Collaborative Landscape Research
In Reunion Island

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Implementation of the ELC in Reunion Island

• National “landscape law” was enacted in 1993. Diagnostic studies conducted... but limited follow up

• First landscape charter adopted by the inter-municipality of the West Coast (TCO) in 2007
  – Preservation of agricultural and natural lands, improvement of built environments and the transportation network
  – Translation in legal documents and operational plans for peri-urban fringes and ravines

• Regional/island-scale landscape inventory published online in 2013
Challenges for policy and research

• Landscape charter = No interest and engagement from the agricultural sector
  – Charter remains a tool for urban planners (landscaping) and environmental managers (conservation)
  – Integrated landscape planning is impossible

• Need to bring new perspectives and a wider audience in the landscape debate
  ⇒ Collective exploration of the multi-functionality of landscapes
  ⇒ Dynamic perspective on the future of landscapes
Study site location and landscape-ecological characteristics

TCO inter-municipality

Réunion Island

5 municipalities
536 km²
213,000 inhabitants
± 400 pop./km²
Approach and tools

- Participatory scenario planning framework
  - Institutional arena (= flexible social network)
  - Collaborative work in fora

- Spatial modelling and simulation toolbox
  - Ocelet language
  - Dynamic maps
Typical simulation outputs

Scenario #1:
Planned urbanisation = ‘business-as-usual’
Urban sprawl = preferentially near existing built areas

Scenario #2:
Planned urbanisation = accelerated completion rate
Urban sprawl = preferentially near road network
Key preliminary results

• Project inception (March 2012)...
  – Stakeholder meeting, debates on land-use planning challenges and concerns, and broad positioning of the research

• ... Urban sprawl model as demonstrator...
  – Iterative and participatory modelling process (model development <-> consultation)

• ... Establishment of a science-policy bridging organization (March 2013)
  – Signing of a charter of partnership with TCO
  – Joint organization of a workshop on urban sprawl (simulation, impacts and regulation)
Assessing salience, credibility, legitimacy of the research framework

• **Salience** <-> Perceived relevance of the research questions, approach and methods

• **Credibility** <-> Strength of the arguments and evidence produced during the collaborative research process

• **Legitimacy** <-> Acceptance by stakeholders of the knowledge and institutions produced

Adapted from Cash et al. (2003). Knowledge systems for sustainable development. PNAS.
## Salience, credibility, legitimacy: Strategies and trade-offs

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<tr>
<th></th>
<th>Salience</th>
<th>Credibility</th>
<th>Legitimacy</th>
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<tbody>
<tr>
<td><strong>Long-standing involvement of researchers in Reunion Island</strong></td>
<td>+</td>
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<td><strong>Build on stakeholders’ own concerns regarding land-use planning</strong></td>
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<td><strong>Charter of partnership with the TCO inter-municipality</strong></td>
<td>+</td>
<td>+/-</td>
<td>(data access)</td>
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<td>(political risk)</td>
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<tr>
<td><strong>Spatial modelling (accounting for land-use interactions and multi-functionality)</strong></td>
<td>+</td>
<td>-</td>
<td>(complexity)</td>
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<td><strong>Dynamic, spatially explicit simulations (mapping different futures)</strong></td>
<td>-</td>
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<td>+</td>
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<td>(uncertainty)</td>
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Conclusion

• Success in setting up a functional, legitimate institutional arena for collaborative landscape research

• Spatially explicit models and simulations have been instrumental for raising expectations among stakeholders and facilitating dialogue across sectors

• Important trade-offs must be managed on a day-to-day basis (political risk, complexity, uncertainty)

• Perspectives:
  – forums on political-economic and land-use scenario planning
  – coupled models on urban sprawl and agricultural dynamics
  – integration of ecosystem services (water regulation...
Thank you!

For additional information...

Project website: [www.projet-descartes.fr](http://www.projet-descartes.fr)
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