



Land Use Policies and Sustainable Development in Developing Countries; Examples from LUPIS

Floor Brouwer (LEI, Wageningen UR)

EU FP6 Project “LUPIS”

Land Use Policies and Sustainable Development in Developing Countries

15 partners, 11 Countries

Feb 2007 – March 2011

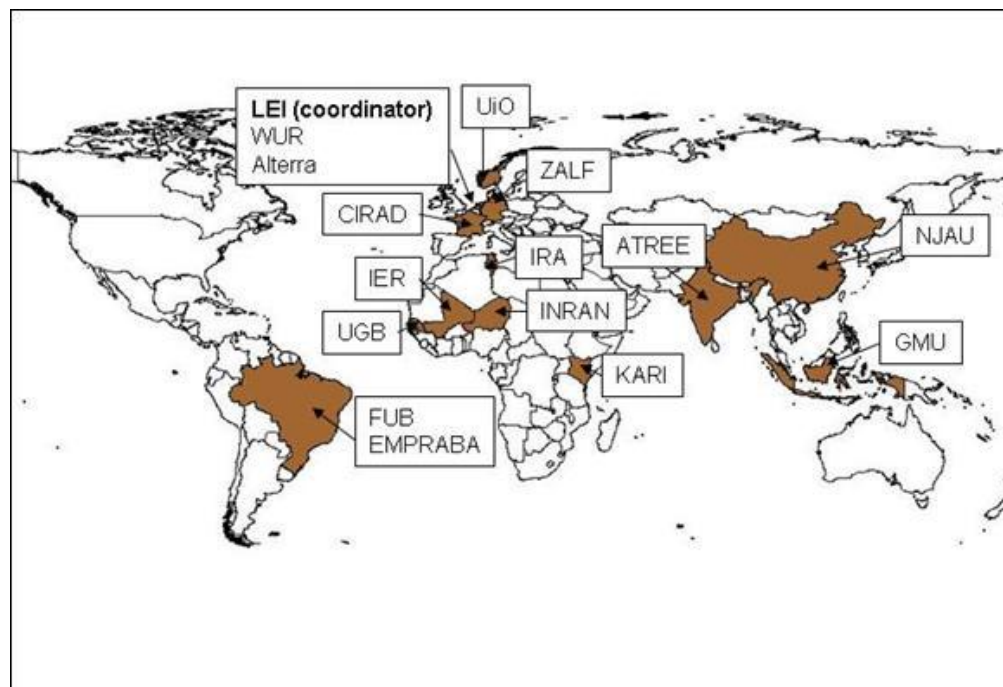
EU-contribution:

2.1 Million euro

Co-ordination

Floor Brouwer

(LEI, part of Wageningen UR)



Key objectives

- Improve knowledge of the impact
 - ❖ that different land use policies will have on the sustainable development of developing countries
- Develop integrated assessment tools
 - ❖ for application by scientists
 - ❖ in a selected number of developing countries
- Building blocks
 - ❖ Tools developed in SENSOR and SEAMLESS
 - ❖ Developed in European context
 - ❖ Test applicability in developing countries



What is the impact on sustainable development of implementing...

(Tunisia)... Water and soil conservation policy

(Kenya)... land privatization policy

(India)... organic farming policies

(China)... water pollution control policies

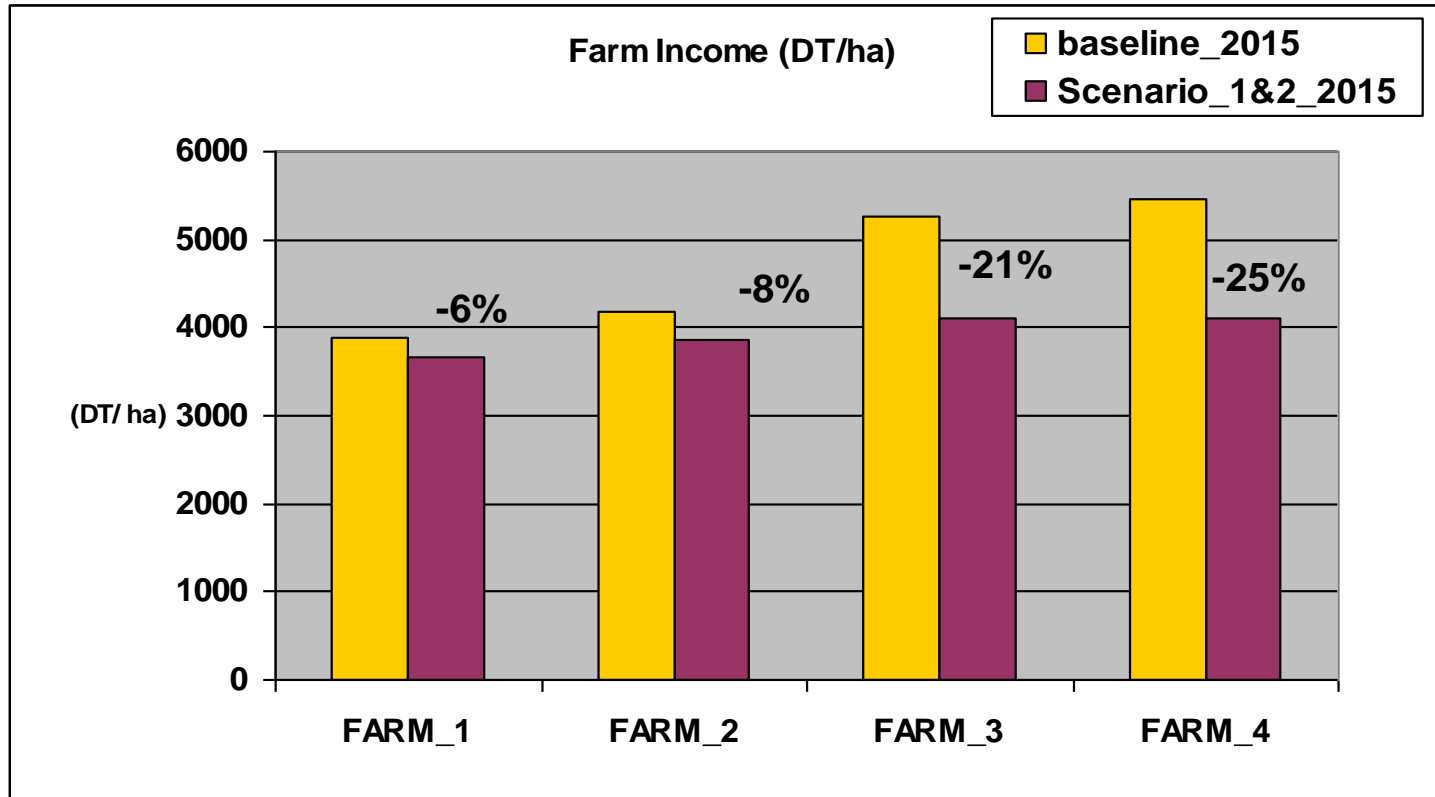
(Indonesia) ... land conversion control policies

(Mali)... plans towards expanding land under irrigation

(Brazil)... land and forest conservation policies

Water pricing policy assessment in Tunisia

Economic impact

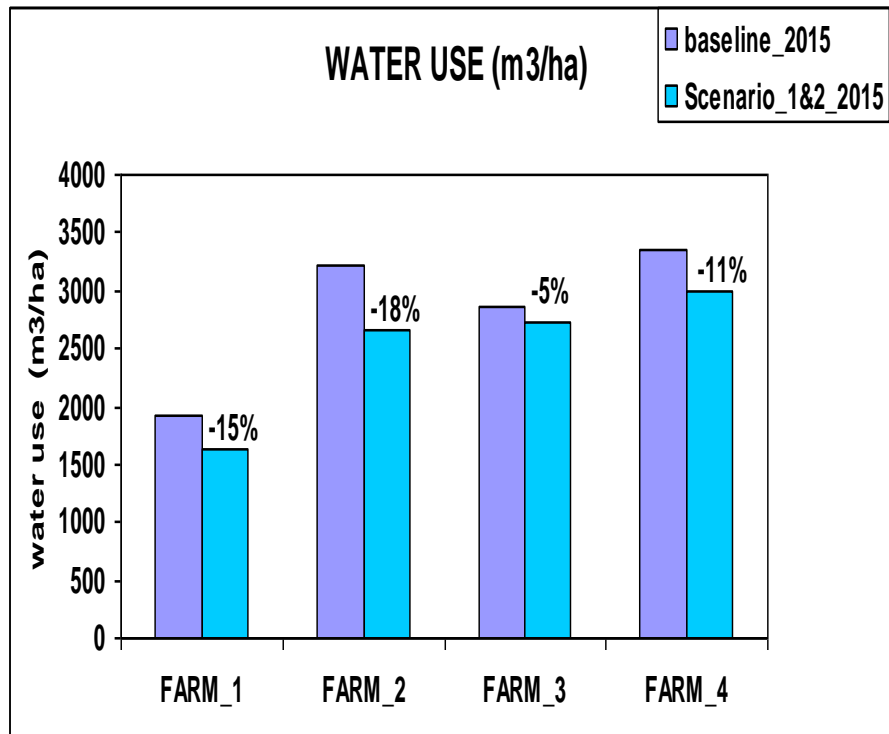


Farm income decline at 8% in the public irrigation system and at 25% in the private system. This deterioration of income due to the increase of water pricing and the cost of pumping

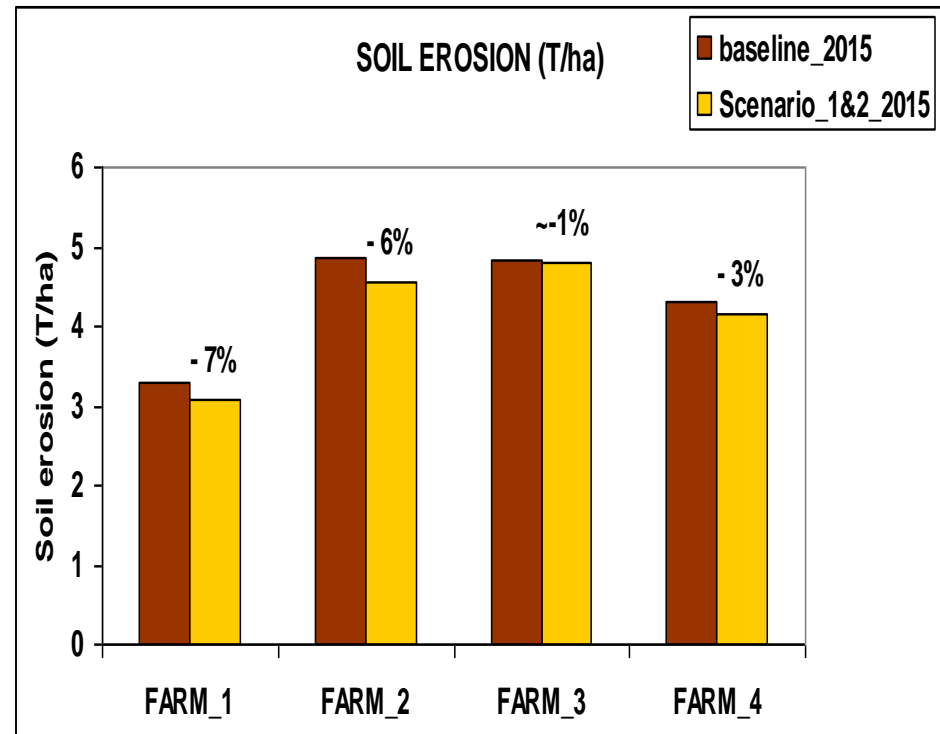
Scenarios_1 & 2_2015 : impacts of increase of pricing Water by 13 %

Water pricing policy assessment in Tunisia

Environmental impact



The increase price of water irrigation has resulted in a significant reduction at 18% of the water consumption in the public system more than the private at the 11%



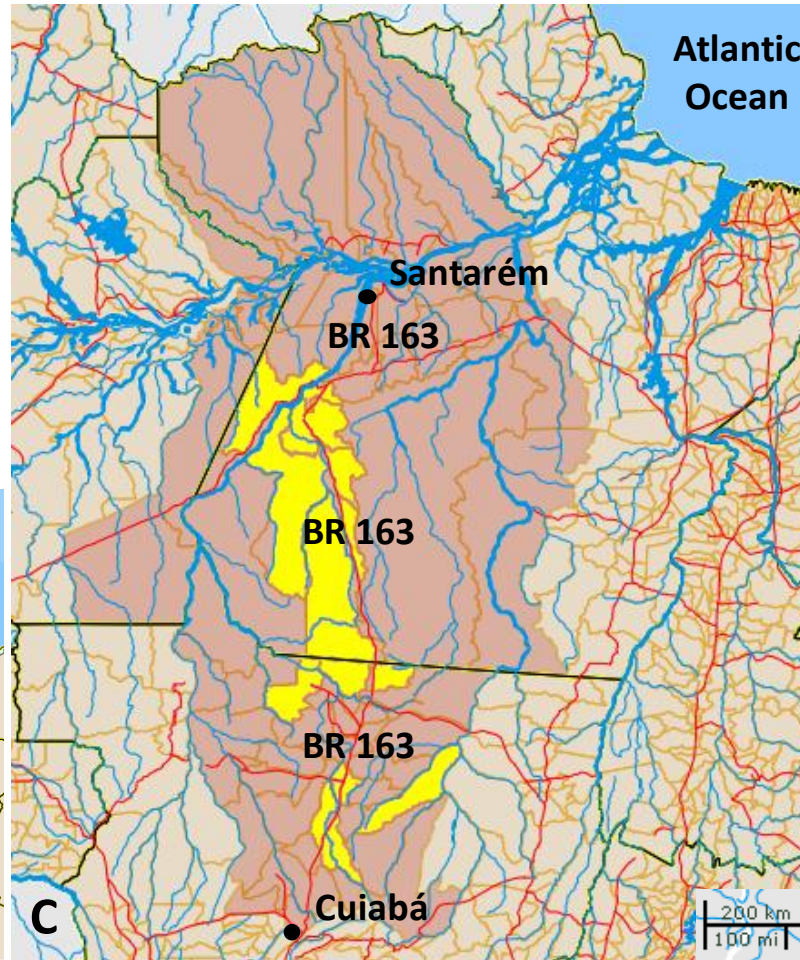
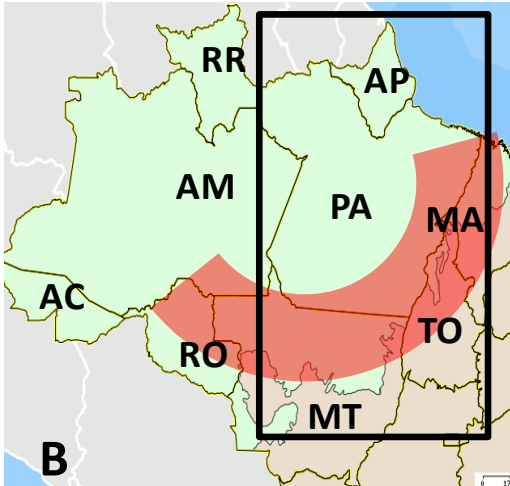
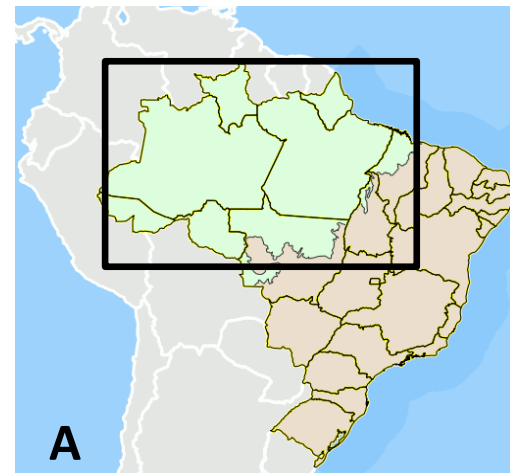
Pricing of irrigation water is an important policy to reduce the level of erosion to 7% in the public system more than the private to 3%

- What is the impact of forest conservation policies along road BR-163 in Mato Grosso and Pará on sustainable development?



Study area

Brazil



- Roads
- Water
- Case study' municipalities
- BR 163's Influence area
- Brazilian Amazon Forest
- Deforestation arch

- **Forest Code** - Existing policy, regulates deforestation in rural properties in the Amazon region. In Amazon forest 80% of the property is preserved for forest conservation, in Cerrado vegetation 35%, but in reality less than these % are effectively protected (weak governance). In 2011 this Code is renewed to 60% protection of Amazon forest in parliament.
- **Conservation Units** – Since 2000 the National System of Nature Conservation Units (SNUC), provides criteria and regulations for the creation, implementation and management of the conservation units. In Brazil 11% of the territory is under conservation, but the borders of the majority of the national parks are not respected (weak governance).

Policy scenarios

Brazil

Scenario	Forest type	Governance ¹	Region	Effective
Baseline	Forest Code	Low	North	65%
			Central	60%
			South	55%
	Conservation Units	Low	North	95%
			Central	95%
			South	95%
Revised baseline	Forest Code	Low	North	40%
			Central	40%
			South	25%
	Conservation Units	Low	North	95%
			Central	95%
			South	95%
Governance	Forest Code	High	North	75%
			Central	70%
			South	65%
	Conservation Units	High	North	100%
			Central	100%
			South	100%
Revised governance	Forest Code	High	North	55%
			Central	55%
			South	40%
	Conservation Units	High	North	100%
			Central	100%
			South	100%

Forest code of 80% **not** effectively protected

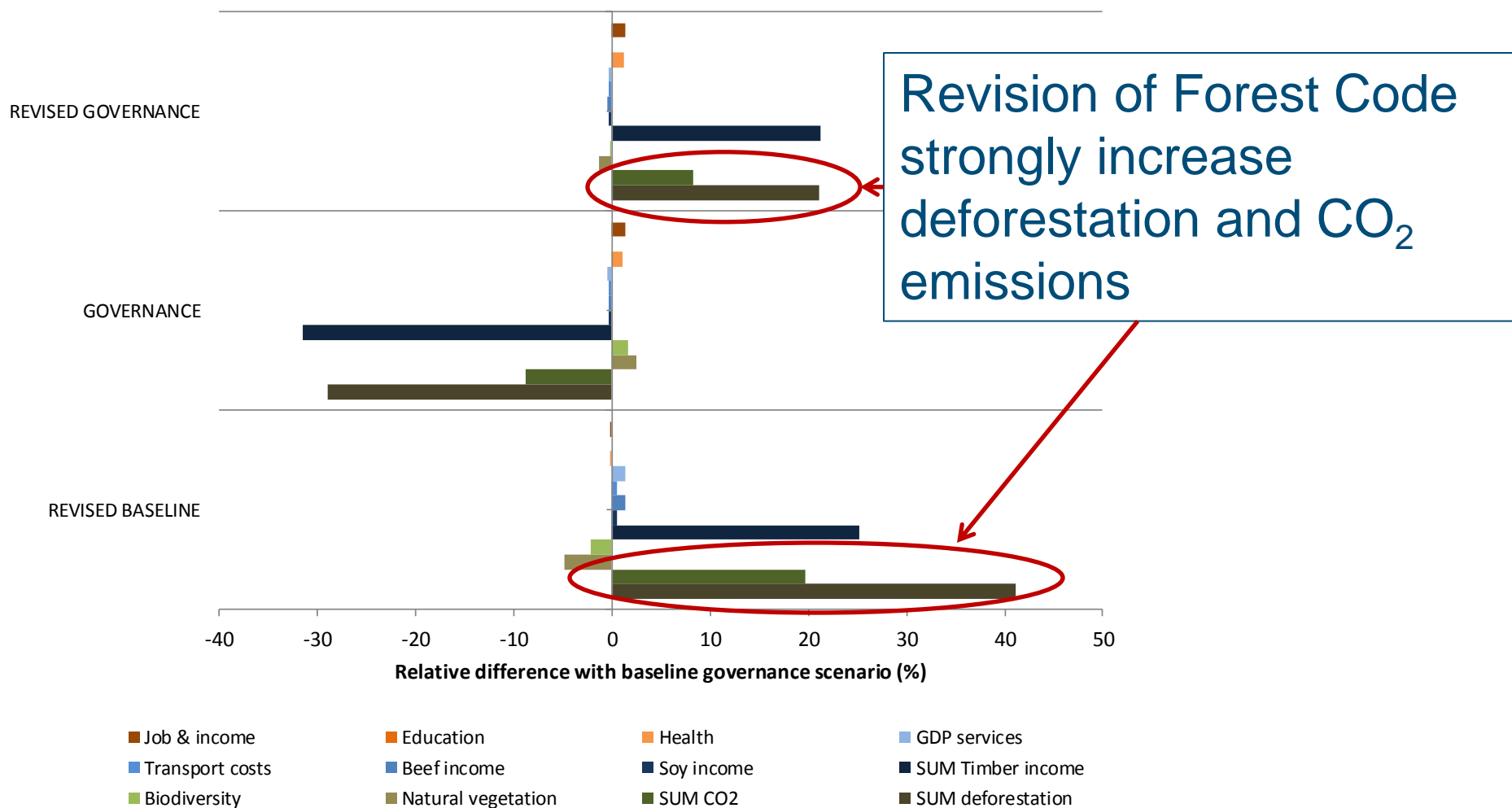
New Forest code of 60% **not** effectively protected

Forest code of 80% effectively protected

New Forest code of 60% effectively protected

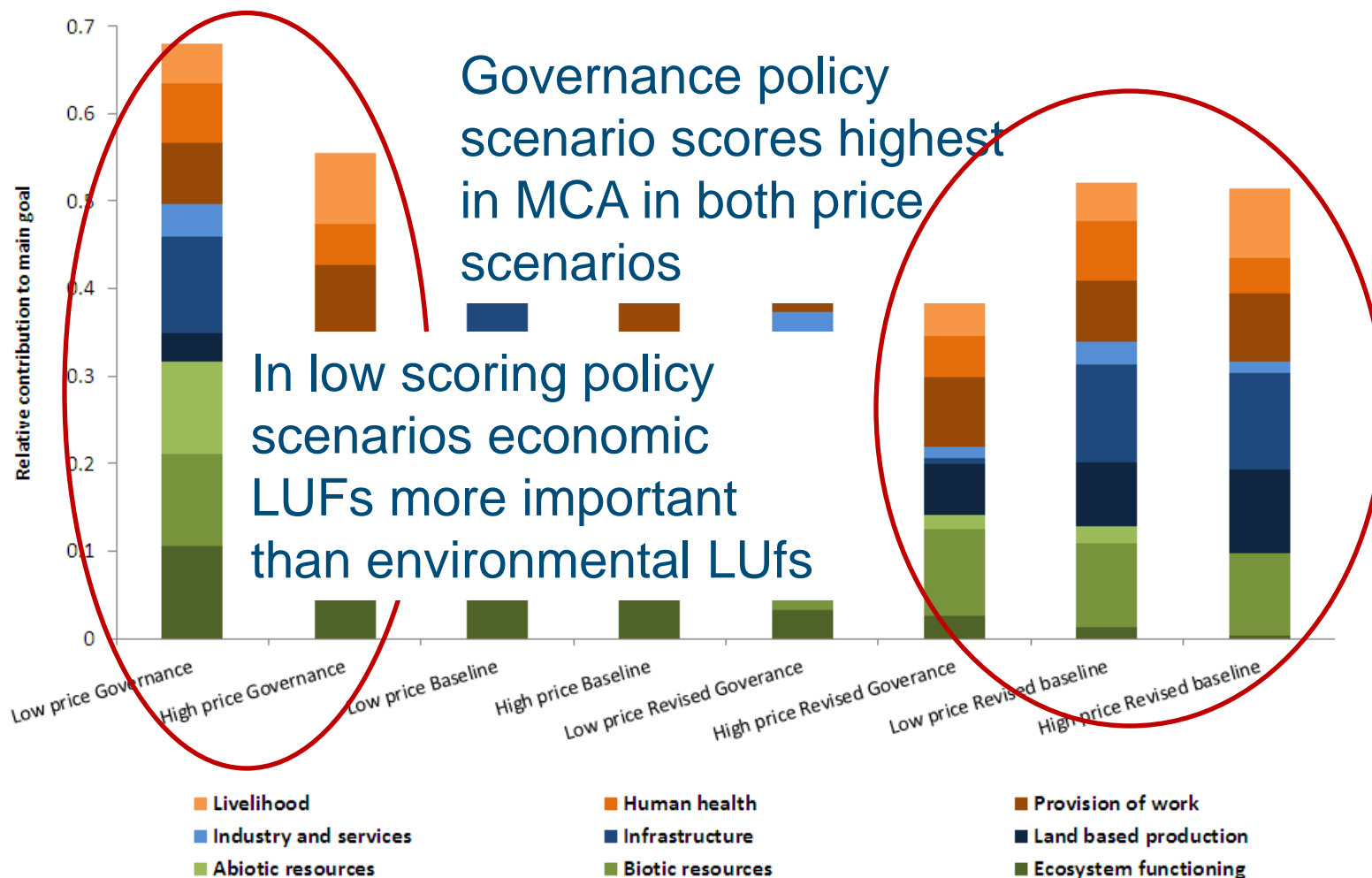
Main results

Brazil



Assessing policy options: equal weights

Brazil

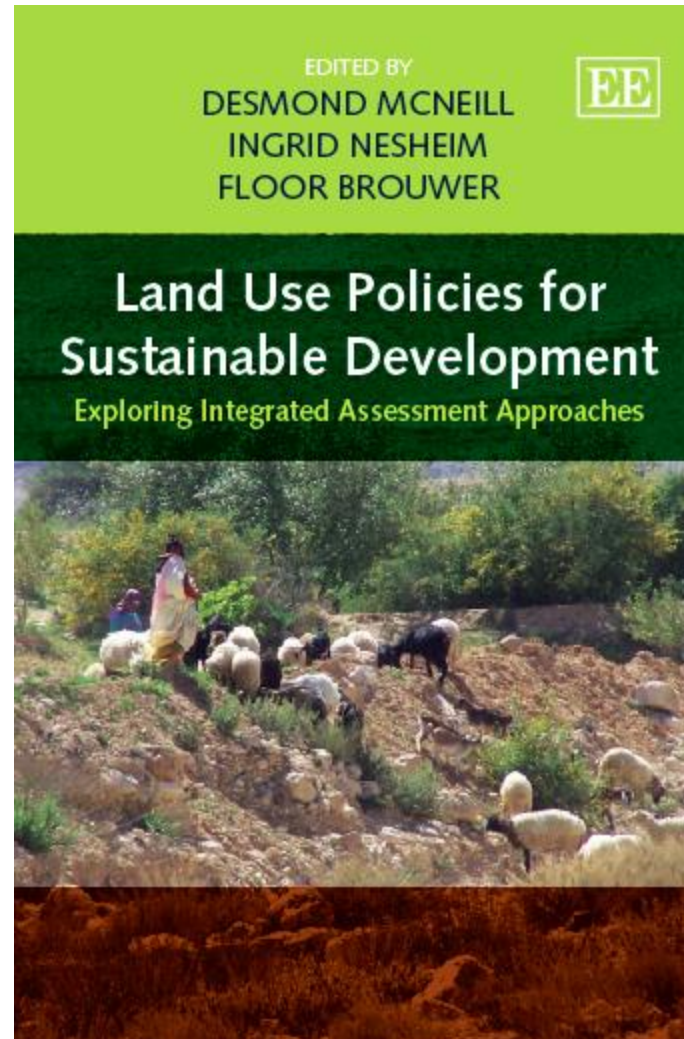


Impact Assessment in LUPIS: Conclusions

- Need for ex-ante policy assessments: to understand intended and *unintended* impacts of policies
- Rich tool-boxes are not sufficient: integrated way of research is yet to emerge for developing countries
- Challenges in the collaboration: diversity of cultures, lack of ex-ante in-house approaches, limited experience in multi-disciplinary research, data constraints, hardly existing science-policy platforms
- LUPIS IA: re-use tools and knowledge, integrate data, models, stakeholders; balanced qualitative & quantitative methods; common language
- Governance is critically important in understanding sustainable development in developing countries (implementation and enforcement of policies)
- LUPIS IA supposes the involvement at each stage- It has contributed to more frequent and systematic interactions with stakeholders than is usual approaches (National and Intl Policy Forums and workshops)

Dissemination strategies

- Publication of a special issue 'Impact Assessment of Land Use Policies and Sustainable Development in Developing Countries' with Journal *Land Use Policy*
- We expect some 6 papers into the Special Issue. Five papers have been published in the past year co-authored by scientists in the South and Europe



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- Highlight how LUPIS might be used by policy makers and market players.
- Although the tools focused on seven specific areas, the analytical framework is meant to be generic and flexible so as to be applied across a range of issues as in further countries. The Technology readiness Level of the methodology is therefore estimated to be 9 on the TRL scale.

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- See also the recent brief in Youris.com (European research media center):
 - http://www.youris.com/Environment/Interviews/Floor_Brouwer_Gathering_Environmental_Scientists_And_Land_Use_Policy_Makers.kl
 - Message: Exploring land use policy can support sustainable development in developing countries, but implementation of scientific advice is difficult to achieve.