

**Third meeting of the structured expert
dialogue on the 2013-2015 review (SED 3)
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Saal Schumann, Maritim Hotel**

***ADAPTATION OPTIONS, NEEDS,
OPPORTUNITIES AND ASSOCIATED
COSTS***

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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



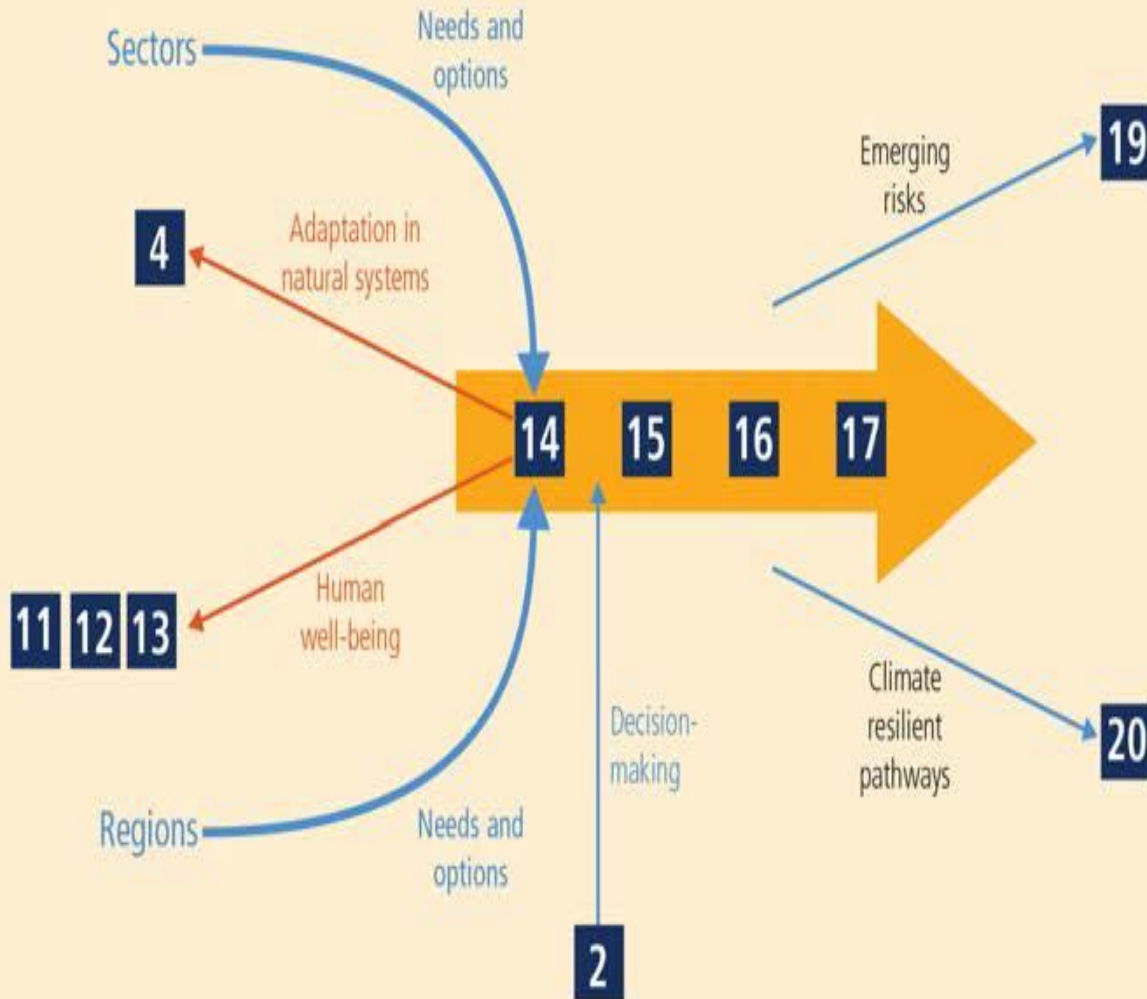
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Adaptability:

It is not the strongest of the species that survives, nor the most intelligent; it is the one that is most adaptable to change. (Charles Darwin)



The relationship between the four adaptation chapters (14 to 17) 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).



An iterative risk management approach for adaptation

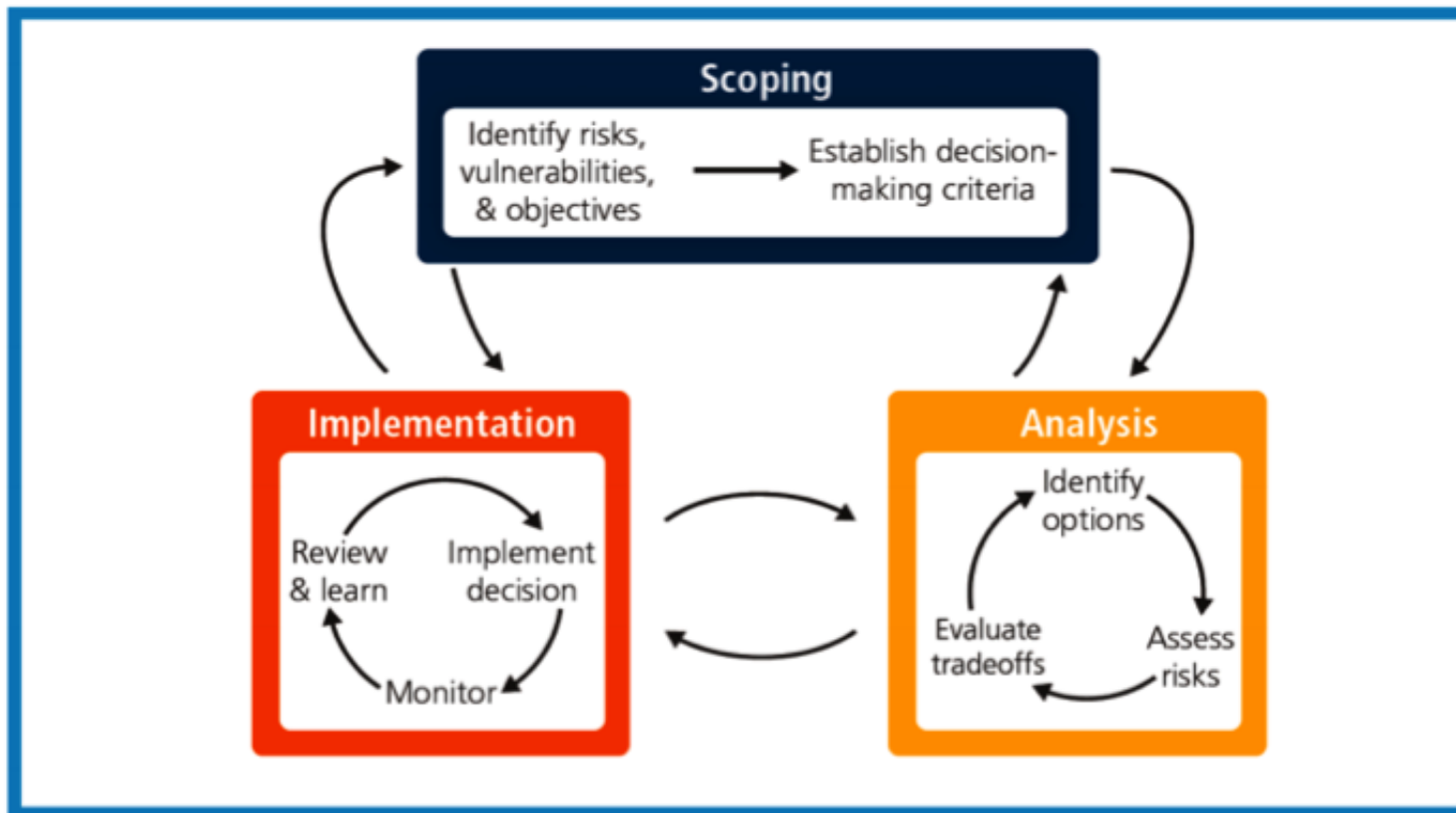
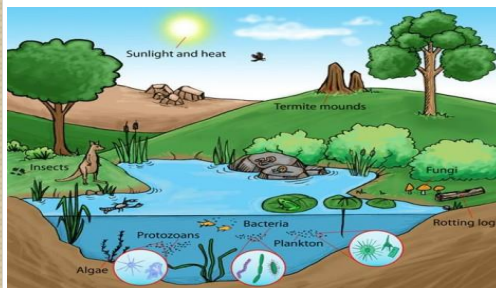


Figure SPM.3 from the IPCC WG II report. A schematic that illustrates the feedbacks of information in an iterative risk management approach for adaptation.

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

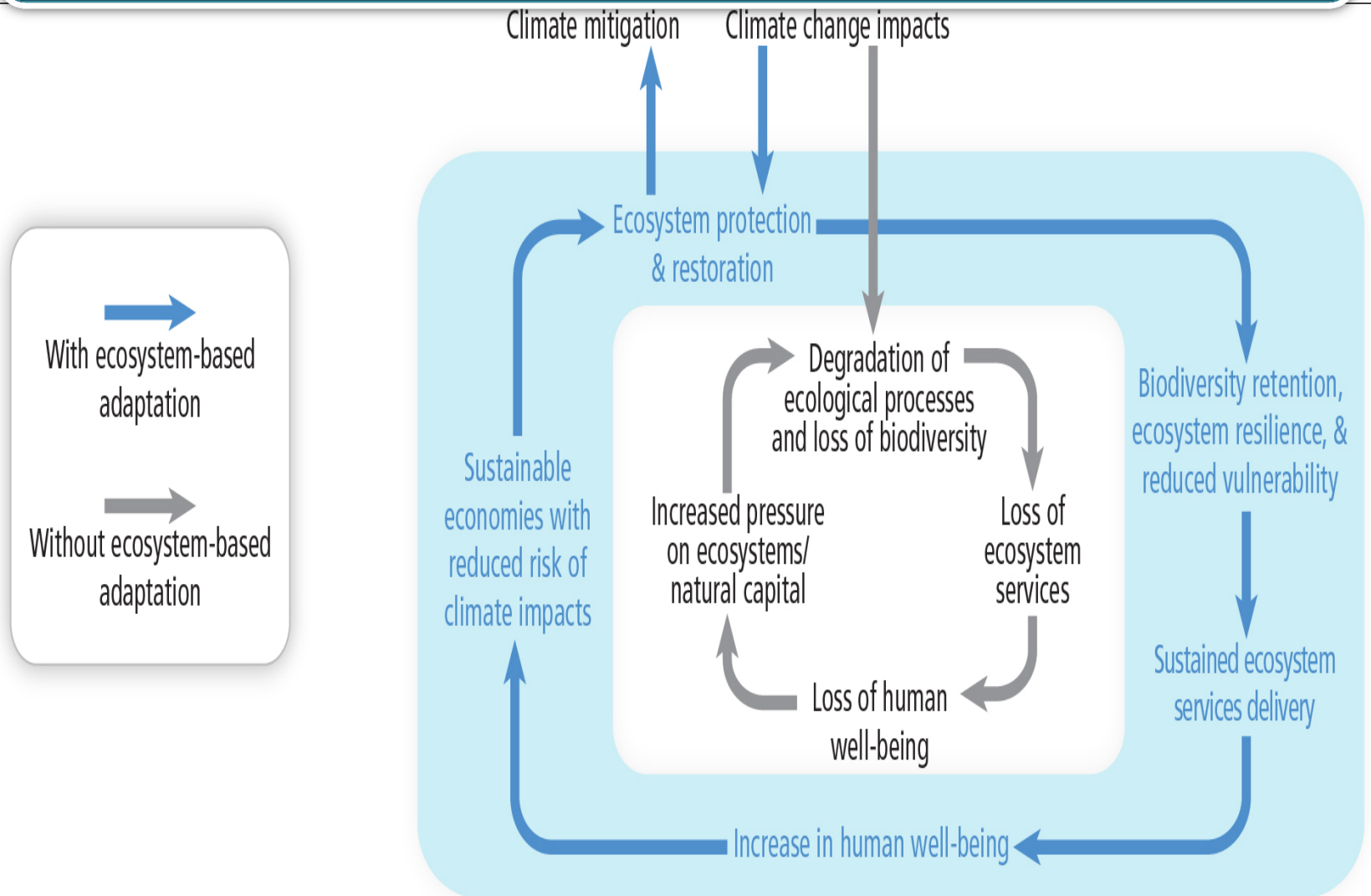


Figure EA-1: Adapted from Munang et al. (2013).

Opportunities, constraints and limits in different Sectors

Sectors


























































































Sectors (Chapter)	Opportunities	Constraints	Limits
Freshwater (3)			
Terrestrial (4)			
Coastal (5)			
Ocean Systems (6)			
Food systems (7)			
Urban Areas (8)			
Rural Areas (9)			
Human Health (11)			
Human Security (12)			

Icon legend

Awareness	Capacity	Tools	Policy	Learning	Innovation	Economic	Human	Social/Cultural	Governance	Financial	Information	Physical	Biological	Biophysical

Opportunities, constraints and limits in different regions

Regions

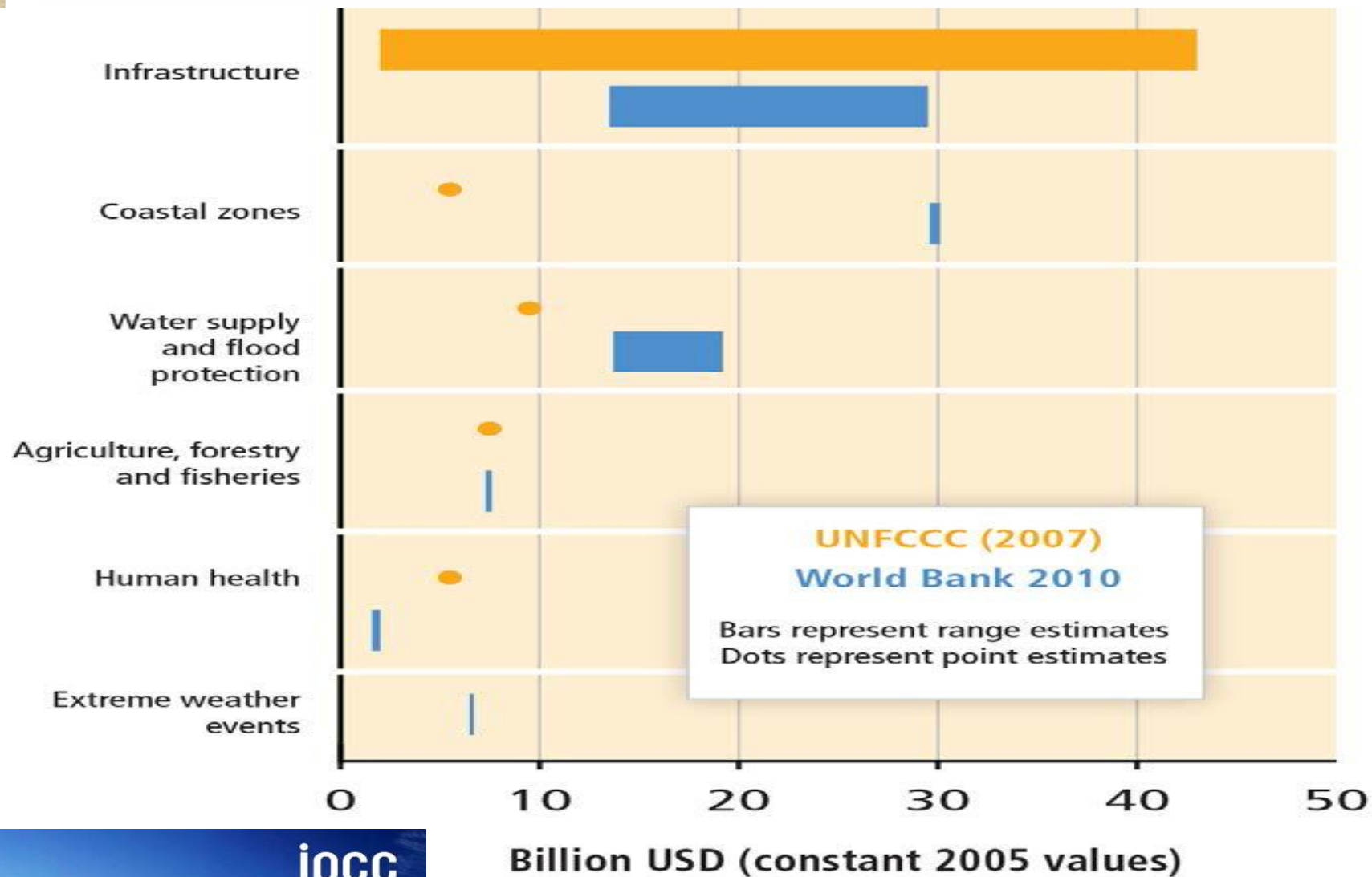
Regions (Chapter)	Opportunities	Constraints	Limits
Africa (22)	     	     	 
Europe (23)	   	  	  
Asia (24)	  	    	
Australasia (25)	   	      	
North America (26)	  	     	
Central & South America (27)	  	     	
Polar Regions (28)	  	    	
Small Islands (29)	    	       	
Open Oceans (30)	   	 	

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 of the need for adaptation funds variously estimated in the range of \$70-100 billion annually (World Bank 2010a), 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



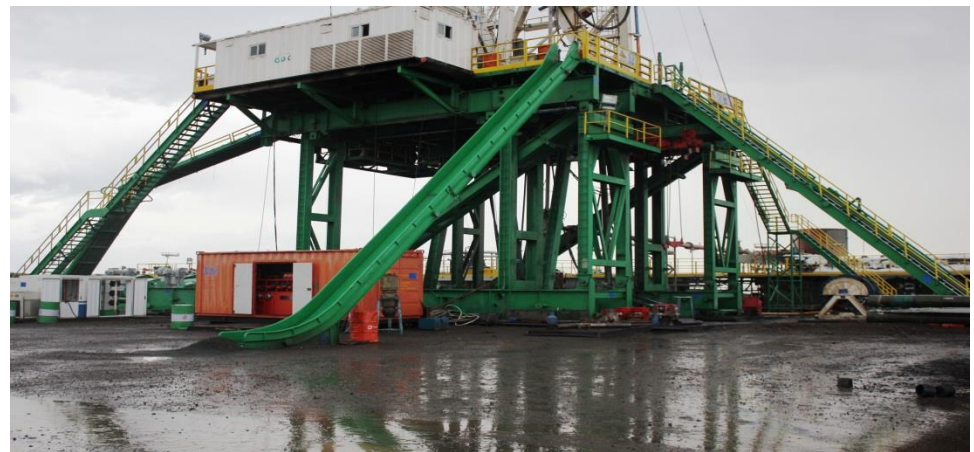
Key Findings(1)

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 *[14.1, 14.2, 14.3] (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)*

Key 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 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)
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Thanks
For more information
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