WP10 - Foresight

Petr Havlík (IIASA) & Michiel van Dijk (IIASA, WECR)

SUSFANS Foresight

Foresight on sustainable food and nutrition security (SFNS) in the EU, based on:

- Future scenario narratives and their translation into quantitative model drivers

- Assessment of the challenges for SFNS in the EU

- Assessment of a range of agro-food-nutrition policies

- Comprehensive assessment of selected holistic future scenarios developed along main challenges, policy responses, and innovation pathways

SUSFANS European SFNS foresight approach

SUSFANS

food system for health - environment - enterprise

SCENARIO NARRATIVES REVIEW

EU FOOD SYSTEM CHALLENGES

AGRO-FOOD-NUTRITION POLICIES

CONTEXTUAL SCENARIOS

INNOVATIONS

SUSFANS FORESIGHT

FINAL FORESIGHT & POLICY GUIDANCE

———————

SUSFANS EUROPE TOOLBOX TOUR (CZ, DK, FR, IT)

CLOSING SEMINARS (Brussels)

Contextual scenarios

Focus on 3 contextual scenarios

– SUSFANS stakeholder scenarios provide the narrative for indirect drivers

Contextual scenario	Stakeholder scenario
Business as usual (REF0)	Scenario 1
High challenges to EU FNS (REF–)	Scenario 4 Scenario 6
Low challenges to EU FNS (REF+)	Scenario 7

Source: Zurek et al. (2017), SUSFANS deliverable report D6.2

Challenges to sustainable FNS in Europe

Contextual scenarios *building on the stakeholder consultation in WP6* focusing on the main challenges and drivers for the sustainable FNS in Europe

- Demographic and income trends

- Technological change

- International trade policies

- Climate change: Impacts & Mitigation

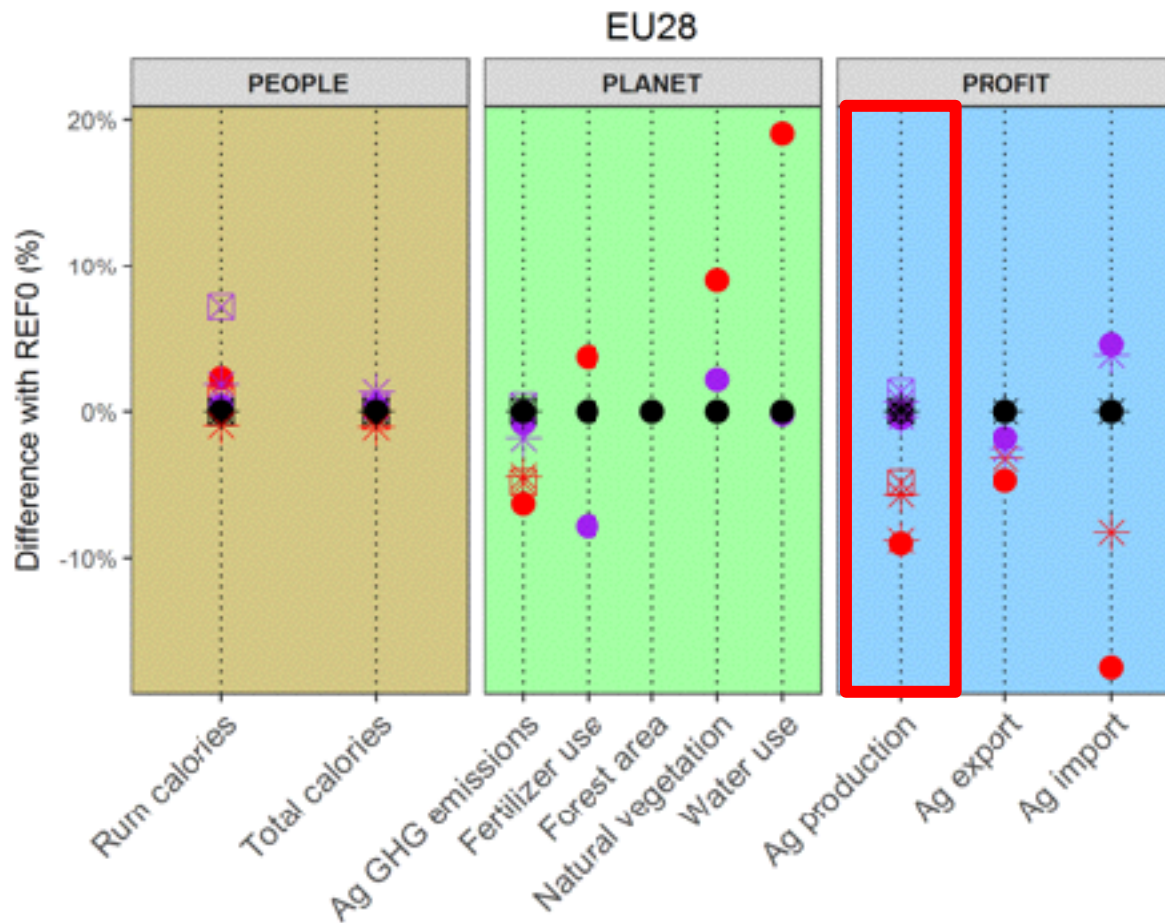- Policy context: Current agricultural and fisheries policies

# Quantification of scenario drivers

- Overview of the quantified driver variables included in the database and main scenario relevant assumptions

|			Baseline REF0	High challenges for EU FNS REF-	Low challenges for EU FNS REF+
Scenario narrative			Stakeholder Scenario 1	Stakeholder Scenario 4 & 6	Stakeholder Scenario 7
Quantitative drivers		Unit			
Demographic trends	Population	Million	EU reference / SSP2	SSP3	SSP1
Income trends	GDP	USD Billion	EU reference / SSP2	SSP3	SSP1
Inequality	Dietary energy consumption distribution				
Technological change	Crop yield growth	Index (2010=1)	CAPRI baseline / SSP2	SSP3	SSP1
	Feed conversion efficiency growth	Index (2010=1)	SSP2	SSP3	SSP1
International trade policies	Ad valorem equivalents	%	Current	Current +50%	Current -50%
Agricultural policies	Producer Support	Euro/ha		Current policies	
Fisheries policies	Aquaculture Capacity	Million Tons		Current policies	
	Fishery Capacity	Million Tons		Current policies	
Climate change mitigation policies	Carbon price	USD/tCO2eq		RCP2p6, RCP4p5, RCP6p0, noMITIG	
	Forest area	Million Ha		RCP2p6, RCP4p5, RCP6p0, noMITIG	
	Biomass for energy supply	EJ		RCP2p6, RCP4p5, RCP6p0, noMITIG	
	First generation biofuels	EJ		RCP2p6, RCP4p5, RCP6p0, noMITIG	
Climate change impacts - trend	Crop yield change	Index (No CC =1)		RCP2p6, RCP4p5, RCP6p0, RCP8p5	
Climate change impacts - variability	Crop yield change	Index (No CC =1)		Historical, Plus1p5, Plus2p0	

Contextual scenarios
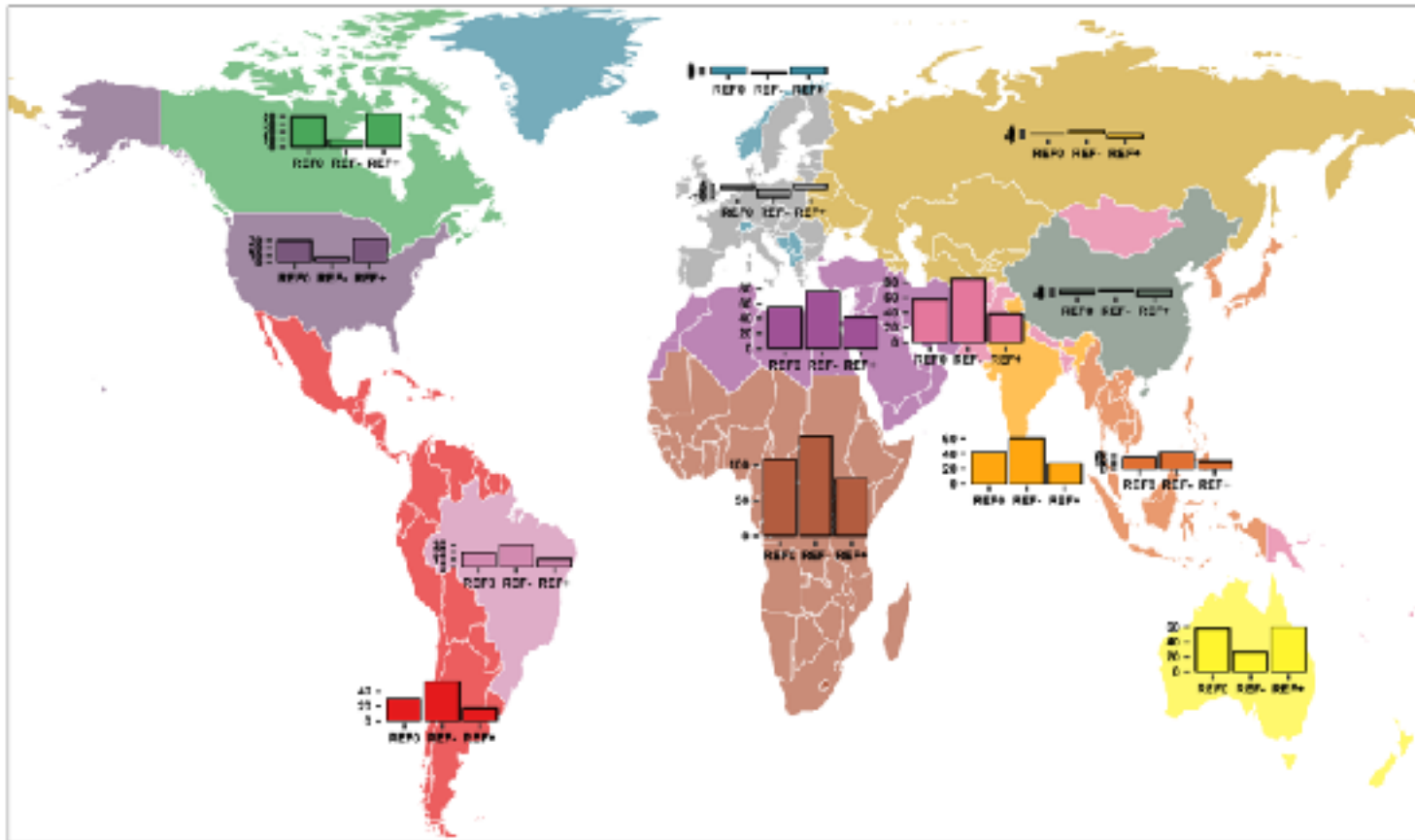

EU28

Contextual scenarios
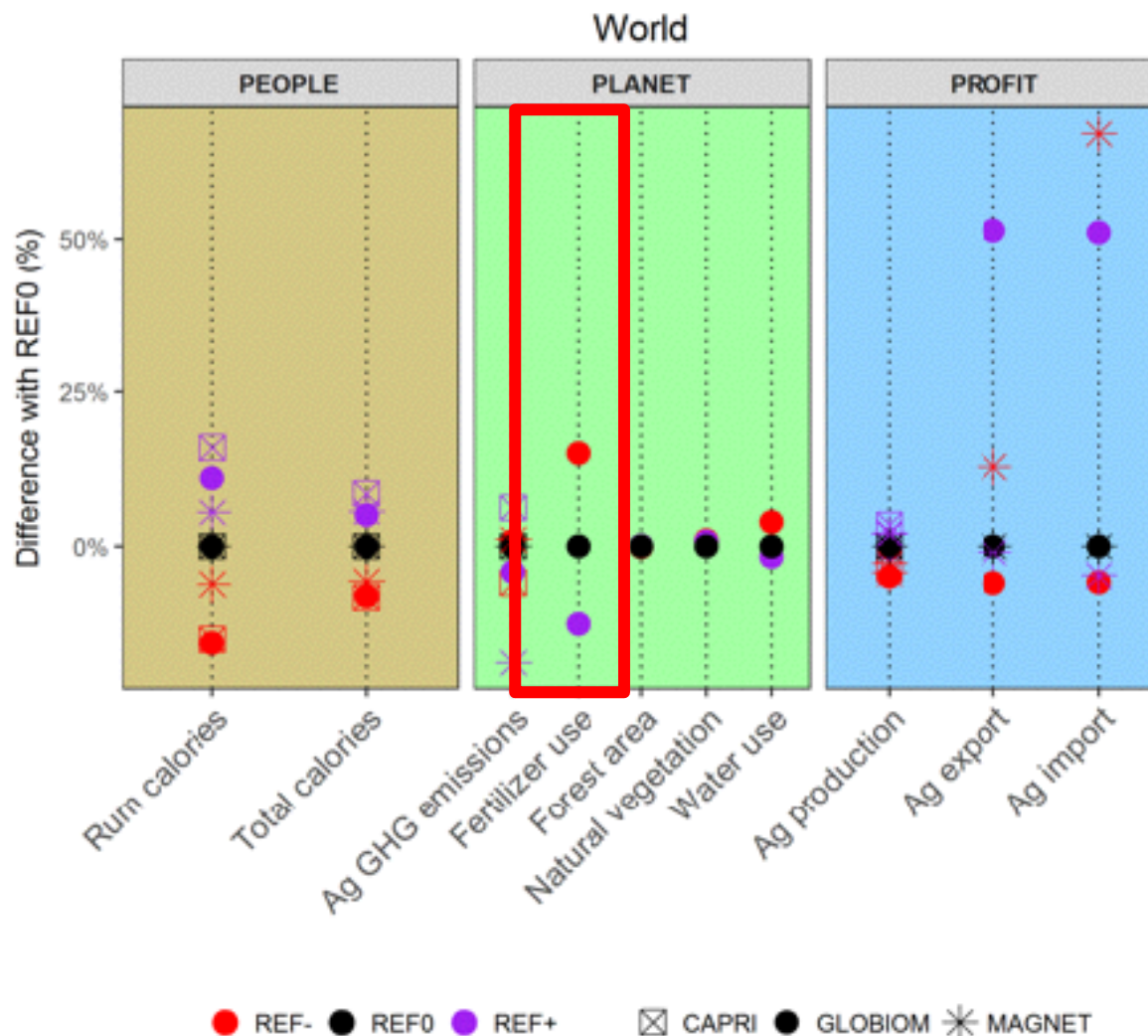
World

Population growth: EU

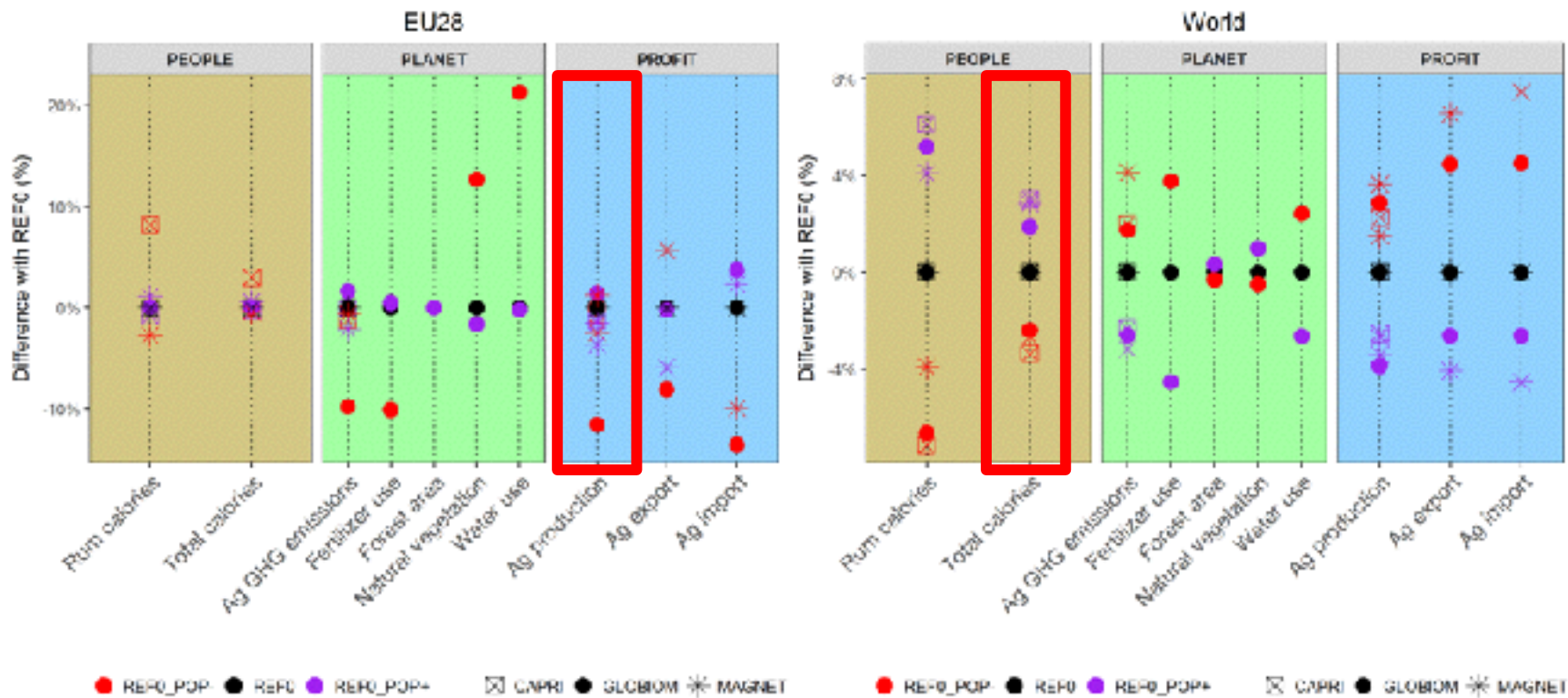Total population change between 2010 and 2050 in REF0 (bars) [%]
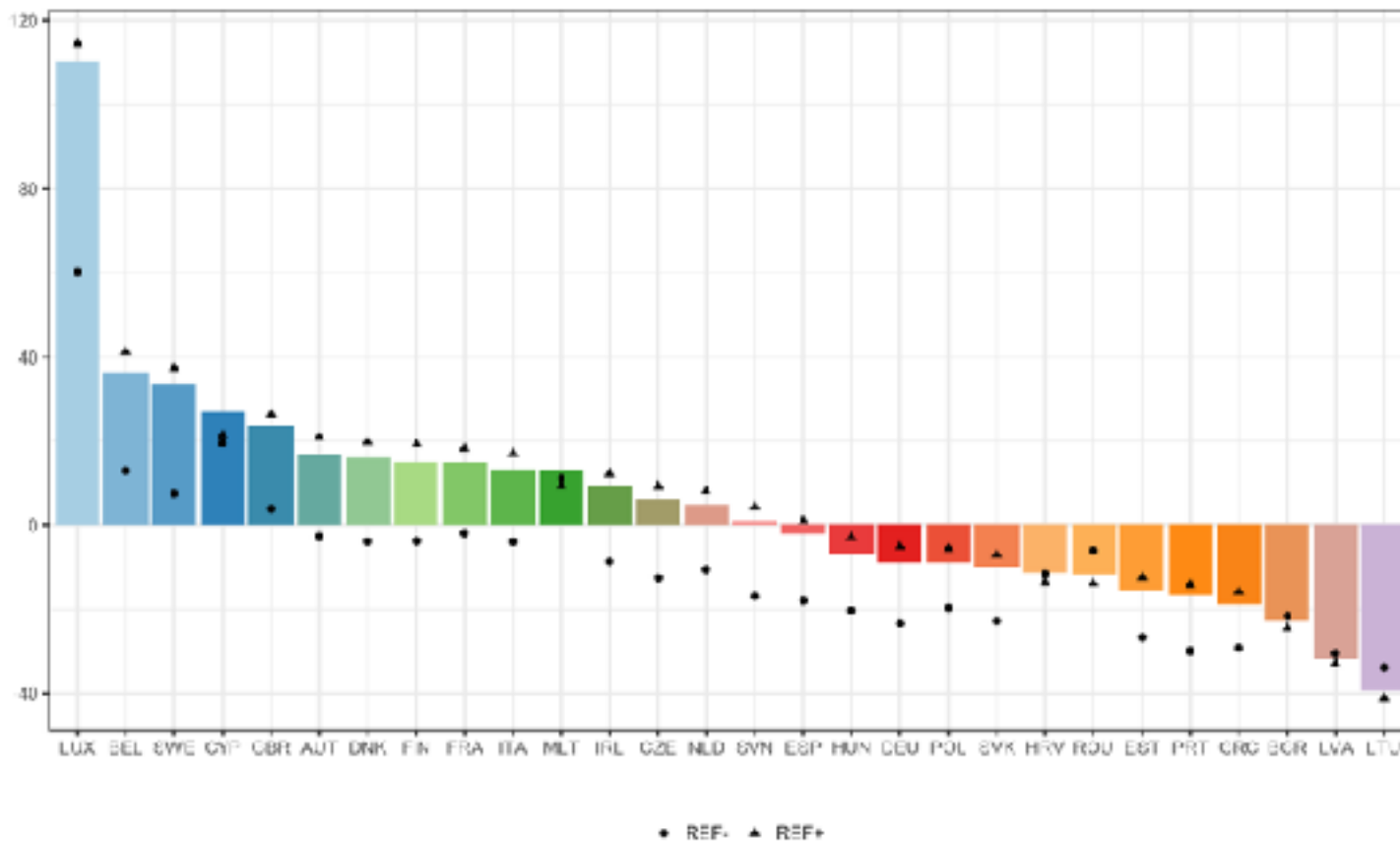
Population growth: World

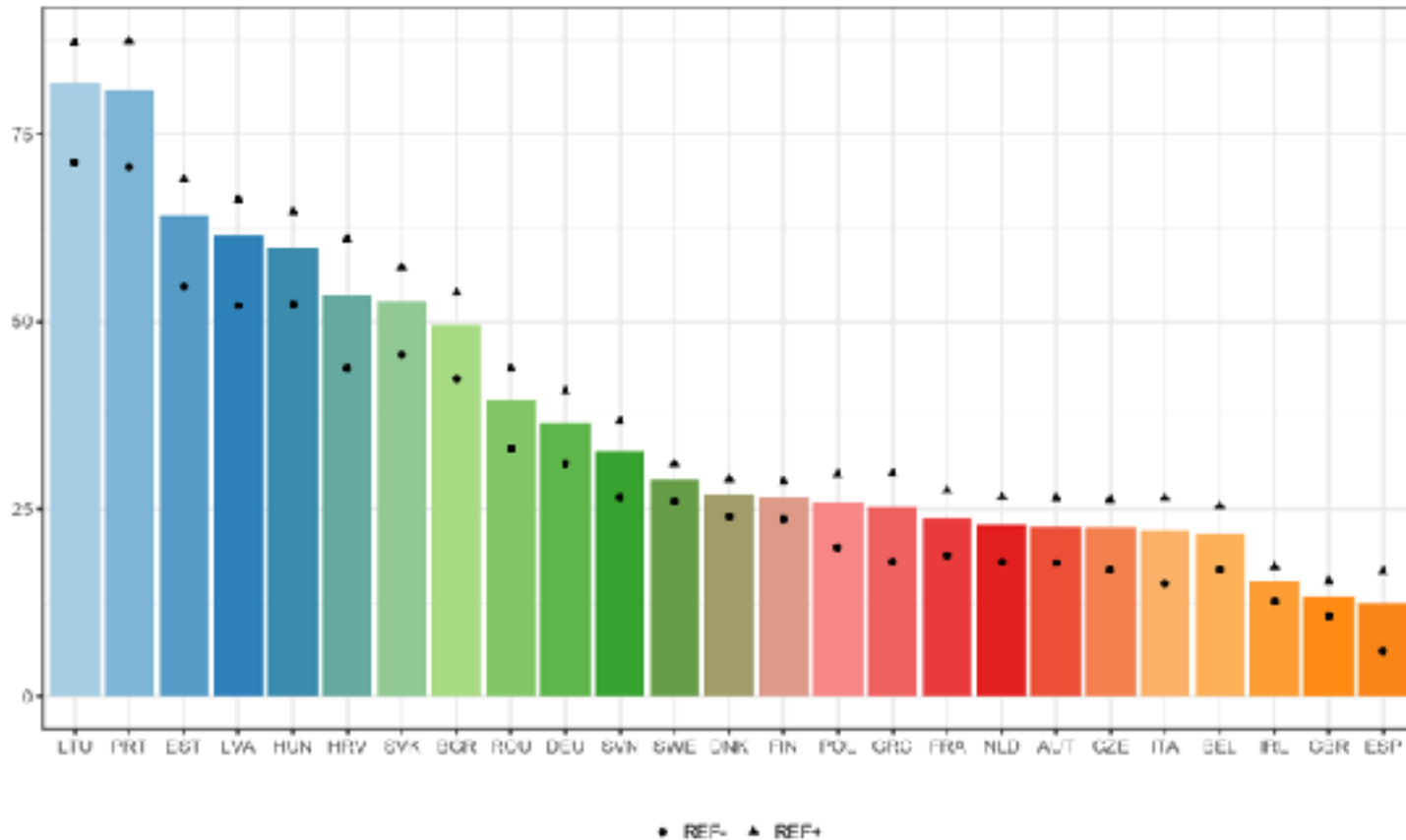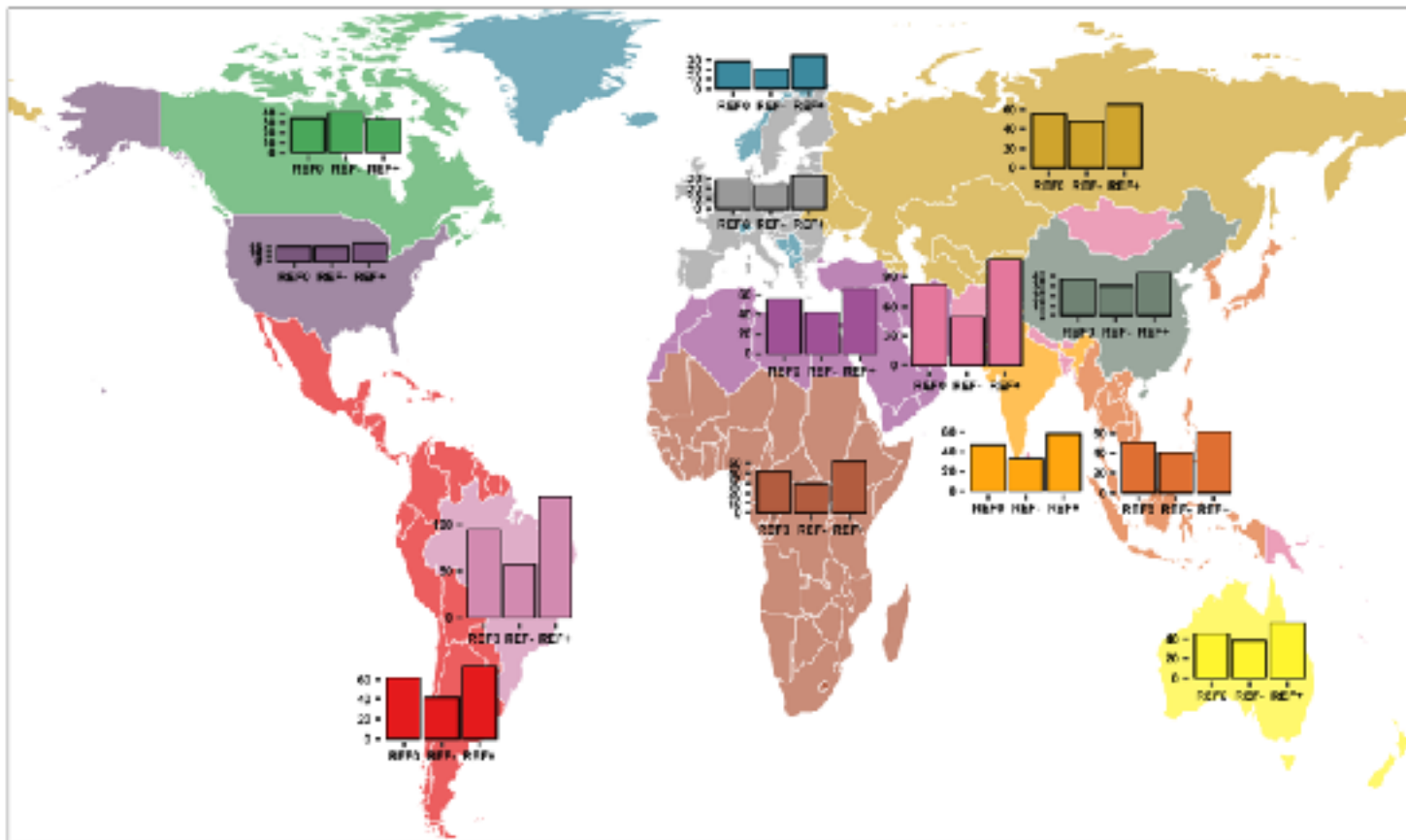Total population change between 2010 and 2050 [%]

Population growth

Crop yields: EU

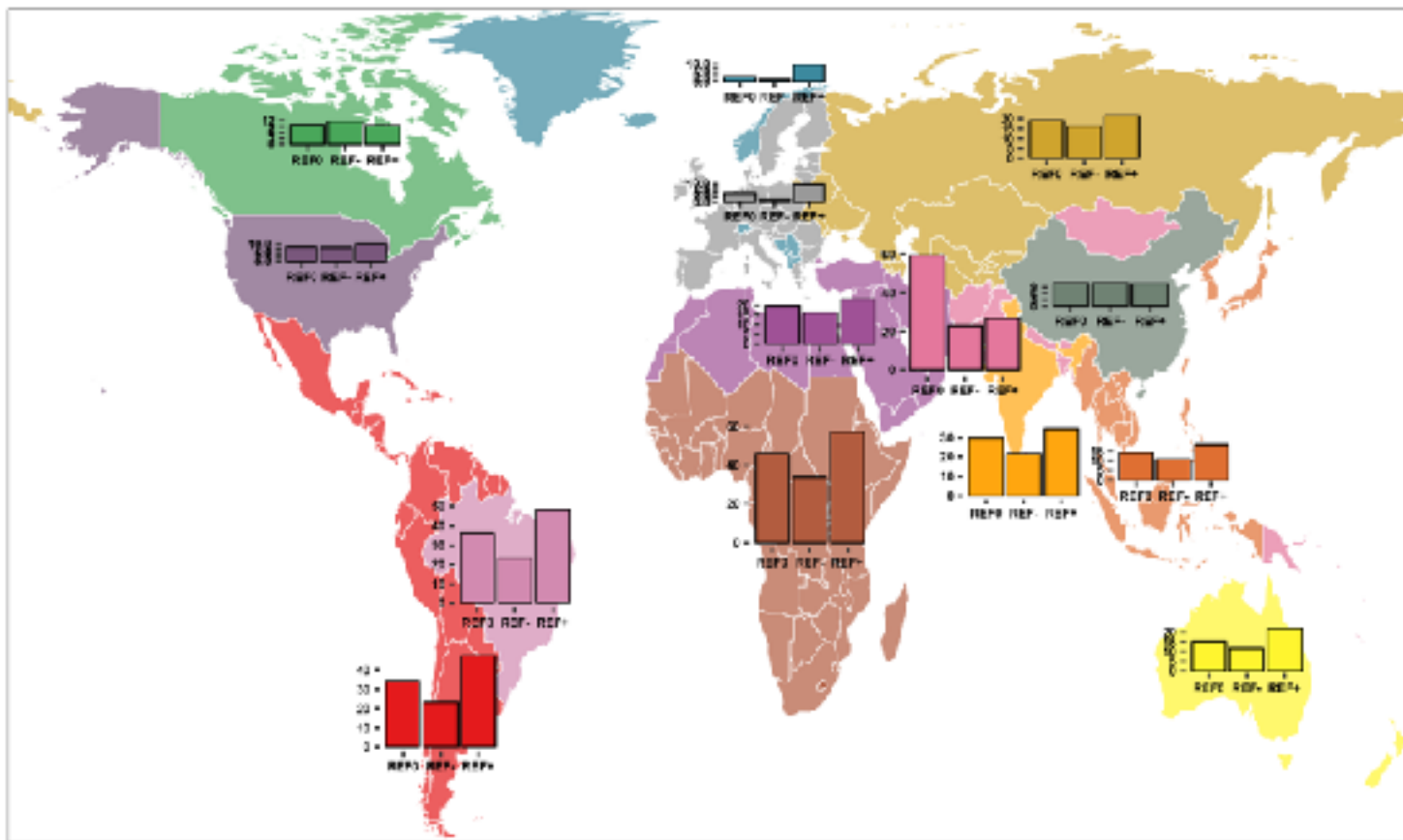Wheat yield change between 2010 and 2050 in REF0 (bars) [%]

Source: Own calculations based on CAPRI model baseline and Havlík et al. (2012)

Crop yields: World

Wheat yield change between 2010 and 2050 [%]

Feed conversion efficiency

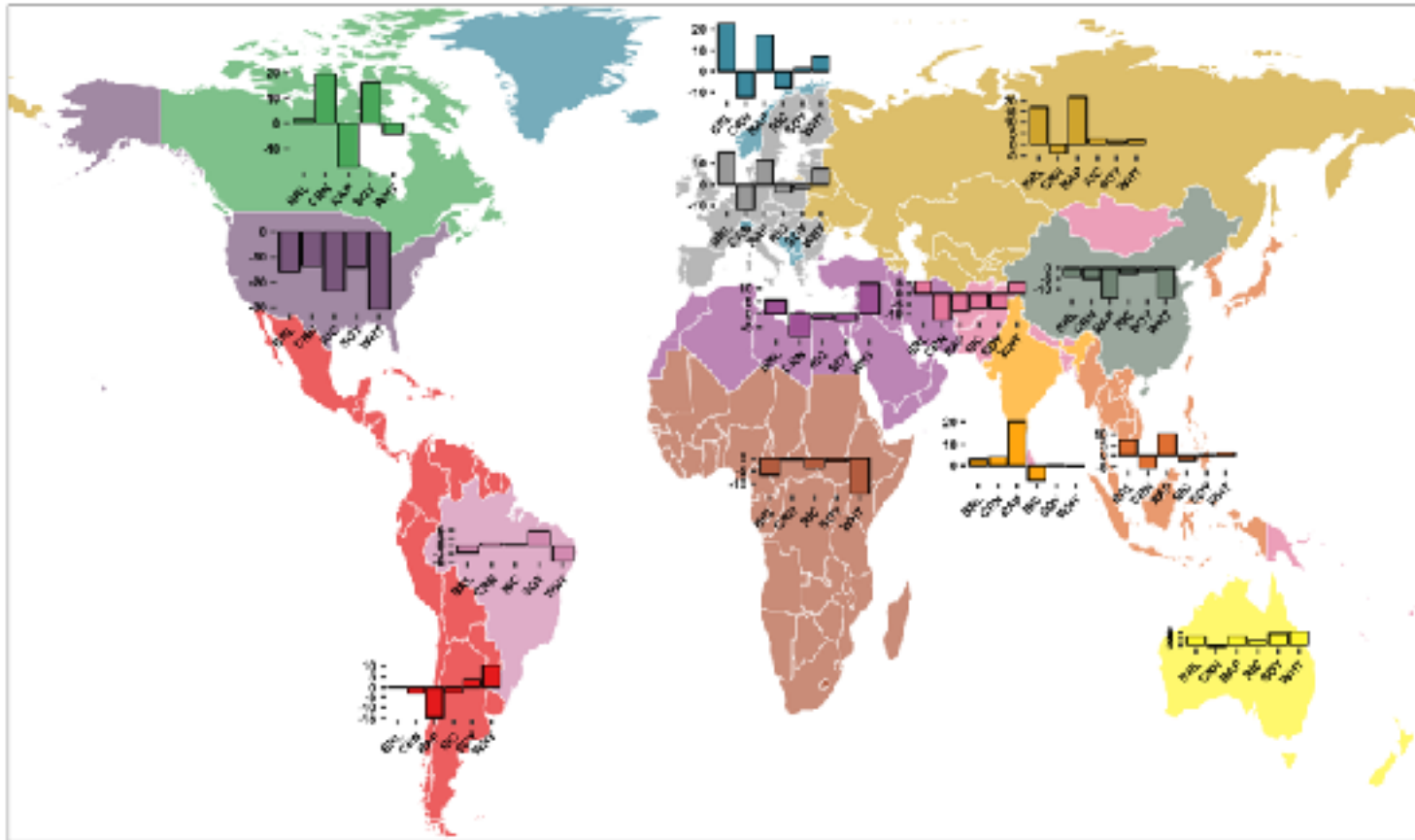Beef, dairy and small ruminants FC efficiency change between 2010 and 2050 [%]

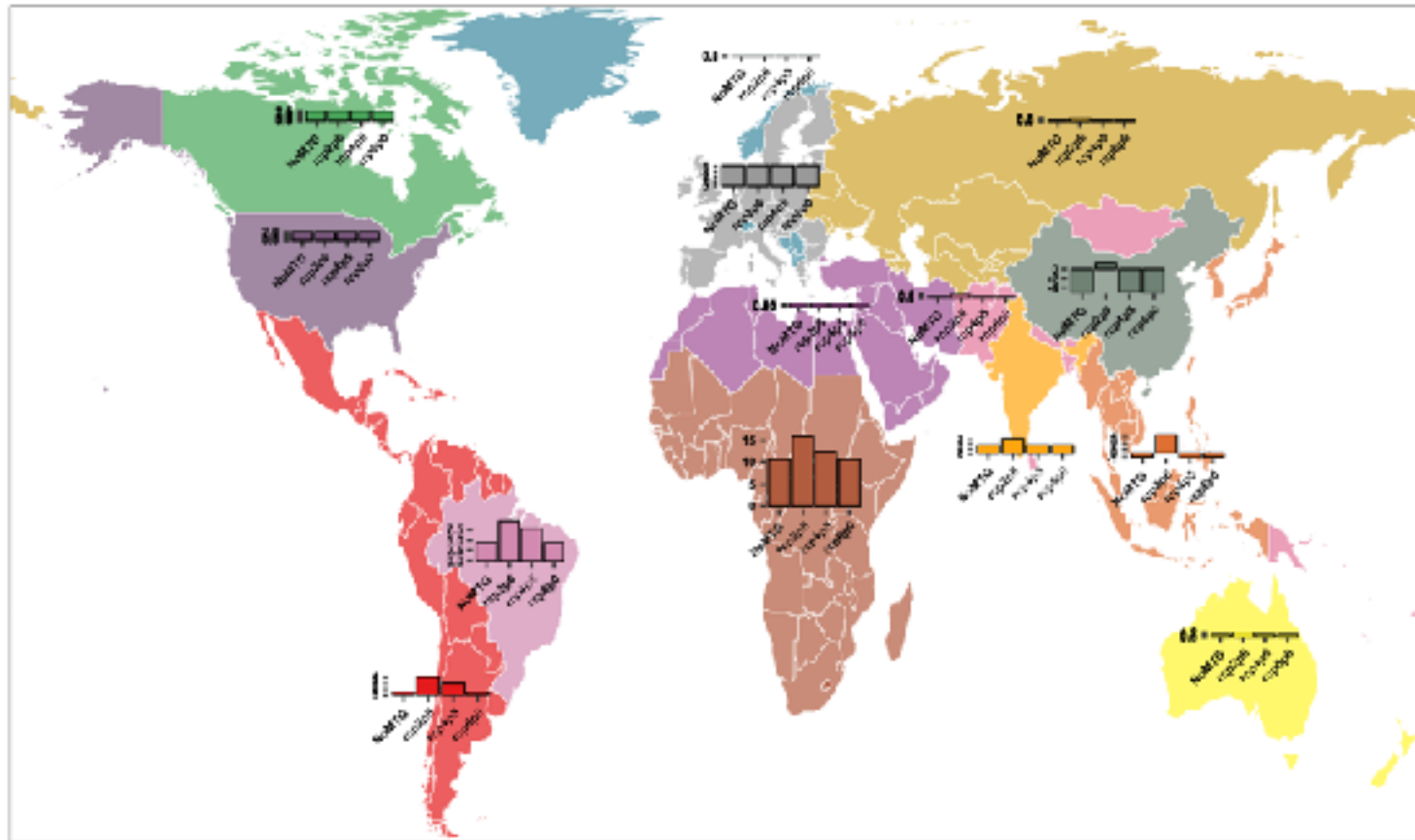Source: Soussana et al. (2012)

Technological change
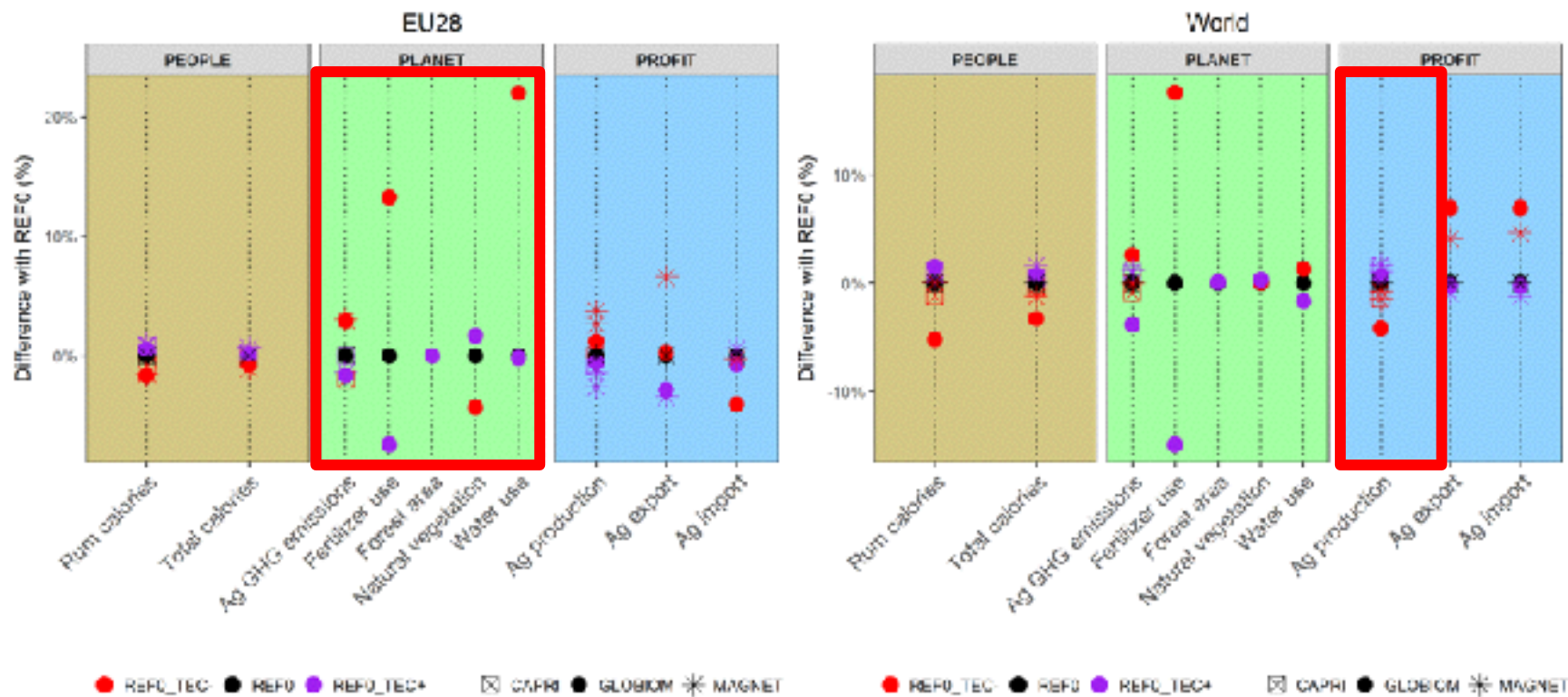
Climate change impacts: World

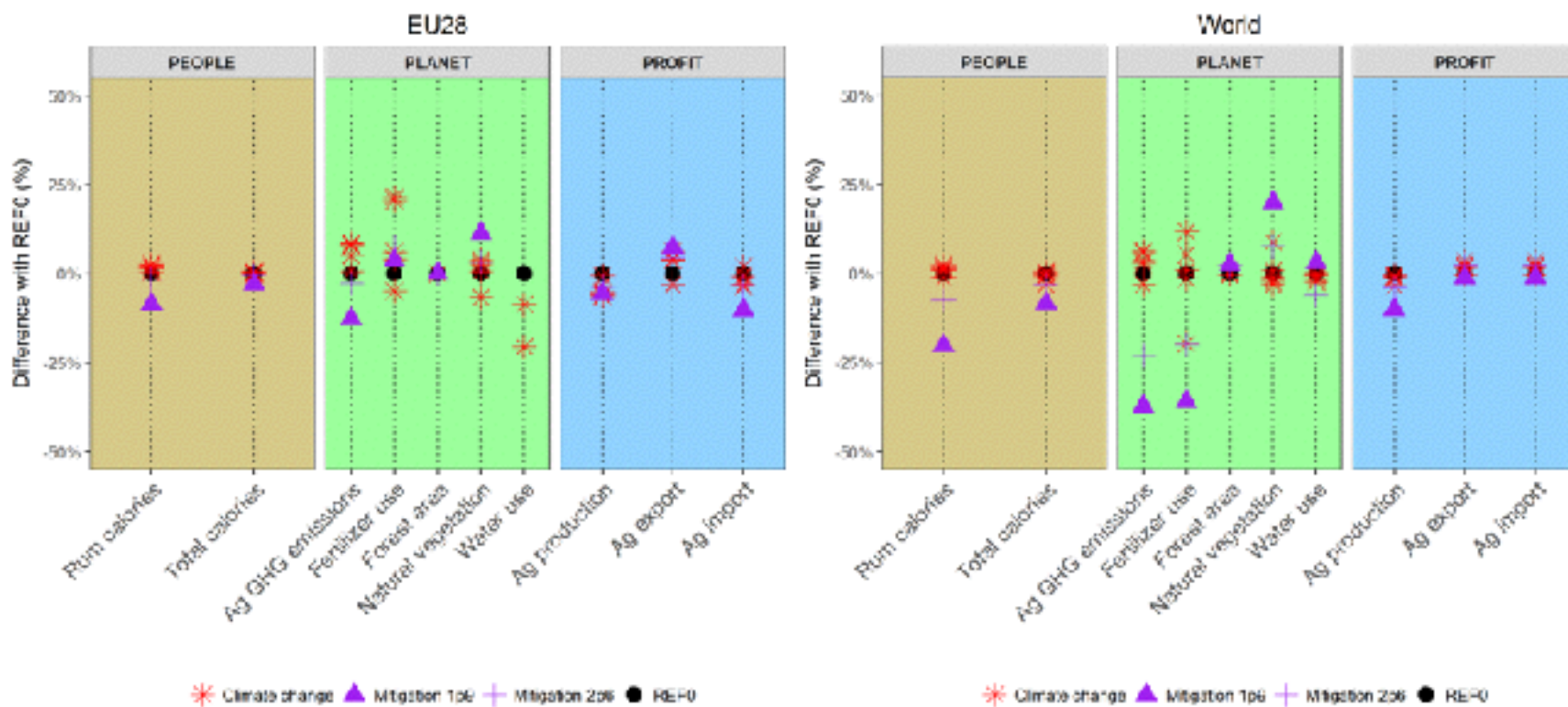Crop yield change due to climate change by 2050 [%]

Source: EPIC calculations from ISI-MIP Fast Track (Leclère et al. 2014)

Biomass supply for energy production in RCP2p6 by 2050 [EJ]

Source: MESSAGE-GLOBIOM (Fricko et al. 2017)

Climate change

Thank you!

havlikpt@iiasa.ac.at