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Biennial transparency reports and national inventory reports

Synthesis report by the secretariat

Summary

This report provides a synthesis of information reported by Parties in their first biennial transparency report submissions, including their national inventory reports. Submissions received as at 15 April 2025 were included in the synthesis. The structure of the report aligns with the reporting format set out in the modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement, and as such, synthesizes information on greenhouse gas emissions and removals, information necessary to track progress in implementing and achieving nationally determined contributions under Article 4 of the Paris Agreement, information on climate change impacts and adaptation under Article 7 of the Paris Agreement, and information on financial, technology development and transfer, and capacity-building support.

Abbreviations and acronyms

BTR	biennial transparency report
CH_4	methane
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CTF	common tabular format
CRT	common reporting table
ETF	enhanced transparency framework under the Paris Agreement
EU	European Union
F-gas	fluorinated gas
FX	flexibility
GDP	gross domestic product
GHG	greenhouse gas
IE	included elsewhere
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
ITMO	internationally transferred mitigation outcome
LULUCF	land use, land-use change and forestry
MPGs	modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement
NAP	national adaptation plan
NDC	nationally determined contribution
NE	not estimated
NID	national inventory document
NIR	national inventory report
PaMs	policies and measures
QA/QC	quality assurance/quality control
REDD+	reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks (decision 1/CP.16, para. 70)
SCF	Standing Committee on Finance
SDG	Sustainable Development Goal
WAM	‘with additional measures’
WM	‘with measures’
WOM	‘without measures’

I. Executive summary

1. This synthesis of the BTR1s submitted by Parties is the first report of the secretariat that provides an initial picture of Parties' progress in implementing the Paris Agreement and identifies areas in which additional efforts are needed to meet its goals. On the basis of information and data reported up until 2022, the report offers an insight into the diverse national approaches to implementation that countries were adopting, including enablers that have driven progress and successes that can be built on, but also barriers yet to be overcome.

2. Transparency is at the core of the Paris Agreement, and the ETF helps Parties build a strong evidence base to support climate-related policymaking and identify investment needs and opportunities. In its role in tracking progress in implementing and achieving NDCs, the ETF also promotes their effective implementation and fosters accountability and trust among Parties. Together with the NDCs and the global stocktake, the ETF forms the foundation for enhancing global ambition in climate action and support under the Paris Agreement over time.

3. The submission of more than 100 BTR1s is a milestone in ETF implementation, as BTRs underpin the enhanced global approach to reporting on GHG emission trends and projections, mitigation, adaptation, loss and damage and support provided, needed and received. Some countries also chose to include in their BTRs information on broader aspects of climate action, such as just transition, gender and youth considerations, and the involvement of non-Party stakeholders. It is hoped that the information presented in this BTR synthesis report will inform relevant processes and workstreams under the Convention and the Paris Agreement.

A. Progress in implementing the Paris Agreement

4. All Parties that submitted their BTR1s have taken steps to implement their NDCs, and many of them, guided by the goals of the Paris Agreement, are taking clear initial steps towards net zero and climate-resilient futures. On the basis of information and data reported up until 2022, 50 Parties,[1] accounting for well over half of global emissions, have made initial progress in achieving their 2030 NDC targets. While substantial further progress can be expected in the period since 2022, several Parties may need to accelerate their actions or make additional efforts to keep their 2025 or 2030 targets within reach. Given that the reported information covers only the beginning of the NDC implementation period, those Parties have some time for 'course correction' before its end.

1. Mitigation

5. Climate policies that align with the goals of the Paris Agreement are key to ensuring progress towards achievement of NDC targets and enabling transition to low-emission development. Many Parties plan to achieve their NDCs through domestic PaMs and actions alone, while others intend to use cooperative approaches under Article 6 of the Paris Agreement. Many developing countries emphasized the need for support to enable them to fully implement their NDCs.

6. Parties reported on almost 5,000 PaMs and actions, covering all gases and sectors, that they have planned, adopted or implemented to meet their NDC targets. Twenty-five per cent of those PaMs are recently adopted or planned – put in place to enhance mitigation efforts towards meeting the targets set out in Parties' NDCs and, in turn, the goals of the Paris Agreement. While the energy sector remains the mainstay of countries' portfolios of mitigation PaMs, several Parties have increased their mitigation efforts in the IPPU, agriculture, LULUCF and waste sectors, including by implementing policies with higher abatement costs than those previously implemented.

[1] Seventy-nine Parties were assessed for progress towards their NDC targets. The number of Parties assessed includes the EU but excludes its 27 member States because the EU and its member States have a joint NDC target.

7. Nevertheless, while keeping in mind that the data set is limited to a subset of reporting Parties representing 69 per cent of global emissions in 2021, GHG emissions increased between 2005 and 2021, a trend driven by economic and population growth and increased industrial activity and transportation. The BTR1s signal that Parties plan to strengthen mitigation PaMs that may reduce the impacts of these drivers of emissions.

8. The largest number of PaMs reported by Parties target GHG emissions from the energy sector, which is the main source of emissions in most countries and indeed globally. To transform their energy systems and transition to cleaner energy sources, Parties are prioritizing policies aimed at electrifying industry, transport and households using renewable energy sources; increasing renewable energy sources in the energy mix such that they constitute the largest share or in some cases entirely meet energy demand or growth in energy demand; replacing coal-fired power plants with new facilities that use renewable energy sources and natural gas; promoting the adoption of distributed renewable energy technologies in rural and remote areas; imposing bans on building new coal-fired power plants unless they are equipped with carbon dioxide capture and storage and accelerating the phaseout of existing unabated coal-fired plants; promoting nuclear energy; upgrading electricity grids to integrate renewable electricity (by introducing smart, flexible grid operations and increasing battery storage capacity) and to reduce power losses in transmission and distribution networks; introducing and scaling up emissions trading schemes and carbon and energy taxation; and promoting a modal shift in transport, the use of electric vehicles, and CO_2 emission performance standards for new passenger cars and vans.

9. Energy efficiency is also a central pillar of climate policy for most Parties, being a fast, cheap and highly effective lever for reducing emissions. Focus areas for energy efficiency include decarbonizing industry; improving the energy performance of buildings, including by promoting heat pumps; and integrating e-mobility into transportation. Applying digital technologies to grid management, fostering systemic efficiency and promoting a just energy transition are also identified by some Parties in BTR1s as being crucial to energy system transformation.

10. Beyond curbing CO_2 emissions from the energy sector, Parties have gained momentum in reducing CO_2, CH_4 and other GHGs emitted from other sectors. As the use of air conditioning increases, many Parties are adopting measures to substitute or reduce the use of hydrofluorocarbons with high global warming potential. Parties are also continuing to make efforts to reduce emissions from cement and steel production, which have a high abatement cost. In agriculture, Parties are focusing on improving soil carbon management, developing lower-emission plant and animal breeds, and introducing feeds and supplements that reduce CH_4 emissions from livestock. Initiatives to reduce deforestation and to increase reforestation and afforestation were reported by many Parties as LULUCF sector actions.

2. Adaptation

11. Climate change impacts manifest in every aspect of society, the economy and the environment, including in people's health and livelihoods, and the reporting in the BTR1s shows that developed and developing countries alike are addressing these impacts. While reporting on adaptation is not mandatory, 91 BTR1s (about 90 per cent) contain an adaptation component, indicating the growing attention on adaptation as a part of climate change strategies. Most Parties show progress in adaptation, providing not only a comprehensive assessment of climate change impacts, risks and vulnerabilities in their BTR1s, but also information on adaptation strategies, including gender-responsive measures, being implemented to minimize them.

12. Overall, the BTR1s demonstrate that Parties are contributing to achievement of the dimensional and thematic targets of the global goal on adaptation.[2] Parties reported considering equity, inclusivity, Indigenous Peoples' and local community knowledge systems, and other cross-cutting elements in adaptation action and planning, as well as integrating adaptation goals set out in NAPs and NDCs into both national development policies and sectoral strategies. Water resources were identified as the highest priority for domestic adaptation action, and nature-based solutions are increasingly becoming a national

[2] Decision 2/CMA.5, paras. 9–10.

adaptation priority. Food security and nutrition was the most frequently reported area for implemented adaptation action.

13. Almost all Parties highlighted their implemented or planned approaches and systems for monitoring and evaluation of adaptation action. While they vary in scope and structure, all such systems are used to inform decision-making about, improve the efficiency of and demonstrate accountability in adaptation planning and action. The progress in adaptation achieved so far, along with experience gained, allows for refinement of climate change adaptation plans and actions and for continuous learning and improvement as conditions change and knowledge evolves.

14. A number of Parties have taken steps to integrate data and information on loss and damage into national climate reporting. However, the lack of standardized methodologies for assessing loss and damage and guidelines for reporting thereon has led to different approaches to reporting and levels of detail of reported information in the BTR1s, precluding a standardized synthesis of trends in loss and damage. Nevertheless, these early efforts lay the foundation for enhanced future reporting.

3. Support

15. The BTR1s show that more financial, technology development and transfer, and capacity-building support for stronger climate action was provided and mobilized to developing countries in 2021–2022 than in previous bienniums. Financial support is largely flowing to the sectors where it is most needed, as defined by recipient countries, namely energy and transport in terms of mitigation support. In terms of adaptation, there is evidence in the agriculture sector that the proportionate share of financial support needed and received for that sector aligns with the share provided and mobilized, with less alignment across other sectors.

16. On financial support provided and mobilized, 37 Parties reported data for 2021–2022; 98.9 per cent of support was from developed country Parties and 1.1 per cent was from other Parties reporting information voluntarily. Annual average climate finance for the period amounted to USD 63.17 billion, of which 64.1 per cent was provided via bilateral, regional and other channels, 16.2 per cent was provided via climate-specific multilateral channels and 22.4 per cent was mobilized through public interventions.[3] Twenty Parties provided information on finance mobilized by public interventions. A significant amount of multilateral financial support was provided through the World Bank and other multilateral development financial institutions, as well as through the Adaptation Fund, the Global Environment Facility and the Green Climate Fund.

17. 37 developing country Parties reported finance needed for climate action (mostly before 2030), amounting to USD 3,396.23 billion, and 49 developing country Parties reported on climate finance received, amounting to USD 60.84 billion. Many developing countries are in the process of establishing systems for collecting and tracking information on financial support received and not all were yet able to report on financial support received, or needed, in the BTRs; however, for those that did, the provision of this information in CTF for the first time is useful for the clarity and transparency of observed trends.

18. A majority of climate finance was provided and mobilized through grants and concessional financial instruments, which aligns with the financial instruments highlighted as preferred by developing country Parties in their reporting on financial support needed. Regarding private sector climate finance mobilized by public interventions, 49.2 per cent was mobilized using grants as the main instrument.

19. Technology development and transfer support provided through 1,483 reported activities was focused on adaptation, including water and sanitation, and agriculture. Capacity-building support received, reflected in the 1,814 reported activities, was evenly distributed across adaptation, mitigation and cross-cutting themes.

[3] See the box in chap. VI.A.

4. Whole-of-society approaches to climate action

20. The BTR1s show that, to implement ambitious climate action, Parties are establishing institutions and coordination bodies, reflecting the cross-cutting nature of climate change and the whole-of-society approaches needed to address it. Most Parties reported establishing legal and regulatory frameworks and data management systems to underpin evidence-based climate-related policymaking and to enable unified, coherent policy implementation.

21. The engagement of a broad range of stakeholders, including government agencies, private sector entities, civil society organizations, non-governmental organizations, academic and research institutions, local communities and international organizations in climate action suggests a shift towards whole-of-society policymaking. Parties are also integrating the consideration of issues relating to gender, youth and Indigenous Peoples into climate action.

22. Enhanced understanding of the nexus of climate change, social and economic development, and the SDGs is increasingly reflected in the national policies of Parties, while such policies maintain a clear focus on the SDGs, particularly those related to clean energy, sustainable cities and communities, sustainable production and consumption and green growth. A number of countries highlighted in their BTR1s the social and economic co-benefits of climate policies and actions.

B. Enablers and barriers related to accelerating global implementation

23. While the BTR1s demonstrate success in implementing the Paris Agreement, they also identify challenges and barriers that still need to be addressed. Climate policies can be strengthened and action and support accelerated through scalable solutions that capitalize on lessons learned from successful approaches.

1. Support

24. As information on support needed and received was not provided in the BTR1s of all developing countries that need it, assessing the extent to which needs were met was difficult. Regarding financial support provided, mobilized, needed and received, many Parties reported facing challenges. Developing countries noted the absence of standardized definitions and classification systems for climate finance and the lack of centralized databases and infrastructure to enable assessment of and reporting on climate finance received. They also noted insufficient capacity for conducting assessments of financial needs, particularly for adaptation. With regard to reporting on finance mobilized by public interventions, several Parties reported that they are yet to establish national reporting systems for this purpose.

25. The portfolio of financial instruments to support developing country Parties in their climate action is growing, although at a slower pace than is necessary to fully meet needs. The slow pace is a particular problem for many developing countries, particularly the least developed countries and small island developing States, that have very limited financial means and high financial indebtedness. However, there are encouraging trends in climate finance that may enable stronger action: the shares of financial support going to mitigation, adaptation and cross-cutting action broadly correspond to the proportionate needs across these areas reported by developing countries, and international climate finance is increasingly being used to leverage private finance through co-financing.[4]

26. Developing countries identified persistent capacity gaps and capacity-building needs, including in accessing finance, identifying technology needs, establishing infrastructure for collecting comprehensive and reliable data and information, and ensuring the availability of qualified staff for BTR preparation.

[4] The information on financial support provided and mobilized, and needed and received is based on an incomplete data set. The number of Parties that reported financial support provided through bilateral, regional and other channels and through multilateral channels was 35 and 31 respectively, while the number of developing country Parties that reported on financial support needed and received was 36 and 47 respectively.

2. Scalable solutions

27. Numerous examples of successful PaMs presented in the BTR1s could be replicated by other Parties and scaled up to accelerate climate action and deliver exponential progress towards net zero – progress that is urgently needed to achieve the goals of the Paris Agreement.

28. Renewable energy and electric vehicles have emerged as the most scalable mitigation opportunities for many countries, and the results evident in the BTR1s arising from policies promoting them are remarkable. Rapid expansion in installed wind and solar power capacity to meet most of the growth in electricity demand, with corresponding growth in power generation from renewable sources, can be observed in many countries. Similarly, sales of electric vehicles are growing quickly, with their market share of new cars reaching as high as 90 per cent in some countries.

29. Promoting energy efficiency is another area where the BTR1s offer scalable solutions. Success in improving energy efficiency lies in implementing comprehensive, multi-pronged efforts, including introducing labelling to provide information on the energy consumption and efficiency of household appliances, providing incentives for faster uptake of new energy-efficient technologies in the building sector (such as heat pumps), promoting market-based instruments for energy efficiency, training the workforce in energy efficiency, and raising public awareness of energy efficiency by including the topic in educational curricula and delivering energy efficiency kits to households.

30. Most Parties reported on their laws, acts and regulations relevant to climate change, reflecting widespread efforts to establish formal legal and regulatory frameworks for climate action and to align those domestic frameworks with international commitments under the Paris Agreement. The information reported in the BTR1s shows that national climate laws and regulations have emerged as essential tools for ensuring systemic changes towards a green economy across all areas of a country's economy and society. In many countries, climate laws have made climate ambition a legally binding, long-term governance system. Climate laws have also proven important in aligning finance, both public and private, with climate goals, for example by establishing green budgets and redirecting investments to low-carbon projects.

3. Data and knowledge

31. The BTR1s reveal that Parties have data and knowledge gaps hindering them in evidence-based climate-related policymaking and decision-making on climate action. The rigorous reporting requirements under the ETF have proven challenging for some developing countries, largely owing to data gaps.

32. While the progress achieved by many developing countries in some areas cannot be overstated – for example reporting comprehensively on GHG inventories and providing information on financial, technology development and transfer, and capacity-building support needed and received – many face technical challenges and capacity-building constraints, primarily relating to the quality of available data; the application of methodologies for estimating GHG emissions, assessing the impacts of PaMs and developing GHG emission projections; and the development of comprehensive systems for monitoring GHG emissions. The BTR1s of some developing country Parties contain limited data on trends in GHG emissions, pointing to their lack of data and capacity to compile a comprehensive GHG inventory as a contributing factor. The BTR1s also provide limited data on GHG projections to 2030 and 2035. Only 30 Parties reported GHG projections, representing 31.7 per cent of total GHG emissions in 2020, and several developing country Parties chose to apply flexibility to reporting projections owing to capacity constraints.

33. Of the 66 developing country Parties that submitted a BTR1, 47 applied at least one flexibility provision. The challenges faced by developing countries underline the need for continuous capacity-building support (e.g. via the Capacity-building Initiative for Transparency) to strengthen institutional capacity for data collection and analysis and to address information and data gaps with a view to enhancing the quality of reporting in the BTRs.

34. Challenges, gaps and barriers featured prominently in the BTR1s of the 91 Parties that reported on climate change impacts and adaptation. Knowledge-based, technical challenges were reported by 72 Parties and institutional and governance challenges by 71 Parties. However, the BTRs also contain solutions: more than half of Parties reported good practices and lessons learned in adaptation, reflecting their gain in experience as they move through iterations of the adaptation cycle. Lessons learned relate to inclusive participation, institutional coordination and flexible, evidence-based approaches, while good practices relate to community-based adaptation, participatory planning and engagement with Indigenous Peoples and local communities.

4. Socioeconomic co-benefits of climate action, just transition and inclusiveness

35. Many Parties described the social and economic co-benefits of climate actions, such as improved public health, creation of jobs in green sectors, and enhanced food and water security. They also addressed the adverse social and economic consequences of climate impacts, such as poverty, inequality and forced migration. Some 43 per cent of Parties in their BTR1s emphasized synergy between climate policies and broader socioeconomic development goals such as improved livelihoods, health, employment and household consumption.

36. Some Parties are shifting political attention to socially fair just transition policies and strategies as part of their efforts to ensure that inclusive climate actions recognize and engage affected stakeholders. In the context of PaMs, some Parties reported on just transition policies designed to counter the negative impacts of structural changes to economies arising from energy transformation. Many of those Parties highlighted their establishment of committees or task forces for monitoring and addressing such impacts, along with funds to support measures in the just transition policies. Strategies to develop the renewable energy industry and tourism, as well as retrain workers, were reported as being targeted to coal-dependent regions and peat-producing areas.

37. It is evident from many BTR1s that engaging all stakeholders in climate policy planning and decision-making is a growing practice bringing unique insights, technical expertise and local knowledge to those processes. An inclusive approach to climate policymaking – an enabler for accelerated climate action – fosters collaboration and builds trust among stakeholders and ensures that policies are effective and sustainable. Climate policies that are inclusive and supportive of sustainable social and economic development also promote stakeholder confidence that arrangements have been put in place to ensure just and equitable transition and that no one will be left behind, thus enhancing broad acceptance of such policies and enabling accelerated implementation of climate action.