

The IPCC Special Report on Climate Change and Land: An introduction



#SRCCL

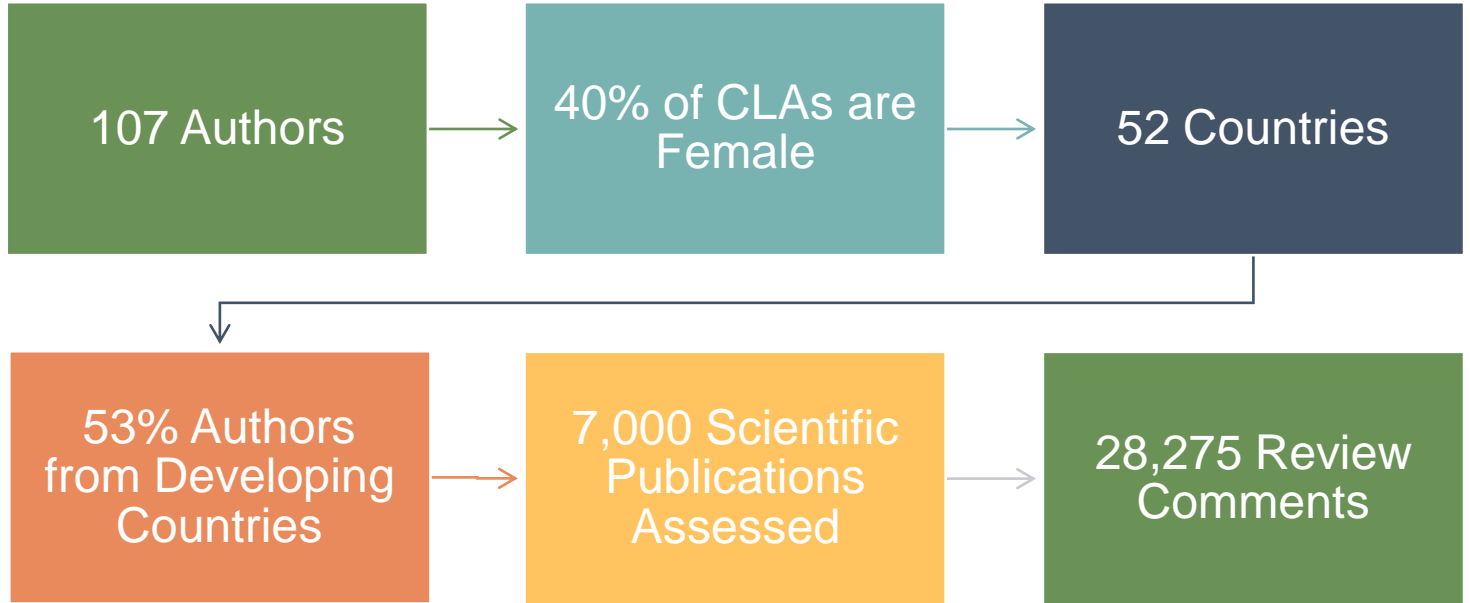
www.ipcc.ch/report/SRCCL

**Raphael Slade, IPCC WG III
COP 25 , 5th December 2019**

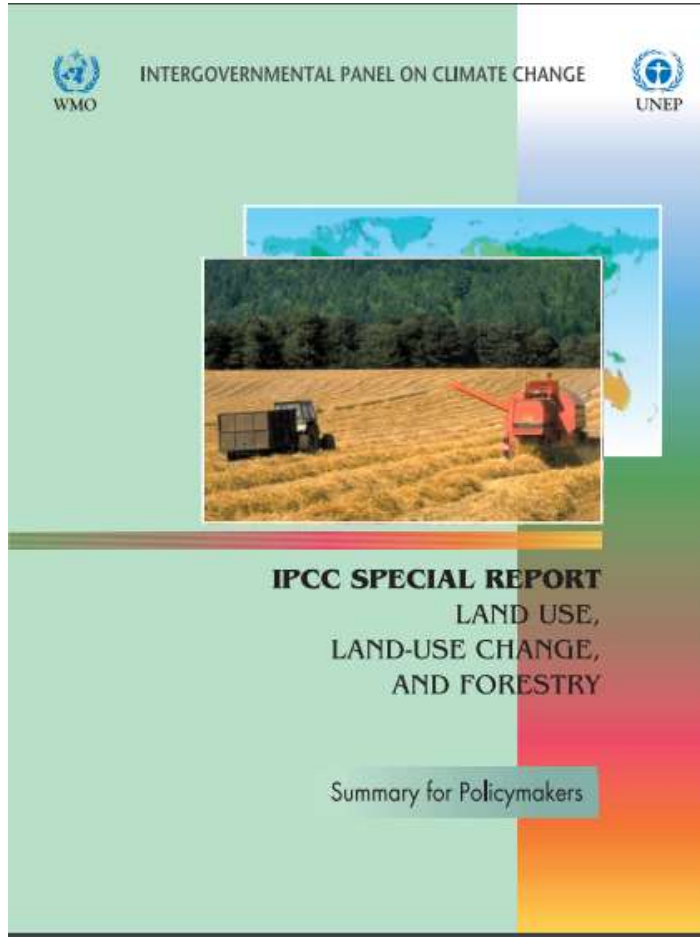
Agricultural landscape between Ankara and Hattusha, Anatolia, Turkey (40°00' N – 33°35' E)
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ipcc
INTERGOVERNMENTAL PANEL ON climate change





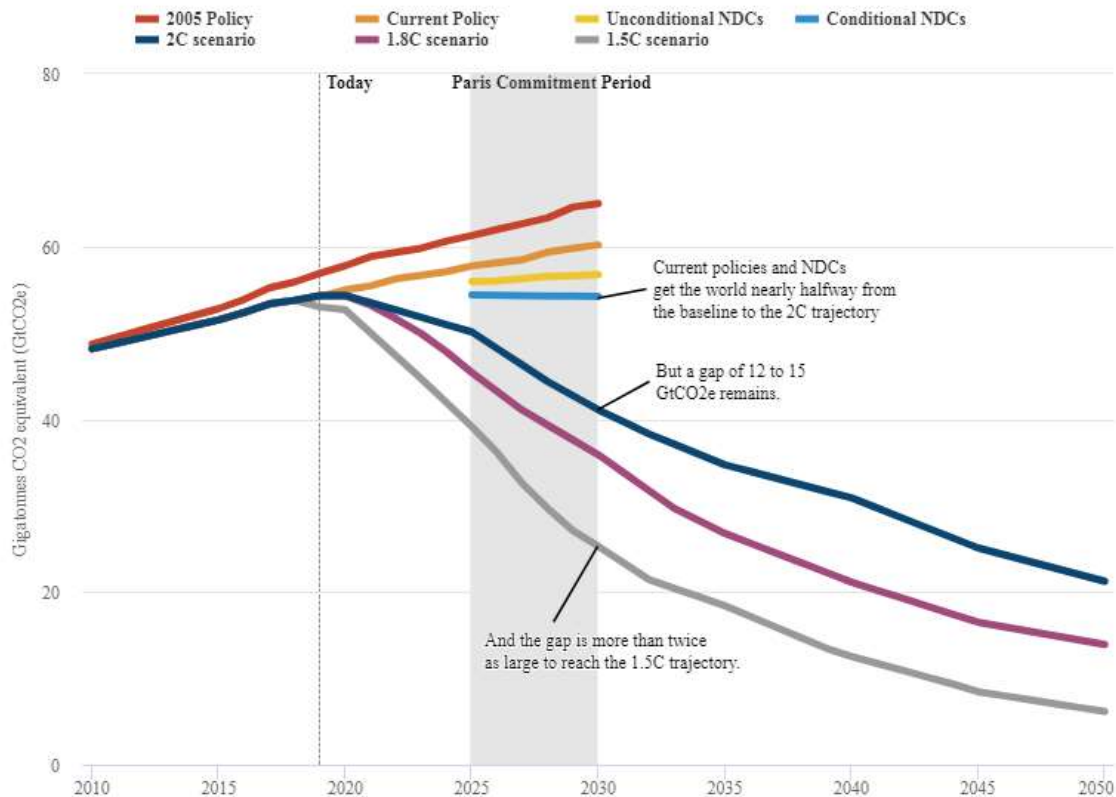
Authors included:
Scientists engaged with IPBES, UNCCD, FAO



The last IPCC report on land was 20 yrs ago...

... and focussed mainly on methods, measuring & monitoring

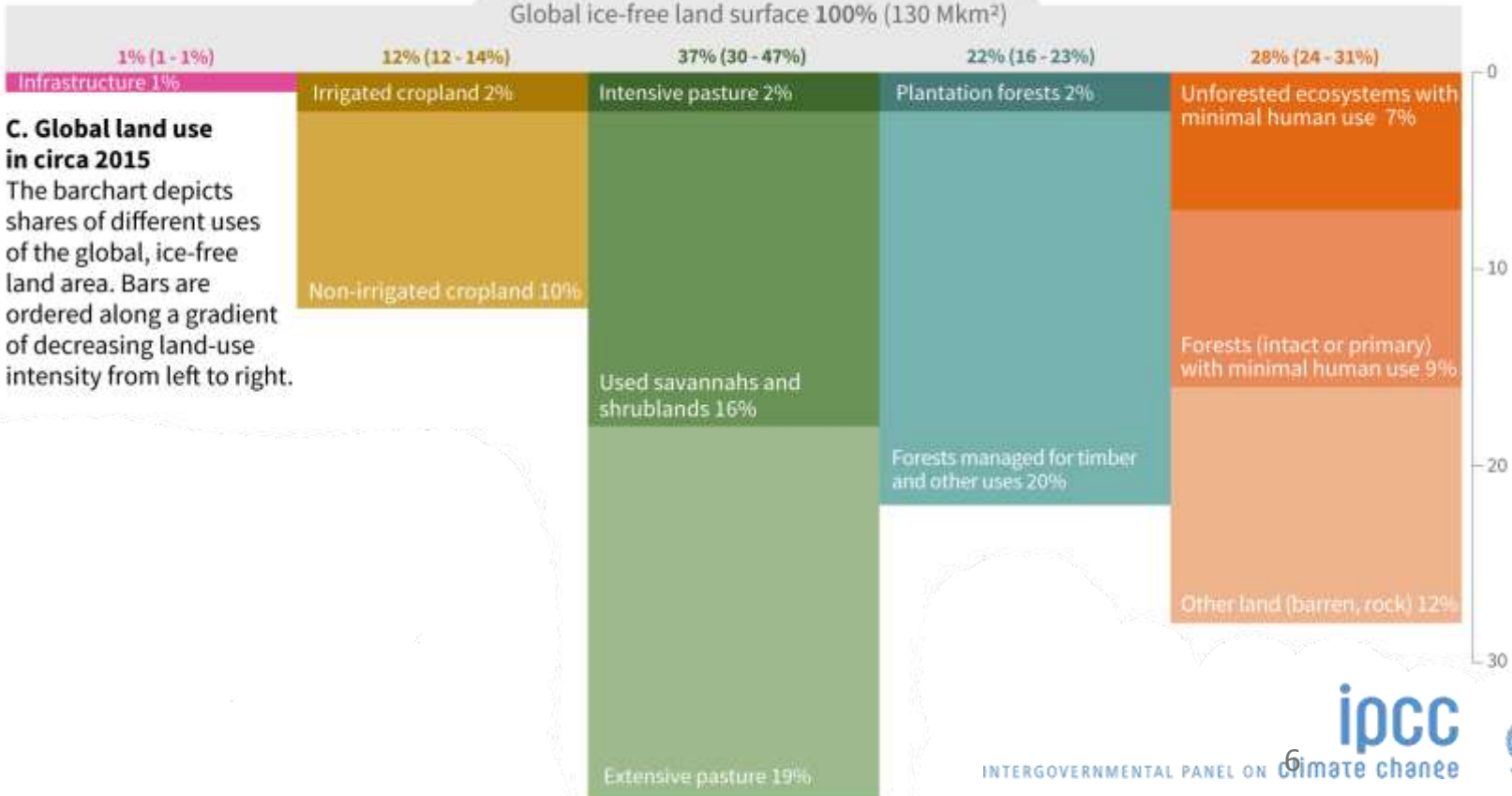
Expectations for the role of land in mitigation and adaptation have increased dramatically



Land is expected to contribute ~25% to existing NDCs

Indicative pathways highlight an increasing role for land in future mitigation

How we use land ~75% of land is under human influence - Chapter 1

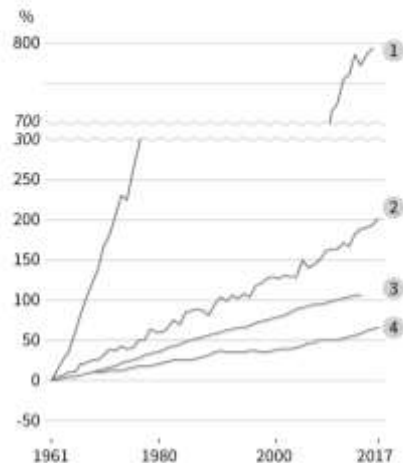


Land is already under growing human pressure. Climate change is adding to these pressures – Chapter 1

D. Agricultural production

CHANGE in % rel. to 1961

- 1 Inorganic N fertiliser use
- 2 Cereal yields
- 3 Irrigation water volume
- 4 Total number of ruminant livestock

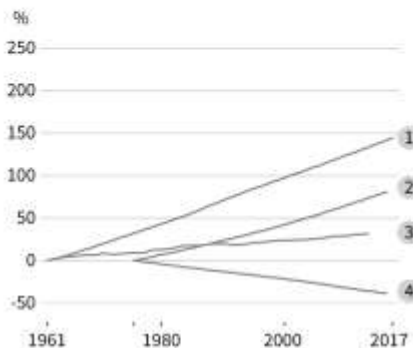


E. Food demand

Increases in production are linked to consumption changes.

CHANGE in % rel. to 1961 and 1975

- 1 Population
- 2 Prevalence of overweight + obese
- 3 Total calories per capita
- 4 Prevalence of underweight

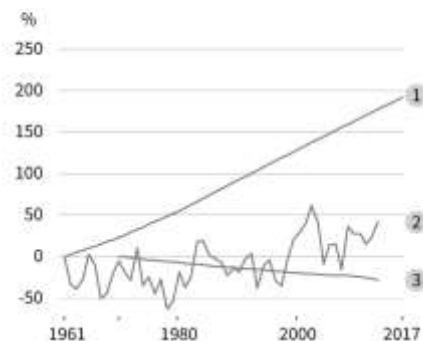


F. Desertification and land degradation

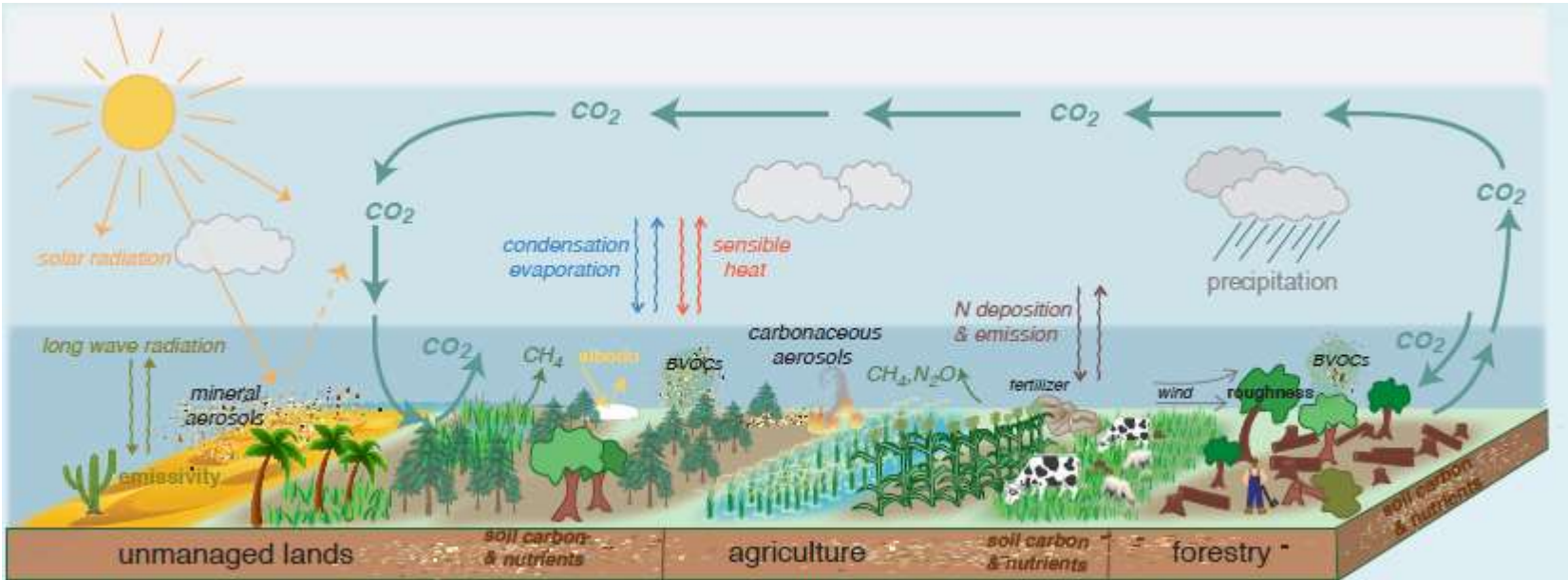
Land-use change, land-use intensification and climate change have contributed to desertification and land degradation.

CHANGE in % rel. to 1961 and 1970

- 1 Population in areas experiencing desertification
- 2 Dryland areas in drought annually
- 3 Inland wetland extent



Land-climate interactions: climate affects land, land affects climate - Chapter 2



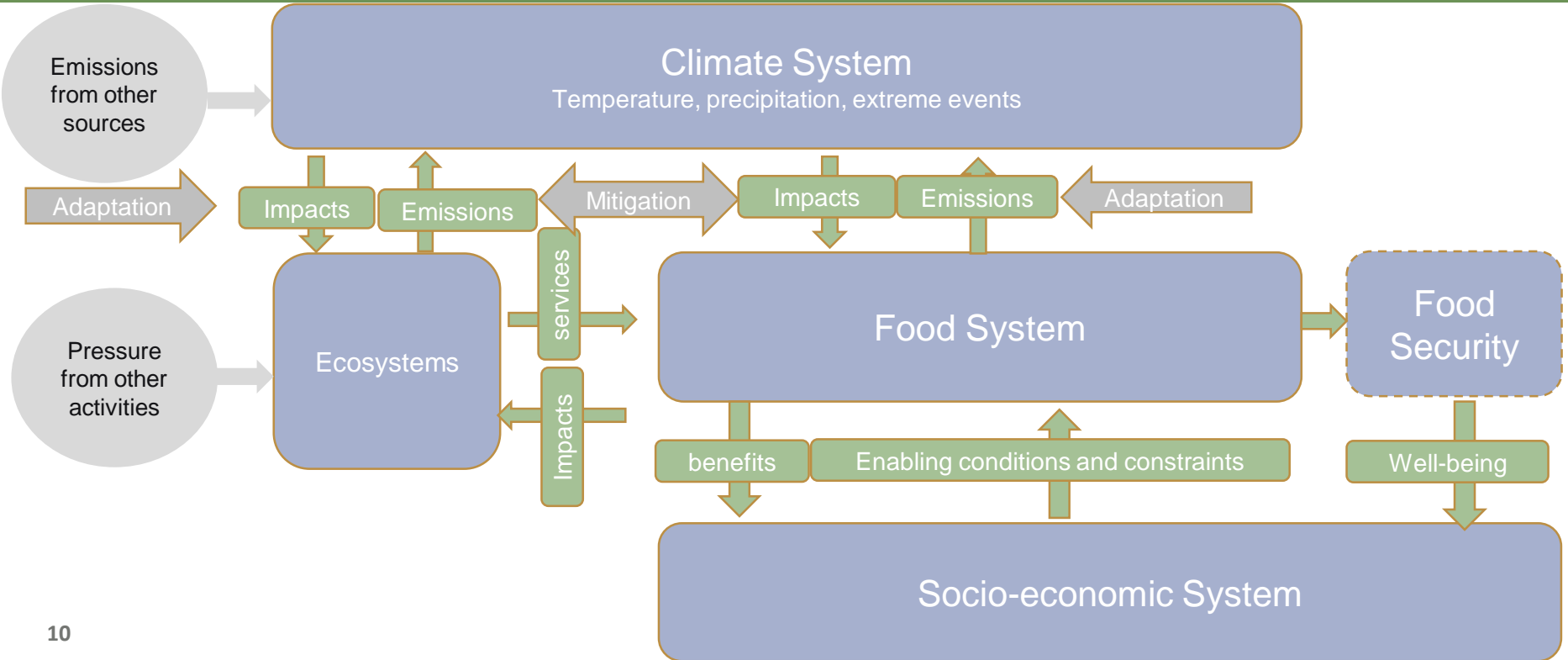
Land Degradation and desertification – Chapters 3 &4



- Land degradation adversely affects livelihoods over $\frac{1}{4}$ of the Earth's ice-free land area.
- Agriculture is a dominant sector driving degradation.
- Land use changes and unsustainable land management are direct human causes of degradation.
- Climate change exacerbates the rate and magnitude of land degradation processes.

Food and Agriculture –

~21–37% of total greenhouse gas (GHG) emissions are attributable to the food system - Chapter 5



Interlinkages and integrated response options - Chapter 6

Response options based on land management		Mitigation	Adaptation	Desertification	Land Degradation	Food Security	Cost
Agriculture	Increased food productivity	+	+	-	+	+	---
	Agro-forestry	+	+	-	+	+	+
	Improved cropland management	+	+	-	+	+	---
	Improved livestock management	+	+	-	+	+	---
	Agricultural rewildification	+	+	-	+	+	+
	Improved grazing land management	+	+	-	+	+	---
	Integrated water management	+	+	-	+	+	---
Forests	Reduced grassland conversion to cropland	+	+	-	+	+	+
	Forest management	+	+	-	+	+	---
Soils	Reduced deforestation and forest degradation	+	+	-	+	+	---
	Increased soil organic carbon content	+	+	-	+	+	---
	Reduced soil erosion	+	+	-	+	+	---
	Reduced soil salinization	+	+	-	+	+	---
Other ecosystems	Reduced soil compaction	+	+	-	+	+	---
	Fire management	+	+	-	+	+	---
	Reduced landslides and natural hazards	+	+	-	+	+	---
	Reduced pollution including acidification	+	+	-	+	+	---
	Restoration & reduced conversion of coastal wetlands	+	+	-	+	+	---
Restoration & reduced conversion of peatlands	+	+	-	+	+	---	
Response options based on value chain management							
Demand	Reduced post-harvest losses	+	+	-	+	+	---
	Dietary change	+	+	-	+	+	---
	Reduced food waste (consumer or retailer)	+	+	-	+	+	---
Supply	Sustainable sourcing	+	+	-	+	+	---
	Improved food processing and retailing	+	+	-	+	+	---
	Improved energy use in food systems	+	+	-	+	+	---
Response options based on risk management							
Risk	Livelihood diversification	+	+	-	+	+	---
	Management of urban sprawl	+	+	-	+	+	---
	Risk sharing instruments	+	+	-	+	+	---

“Coordinated action to tackle climate change can simultaneously improve land, food security and nutrition, and help to end hunger”

Risk management and decision-making in the context of sustainable development - Chapt 7



- Land-based adaptation and mitigation responses pose risks ...effectiveness and potential adverse side-effects
- Delaying deep mitigation in other sectors shifts the burden to the land sector, increasing risks to food security and ecosystem services
- “The complex spatial, cultural and temporal dynamics of risk and uncertainty in relation to land and climate interactions and food security, require a flexible, adaptive, iterative approach to assessing risks, re-evaluating decisions and policy instruments (high confidence)

Learning by doing...

Land is where we live

Land is under growing human pressure

Feedback between land use and climate increasingly important

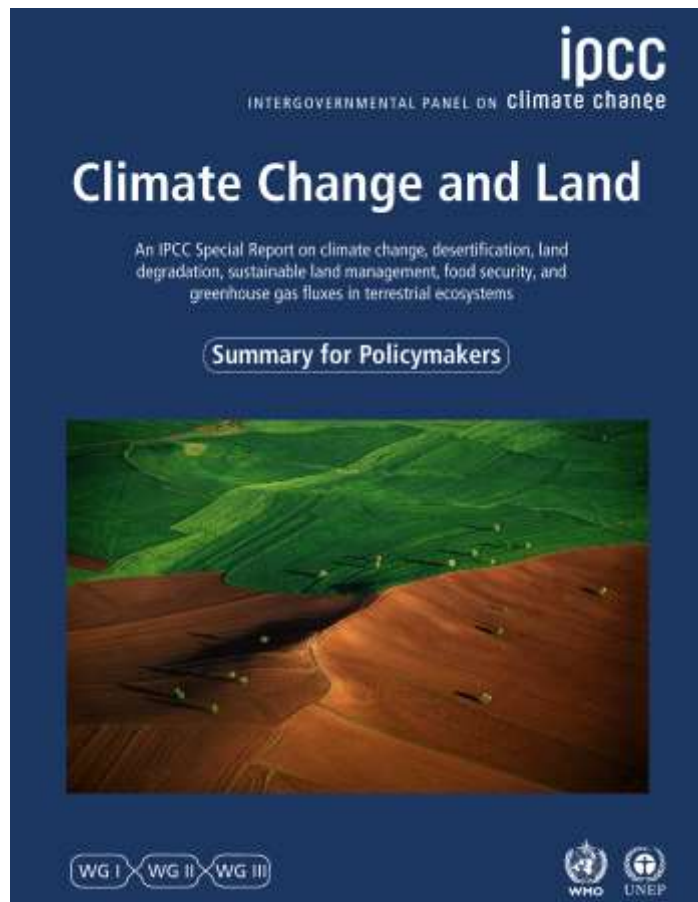
Land is a part of the solution

Cost effective win-win options available now.

But land can't do it all

Mitigation required across all sectors

“Nature based solutions” are limited, reversible & saturate



FOR MORE INFORMATION:

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Raphael Slade

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Intergovernmental Panel on Climate Change

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