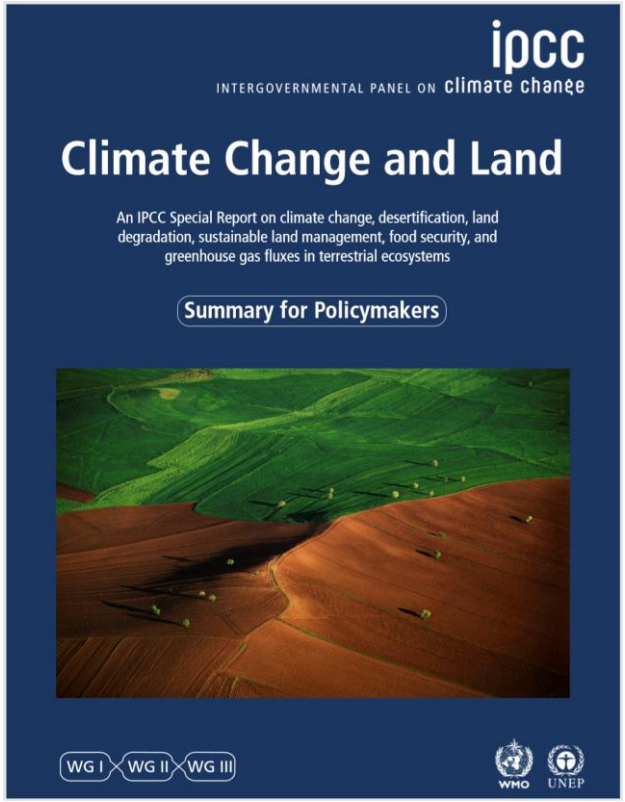
The IPCC's Special Report on Climate Change and Land

What's in it for South Asia?

IPCC Special Report on Climate Change and Land

The report assesses:

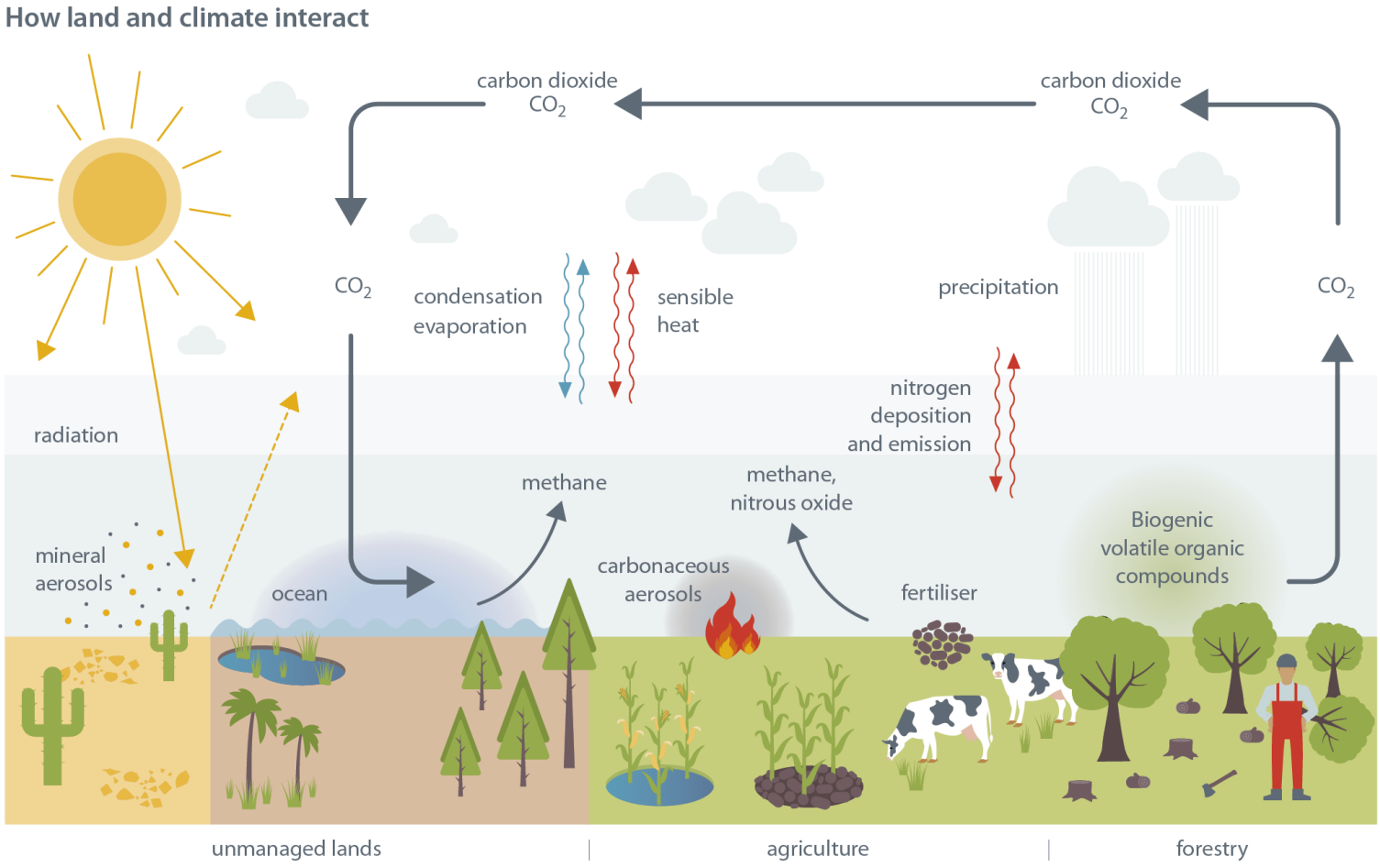
- the existing science to date on how greenhouse gases are released and absorbed by land-based ecosystems, and
- the science on land use and sustainable land management in relation to climate change adaptation and mitigation, desertification, land degradation and food security.
- IPCC's Summary & full report: **www.ipcc.ch/srccl**



IPCC Special Report on Climate Change and Land

- First IPCC report with more authors from developing countries than authors from developed countries
- 107 Coordinating Lead Authors, Lead Authors and Review Editors, from 52 countries
- CDKN report & communications toolkit digests the IPCC's 1,300 pages into headlines & images for African, Asian and Latin American audiences: **www.cdkn.org/landreport**

The climate and land interact with and influence each other

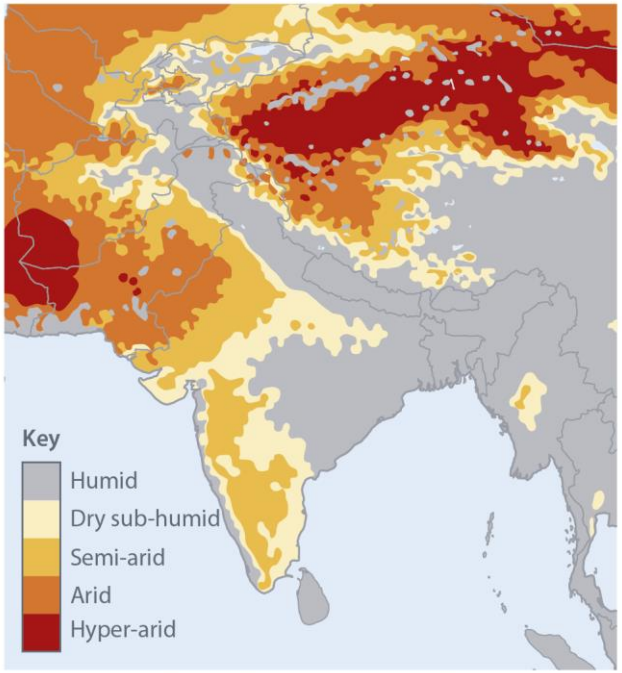


Source: Adapted from IPCC (2019) *Climate Change and Land: an IPCC special reports on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*, Chapter 2, Figure 2.1; p2-12. This fig ure is a slightly modified version of the IPCC's Box 2.1 in the Special Report on Climate Change and Land.

Dryland areas are expected to become more vulnerable to desertification in South Asia – affecting many people (1)

- '**Desertification**' refers to **degradation of drylands**.
- Future climate change will increase the frequency, intensity and scale of extreme weather events such as droughts and heat waves.
- This will **worsen the vulnerability of people and ecosystems** to desertification.

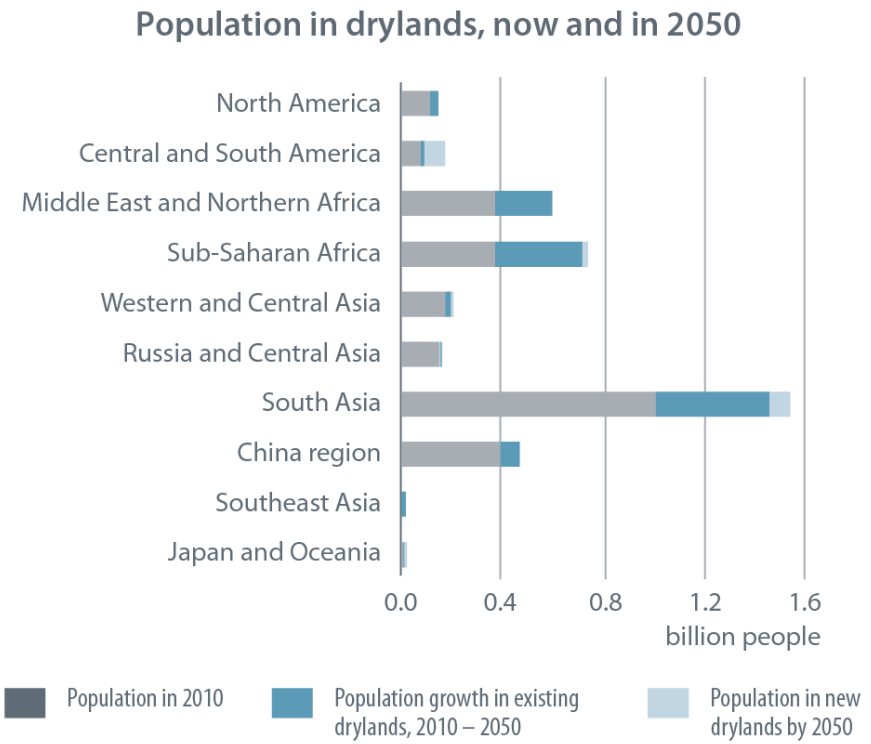
Drylands in South Asia



Source: Adapted from IPCC (2019) *Climate Change and Land: an IPCC special reports on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*, Chapter 2; p10.

Dryland areas are expected to become more vulnerable to desertification in South Asia – affecting many people (2)

- The dryland population in South Asia is expected to keep increasing



Under a middle-of-the-road climate change and socioeconomic development scenario, called the SSP2 scenario, which assumes a continuation of current trends in population, economic development and technology

Source: Adapted from IPCC (2019) *Climate Change and Land: an IPCC special reports on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*, Chapter 3; p7.

Desertification has implications for food security and poverty in South Asia (1)

"There is high evidence and high agreement that both climate change and land degradation can affect livelihoods and poverty through their **threat multiplier** effect." - IPCC

Desertification has implications for food security and poverty in South Asia (2)

Climate change will reduce the mean yields of 11 major crops – millet, field pea, sugar beet, sweet potato, wheat, rice, maize, soybean, groundnut, sunflower and rapeseed – by 18% in South Asia by the period 2046 – 2055 compared with 1996–2005.

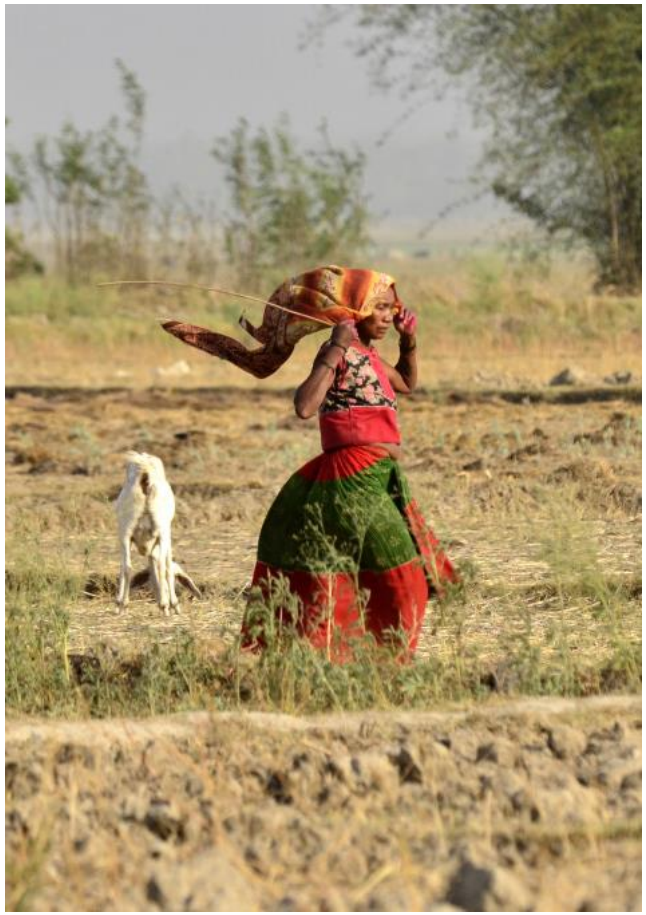
Community and policy responses can combat land degradation (1)

Stopping and reversing land degradation involves:

- improving the carbon content of soils; and
- retaining and restoring soil nutrients (including through soil and water management techniques and land-livestock interactions).

Also:

- reducing deforestation and forest degradation and sustainable forest management.



Community and policy responses can combat land degradation (2)

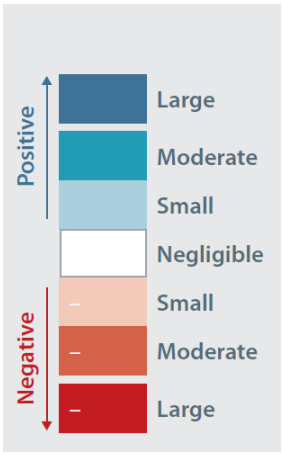
Reversing land degradation is worthwhile:

Implementing sustainable land management increases the productivity of land and provides good economic returns on investment around the world. A study of 363 sustainable land management projects found:

- three quarters of sustainable land management projects had *positive cost-benefit returns in the short term*
- 97% of the projects had *positive or very positive cost-benefit ratios in the long term.*

Certification schemes have been shown to improve the sustainability of forest management in tropical areas.

Improved land management can deliver climate adaptation, mitigation and development



Confidence level
Indicates confidence in the estimate of magnitude category.

H High confidence
M Medium confidence
L Low confidence

Cost range
Relative costs for each option. See the IPCC's Summary for Policy Makers for cost ranges in US$.

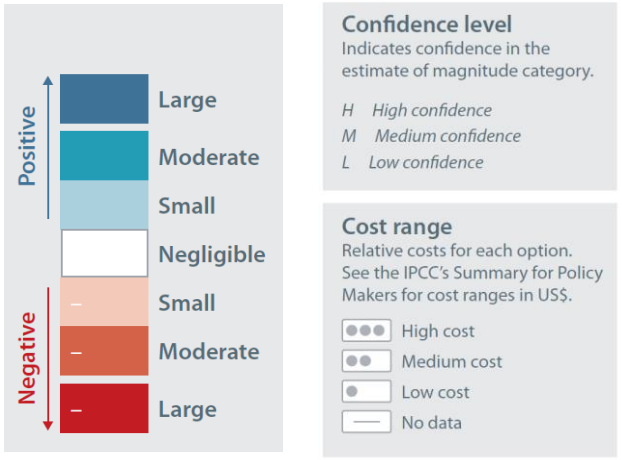
High cost
Medium cost
Low cost
No data

These actions can minimise pressure on land

(colours illustrate positive-negative impact)

	Response options based on land management	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	●
Forests	Forest management	M	L	L	L	L	●●
	Reduced deforestation and forest degradation	H	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 salinisation	—	L	L	L	L	●●
	Reduced soil compaction	—	L	—	L	L	●
Other ecosystems	Fire management	M	M	M	M	L	●
	Reduced landslides and natural hazards	L	L	L	L	L	—
	Reduced pollution including acidification	↔ M	M	L	L	L	—
	Restoration & reduced conversion of coastal wetlands	M	L	M	M	↔ L	—
	Restoration & reduced conversion of peatlands	M	—	na	M	– L	●

Improved value chain and climate risk management can deliver climate adaptation, mitigation and development



These actions can minimise pressure on land

(colours illustrate positive-negative impact)

Response options based on value chain management

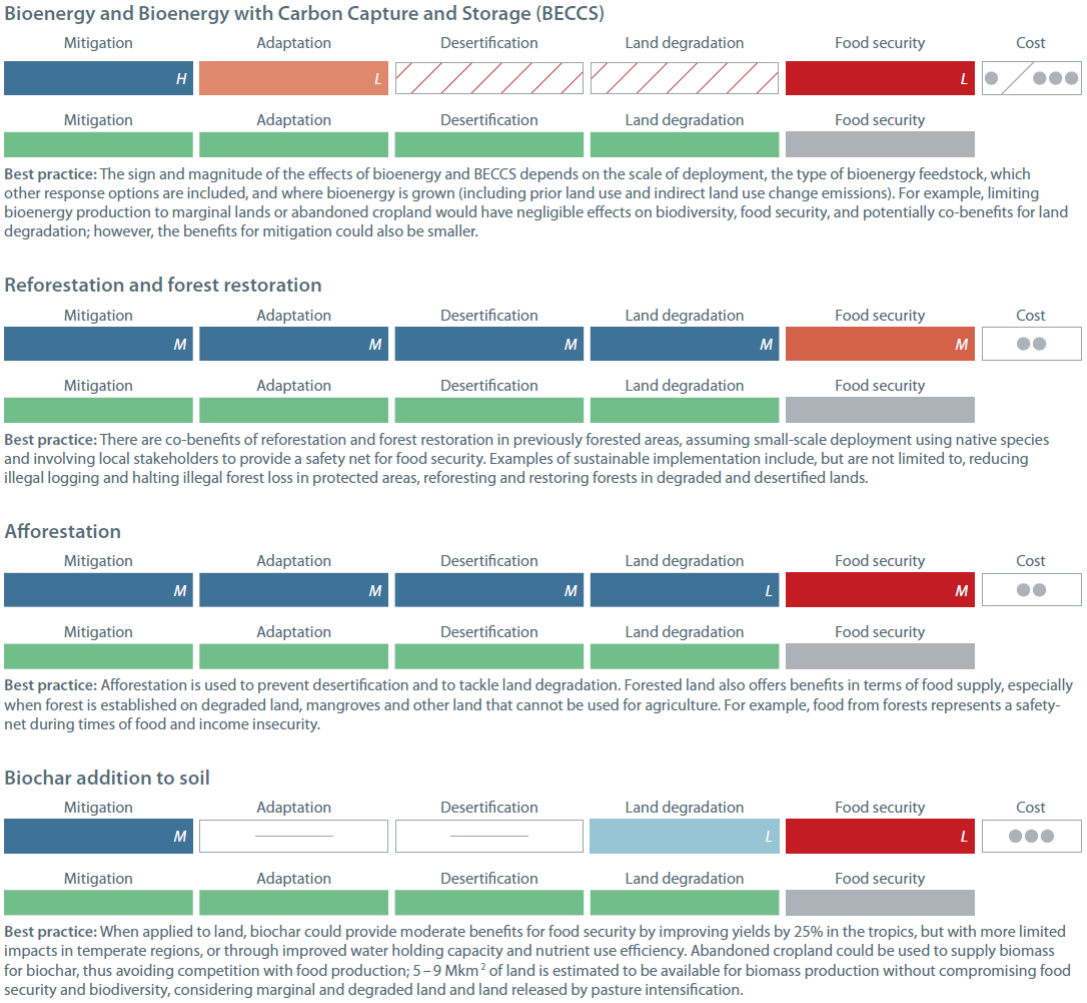
Demand	Reduced post-harvest losses	H	M	L	L	H	
	Dietary change	H		L	H	H	
	Reduced food waste (consumer or retailer)	H		L	M	M	
Supply	Sustainable sourcing		L		L	L	
	Improved food processing and retailing	L	L			L	
	Improved energy use in food systems	L	L			L	

Response options based on risk management

Risk	Livelihood diversification		L		L	L	
	Management of urban sprawl		L	L	M	L	
	Risk sharing instruments	⟷ L	L		⟷ L	L	●●

Other options for climate adaptation, mitigation and development

These could increase pressure for land <u>but</u> best practices can reduce the pressure



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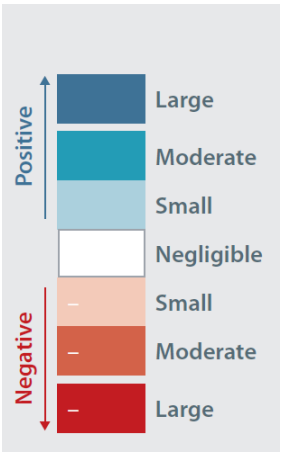
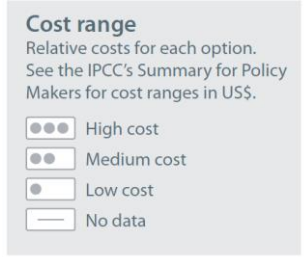




Insecure property rights and lack of access to tenure and land advisory services hamper progress – especially by women

Women's lack of access to these services (for social and cultural reasons), in particular, hampers their ability to be more effective agents of sustainable change.

The skills and knowledge of marginalised groups – especially women – are not yet sufficiently recognised

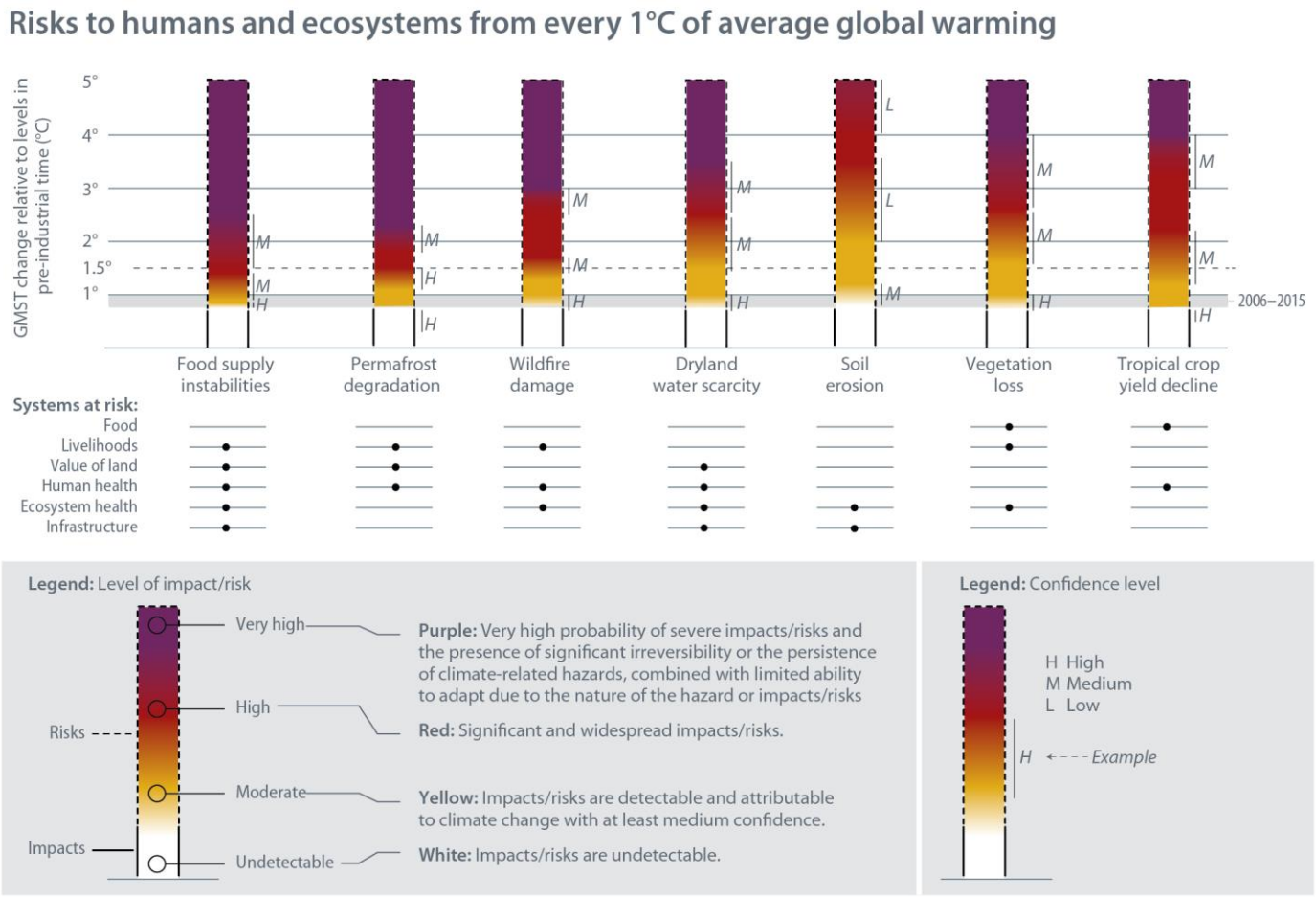
- Most literature focuses on women's, marginalised groups' greater vulnerability. However, it is important not to frame people as 'victims'.
- Recognise real strengths and ingenuity of women, indigenous people, marginalised groups, particularly in adaptation.
- Women often assume new leadership roles when adapting to climate change.

"Many sustainable development efforts fail because of lack of attention to societal issues including inequality, discrimination, social exclusion and marginalisation … citizen engagement is important in enhancing natural resource service delivery." – IPCC

Integrated governance is needed to maximise the benefits of land and water

- Integrated governance across sectors and scales is needed to manage pressure on land and water, to meet the requirements of people and biodiversity and relieve the increased pressures caused by climate change.
- Integrated governance is especially important at national, river basin and ecosystem levels.
- Coherent policies and adaptive management are important.

Every degree of increase in average global warming brings more risks to people and the environment



Source: Adapted from IPCC (2019) *Climate Change and Land: an IPCC special reports on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*, Summary for Policy Makers; p13.

Emissions reductions in other sectors are vital to relieve pressure on land

- Bioenergy crops and tree plantations are used to take up greenhouse gases from the atmosphere and mitigate climate change. However, without sustainable land management, using these approaches at large scale could jeopardise the achievement of Sustainable Development Goals (SDGs), including food security and livelihoods.

- Bioenergy and afforestation need to be carefully managed to avoid these risks. Good outcomes depend on locally appropriate policies and governance.

- Lowering greenhouse gas emissions in other sectors and areas of human behaviour (e.g. cutting waste, cutting energy use, dietary change) can ease pressure on land. **“Land cannot do it all.”**

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