NorthWestern Paths

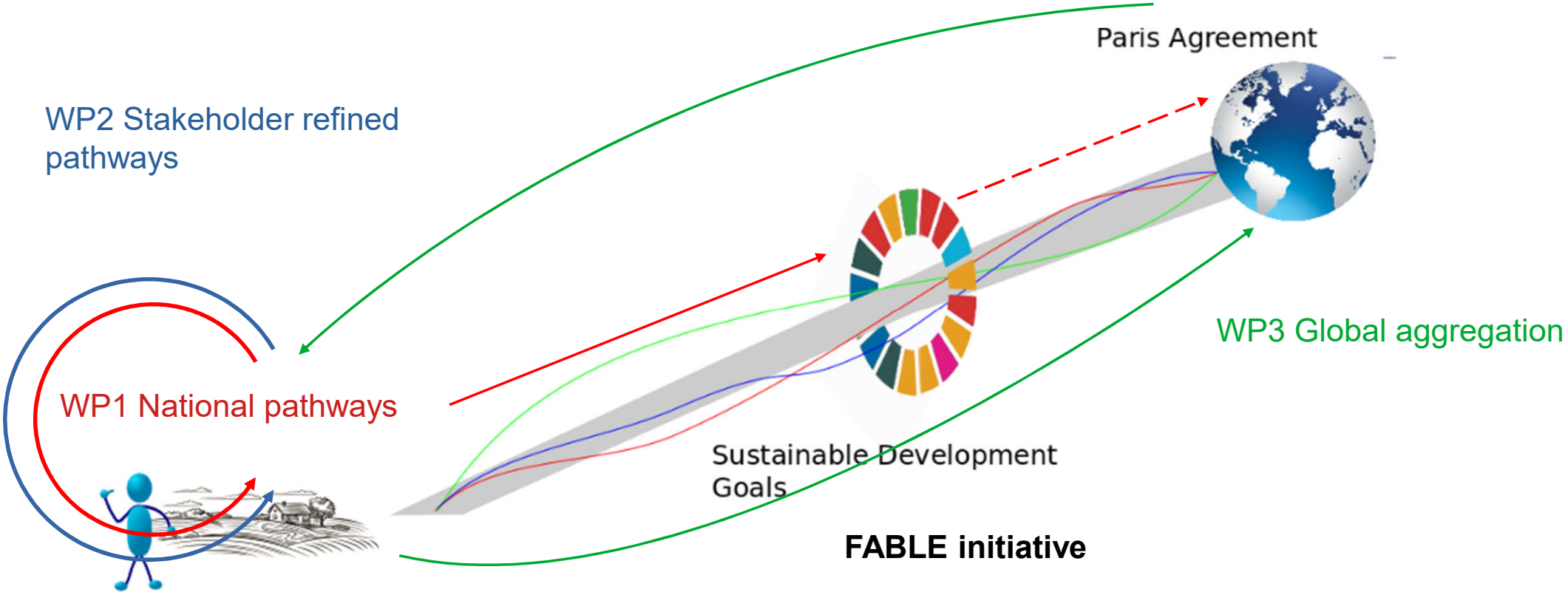
Pathways to sustainable food and land use futures

AXIS Final Event
19 June 2023

Horizon 2020
European Union Funding
for Research & Innovation

Project details

National **Global**



FABLE initiative

transition towards

- sustainable land-use & food systems
- collectively meet SDGs and
- objectives of the Paris Agreement
-

Partners

Sweden
Stockholm Resilience Centre (SRC - coordinator)

Swedish University of Agricultural Sciences (SLU)

Research Institutes of Sweden (RISE)

Norway
Center for Climate International Climate Research (CICERO)
EAT Foundation

Germany
Sustainability and Global Change Unit, University of Hamburg

associated:
Finland Natural Resources Institute (LUKE)

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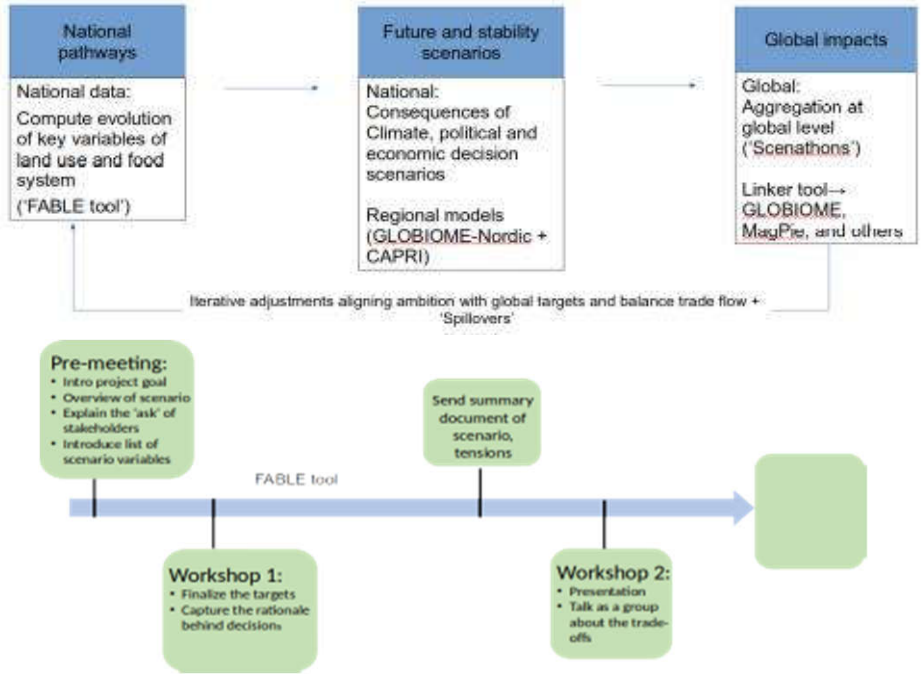
Project WP structure

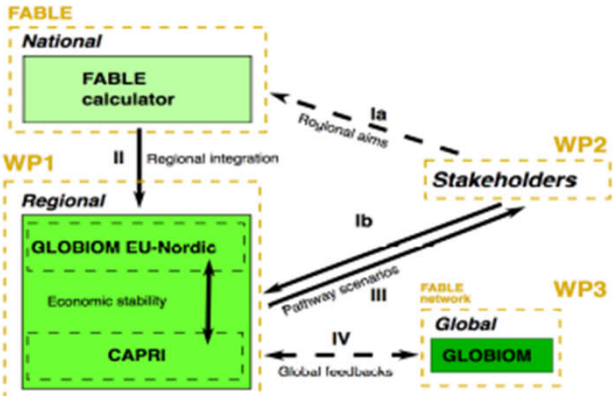
WP1 Development of transformative national pathways:
Pathway scenarios:

- BAU (no afforestation, no dietary change, ….)
- sustainable (afforestation, dietary change,....
- sustainable+ (more afforestation, dietary chan

WP2 Stakeholder dialogues:
Iterative stakeholder dialogues from private/public sector

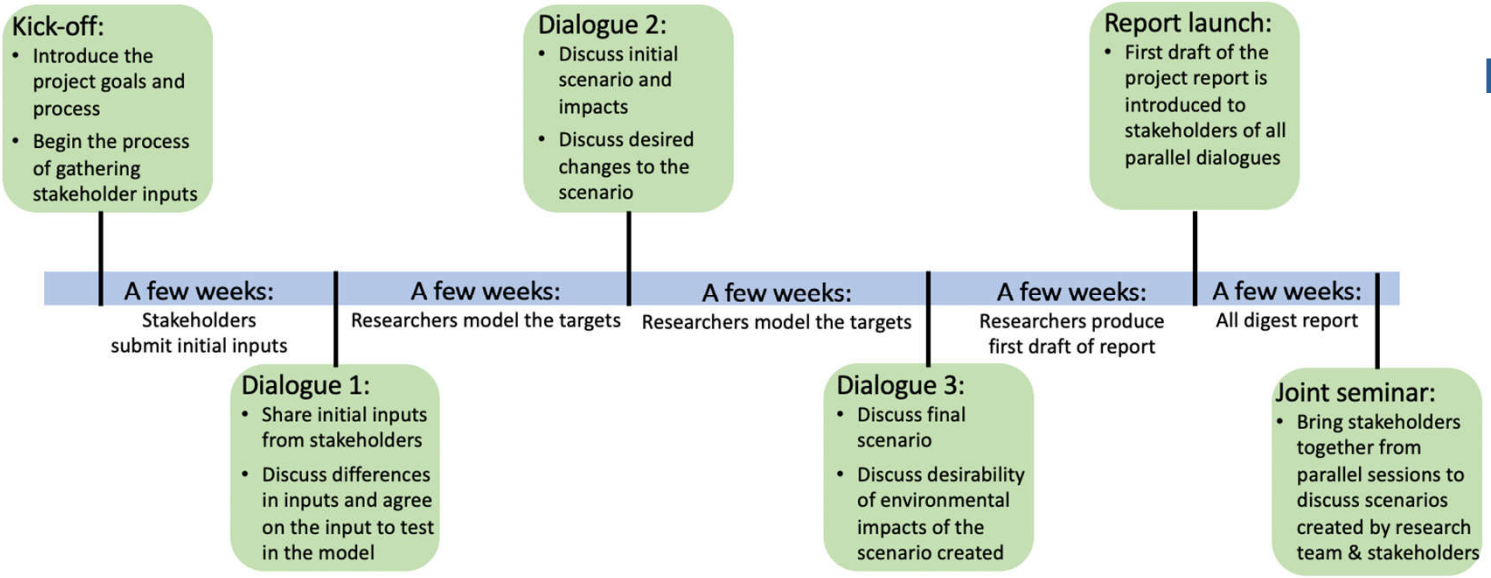


WP3. Global integration of national pathways
(coordinated by IIASA) → "Scenathon"

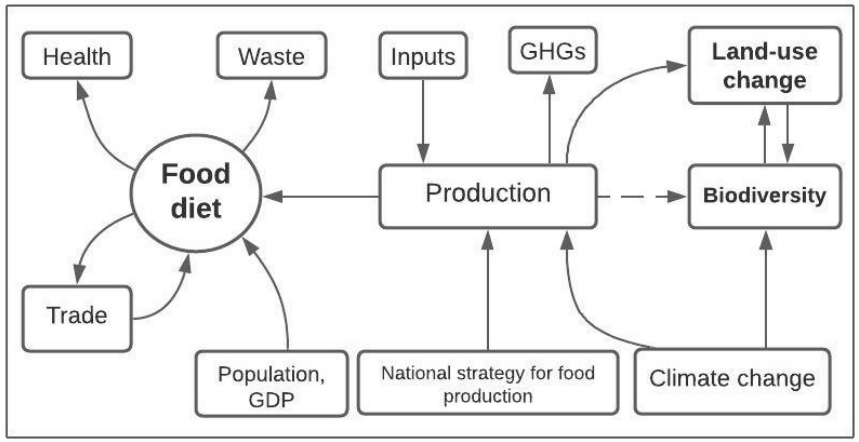


Stakeholder dialogues

Dialogue procedure



"FABLE calculator"



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Stakeholder dialogues - structure

Sweden

- Creation of iterative stakeholder dialogue format
- 2 kick-off meetings with different rounds of participants
- 5 stakeholder dialogues (+1 joint-stakeholder dialogue
- creation and completion stakeholder scenario
- 1 x Report and 1 x publication

Norway and **Germany** changed to surveys

→ hope to reach faster results and more people

→ replies expected before Summer w/ first results in Fall

Stakeholder dialogues - participants

Public Sector Dialogue	Private Sector Dialogue	NWP Research team
Folkhälsomyndigheten	Arla	SRC – lead, modeling and facilitation
Jordbruksverket	HK Scan	SLU – advisory team
Kommerskollegium	ICA	EAT – support team
Livsmedelsverket	Lantmännen	
Naturvårdsverket	LRF	
Skogsstyrelse	Orkla	

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Stakeholder scenarios - development

The All-Rounder Creator: Public sector	**- no drastic changes,** **- moderate change to plant based diet** **- but large increase in animal productivity**
The Meat Producer Creator: Private sector	**- large increase in exports of beef and pork**
The Meat Producer Jr. Creator: Private sector	**- less extent of beef and pork exports**
The High-growth Exporter Creator: Private sector	**- export rules with increase of many food commodities**
The Sustainable Consumer Creator: Research team	**- prioritizes consumer concerns of sustainable diets and animal welfare** **- include largest shift in diets and low animal productivity increases.**
The Organic Society Creator: Research team	**- similar to the All-Rounder** **- but increases in organic production (crops and livestock)**

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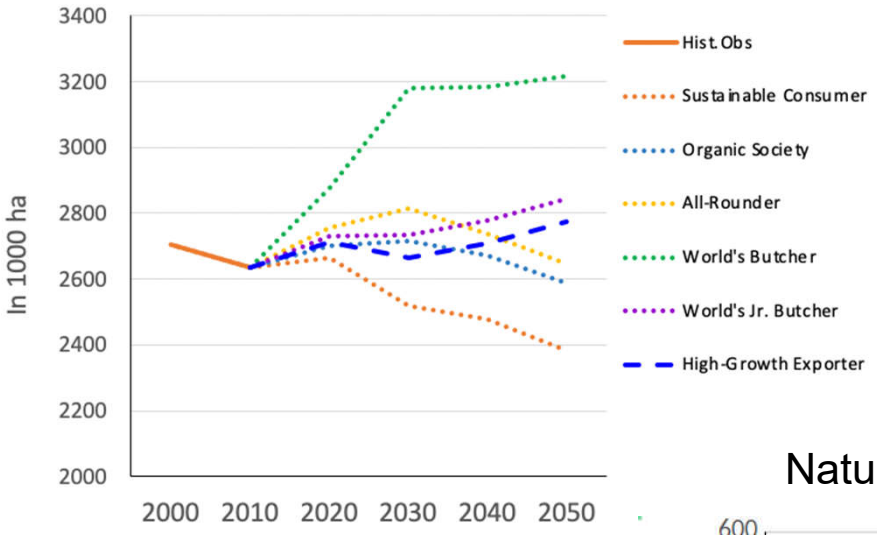
Stakeholder scenarios - development

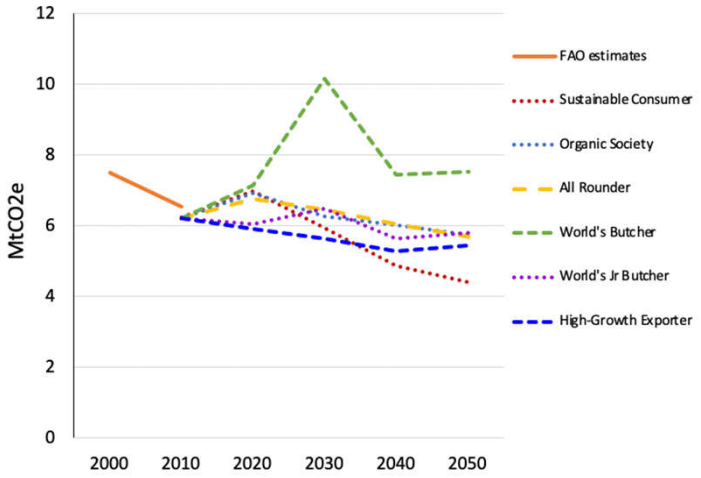
	Sustainable Consumer	Organic Society	All-Rounder	Meat Producer	Meat Producer Jr	High-Growth Exporter
Diets	Most plant-based diet	Moderate shifts to plant-based diet		Most similar to current diet		
FLW	Halve food losses and waste by 2030					
Imports	Moderate increase in self-sufficiency			Large shifts towards self-sufficiency of meat and dairy		
Exports	Modest overall growth of exports	Moderate overall growth of exports		Huge increase in beef and pork exports	Large increase in beef and pork exports	Large overall growth of exports
Crop productivity	Increase 26-75% (2005-2050)		Increase 26% (2004-2050)	Increase 15-50% (2005-2050)		
Animal productivity	Slight increase	Large annual increase	Large annual increase, huge for pork	Large annual increase		
Organic production	30% total land	50% total land	30% total land	20% total land (constant at 2020 levels)		
Afforestation	100,000 ha afforested by 2050			Constant forest area		
Rewet of peatland	Small amount of rewetting	No expansion	Small amount of rewetting	No expansion		
Protected areas	Increase to 30% of terrestrial land by 2030			No expansion		
Feed protein	Small replacement of soy protein			No change		
Feed supply	Moderate shift from feed to grazing		No change	Modest shift from feed to grazing		
Stocking density	Moderate decrease		No change	Modest decrease		
Biofuel	Modest increase in biofuel demand from agriculture			Stable biofuel demand from agriculture		

Stakeholder scenarios – future implications

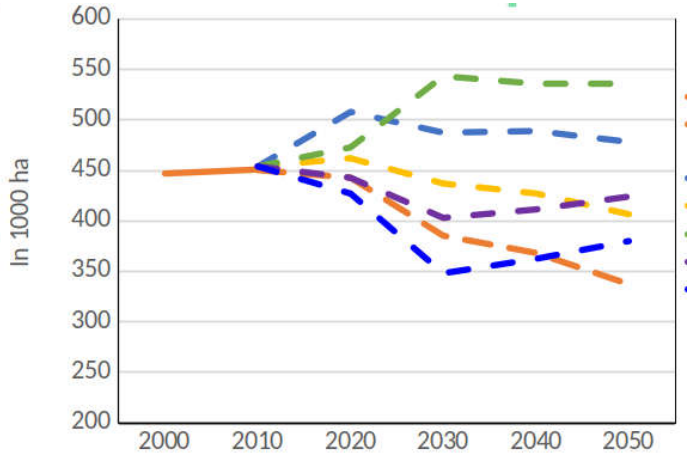
Agricultural area



GHG emissions



Natural habitats



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Stakeholder scenarios – Export oriented

All Rounder Sustainability impact overview	Domestic GHGe	→	Crop Diversity	↗
	Cropland Use	→	Chemical Use	↘
	Pasture Land	↘	Diet Impacts	↘
The Meat Producer Sustainability impact overview	Domestic GHGe	↑	Crop Diversity	→
	Cropland Use	↑	Chemical Use	↘
	Pasture Land	↑	Diet Impacts	→
The Meat Producer Jr. Sustainability impact overview	Domestic GHGe	→	Crop Diversity	→
	Cropland Use	→	Chemical Use	↘
	Pasture Land	→	Diet Impacts	→
The High-growth Exporter Sustainability impact overview	Domestic GHGe	↘	Crop Diversity	→
	Cropland Use	→	Chemical Use	↘
	Pasture Land	↓	Diet Impacts	→

Stakeholder scenarios – Sustainable

All Rounder Sustainability impact overview	Domestic GHGe	→	Crop Diversity	↗
	Cropland Use	→	Chemical Use	↘
	Pasture Land	↘	Diet Impacts	↘
The Organic Society Sustainability impact overview	Domestic GHGe	→	Crop Diversity	↑
	Cropland Use	→	Chemical Use	↓
	Pasture Land	↗	Diet Impacts	↘
The Sustainable Consumer Sustainability impact overview	Domestic GHGe	↓	Crop Diversity	↑
	Cropland Use	↓	Chemical Use	↘
	Pasture Land	→	Diet Impacts	↓

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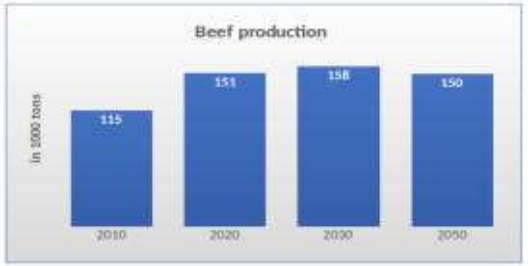
Stakeholder dialogues – lessons learned

- translate stakeholder assessment for modeling
- height responsiveness to ongoing national discussions
- the more discussion the more open stakeholders are
- also better understanding of the targets & inter-dependencies → much more engaged
- Private sector want more ambiguous targets
- both ask for guidance and have more science based targets

Continuation & Outreach

Modelling (WP1 + WP3:)

- Modelling of Nordic food and land use transitions (2019 - ongoing)
  → development of models (ongoing)
  → applications of more complex models
  → estimate outcomes under environmental and political uncertainties (CAPRI & GLOBIOM)



Outreach

Global 'Scenathons' in with all country teams in 2019 & 2020:
→ FABLE reports (2019/2020)

→ two policy briefs (UNSDSN & IIASA)
→ EAT Stockholm Food Forum (video)
→ Stakeholder dialogues report (and a publication
→ ten publication and four manuscripts are in progress