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Adaptation options, needs, opportunities and associated costs: An African Context

Balgis Osman-Elasha (PhD)
Lead Author, Chapter 14- IPCC AR5

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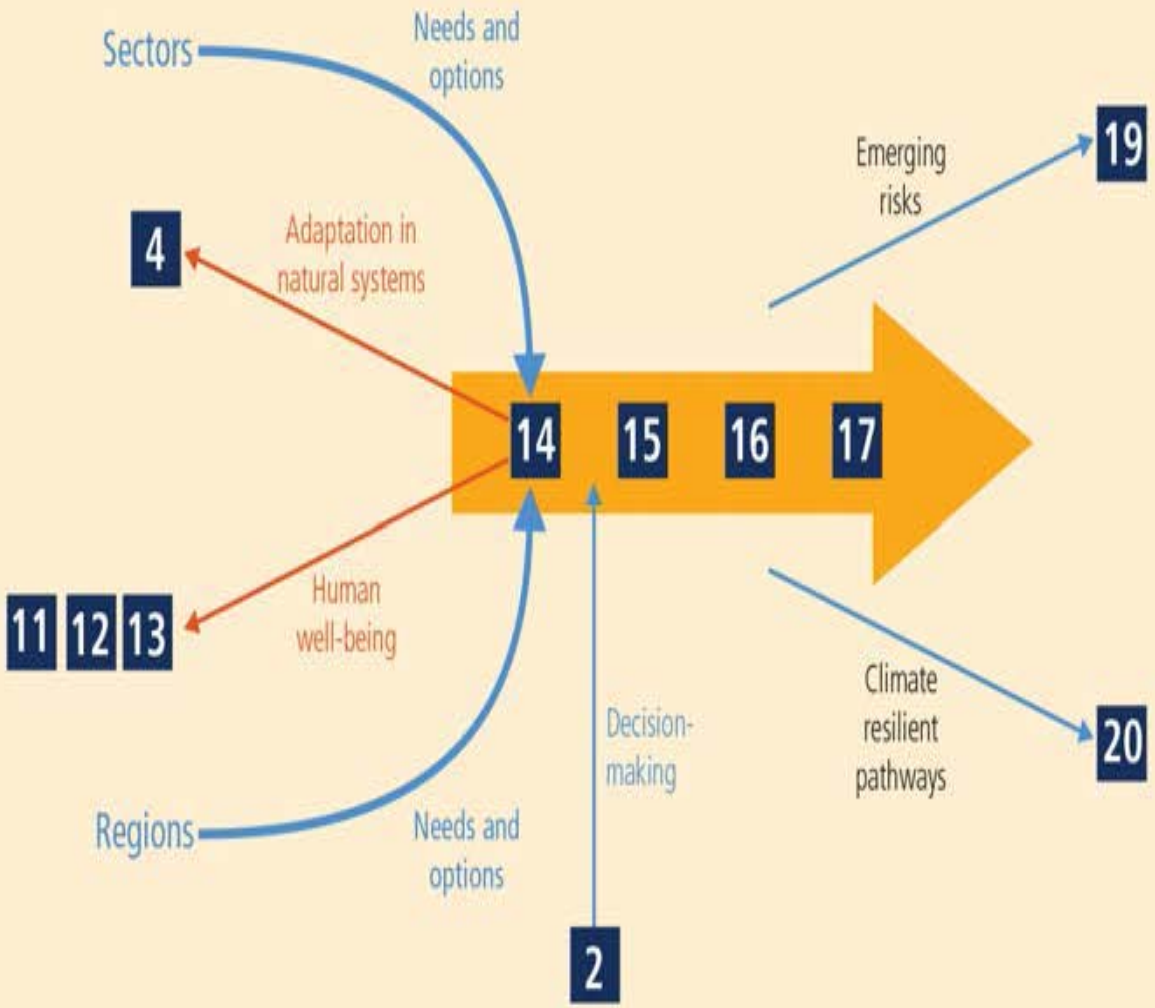
AR5 Definition of adaptation

The process of adjustment to actual or expected climate and its effects. In human systems, adaptation **seeks to moderate** harm or exploit beneficial opportunities. In natural systems, human intervention may facilitate adjustment to expected climate and its effects

The relationship between the four adaptation chapters (14 to17) and other closely related chapters



Adaptation needs

- ***Why* is there a need to adapt?**
- Adaptation needs arise when the anticipated risks or experienced impacts of climate change require action to ensure the safety of populations and the security of assets, including ecosystems and their services [14.2] (Moderate Agreement) medium evidence).

Adaptation for Africa is key (1)

Climate change will interact with non-climate drivers and stressors to exacerbate existing vulnerability :

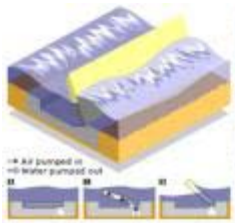
- **Water availability :** The population at risk of increased water stress in Africa is projected to be 75-250 million and 350-600 million people by the 2020s and 2050s, respectively
- **Agricultural systems**, particularly in semi-arid areas (*high confidence*). Parts of the Sahara will likely be some of the most vulnerable areas showing agricultural losses of between 2 and 7% of GDP by 2100
- **Food security and Human Health:** Increase of 25 to 90% in proportion of the population undernourished
- *Increase transmission* and associated costs *of malaria and* water-borne diseases

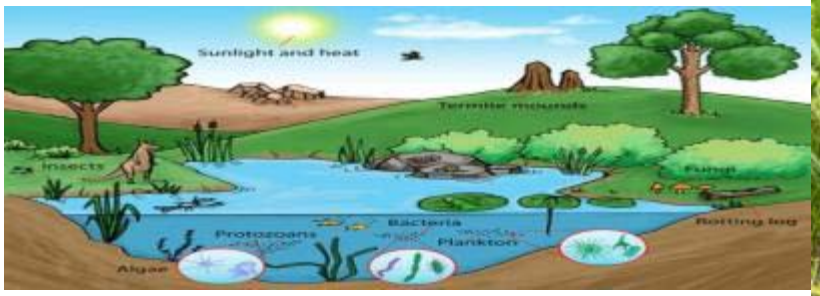
Adaptation for Africa is key (2)

- **Climate change will interact with non-climate drivers and stressors to exacerbate existing vulnerability :**
- **Biodiversity and ecosystems**
- Increased risk of fire, which threatens tropical forests and woodlands, especially in eastern Africa
- Increase of 5-8% of the proportion of arid and semi-arid lands in Africa is projected by the 2080s
- Negative impacts on ecosystem services, such as water regulation, storm protection, and tourism

Adaptation options

Engineered and technological adaptation options are still the most common adaptive responses, although there is growing experience of the value for ecosystem-based, institutional, and social measures, including the provision of climate-linked safety nets for those who are most vulnerable *[14.3] (High agreement, robust evidence)*





Ecosystem-based adaptation

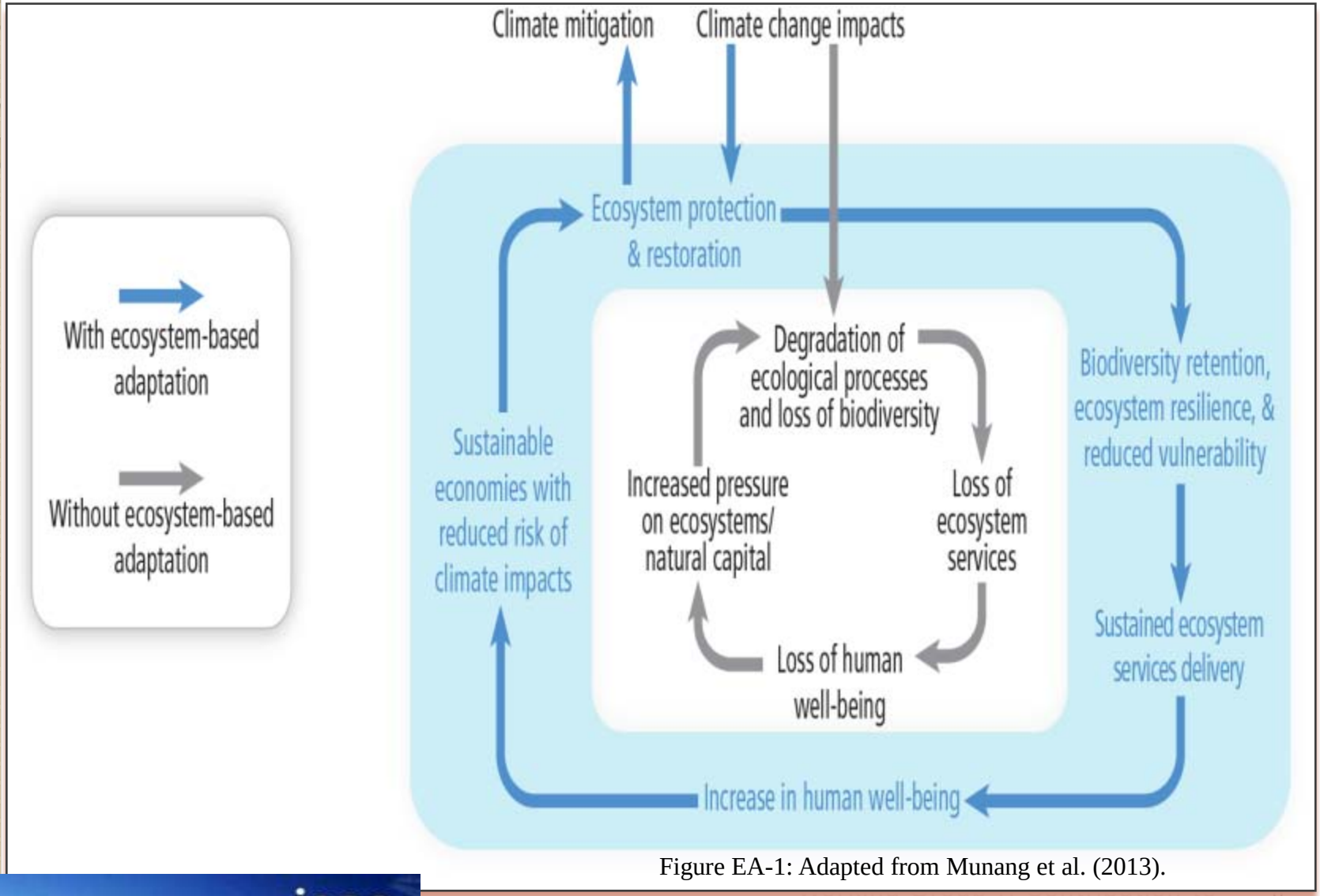


Figure EA-1: Adapted from Munang et al. (2013).

An iterative risk management approach for adaptation

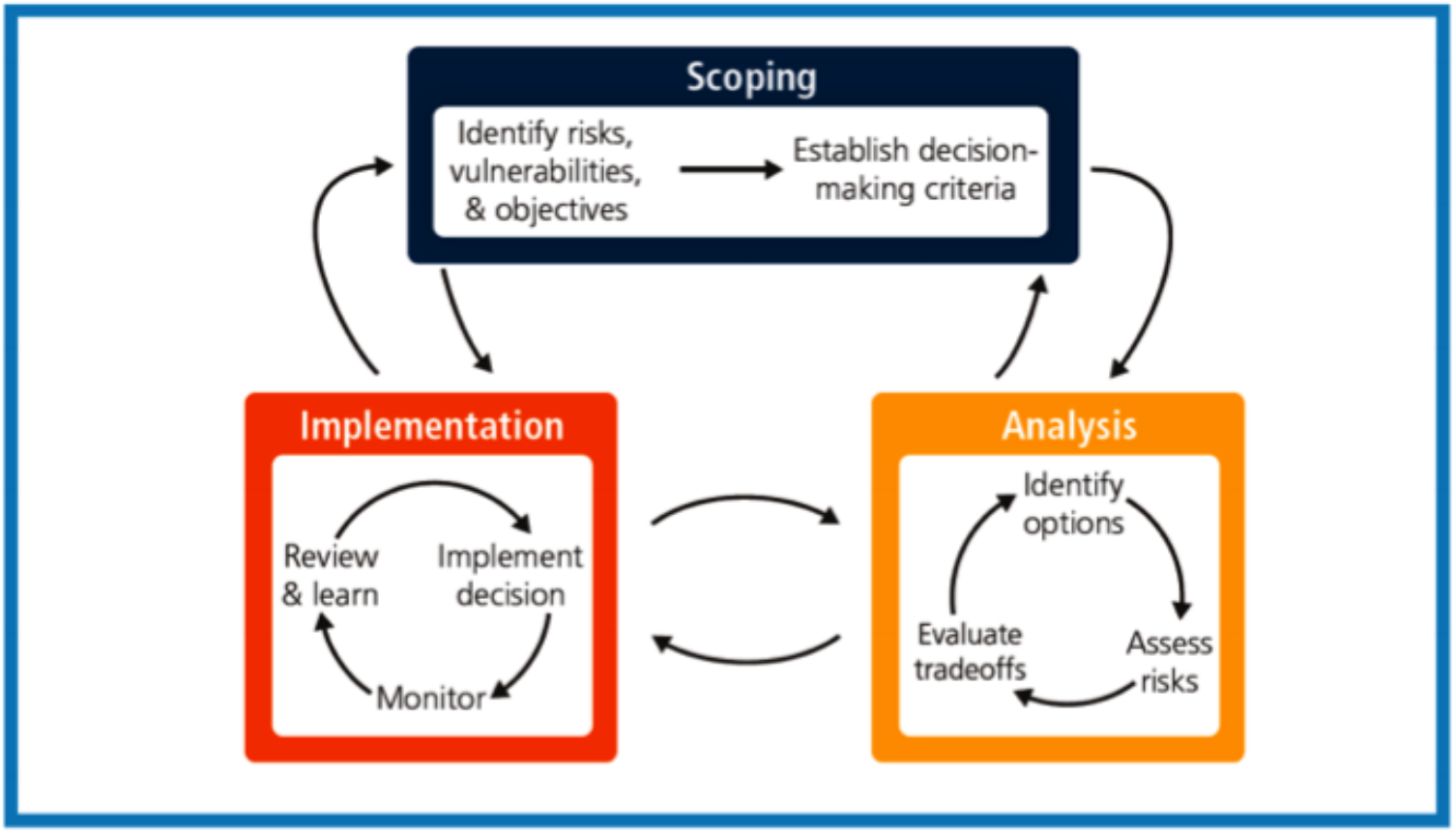
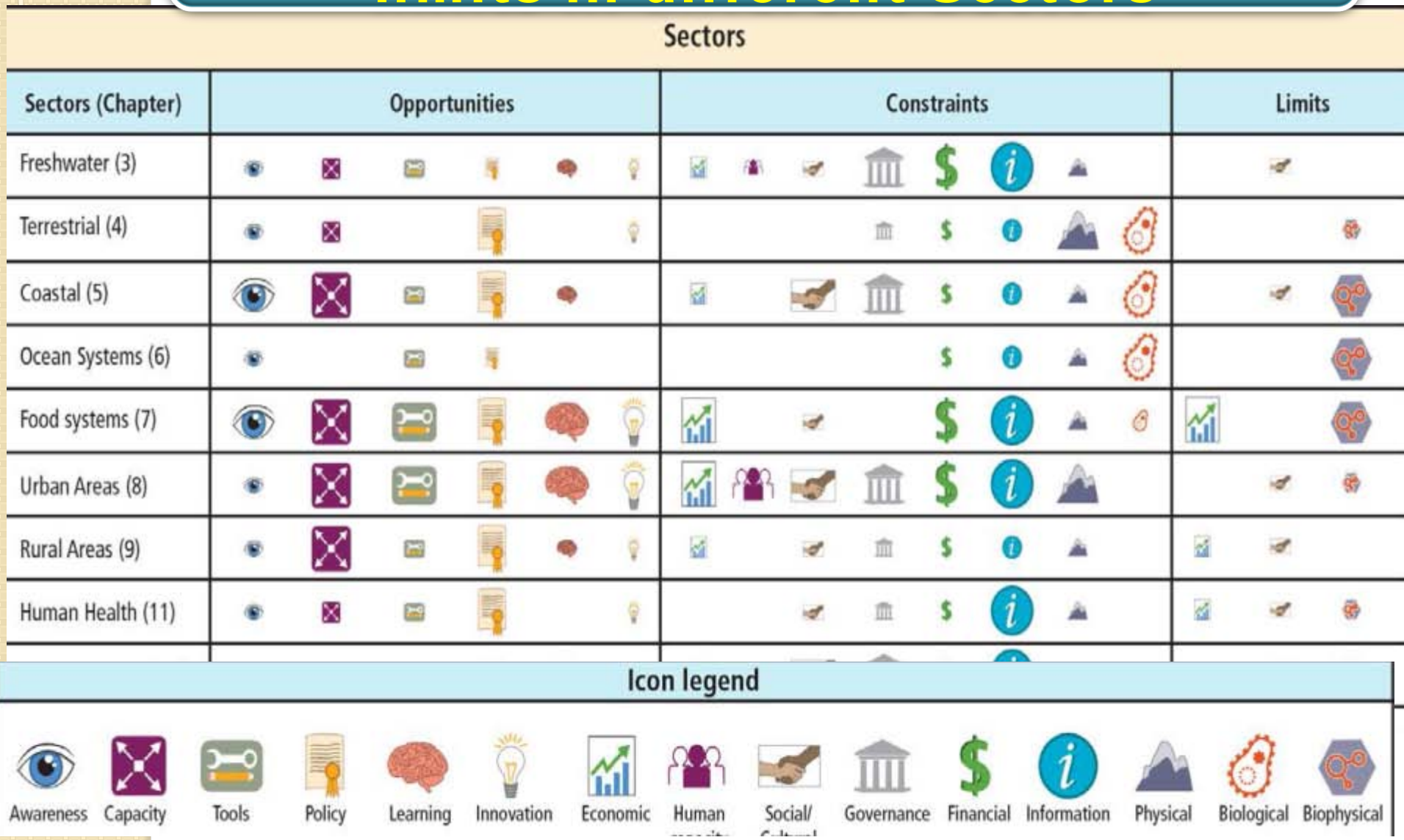


Figure SPM.3 from the IPCC WG II report. **A schematic that illustrates the feedbacks of information in an iterative risk management approach for adaptation.**

Opportunities, constraints and limits in different Sectors



Opportunities, constraints and limits in different regions

Regions

Regions (Chapter)	Opportunities	Constraints	Limits
Africa (22)			
Europe (23)			
Asia (24)			
Australasia (25)			
North America (26)			
Cental & South America (27)			
Polar Regions (28)			
Small Islands (29)			
Open Oceans (30)			

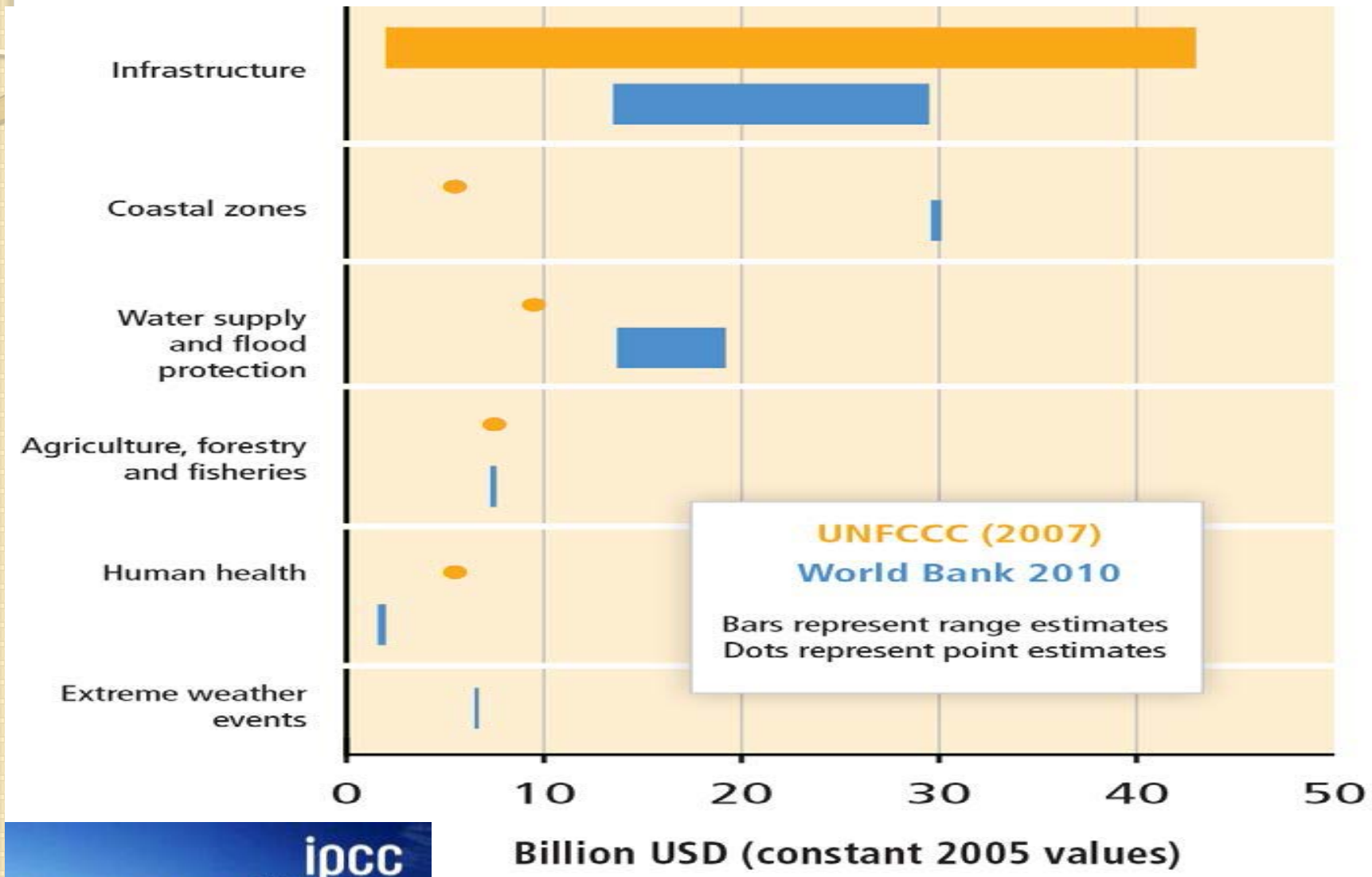
Costing adaptation

Global adaptation cost estimates are greater than current adaptation funding and investment, particularly in developing countries, suggesting a funding gap and a growing adaptation deficit

(limited evidence, medium confidence).

Global estimates for adaptation funds variously estimated in the range of $70-100 billion annually (World Bank 2010), but with actual expenditures in 2011 estimated at $244 million (Elbehri et al, 2011), and in 2012 estimated at $395 million (Schalatek et al., 2012).

Comparison of sectoral results on the costs of adaptation in developing countries across the UNFCCC and World Bank studies



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Key Global Findings(1)

Since AR4 the framing of adaptation has moved further from a focus on **biophysical vulnerability** to the wider **social and economic** drivers of vulnerability and people's ability to respond *(High agreement, robust evidence)*

-Adaptation assessments, have demonstrably led to a **general awareness** among decision makers and stakeholders of climate risks and adaptation **needs and options**. However, such awareness has often not translated **into adaptation action**. [14.4.3] *(High agreement, medium evidence)*

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Key Global Findings(2)

- The theory and the evidence indicate that adaptation cannot generally **overcome all** climate change effects *([17.2.2, 17.2.5]high confidence).*
- Adaptation generally needs to be seen in the frame of the **overall development path** of the country, particularly for developing countries *(high confidence)*

Key Global Findings (3)

- **Opportunities** exist to enable adaptation planning and implementation for actors across all sectors and geographic regions *(very high confidence).*
- Successful adaptation requires not only identifying adaptation options and assessing their costs and benefits, but also exploiting available mechanisms for **expanding** the adaptive capacity of human and natural systems ***(high agreement, medium evidence).*** [16.2; 16.3; 16.5; 16.8; Table 16-1; Box CC-EA)

Africa Specific Findings (1)

- Climate change and climate variability have the potential to exacerbate or **multiply existing threats to human security including food, health and economic insecurity**, all being of particular concern for Africa (*medium confidence*).
- A wide range of **data and research gaps constrain** decision making to reduce vulnerability, build resilience and plan and implement adaptation strategies at different levels in Africa (*high confidence)*.

Africa Specific Findings (2)

- **Progress has been achieved on managing risks to food production from current climate variability and near term climate change but these will not be sufficient to address long-term impacts of climate change (*high confidence*).**
- **In all regions of the continent, national governments are initiating governance systems for adaptation and responding to climate change, but evolving institutional frameworks cannot yet effectively co-ordinate the range of adaptation initiatives being implemented (*high confidence*).**

Africa Specific Findings (3)

- Despite implementation limitations, Africa's adaptation experiences nonetheless highlight valuable lessons for enhancing and scaling up the adaptation response, including principles for good practice and integrated approaches to adaptation (*high confidence*).
- Strengthened inter-linkages between adaptation and development pathways and a focus on building resilience would help to counter the current adaptation deficit and reduce future maladaptation risks (*high confidence*).


Thanks
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