Cambodia • Lao PDR • Thailand • Viet Nam
For sustainable development

Council Study: Economic Assessment

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I. Methodology and approach

1. Resource economic valuation
   → How would costs & benefits change (time & space) for the various scenarios?

2. Macro-economic assessment
   → How will GDP related indicators change?

II. Method: Resource Economics

Resource economic valuation → **Cost & benefits** of

- Crop production
- Hydropower
- Fisheries
- Wetlands
- Navigation
- Floods
- Salinity
- Erosion

Net present value (NPV) for period until 2040 = 23 years costs & benefits in today's values

II. Method: Resource Economics

Resource economic valuation → **Cost & benefits** of

- Crop production
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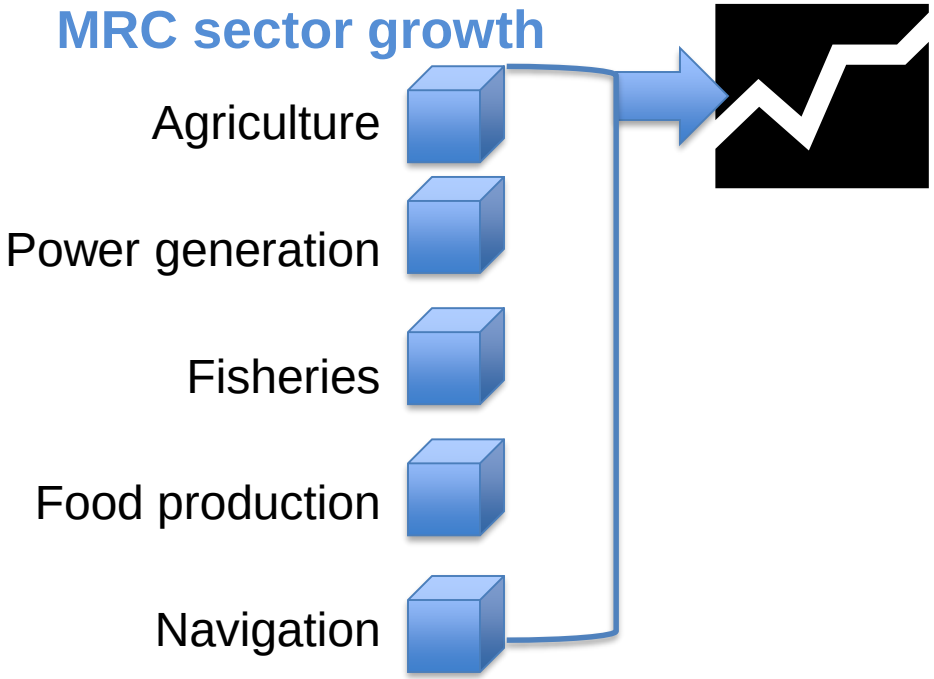
Data provided by

- Modelling team
- BioRA team
- Thematic teams
- Gaps: MERFI database

II. Method: Macro-Economics

Macro-economic assessment

- How will GDP change for each scenario?



II. Method: Macro-Economics

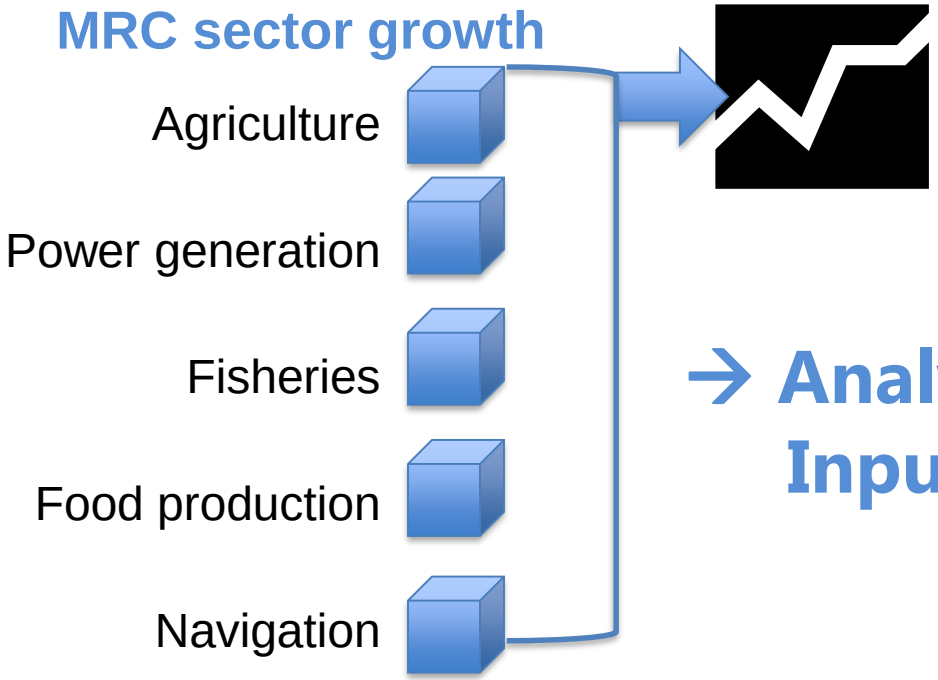
Strategic Indicators	Assessment Indicators	Unit
Economic performance of MRC sectors	▫ Economic value of irrigated agriculture: ▫ Economic value of recession agriculture ▫ Economic value of lowland rain fed agriculture ▫ Economic value of hydropower production ▫ Economic value of mainstream navigation ▫ Economic value of flood damage ▫ Economic value of drought damage ▫ Economic value of capture fisheries ▫ Economic value of reservoir fisheries ▫ Economic value of aquaculture ▫ Economic value of river bank gardens	all in US$M /year

II. Method: Macro-Economics

Strategic Indicators	Assessment Indicators	Unit
Economic performance of MRC sectors	▫ Economic value of upland forestry ▫ Economic value of flooded forests ▫ Economic value of wetlands, key habitats and conservation areas ▫ Economic value of sand mining ▫ Economic value of productive activities in areas affected by salinity ▫ Economic value of assets in locations affected by river bank erosion ▫ Economic expenditure on tourism and recreation ▫ Aggregate economic value (from above)	all in US$M /year

II. Method: Macro-Economics

- How will GDP change for each scenario?



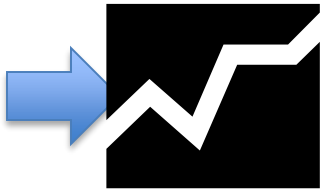
→ **Analysis based on Input-Output tables**

II. Method: Macro-Economics

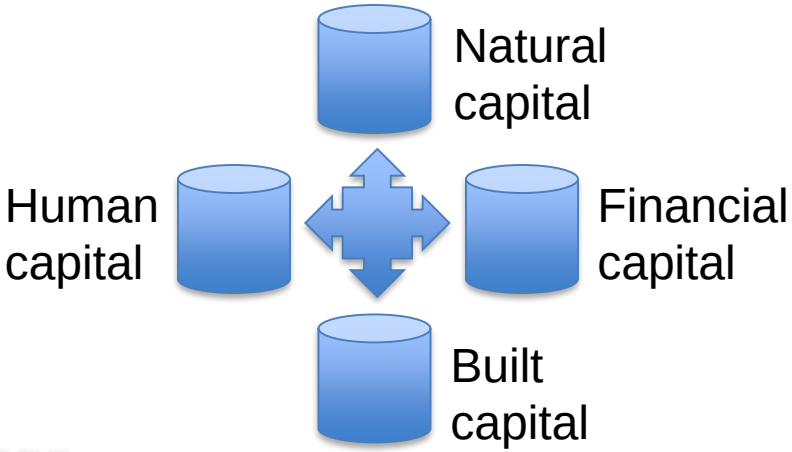
Macro-economic assessment

- How will GDP change for each scenario?

MRC sector growth

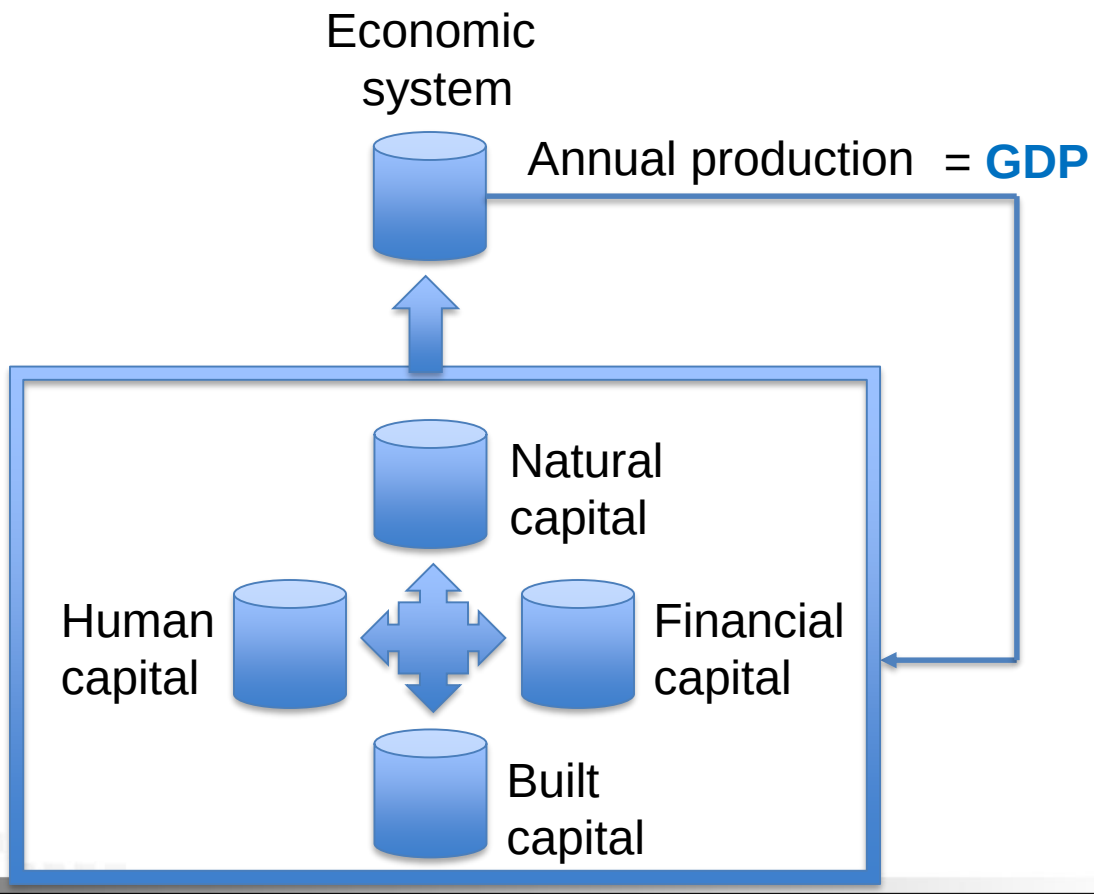


- How sustainable is GDP growth?



II. Method: Macro-Economics

→ Assessing how ***sustainable*** the economic system operates by looking at it's input related foundations



II. Method: Macro-Economics

Macro-economic assessment

In 2010 prices	Economic system ➢ **GDP**	Natural Capital ➢ **Ecosystem service**	Human Capital ➢ **Investment**	Financial Capital ➢ National debt
2003	$63.1b	$412.1b ($184b - $640b)	$0.5b	$30.2b
2010	$80.2b	$295.1b ($141b - $449b)	$0.7b	$58.9b
	+$17b	**-$117b**	**+$0.2b**	**-$28.7b**
	I. Conversion Multiplier 6.9 Sustainable Develop= 0–1 II. Dependency on Natural resources		Labour productivity	Financing costs Credit rating

III. Data needs

- Resource economics → Cost benefit Analysis
  - Mostly informed by other CS teams
  - MERFI database of over 500 previous valuations
- Macro-economics
  - Socio-economic analysis (Dr John Ward)
  - Input-Output tables (OECD & World Bank)
  - Green growth (National agencies, World Bank & IMF)

IV. Limitations

'Static' approach neglects…

- …important feedbacks
  - More growth means more investment
  - More scarcity means adaptation (i.e. crops, irrigation)
  - Effect between sectors (price and production effects)
- …important spatial effects
  - Migration as pressures changes
- …important temporal effects
  - Income changes affect the value of natural resources