

SSP-linked scenarios to guide decision making for food systems under climate change



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CGIAR Climate Change, Agriculture and Food Security Scenarios program

- Combined socio-economic and climate **scenarios** developed for six global regions: East and West Africa, South and Southeast Asia, Andes and Central America
- **Stakeholder-driven**; quantified through agricultural economic models and linked to **SSPs and RCPs**; plausibility/narrative based
- With **240 partner organisations** (..) partnering with FAO, UNEP WCMC, Oxfam, regional economic bodies, regional and national stakeholders
- **Goal:** scenarios to help decision-makers develop better national and regional **policies, investments and institutional structures**, supported by key **global and regional actors**

(Vermeulen et al. 2013, Chaudhury et al. 2013, Vervoort et al. 2014, Herrero et al. 2013)



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Program development

Drivers structuring scenarios	Two axes, two states each	Multiple axes, multiple states
Time horizon	2030	2050 + climate scenarios
Focus on development vs. use	Multiple workshops for scenario development	One scenario development workshop, many scenario use + review workshops
Link to decision-making	One process in a region	Multiple demand-driven processes: 81 impact pathways
Organization	Centrally organized	Strong, on-going regional support
Process owners	CCAFS	CCAFS + global orgs, regional, national orgs and governments, <i>internal capacity development</i>

FACTORS, STATES

A	B	C	D
A1	B1	C1	D1
A2	B2	C2	D2
A3	B3	C3	D3

COMPATIBILI LITY

	B1	B2	B3
A1	2	0	1
A2	1	1	1
A3	2	0	2

SCENARIOS

(A2,B2,C2,D1)
(A1,B3,C1,D3)
(A3,B3,C2,D3)

MATLAB program (OLDFAR)

10000s of ways

FINAL SCENARIOS

(A2,B2,C2,D1)
(A1,B3,C1,D3)
(A3,B3,C2,D3)
(A2,B1,C2,D1)

**Choose
4,6,8..**

Scenario drivers

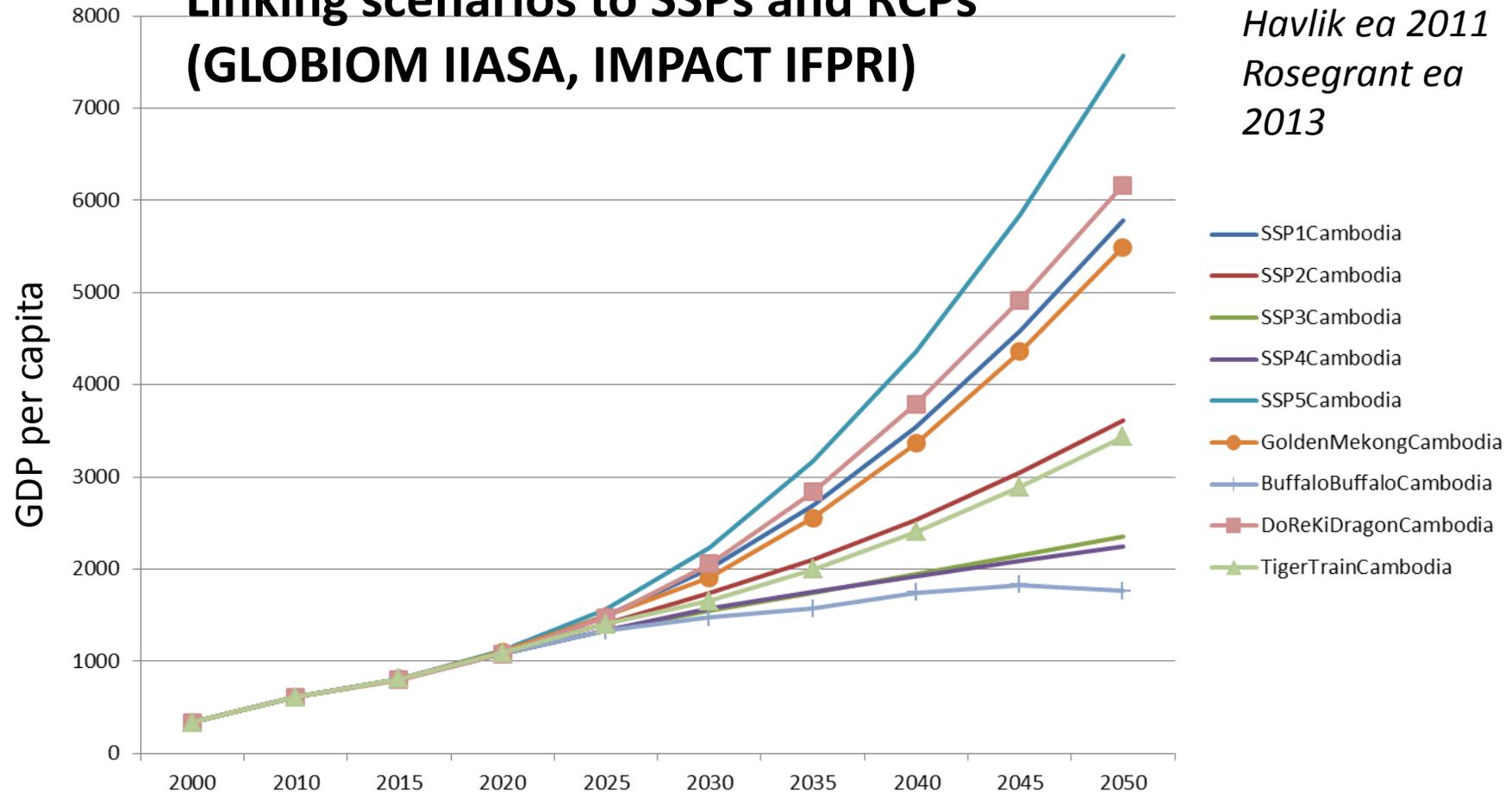


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Markets	Institutional capacity of states	Availability of water resources	Distribution of wealth
Participatory, regulated	Low	High	Equal, driven by the state
Participatory, not regulated	High	Low	Equal, driven by the market
Non-participatory, regulated	Uneven		Unequal, driven by the state
Non-participatory, not regulated			Unequal, driven by the market

Linking scenarios to SSPs and RCPs (GLOBIOM IIASA, IMPACT IFPRI)



In from scenarios/SSPs (global = SSP2):

- GDP
- Population
- Yields
- Production costs

RCPS: impacts on yields, RCP 8.5 (extreme), multiple models

Out: (iterative feedback from participants)

- Yields, production, prices, demand, trade for range of commodities
- Calorie availability
- Production systems
- Land use
- Emissions



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Using scenarios to develop policies, investments etc.

- *Develop plans,*
- *Adapt scenarios,*
- *Test plans against scenarios,*
- *Analyse robustness, alternatives, etc.*
- *Scale of action vs. scale of context*
- Cambodia MAFF Climate Change Action plan
- Bangladesh planning commission 7th 5 year plan in context of 2021 vision and beyond
- Vietnam FAO investment proposals
- Honduras climate adaption policy
- Uganda, Rwanda Burundi development and environmental policies
- ECOWAS partnership
- WRI flood risk maps
- UNEP WCMC land use change maps (EA, SEA, LAM)



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Concluding thoughts

- SSPs and RCPs used; SPAs not used - keeping **decision space** open; **8.5 + SSP2?**
- Interested to see more **fully fledged** scenarios; but openness is useful
- Transmango: new project on food system futures in **Europe/global**: SSPs + discourses + conceptual modelling
- An objective assessment of what **impact** global scenarios are having on policy and planning, and how institutional impact can be improved (working on this in CCAFS)
- Interested in **methodology design**, **stakeholder** involvement choices, framing etc. related to SSPs; ESG taskforce, scenarios as a service

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- <http://ccafs.cgiar.org/scenarios> - look for blogs and video - **Joost.vervoort@eci.ox.ac.uk**

