



# Strategic Environmental Assessment (SEA) of the Cumulative Effects of Road Development Plans in Bukit Barisan Mountain Range, Tropical Rainforest Heritage Sumatera

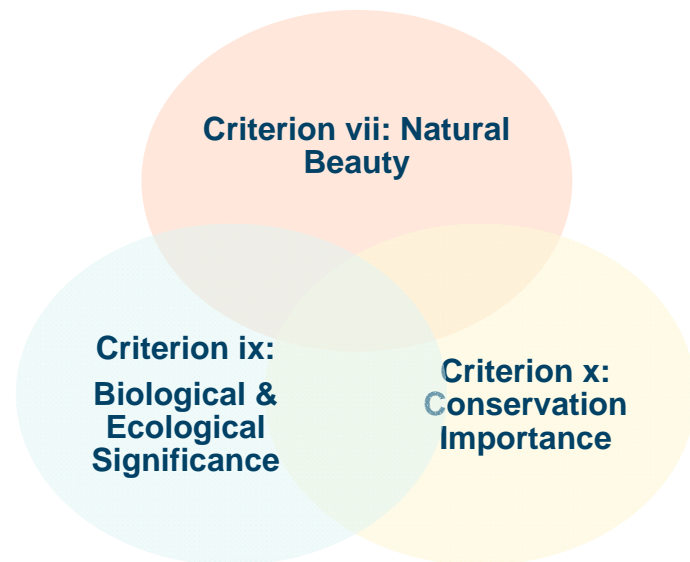
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*Bali, July 2016*



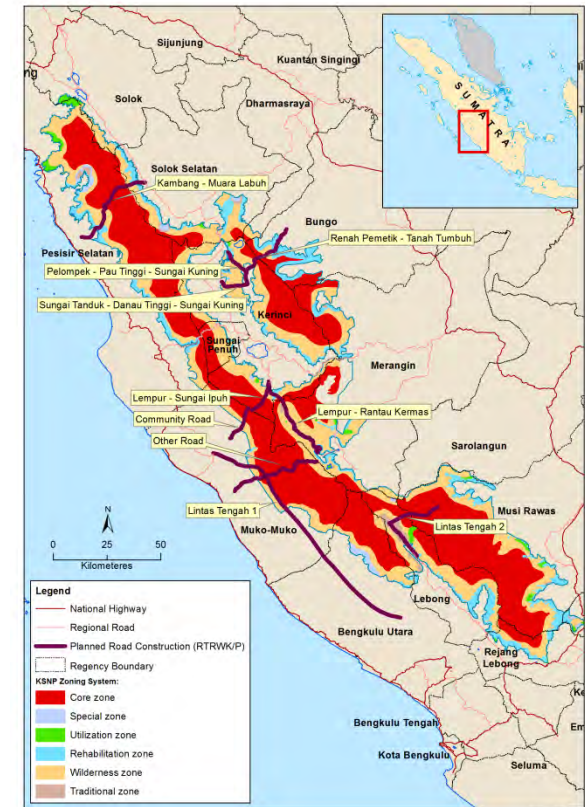
# Objective of TRHS SEA

This SEA Study is part of the 'Corrective Measures & Action Plan, which aims to identify major risks and impacts to TRHS Outstanding Universal Value (OUV) and recommend appropriate mitigation measures



## Background of the Study

- Planned / Proposed road developments, combined with other stressors, present a threat to the integrity of the site
- The TRHS is currently inscribed on the list of 'World Heritage in Danger'
- Indonesia was requested by the WHC to finalize the Desired State of Conservation (DSOCR) for the removal of TRHS from the list, i.e.:
  - draft the corrective measures, and
  - complete an Emergency Action Plan
- The SEA plays a central role in assessing / verifying the risks / impacts from Road Planning and devising necessary mitigation responses



# SEA Definition & Principles

- SEA is generally understood as a systematic & anticipatory process undertaken to analyse environmental effects of proposed plans, programmes & other strategic actions and to integrate the findings into decision-making

“..evaluation of the likely environmental, including health, effects, which comprises the determination of the scope of an environmental report and its preparation, the carrying out of public participation and consultations, and the taking into account of the environmental report and the results of the public participation and consultations in a plan or programme.”  
(UNECE SEA Protocol, Article 2 Para 6)

“A series of systematic, comprehensive and participatory analyses to ensure that sustainable development principles have been the basis and integrated into the policy, plan and programme of the development”  
(Indonesian Law No 32/2009, Article 15)

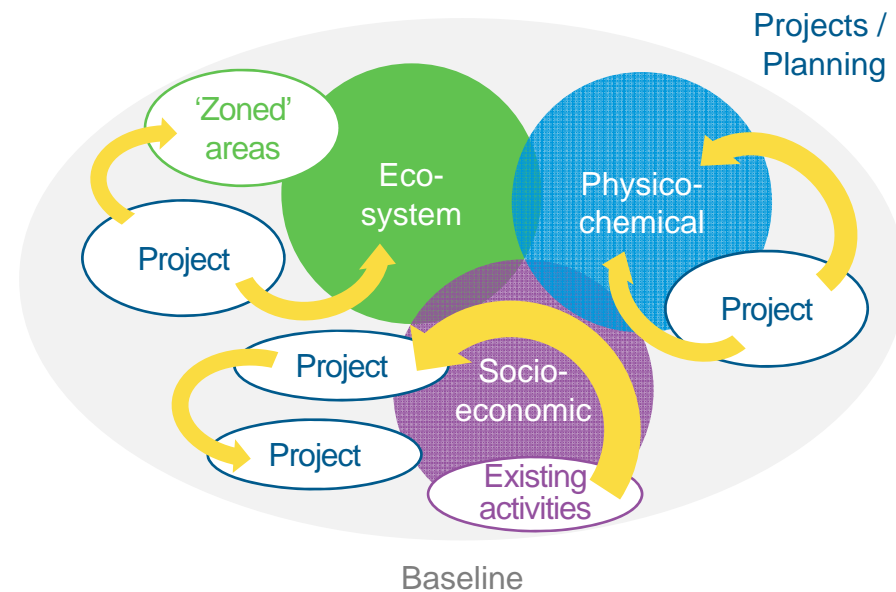
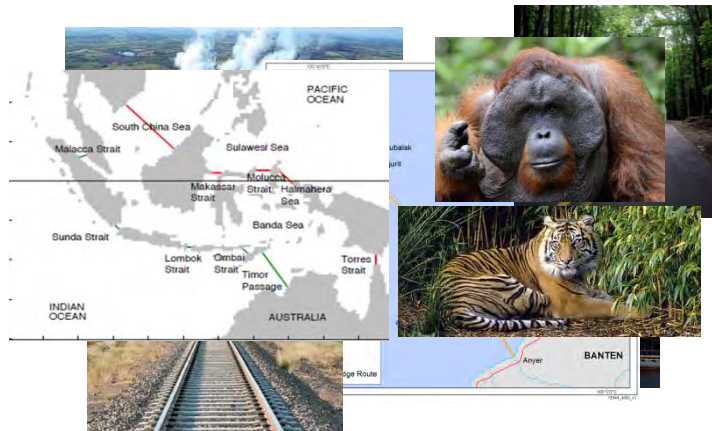
Indonesian SEA principles, e.g:

- Environmental carrying capacity and supporting capacity for development
- Likely environmental impacts predictions
- Ecosystem services performance
- Efficiency of natural resources use
- Vulnerability level and adaptation capacity to climate change
- Resilience level and biodiversity potential

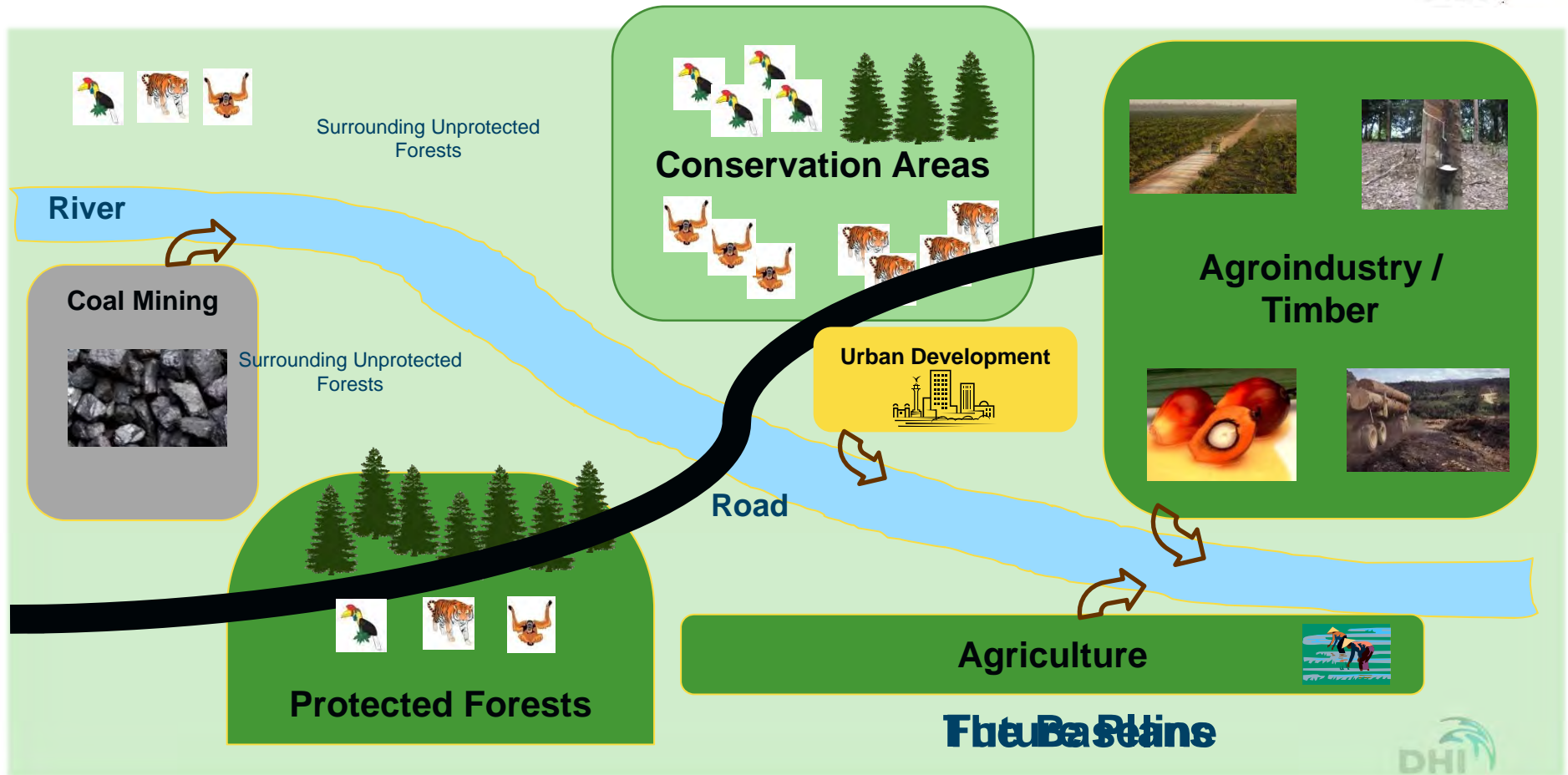
# Definition of a 'Strategic Issue' in Relation to Spatial Plans

In relation to SEA for Spatial Planning, a strategic sustainability issue is often defined in relation to:

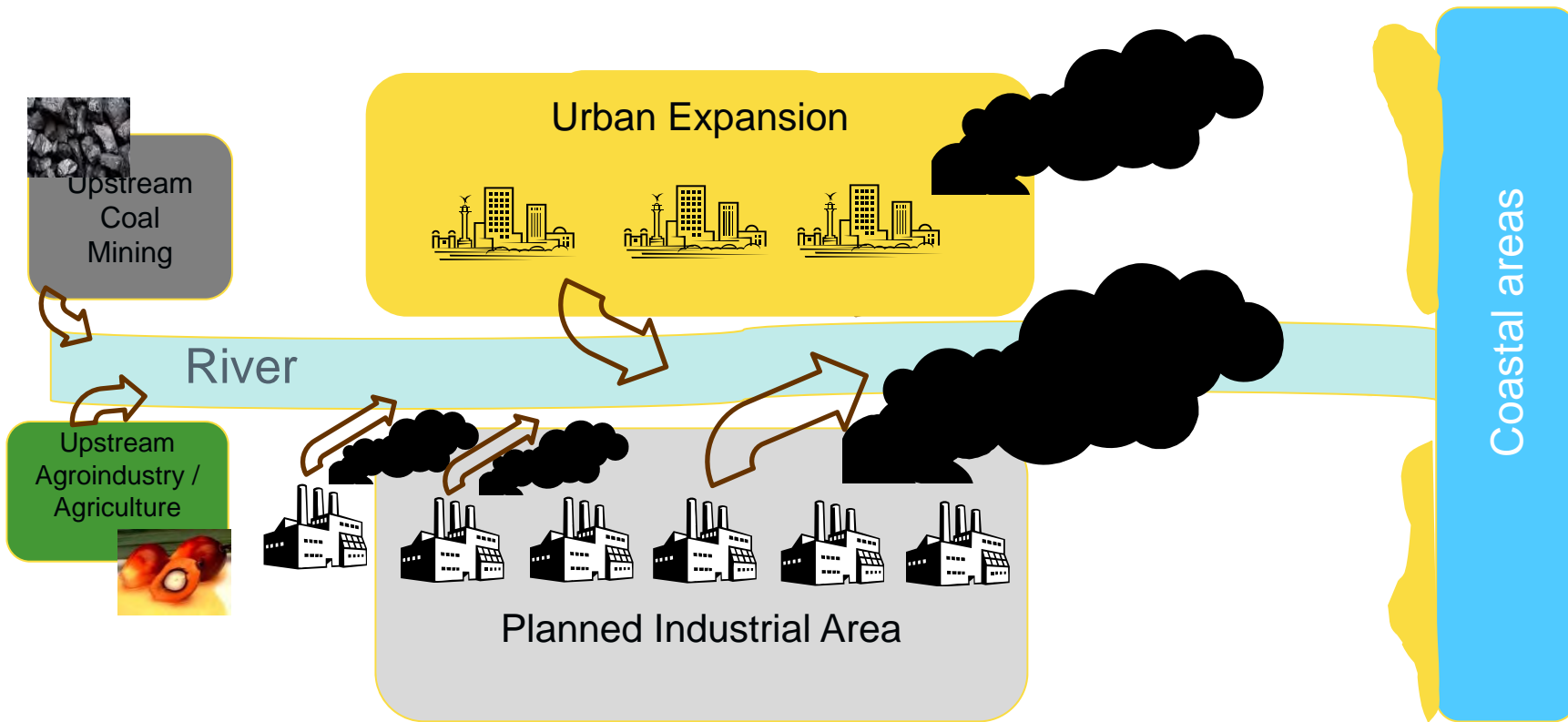
- Cumulative impacts
- Interactive impacts
- International / Regional Scale



# Example #1: 'Upstream' Strategic Issues / Deforestation

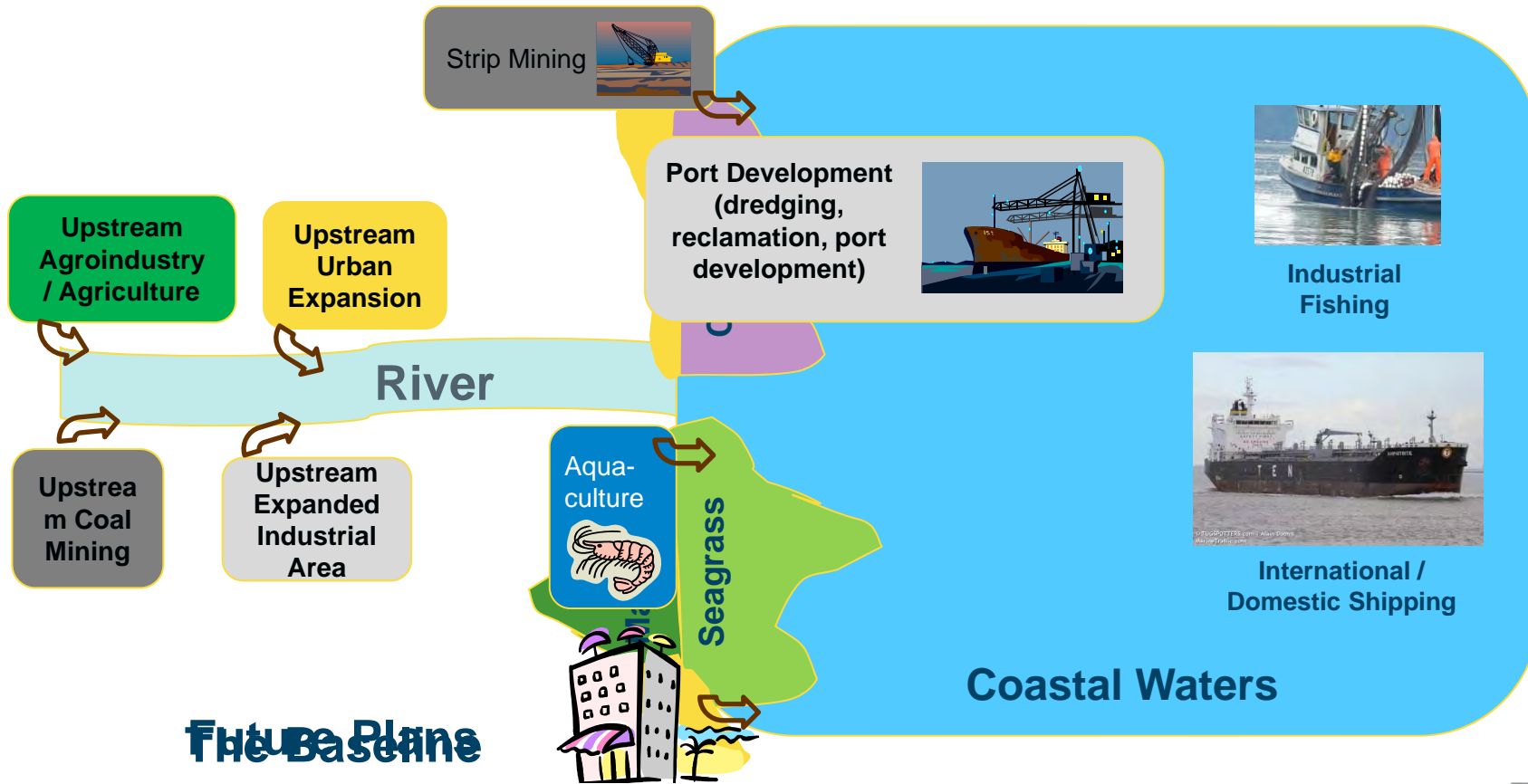


# Example #2: Cumulative Air and Water Quality Impacts



The Baseline

# Example #3: Coastal Degradation





## Approach to the TRHS SEA

- Establish a solid baseline from existing spatial data sets and secondary (non-spatial) information sources
- Identify key risks and impacts via expert scoping and use of map overlay techniques
- Verify and further definition / characterisation of the strategic impacts via:
  - Further focussed baseline analysis
  - GIS extrapolation techniques
  - ‘rapid’ or ‘ impact approximation’ techniques
  - Case study examples
  - Expert Judgement
- Develop mitigation measures: e.g. alter Road Plans or Improve management
- Biggest challenge thus far: verify road plans and obtain sufficiently detailed baseline data



# Examples of GIS Map Overlays

