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Chapter 7

Outlook on global progress

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A woman surveys her crops in a village community garden in the increasingly dry north eastern province where UNEP and partners are helping communities adapt to climate change in Jappineh, The Gambia. Learn more about this project [here](#).

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This chapter synthesizes findings from chapters 3 to 6 of this report, with the aim of providing an overview of the status of global progress on adaptation (section 7.1). It also offers an outlook for future developments in terms of tracking adaptation progress globally (section 7.2).

7.1 Synthesis of results across the chapters

Building on the framing in table 2.1 (chapter 2), this section synthesizes knowledge from chapters of this Adaptation Gap Report (AGR) on progress, gaps and factors constraining the interpretation of findings related to adaptation planning, finance and implementation. It also provides insights in expected future trends, based on the chapter authors' expert judgement.

Figure 7.1 provides a contextual visualization of the results (panel A) and synthesizes them using the assessment criteria described in chapter 2 of this report (section 2.3.2 and table 2.1).

7.1.1 Progress

There is more robust evidence compared to AGR2020 that progress made worldwide over the last decade in enhancing national-level adaptation continues to accelerate. This conclusion is supported by multiple findings below.

Recognition of the policy importance of adaptation to galvanize action at the international and national levels:

Climate adaptation has become an established part of climate policy action worldwide (UNEP 2021a). Nearly eight out of 10 countries have at least one national-level planning instrument in place that addresses adaptation (including regular updates and additions) and about one in 10 countries are in the process of developing a new one. Results also show some signs of acceleration: among countries with one or several national-level planning instrument(s) that address adaptation, almost one in five have introduced such an instrument in the past five years (including one country in 2021). The analysis also shows some acceleration since 2015 in terms of the number of adaptation-related projects financed through international funders (Adaptation Fund,

Green Climate Fund and the Global Environment Facility). Lastly, there is qualitative information suggesting that the COVID-19 crisis has served as a "wake-up call" to instigate or accelerate adaptation processes, such as the National Adaptation Plan (NAP) development processes in some countries (for example, Ghana).

Increasing maturity in the way adaptation is considered in policies and strategies:

Approaches to adaptation at the national level demonstrate varying degrees of maturity – either through adaptation-centred instruments or mainstreaming of the adaptation component into existing planning processes – depending on national circumstances and risk profiles. For example, six out of 10 countries now have one or more stand-alone sectoral planning instruments in place and at least one out of four has one or more subnational planning instrument(s). The inclusion of vertical coordination mechanisms in adaptation planning instruments, which facilitates governance across levels of administration, has also progressed since AGR2020, with a 22 per cent increase in the number of such mechanisms. Stakeholder engagement (different government levels, non-governmental and sectoral organizations, research institutes, and the private sector) in national-level processes has also increased by about 20 per cent compared to the assessment of adaptation plans in AGR2020.

Actionable policies providing guidance on how to operationalize adaptation:

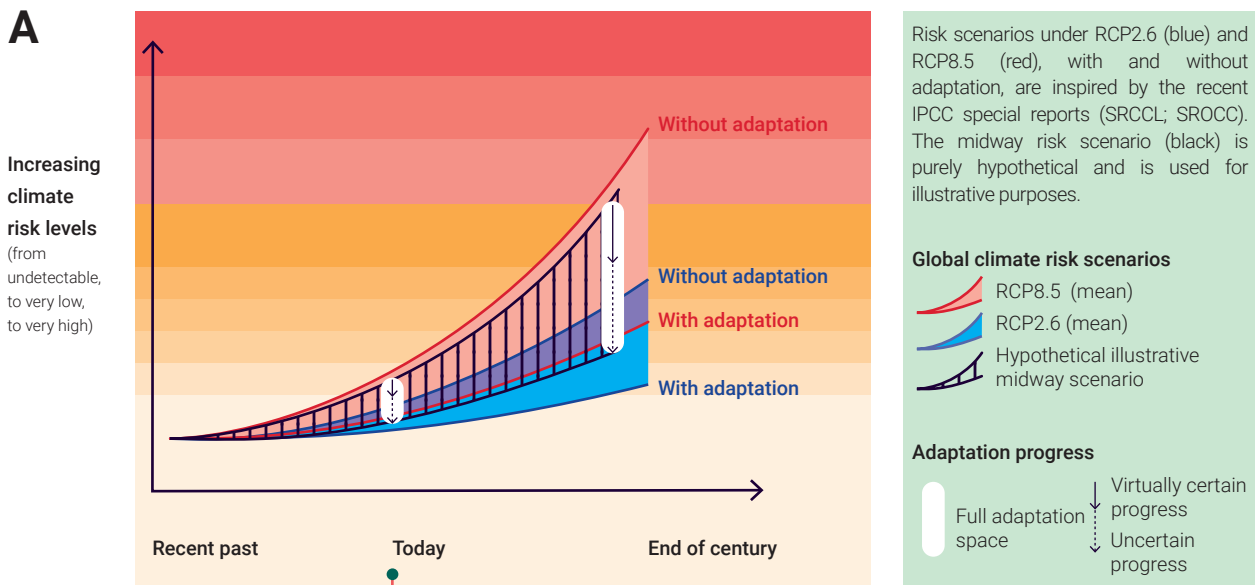
The increasing levels of adaptation finance reported by multilateral and bilateral funding agencies (for example, the hundreds of projects in developing countries that have received support from multilateral climate funds since 2005) indicate that there is increasing focus on more actionable policies. The move towards more stand-alone sectoral plans is an illustration of this phenomenon: besides more integrated plans contributing to more actionable policies, more dedicated plans also indicate sector-specific approaches to the topic.

Early signs suggesting more progress in the near to long-term future:

Evidence of more climate-resilient and sustainable financial systems and investments is accumulating (for example, through increasing measures addressing climate risks to components of the financial system, such as industries, corporations, enterprises and

Note for figure 7.1: Synthesis of progress and gaps in adaptation at the national-level, as reported in the corresponding chapters. This figure is based on the framing table (table 2.1 in chapter 2). **Panel A.** The background colouring illustrates the increase in climate risks for various warming scenarios (Representative Concentration Pathway [RCP]2.6 and RCP8.5) and adaptation scenarios (with/without) (Oppenheimer *et al.* 2019; Hurlbert *et al.* 2019; Magnan *et al.* 2021). The blue and light-red curved drawings represent risk scenarios under RCP2.6 and RCP8.5, respectively, while the central black drawing represents a hypothetical risk scenario under a speculative, midway warming scenario. This figure is purely illustrative and does not rely on any quantitative data. The white vertical bars show, for today (left) and by the end of this century (right), the level of risk reduction to be expected from very limited adaptation efforts (top of white boxes) to high adaptation efforts (bottom of white boxes), i.e. the "adaptation space". The downward black arrows within these white boxes provide a theoretical interpretation of observed progress and uncertainty: the solid arrows illustrate the progress that can be assessed and reported based on evidence, and the dotted arrows reflect knowledge gaps and therefore potential adaptation gaps. Together, the solid and dotted arrows within the same box help understand the balance between what we know has been achieved and what we are uncertain about because of a lack of information; they therefore help balance progress and potential gaps. **Panel B.** applies the general framing used in this report (progress, gaps, contextual factors that constrain the interpretation of the results; see table 2.1) to the findings of the main chapters (3–6).

Figure 7.1 Synthesis of progress and gaps in adaptation at the national-level, as reported in the corresponding chapters



B

Evidence of adaptation progress

- **Recognition of the importance of adaptation in policy** is on the rise in national-level policy documents across the world, as well as in climate finance
- **More maturity** in the way adaptation is either mainstreamed into existing policies or considered as an overarching policy area in its own right; however, levels of maturity vary significantly across countries
- **Actionable policies** providing guidance on how to operationalize national-level adaptation planning are increasing, as illustrated by increasing levels of adaptation finance reported by multi- and bilateral funding agencies, and the move towards more sectoral adaptation plans
- **Early signs of further progress**, such as the emergence of new instruments, actors and approaches to scale up adaptation finance, indicates that more knowledge, experience and progress, are to be expected in the near to long-term future

Identification of gaps

- In terms of **adaptation finance**, there is some indication that a sizeable adaptation finance gap remains (i.e. adaptation costs are increasing at a higher rate than adaptation-oriented financial flows)
- **Monitoring and evaluation** systems continue to be underrepresented and are only in place in about one-quarter of countries
- Evidence that present action is having the intended **knock-on effects** seems to be limited (e.g. in many countries it remains unclear whether national planning processes are actually leading to implementation at both the national and more local levels)
- In terms of **connection to climate risk reduction**, national-level data (outputs) provides very limited evidence of effective climate risk reduction today and in the future (outcomes)
- **Gender**, and, more broadly, **equity and justice** issues, remain under considered in practice, despite rising policy attention

Factors that constrain the interpretation of findings

- Vague adaptation goals at the global level do not facilitate the identification of precise global-level targets (i.e. at multiple scales, including global) or guide analysis of adaptation progress
- There is still a gap in the **availability of information** on both adaptation outputs (what has been done to adapt?) and adaptation outcomes (to what extent has this reduced climate risks?)
- **Uncertainty around the enabling conditions for adaptation** now and in the future is illustrated by the consequences of the COVID-19 pandemic (e.g. faltering of public finance flows and budget depletion more broadly; disruption of development- and disaster-related institutions and processes with implications on adaptation dynamics)

consumers). The analysis also confirms an important point made in AGR2020 on the emergence of new instruments, actors and approaches to scale up adaptation finance, including private adaptation, despite the effects of the COVID-19 crisis (section 7.1.3) (UNEP 2021a). There is widespread agreement that continued effort towards more climate-proof financial systems and investments will be important to progressively minimize and counteract cascading risks throughout societies as a whole and ensure longer-term and transformational reductions in climate vulnerability.

7.1.2 Gaps

This year's report warns that despite encouraging trends, adaptation progress made at the national level to date does not appear to be at the appropriate scale. Five aspects support this conclusion.

Adaptation finance: Estimates of adaptation costs and adaptation finance needs, as reported in updated NDCs, appear to indicate higher totals than previous AGRs, while adaptation-oriented financial flows appear to be broadly similar. This suggests that a sizeable adaptation finance gap remains in place and is likely increasing. Besides incomplete information on public flows, information on private flows also remains unclear. There have been positive trends in the emergence of new instruments, actors and approaches to scale up adaptation, including by the private sector, but the rate remains slow and is unlikely to fill the gap. Lastly, it is also unclear exactly how adaptation financing flows have been impacted by the pandemic, not least because up to mid-2021 COVID-19 stimulus packages were not very explicit about how they consider physical climate risk, adaptation or resilience dimensions in their announced investment priorities.

Monitoring and evaluation: Monitoring and evaluation (M&E) enables the adjustment of adaptation objectives, strategies and resources over time and is therefore key to ensure adequate and effective adaptation planning and implementation. While over one-third of the countries have an adaptation-dedicated M&E system under development, only about one-quarter already have one in place. In addition, there are indications that M&E approaches still strongly focus on outputs at the expense of outcomes and lack perspective on risk reduction per se, partly due to difficulties identifying how this can be measured in relation to climate hazards using climate data and scenarios. Similarly, there has been little attention on assessing the effectiveness of transformational adaptation.

Knock-on effects: This report reinforces the conclusions of the AGR2020. While in theory, national-level adaptation planning plays a substantial role in stimulating the development of subnational and sectoral adaptation

strategies and plans, in practice, it remains unclear whether the planning processes in various countries lead to actual implementation at the national and subnational levels. For example, more than 60 per cent of countries with a NAP are not yet tracking its implementation (Leiter 2021). Moreover, even countries with horizontal and/or vertical coordination mechanisms in place in their planning instruments flag effective coordination as a continuing area of difficulty.

Connection to climate risk reduction: National-level data provide very limited evidence of effective climate risk reduction today and even more in the future. There is also a lack of evidence in the scientific literature: out of more than 1,680 scientific papers analysed by the Global Adaptation Mapping Initiative (GAMI),¹ less than 2 per cent contain empirical evidence of risk reduction as a result of adaptation-related interventions (Berrang-Ford *et al.* 2021). While this does not exclude the possibility of reducing climate risks, adaptation initiatives are still very much operating on the basis of the assumption that the intended results are being achieved.

Gender and equity: Despite broad recognition of gender as an important adaptation dimension, the national-level policy documents of about seven out of 10 countries tend to underscore the importance of integrating gender considerations into adaptation planning. In addition, the way in which countries report on gender considerations varied considerably, ranging from general statements through to more elaborate ways of taking gender into account in action plans.

7.1.3 Factors constraining the interpretation of the findings

There are three main **types of limitations and uncertainties** to be considered:

Lack of clarity in adaptation goals: The Global Goal on Adaptation is not specific in terms of resilience and vulnerability at the global level and on climate risk reduction now and in the future. While there are reasons that article 7 of the Paris Agreement does not provide a precise definition (such as to accommodate interpretation by a variety of Parties), this has resulted in certain limitations, such as the difficulty to infer precise global-level targets and guide the analysis of adaptation progress (Magnan and Ribera 2016). There is an expectation that with growing experience in adaptation, reporting under the United Nations Framework Convention on Climate Change (UNFCCC) will continuously converge and become more informative. Improved information across countries' reporting has the potential to advance information on some quantitative indicators (for example, the relative number of actions implemented on the ground or at-risk population groups covered by specific interventions). More qualitative goals could also emerge, for example in terms of knowledge at the local scale of risk

¹ <https://globaladaptation.github.io/>.

reduction, the inclusion of equity dimensions or extending the timescale of planning from the short-to-medium term to the longer term. To date however, this remains largely aspirational.

Availability of information: Information levels on the three dimensions considered in the UNEP AGRs (planning, finance, implementation) have not improved since 2020. This means there are still substantial limitations and uncertainties:

- ▶ First, there are gaps in data availability. For example, it remains challenging to get a sense of the scale of private finance dedicated to adaptation because databases are mostly scattered or difficult to access. Similarly, and despite recent progress under the GAMI, there is a lack of comprehensive databases gathering information on adaptation planning and implementation in high-income countries because adaptation is frequently mainstreamed at subnational and sectoral levels. Data on project outcomes and evaluations are also often not publicly available.
- ▶ Second, there are knowledge gaps in understanding the effectiveness of a wide range of climate adaptation measures and policies in terms of the adaptation process itself (for example, the extent to which vulnerable population groups are included and equity issues are considered), but also in terms of their actual contributions to climate risk reduction now and in the future. It is therefore unclear whether current adaptation approaches contribute to long-term successful adaptation or to an increased level of maladaptation. In turn, this limits our understanding of the contribution of adaptation-related national plans, strategies, frameworks and laws to societal resilience and climate risk reduction across sectors, territories and population groups.
- ▶ Third, the lack of understanding of future risk levels under various warming and (national-level) socioeconomic scenarios prevents comparison of adaptation outputs observed today with potential outcomes in the future. There are, however, avenues for improvement. In principle, for example, it is possible to assess progress in implementation of climate-relevant interventions and compare this with levels of exposure in the future, which would give us a proxy for understanding progress or gaps.

Uncertainty around the enabling conditions for adaptation:

External factors that are not climate-related have a considerable influence on vulnerability trends and the extent and time of the emergence of climate risks. This includes, for example, changes to the political economy of nations (for example, changes in the rights of women and indigenous groups), geopolitical shifts and global shocks. The COVID-19 crisis, which is expected to have increasingly profound implications for future adaptation efforts and outcomes

(though not fully studied and understood), illustrates this phenomenon. For example, the global pandemic crisis appears to have halted the trend for the gradual increase in international public adaptation finance observed in recent years. There is also emerging evidence that the pandemic has disrupted existing adaptation planning and disaster risk financing. In some countries, NAP processes have been hampered by health restrictions, as well as by the focus on immediate pandemic responses at the expense of climate change adaptation. Additionally, some contingent disaster risk management budgets have been depleted, raising concerns of reduced adaptive capacity to respond to subsequent health emergencies and climate shocks. On a more positive note, the COVID-19 crisis also highlights the importance for governments to address compound risks through integrated risk management approaches and provides opportunities for governments and donors to finance activities that support economic recovery, while also building adaptive capacity.

7.1.4 Exploratory forward-looking findings

While chapters 3 to 6 are essentially backward-looking, an exploratory forward-looking approach has also been used, based on expert judgement, to complement limited data and evidence. The findings are both encouraging and worrying at the same time. Crucially, there is overall consensus among the authors of this report and in the literature that more ambitious adaptation will be critical going forward. Recent conclusions from the IPCC state that the Paris Agreement temperature goal is in peril, with the global mean surface temperature rapidly approaching 1.5°C above pre-industrial levels (IPCC 2021). Moreover, the recent NDC synthesis by the UNFCCC confirms that the world is not on a path towards 2°C (UNFCCC 2021; UNEP 2021b).

The chapters of this AGR indicate that adaptation planning and implementation are mostly incremental and still following historical and current events and trends, rather than taking a more anticipatory approach and considering unexpected factors (for example, tipping points in climate and social systems). The authors of this report also expect that adaptation costs and needs will likely continue to rise, especially if insufficient progress is made towards the temperature goal of the Paris Agreement. Public adaptation finance flows are also likely to continue to increase modestly, but will not close the finance gap, while private adaptation flows will continue to increase, but will be uneven and often not reach those in greatest need. Overall, the large adaptation finance gap is likely to remain and it is plausible that it will even grow. The COVID-19 pandemic is also expected to negatively impact adaptive capacity at multiple scales, affecting a wide range of stakeholders. For example, the economic shocks of COVID-19 have contributed to household vulnerability (with around 100 million more people falling into poverty in 2020), job losses and declining sales for businesses. The pandemic has also exacerbated high levels of existing corporate debt and the prevalence of unsustainable sovereign debt, which will



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likely hamper future government spending on adaptation, particularly in developing countries. The length and depth of these consequences will vary across and within countries and will become more apparent over time but there seems to be general agreement that long-term adaptation challenges in terms of planning, finance and implementation will be substantially affected.

To summarize, the level of transformation required to address future climate risks does not yet seem to be materializing. However, this conclusion deserves some caution due to the difficulties in tracking transformational adaptation processes, partly because data collection on such future processes has not really begun in the scientific and policymaking communities. This report therefore calls for the scaling up of efforts to develop methods that combine metrics or indicators on resilience (grounded in empirical studies and recognizing the contextual nature of resilience and adaptation); adaptation performance in terms of implementation; and the effects on actual risk reduction now and in the future (in relation to measuring “successful adaptation” and the risk of maladaptation). Progress may be slow in these areas, but the authors of this report estimate that further development and promotion of robust assessment and decision-making approaches are likely as climate change impacts intensify, increasingly highlighting the need for enhanced adaptation ambitions.

7.2 The way forward

This section discusses some overarching challenges in assessing adaptation progress and outlines key takeaways for future work on tracking it globally.

7.2.1 The challenges ahead

This report raises several recurring knowledge barriers to understand adaptation, globally and across scales, aligned with those described in previous AGRs. These limitations underpin a number of key recommendations for the scientific and policymaking communities.

First, on **climate hazards**, it is crucial to better understand future climate trends and hazards at the national level, as well as at the subnational levels (for example, to highlight levels of cross-scale homogeneity/heterogeneity in terms of adaptation-related challenges). The IPCC Sixth Assessment Report (AR6) (IPCC 2021) contains ground-breaking information in this area (see the contribution of Working Group I, released in August 2021). The contribution of Working Group II, due in early 2022, will provide additional information, for example through the identification of representative key risks relevant to the interpretation of dangerous interferences with the climate system stressed by UNFCCC.

Second, **climate risk projections** need to be dramatically improved as they are key to informing the assessment of adaptation progress or gaps. Given the multidimensional nature of climate risk (hazard, exposure, vulnerability and including adaptive capacity), a hard push is especially needed to better combine climate projections with scenarios on societal exposure and vulnerability (Garschagen *et al.* 2021; Magnan *et al.* 2021), for example through a more systematic application of the Shared Socioeconomic Pathways approach to national contexts. Such combined scenarios can be highly beneficial to the policymaking community. By allowing contrasting risk levels under various warming scenarios and adaptation scenarios (for example, business-as-usual, medium ambition, high ambition), they will in turn highlight

the range of possible risk reductions (for example, business-as-usual versus high adaptation), support the identification of feasible adaptation scenarios, depending on context-specific risk tolerance patterns, and provide a sense of the residual risks expected to persist even after adaptation.

Third, there is an urgent need for science-based advances to understand the **effectiveness of adaptation responses** in terms of their ability to reduce climate risk levels, both now and in the future, and therefore support successful adaptation over the long run, while limiting the risk of maladaptation. There is emerging scientific literature on frameworks to assess effectiveness, but more is needed, especially on national-level policy analysis.

Lastly, the availability of **multiple types of data and information** needs to be substantially increased, including on private climate finance (to provide more comprehensive information on trends in adaptation finance) and adaptation plans implemented locally (to better capture the knock-on effect of national-level policies).

7.2.2 Towards the next generation of approaches for tracking adaptation progress

The UNFCCC Adaptation Committee recently prepared several technical papers, including one in 2021, to review existing approaches for adaptation progress tracking, especially from the perspective of the Global Stocktake and with a view to opening up avenues to develop further methodological guidance (UNFCCC Adaptation Committee 2021a).² Among several issues identified by the Adaptation Committee, two touch on critical points raised throughout the AGR series, namely the type of information needed to understand adaptation progress and the way to use/aggregate the data and information.

In addition to reinforcing caution about the overall feasibility of aggregating quantitative indicators and data, the

Adaptation Committee paper argues that a standardized approach to assess progress carries the risk of masking both the sensitivities of national contexts in terms of exposure and vulnerability to climate change, and the divergence of approaches to monitor, evaluate and report on adaptation action. In line with findings from the scientific community, the paper also emphasizes that existing approaches usually rely on just a few different types of information (often just one), such as national communications or quantitative indicators/statistical data. Yet it is increasingly acknowledged that multiple sources of information (both quantitative and qualitative data, both scientifically-based and from traditional knowledge systems, etc.) provide different types of understandings that do not compete with but complement each other. For example, quantitative data sets help describe formal dimensions of vulnerability conditions but are unable to reflect more qualitative dimensions. On the other hand, traditional and indigenous knowledge or the perspectives of women and other vulnerable groups are key to reflecting such qualitative and often intuitive information on vulnerability and risk on the ground but can be hard to include in traditional scientific analysis. Lastly, the paper also warns against the risk of the dilution and loss of information throughout the complex synthesis and reporting mechanisms under the UNFCCC. The issue may not always be data itself, but rather the way information is used to inform policy and action at higher levels.

Being able to identify new approaches to allow different types of information (quantitative and qualitative, and evaluative and descriptive) to be brought together at multiple scales is an emerging challenge. For example, recent publications have used expert judgement approaches to understand future climate risk at local levels (Oppenheimer *et al.* 2019; Duvat *et al.* 2021) or support a more comprehensive assessment of adaptation (for example, the UK Climate Change Committee regular reports³ and GAP-Track approach by IDDRI⁴). Such approaches provide promising ways forward, but still need further exploration and validation.

² For interim guidance drafted by Adaptation Committee on Adaptation Communications, see UNFCCC Adaptation Committee (2021b).

³ See for example the 2019 Progress Report to Parliament: www.theccc.org.uk/publication/progress-in-preparing-for-climate-change-2019-progress-report-to-parliament/.

⁴ See for example the 2021 Methodological Report available on the project webpage: www.iddri.org/en/project/assessing-global-progress-climate-adaptation-gap-track-2021.

References

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