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Technical Dialogue to First Global Stocktake of the Paris Agreement @ SBSTA-56

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- **Adaptation & adaptation pathways, incl.**

1. **Current state of adaptation**

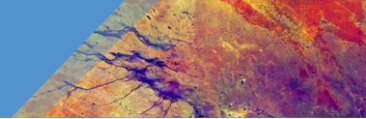
- Documented adaptation (AR6 Ch16/ Ch17; GAMI assessment)
- State & quality of adaptation planning in European cities (own work)

2. **Enabling conditions and good practices for near-term adaptation (AR6)**

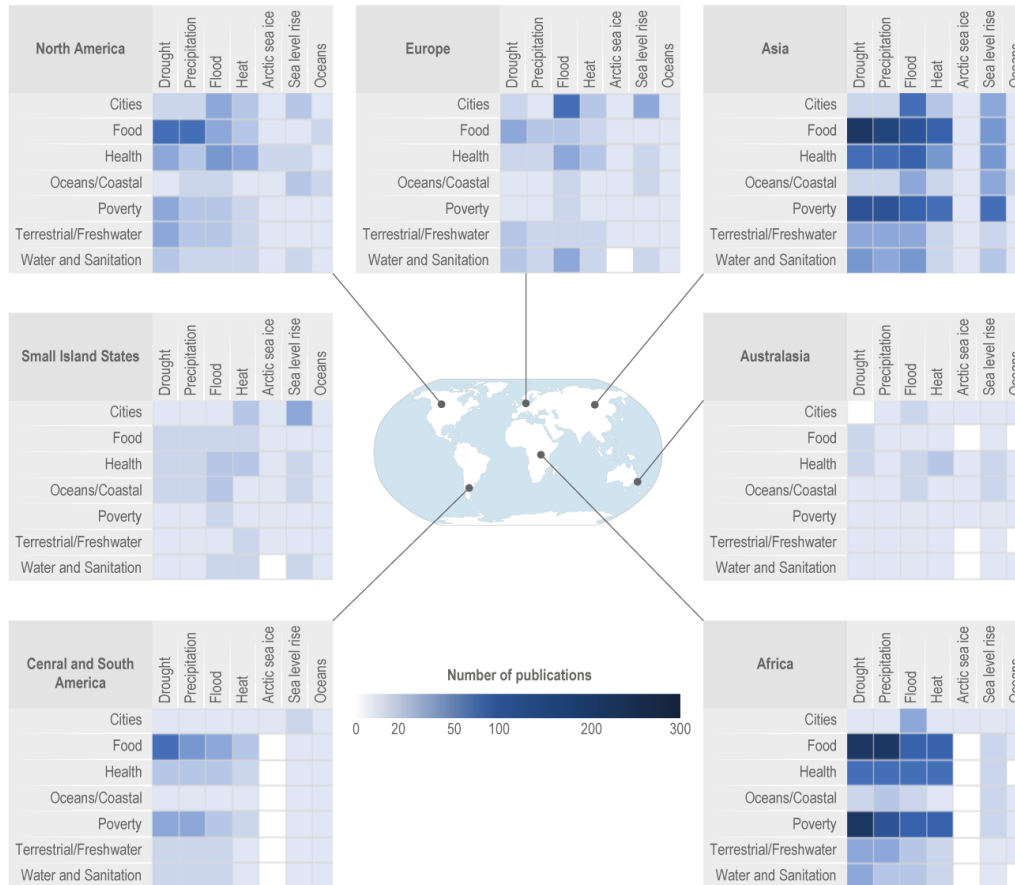
3. **Measuring progress on adaptation**

- Challenges for a GST on adaptation (AR6 Ch17)
- AR6 adaptation – maladaptation work (AR6 Ch17; own work)



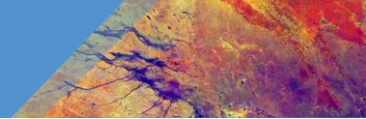


Salience of different types of hazards in the scientific literature on adaptation-related responses

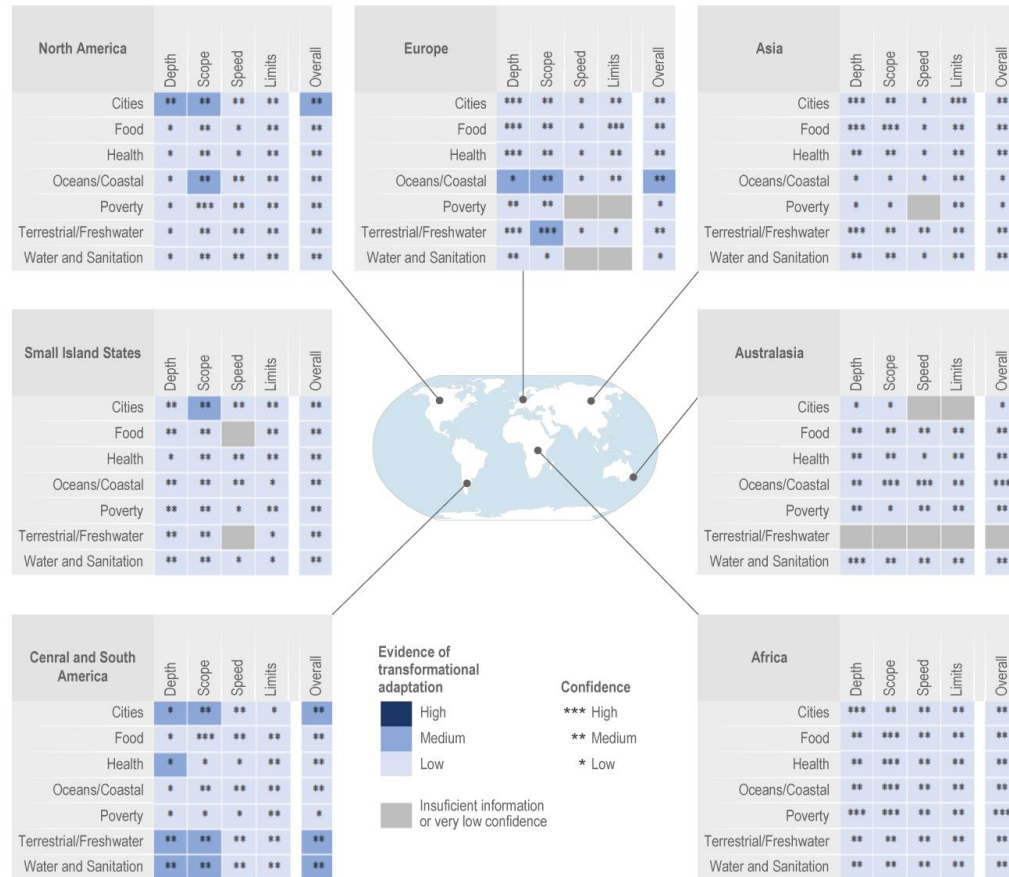


1. Observed adaptation

- Despite progress most adaptation is fragmented, uneven & focused on planning



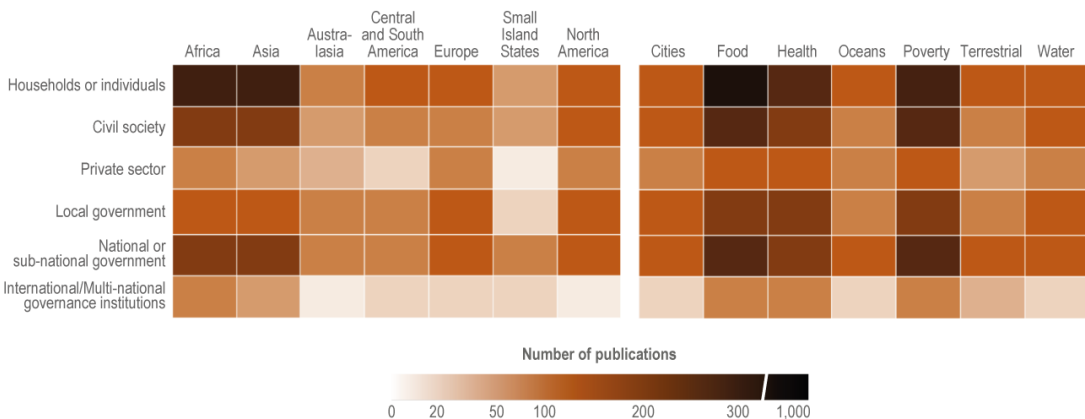
Evidence of transformative adaptation by sector and region



1. Observed adaptation

- Despite progress most adaptation is fragmented, uneven & focused on planning
- Transformational adaptation is rare but will become increasingly needed with increasing warming

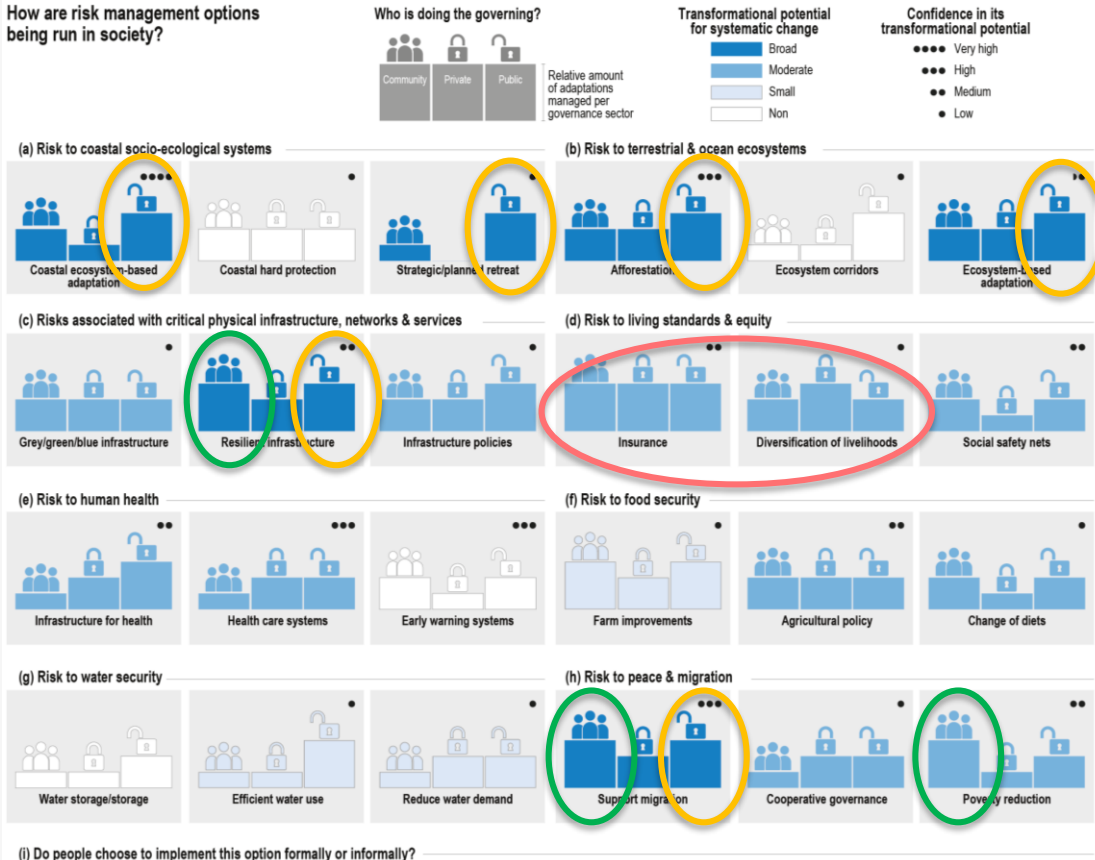
Who is responding, by geographic region and sector?



AR6, Ch.16; Berrang-Ford et al., 2021

1. Observed adaptation

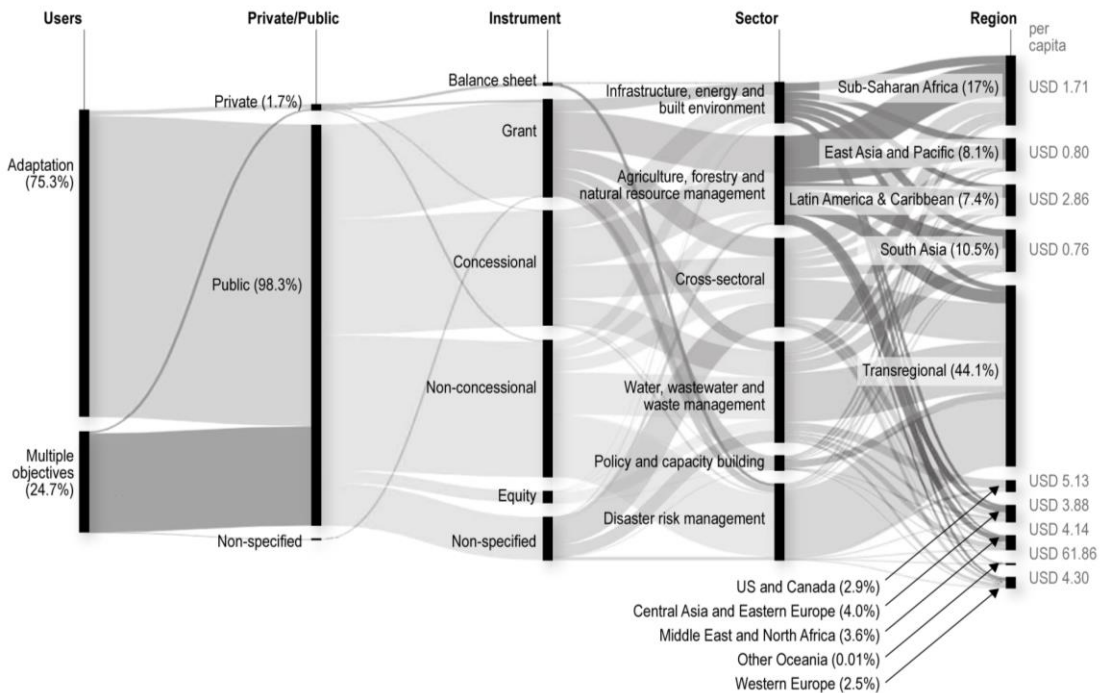
- Despite progress most adaptation is fragmented, uneven & focused on planning
- Transformational adaptation is but will become increasingly needed with increasing warming
- The bulk of adaptation is taken up by households and individuals → gaps: private sector, inter-/ multi-nationals



1. Observed adaptation

- **Public** governance has the largest role for adaptation, in particular for transformative adaptation
- **Private** sector governance for specific actions; **so far underutilized**
- **Communities and individuals** important for certain adaptation, filling in gaps in public governance

Flow and distribution of globally tracked adaptation and resilience finance in 2018 from different sources, through different instruments into different sectors and regions

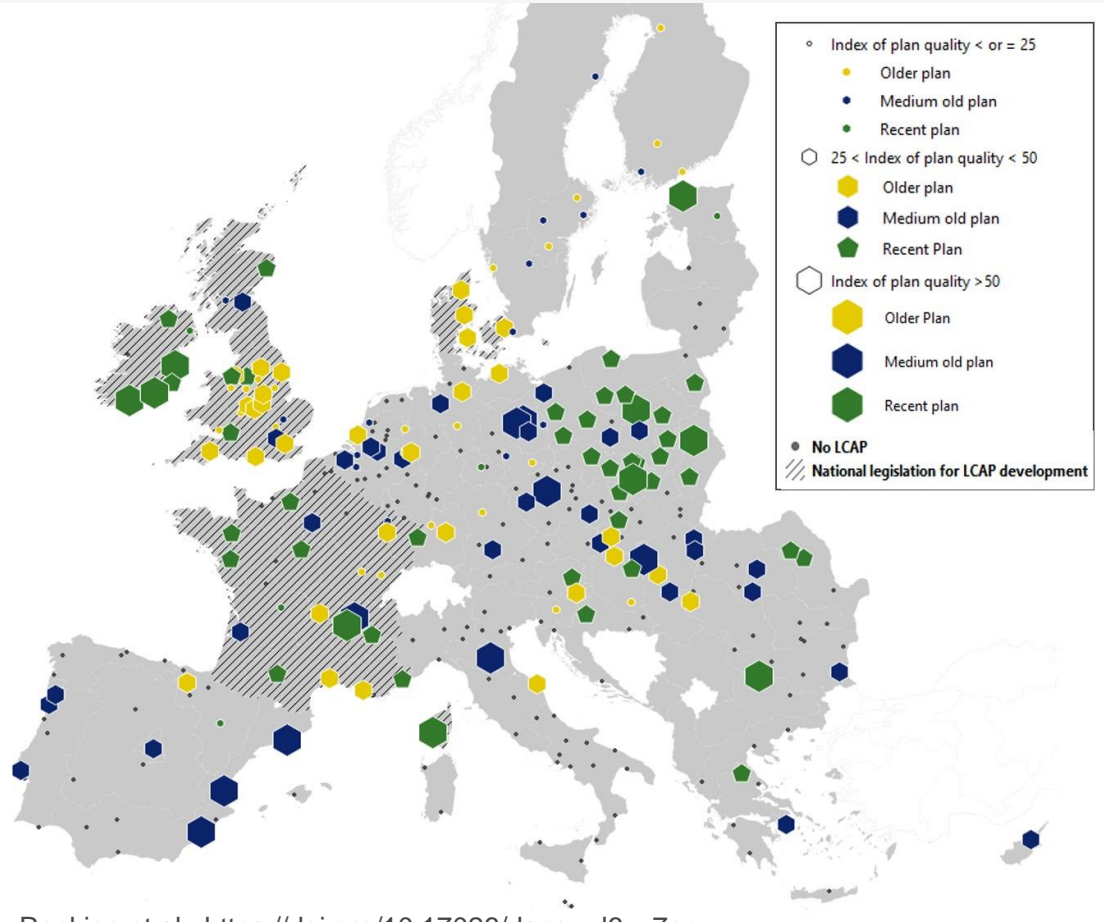


AR6, Ch17; Fig.CCB FINANCE.2

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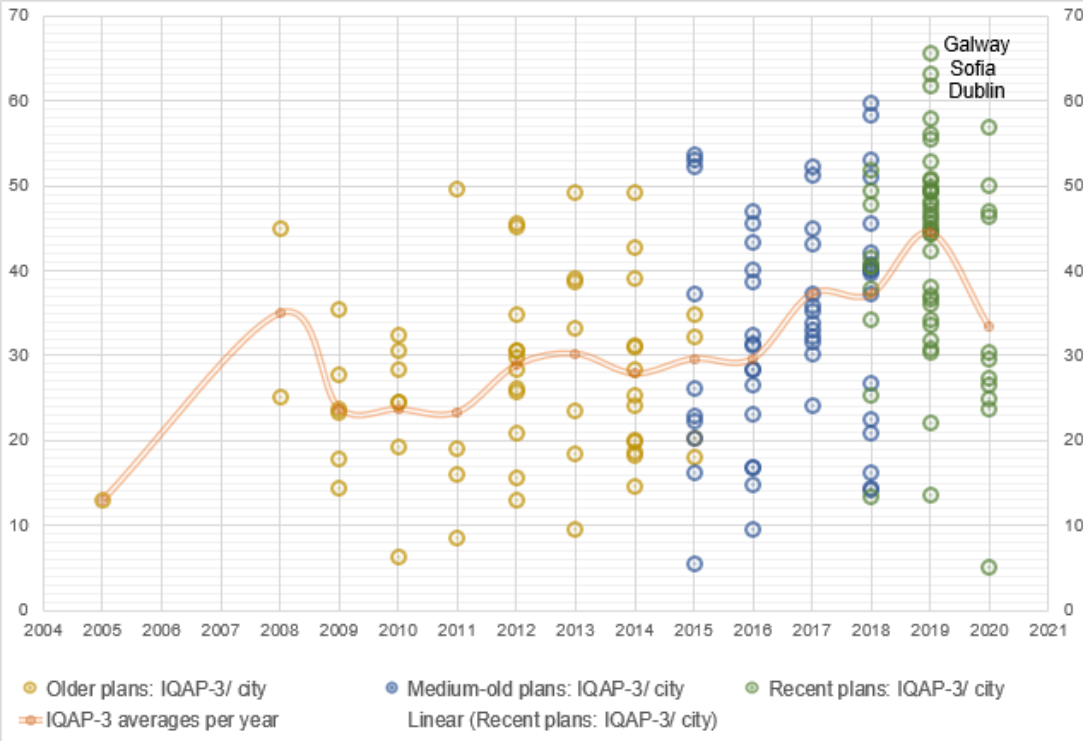
Financial flows

- Gap between estimated costs of adaptation and (tracked) adaptation finance has widened
- Private sector financing for adaptation has been increasingly promoted but is limited, especially in developing countries
- Key challenge: **demonstrating financial return on investment**
- Even more difficult in developing countries because of risk (perceived and/ or real) to investors



1. State/ quality of adapt. planning in EU cities

- 50% of EU cities with adaptation plan
- Recent plans (2018-2020) mostly in East EU, IRE, FR



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- 50% of EU cities with adaptation plan
- Recent plans (2018-2020) mostly in East EU, IRE, FR
- Newer plans are better in quality → climate networks & national guidelines useful
- Little investment in M&E & participation

- **Adaptation & adaptation pathways, incl.**

1. **Current state of adaptation efforts**

- Documented adaptation (IPCC AR6 Ch16/ Ch17; GAMI assessment)
- State & quality of adaptation planning in European cities (own work)

2. **Enabling conditions and good practices for near-term adaptation (AR6)**

3. **Measuring progress on adaptation**

- Challenges for a GST on adaptation (AR6 Ch17)
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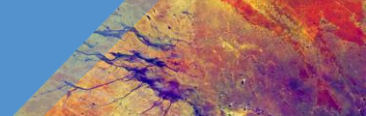


[Axel Fassio/CIFOR CC BY-NC-ND 2.0]

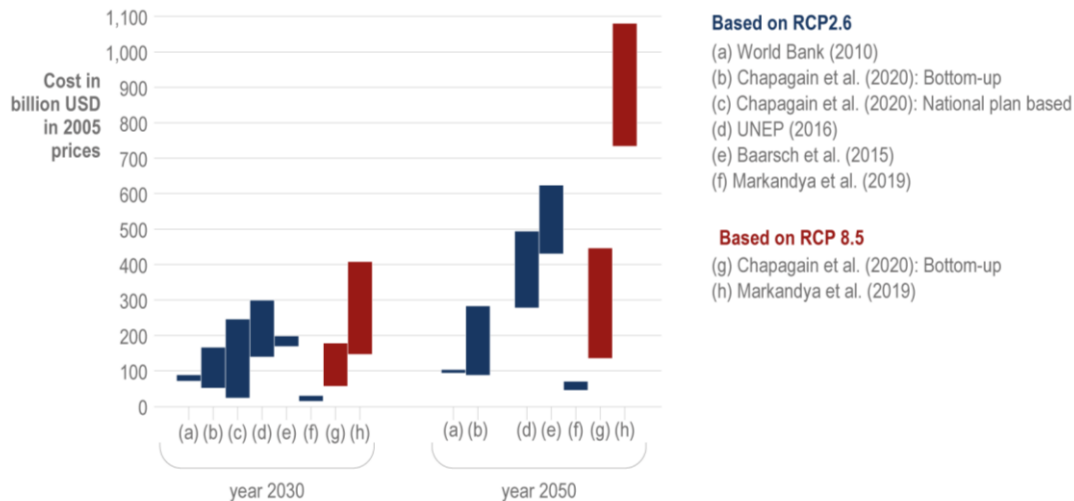
2. Enabling conditions

Governance

- Political commitment and follow-through across all levels
- Institutional framework: clear goals, priorities that define responsibilities
- Monitoring and evaluation of adaptation measures are essential to track progress
- Inclusive governance that prioritizes equity and justice – direct participation



Comparison of recent studies that estimated developing country adaptation costs in billion USD (in 2005 prices) per year for 2030 and 2050



2. Enabling conditions

Finance

- Climate finance (mitigation and adaptation) Copenhagen commitment: 100 USD billion/year by 2020 **not met**
- Absolute estimated adaptation cost higher for developed countries, but for developing countries higher as % of national income → Self-financing difficult

➔ **Crucial role of international finance**

2. Enabling conditions Wider benefits



For more than 3.4 billion people in rural areas: improved roads, reliable energy, clean water, food security

SDG 1: No poverty



Green buildings, green spaces, clean water, renewable energy, sustainable transport – in cities

SDG 3: Good health and wellbeing



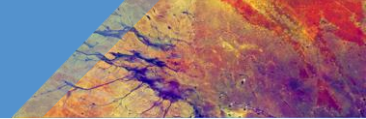
Policies that increase youth access to land, credit, knowledge and skills can support agri-food employment

SDG 10: Reduced inequality

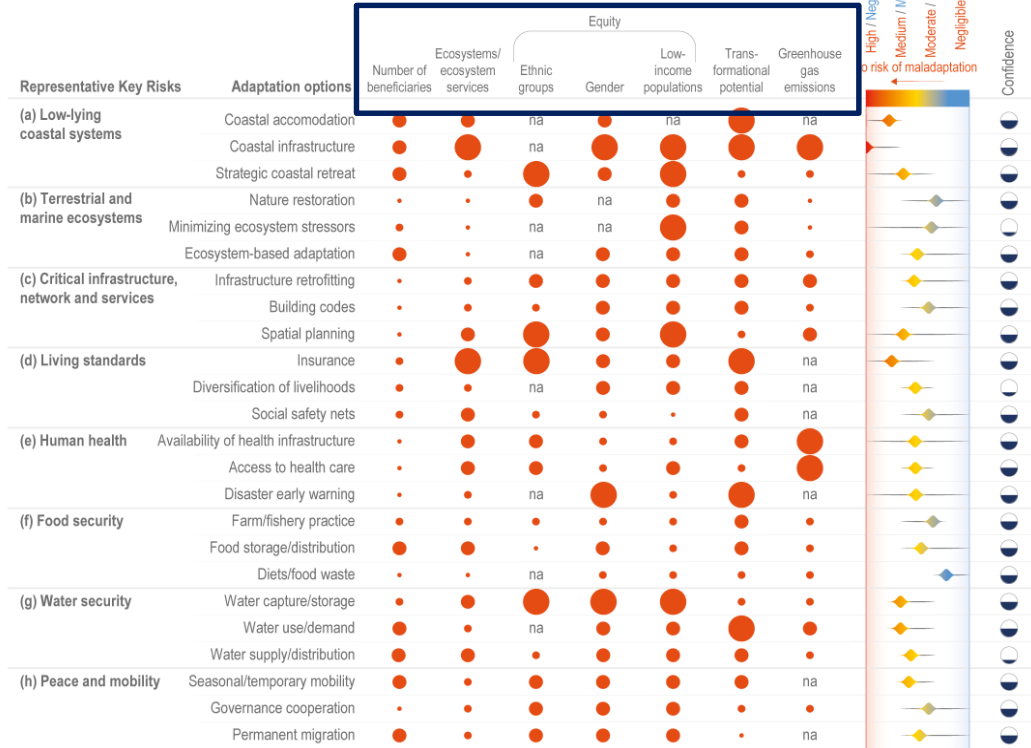


Restored and connected habitats can provide corridors for vulnerable species

SDG 14/15: Life on land & below water



Potential contribution of 24 adaptation-related options to maladaptation and successful adaptation



Potential contribution to the risk of maladaptation to climate change
 High e.g. through dis-benefits that worsen the situation for the group/sector
 Moderate e.g. through mixed or no clear benefits/dis-benefits
 Small e.g. through moderate benefits for the group/sector
 Negligible e.g. through large benefits for the group/sector

Average score per adaptation option
 Range of scores across criteria

Confidence levels
 Average per adaptation option and across criteria
 High ●
 Medium ●
 Low ●

2. Enabling conditions

Wider benefits, e.g. to assess adaptation vs maladaptation potential

Most important:

- Ecosystem services
- Ethnic groups
- Gender aspects
- Low-income groups
- Transformational adaptation
- Greenhouse gases emissions

- **Adaptation & adaptation pathways, incl.**
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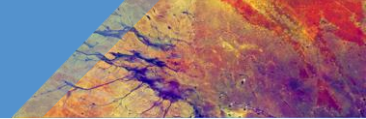


Approach/data source	Potential added value	Limitations
<p>Systematic assessment of adaptation responses reported in academic literature (e.g., systematic reviews, evidence synthesis, meta-analysis, large-<i>n</i> comparative studies) Examples: Berrang-Ford, 2011 #188, Global Adaptation Mapping Initiative, Berrang-Ford et al. (2021)</p>	<p>Provides an indication of the status, trends and gaps in adaptation responses</p>	<p>Not a representative sample; biased towards responses published in scientific literature; excludes grey literature; some topics and regions not well covered; challenges in terms of comparability and aggregation; inconsistency in definitions and use of concepts; English language bias</p>
<p>Self-reported progress documents by countries (e.g., National Communications, Biennial Transparency Reports or domestic progress and evaluation) Examples: Gagnon-Lebrun and Agrawala (2007); Lesnikowski et al. (2015); Lesnikowski et al. (2016); Leiter (2021a)</p>	<p>Context-specific information; official government documents enable assessments of national progress</p>	<p>May only be available every few years; content is sensitive to political and policy changes; possible bias towards positive examples; challenges in terms of comparability and aggregation; inconsistency in definitions and use of concepts</p>
<p>Self-reported information from the private sector (e.g., information on actions taken in response to climate risks within the context of climate-related financial disclosure or in company reports). Examples: Committee on Climate Change (2017); Street and Jude (2019); UNFCCC (2021), responses reported under Climate-related Financial Disclosure</p>	<p>Provides an indication of the status, trends and gaps in adaptation responses by the private sector; complements information published in the scientific literature; could enable better understanding of supply chain risks</p>	<p>Sample biased towards larger companies; challenges in terms of comparability and aggregation; potential inconsistencies in definitions and use of concepts</p>
<p>Project documents and evaluations (e.g., from climate funds or implementing organisations) Examples: Leiter (2021b); Eriksen et al. (2021)</p>	<p>Detailed information on context, intended or achieved results and activities</p>	<p>Actual implementation can differ from what was proposed; fragmented picture of local/regional actions; results may be challenging to aggregate; challenges in terms of comparability and aggregation; inconsistency in definitions and use of concepts</p>
<p>Existing global data sets of mostly quantitative indicators Examples: United Nations (UN, 2016a; UN, 2016b; UN, 2019; UNDRR, 2019)</p>	<p>Comparable information based on globally defined indicators</p>	<p>Global data availability constrains indicator choice; reporting burden for new indicators; trade-off between global applicability and national circumstances; usefulness and meaningfulness of global indicators is contested (Leiter and Pringle, 2018; Lyytimäki et al., 2020; Pauw et al., 2020).</p>
<p>Tracking financial flows Examples: CPI (2019), OECD (2018a), MDBs (2019)</p>	<p>Comparable data on financial flows directed at adaptation; standardised methodologies (e.g., OECD RIO markers; climate finance tracking method of multi-lateral development banks; Section 17.5.2.6; Cross-Chapter Box FINANCE in this Chapter)</p>	<p>No information about implementation of measures and their adaptation effect (Eriksen et al. 2021), i.e., it tracks inputs, not outputs or outcomes; inconsistency in what gets counted as adaptation finance (Donner et al., 2016; Doshi and Garschagen, 2020); evidence of over-reporting (Michaelowa and Michaelowa, 2011; Weikmans et al., 2017)</p>

3. Measuring progress

Challenges:

- What is adaptation: What risk (hazard, vulnerability, exposure)?; What goals?
- Comparability: context dependent
- Aggregation: no universal, global reference metric
- Input, process, output or outcome: all important, output dominates
- Data: scarce, global generic vs. local patchy



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Average score per adaptation option
 Range of scores across criteria

IPCC AR6 Ch17: 66

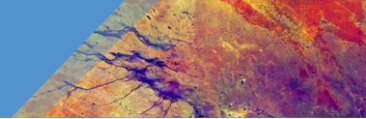
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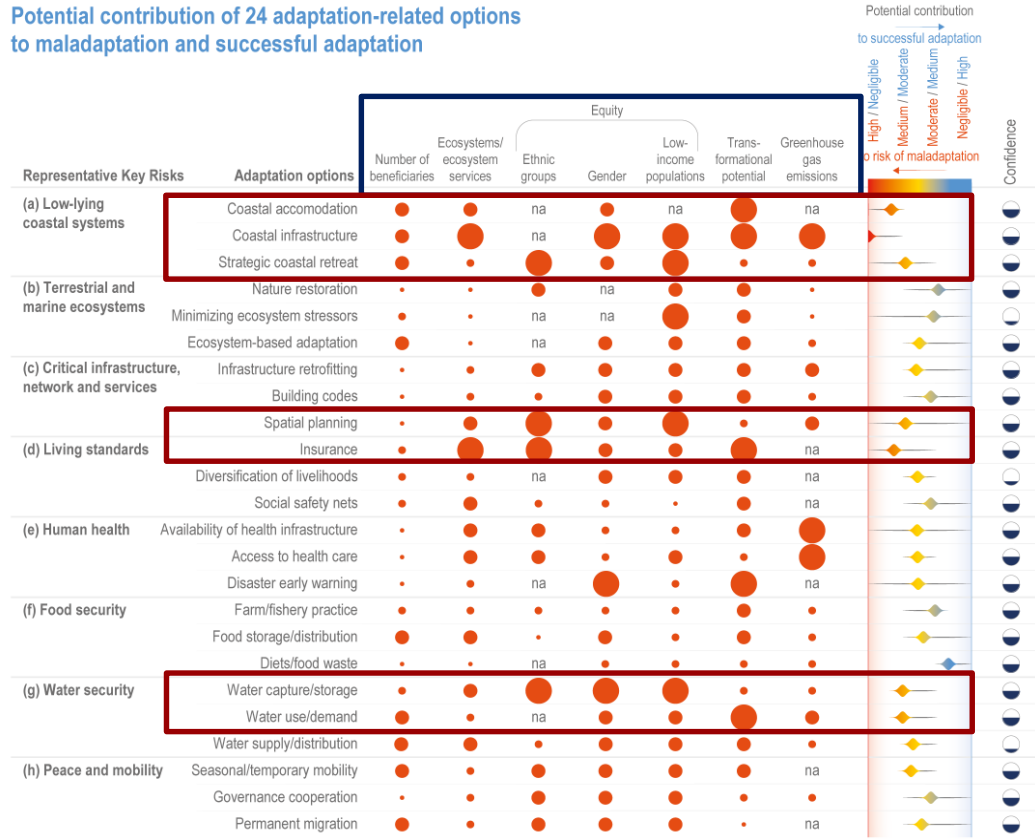
3. Measuring progress

Suggestions:

- **Outcome:** Assessing wider benefits/ synergies vs **trade-offs**



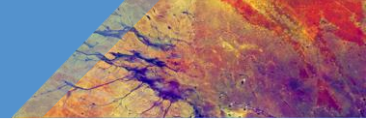
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3. Measuring progress

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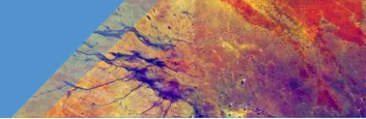
Suggestions:

- **Outcome:** Assessing wider benefits/ synergies vs **trade-offs**
- **Detects pot. mal-adaptation**
- **& structural problems**

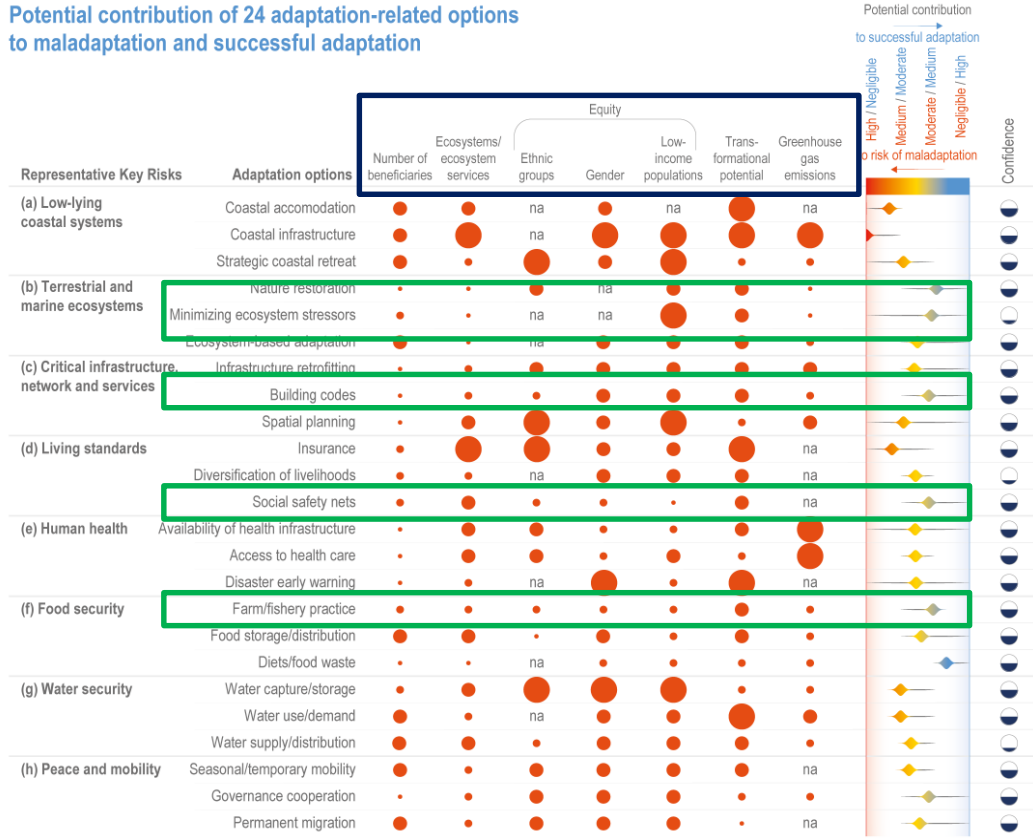
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- **& pot. successful adaptation**

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Climate responses and adaptation options have benefits for ecosystems, ethnic groups, gender equity, low-income groups and the Sustainable Development Goals
 Relations of sectors and groups at risk (as observed) and the SDGs (relevant in the near-term, at global scale and up to 1.5°C of global warming) with climate responses and adaptation options



Footnotes: ¹ The term response is used here instead of adaptation because some responses, such as retreat, may or may not be considered to be adaptation. ² Including sustainable forest management, forest conservation and restoration, reforestation and afforestation. ³ Migration, when voluntary, safe and orderly, allows reduction of risks to climatic and non-climatic stressors. ⁴ The Sustainable Development Goals (SDGs) are integrated and indivisible, and efforts to achieve any goal in isolation may trigger synergies or trade-offs with other SDGs. ⁵ Relevant in the near-term, at global scale and up to 1.5°C of global warming.

3. Measuring progress

Suggestions:

- **Outcome:** Assessing wider benefits/ synergies vs **trade-offs**
- Synergies with SDGs

+ 5 forms of CONSISTENCY between, e.g., risk & goals, risk & measures, vuln groups & measures, ...

VI. PARTICIPATION

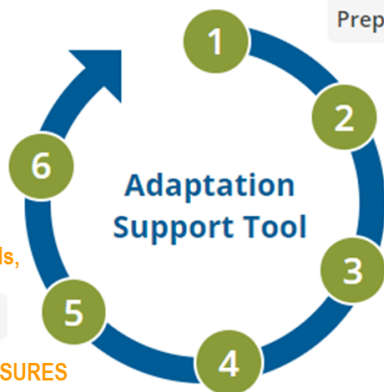
V. MONITORING & evaluation

Monitoring & Evaluation (M&E)

IV. IMPLEMENTATION tools, process & progress

Implementation

III. Adaptation MEASURES



I. Climate change IMPACTS, risk and vulnerability assessment

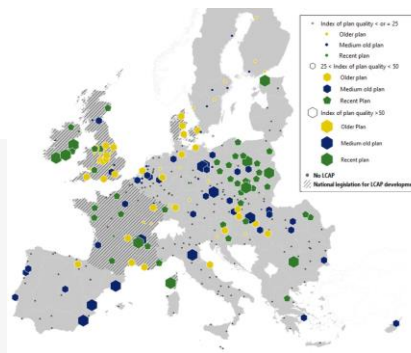
Preparing the ground for adaptation

Assessing risks and vulnerability to climate change

II. Adaptation GOALS

Identifying adaptation options

Assessing adaptation options



3. Measuring progress

Suggestions:

- **Outcome:** Assessing wider benefits/ synergies vs trade-offs
- **Output:** Assessing **quality** of adaptation planning with cities at the forefront

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