Zero Carbon Analytics

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Delivering indicators for the Global Goal on Adaptation can drive climate action

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Key points:

- Climate impacts such as heatwaves, extreme weather events and sea-level rise are already taking a severe toll on many communities and causing billions of dollars in damages each year. The need for increased investments in adaptation measures is greater than ever.
- The many ways climate change can impact communities mean that tracking the implementation and efficacy of adaptation measures has, so far, proven difficult.
- The Global Goal on Adaptation (GGA) is one of the key elements to deliver at COP30. This central framework aims to set specific, measurable targets for adaptation action and define indicators to track how far and how well those measures are implemented. Around 100 draft indicators have been shared to be agreed on at COP30 in Belém.
- Having quantifiable metrics for adaptation projects can help incentivise governments and businesses to make investments and take action.
- Financing for adaptation has been shown to attract high returns on investment, as well as offering broad-ranging social, environmental and other non-monetary benefits.
- However, adaptation action remains critically underfinanced. COP30 presents an opportunity for countries to discuss how to close the adaptation financing gap, and is a critical time to do so, as many climate finance pledges from developed countries are about to expire.

What is the Global Goal on Adaptation?

The UNFCCC considers adaptation a critical element of the long-term response to climate change (see Box 1). The Global Goal on Adapation (GGA) is the central framework for addressing adaptation within international climate negotiations. It aims to develop universally-understood and accepted targets for adaptation and to define how progress is measured and reported.

Although the GGA was established as part of the 2015 Paris Agreement, countries only agreed on an overarching framework for adaptation action in 2023. So far, seven broad thematic targets and four dimensional targets have been decided on (explored further below), with the work due to be completed and ready for adoption by November 2025.

The missing piece that will help countries to work with the GGA is agreement on a set of adaptation indicators. There are approximately 100 draft indicators to be discussed and agreed upon at COP30, narrowed down from an initial list of 9,529 suggestions.

Box 1. Why prioritise adaptation?

Climate impacts are already severe and global. In 2024, the majority of datasets put the world's surface temperature at above 1.5°C, a level of warming that resulted in stronger heatwaves, extreme weather events and sea-level rise, among other impacts.

'Adaptation' refers to the process of making adjustments to better anticipate and cope with the many harmful effects of climate change. Adaptation seeks to reduce vulnerability, improve resilience and minimise damage; it is one of the central pillars of climate action, alongside mitigation and loss and damage.

It is estimated that nearly half of the global population – 3.6 billion people – are highly vulnerable to the impacts of climate change. Between 1993 and 2022, nearly 9,500 extreme weather events resulted in the loss of more than 765,000 lives, as well as direct economic losses of almost USD 4.2 trillion.

Many African countries already report spending up to 9% of their GDP on coping with ever-more extreme weather patterns. The UN estimates that between 2025-2035, the average annual cost of all developing countries' adaptation needs will reach USD 365 billion.

Why do we need indicators for adaptation?

For climate mitigation, there are clear targets for the global and national action needed to keep global temperature rise within safe limits. We know how many tonnes of greenhouse gas (GHG) emissions we need to stop emitting by when. Countries set informed national targets and track progress towards mitigation goals as part of their nationally determined contributions (NDCs).

Adaptation is more complex. It's about how people, places, ecosystems and economies are being impacted by climate change, now and in the future. Each community has its own level of vulnerability and exposure to climate change, and so will feel the impacts differently. When dealing with such vastly wide-ranging, diverse, regionally varied and at times unpredictable impacts, there are a number of ways in which progress on adaptation could be tracked. In this complex landscape, the GGA seeks to offer a universal framework for monitoring and evaluating adaptation progress.

Acting on adaptation can achieve more than preventing the worst impacts of climate change – it can help spur better environmental, social and economic outcomes across the globe. In a letter from the COP30 presidency, COP30 President Designate André Aranha Correa do Lago writes that "the GGA is not merely a negotiation item – it is an economic and moral compass. … Finance ministers and development banks must treat adaptation as a core policy instrument, not as charity."

What are the proposed indicators?

The GGA will offer globally-relevant adaptation indicators for countries to work towards, assess and report on. Currently, around 100 draft indicators have been shared for negotiation at COP 30.

Crucially, the indicators cover both outcomes (for example, access to safe water or reduced mortality from heat) and the means of implementation (such as finance, technology and capacity-building). These are grouped under the seven thematic targets, which track progress on adaptation outcomes, and four dimensional targets, which cover how work on adaptation will be implemented (see Table 1).

Table 1. Targets under the GGA and examples of proposed indicators

Category	Target	Example of proposed indicator
Thematic targets	Water supply and sanitation	Change in water stress levels over time
	Food and agricultural production	Proportion of Parties that have integrated climate risks into national food security
	Health impacts and health services	Change in the annual rate of reported heat-related occupational injuries and deaths
	Ecosystems and biodiversity	Extent of ecosystems that contribute to climate resilience covered by protected areas and other effective area-based conservation measures
	Infrastructure and human settlements	Proportion of informal settlement upgrading programmes that (i) include climate change adaptation and (ii) are locally led and co-designed
	Poverty eradication and livelihoods	Proportion of population living below the international poverty line in areas highly exposed to climate-related hazards
	Cultural heritage and knowledge	Percentage of at-risk cultural and natural heritage sites with adaptation measures implemented
Dimensional targets	Impact, vulnerability, risk assessment	Number of Parties that have established multi-hazard early warning systems
	Planning	Number of Parties with adopted national adaptation plans, policy instruments, and planning processes and/or strategies
	Implementation	Annual adaptation finance expenditure
	Monitoring, evaluation, and learning	Number of Parties that have designed a system for monitoring, evaluation and learning for their national adaptation efforts

Source: UNFCCC (2025) *Potential indicators for the targets of the GGA framework proposed by the expert group_2025-09-08*

How will the GGA indicators be used?

At the international level, countries have not previously agreed on a shared set of indicators for adaptation. Once signed off, the GGA and its indicators will serve as the benchmark for assessing both how well countries are coping with climate impacts and how effectively they are implementing measures to adapt to their effects.

This will provide a clear and reliable benchmark for both developed and developing countries to understand progress on adaptation and to identify where efforts need to be ramped up. This would resolve long-standing contention around the lack of reliable tracking and transparency.

Ultimately, countries' updates on their progress towards meeting the adaptation targets will feed into the UN Global Stocktake process, providing analysis on areas where they are making progress and where they are lagging behind. In time, this should provide the first full picture of how countries are preparing for extreme weather events and their consequences (for example, supply chain disruptions).

The inclusion of indicators on finance will be essential for the national and international-level tracking of adaptation funding and will help shape discussions on how much should be channelled towards adaptation action. The indicators will also provide strategic support at the country level, informing the development of National Adaptation Plans.

The indicators will also support other initiatives, such as the Belem Health Action Plan. Due to be announced at COP30, the Plan aims to foster collective action around preventing, detecting and responding to growing health-related climate challenges.

How well are countries preparing for climate adaptation?

National Adaptation Plans (NAPs) are the main way in which countries outline how they are preparing for and adapting to climate impacts. NAPs will be an important channel for achieving the indicators set out in the GGA, although countries will require guidance and assistance to integrate these measures into their planning processes. Some countries have also developed sectoral NAPs, which identify vulnerabilities and set adaptation priorities for specific sectors, such as agriculture, water resources, or infrastructure.

Increasingly, countries are developing national policies on adaptation, with 171 countries having at least one national adaptation planning instrument, such as a policy, strategy or plan, in place.

According to the latest official progress report, 67 developing countries and 13 developed countries have submitted NAPs. 121 developing countries have successfully applied for funding to support the development of their NAPs and other types of adaptation planning. Further evaluation of NAP progress and a discussion on next steps will be on the agenda at COP30.

How will the GGA encourage governments and businesses to act?

Right now, most pledges on adaptation are broad, promising to "build resilience", "protect livelihoods", or similar statements. But after the introduction of agreed, quantifiable indicators at COP30, governments will need to show measurable progress. Ideally, this development will prompt governments to integrate adaptation targets into a range of national plans and budgets. Research indicates that public investment in adaptation can, in turn, attract private investment.

Adoption of the GGA and its indicators will not radically shift government or business policy overnight; it will take time to filter down to ministries and departments. The initial stages of other UN processes have demonstrated that some poorer countries will struggle with capacity gaps unless they receive support. In time, likely by the mid-2030s, we will have a clearer picture of how countries are preparing for climate impacts.

For mitigation, tracking progress in renewable energy has been relatively straightforward to date, thanks to the availability of relevant data at the country and global levels. National-level information on clean energy is used to assess where renewable energy sources are growing. In turn, businesses can use data to inform their investment decisions.

Adaptation action is likely to be one of the world's major investment opportunities over the coming decades, as the effects of climate change increasingly push countries to prepare for a range of impacts. The more data countries can provide on how, where, and when these investments are being made, the stronger the global dataset of investment opportunities and funding gaps will be, which in turn presents a set of best practices for adaptation.

What are the benefits of investing in adaptation?

Today, more research is highlighting the wide-ranging benefits of financing adaptation projects – a picture which was previously not always clear. A 2025 study by the World Resources Institute (WRI) analysed 320 adaptation and resilience investments across 12 countries, totalling USD 133 billion. It found that every dollar invested in adaptation and resilience may generate more than ten dollars in benefits over ten years – including avoided losses, economic benefits, and social and environmental benefits.

These benefits might, for example, be seen in fewer people being affected by extreme weather events, but also in job creation, a healthier population, better transport, reduced soil erosion, greater social benefits for women, and increased carbon uptake, among many others. WRI found that USD 133 billion in investment may result in benefits of around USD 1.4 trillion – which is likely an underestimation, as many benefits are not monetised. Investment in adaptation has also been shown to bring benefits to a community even when a climate shock does not occur.

Investment is also necessary to adapt to worsening climate impacts on health. For example, rapid warming has led to a 23% increase in heat-related deaths since the 1990s, resulting in an average of approximately 546,000 deaths per year in 2012–21. The changing climate is also playing a role in increasing the transmission of infectious diseases such as dengue.

Other reports highlight the risks posed by climate impacts and estimate the finance required for adaptation. A 2021 report found that investing USD 68 billion in agriculture, water and infrastructure globally each year would prevent around 78 million people from starving or experiencing chronic hunger caused by climate change impacts. Estimates from a 2025 report suggest USD 443 billion is needed each year for small-scale family farmers – who produce around half of the world's food calories – to adapt to the impacts of climate change.

The wide-reaching benefits of sufficient investment in adaptation include preventing drought-driven crop failures that have caused malnourishment in millions of people, protecting global supply value chains and billion-dollar food industries, as well as safeguarding the employment of those working in the agricultural sector. Additional analysis suggests investing USD 350 billion in adaptation each year could create 280 million jobs in emerging markets and developing economies over the next decade.

When will the GGA take effect, and will it be enforced?

COP30 in Belém will serve as a critical checkpoint on adaptation and specifically on the GGA, where countries will review the framework and its early progress. In 2028, a comprehensive review of progress towards the GGA will take place during the second Global Stocktake.

By 2030 – the initial time horizon for achieving measurable progress under the GGA's 11 targets – countries should be able to demonstrate strengthened adaptive capacity, reduced climate vulnerability and improved resilience across key systems. Subsequent stocktakes in the early 2030s will inform the next phase of adaptation ambition.

Submitting communications on adaptation is mandatory under some UNFCCC reporting mechanisms. However, like other mechanisms under the Paris Agreement, implementation is nationally determined and voluntary – countries are not legally required to meet adaptation targets or outcomes. Countries have also agreed that reporting on the indicators remains voluntary, so as not to add to reporting burdens.

Is the GGA backed by finance?

Adaptation has consistently been underfinanced: it currently receives around one-third of public climate finance, with the majority going towards mitigation. Other estimates looking at all sources of climate finance suggest as little as 3% went towards adaptation in 2023.

In the COP26 summit outcomes, developed countries were urged to at least double the adaptation financing going to developing countries from 2019 levels by 2025. Achieving that goal would mean reaching around USD 40 billion in public adaptation funding by the end of the current year. However, funding was only tracked at USD 26 billion in 2023, meaning the goal is likely to be missed if current trends continue.

The world's adaptation finance needs are now estimated at between USD 310 and 365 billion a year for developing countries – 12-14 times the current finance flows. In 2024, the New Collective Quantified Goal (NCQG) agreed at COP29 went some way to acknowledging the sheer level of climate finance needed. Parties set the ambition of at least tripling funding for developing countries to USD 300 billion per year by 2035, with the ultimate goal of providing USD 1.3 trillion per year in climate finance within the same timeframe.

However, the NCQG does not suggest how much of that finance should be allocated towards adaptation.

At COP30, discussions will continue on how to "close the adaptation-finance gap". With the objective of doubling adaptation finance from developed nations coming to an end in 2025, countries and civil society are considering what should come next for adaptation financing, for example, if a specific target for adaptation is situated within the agreed financial goal of USD 300 billion a year. At the same time, countries need to step up their contributions to dedicated existing funds, such as the Adaptation Fund.

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