

CLIMATE CHANGE 2014:

IMPACTS, ADAPTATION, AND VULNERABILITY

Links between socioeconomic pathways and climate change risks – views from the poor.

Lennart Olsson

CLA Ch 13: Livelihoods and Poverty



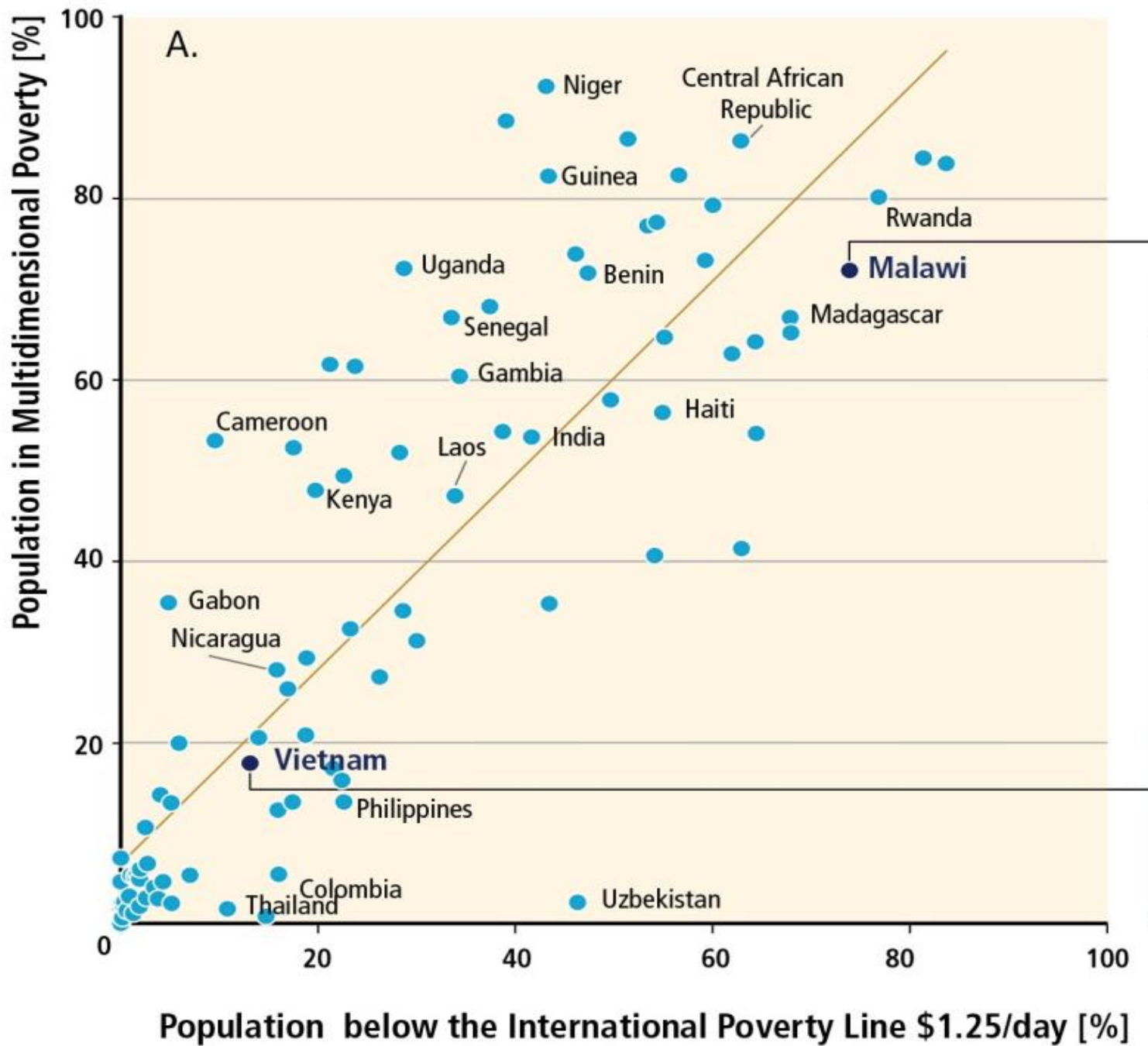
AR4 { 7. Industry, Settlement and Society
8. Human Health

AR5 { 8. Urban Areas
9. Rural Areas
10. Key Economic Sectors
11. Human Health
12. Human Security

Scope of the Assessment

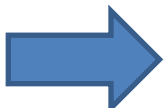
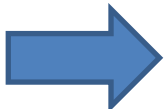
AR4 { 17. Assessment of Adaptation Practices, Options, Constraints and Capacity
18. Inter-relationships Between Adaptation and Mitigation

AR5 { 14. Adaptation Needs and Options
15. Adaptation Planning and Implementation
16. Adaptation Opportunities, Constraints, and Limits
17. Economics of Adaptation



livelihood assets	examples
Natural	Vegetation, soils, water, climate
Human	Labour, skills
Physical	Land, technology, equipment,
Social	Social network, mobilisation capacity
Financial	Savings, credits, insurance
Cultural	Identity, sense of place, knowledge

Key risk	Adaptation issues and prospects	Climatic drivers	Supporting ch. sections	Time frame	Potential for reducing risk through adaptation
Deteriorating livelihoods in drylands, due to high and persistent poverty. Risk of reaching tipping points for crop and livestock production in small-scale farming and/or pastoralist livelihoods (<i>high confidence</i>)	Adaptation options are limited owing to persistent poverty, declining land productivity, food insecurity, and limited government support due to marginalization. Rural-urban migration is a potential adaptation strategy.		13.2.1.2, 13.2.2.1, 13.2.2.3	Present Near term (2030–2040) Long term 2°C (2080–2100) 4°C	Very low Medium Very high
Destruction and deterioration of assets: physical (homes, land, and infrastructure), human (health), social (social networks), cultural (sense of belonging and identity), and financial (savings) due to floods in flood-prone areas, such as low-lying deltas, coasts, and small islands (<i>high confidence</i>)	Adaptation options are limited for people who cannot afford relocation to safer areas. Government support and private options (e.g., insurance) are limited for people with insecure or unclear tenure.		13.2.1.1, 13.2.1.3, 13.2.1.5, Box 13-1	Present Near term (2030–2040) Long term 2°C (2080–2100) 4°C	Very low Medium Very high
Shifts from transient to chronic poverty due to persistent economic and political marginalization of poor people combined with deteriorating food security (<i>high confidence</i>)	Adaptation options are limited due to exclusion from markets and low government support. Policies for adaptation are unsuccessful because of failure to address persistent inequalities.		13.2.1.3, 13.2.2.4	Present Near term (2030–2040) Long term 2°C (2080–2100) 4°C	Very low Medium Very high
Declining work productivity, morbidity (e.g., dehydration, heat stroke, and heat exhaustion), and mortality from exposure to heat waves. Particularly at risk are agricultural and construction workers as well as children, homeless people, the elderly, and women who have to walk long hours to collect water (<i>high confidence</i>)	Adaptation options are limited for people who are dependent on agriculture and too poor to afford agricultural machinery. Adaptation options are limited in the construction sector where many poor people work under insecure arrangements. Adaptation might be impossible in certain areas in a +4°C world.		13.2.1.1, 13.2.1.5, 13.2.2.4, Box 13-1	Present Near term (2030–2040) Long term 2°C (2080–2100) 4°C	Very low Medium Very high
Declining agricultural yields, primarily in already hot climates, with severe impacts on countries and communities highly dependent on agriculture. Declining yields may cause further deterioration of assets: financial (savings), human (health), social (social networks), and cultural (sense of belonging and identity) (<i>high confidence</i>)	Adaptation by changing livelihoods away from agriculture is limited owing to poverty and marginalization. Adaptation strategies such as early or late planting, inter-cropping, and shifting crops bring mixed benefits and have limitations, often depending on household resources and access to seasonal forecasts and longer term projections. In a +4°C world, adaptation in agriculture is very limited.		13.2.2.2, 13.2.2.4	Present Near term (2030–2040) Long term 2°C (2080–2100) 4°C	Very low Medium Very high
Reduced access to water for rural and urban poor people due to water scarcity and increasing competition for water (<i>high confidence</i>)	Adaptation through reducing water use is not an option for the large number of people already lacking adequate access to safe water. Access to water is subject to various forms of discrimination, for instance due to gender and location. Poor and marginalized water users are unable to compete with water extraction by industries, large-scale agriculture, and other powerful users.		13.2.1.1, 13.2.1.3, 13.2.1.5, Box 13-1	Present Near term (2030–2040) Long term 2°C (2080–2100) 4°C	Very low Medium Very high

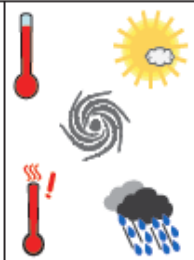


Climatic drivers of impacts						Potential for reducing risk through adaptation
 Warming trend	 Extreme temperature	 Drying trend	 Extreme precipitation	 Damaging cyclone	 Sea level	<p>Potential for reducing risk through adaptation</p> <p>A hypothetical highly adapted state Continuation of current adaptation</p>

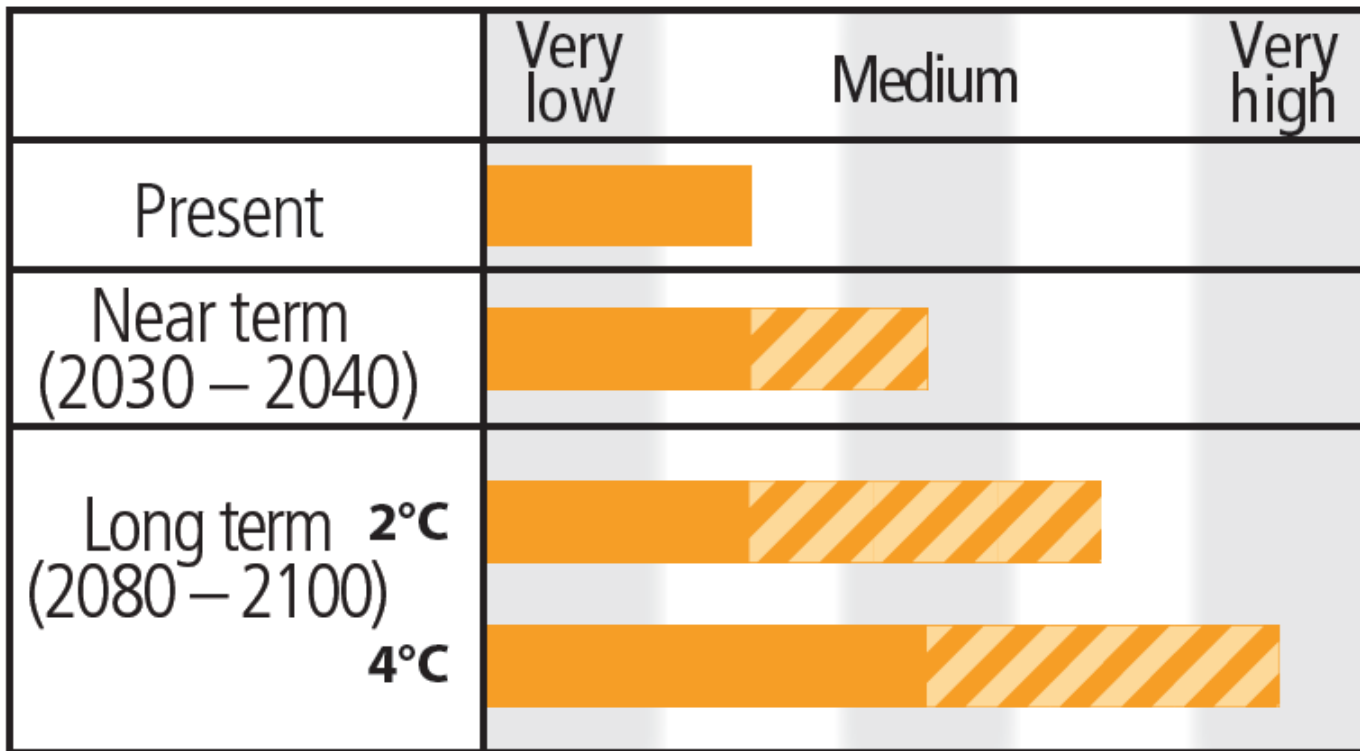
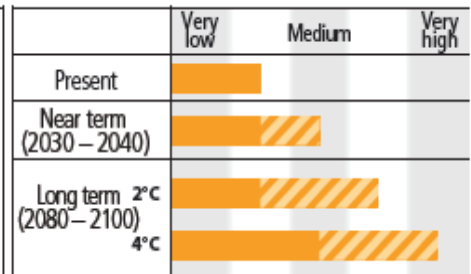
Deteriorating food security

Shifts from transient to chronic poverty due to persistent economic and political marginalization of poor people combined with deteriorating food security (*high confidence*)

Adaptation options are limited due to exclusion from markets and low government support. Policies for adaptation are unsuccessful because of failure to address persistent inequalities.



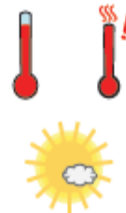
13.2.1.3,
13.2.2.4



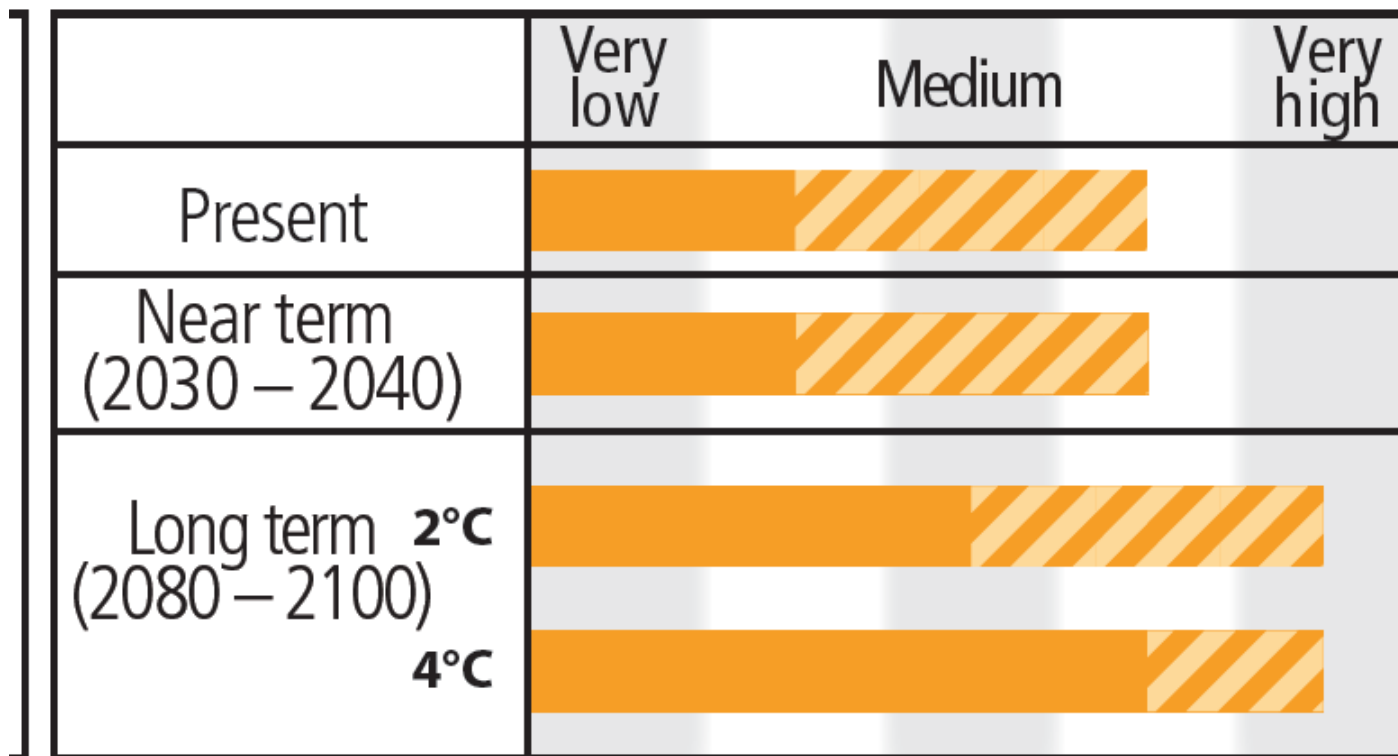
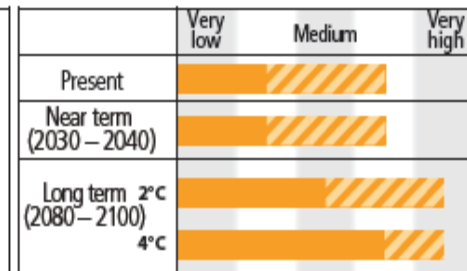
Deteriorating access to water

Reduced access to water for rural and urban poor people due to water scarcity and increasing competition for water (*high confidence*)

Adaptation through reducing water use is not an option for the large number of people already lacking adequate access to safe water. Access to water is subject to various forms of discrimination, for instance due to gender and location. Poor and marginalized water users are unable to compete with water extraction by industries, large-scale agriculture, and other powerful users.



13.2.1.1,
13.2.1.3,
13.2.1.5,
Box 13-1



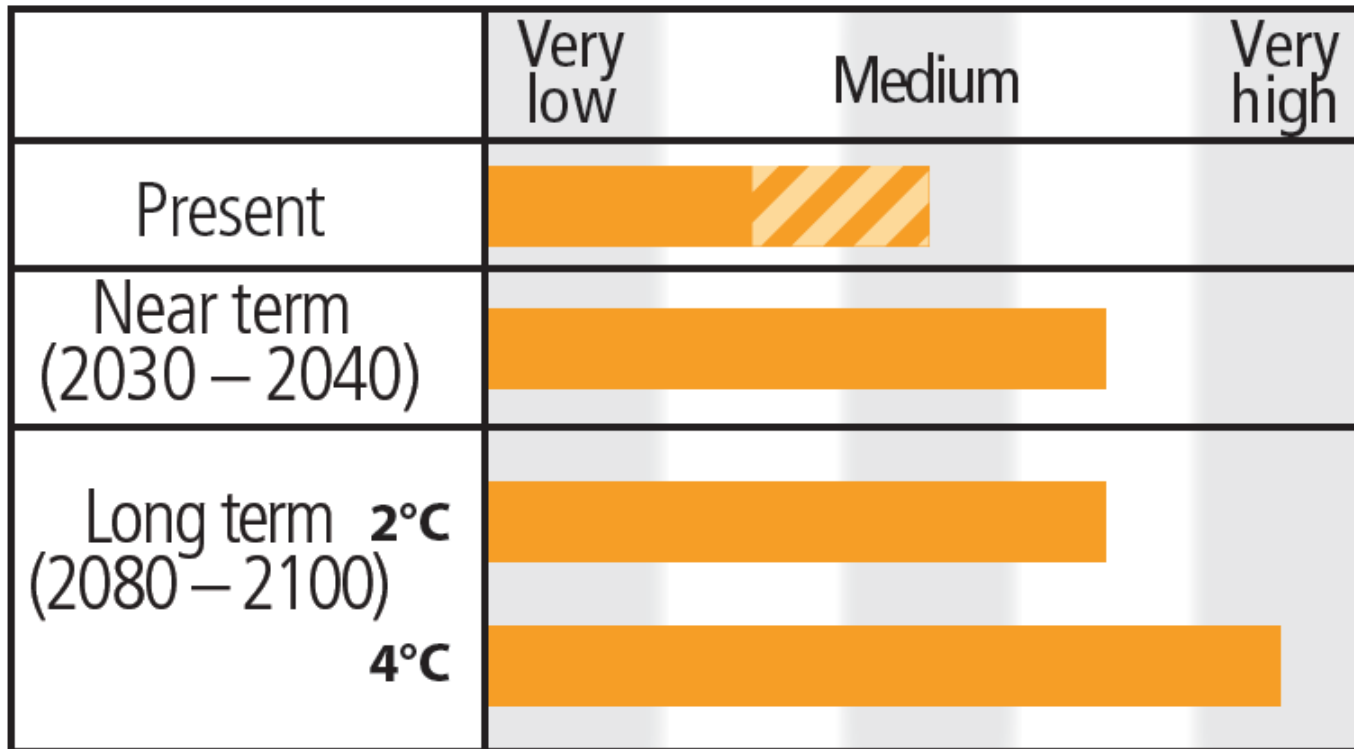
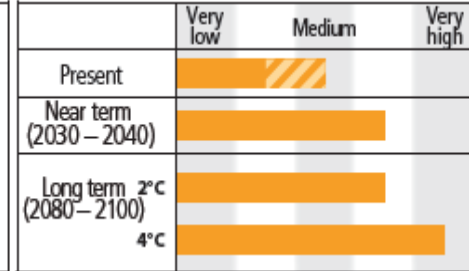
Increasing heat waves

Declining work productivity, morbidity (e.g., dehydration, heat stroke, and heat exhaustion), and mortality from exposure to heat waves. Particularly at risk are agricultural and construction workers as well as children, homeless people, the elderly, and women who have to walk long hours to collect water (*high confidence*)

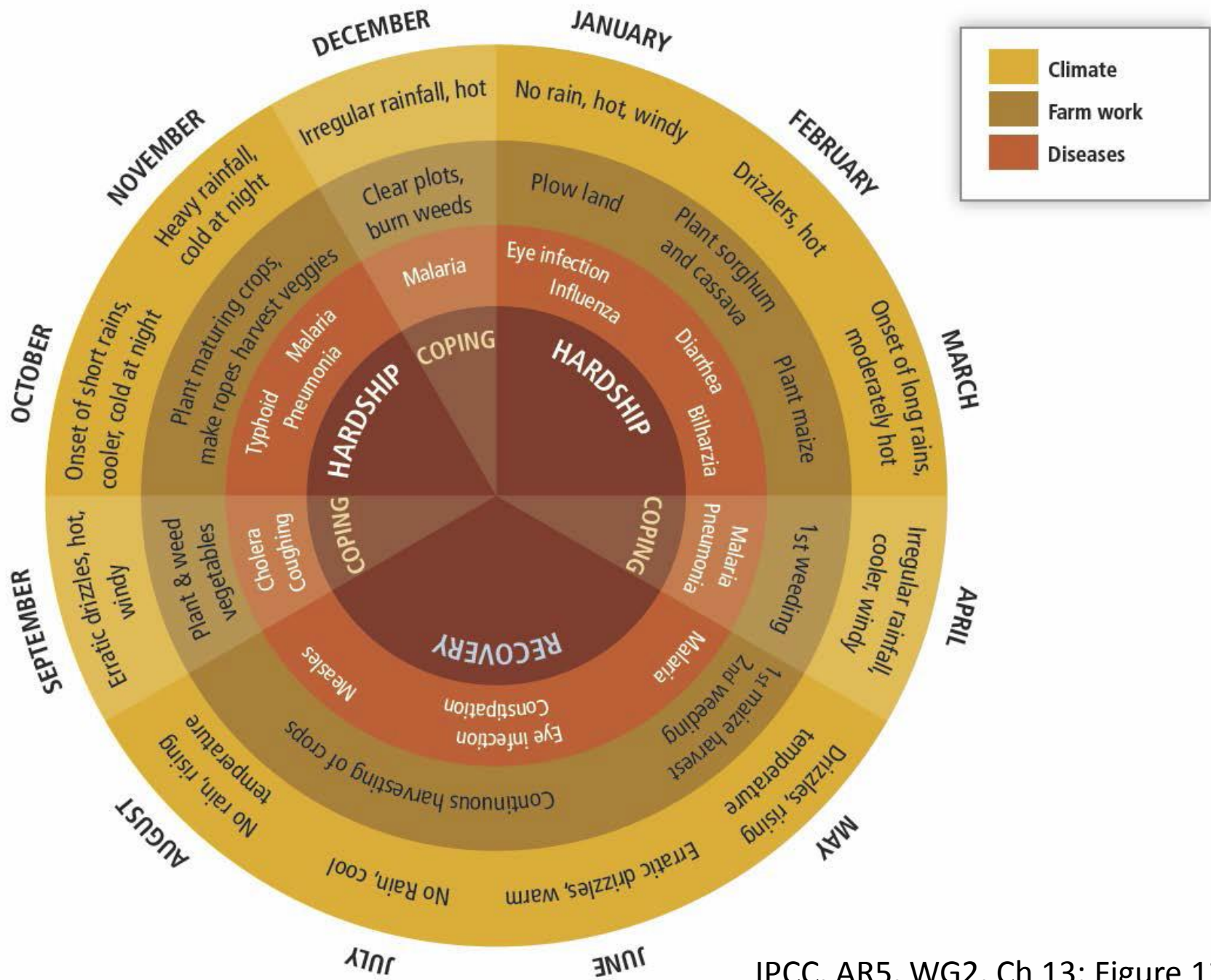
Adaptation options are limited for people who are dependent on agriculture and too poor to afford agricultural machinery. Adaptation options are limited in the construction sector where many poor people work under insecure arrangements. Adaptation might be impossible in certain areas in a +4C world.



13.2.1.1,
13.2.1.5,
13.2.2.4,
Box 13-1

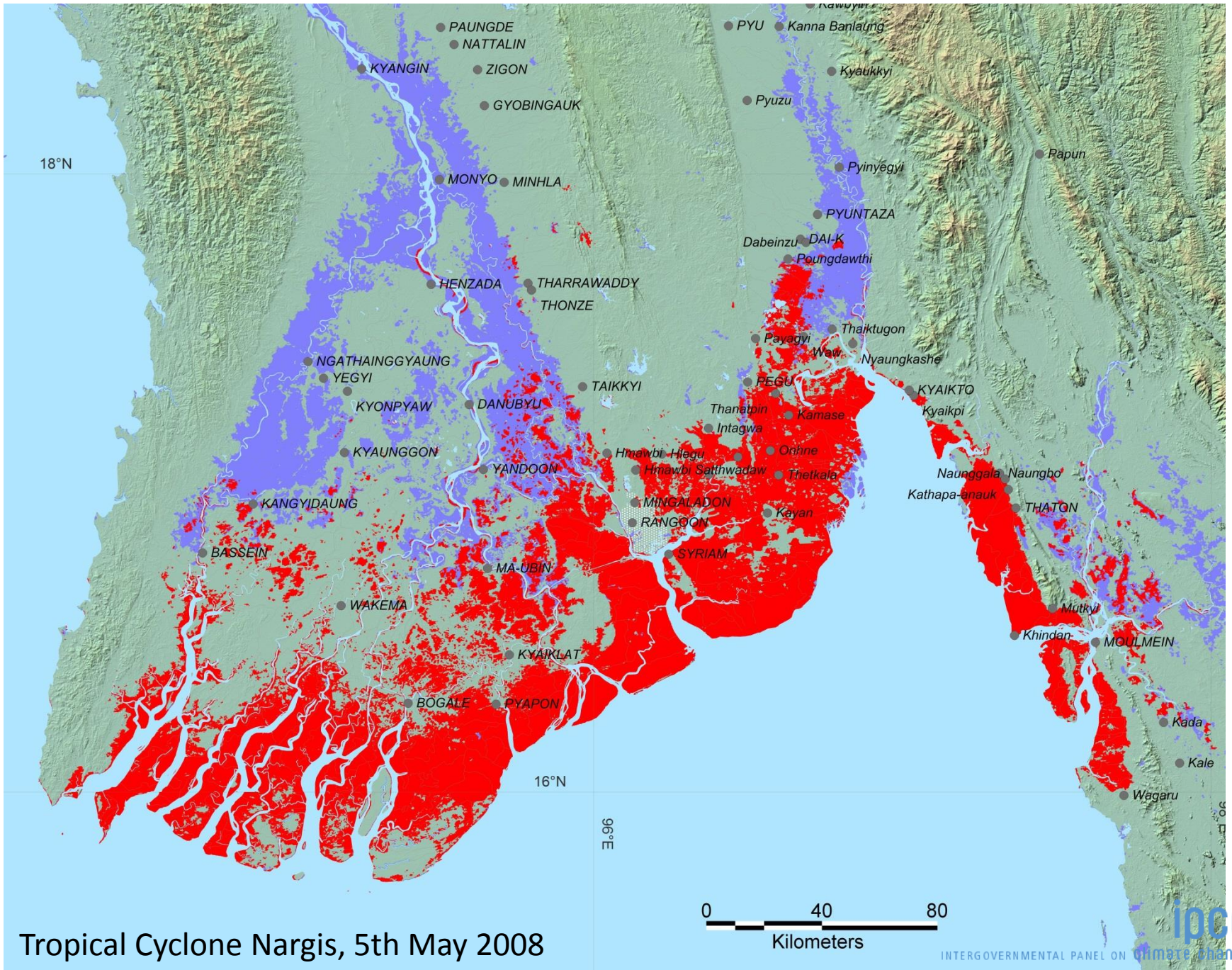


Wheel of Hardship

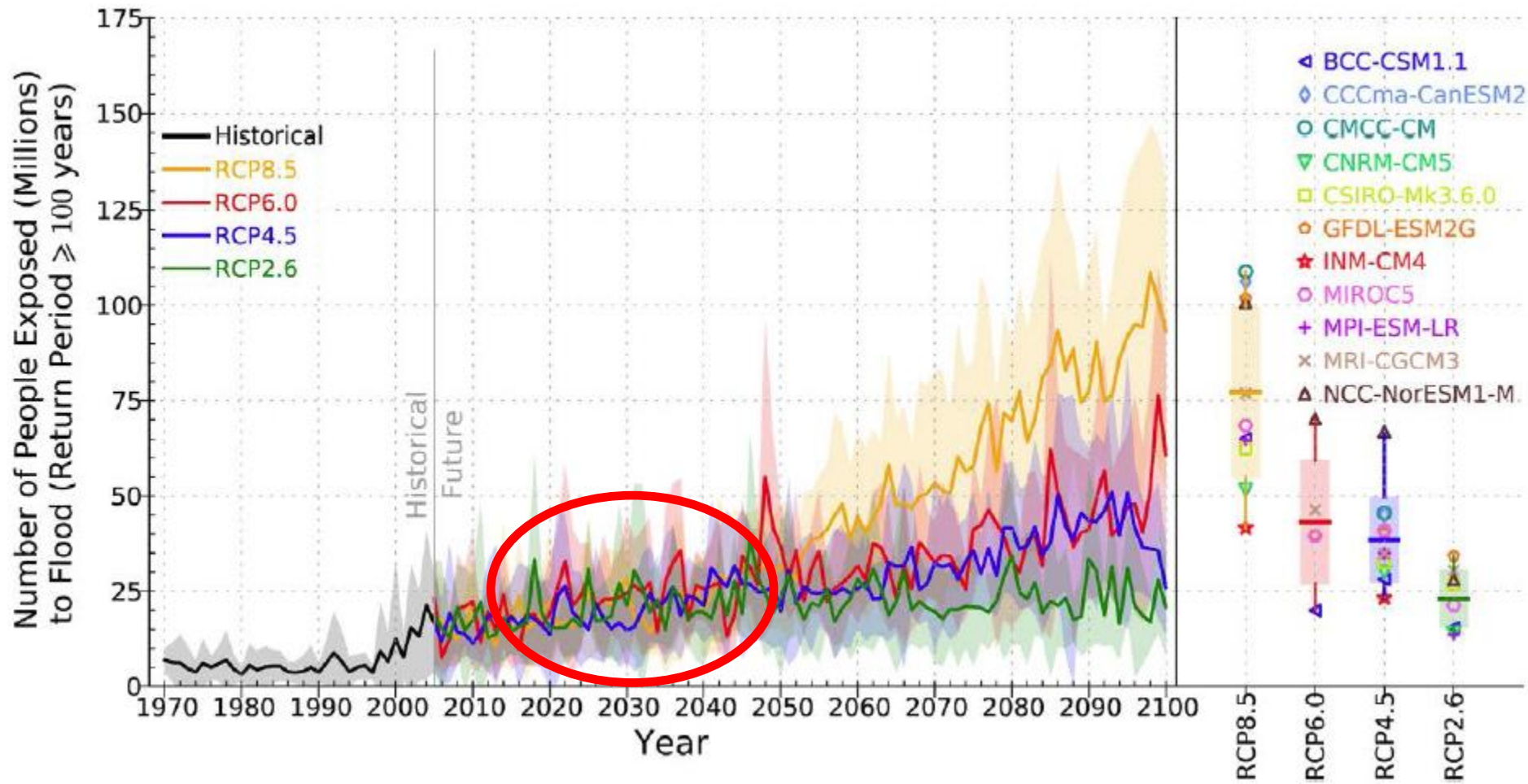


IPCC, AR5, WG2, Ch 13: Figure 13.4





Tropical Cyclone Nargis, 5th May 2008



Global exposure to the 20th century 100-year flood (or greater) in millions of people (IPCC AR5, WGII, Ch 3, Figure 3-6)

Take home messages:

- Various forms of **inequality** reinforce differential vulnerability.
- High risks for poor people **already** at present situation and in the short term.
- Very high risks after 2050 if $> +2C$, **some beyond limits** of adaptation for the poor.
- Current mitigation policies may hurt poor people – a call for **pro-poor policies**.