Climate Change and Land Use
What can land surveyors do?

Paul van der MOLEN & David MITCHELL
(Members FIG Task Force CC)

CC and urban land

- Urban areas emit 47% total (23 Gtons CO$_2$e)
- 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\(_2\)e).
- Removal CO\(_2\)e from atmosphere: 4 Gtons CO\(_2\)e
- 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

CC and forest land

- Deforestation 13 million ha/year
- Represents emission 4 Gtons CO\(_2\)e
- Sequestration potential 14 Gtons CO\(_2\)e
- 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
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

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.
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

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
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

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