

# **UNFCCC GLOBAL STOCKTAKE EXPERT PANEL 2 – ENABLING TRANSITIONS AND STRENGTHENING THE RESPONSE**

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**Mitigation options, embedding options within the wider development context, climate governance, policies and measures, international cooperation**

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# Climate target has grown..

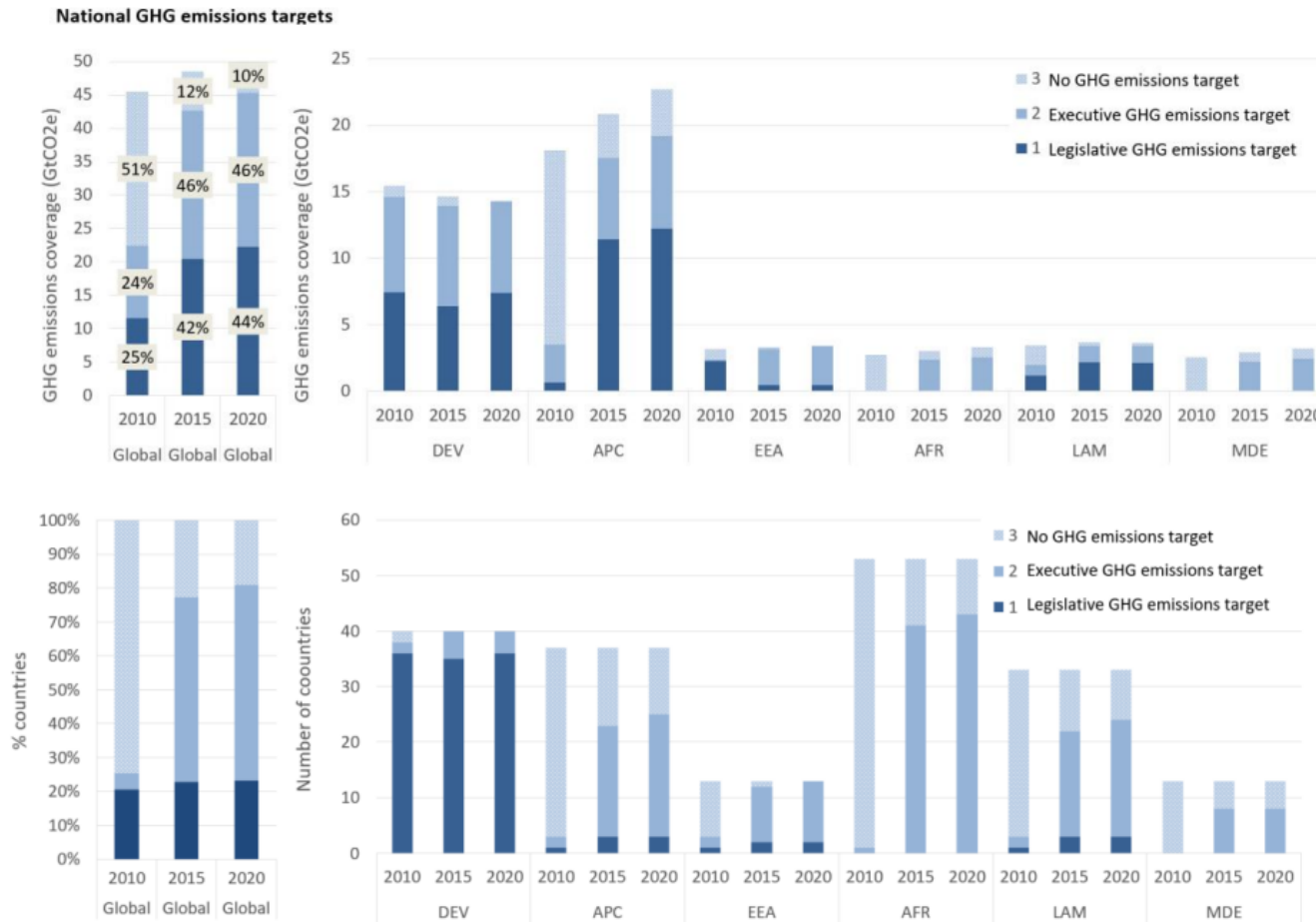


Figure 13.2 Prevalence of targets by emissions and number of countries across region

# ..And so have climate laws

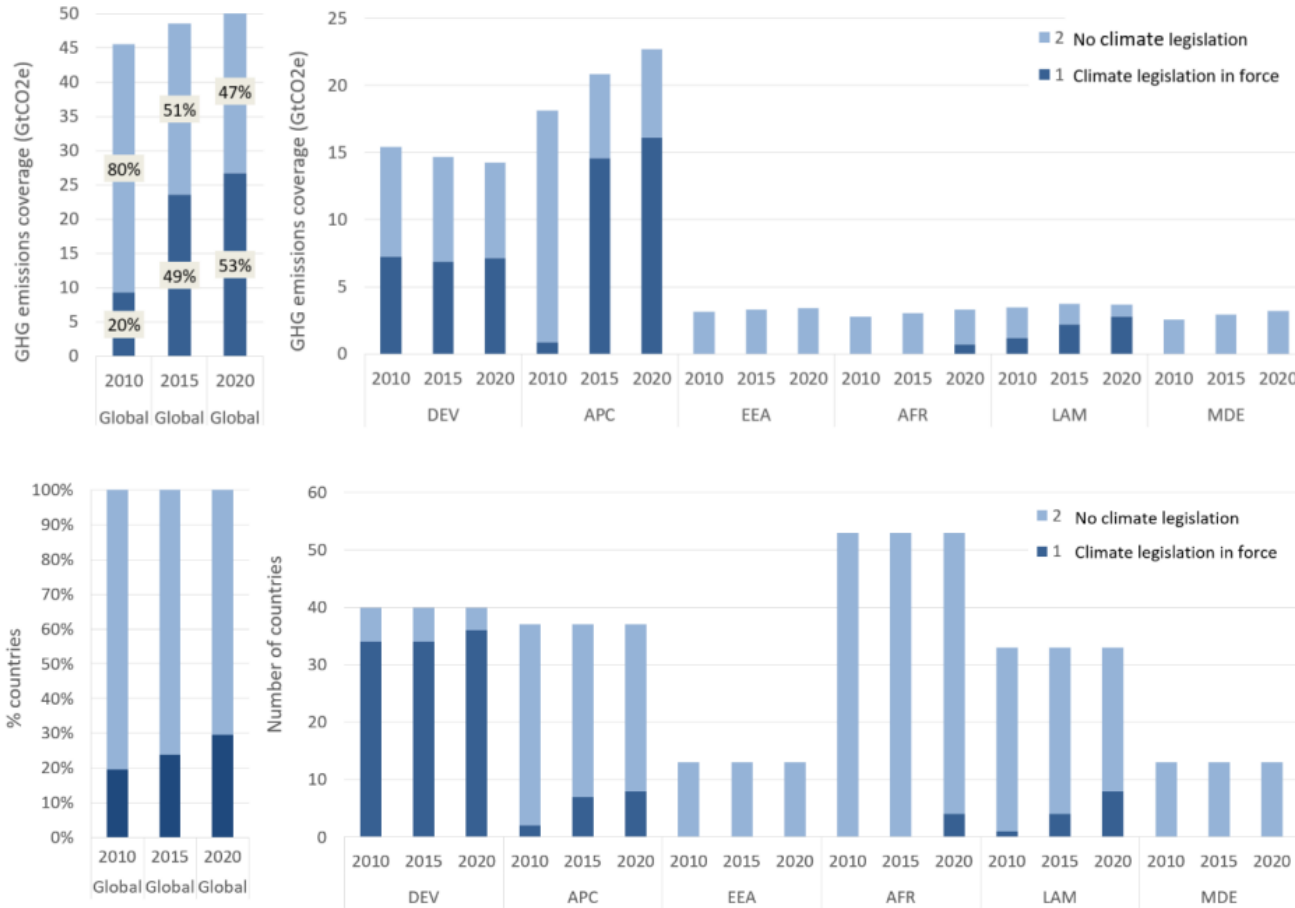
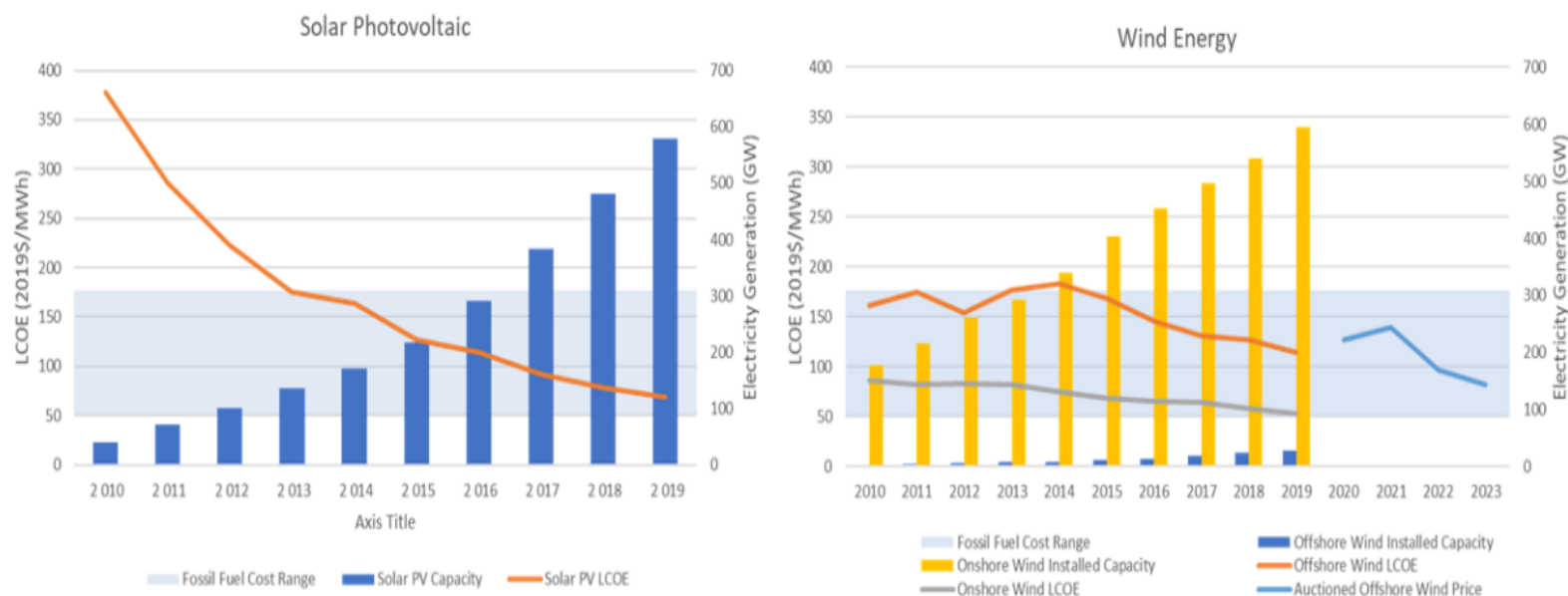


Figure 13.1 Prevalence of legislation by emissions and number of countries across regions

**Table 13.1 Classification of mitigation policies**

<b>Category</b>	<b>Examples of common types of mitigation policy instruments</b>
Economic instruments	Carbon taxes, GHG emissions trading, fossil fuel taxes, tax credits, grants, renewable energy subsidies, fossil fuel subsidy reductions, offsets, R&D subsidies, loan guarantees
Regulatory instruments	Energy efficiency standards, renewable portfolio standards, vehicle emission standards, ban on SF <sub>6</sub> uses, biofuel content mandates, emission performance standards, methane regulations, land-use controls
Other instruments	Information programs, voluntary agreements, infrastructure, government technology procurement policies, corporate carbon reporting

# Fall in cost of some RE technologies

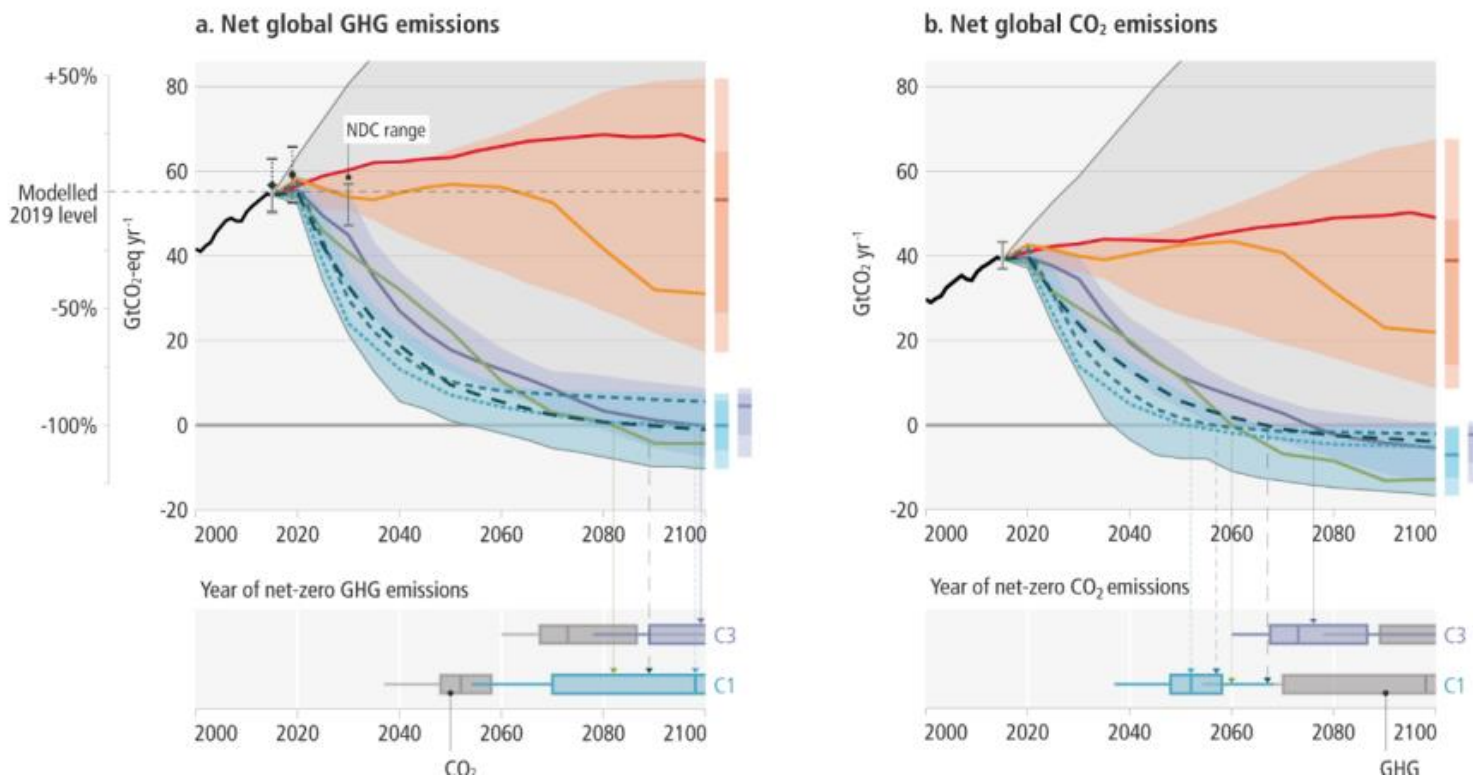


**Figure 1.2: Cost reductions and adoption in solar PV and wind energy**

Source: (IRENA 2020a,b), with fossil fuel LCOE indicated as shaded blue at USD 50-177/MWh (IRENA 2020b)

# ..But big gap remains

Modelled mitigation pathways that limit warming to 1.5°C, and 2°C, involve deep, rapid and sustained emissions reductions.



# Mitigation options have synergies with many Sustainable Development Goals, but some options can also have trade-offs. The synergies and trade-offs vary dependent on context and scale.

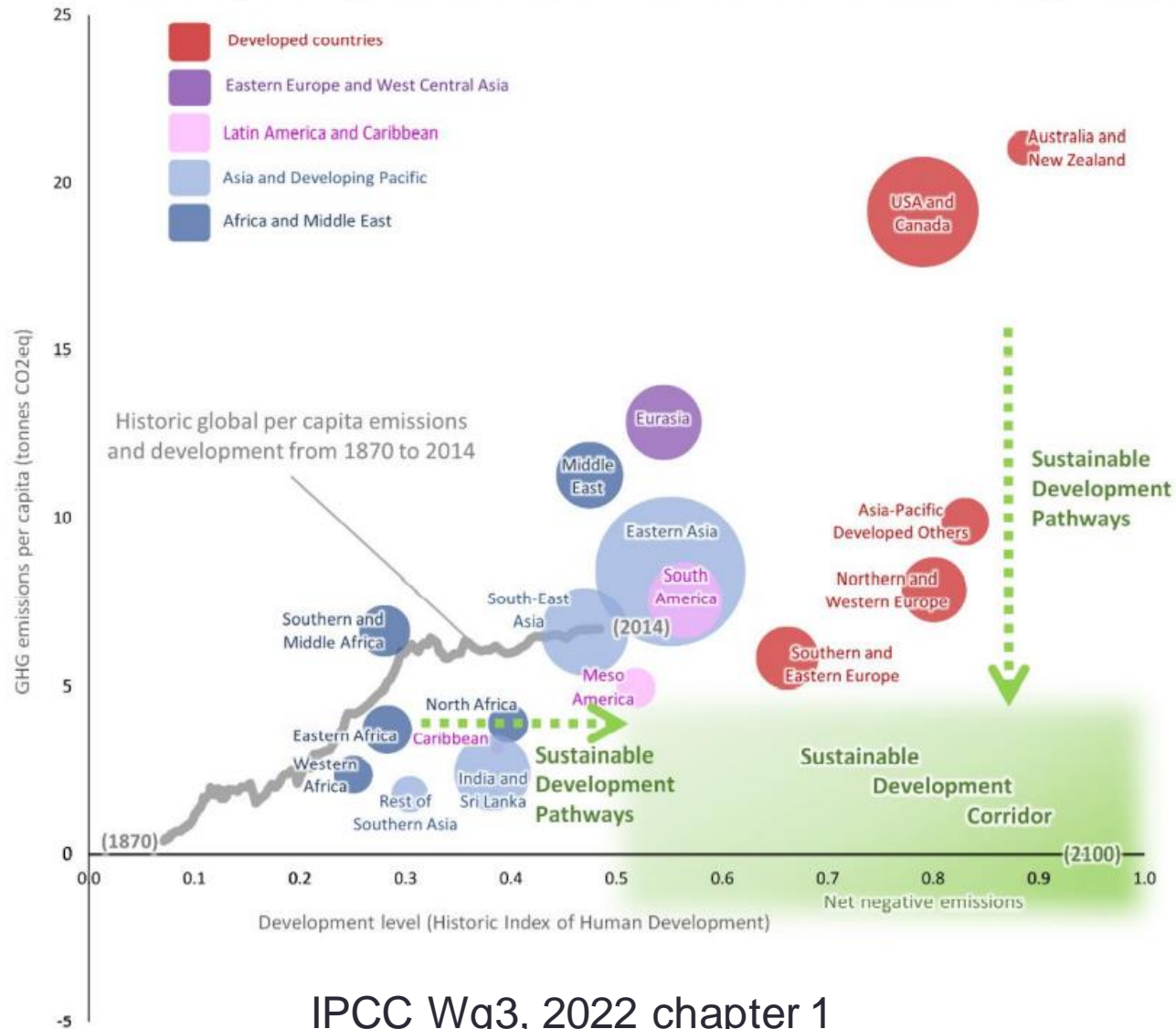
Sectoral and system mitigation options	Relation with Sustainable Development Goals																	Chapter source	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
Energy systems	Wind energy	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	Solar energy	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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Bioenergy	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
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Hydropower	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
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Geothermal energy	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
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Nuclear power	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
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Carbon capture and storage (CCS)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
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Agriculture, Forestry and Other Land Use (AFOLU)	Carbon sequestration in agriculture <sup>1</sup>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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	Reduce CH <sub>4</sub> and N <sub>2</sub> O emission in agriculture	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
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Ecosystem restoration, reforestation, afforestation	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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Improved sustainable forest management	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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Reduce food loss and food waste	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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Shift to balanced, sustainable healthy diets	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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Renewables supply <sup>2</sup>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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Urban systems	Urban land use and spatial planning	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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	Electrification of the urban energy system	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
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District heating and cooling networks	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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Urban green and blue infrastructure	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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Waste prevention, minimization and management	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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Integrating sectors, strategies and innovations	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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Buildings	Demand-side management	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	Highly energy efficient building envelope	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
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		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Efficient heating, ventilation and air conditioning (HVAC)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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Efficient appliances	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
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Building design and performance	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	+	+	+	+	+														

# Drivers and Constraints of Climate Policy

Domain	Factors
Economic Factors	Sectors and services Trade and leakage Finance Investment Technological innovation
Social Political issues	Political Economy Social innovation Equity and Fairness
Institutional Factors	Policy Legal Framework International co-operation



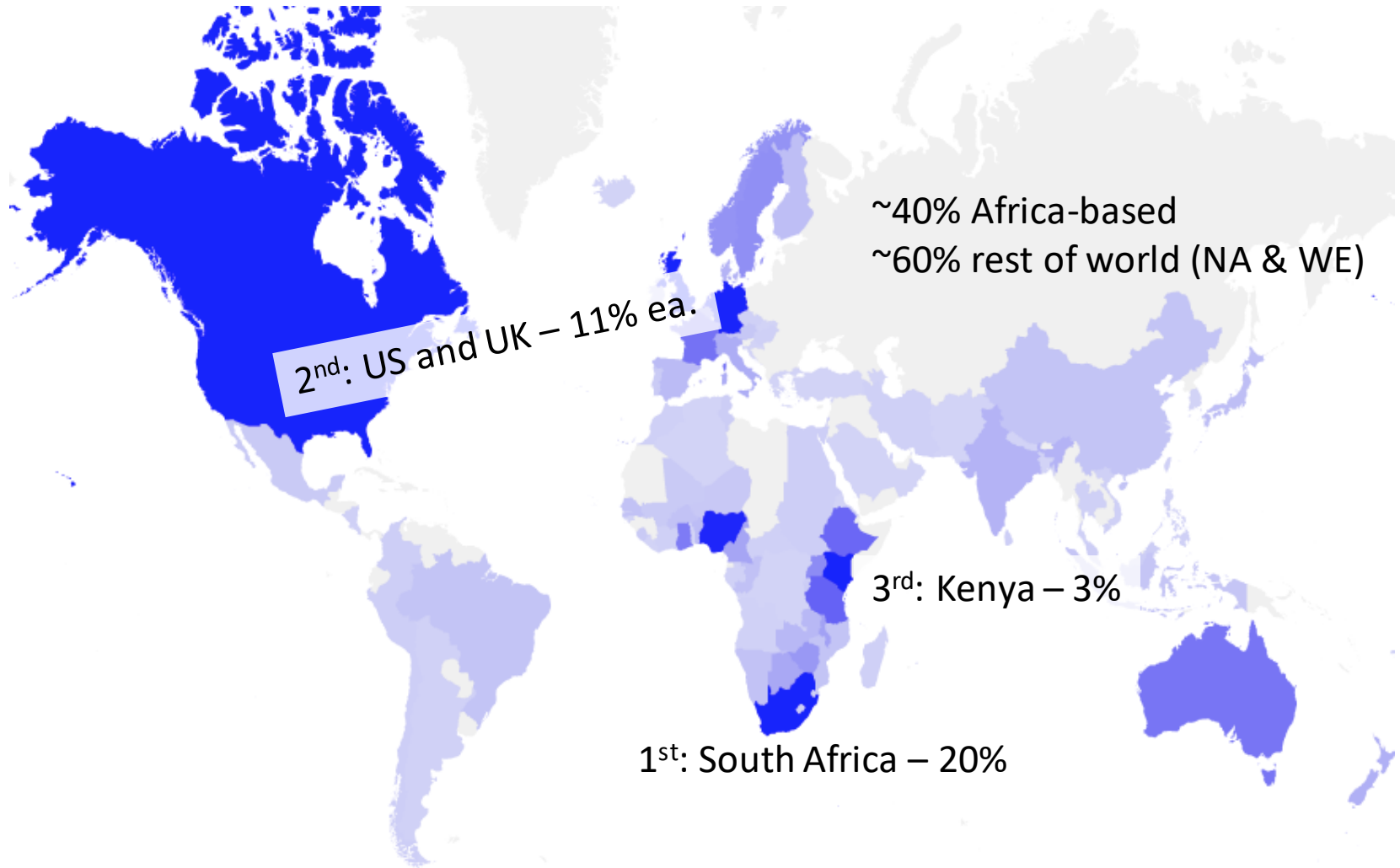
## Sustainable development pathways for regions and countries differ according to stages of industrial development and national capabilities



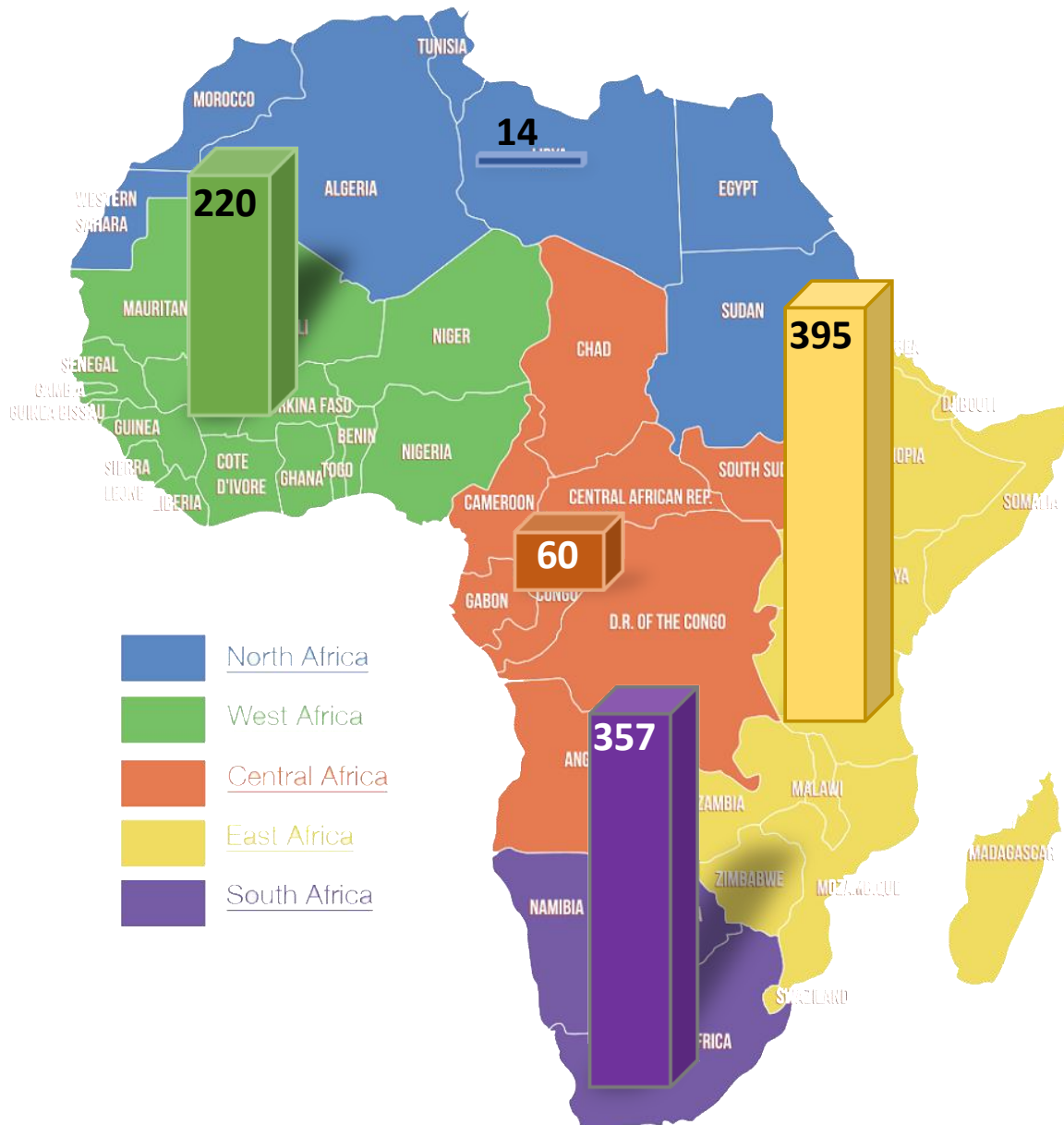
**Table 14.2 Criteria for assessing effectiveness of international cooperation**

<b>Criterion</b>	<b>Description</b>
Environmental outcomes	To what extent does international cooperation lead to identifiable environmental benefits, namely the reduction of economy-wide and sectoral emissions of greenhouse gases from pre-existing levels or ‘business as usual’ scenarios?
Transformative potential	To what extent does international cooperation contribute to the enabling conditions for transitioning to a zero-carbon economy and sustainable development pathways at the global, national, or sectoral levels?
Distributive outcomes	To what extent does international cooperation lead to greater equity with respect to the costs, benefits, and burdens of mitigation actions, taking into account current and historical contributions and circumstances?
Economic performance	To what extent does international cooperation promote the achievement of economically efficient and cost-effective mitigation activities?
Institutional strength	To what extent does international cooperation create the institutional framework needed for the achievement of internationally agreed-upon goals, and contribute to national, sub-national, and sectoral institutions needed for decentralised and bottom-up mitigation governance?

# Inequality in Knowledge Production



# Inequality in Knowledge Production



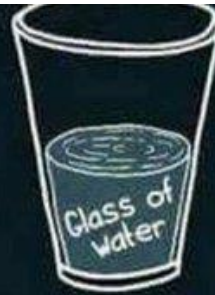




Optimist



Pessimist



Realist



Physicist



Surrealist



Relativist



Utopist



Scepticist



Artist