach contrasting "FUTURE WITH" and "FUTURE WITHOUT" development situations for each BDP scenario;**



General Approach to Economic Assessment

For each development scenario:

- **Net Present Value (NPV) of annual incremental net benefits estimated by sector within LMB economy to reflect contribution to economic growth;**
- **Sensitivity analysis to assess future uncertainties with respect to expected benefits, cost estimates and social/environmental losses;**
- **Distribution of incremental net economic benefits between LMB countries as key indicator of achieving equitable distribution of benefits from water resource developments;**
- **Benefit sharing mechanisms and compensatory funding to mitigate adverse social and environmental impacts;**
- **Employment impact: number of jobs/livelihoods created and lost due to interventions under each development scenario.**

General Approach to Economic Assessment

Economic Valuation

- Opportunity cost approach for resources with alternative uses (e.g. land, labour and capital) and for products with direct use (e.g. energy, crops and fish);
- Financial prices converted to economic prices to reflect their opportunity cost using border prices and economic conversion factors to remove transfer payments (e.g. taxes) and distortions in exchange rates;
- For environmental benefits and losses, Total Economic Valuation (TEV) framework will be used to estimate direct, indirect, option and non-use values.

Identification of Cost-Benefit for the Scenarios

Economic Benefits	Economic Losses	Costs
Energy production from hydropower development	Reduced capture fisheries production	Capital and recurrent costs
Increased crop production from new irrigated area.	Reduced crop production due to salinity intrusion	Resettlement costs
Reduced flood damages	Loss of land due to river bank erosion	Environmental mitigation costs
Enhanced navigation and river transport	Decline in wetland areas resulting from reduction in flooding	
Increased fish production from reservoirs	Reduced other benefits of flooding	

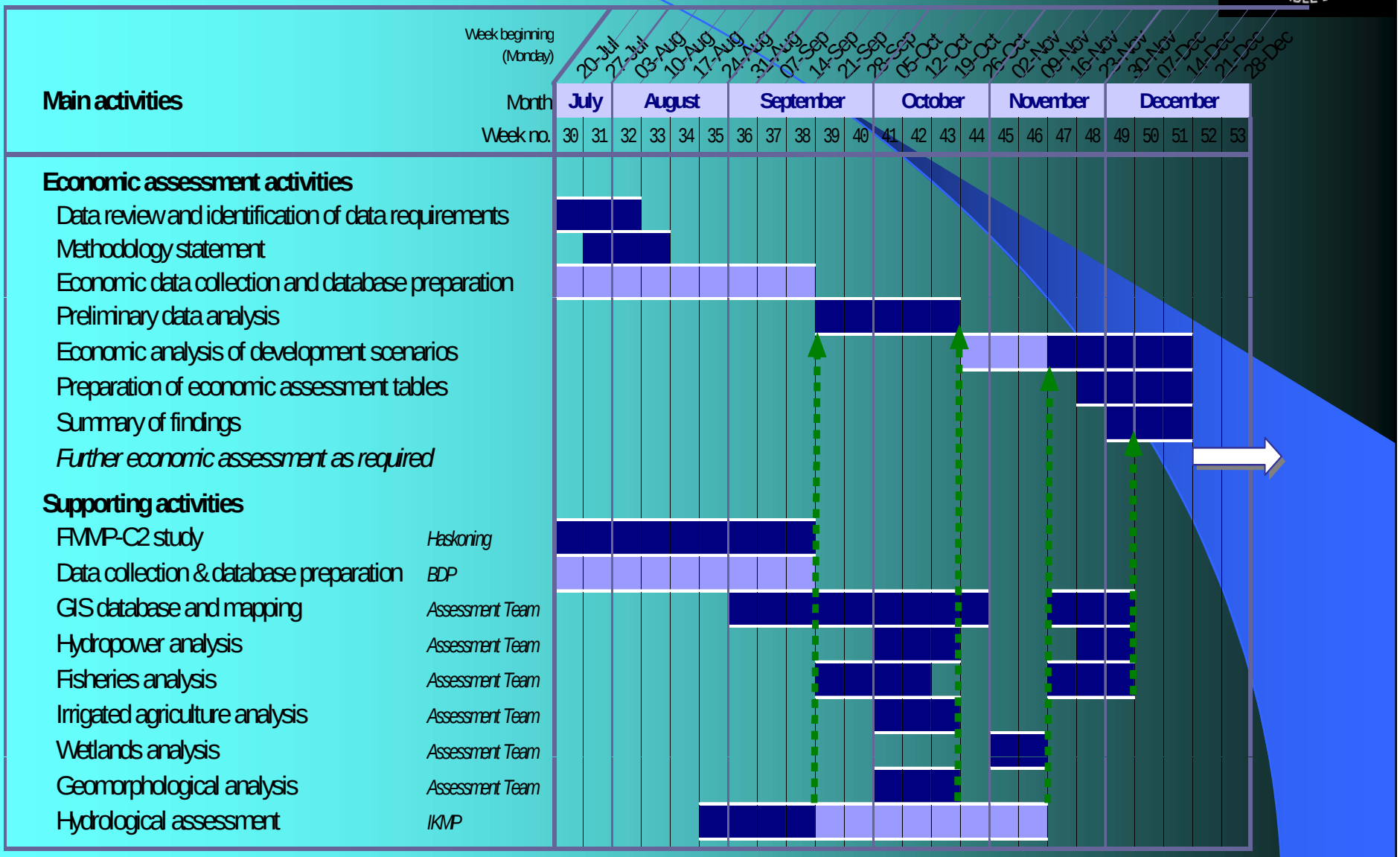
Data Required for Economic Assessment

Sector/Topic	Main Data Sources	Comment
Hydropower	BDP hydro-power database and hydropower sector review	Available (under review by Hydropower Specialist)
Irrigated Agriculture	BDP irrigation database District level statistics Project reports	Available (under review by Irrigation Agronomist) Price data available Further crop data being gathered
Flood Mitigation	FMMP- C2 (Mekong Delta) Hydrological assessment	Data available in earlier C2 reports. Awaiting final report.
Fisheries	Fisheries programme Fisheries Specialist	Fisheries data being assembled Further price data being gathered

Data Required for Economic Assessment

Sector/Topic	Main Data Sources	Comment
Navigation	Navigation programme Govt statistics	To be discussed with NP following hydrological analysis
Wetlands	Environmental Specialists Environment Programme	Results of environmental assessment Wetland values available from EP (to be reviewed)
Saline Intrusion	Hydrological assessment	Results of hydrological assessment Valuation by Economists
Riverbank Erosion	Geo-morphologist Environmental Specialists	Results of geo-morphological assessment Valuation by Economists

Work Programme



Thank you