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# Carbon Conservation Opportunities for Coastal Riau, Indonesia

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Asia Pacific Resources International Limited

# Coastal Riau landscape



# Paying for climate mitigation

- Climate change initiatives are receiving much attention
  - In principle - local actors are paid by global beneficiaries in return for avoiding imminent deforestation
  - Fundraising and transfer mechanisms are as yet untried
  - The carbon cycle is global with a long feedback period
  - To effect mitigation, project funding and management will need to stay in place just as long
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# Meeting mitigation challenges

- Spatial - protecting a resource in one location should not transfer pressure to resources elsewhere
  - Temporal - carbon stocks must be kept out of the atmosphere for about a century to effect climate change
  - Financial- carbon incentives must remain affordable, give good value and be socially equitable
  - Additional - society should not pay for conservation that would have happened anyway
  - Successful project design must build in evaluation (MRV) of social, environment and economic outputs
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# Who owns the landscape carbon ?

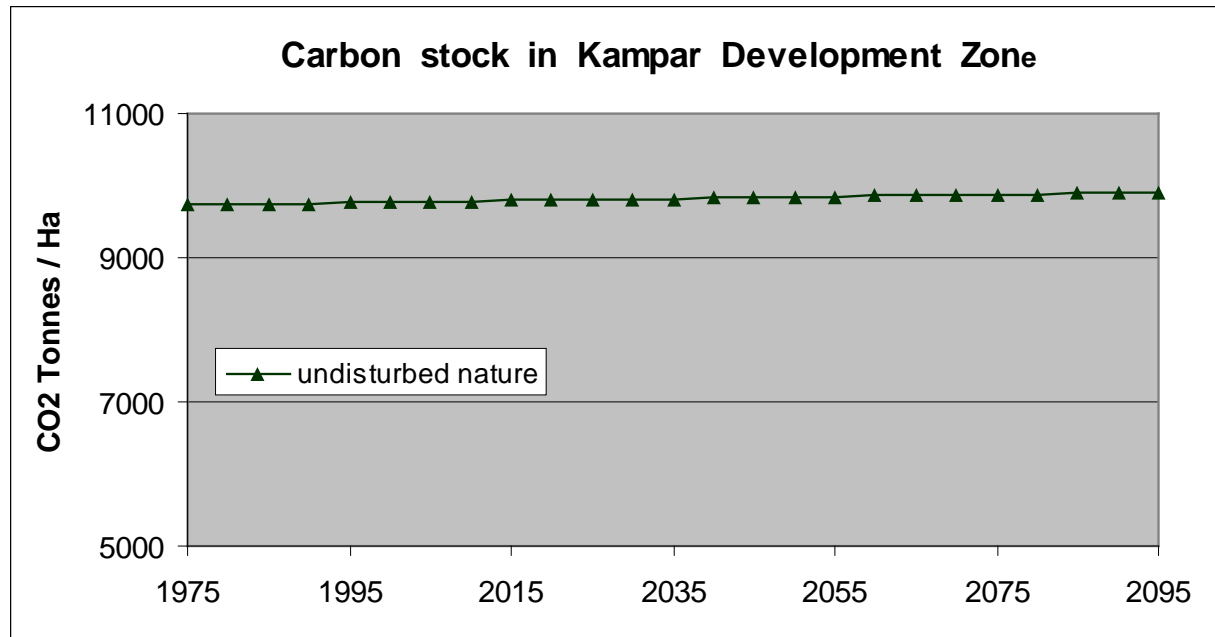
- Largely a Government zoned landscape with leases available for sustainable forest management
  - There are enclaves of conservation & community forests with overlapping concessions and land use zones
  - It is peatland: 95% of the carbon in soil, 5% in biomass
  - Retaining all of the peat soil carbon depends on retaining a functioning natural forest
  - Population growth is fueling a dynamic agricultural frontier, to slow it will require alternative income streams
  - The range of forest & land conditions, uses and pressures are producing a range of carbon scenarios ...
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# Coastal Riau landscape



# Scenario 1 'undisturbed nature'

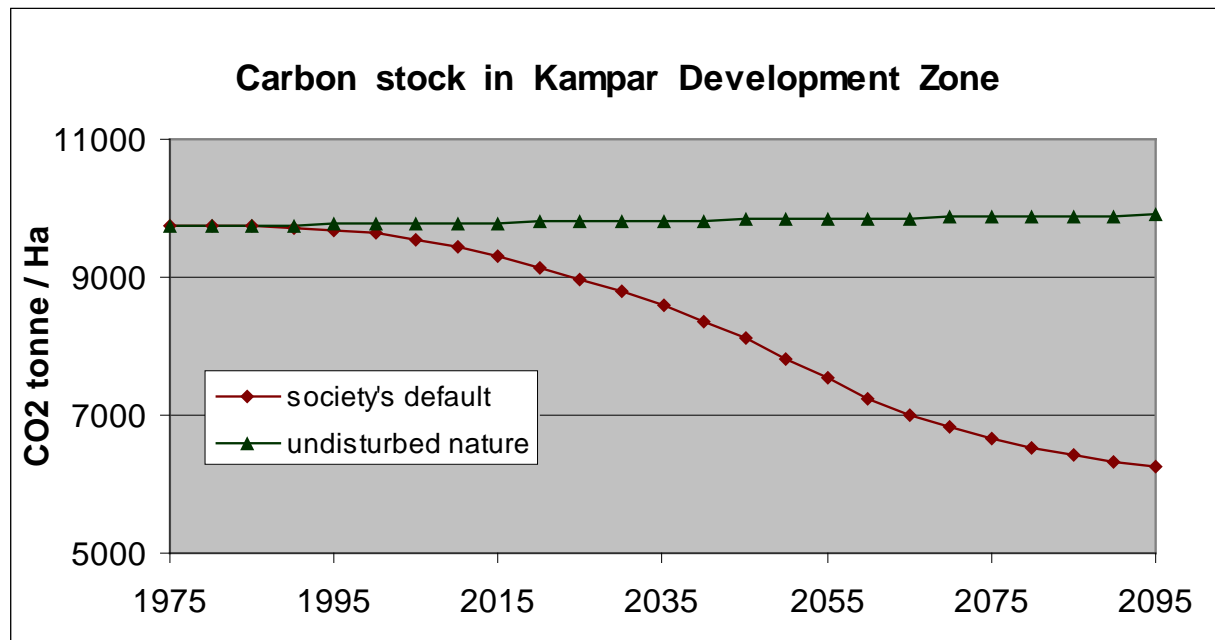
- The ideal to conserve carbon, biodiversity & ecosystems
- High value to society – but a rapidly dwindling option
- High opportunity cost to maintain in a developing country





## Scenario 2 ‘society’s default’

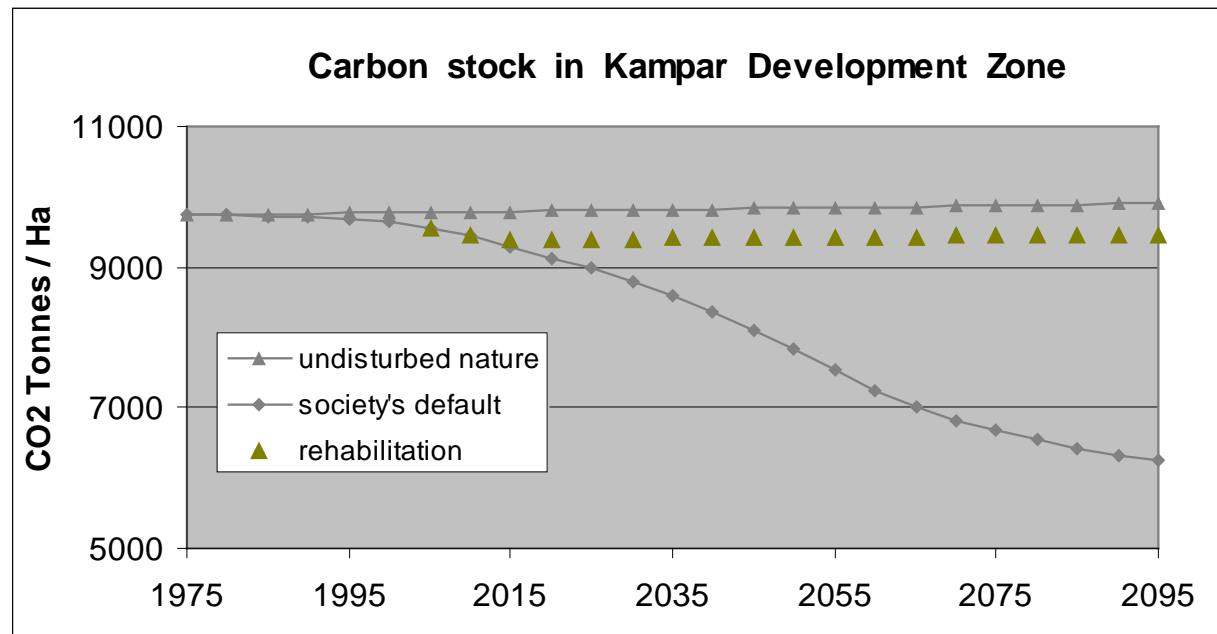
- Least optimal to conserve carbon – the least secure
- Already a widespread scenario in coastal Riau
- Frontier driven - the ordinary person’s only option





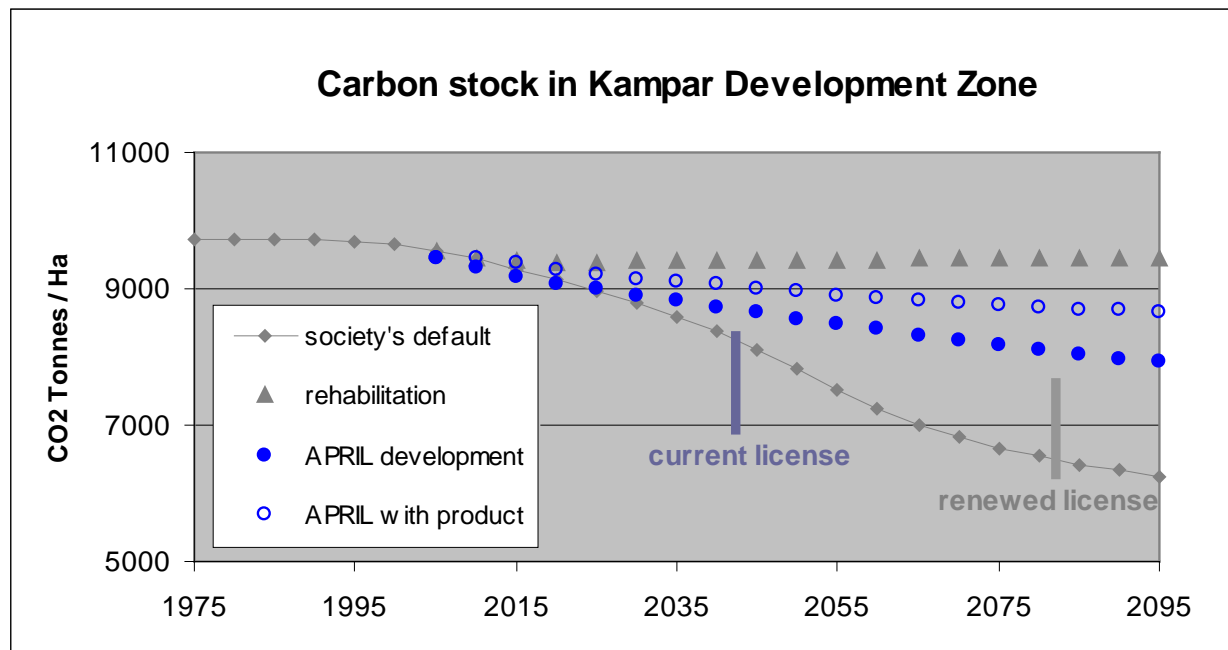
## Scenario 3 rehabilitation

- An option where recoverable forest structure remains
- Rehabilitation of deforested peatland is unproven
- High opportunity & implementation cost – select carefully



## Scenario 4 plantation /rehabilitation mix

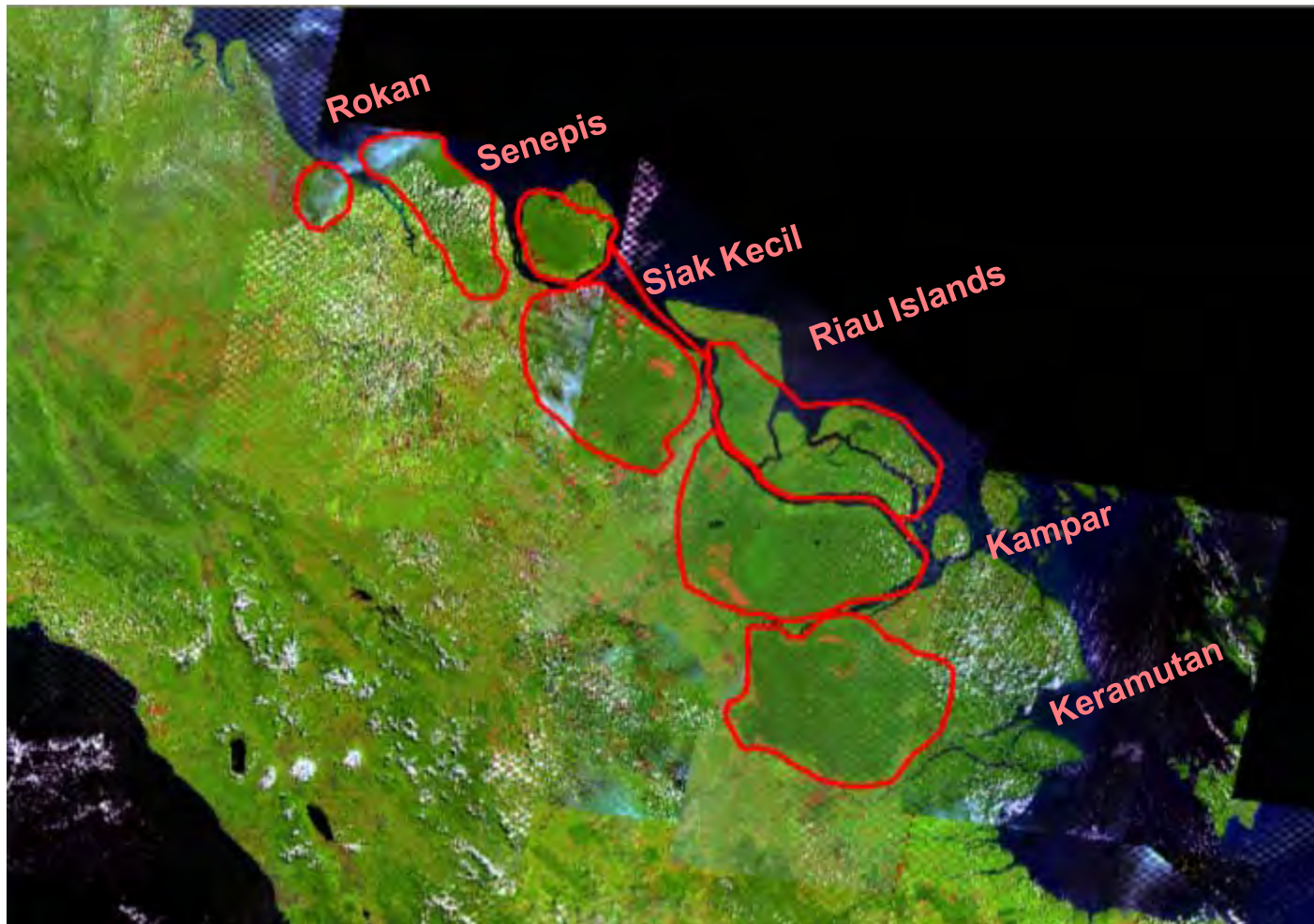
- Conservation & social outcomes are fully funded for as long as global demand for plantation products continues
- Retains 55% the carbon of fully rehabilitated landscape
- Additional carbon exported in product - creates jobs, tax



# Conservation opportunities compared

- Society Default: big scale x high carbon cost: mitigation offers best cost : benefit ratio, but complex to implement - primarily role for Govt.
  - Plantation: offers affordable carbon where benefit from product is high & nature is going fast - business role
  - Rehabilitation: affordable where carbon benefit is large & opportunity cost is low - role for carbon investor ?
  - Undisturbed Nature: existing national parks / reserves are under stress - role for Govt. to Govt. funding ?
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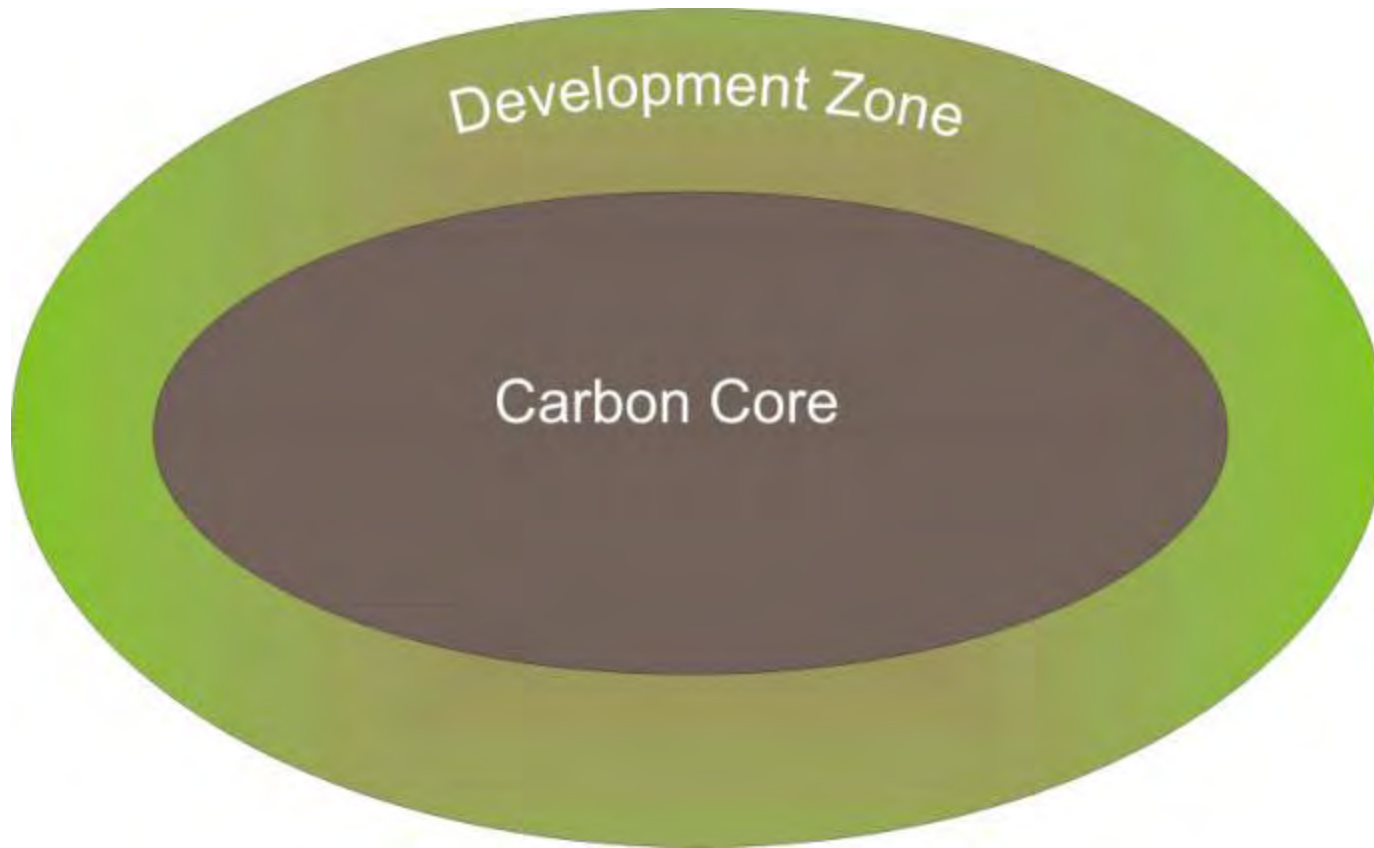
# Coastal Riau landscape



# Conservation initiatives on landscape scale

- Rokan Hilir: agriculture & plantation mix
  - Senepis Peninsula: wildlife reserve comprised of nature reserve, production natural forest and plantation zones
  - Riau Islands: plantation / conservation mix, plus 1 nature reserve
  - Giam Siak Kecil: Biosphere Reserve core surrounded by plantation and agriculture / community zones
  - Keramutan: National Govt. nature reserve with plantation rehab mix buffers and extensive agriculture zones
  - Kampar Peninsula: plantation / rehabilitation mix zoned around a core of production forest leases (and small reserves), discussion of land use change to facilitate carbon conservation
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# Common theme in landscape conservation



The integrated approach

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# Priorities for effective mitigation projects

- A range of carbon scenarios & promising initiatives; all are unproven and will remain so for some time
  - Alleviate poverty & stabilize agriculture is and probably will long remain a priority
  - Careful selection & design of initiative is essential to deliver affordable benefits
  - Finance mechanism security must be min 40 years
  - Secure professional management inputs to deliver conservation benefits & good land stewardship
  - Partnership with National Govt. is essential given the immensely long payback period & national interests
  - Social, conservation & economic benefits must Monitored, Recorded, Verified
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# Is the landscape gaining or losing carbon ?

- Verifying the carbon trend takes time & expertise; uncertainty remains
- Biomass - monitor change in live vegetation over sufficient interval
- Soil - monitor snapshots of soil CO<sub>2</sub> flux
  - analyze / interpret peat soil surface
  - monitor changes in soil volume & density - over sufficient interval



# Successful carbon investment involves:

- Success long term at conserving project's carbon
  - Against baseline track record of declining carbon
  - Positive long term trend in market price of carbon
  - Secure finance & management arrangements
  - Stable socio-political environment
  - At present there is a strong case for the integrated approach to carbon conservation in Riau
  - A project mix of conservation, rehab' & development
  - A funding mix: international, national and local Govt., plantation big business, carbon investor, small holder cooperatives, NGO
  - National Government leadership will be crucial
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# Conclusions

- At present there is a strong case for the integrated approach to carbon conservation in Riau
- Mix of conservation, rehab' and development initiatives
- Diverse funding: international, national & local Govt., plantation big business, carbon investor, small holder cooperatives, NGO
- National Government leadership & policy will be crucial

thank you

