

Climate Change and Land Use

What can land surveyors do?

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CC and urban land

- Urban areas emit 47% total (23 Gtons CO₂e)
- Energy use & transportation
- For low carbon cities, GHG abatement and energy conservation and land use planning should be connected
- More compact cities, better designed urban spaces
- Key words: urban land management, secure urban land tenure arrangements



CC and rural land

- Deforestation, agriculture and livestock grazing emit 31% (15 Gtons CO_{2e}).
- Removal CO_{2e} from atmosphere: 4 Gtons CO_{2e}
- Enriching soil carbon, farming with perennials, climate friendly livestock production, protecting natural habitats, restoring watersheds and range lands
- Key words: rural land management, secure rural land tenure arrangements



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CC and forest land

- Deforestation 13 million ha/year
- Represents emission 4 Gtons CO_{2e}
- Sequestration potential 14 Gtons CO_{2e}
- REDD and REDD+ restores 4 million /year
- Ownership rights over forest land and carbon sequestered most critical elements
- Key words: Forest land management and secure forest land tenure arrangements



Immediate action on REDD+ can catalyze accelerated national development in addition to curbing carbon emissions. Healthy forests sustain biodiversity and ecosystem services, ensuring clean water, productive soils, and protection against floods and droughts – helping countries adapt to climate change, food security and generally improving the wellbeing of people.

The REDD+ Programme is supported by Norway, the UK, the EU and the US. It supports developing countries efforts to reduce emissions from deforestation and forest degradation – commonly known as 'REDD'.



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CC and coastal land

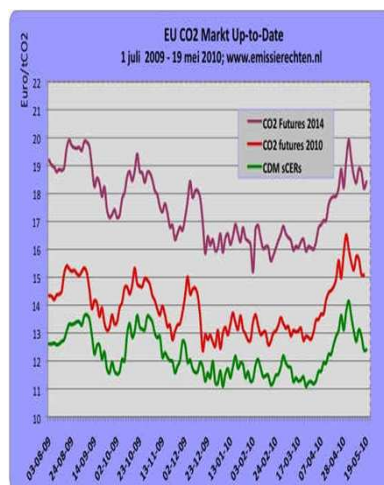
- 634 million people live in low coastal areas
- Hazard prone areas habitat for urban poor
- Pressure urbanization, inadequate land delivery, lack of secure tenure
- Likelihood displacement and need for resettlement
- Key words: intensified resettlement planning, land use planning and improvement tenure security



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Carbon Credits and land

- Cap and Trade Compliance Market under Kyoto
- Retail market not under Kyoto
- Dr Barnes: need for carbon cadastre?
- Dr Wallace: carbon credit unbundled property right?
- May be for adjudication, measurement, and recording in LAS.



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Land Policy: examples

- Better urban design
- Urban sprawl control
- Regeneration urban areas
- Infill vacant urban lands
- Minimize transportation
- Better soil carbon storage
- Cultivation methods
- Restoration degraded lands
- Reforestation
- Resettlement of coastal population
- Strengthen land tenure



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Land Management: examples

- Adaptation planning
- Rainwater harvesting
- Water storage
- Crop variety
- Erosion control
- Soil protection
- Reduction transport needs
- Perennial crops
- Minimizing tillage
- Reduce nitrogen fertilizers



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Land Administration: examples

- Land tenure security
- Environmental rating buildings
- Energy use
- Transport indicators
- Current and potential land use
- Land types recording
- Defining REDD beneficiaries
- De jure and de facto land rights
- Taxation options
- Carbon credits



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Suggestion FIG work plan 2015-2018

- FIG may elaborate role of land surveyors in CC adaptation and mitigation
- For a concise briefing see our interview in Coordinates June 2014
- Many thanks for listening



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