2da Conferencia Regional sobre el IPCC

Cambio climático: conocimiento y soluciones hacia la COP26

Key Findings from the Food Security Chapter in the IPCC Special Report on Climate Change and Land

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The Food System

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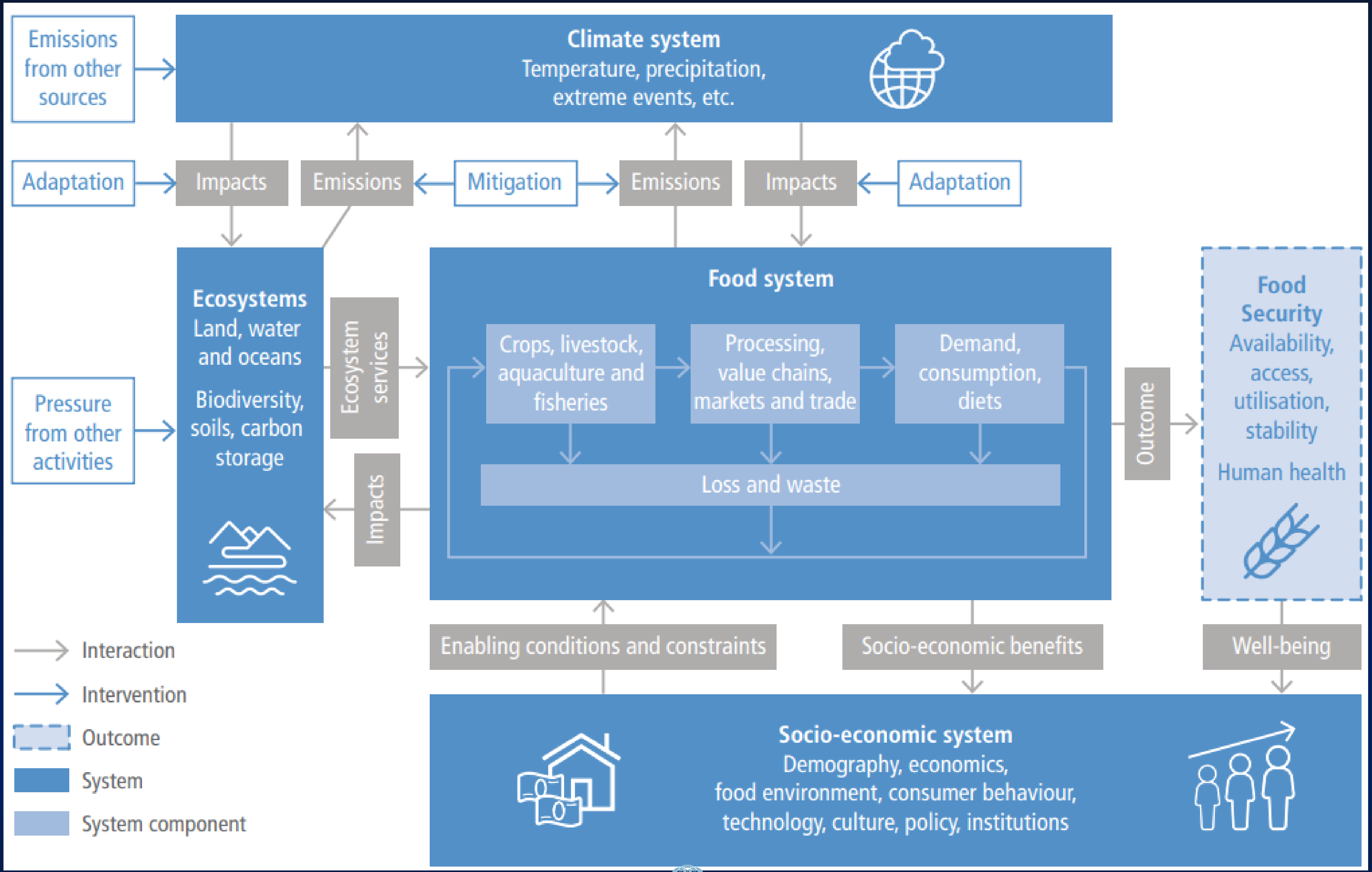
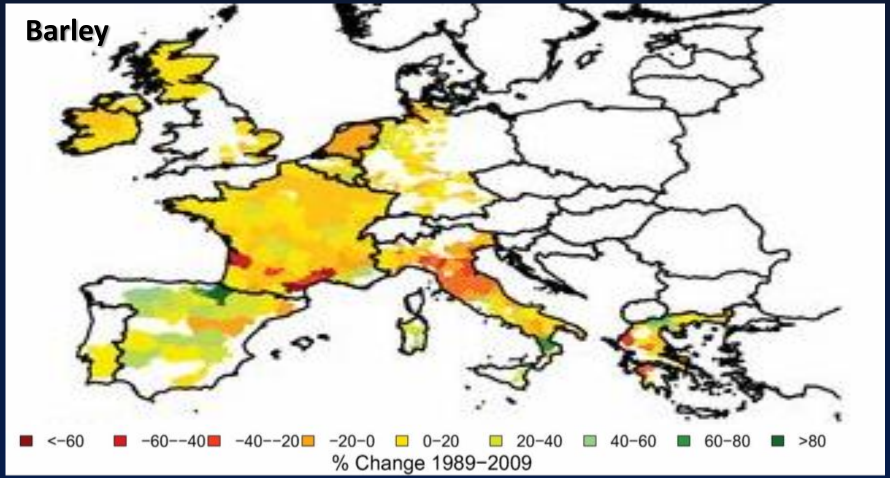


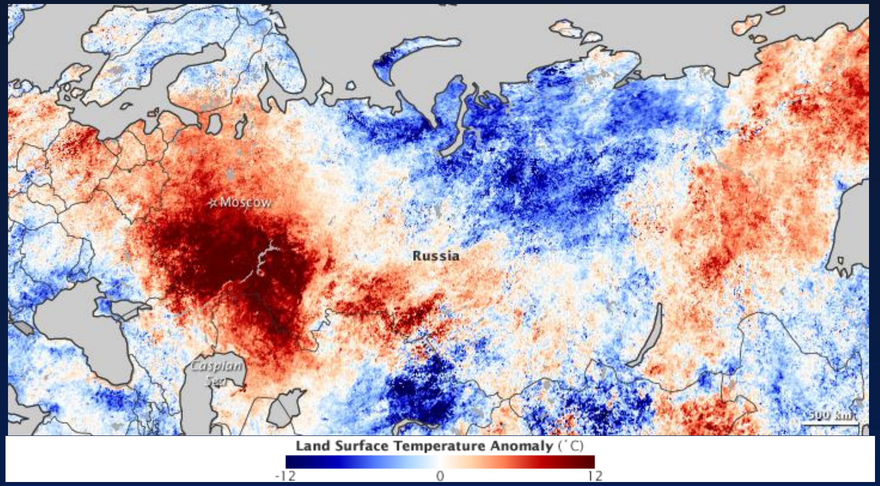
Food System Emissions

Food System		
Components	Emissions [$GtCO_2$-eq yr^{-1}]	Percentage of anthropogenic GHG emissions (%)
Agriculture	6.2 ± 1.4	9–14
Food-related FOLU	4.9 ± 2.5	5–14
Pre- to post-production	2.6–5.2	5–10
Total	10.8–19.1	21–37

Food System Vulnerabilities - Observed

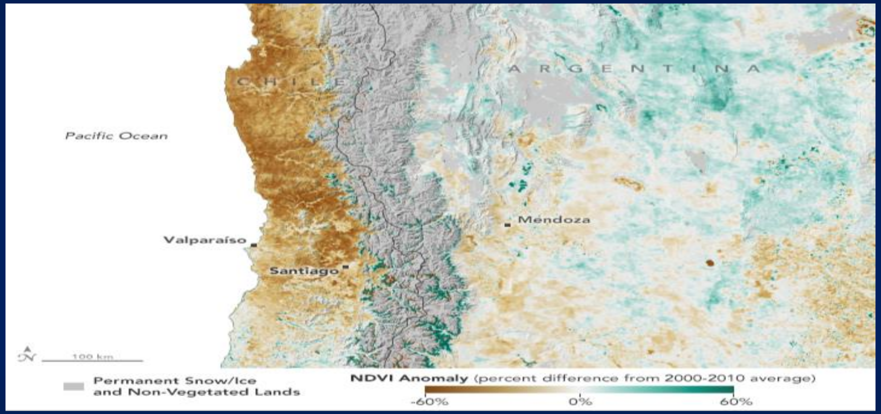


Availability – Decreases in barley yields in Southern Europe.
Moore and Lobell, 2015



Access – 2010-2011 global food price spike, triggered by heatwave in Eastern Europe/Russia
Hoag 2014, Watanabe et al 2013, Barriopedro et al 2011. Image: NASA

Utilization – Reduced quality of apples in Japan due to exposure to higher temperatures.
Sugiura et al 2013. Image: LA Times

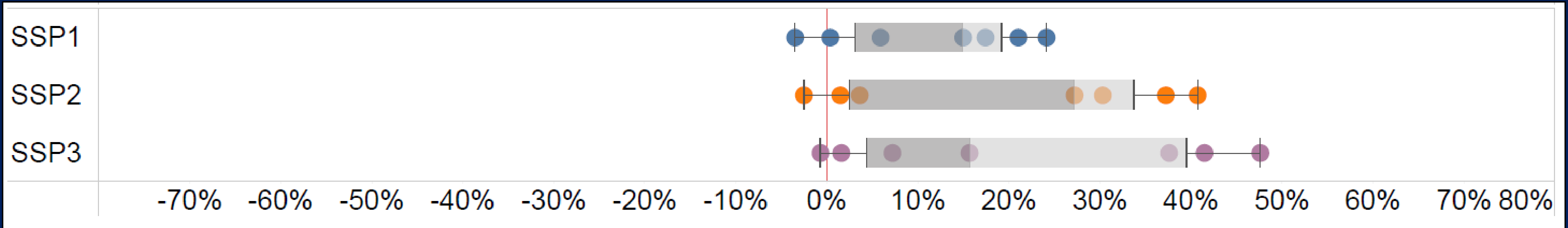


Stability – In 2019, Central Chile had 80-90% rainfall deficit, declared agricultural emergencies
NASA, 2020. Image: NASA

Food System Vulnerabilities - Projected

Food security will be increasingly affected by projected future climate change (high confidence)

Percent change in population at risk of hunger by 2050



Hasegawa et al. 2018

Response Options

Response options throughout the food system, from production to consumption, including reducing food loss and waste, can be deployed and scaled up to advance both adaptation and mitigation (high confidence)

Response Options

Response options based on land management

	Response option	Mitigation	Adaptation	Desertification	Land Degradation	Food Security	Cost
Agriculture	Increased food productivity	L	M	L	M	H	—
	Agro-forestry	M	M	M	M	L	●
	Improved cropland management	M	L	L	L	L	●●
	Improved livestock management	M	L	L	L	L	●●●
	Agricultural diversification	L	L	L	M	L	●
	Improved grazing land management	M	L	L	L	L	—
	Integrated water management	L	L	L	L	L	●●
	Reduced grassland conversion to cropland	L	—	L	L	- L	●
Soils	Increased soil organic carbon content	H	L	M	M	L	●●
	Reduced soil erosion	←→ L	L	M	M	L	●●
	Reduced soil salinization	—	L	L	L	L	●●
	Reduced soil compaction	—	L	—	L	L	●

		Mitigation *Gt CO_2-eq yr^{-1}*	Adaptation *Million people*
Positive	Large	More than 3	Positive for more than 25
	Moderate	0.3 to 3	1 to 25
	Small	Less than 0.3	Less than 1
	Negligible	No effect	No effect
Negative	Small	Less than -0.3	Less than 1
	Moderate	-0.3 to -3	1 to 25
	Large	More than -3	Negative for more than 25

Cost range

See technical caption for cost ranges in US$ tCO_2e^{-1} or US$ ha^{-1}.

- ●●● High cost
- ●● Medium cost
- ● Low cost
- — no data

Confidence level

Indicates confidence in the estimate of magnitude category.

- *H* *High confidence*
- *M* *Medium confidence*
- *L* *Low confidence*

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Role of Diversification, Indigenous Knowledge, and Gender

- Diversification in the food system (e.g., implementation of integrated production systems, broad-based genetic resources, and heterogeneous diets) is a key strategy to reduce risks (medium confidence)

- Indigenous and Local Knowledge can contribute to enhancing food system resilience (high confidence)

- Empowering women and rights-based approaches to decision-making can create synergies among household food security, adaptation, and mitigation

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Thank You!

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