



SDGs and Climate Policy:

How does short-term action on SDGs influence long-term climate goals?

Isabela Tagomori*, Mathijs Harmsen, Muhammad Awais, Edward Byers, Vassilis Daioglou, Jonathan Doelman, Adriano Vinca, Keywan Riahi, Detlef van Vuuren

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Context



Agenda to meet social, economic and environmental goals in 2030



PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

Keep global temperature increase well-below 2°C, preferably below 1.5°C

Context

- > This study aims at understanding the **synergies** and **trade-offs** between climate policy and the SDGs agenda: how does short-term action on SDGs influence long-term climate goals?



Agenda to meet social,
economic and environmental
goals in 2030



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Keep global temperature
increase well-below 2°C,
preferably below 1.5°C



Approach



Land, Water, Energy Nexus

Climate



Approach



Healthier diets:

- EAT-Lancet

Reduced food waste in primary, processing and consumption stages

Improvements in **equity** of food availability



Efficiency improvements:

- Irrigation;
- Power generation;
- Industry

Implementation of environmental flow constraints



Maximize access to electricity

Minimize the use of traditional biomass and coal for cooking and heating



Mapping and implementing protected areas



Limit the increase in global temperature to well-below 2°C (forcing target of 2.6 W/m²)



Scenarios



Climate impacts, including:

- Precipitation pattern/drought intensity
- Yield changes
- Renewable energy
- Cooling/heating demand

| Scenario | Nexus SDGs Measures | Climate Target (forcing in 2100, in W/m ²) |
|-------------------------|---|---|
| SSP2-CF (REF) | No additional effort | 6.0 |
| SSP2-26-CF (CLIM) | No additional effort | 2.6 |
| SSP2-26-SDG-CF (SDG) | Additional measures to achieve food/water/energy/biodiversity targets | 2.6 |



Effectiveness of actions on SDGs



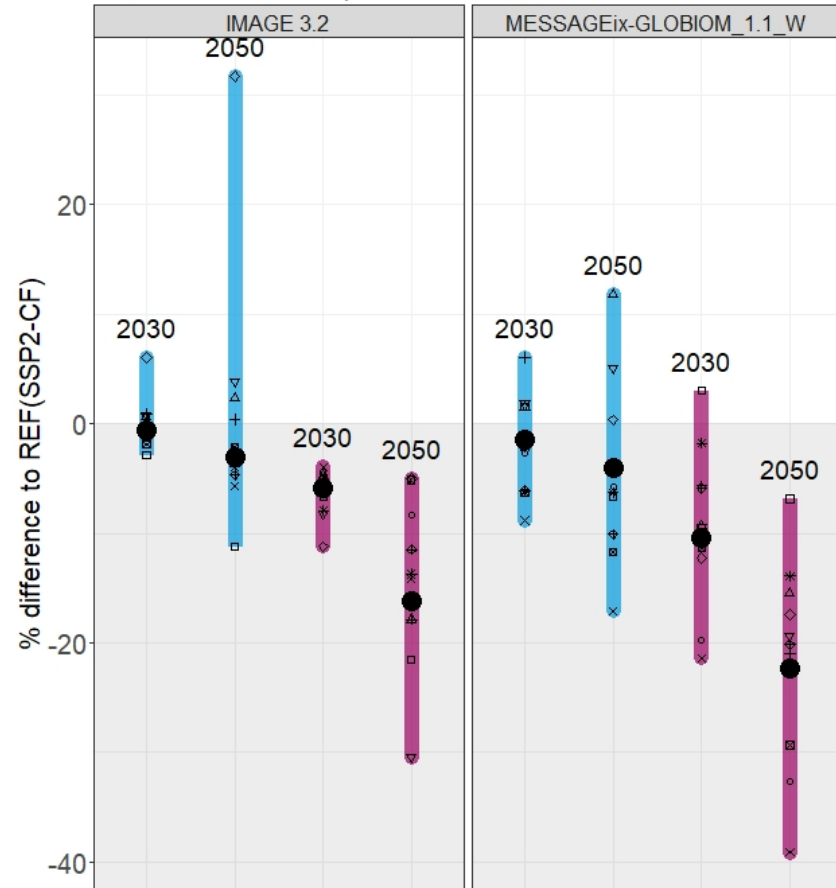
Food



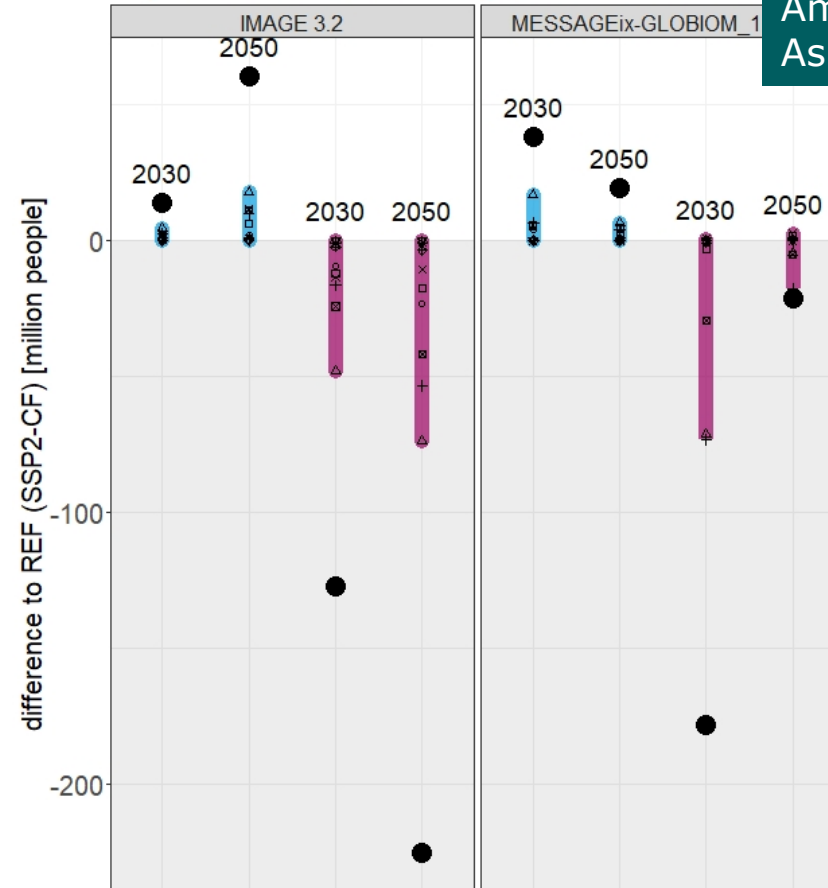
Diet changes (less meat, more vegetables) and reductions in food waste

Reductions in population at risk of hunger especially in Latin America, Africa, India and other Asian countries

Food Production | Non-Energy Crops



Population in Risk of Hunger

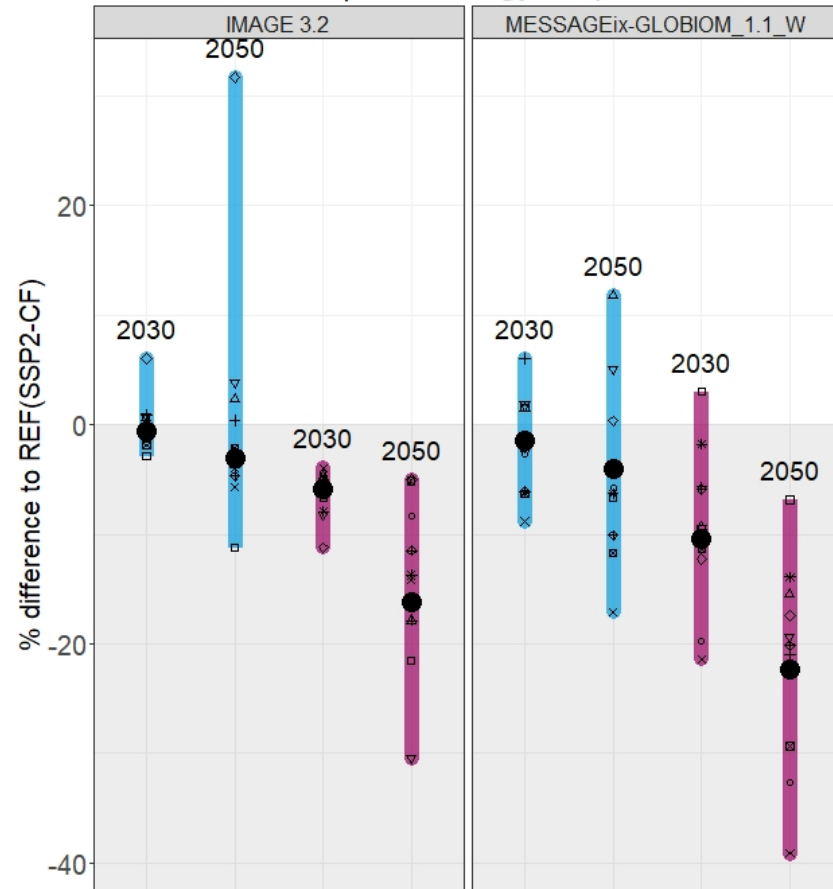


- Region
- CAs, China
 - Latin America
 - △ SAs, India
 - + SSAf
 - × Middle East
 - ◇ EU28
 - ▽ North America
 - ▣ Asia others
 - * Pacific OECD
 - ⊕ FSU, Russia
 - World
- Scenario
- SSP2-26-CF
 - SSP2-26-SDG-CF

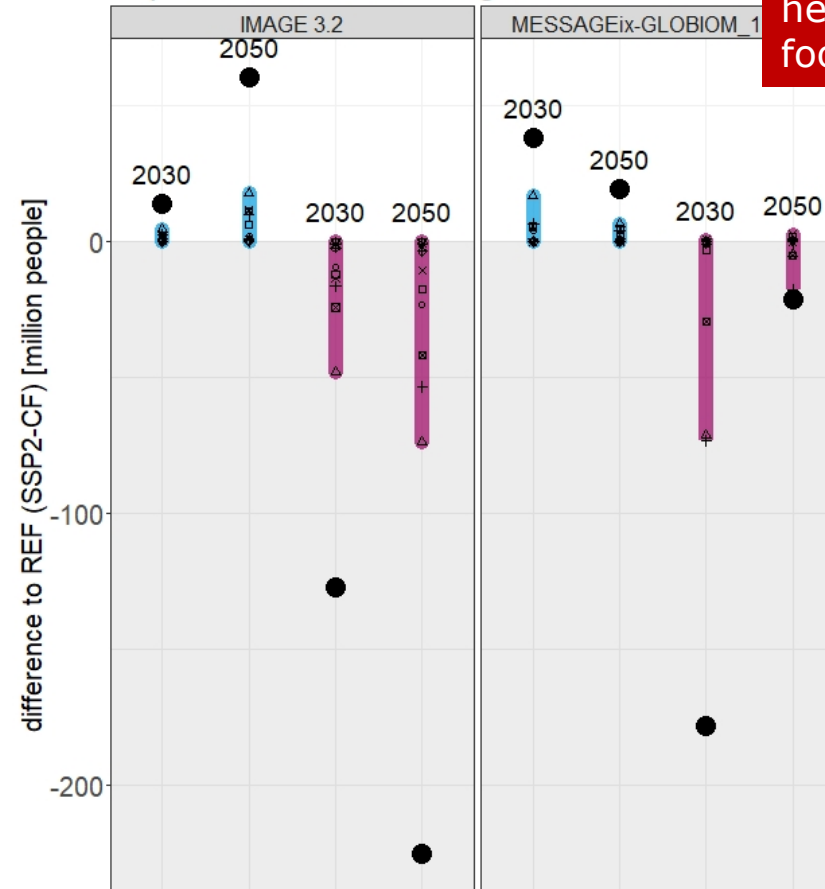


Food

Food Production | Non-Energy Crops



Population in Risk of Hunger

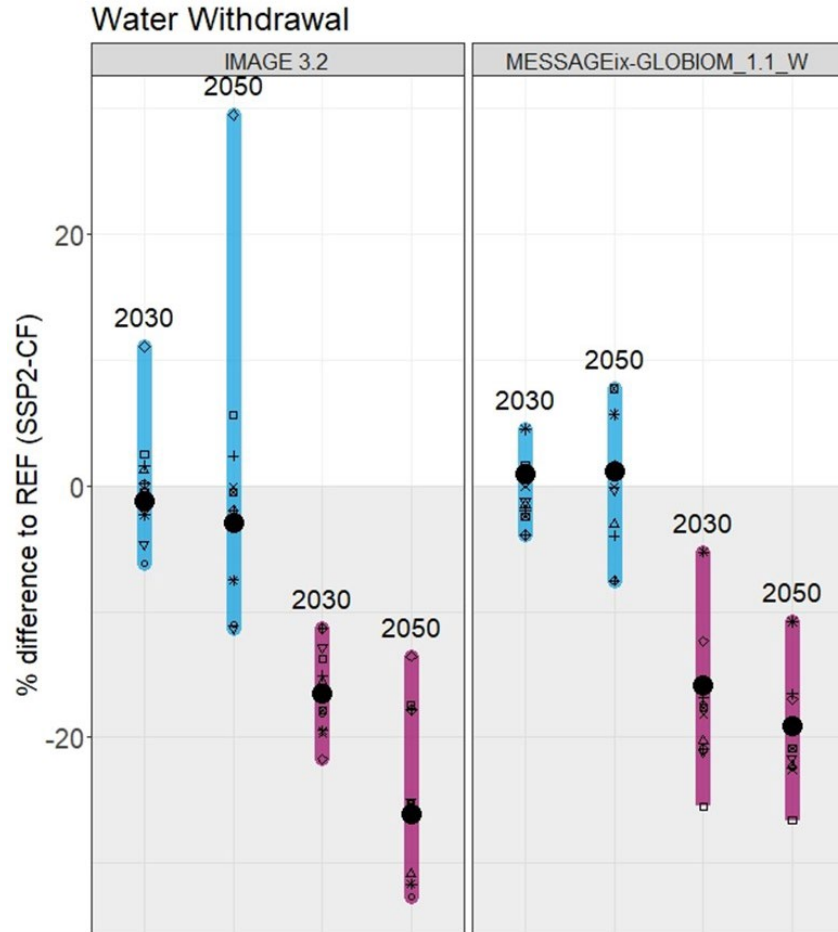


Trade-offs: without equity of food availability, measures on healthier diets might increase food insecurity.

This transition is an enormous challenge, that shouldn't be overlooked.

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Water



Efficiency improvements in water use in agriculture, power generation and industry

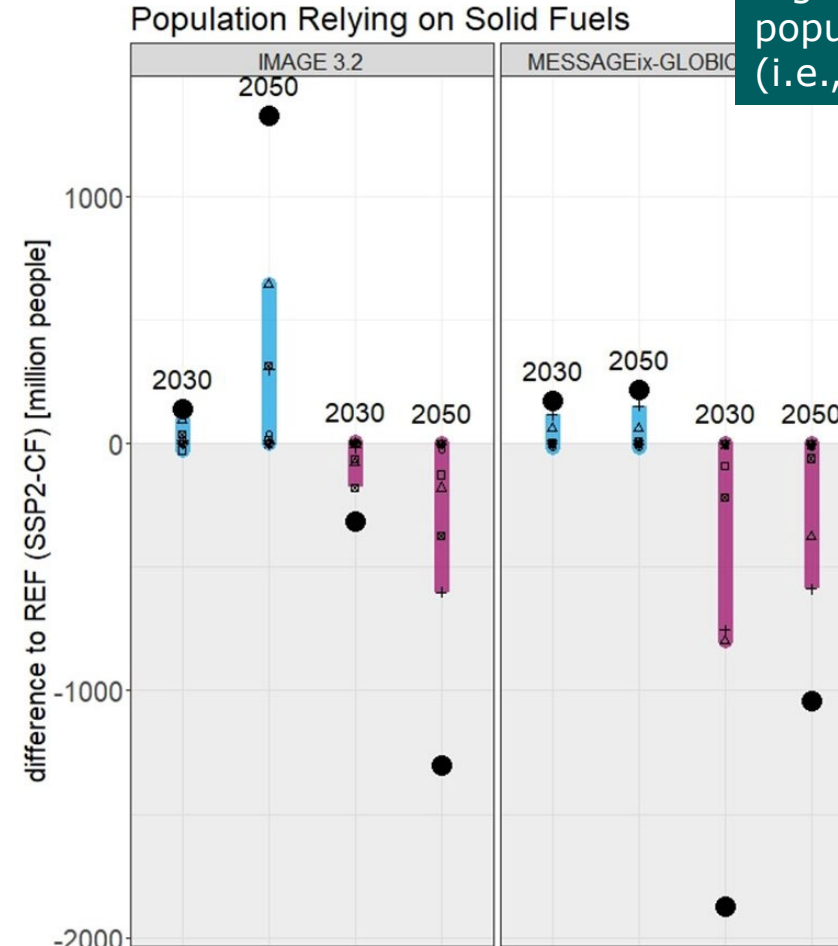
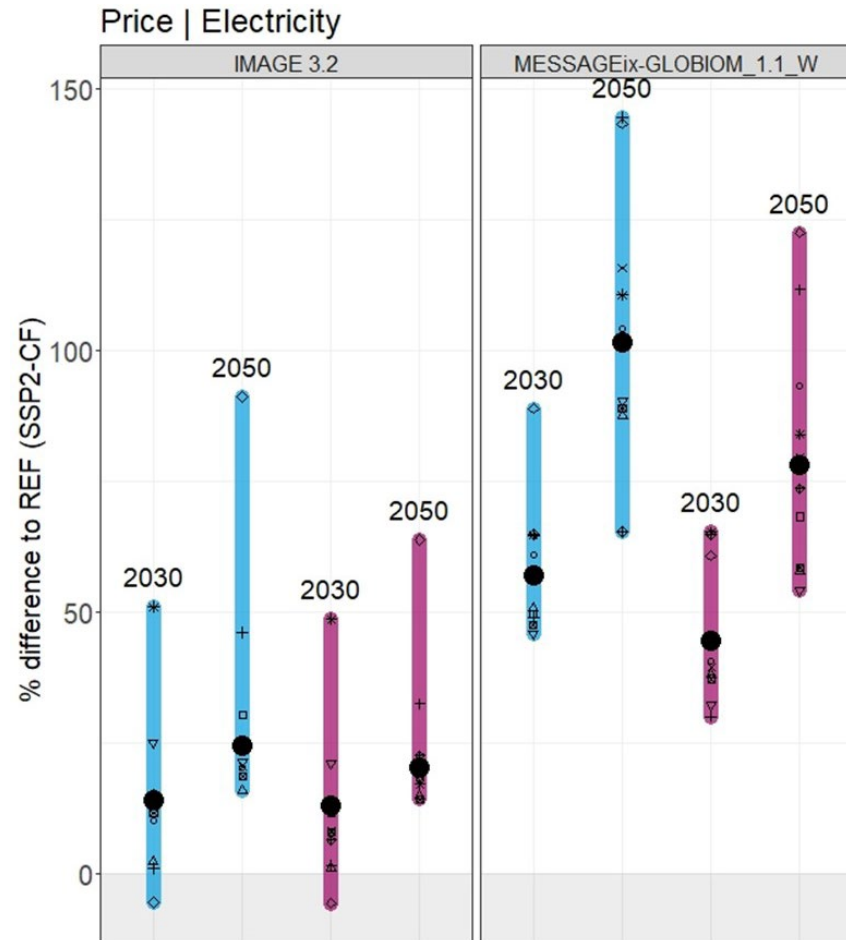
Environmental flow requirements strongly limit water withdrawals in the Middle East, Northern Africa and Central Asia



Energy

Relatively lower energy prices

Significant reduction in population relying on solid fuels (i.e., traditional biomass, coal)



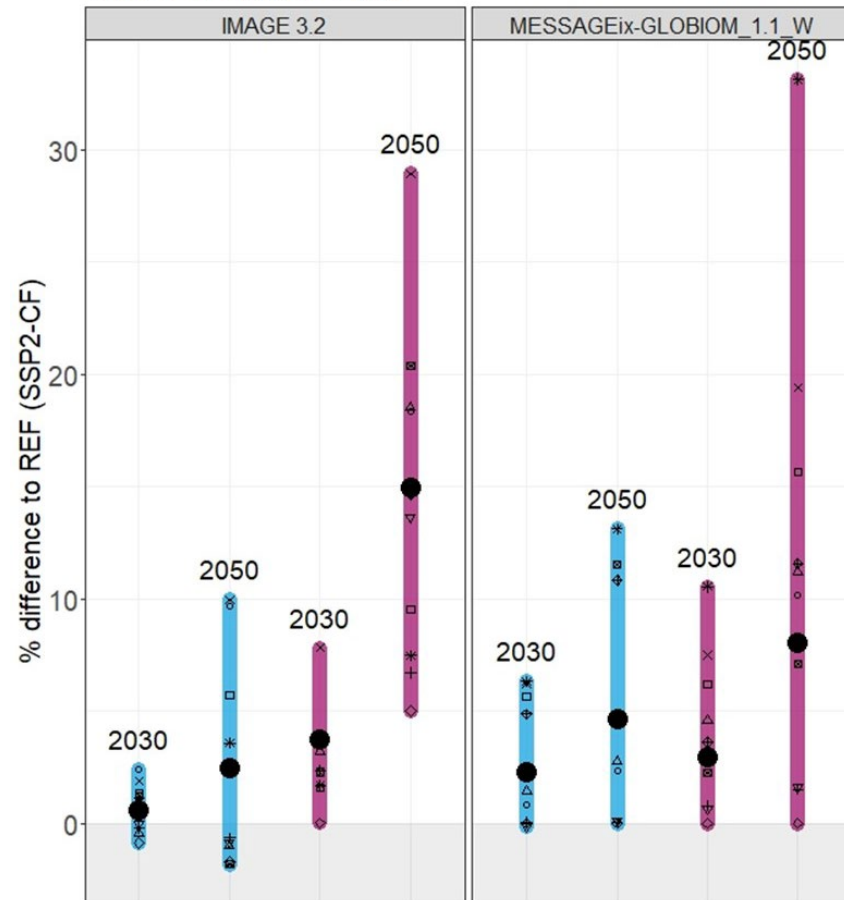
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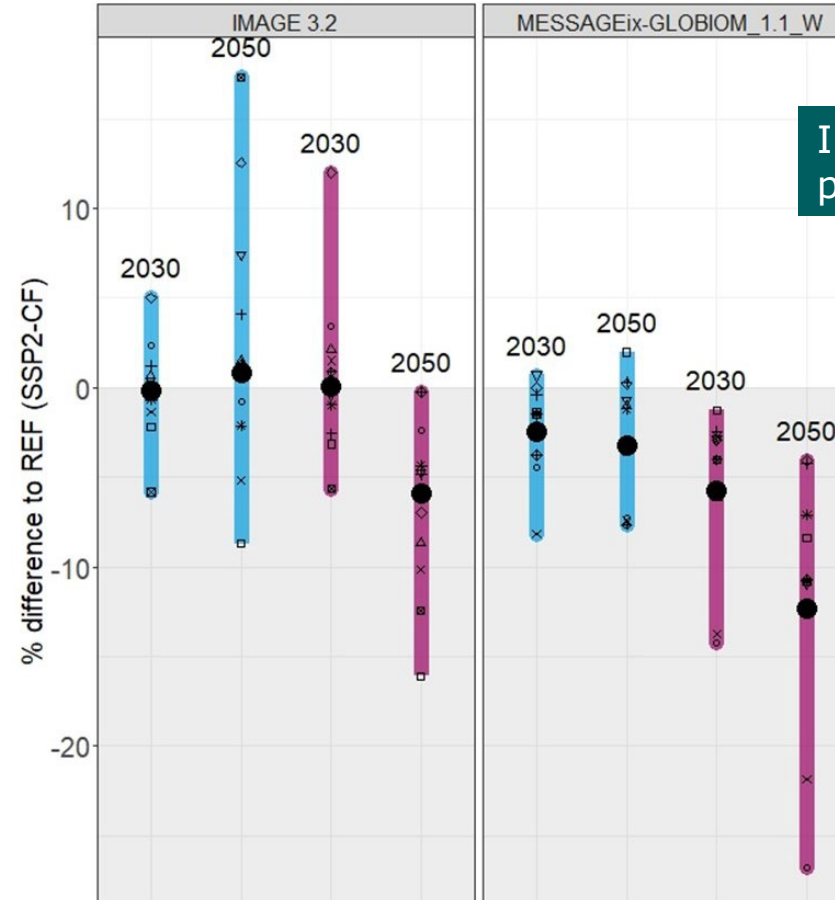
Life on Land



Share of Natural Land



Share of Cropland



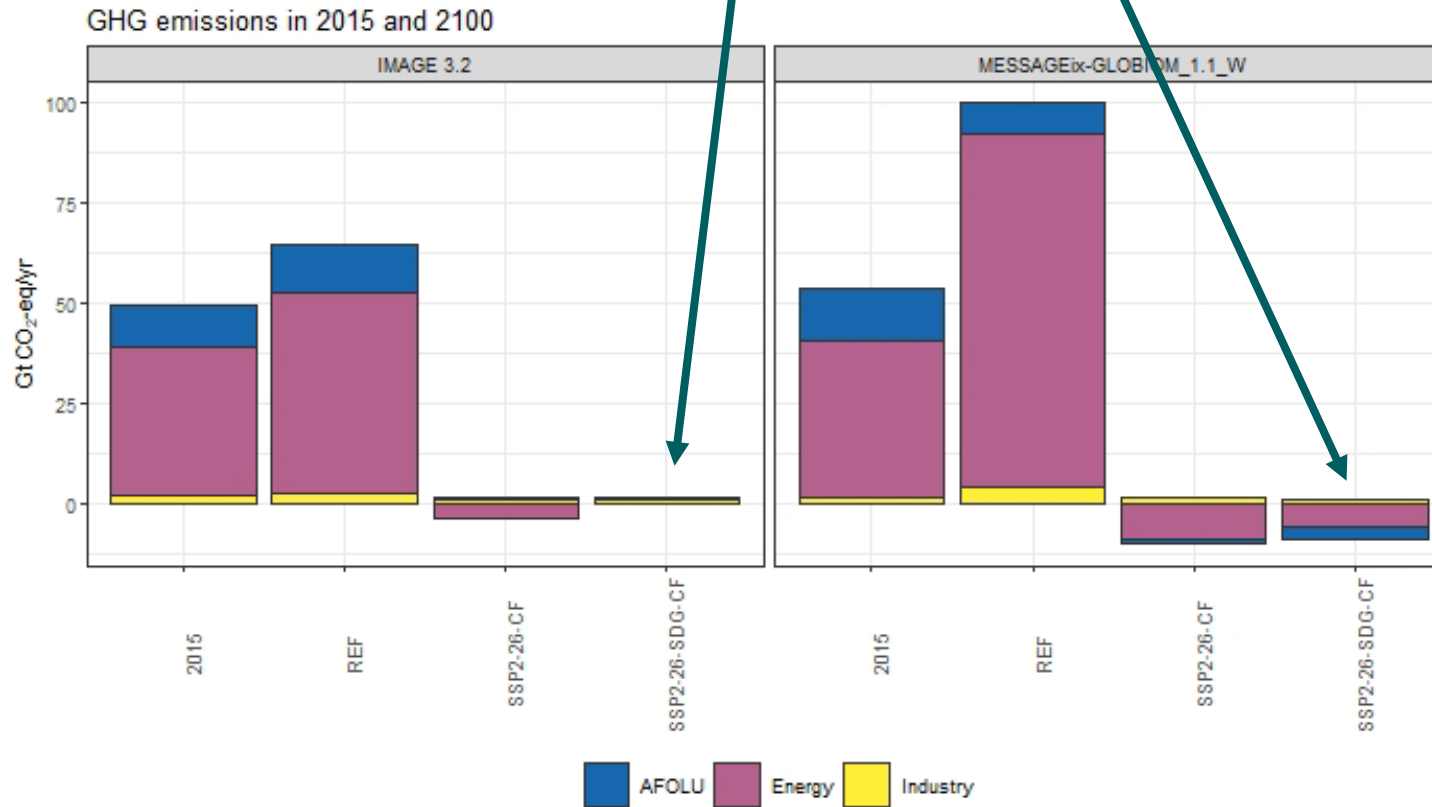
Improvement in biodiversity protection

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SDGs and climate strategies

Less need of negative emissions in the long-term





Conclusions

- **Clear positive effects** of combining the agendas on sustainable development and climate policy, with near-term action on SDGs positively influencing the achievement of long-term climate goals
 - **Reduction of population at risk of hunger and relying on solid fuels**
 - **Increased preservation of natural lands and biodiversity**
 - **Improved access to and affordability of electricity**



Conclusions

- When combined with equity in food availability, shifting towards **healthier diets and reducing food waste** has positive impacts across multiple SDGs, increasing food security, with co-benefits to sustainable water management and the climate goals
- The **transition is still enormously challenging**, and the implementation of measures needs to carefully focus on synergies and avoid trade-offs
 - Increases in food prices due to pressure in the land system in multiple regions and shifting towards less carbon-intensive diets without ensuring equity in food distribution could, in fact, lead to higher food insecurity



Conclusions

- Combining climate policies and the SDGs agenda results in a smaller temperature overshoot and consequently **less need for negative emissions** by the end of the century to meet the global climate goals
- This reflects the synergies between the two types of policies, with **short-term action on SDGs** helping achieve the **long-term climate goals** in a more sustainable way



Thank you!

More info can be found at:

NAVIGATE – Next Generation of Advanced Integrated Assessment Modelling to Support Climate Policy Making (<https://www.navigate-h2020.eu/>)

Isabela Schmidt Tagomori

PBL Netherlands Environmental Assessment Agency

isabela.tagomori@pbl.nl

@IsabelaTagomori