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Certification Module for Low Indirect Impact Biofuels

IEA Bioenergy workshop Land use effects of bioenergy

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Indirect impact challenges

- Indirect impacts are one of the key (remaining) challenges of large scale sustainable bioenergy application
- Most of current work on indirect impacts focuses on 'sizing the problem' – assessing the GHG-emissions associated with indirect impacts of biofuels
- Less is currently done on how biofuels can be produced with a minimum risk of indirect impacts

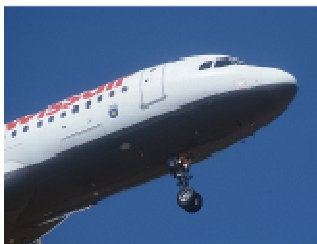


The importance of bioenergy

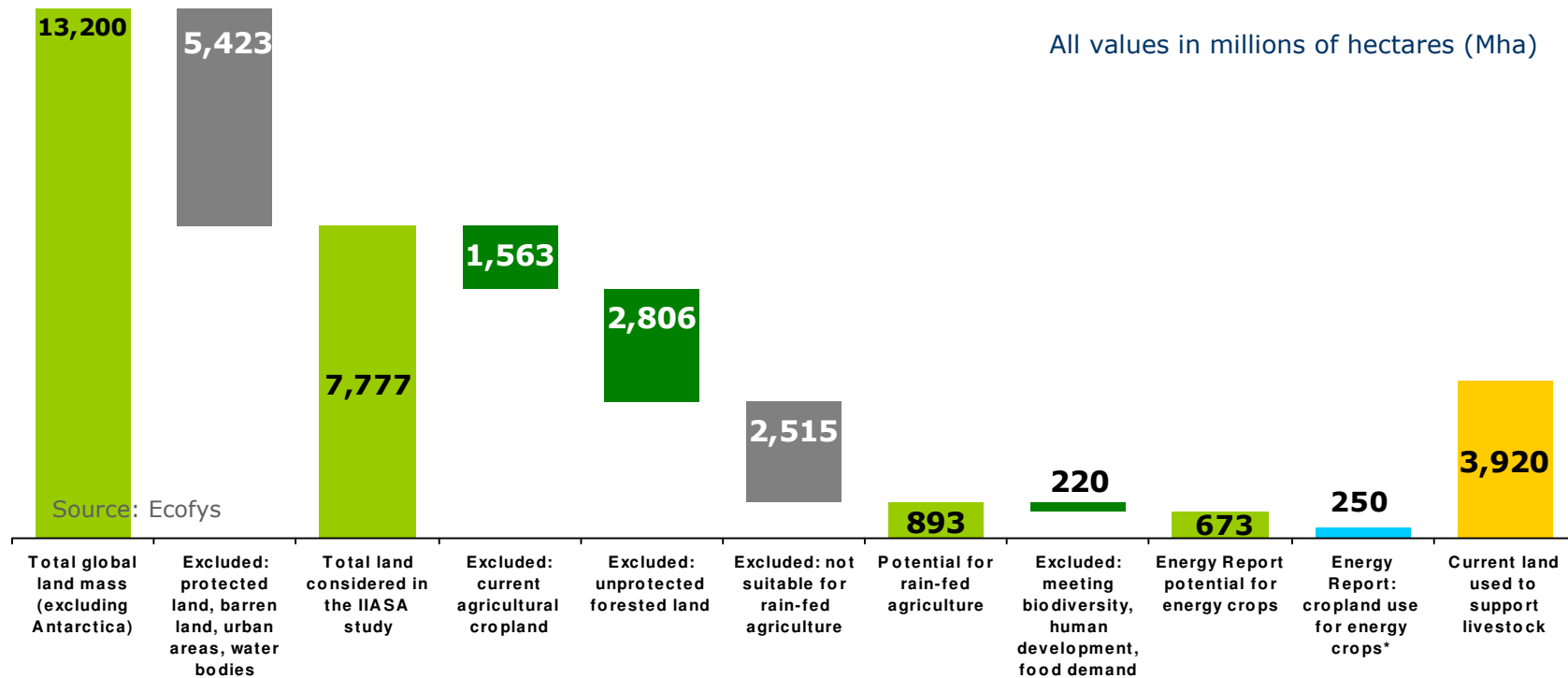
- Energy efficiency comes first
- Role of bioenergy in the renewables mix?
 - Plenty of alternatives for electricity



- But for several sectors few alternatives exist and these sectors are BIG

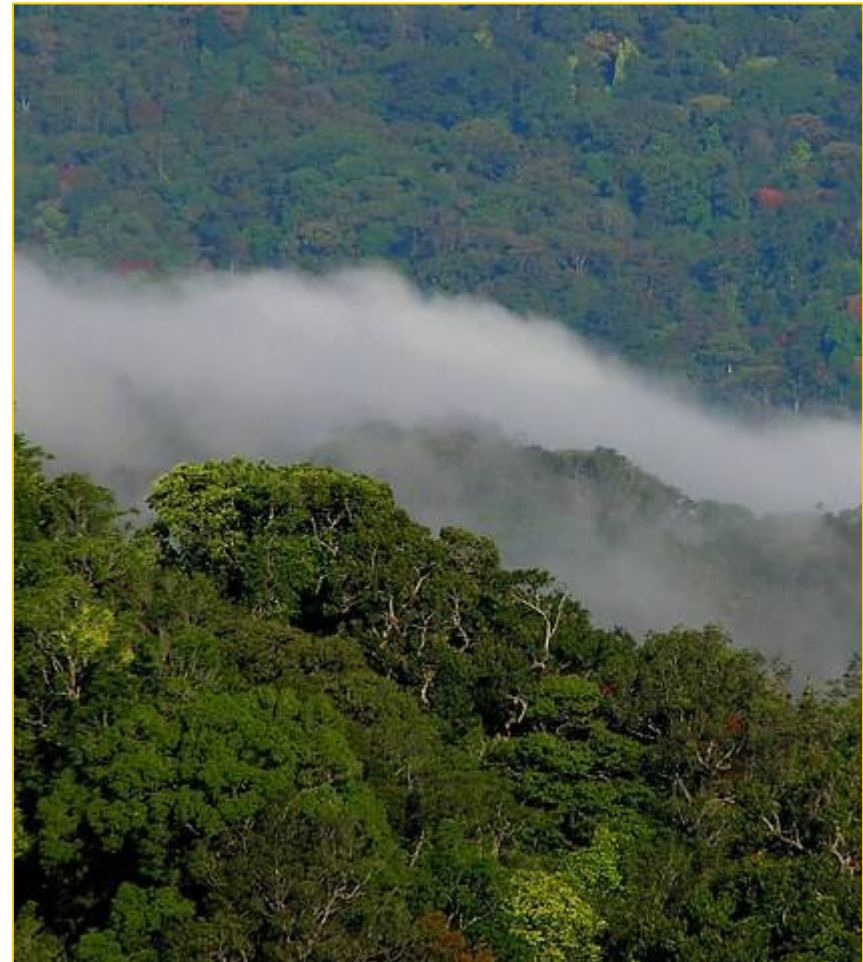


While a large sustainable potential for energy crops exist, the challenge is to steer energy crop expansion onto the 'sustainable' areas



Therefore, current policies focus on addressing unwanted direct LUC

- The EU RED excludes biofuels grown on land with high carbon stocks or biodiversity
- But what about *indirect land use change*.....



How can we reduce the risk of unwanted indirect effects?

- Global-level approaches (long term)
 - Prevent unwanted “direct” LUC, globally and for all sectors
 - Reduce pressure on land from the agricultural sector as a whole by increasing yields, supply chain efficiencies and/or a reduction in consumption
- Producer-level approaches (short term)
 - Expand production at the project level in ways that minimise the risk of unwanted indirect effects
 - Positive indirect effects: spill over of good agri practices for biofuels to other sectors

How can the risk of unwanted indirect effects be mitigated at the producer level?

To prevent unwanted indirect effects one must prevent displacement of existing production

- Land-based biofuels
 - Expanding production on “unused” land with low biodiversity and carbon stocks
 - Expanding production by increasing productivity of existing feedstock production systems in sustainable manners
 - Expanding production by increasing productivity of non-bioenergy systems = integration
 - (Co-products)
- Non-land based biofuels
 - Unused residues
 - (Aquatic biomass)

What the market needs

- Bioenergy is a policy-influenced market
- Due to ILUC considerable doubt about the actual GHG savings
- If unaddressed, this can impact the future of markets
- Therefore, the market needs to credibly demonstrate that it can deliver sustainable biofuels without unwanted indirect effects

What policy makers need

- Policy makers need the means to demonstrate their policies realise significant GHG savings, including indirect effects
- Distinguish biofuels produced with a low risk of indirect effects

-> Certification module for Low Indirect Impacts of Biofuels

Certification Module for Low Indirect Impact Biofuels

Partners



Project goal

Develop a methodology to cost-effectively and credibly certify biofuels with a low risk of unwanted indirect effects

What the project does

- Develop field testing version of certification module
- Test certification module in 4 pilots
- Improve certification module
- Good practice guidelines for project developers for each solution type

Overview pilots

I. Sugarcane – cattle integration

- Brazil
- USP



II. Palm oil yield increase

- Indonesia
- WUR + WWF-indo



III. Jatropha on 'unused' land

- Mozambique
- WWF-mozambique



IV. Used Cooking Oil

- South Africa
- RSB + Biogreen



Central ILUC principle in the certification module

- Displacement of other production is what can cause indirect impacts
- Therefore, preventing displacement by **additional energy crop production** is central to avoiding unwanted indirect effects
 - “Unused land”
 - Yield increase
 - Integration models
 - Residues
 -others may be added (suggestions welcome!)

Verifying additional production - Key challenge for effectiveness and transaction costs

- If projects are to minimise risk of unwanted indirect effects, they must be additional, or displacement still occurs
- But,
 - Demonstrating additionality in carbon markets has very high transaction costs
 - There will never be 100% certainty on the counterfactual
- Therefore, the LIIB certification module works with standardized approaches that best fit the solution type
 - No need for expensive additionality test by project developer, but standard “acceptance requirements”
 - Methodology for baseline is provided to project developer
 - Certification burden currently being tested, expected to not be higher than today’s voluntary schemes

Example: Unused land

- Project acceptance
 - (RED criteria)
 - Not used for provisioning services in last 5 years
 - Rotational systems
 - Limited displacement allowed if sustainable alternatives implemented
 - Excess potential of unused agricultural land
 - Areas with growing potential
 - Areas in which unused potential >10 times larger than project area
- Baseline
 - Zero
- Eligible for certification
 - All production



In conclusion

- Bioenergy key for decarbonising the economy
 - While large sustainable bioenergy potential exists, the challenge is to ensure the 'sustainable' options are realised
- Low indirect impacts must be demonstrated to ensure future markets and growth opportunities
- Long term solution is sustainable land use by all sectors
- In short term, producer models can provide solution
- The right policies could create a large demand for such good agri practices -> positive spill-over effect

Further reading

- Field-testing version Certification Module for Low Indirect Impact Biofuels
 - <http://rsb.epfl.ch/files/content/sites/rsb2/files/Biofuels/Working%20Groups/II%20EG/Low%20Indirect%20Impact%20Biofuels%20Certification%20Module%20-%20Field%20testing%20version%20-%20July%202011.pdf>
- Responsible Cultivation Areas - Identification and certification of feedstock production with a low risk of indirect effects
 - http://www.ecofys.nl/com/publications/Responsible_Cultivation_Areas.htm

Thank you - Remaining questions



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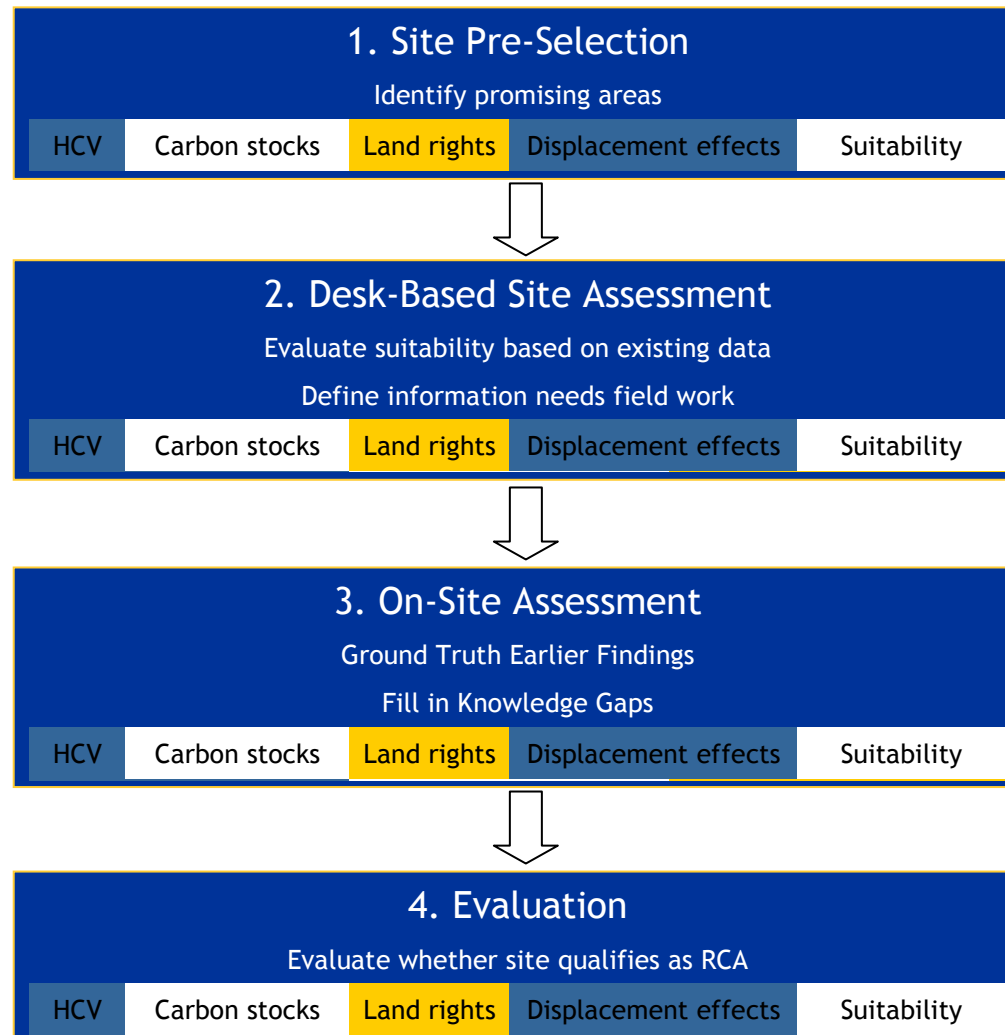
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APPENDIX

Responsible Cultivation Area (RCA) Methodology

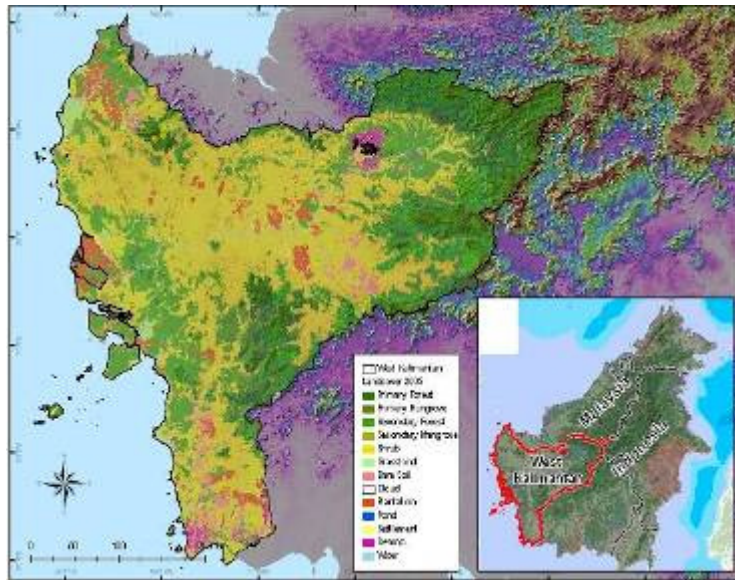
- Identification module

Four-step process

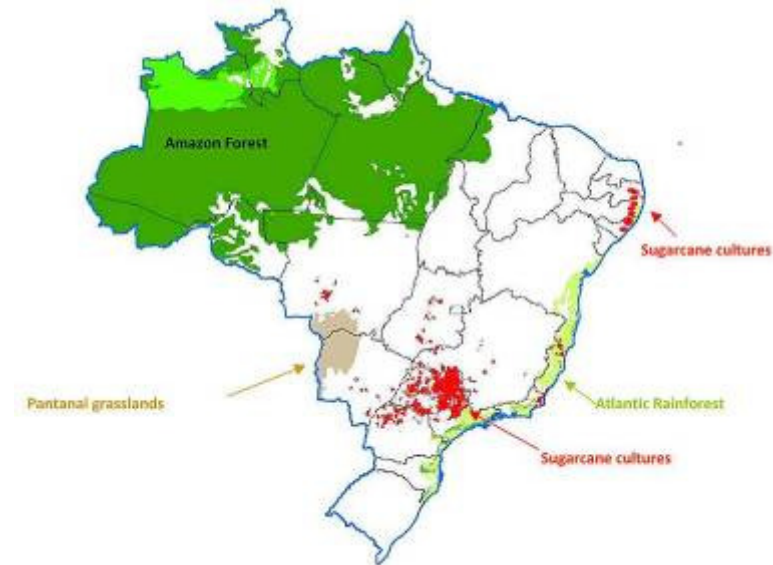


Pilot studies

- West Kalimantan
 - Focus on “land without provisioning services”



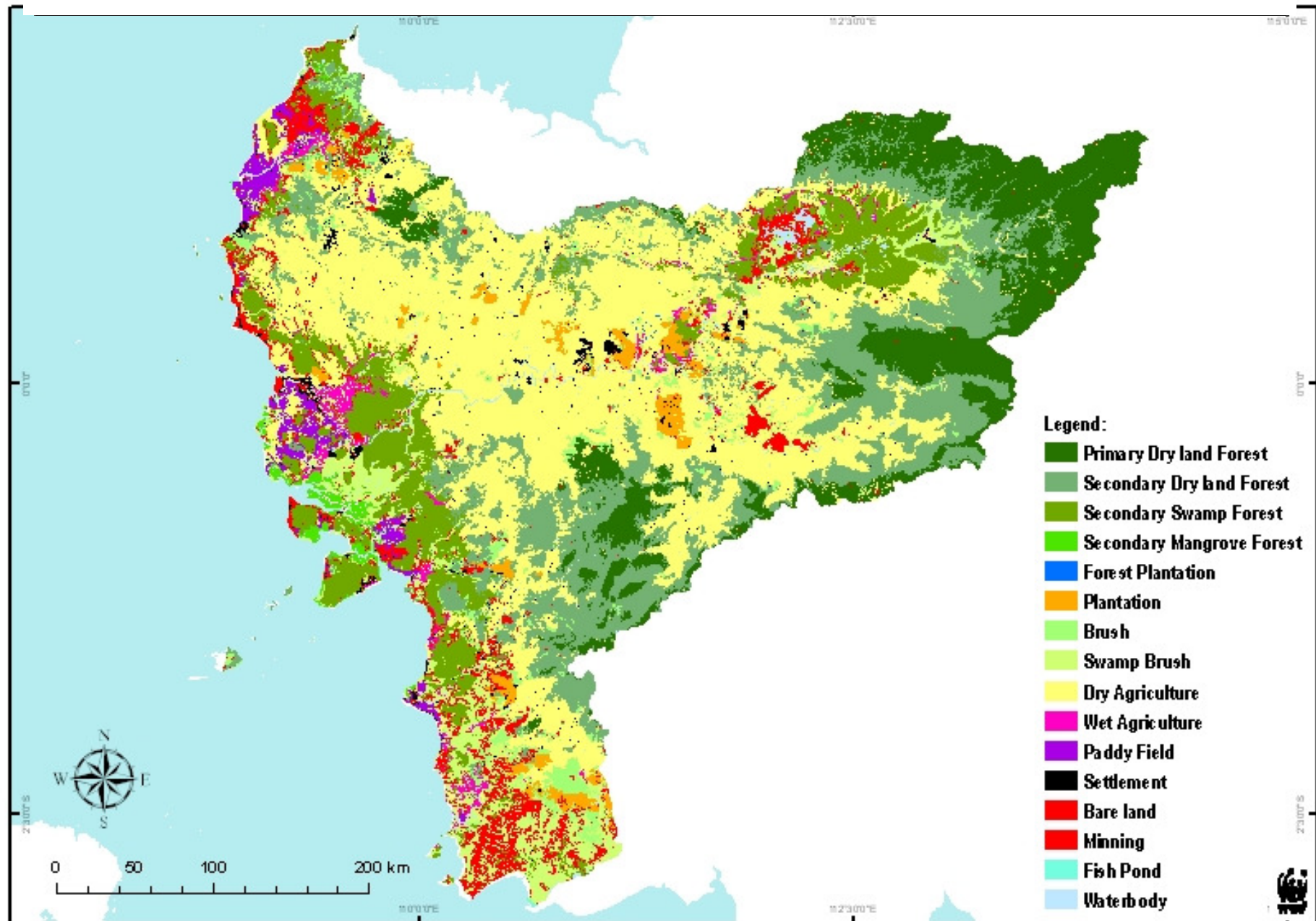
- Brazil
 - Focus on “sustainable increase of land productivity”



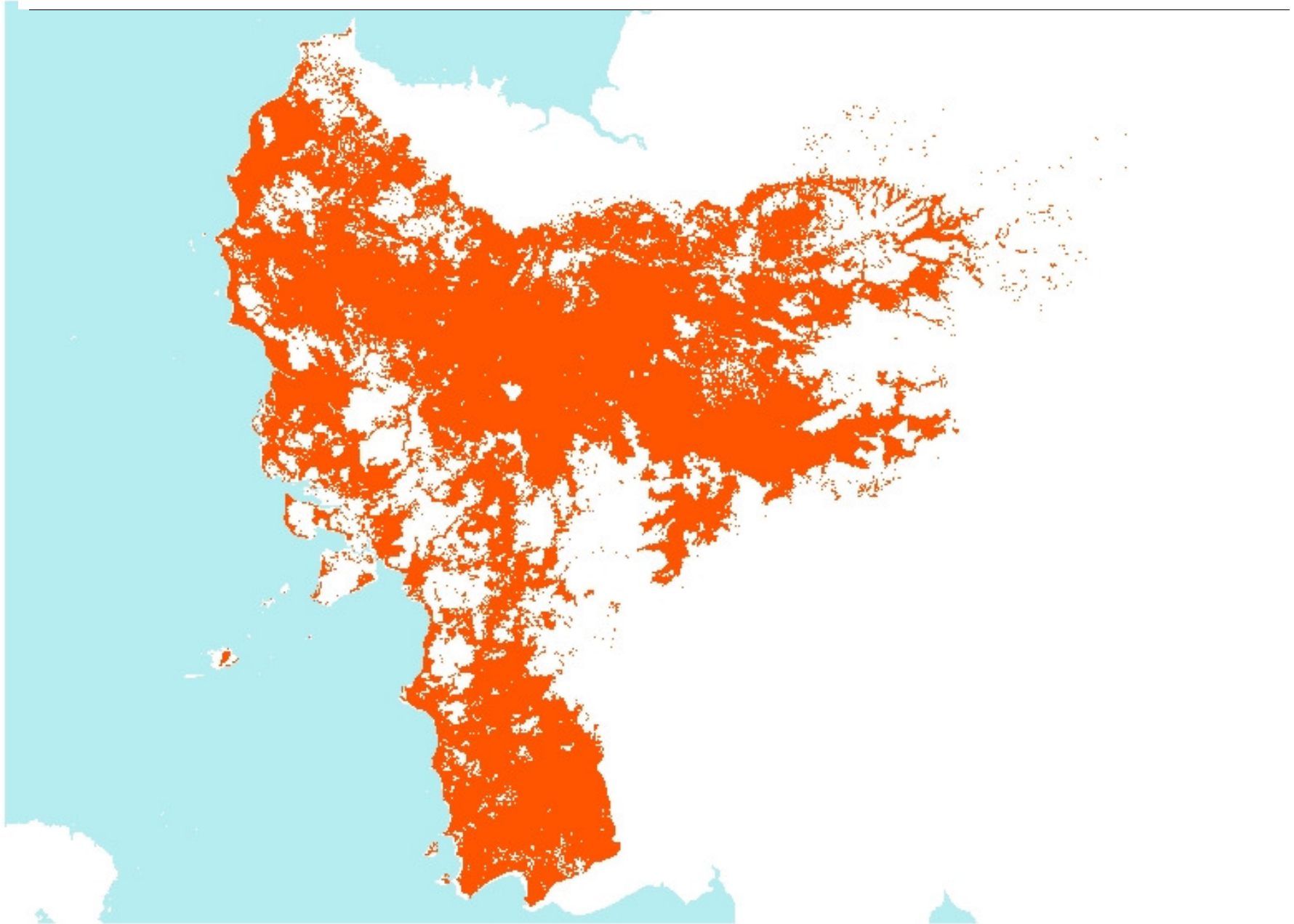
Pilot results: Kalimantan

- With kind permission of WWF Indonesia

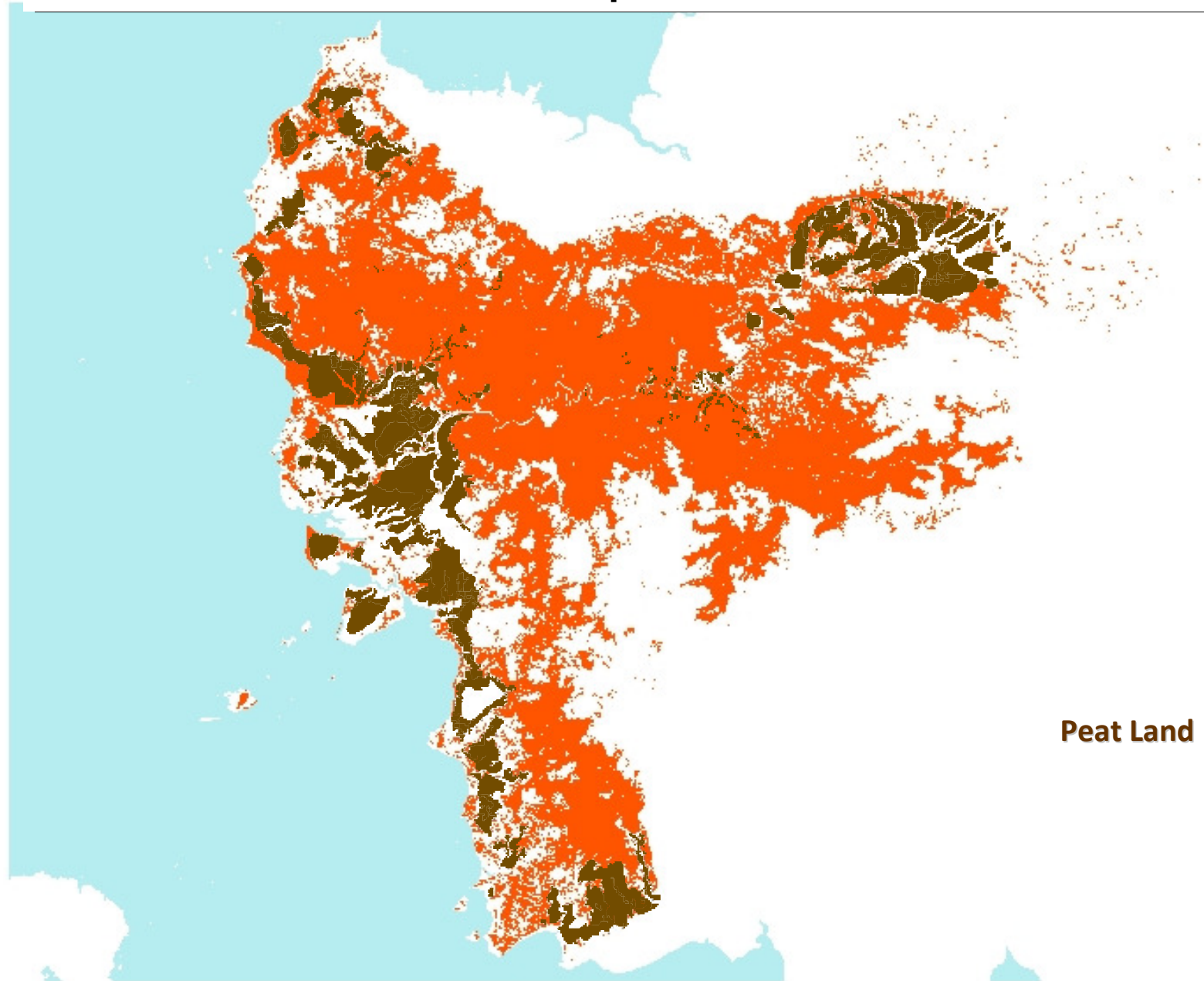
Land cover of West Kalimantan



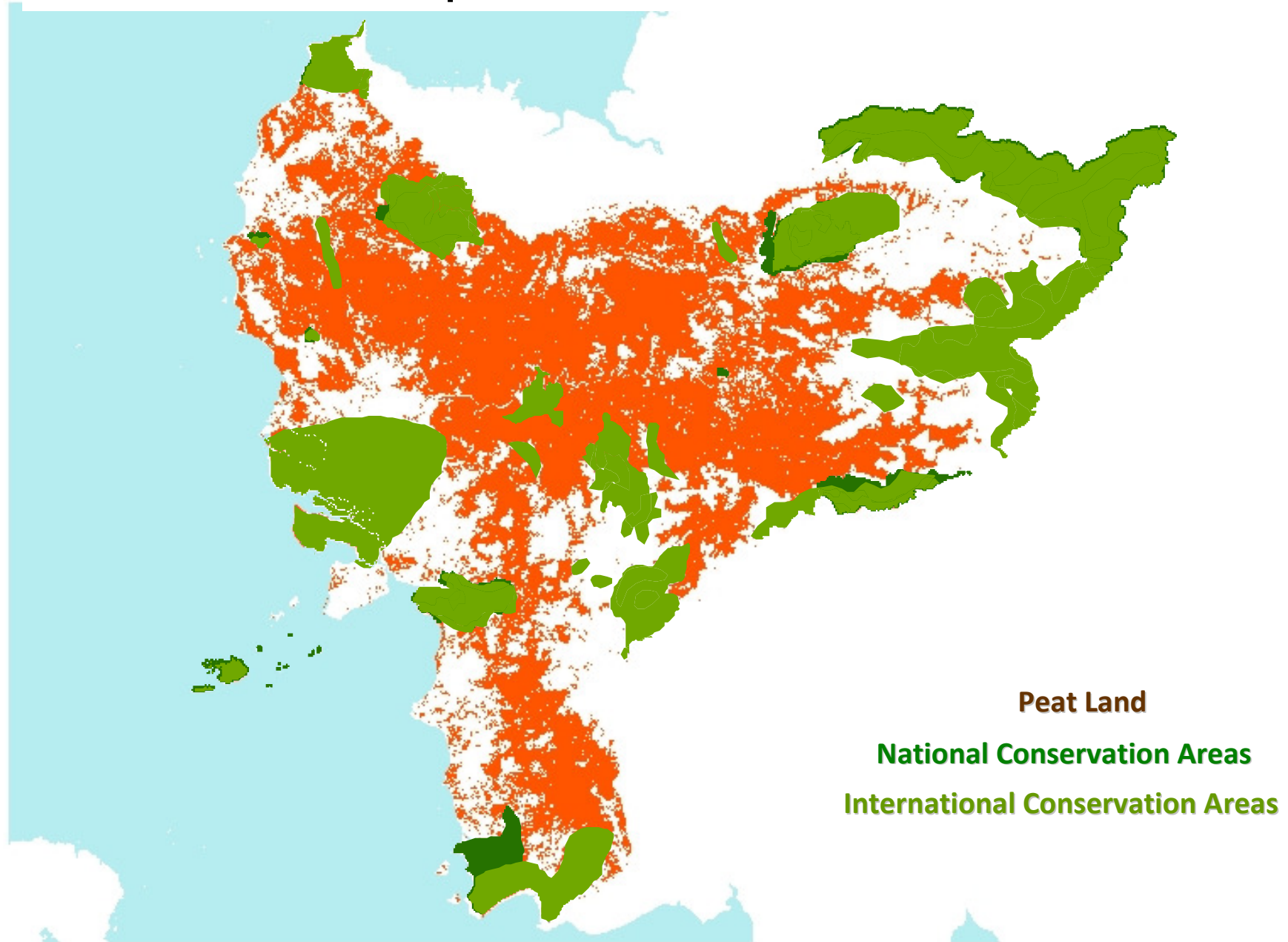
C-stocks - exclude all forested areas



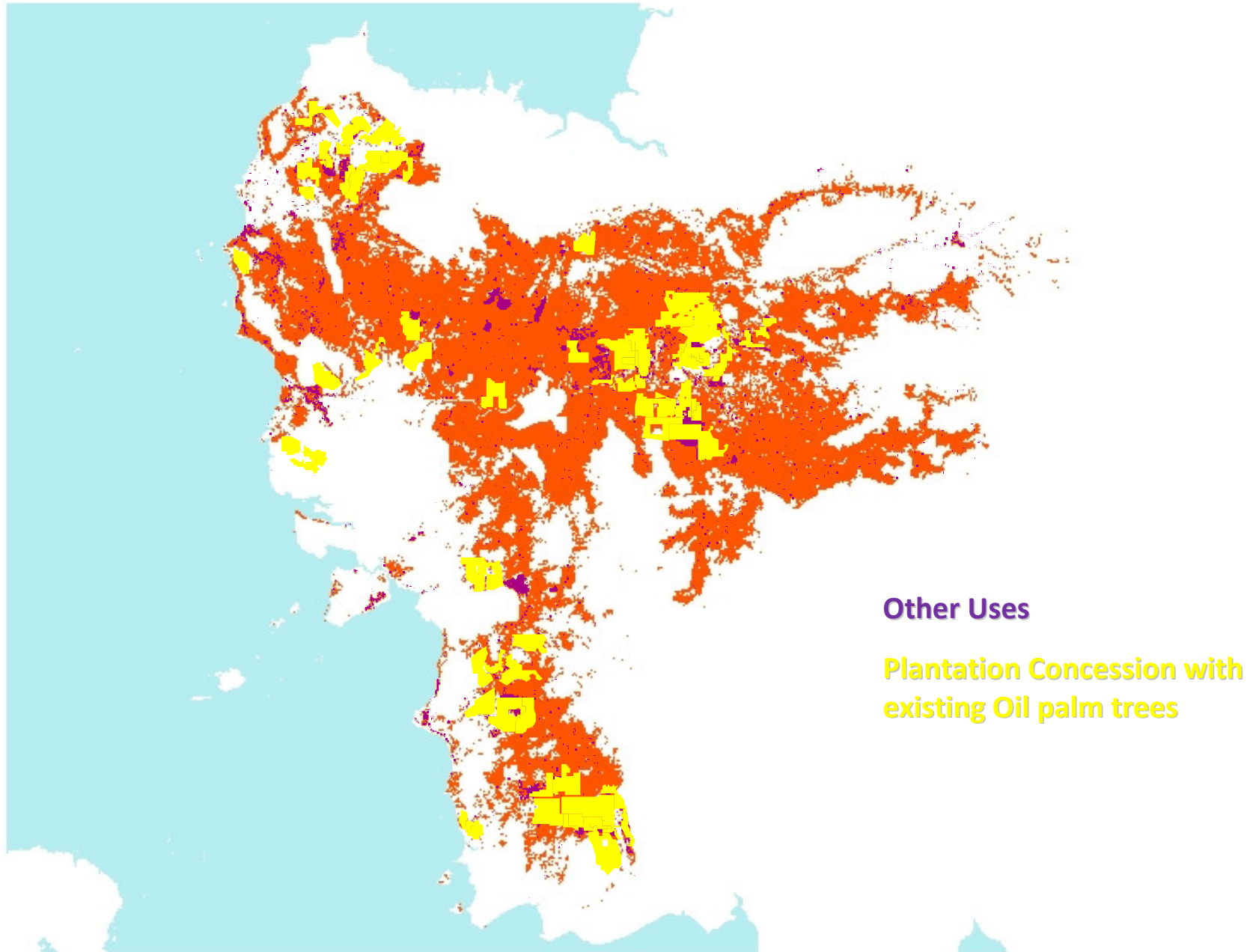
C-stocks - exclude all peat land



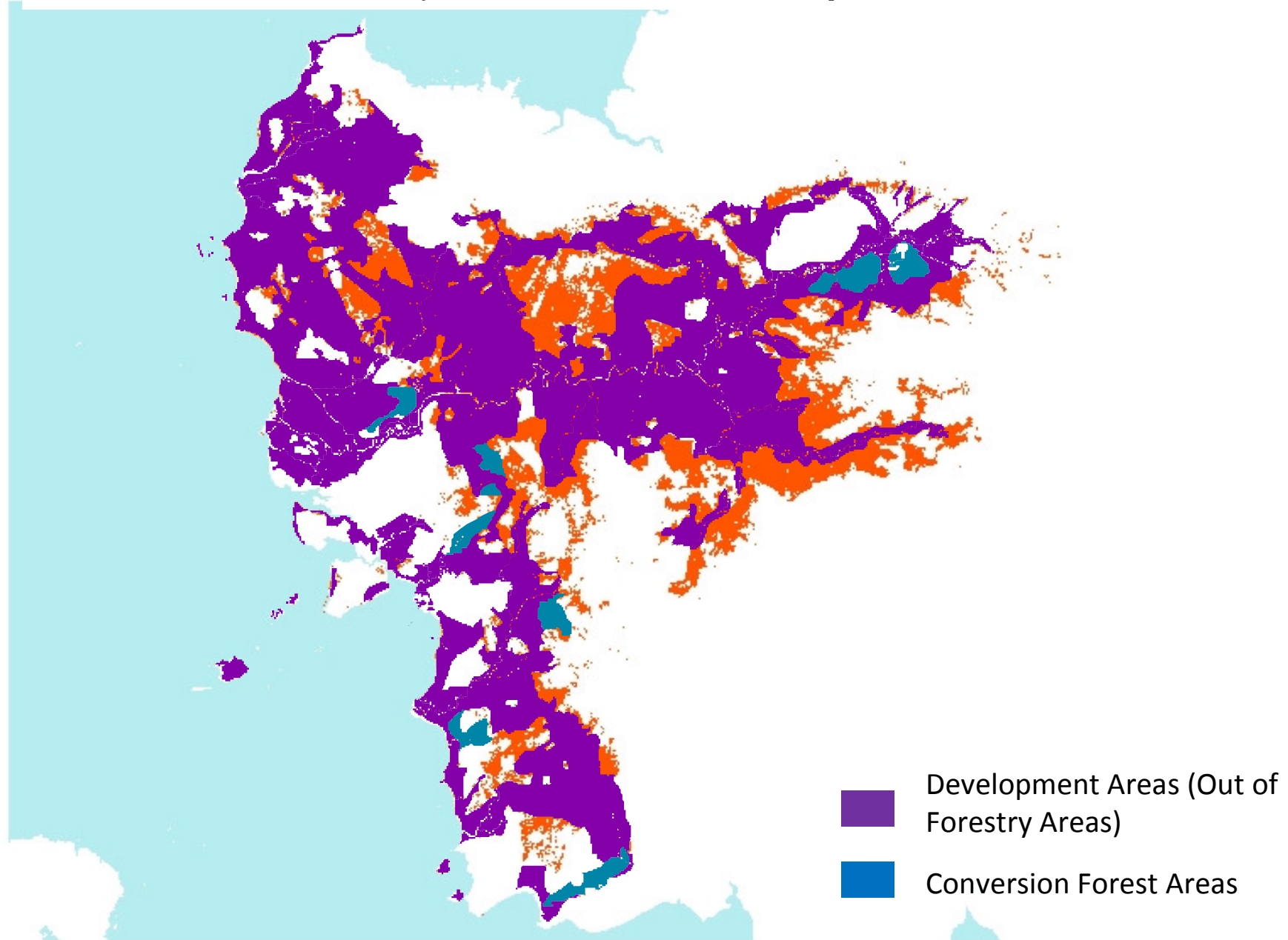
HCV's - exclude protected areas



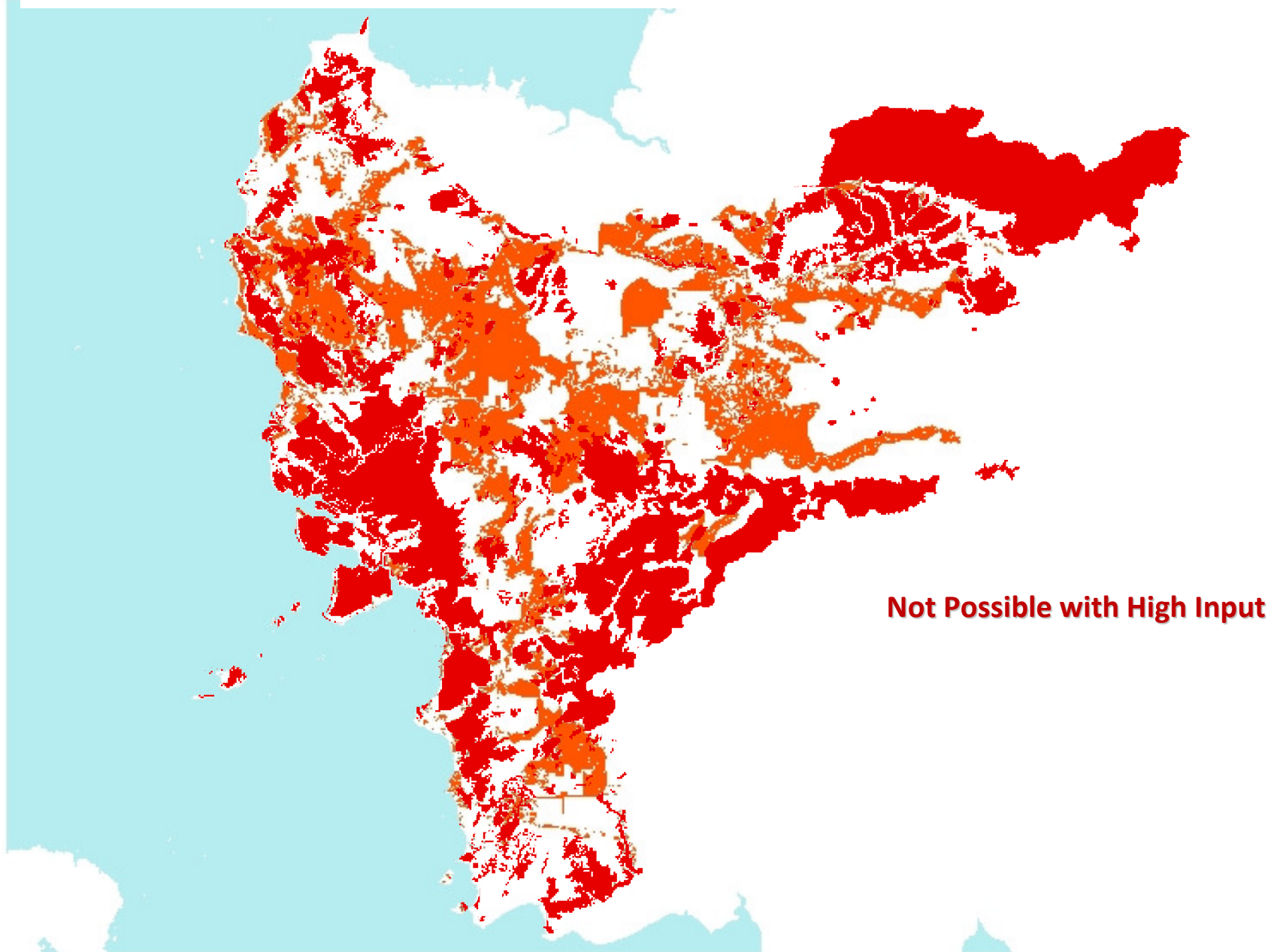
Displacement - exclude existing plantations and other uses



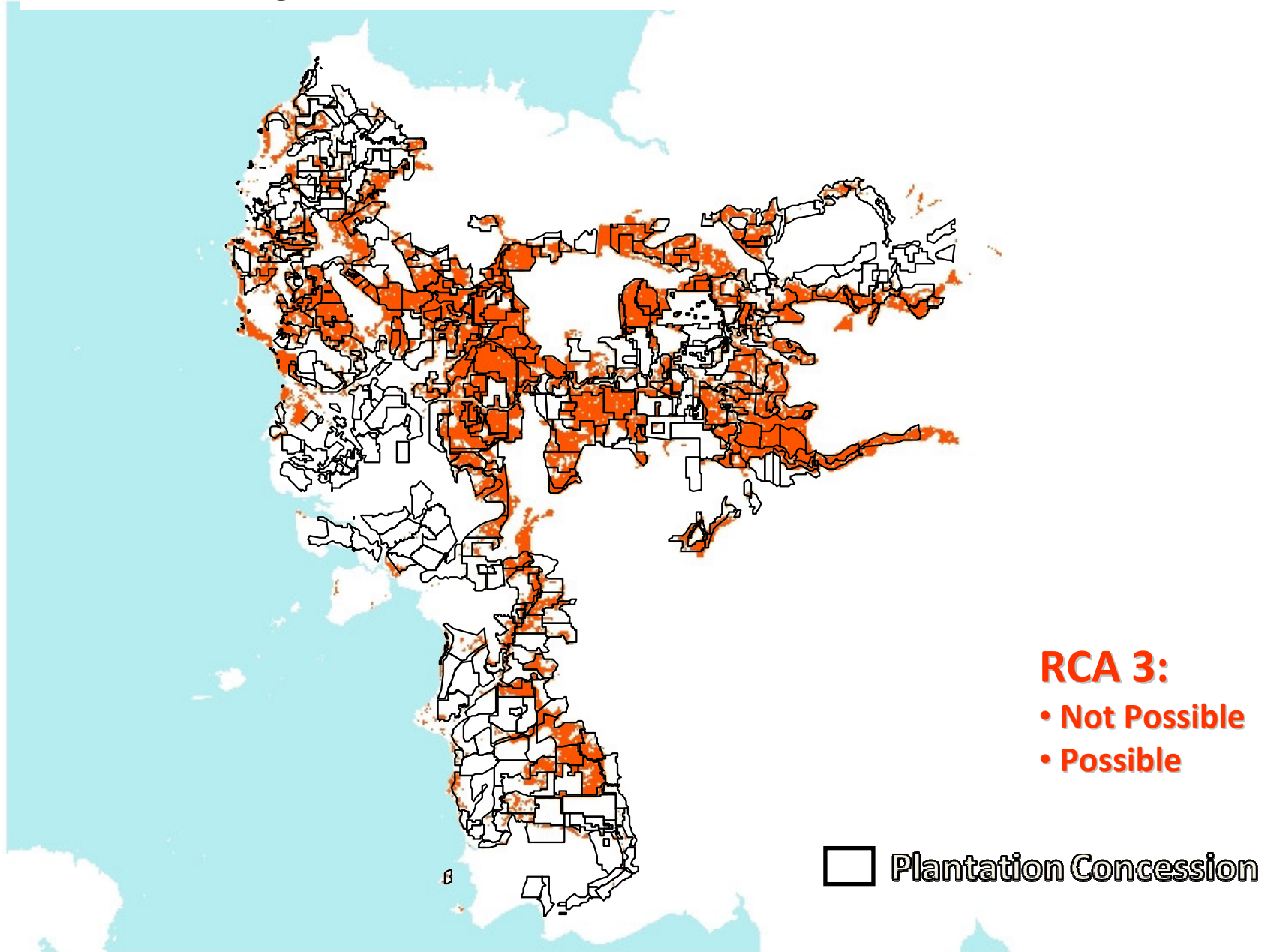
Land availability - Inside development areas



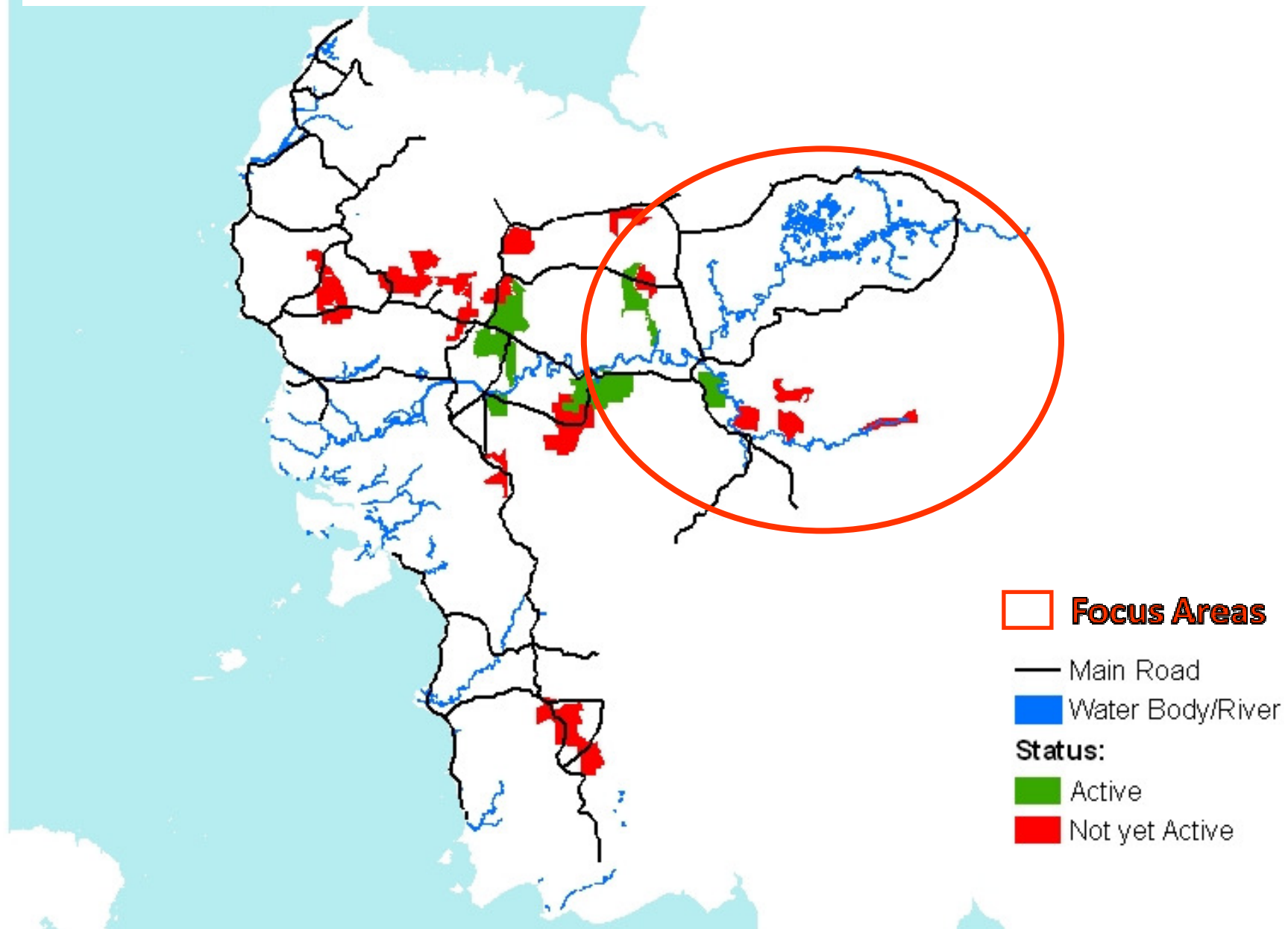
Agricultural suitability - exclude non-suitable areas



Remaining areas and concession boundaries



Infrastructure / Focus Area



Location I



Location II



Location III



Location IV



Location IV



Ecofys – Facts & Figures

- 1984: Founded as spin-off from University Utrecht
- Consulting in renewable energy, energy efficiency, climate change
- 220 employees across 6 offices
 - NL: Utrecht (Headquarter)
 - DE: Berlin, Cologne
 - UK: London
 - CN: Beijing
 - US: Portland
- Over 500 clients served across 50 countries
- The IPCC reports and processes, winning the Nobel Peace Prize in 2007, have been supported by over ten Ecofys experts

