

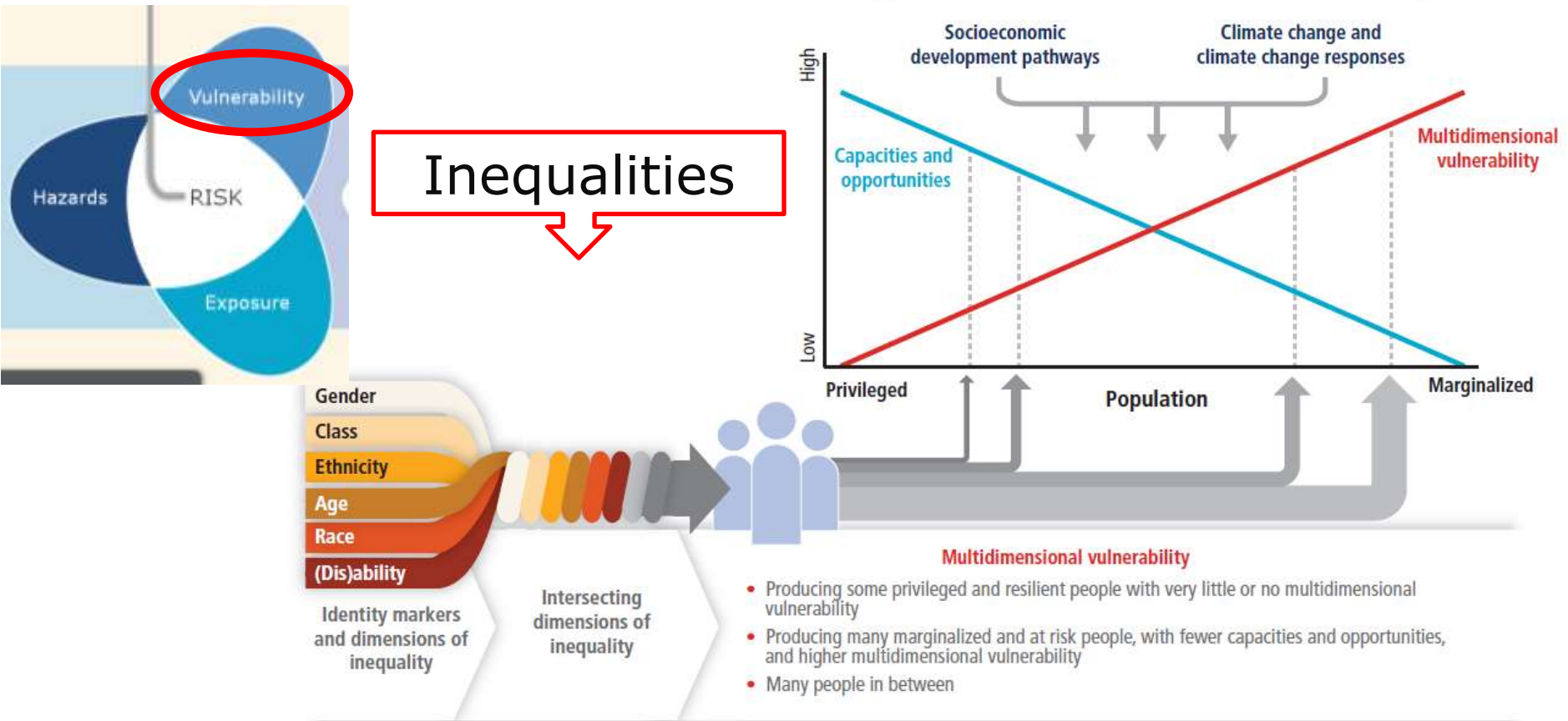
Sustainable development, poverty eradication and food security: Impacts, adaptation and losses

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15 August 2016

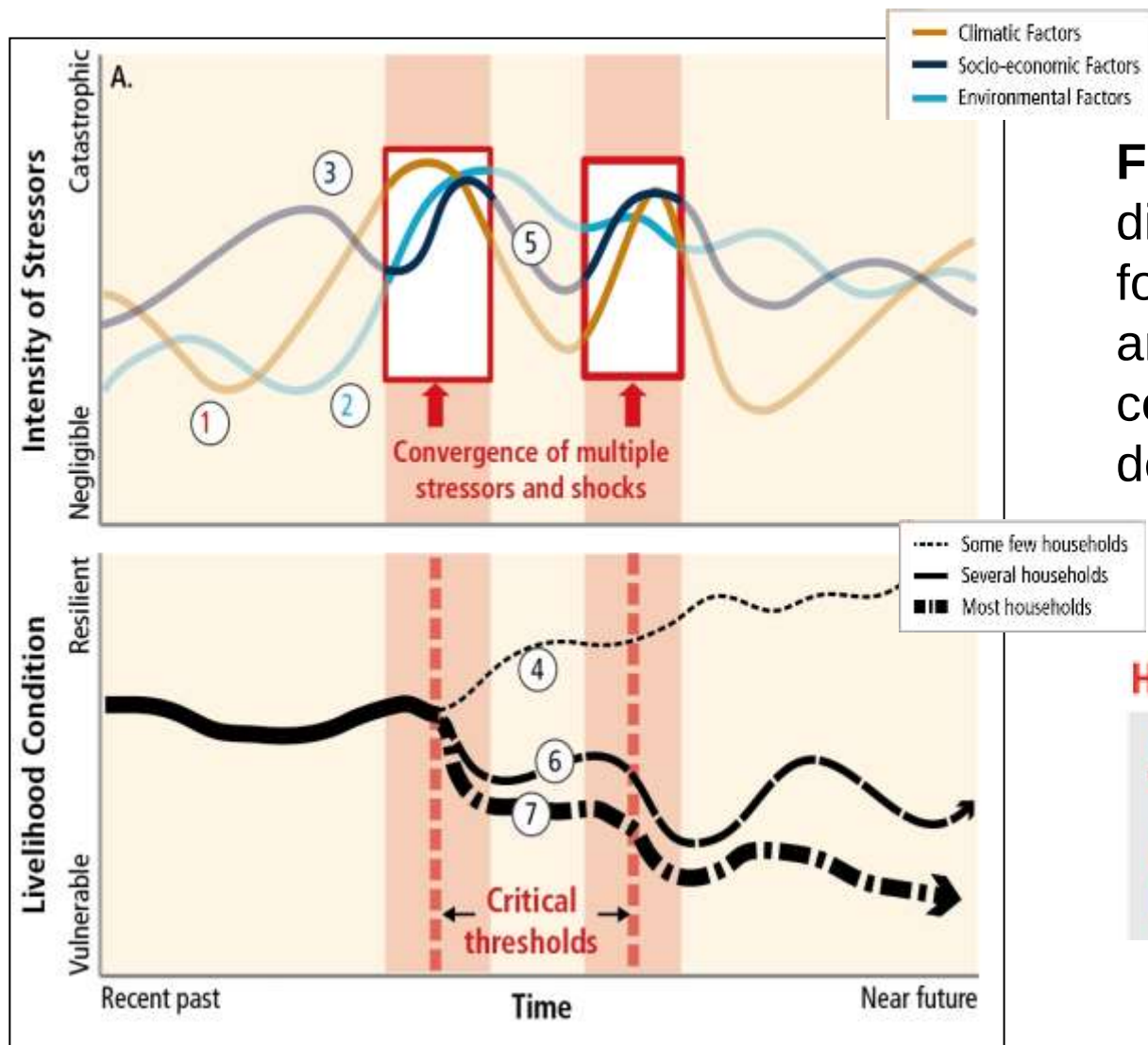
Uneven Development

- **Climate change is a threat to equitable and sustainable development; it exacerbates livelihood struggles, esp. among disadvantaged people**
- **Structural disadvantage (marginalization) drives vulnerability, and risk**
- **Averages and aggregates mask disproportional impacts and risks**
- **Critical thresholds for communities/society NOT from a global average**
- **Yardstick: transition from acceptable to unacceptable at the local level**

Multidimensional Inequalities



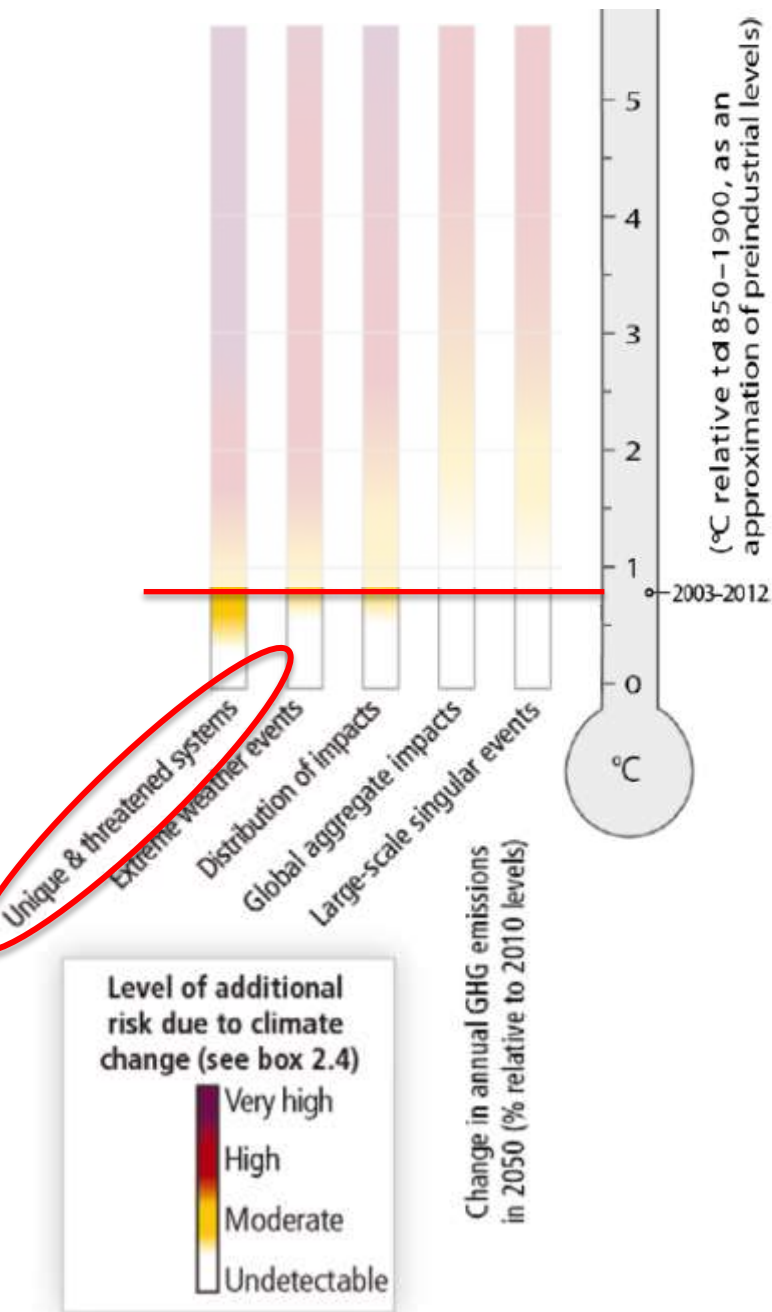
Critical Thresholds



Future risks are unevenly distributed and are greater for disadvantaged people and communities in countries at all levels of development.

Human and managed systems





Reasons for Concern

Indigenous and other unique communities/social systems:

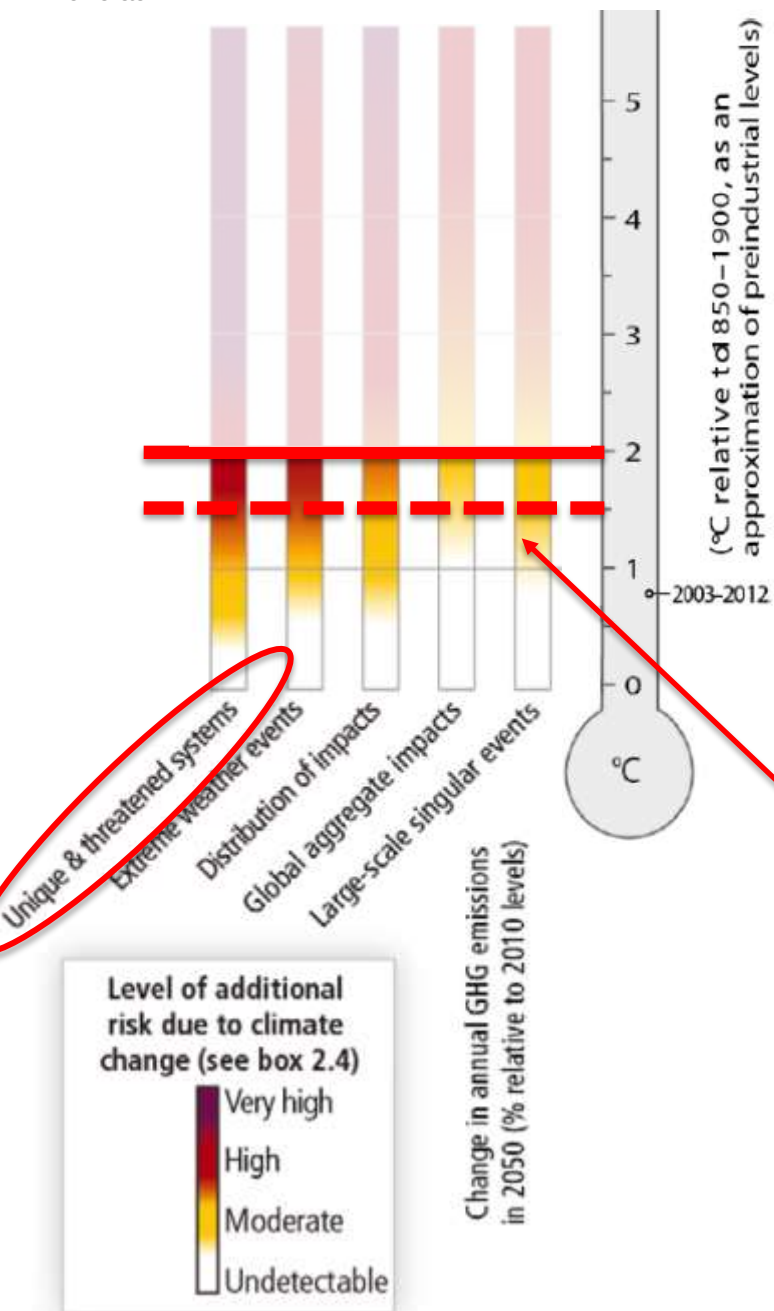
Arctic communities + N Europe:

Livelihoods of indigenous peoples
(e.g Inuit, Sámi)

Increased shipping traffic (Bering Street)

High mountain communities:

Declining livelihood trajectories (Aymara)



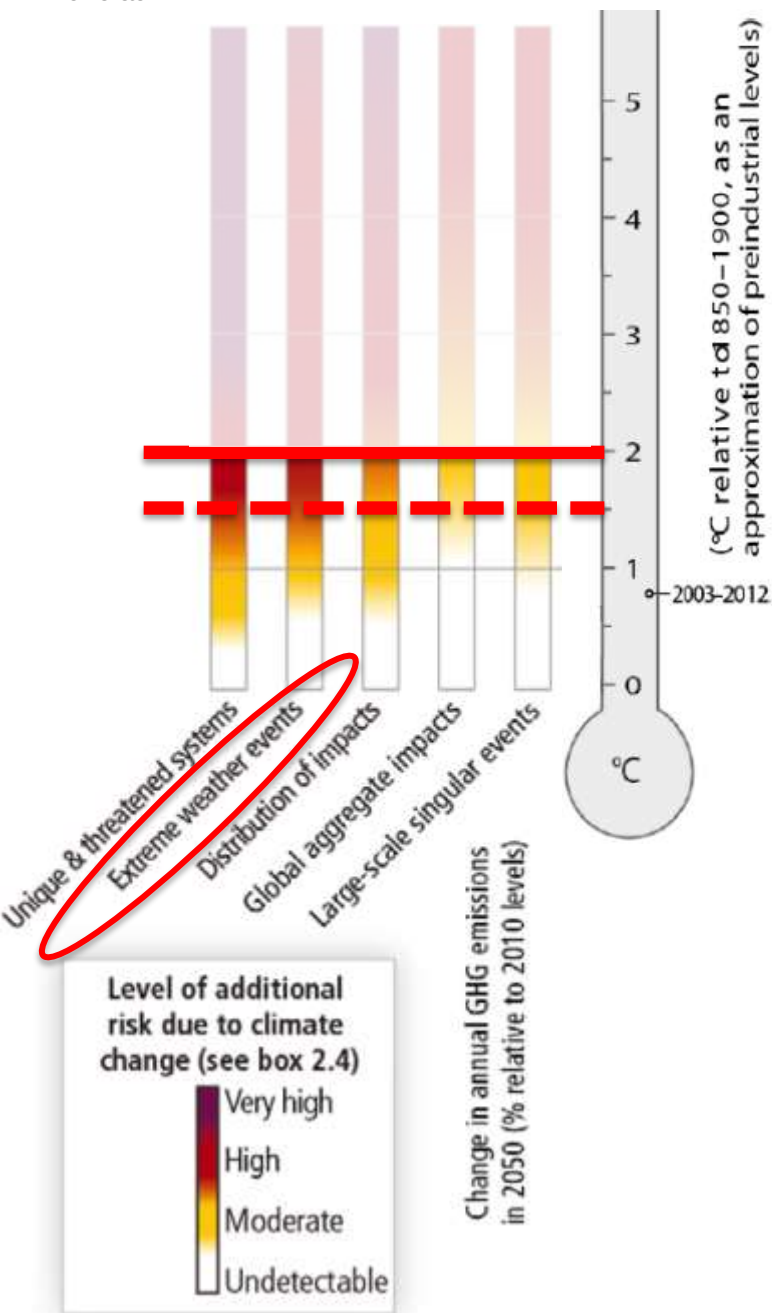
Reasons for Concern

Indigenous and other unique communities/social systems:

Loss of land, cultural and natural heritage disrupting cultural practices embedded in livelihoods

	Very low	Medium	Very high
Present			
Near term (2030 – 2040)			
Long term 2°C (2080 – 2100)			
4°C			

WGII, Fig 12.1



Reasons for Concern

Megacities – urban heat island effect, air pollution, and differential vulnerabilities

Urban housing and human health

Displacement and permanent migration

Livelihood struggles and conflict in resource-dependent livelihoods (agriculture, pastoralism)

High livelihood vs monetary damage

Shifts from transient to chronic poverty (social marginalization & food insecurity)



Emerging Knowledge: Losses

FAO 2015:

The impact of disasters
on agriculture and food security

- In developing countries, the agriculture sector absorbs **~22%** of the total damage and losses caused by natural hazards
- **>80%** of the damage and losses caused by drought is to agriculture, especially livestock and crop production
- **~USD 80 billion** lost due to declines in food and livestock production after medium- and large-scale disasters 2003-2013 in developing countries
- Pakistan floods: **>70%** farmers lost **>50%** of expected income
- Crop loss, damage to land, trade flows, national economies, individual income, food intake, livelihoods.....

ipcc

INTERGOVERNMENTAL PANEL ON climate change



ASIA

USD
48 billion

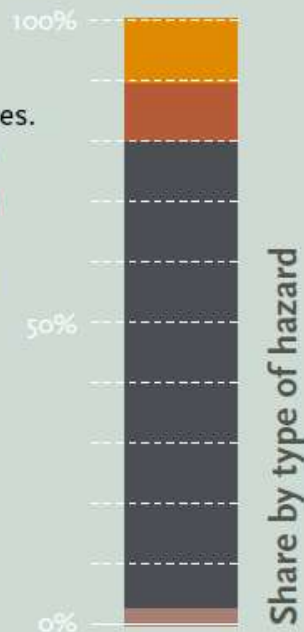
in crop and livestock
losses 2003–2013

2% of the projected
value of production

Floods were associated with **77%** of the region's losses.

While the region experienced the largest absolute production losses, it was least affected in relation to the projected value of production.

India was most affected by losses after recurrent floods from 2004 to 2013, while the Philippines (e.g. 2012 Bopha and 2013 Haiyan Typhoons), Pakistan (e.g. 2010 floods), Cambodia (e.g. 2005 drought) and Thailand (e.g. 2008 drought) were also hard-hit



Source: FAO, based on FAOSTAT

The impact of disasters on agriculture and food security

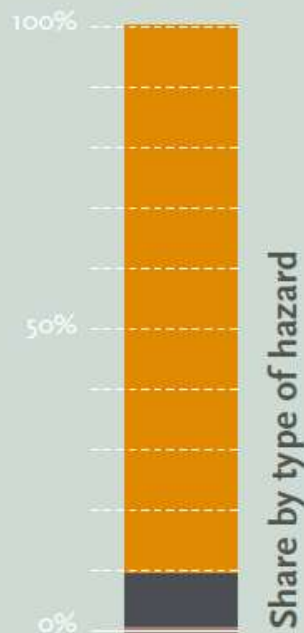
AFRICA

USD
14 billion

in crop and livestock
losses 2003–2013

6% of the projected
value of production

Some **90%** of the region's losses occurred after **droughts**, when most countries experienced sharp declines in yields, likely leading to losses in output and revenue. Droughts severely challenge food availability, rural livelihoods and overall economies, particularly given agriculture's critical contribution to food security and economies in sub-Saharan Africa



Source: FAO, based on FAOSTAT

Legend: Storms Floods Drought Earthquakes

Addressing Intangible Loss

Values- and place-based approaches to adaptation

- ✓ **Adaptation** = keep risks to valued objects and objectives at a tolerable level (Dow et al. 2013)
- ✓ **Limits to adaptation** ~ (irreversible) loss = the point where adaptation fails to protect things people value (Barnett et al. 2015)
- **Psychology** lens (universal values guiding beliefs and behaviour)
- **Human geography** lens (lived values, making the everyday visible)
- ❖ Loss is a matter of what people value and deem worth protecting
- ❖ Loss is given meaning through lived experiences rooted in place
- ❖ Loss is more felt than tangible, difficult to measure or model



Lived Values at Stake

(example drought, implications for food security)

1) Ghana subsistence farmers:

- Loss of personal **identity** as farmer and eroded dignity
- Loss of sense of **place**, grief, depression
- Outmigration, declining social networks and impaired **health**



2) Australia family farmers:

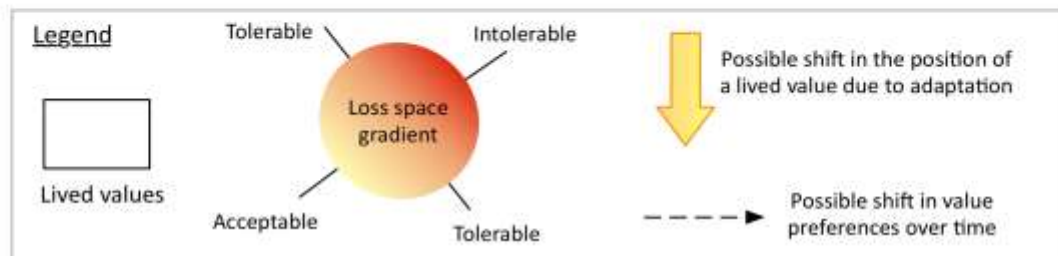
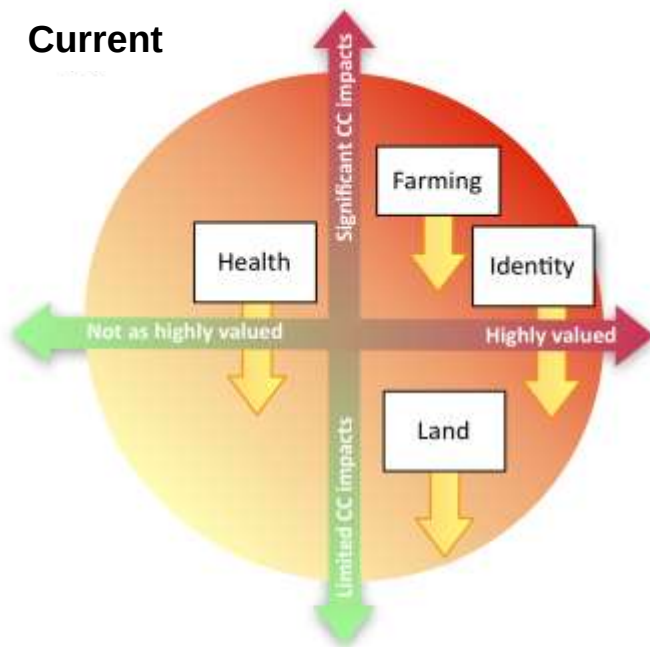
HARDENUP

- Heroic endurance, failure to live up to 'good farmer' **identity**
- Social isolation, ill **health**, substance abuse, violence, suicide
- Degraded land, loss and grief, declining sense of **place**



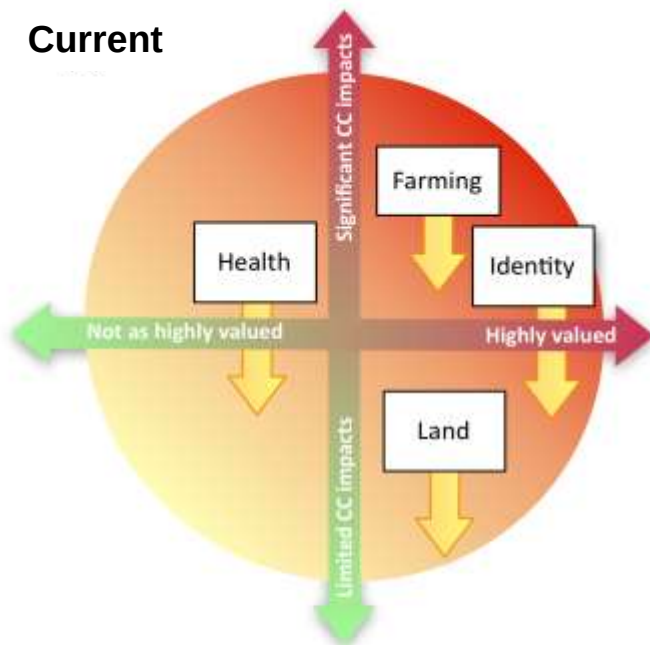
Dangerous Climate Change – Viable and Acceptable Development

Current

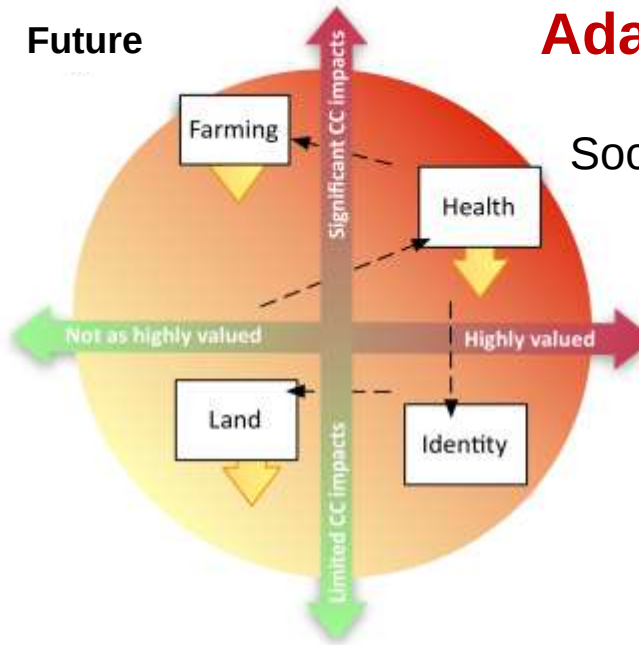


Dangerous Climate Change – Viable and Acceptable Development

Current



Future



Adaptation Pathways:

Socially-salient tipping points

Unacceptable impacts

Acceptable trade-offs
between what is
worth protecting
and what to let go

AVOIDED IMPACTS =

shift a looming intolerable loss
to an acceptable or
tolerable damage

