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Reporting from and review of Parties included in Annex I to the Convention

Compilations and syntheses of biennial reports from Parties included in Annex I to the Convention

Compilation and synthesis of fourth biennial reports of Parties included in Annex I to the Convention

Revised report by the secretariat

Executive summary

Summary

This report contains a summary of the compilation and synthesis of the fourth biennial reports submitted to the secretariat by Parties included in Annex I to the Convention. It highlights key findings in relation to quantified economy-wide emission reduction targets; progress towards those targets, including information on mitigation actions and their effects, and estimates of emission reductions and removals and the use of units from market-based mechanisms and land use, land-use change and forestry activities; greenhouse gas emission trends and projections; and the provision of financial, technological and capacity-building support to developing country Parties.



Abbreviations and acronyms

Annex I Party	Party included in Annex I to the Convention
Annex I Party not included in Annex II	Party included in Annex I to the Convention that is not included in Annex II to the Convention
Annex II Party	Party included in Annex II to the Convention
BR	biennial report
CH ₄	methane
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
COP	Conference of the Parties
CTF	common tabular format
EIT Party	Party with economy in transition
EU	European Union
EU ETS	European Union Emissions Trading System
GDP	gross domestic product
GHG	greenhouse gas
HFC	hydrofluorocarbon
LT-LEDS	long-term low-emission development strategy(ies)
LULUCF	land use, land-use change and forestry
N ₂ O	nitrous oxide
NDC	nationally determined contribution
NF ₃	nitrogen trifluoride
non-Annex I Party	Party not included in Annex I to the Convention
non-EIT Party	Party that does not have an economy in transition
non-ETS sector	sector not covered by the European Union Emissions Trading System
OECD	Organisation for Economic Co-operation and Development
PaMs	policies and measures
PFC	perfluorocarbon
SDG	Sustainable Development Goal
SF ₆	sulfur hexafluoride
WAM	‘with additional measures’
WEM	‘with measures’

I. Mandate and approach

2. COP 17 decided that developed country Parties should submit their BRs two years after the due date of a full national communication. BR4s were due for submission by 1 January 2020. COP 17 also decided that developed country Parties should use the “UNFCCC biennial reporting guidelines for developed country Parties” for preparing their BRs.¹

3. In addition, COP 17 requested the secretariat to prepare compilation and synthesis reports on the information reported by developed country Parties in their BRs.² The latest report (FCCC/SBI/2020/INF.10/Add.1/Rev.1) is a compilation and synthesis of information provided in the submitted BR4s. It contains information that has been updated since the previous version of the report,³ namely on the BR3 of the United States of America and the BR4s of Iceland and the United States. These BRs were submitted after the publication of the previous report. It also includes information on the BR4s resubmitted during reviews conducted after the publication of the previous report; updated information contained in the technical review reports; the latest available data on GHG emissions reported in the 2021 GHG inventory submissions of developed country Parties; and the latest NDCs and LT-LEDS submitted under the Paris Agreement. This report is an executive summary of the latest compilation and synthesis report.

4. For the compilation and synthesis of BR4s, the process of refining the analytical approaches continued with the aim of presenting an accurate and balanced picture of key trends in Parties’ climate actions and the drivers underlying the trends. The main changes compared with the compilation and synthesis of BR3s⁴ include:

(a) An increased focus on how Parties’ climate actions and provision of support relate to their post-2020 targets and strategies, including a more comprehensive description of Parties’ midterm and long-term targets and strategies and of their implemented PaMs, as well as the outlook for achieving those targets;

(b) More information on the drivers of GHG emission trends and projections, with a particular focus on the Parties with the highest shares of total emissions reported across the BR4s. In an attempt to further nuance the analyses of the GHG emission trends and projections of EIT Parties and non-EIT Parties, the increasing convergence in trends between the two sets of Parties has been addressed;

(c) Some revision of the presentation of the financial data stemming from Parties’ improvement of their reporting approaches (e.g. more detailed sectoral allocation of climate finance) or data-collection processes (e.g. reporting on private finance leveraged as a result of public climate finance). The section on technology transfer has been more closely aligned with the reporting elements of the “UNFCCC biennial reporting guidelines for developed country Parties”. The information presented on capacity-building projects supported, including on how the capacity-building support provided responds to the emerging needs of developing countries and on the integration of gender considerations into capacity-building, has also been enhanced.

II. Key messages from the compilation and synthesis of fourth biennial reports

5. **Annex I Parties are progressing towards their 2020 emission reduction targets, but gaps to those targets remain for some.** All Parties’ emissions in 2017 were below their base-year level, which in many cases means that they have already achieved their 2020 targets. However, for a number of Parties whose emissions in 2017 were between their base-year level and targeted emission level for 2020, the emission reductions achieved by 2017 are not commensurate with the target reductions by 2020, in terms of either emission level or emission budget, as relevant. Those Parties are expected to make further efforts to meet their

¹ Decision 2/CP.17, para. 13.

² Decision 2/CP.17, para. 21.

³ FCCC/SBI/2020/INF.10 and Corr.1 and Add.1 and Add.1/Corr.1.

⁴ Contained in document FCCC/SBI/2018/INF.8/Add.1 and Add.1/Corr.1.

2020 targets by strengthening the implementation of existing PaMs. Some Parties have already indicated their intention to use units from market-based mechanisms and, if applicable, the contribution of LULUCF towards achieving their 2020 targets.

6. **The total GHG emissions of Annex I Parties in 2019 were lower by 14.8 per cent than in 1990.**⁵ The overall decline in GHG emissions since 1990 reflects primarily the impact of the economic transformation of EIT Parties in the 1990s and the strengthening of climate change mitigation actions by almost all Parties in the second half of the 2000s and after 2010. These actions include promoting the increased use of less carbon-intensive fuels and of renewable energy in the electricity mix and improving energy end-use efficiency in the energy sector, as well as PaMs in the agriculture and waste sectors. Those measures have been accompanied by modernizing and enhancing the efficiency of industrial processes and reducing the livestock population.

7. **Parties are continuing to implement existing measures aimed at achieving their 2020 targets, while increasingly focusing on their post-2020 targets.** Most Parties view their 2020 targets as a waypoint on the trajectory towards their midterm and long-term targets under the Paris Agreement. They are capitalizing on their experience in implementing PaMs by tailoring their portfolios to target the key emitting sectors and to include PaMs that are cost-efficient and can bring co-benefits, such as health benefits and job creation, in addition to emission reductions. Parties' 2030 NDC targets, long-term goals or targets (e.g. carbon neutrality or net zero emissions by 2050) and LT-LEDS feature prominently in Parties' reporting. Many Parties described their plans to transition to low-emission economies and societies, with newly reported PaMs being part of their strategies for achieving their 2030 and 2050 targets. Key long-term policy objectives include making renewables the main source of electricity while phasing out coal and electrifying building heating systems and road transport. Parties reported on new near-term actions needed to meet these goals, such as building infrastructure for electric transportation and scheduling the retirement of coal power plants. The majority of Parties are or envisage using carbon pricing approaches in some form. Many Parties reported on combining carbon pricing approaches in the form of levies or taxes and trading systems.

8. **The portfolio of PaMs is evolving to address Parties' midterm and long-term targets.** In their BR4s, Parties reported a total of 2,749 PaMs, with estimated 2020 impacts reported for 30.0 per cent of them, totalling emission reductions of 6,238.81 Mt CO₂ eq.⁶ A trend of measures moving through a 'life cycle' is evident throughout the four biennial reporting cycles as successful actions are replicated and expanded, imperfect policies are reformulated and strengthened, and ineffective policies are discontinued. The trend is manifested in a higher share of planned and adopted, but not yet implemented, measures being reported in the BR4s than in previous BRs and indicates that Parties have started

⁵ The information on the GHG emissions and trends of developed country Parties is based on their 2021 GHG inventory submissions, which include emission estimates for 2019, while the information on their progress towards the achievement of targets is based on their BR4s, which include emission estimates for 2017.

⁶ The approach to calculating the total impacts has changed since the report on the compilation and synthesis of BR3s. In this report, impacts reported in the BRs of the EU and EU member States have been included in the totals. Previously, EU member States' reported impacts (excluding impacts related to the EU ETS) and the impacts of the EU ETS (but no other measures) reported by the EU were included in calculating the totals in order to avoid double counting. However, the reporting in the EU BRs focuses on EU-wide measures, while EU member States report domestic measures and some EU-wide measures. Despite this, there is generally good alignment with regard to reporting estimates of impacts of measures, so where EU member States report impacts of an EU-wide policy or measure, the EU does not report an estimate, and vice versa. This means that the approach used for the report on BR3s might have led to an underestimation of the total impacts reported. The Russian Federation did not submit a BR1 or report on the impacts of PaMs in its BR2. However, in the Russian Federation's BR3 and BR4, estimated impacts were reported for the Order of the President of the Russian Federation on the Reduction of the Greenhouse Gas Emissions (2013) and the Action Plan on the Provision of Greenhouse Gas Emission Reduction by 2020. The impacts of these two PaMs have not been included in the totals in this report as they appear to overlap with two other measures, namely the Energy Strategy of the Russian Federation and the State Programme for the Development of Coal Mining.

planning actions towards achieving their post-2020 targets. For example, the EU ETS has been substantially revised for its fourth phase (2021–2030). Planning for achieving post-2020 targets also includes strengthening institutional structures and processes, for example with regard to planning mitigation actions, tracking progress against targets and evaluating the effectiveness of implemented PaMs.

9. **The total GHG emissions of Annex I Parties are projected to slightly decrease by 2020 compared with the 2017 level and then remain at almost the same level until 2030.** Projections made in 2017 (the most recent reported year in GHG inventories) show a 13.6 per cent decrease in total GHG emissions excluding LULUCF by 2020 compared with the 1990 level and a 1.2 per cent decrease compared with the 2017 level under the WEM scenario, which takes into account implemented and adopted PaMs. Despite the increased scope and expected strengthening of mitigation actions for beyond 2020, total emissions under the WEM and WAM scenarios are projected to decline by only 0.4 and 4.0 per cent, respectively, between 2020 and 2030. This suggests that implemented and planned mitigation actions may not be sufficient to completely offset the impact of the underlying emission drivers, such as economic and population growth, and to drive emissions down after 2020. It may also suggest that the impacts of the planned mitigation actions reported in the BR4s aimed at achieving the 2030 targets have not been fully accounted for because the impacts depend on what form the legislative and regulatory frameworks supporting their implementation, which have yet to be finalized, will take.

10. **Climate finance has continued to increase, reflecting a continued commitment to support the global transition to a low-emission, climate-resilient future.** As reported in the BR4s, total climate support reached an annual average of USD 52.2 billion in 2017–2018; on a comparable basis, this represents a 5.9 per cent increase over the previous biennium 2015–2016.⁷ Both Annex II Parties and Annex I Parties not included in Annex II⁸ provided quantitative or qualitative information on climate finance in their BR4s on climate-specific support (funds targeted specifically at climate action) and core/general support (funds that are not specifically targeted at climate action). One third of the total support (an average of USD 18.4 billion per year over the biennium 2017–2018) was allocated through multilateral channels, with over half allocated to mitigation, followed by cross-cutting and adaptation. As in the previous biennium, multilateral development banks represent the largest share of multilateral finance institutions for channelling climate finance. Multilateral climate finance funds, such as the Green Climate Fund, are now also attracting considerable funding, allowing them to channel expanded support for climate action in developing countries.

11. The BR4s demonstrate some new developments, including expanded use of innovative financial instruments such as insurance, a move towards more detailed sectoral reporting, improved tracking of private sector finance and the introduction of voluntary reporting on issues such as gender. In addition, more Annex I Parties not included in Annex II reported on climate support provided to non-Annex I Parties in the BR4s than in any previous BRs. Parties also demonstrated ongoing efforts to expand their tracking and reporting of private sector finance leveraged by public investments, thereby helping to clarify the bigger climate finance picture.

12. **Support for technology development and transfer activities has increased significantly, providing a strong foundation for the transformational change envisioned in the Paris Agreement.** In their BR4s, Parties reported 425 activities relating to technological support (40 per cent more than in the BR3s), with more than half of the activities supporting mitigation (56 per cent), a quarter supporting adaptation (28 per cent) and the remainder supporting cross-cutting action (a similar pattern to that presented in the BR3s). Annex II Parties highlighted their efforts to fully respond to developing country Parties' needs, as identified by 53 non-Annex I Parties in their technology needs assessments and contained in the fourth synthesis report on technology needs identified by non-Annex I

⁷ The report on the compilation and synthesis of BR4s includes financial information from the 22 Annex II Parties that had submitted their BR4s by October 2020. Previous compilation and synthesis reports include data from the BRs of 24 Annex II Parties, which limits comparability of the financial information reported.

⁸ See <https://unfccc.int/parties-observers> for an explanation of the classification of Parties by their commitments.

Parties.⁹ Deploying mature technologies remained the predominant supported activity, but support for technology research and development and demonstration activities has increased since the BR3s, in line with the need to support research and development and facilitate access to technology highlighted in the Paris Agreement. The Asia-Pacific region continued to benefit most from the reported technological support, with 43 per cent of all reported technological support activities focusing on that region.

13. Capacity-building support has increased, reaffirming the commitment of Annex I Parties to support successful implementation of the Convention and the Paris Agreement. In the BR4s, 702 capacity-building activities were reported, a significant increase (77.7 per cent) on the 395 activities reported in the BR3s. The reported capacity-building activities cover all 15 priority areas outlined in the framework for capacity-building in developing countries established under decision 2/CP.7. Continuing the trend observed from the BR3s, the most significant share of capacity-building was for adaptation (40.0 per cent) and this support was mostly focused on integrating climate resilience into existing and new infrastructure or on promoting green transformation in agriculture and forestry. Mitigation accounted for 28.6 per cent of capacity-building, primarily aimed at strengthening monitoring and evaluation. Geographically, the majority of the capacity-building support for adaptation was provided to the Asia-Pacific and Africa regions. Mitigation support was primarily provided for multiregional or global projects.

14. Well-established and -functioning systems for ensuring transparency of action and support have helped to enhance the quality of reporting and domestic policymaking. These systems, which are supported by domestic institutional frameworks and international technical reviews under the UNFCCC, lay the groundwork for a successful transition to the enhanced transparency framework under the Paris Agreement. In addition, Parties without reporting obligations under the current system have voluntarily reported on support (e.g. Annex I Parties not included in Annex II reporting on financial, technological and capacity-building support provided to developing country Parties), which has helped them to gain reporting experience and facilitated the development of reporting systems and approaches to help them prepare for the transition to the enhanced transparency framework. Developed countries have demonstrated a deep understanding of how their climate policies are performing over time and how they affect emission levels. As well as contributing to the quality of reporting under the UNFCCC, the establishment of systems for ensuring transparency of climate action and support has facilitated domestic policymaking by providing policymakers with access to accurate, reliable and up-to-date information on emission levels, impacts of mitigation actions and support provided.

III. Executive summary

A. Quantified economy-wide emission reduction targets

15. All Annex I Parties except Turkey have communicated their quantified economy-wide emission reduction targets for 2020¹⁰ and reported them in their BR4s. Each target is expressed as a percentage reduction in absolute GHG emissions from a base-year level to be achieved by 2020 and is accompanied by information on underlying assumptions and conditions, base year, coverage of gases and sectors, the role of LULUCF, if included in the target, and the use of units from market-based mechanisms, if envisaged.

16. Although Parties are required to report ex post information relevant to assessing progress towards their targets, including total annual GHG emissions and the contribution of LULUCF and use of market-based mechanisms, there is no specific guidance outside the Kyoto Protocol rules on accounting for such emissions and contributions towards the achievement of the 2020 targets, which would ensure, for instance, the avoidance of double counting of units from market-based mechanisms across Parties. Yet, most Parties indicated in their BR4s how they accounted for such emissions and contributions.

⁹ FCCC/SBI/2020/INF.1.

¹⁰ Contained in document FCCC/SBSTA/2014/INF.6.

17. Most Parties have taken on multiple targets: one that is unconditional (independent of future circumstances) and one or more that are more ambitious but conditional (contingent on certain conditions, such as treaty provisions or pledges made by other Parties). The Parties that have conditional targets did not report in their BR4s on whether any of the conditions for increasing their ambition and shifting towards their conditional targets had been met so far.

18. Parties are increasingly shifting the focus of their climate policy from 2020 targets to midterm targets and long-term mitigation goals. Most reported in their BR4s information on the post-2020 targets communicated in their NDCs under the Paris Agreement. Most also reported on their LT-LEDS which are typically for 2050, highlighting that the 2020 targets are part of their national climate policies, setting midterm to long-term trajectories towards more substantial emission cuts and the transition to low or net zero GHG emissions in the second half of the century. A few Parties reported increased ambition for 2030 in the form of national targets and targets for individual sectors.

19. Among the long-term targets reported,¹¹ Australia, the EU, Japan, Switzerland, the United Kingdom of Great Britain and Northern Ireland and the United States have committed to net zero GHG emissions or to becoming carbon- or climate-neutral by 2050 and have submitted an LT-LEDS that encompasses all sectors of the economy. New Zealand has submitted an LT-LEDS for achieving the goal of net zero emissions by 2050 for all GHGs except biogenic CH₄, and has passed this strategy into law. Iceland and Sweden have set a goal of net zero emissions by 2040 and 2045, respectively, with negative emissions thereafter. Canada and Ukraine described their goal of net zero GHG emissions by 2050 and 2060, respectively, in their NDCs. Norway highlighted its target of becoming a low-emission society by 2050, outlining that the aim is to promote the long-term transformation of the country in a climate-friendly direction, which has been translated into a quantitative target of an 80–95 per cent emission reduction below the 1990 level. Such targets, objectives and strategies provide long-term direction to national climate policy and ensure that near-term and midterm targets are consistent with that direction.

20. An overview of Parties' emission reduction targets for 2020, 2030 and 2050 is provided in the table below.

¹¹ To ensure the completeness and accuracy of information, developed country Parties' 2030 and long-term targets reported in their BR4s have been updated and supplemented with information from the most recent NDCs and LT-LEDS submitted under the Paris Agreement.

Annex I Parties' greenhouse gas emission reduction targets^a

Party	Quantified economy-wide emission reduction target for 2020 (reduction from base-year emission level) ^b			GHG emission reduction target for 2030 (reduction from base-year emission level) ^c			GHG emission reduction long-term target or objective (reduction from base-year emission level) ^d	
	Base year	Unconditional (%)	Conditional (%)	Base year	Unconditional (%)	Conditional (%)	Base year	Target or objective
Australia	2000	5	15–25	2005	26–28	–	–	Net zero emissions by 2050
Belarus	1990	–	5–10 ^e	1990	At least 35	At least 40	–	–
Canada	2005	–	17	2005	At least 40	–	–	Net zero GHG emissions by 2050
EU	1990	20	30	1990	At least 55	–	–	Climate-neutral by 2050
Iceland	1990	20 ^f	30	1990	At least 55	–	–	Climate-neutral and net zero emissions no later than 2040 and fossil fuel free by 2050
Japan	Fiscal year 2005	At least 3.8 ^g	–	Fiscal year 2013	46 and continue efforts towards 50	–	–	Net zero, that is, to realize carbon neutrality by 2050
Kazakhstan	1990	15	–	1990	15	25	–	–
Liechtenstein	1990	20	30	1990	40	–	–	–
Monaco	1990	30	–	1990	55	–	–	Carbon-neutral by 2050
New Zealand	1990	5	10–20	2005	50	–	–	Net zero GHG emissions by 2050 (other than biogenic CH ₄ , for which the target is to reduce emissions by 24–27% below the 2017 level)
Norway	1990	30 ^h	40	1990	50–55	–	1990	Emission reduction of 80–95% by 2050 compared to 1990
Russian Federation	1990	–	15–25	1990	Limiting GHG emissions to 70 relative to 1990 level	–	–	–
Switzerland	1990	20 ⁱ	30	1990	50	–	–	Net zero GHG emissions by 2050
Turkey	–	–	–	–	Up to 21 from 'business as usual'	–	–	–
Ukraine	1990	–	20	1990	65	–	–	Net zero GHG emissions by no later than 2060
United Kingdom	–	–	–	1990 for CO ₂ , CH ₄ and N ₂ O 1995 for HFCs, PFCs, SF ₆ and NF ₃	68	–	–	Net zero emissions by 2050

Party	Quantified economy-wide emission reduction target for 2020 (reduction from base-year emission level) ^b			GHG emission reduction target for 2030 (reduction from base-year emission level) ^c			GHG emission reduction long-term target or objective (reduction from base-year emission level) ^d	
	Base year	Unconditional (%)	Conditional (%)	Base year	Unconditional (%)	Conditional (%)	Base year	Target or objective
United States	2005	In the range of 17% emission reduction by 2020 compared with 2005 levels	–	2005	50–52	–	–	Net zero GHG emissions by 2050

^a To ensure the completeness and accuracy of information, developed country Parties' 2030 and long-term targets reported in their BR4s have been updated and supplemented with information from the most recent NDCs and LT-LEDS submitted under the Paris Agreement.

^b As communicated to the secretariat and contained in document FCCC/SBSTA/2014/INF.6, unless otherwise specified.

^c As reported in NDCs under the Paris Agreement, available at <http://www4.unfccc.int/ndcregistry/Pages/All.aspx>, unless otherwise specified.

^d As reported in LT-LEDS or NDCs under the Paris Agreement. The LT-LEDS are available at <https://unfccc.int/process/the-paris-agreement/long-term-strategies>.

^e Belarus communicated to the secretariat a conditional target of a 5–10 per cent emission reduction compared with the 1990 level, which is reflected in document FCCC/SBSTA/2014/INF.6, but it has communicated an emission reduction target of 8 per cent in all its BRs.

^f Iceland will fulfil its target jointly with the EU and its 28 member States in accordance with Article 4 of the Kyoto Protocol. Under its bilateral effort-sharing agreement with the EU, Iceland's cumulative emission allocation for the non-ETS sectors for 2013–2020 is 15,327.22 kt CO₂ eq.

^g Target modified after publication of document FCCC/SBSTA/2014/INF.6 and officially communicated to the secretariat by the Government of Japan.

^h Norway reported in its BR4 that its unconditional target under the Convention for 2020 of a 30 per cent reduction in emissions relative to the 1990 level is consistent with its quantified emission limitation or reduction commitment of 84 per cent of the base-year emissions for 2013–2020, as defined in the Doha Amendment to the Kyoto Protocol. Therefore, compliance under the Kyoto Protocol should ensure that Norway also meets its 2020 emission reduction target under the Convention.

ⁱ Switzerland reported in its BR4 that it will assess the fulfilment of its quantified economy-wide emission reduction target under the Convention by accounting against its quantified emission limitation or reduction commitment for the second commitment period of the Kyoto Protocol of 84.2 per cent of the 1990 emission level.

B. Greenhouse gas emissions and trends

21. Total aggregate GHG emissions of Annex I Parties significantly decreased in 1990–2019 (by 14.8 per cent without LULUCF and by 18.6 per cent with LULUCF). In 1990–2019, emissions of EIT Parties decreased by 39.0 per cent without LULUCF and by 46.6 per cent with LULUCF. Likewise, there was a decline in the emissions of non-EIT Parties but at a much lower rate (3.7 per cent without LULUCF and 5.4 per cent with LULUCF).

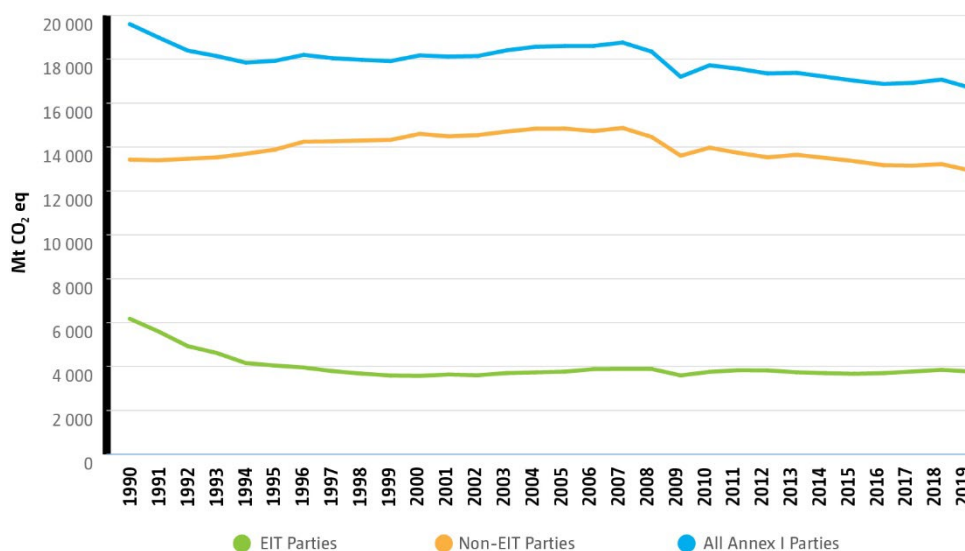
22. The downward trend in emissions was largely influenced by the deep emission cuts by EIT Parties in 1990–2000. Despite economic growth after 2000, emissions either dropped (in the case of non-EIT Parties) or did not increase enough to offset the emission reductions in the 1990s (in the case of EIT Parties) owing to the effect of implemented PaMs.

23. Throughout 1990–2019, the energy sector remained the dominant source of GHG emissions, accounting for 79.7 per cent of Annex I Parties' total emissions in 2019, followed by agriculture and industrial processes and product use, each contributing less than 10.0 per cent of the total emissions, and the waste sector, with the smallest share in the total emissions (around 3.0 per cent). Since 1990, emissions have decreased overall for all sectors, with the largest reduction in the energy sector (2,317 Mt CO₂ eq, or 14.8 per cent), driven by an increase in the share of renewable sources in the electricity mix and improvements in energy efficiency. Other implemented measures, such as reducing the use of nitrogen fertilizers and improving waste collection and segregation systems, alongside modernizing industrial processes and reducing livestock population, have led to lower emissions in the other sectors. Net GHG removals from LULUCF significantly increased (by 40.1 per cent) as a result of expanding forest cover and lowering harvesting rate.

24. Figure 1 shows the levels of and trends in total GHG emissions without LULUCF for 1990–2019 for all Annex I Parties taken together, as well as separately for EIT Parties and non-EIT Parties.

Figure 1

Greenhouse gas emissions without land use, land-use change and forestry of Annex I Parties in 1990–2019



C. Policies and measures

25. Parties are continuing to implement existing measures aimed at achieving their 2020 targets and are increasingly planning and adopting new measures towards achieving their midterm targets for 2030 and implementing their LT-LEDS for 2050. They are capitalizing on their experience in implementing PaMs by tailoring their portfolios to target the key emitting sectors and to include PaMs that are cost-efficient and can bring co-benefits, such as health benefits and job creation, in addition to emission reductions.

26. The key elements for an effective portfolio of PaMs include top-level political commitment, strong policy capacity, the setting of targets and development of midterm and long-term strategies, and effective and comprehensive sets of PaMs (e.g. Australia's Renewable Energy Target scheme; see the box below). They also include rigorous and comprehensive systems for measurement, reporting and verification of emissions (e.g. the EU monitoring mechanism) and for assessment of the effectiveness of the PaMs. Parties did not report drastically changed approaches to developing or implementing portfolios of PaMs in their BR4s, but have built on, enhanced and refined existing structures and measures.

Australia's Renewable Energy Target scheme

The Renewable Energy Target is a scheme developed by the Government of Australia to reduce GHG emissions in the electricity sector by encouraging additional generation of electricity from renewable sources. The scheme creates a guaranteed market for additional renewable energy deployment using a mechanism of tradable certificates that are created by renewable energy generators (such as wind farms) and owners of small-scale renewable energy systems (such as solar photovoltaics). Demand for certificates is created by placing a legal obligation on entities that buy wholesale electricity (mainly electricity retailers) to source and surrender the certificates to the Clean Energy Regulator to demonstrate their compliance with annual obligations. The scheme encompasses both a large-scale renewable energy target, aiming to achieve 33,000 GWh additional renewable electricity generation by 2020, by encouraging investment in renewable power stations, and a small-scale renewable energy scheme, whereby households, small businesses and community groups are assisted with the upfront costs of installing small-scale renewable energy technologies such as rooftop solar photovoltaics and solar hot water systems.

27. Mitigation plays a key role in most Parties' national climate change agendas, and is underpinned by legal and institutional frameworks in the form of climate legislation (e.g. climate acts), approved planning (e.g. LT-LEDS) and structures for political decision-making (e.g. interministerial committees). In their BR4s, a number of Parties reported on their efforts to strengthen these frameworks, including updating and/or enhancing climate framework legislation, enshrining long-term targets to 2050 in legislation, planning a regular schedule for updating targets, and strengthening and/or refining the role of inter-institutional committees on climate change. For example, Denmark has considerably strengthened the role of the Danish Council on Climate Change, created in 2015, to help track progress towards Denmark's climate targets and provide recommendations to help shape climate policy.

28. In their BR4s, Parties reported a total of 2,749 PaMs, with quantified impacts reported for 30.0 per cent of those, totalling estimated 2020 emission reductions of 6,238.81 Mt CO₂ eq.

29. Parties reported on the status of their PaMs (as planned, adopted or implemented),¹² which provides insight into the evolution of the portfolio of measures as the time to account for 2020 targets approaches and Parties shift focus towards their targets for 2030 and beyond. A trend of measures moving through 'life cycles' related to targets is evident throughout the four biennial reporting cycles.

30. In the first three reporting cycles there was a downward trend in the number of measures reported as adopted or planned, from 24.4 to 16.4 per cent, potentially indicating that more PaMs moved into the implementation phase as Parties got closer to the time to account for their 2020 targets (see figure 2). Furthermore, the number of PaMs reported as expired increased from 0.0 per cent in the BR1s and BR2s to 2.0 per cent in the BR3s, potentially because PaMs completed their life cycle or were updated or replaced on the basis of experience. The BR4s indicate that a new policy cycle has begun with regard to post-2020 targets, showing an increased share of planned PaMs reported, up to 22.8 per cent in the BR4s

¹² In some cases, Parties reported as expired PaMs that are no longer in place but were previously reported as implemented.

from 10.1 per cent in the BR3s. Furthermore, PaMs with a starting year of 2019¹³ or later make up a significant share of the PaMs reported (24.2 per cent), with the majority having starting years after 2020. Such measures include both new and updated PaMs, for example the EU ETS, which has been revised for its fourth phase (2021–2030).

31. Energy including transport remains the focus of the PaMs reported in the BR4s. The majority of measures reported in the BR4s were in the energy (30.8 per cent), cross-cutting (19.9 per cent) and transport (18.7 per cent) sectors. In terms of estimated mitigation impacts, energy, cross-cutting and transport measures accounted for 47.9, 19.8 and 18.7 per cent, respectively, of the impacts reported. The 10 PaMs with the largest reported impacts are focused on the energy, industry or transport sectors and together account for 56.3 per cent of all impacts reported by Parties in the BR4s. Examples include the Russian Federation's Energy Action Plan, the EU energy performance of buildings directive, and national initiatives in the United States to reduce GHGs and increase fuel efficiency in light- and heavy-duty vehicles.

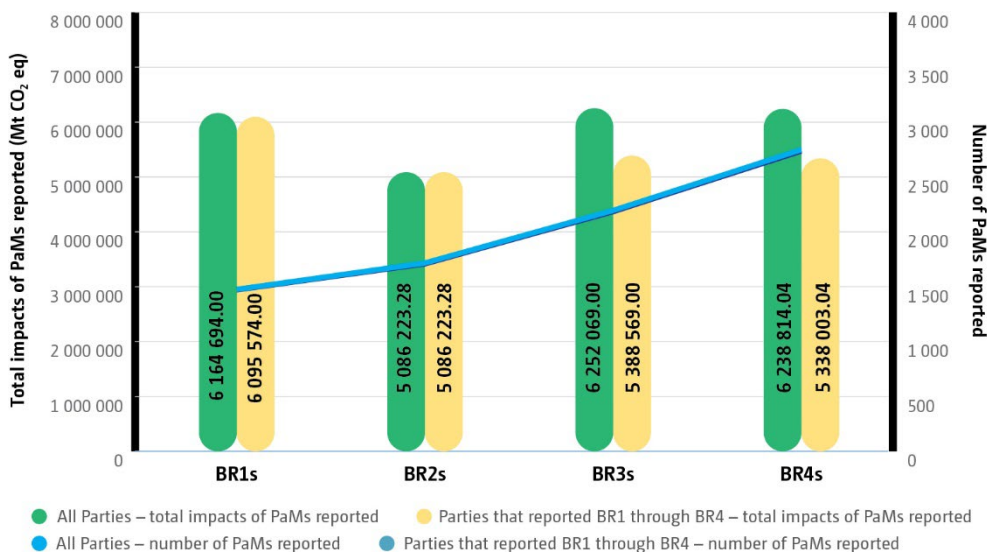
32. Over the four reporting cycles, the clear focus in terms of both the number of mitigation actions and the number of mitigation actions with quantified impacts has been on economic (e.g. green loans in Belgium), fiscal (e.g. road tolls on heavy-duty vehicles in Czechia) and regulatory (e.g. the Renewable Energy Target in Australia) instruments, voluntary agreements (e.g. between the Ministry of Climate and Environment and aluminium-producing industries in Norway) or combinations thereof. Together, these types of action account for 62.0–71.3 per cent of mitigation actions reported and 75.7–90.1 per cent of the quantified impacts. Economic and regulatory instruments dominate, accounting for 19.7–22.2 and 25.8–28.7 per cent of mitigation actions, respectively. The distribution of reported estimated impacts for different instruments has clearly changed over time: the share of impacts from regulatory measures was 55.0 per cent in the BR1s but 47.4 per cent in the BR4s. At the same time, the share of impacts from economic measures was only 4.2 per cent in the BR1s but 21.7 per cent in the BR4s.

33. The majority of Parties use carbon pricing approaches in some form. Prominent examples of trading systems are the EU ETS, the Regional Greenhouse Gas Initiative, a cooperative effort involving 11 states of the United States, and the New Zealand Emissions Trading Scheme, all of which are well established, and the Output-Based Pricing System launched by Canada in 2022. Many Parties reported on combining carbon pricing approaches in the form of levies or taxes and trading systems. The approaches are used in a complementary manner, with trading systems more typically found in subsectors with larger emitters, such as power generation and industrial production, while levies and taxes are more frequently found in areas with a large number of smaller emitters, such as in road transport and the residential and commercial sector.

34. Parties reported on a number of policy developments associated with their post-2020 targets, including strengthening institutional structures and processes, for example with regard to mitigation planning, and reviewing the effectiveness of PaMs. The majority of Parties reported on 2030 targets combined with LT-LEDS up until 2050. Within these LT-LEDS, a number of planned transformational developments were prominent, including a major increase in the share of renewable energy in total power generation, a widespread coal phase-out, the electrification of road transport and, in several countries, a plan to ban vehicles with fossil fuel powered combustion engines from being sold after a certain date. To build the foundation for long-term solutions, research and development efforts are geared towards expanding opportunities for new technologies (e.g. carbon capture, use and storage), finding new ways to apply existing technologies (e.g. hydrogen production from renewable energy sources) and enhancing CO₂ removal in the land-use sector.

¹³ Including new and/or updated PaMs.

Figure 2
Number of policies and measures reported and total impacts of policies and measures reported by Parties in their biennial reports



35. Twenty-six Annex I Parties reported in their BR4s on the assessment of the economic and social consequences of their response measures. Most of them integrated this assessment into national processes for law-making or policymaking, which involved consultations, including open public consultations, together with policy dialogue with trading partners. In general, the information reported is descriptive in nature, with limited information provided on quantitative results or on the methodology and tools used for quantitative assessment. A few Parties, including France, Slovakia and Spain, reported both positive and negative impacts of response measures, and Slovakia reported both qualitative and quantitative impacts of mitigation policies derived using a modelling tool. Some Parties highlighted the difficulty of accurately assessing the economic and social consequences of response measures owing to the lack of an internationally accepted methodology and the uncertainty regarding direct causality and its extent between climate change measures and adverse impacts. Considering the importance of managing the negative impacts of the implementation of response measures on the workforce and overall economy, some Parties highlighted programmes and initiatives undertaken to address just transition, such as establishing a just transition work programme and investing in opportunities to train, retrain and reskill the workforce.

D. Greenhouse gas emission projections

36. Total projected aggregate GHG emissions of Annex I Parties without LULUCF, including the effect of implemented and adopted PaMs (i.e. under the WEM scenario), are expected to be 19.6 per cent lower in 2020 than Parties’ aggregate base-year emissions¹⁴ and 13.6 per cent lower than the 1990 level. Although emissions increased in years up until 2017, the projected total GHG emissions in 2020 are expected to decrease by 1.2 per cent compared with the 2017 level (the most recent historical year used for the projections).

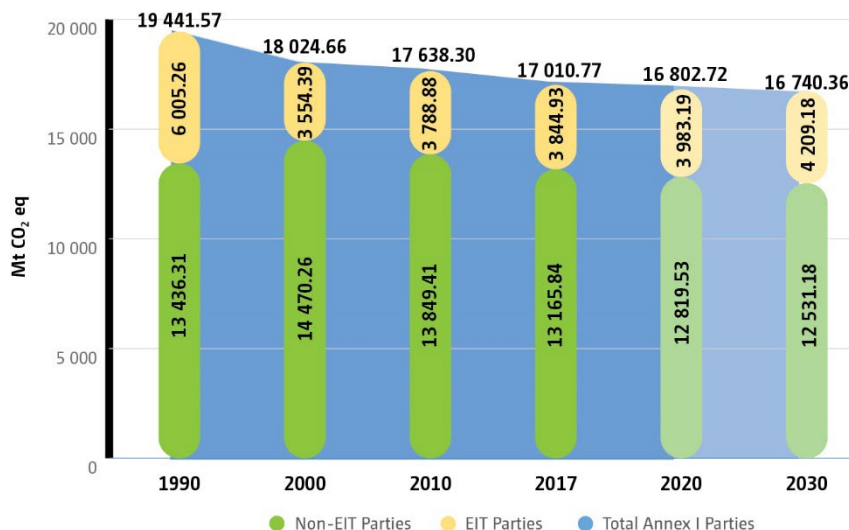
37. The modest projected decrease in emissions for 1990–2020 stems from two trends: (1) the steep decline (of 33.7 per cent) in the emissions of EIT Parties, observed predominantly in the early 1990s as a consequence of the economic downturn and transition to market economies; and (2) the projected decrease in emissions of non-EIT Parties of only 4.6 per cent despite implemented mitigation actions, whose effects were manifested mostly in the late 2000s and after 2010.

¹⁴ The base year for most Annex I Parties is 1990, except for Australia (2000), Canada (2005), Japan (2005) and the United States (2005).

38. Figure 3 presents historical and projected emissions under the WEM scenario for EIT Parties and non-EIT Parties.

Figure 3

Historical and projected greenhouse gas emissions of Annex I Parties without land use, land-use change and forestry under the ‘with measures’ scenario



39. Total emissions for all sectors are projected to decrease by 2020 compared with the 1990 level under the WEM scenario. By 2030, emissions for all sectors are projected to remain below their respective 1990 level; however, emissions from transport, industrial processes and agriculture are expected to be slightly higher in 2030 than in 2020. It is expected that the energy sector including transport will remain the dominant source of GHG emissions in 2020 and 2030, contributing approximately 78 per cent of total emissions.

40. All Parties provided a WEM scenario, but not all Parties provided a WAM scenario. To enable a rough comparison of projections under the WEM and WAM scenarios, where projections were not reported for the WAM scenario, values from the WEM scenario were used as a proxy. Taking this into account, the total GHG emissions of Annex I Parties under the WAM scenario in 2020 are projected to equal 16,686 Mt CO₂ eq, 14.2 per cent lower than the 1990 level. Emissions in 2030 are projected to be 17.6 per cent lower than in 1990, owing to a further 4.0 per cent drop in emissions after 2020.

41. Despite the increased scope and expected strengthening of mitigation actions for beyond 2020, total emissions under the WEM and WAM scenarios are projected to decline by only 0.4 and 4.0 per cent, respectively, between 2020 and 2030. This suggests that implemented and planned mitigation actions may not be sufficient to completely offset the impact of the underlying emission drivers, such as economic and population growth, and to drive emissions down after 2020. It may also suggest that the impacts of the planned mitigation actions reported in the BR4s aimed at achieving the 2030 targets have not been fully accounted for because the impacts depend on what form the legislative and regulatory frameworks supporting their implementation, which have yet to be finalized, will take.

E. Progress towards 2020 targets by 2017 and outlook for achieving midterm and long-term emission reduction goals

42. GHG inventory data for 2017 and projections for 2020 indicate that Annex I Parties are making progress towards their 2020 targets, but gaps to those targets remain for some Parties.

43. The assessment of Parties' individual progress towards their 2020 targets is based on a comparison of the latest levels of GHG emissions reported by Parties for 2017 in their BR4s (in CTF table 4), including the contribution of LULUCF and use of units from market-based mechanisms, where applicable and available, with the base-year emission level and the

targeted emission level for 2020. In quantitative terms, progress towards a target is assessed as the percentage of the targeted emission reduction, expressed as an emission level or budget depending on the nature of the target, achieved by 2017 (see para. 44 below). In addition, for Parties whose emissions in 2017 were above their targeted emission level for 2020, the outlooks for achieving their 2020 targets are presented on the basis of their projected emissions for 2020, together with any plans to use units from market-based mechanisms to make up the shortfall.

44. A few Parties, namely Australia, Iceland, New Zealand, Norway and Switzerland, have implemented their 2020 targets under the Convention using an emission budget approach (e.g. on the basis of their targets under the Kyoto Protocol for the second commitment period (2013–2020)) and, as such, have defined emissions trajectories consistent with those targets. The emission budget for them then represents the cumulative emissions below the emissions trajectory. In such cases, the Party's progress towards its target is assessed by comparing the cumulative emissions, including the contribution of LULUCF and use of market-based mechanisms, as relevant, in 2013–2017 as well as the cumulative projections for 2020 with the emission budget for 2013–2020.

45. In this context, and given that all 2020 targets require a degree of emission reduction below the base-year level, the latest emission levels reported in the BR4s for 2017 can be categorized as follows:

(a) Below both the base-year emission level and the 2020 targeted emission level, which implies that the 2020 target is likely to be achieved, provided emissions do not increase by the end of 2020;

(b) Below the base-year emission level but still above the 2020 targeted emission level, which implies that progress towards the 2020 target has been made but that further efforts are required to achieve it. For Parties applying the emission budget approach, this corresponds to their cumulative emissions in 2013–2017 not exceeding their emission budget for 2013–2020;

(c) Above the base-year emission level, which means that current emission trends diverge from the trajectory towards achieving the 2020 target. For Parties applying the emission budget approach, this corresponds to their cumulative emissions in 2013–2017 having already exceeded their emission budget for 2013–2020.

46. Taking into account emission levels until 2017, reported contributions of LULUCF and use of units from market-based mechanisms, where applicable, and emission projections for 2020, it can be concluded that Parties have made varying individual progress towards their 2020 targets, as shown in figures 4 and 5:

(a) For all Parties, emissions in 2017 were below the base-year level. The emission levels of Belarus, the EU, Japan, Liechtenstein, Monaco and the Russian Federation in 2017 were already lower than their respective base-year level and 2020 targeted emission level. However, the projected emissions of Japan for 2020 under the WEM scenario and Monaco under both the WEM and the WAM scenarios are higher than the targeted emissions for 2020;

(b) Among the Parties not using an emission budget approach, the emissions of Canada, Kazakhstan and the United States for 2017, including the contribution of LULUCF and/or use of units from market-based mechanisms, where applicable, are between the base-year level and the 2020 targeted emission level. The emission reductions achieved by 2017 by these Parties as a percentage of the targeted emission reductions range from 26 to 81 per cent. Moreover, the projected 2020 emission levels of Canada and Kazakhstan under both the WEM and the WAM scenarios are above their targeted emission levels. In contrast, the projected 2020 emission level of the United States under the WEM scenario is below its targeted emission level;

(c) In the case of Parties using an emission budget approach (Australia,¹⁵ Iceland,¹⁶ New Zealand,¹⁷ Norway¹⁸ and Switzerland¹⁹), cumulative emissions (including the contribution of LULUCF and use of units from market-based mechanisms, as relevant) for 2013–2017 correspond to 59–78 per cent of the emission budget. According to projections under the WEM scenario, Australia expects to achieve its emission budget target without using units from market-based mechanisms, while New Zealand, Norway and Switzerland plan to use units from market-based mechanisms to achieve their respective emission budget target. Iceland’s projected emissions for 2020 for non-ETS sectors under the WEM scenario indicate that it is unlikely to meet its 2020 target for these sectors without using units from market-based mechanisms.

¹⁵ Australia follows an emission budget approach in accounting for its target. The budget is calculated by plotting a trajectory of linear decrease from 2010 to 2020 starting from the target level under the first commitment period of the Kyoto Protocol (8 per cent above the 1990 level) and ending at 5 per cent below the 2000 level over 2013–2020. The emission budget represents cumulative emissions below the trajectory. Australia’s cumulative emissions for 2013–2017 were 2,658,760.00 kt CO₂ eq, which corresponds to 59 per cent of its emission budget for 2013–2020 (4,508,000.00 kt CO₂ eq).

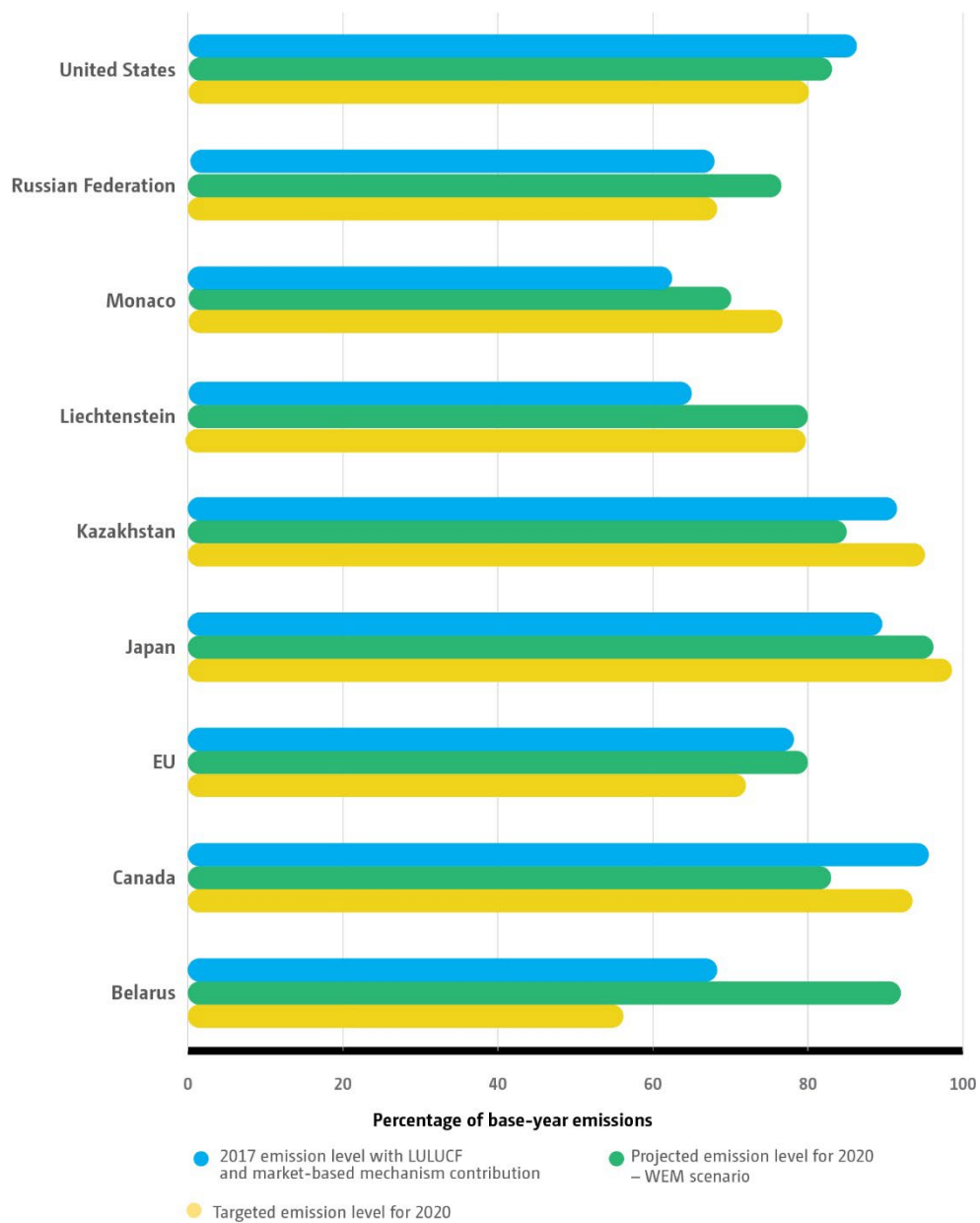
¹⁶ For its target under the Convention, Iceland committed to a joint effort with the EU and its member States in accordance with Article 4 of the Kyoto Protocol. Under its bilateral effort-sharing agreement with the EU, Iceland’s cumulative emission allocation for non-ETS sectors for 2013–2020 is 15,327.22 kt CO₂ eq. Its cumulative emissions including the contribution of LULUCF for 2013–2017 are 12,004.00 kt CO₂ eq, which corresponds to 78.3 per cent of its emission allocation. Iceland therefore has 3,323.00 kt CO₂ eq remaining of in its non-ETS emission budget for 2013–2020. Non-ETS emissions under the WEM scenario are projected to amount to 2,965.00 kt CO₂ eq for 2020 (excluding LULUCF), which indicates that Iceland is unlikely to meet its 2020 target for non-ETS sectors without using units from market-based mechanisms.

¹⁷ New Zealand’s emission budget for 2013–2020 is 509,775.00 kt CO₂ eq. Its cumulative emissions including the contribution of LULUCF for 2013–2017 are 337,705.14 kt CO₂ eq, which corresponds to 66.2 per cent of its emission budget.

¹⁸ Norway’s 30 per cent emission reduction target under the Convention was operationalized through its quantified emission limitation or reduction commitment for the second commitment period of the Kyoto Protocol, which corresponds to an average emission reduction of 16 per cent compared with the 1990 level. Between 2013 and 2017, Norway’s total GHG emissions including the contribution of LULUCF and use of units from market-based mechanisms amounted to 218,083.78 kt CO₂ eq, which corresponds to 62.5 per cent of its assigned amount for the second commitment period of the Kyoto Protocol (348,914.30 kt CO₂ eq).

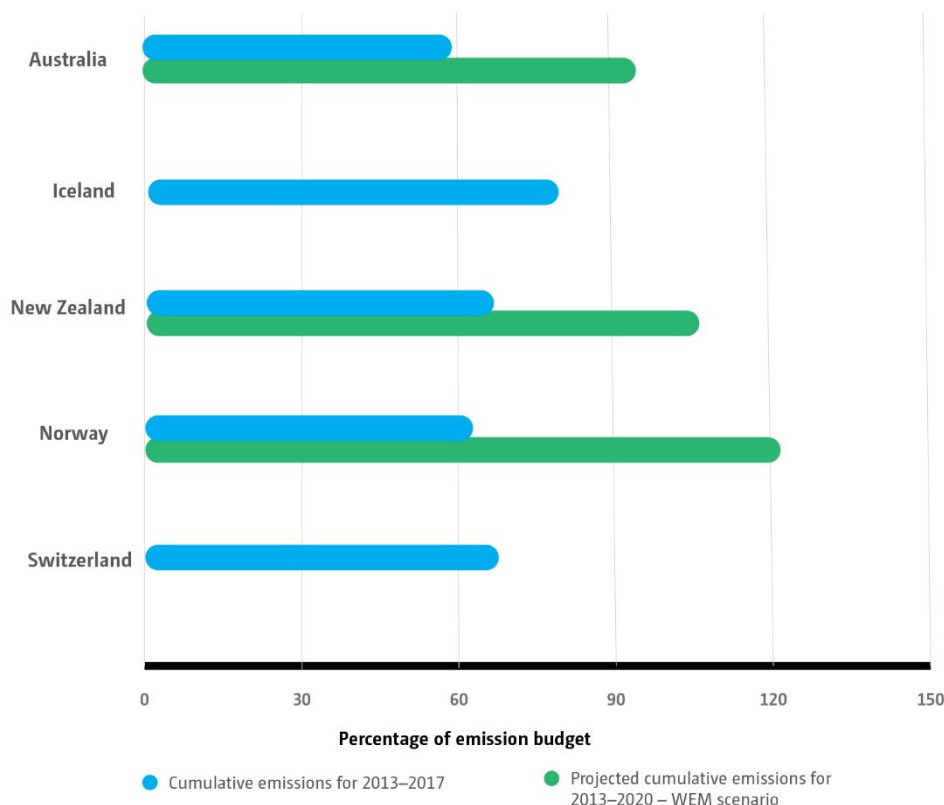
¹⁹ Switzerland assesses progress towards its target under the Convention by accounting against its quantified emission limitation or reduction commitment for the second commitment period of the Kyoto Protocol, which is to reduce emissions by 15.8 per cent below the 1990 level in 2013–2020. In 2013–2017, Switzerland’s cumulative emissions, including the contribution of LULUCF but excluding use of units from market-based mechanisms, amounted to 243,841.79 kt CO₂ eq, which corresponds to 67.4 per cent of its assigned amount for the second commitment period of the Kyoto Protocol (361,768.52 kt CO₂ eq).

Figure 4
Progress towards emission reduction targets for 2020 by Parties with a single-year target



Note: Percentages presented for the EU represent the sum of the emissions of the 27 member States and the United Kingdom.

Figure 5
Progress towards emission reduction targets for 2020 by Annex I Parties using an emission budget approach to achieving their target

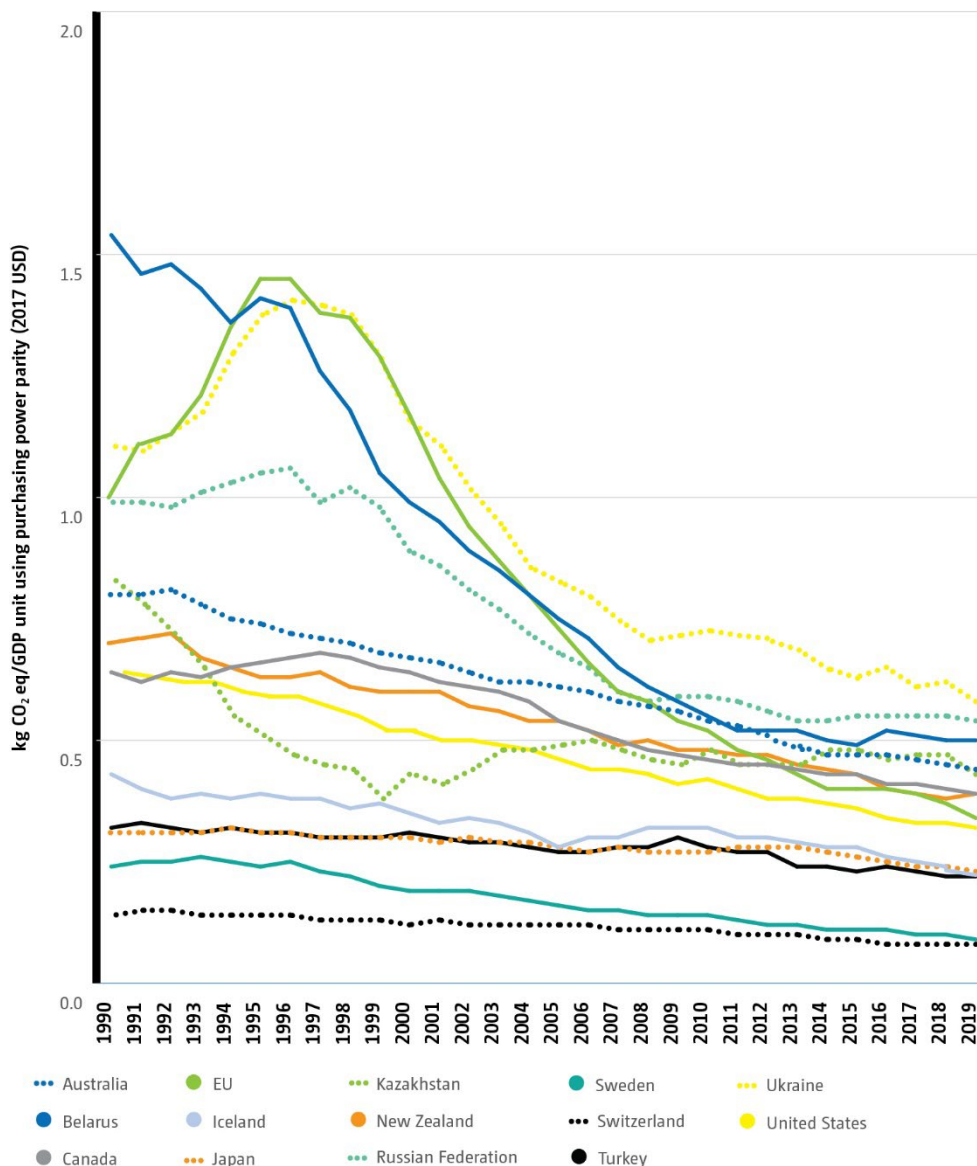


Note: Projected cumulative emissions for 2013–2020 in the WEM scenario for Iceland and Switzerland are not included in the graph because relevant data were not available.

47. From 1990 to 2019, the levels of GHG emissions per capita and GHG emissions per unit of GDP using purchasing power parity were on a downward trend for most Parties; only a few Parties experienced small increases. The downward trend is much more prominent for emissions per unit of GDP using purchasing power parity, reflecting that for most Annex I Parties there has been a decoupling of emissions from economic growth. Figure 6 shows the trends in GHG emissions per unit of GDP using purchasing power parity for Annex I Parties.

48. Overall, it is difficult to accurately attribute GHG emission reductions to specific factors over time using indicators across all Annex I Parties as emission trends have been influenced by a combination of demographic, economy-wide and sector-specific drivers, including, but not limited to, population changes; structural changes in economies (particularly pronounced in EIT Parties); technological improvements in production processes and the shift to less carbon-intensive fossil fuels (e.g. from coal to natural gas); the increased share of renewable energy sources in electricity and heat generation; and increased energy efficiency. However, the analysis of indicators provides evidence that, since 2000, individual Parties have gradually intensified their efforts in implementing mitigation actions aimed at decarbonizing their economies.

Figure 6
Trends in greenhouse gas emissions per unit of gross domestic product using purchasing power parity for Annex I Parties in 1990–2019



Note: Liechtenstein and Monaco are not included because relevant data were not available.

49. Although Parties reported in their BR4s primarily on efforts aimed at meeting their 2020 targets, they also provided information on the economy-wide emission reduction targets in their NDCs and long-term emission reduction goals. This enables a preliminary assessment of the difference between projected emissions in 2030 under the WEM and WAM scenarios, as applicable, and emission levels that correspond to their 2030 targets. Projections under the WEM scenario indicate that none of the Parties will achieve its targeted emission level in 2030. However, most Parties are already putting in place a range of PaMs in order to achieve their 2030 targets. Some Annex I Parties outlined in their BR4s ambitious strategies for meeting the goals enshrined in their long-term emission reduction strategies, typically for 2050.

F. Provision of financial, technological and capacity-building support to developing country Parties

50. Annex II Parties reported quantitative and qualitative information on financial, technological and capacity-building support provided to non-Annex I Parties in 2017–2018 in their BR4s. Consistently with the trend observed since the BR1s (which contain data for 2011–2012), reported climate finance, support for technology transfer and development, and support for capacity-building continue to grow each year, providing more comprehensive support and incentives to developing countries for undertaking mitigation and adaptation activities and strengthening the global response to climate change.

1. Climate finance

51. Overall, climate finance provided by developed to developing countries continues to increase, reflecting a continued commitment to support the global transition to a low-emission, climate-resilient future. In parallel, Parties' reporting on climate finance has continued to improve and expand, with the BR4s including a high number of Parties without financial and reporting obligations (i.e. Annex I Parties not included in Annex II) voluntarily reporting on support provided.²⁰ As a result, the BR4s paint a more comprehensive picture than previous BRs did of global climate finance flows.

52. Total climate finance, as reported in the BR4s, averaged USD 52.2 billion annually in 2017–2018; this represents an increase of 5.9 per cent over the previous biennium 2015–2016, as shown in figure 7.²¹ The largest share (USD 37.8 billion) was reported as climate-specific support, while the share of core/general support (i.e. support provided to multilateral and bilateral institutions that is not considered climate-specific) has been decreasing over time. The share of core/general support decreased from 40.9 per cent of the total in 2011–2012 (as reported in the BR1s) to approximately 27.5 per cent in 2017–2018 (as reported in the BR4s). The growth in climate-specific support can be attributed to Parties responding to the mounting urgency to support climate action by developing countries, Parties progressing towards their climate finance obligations, and multilateral and bilateral finance institutions expanding their climate portfolios. In addition, improved practices for tracking financial flows and/or Parties' decision to reduce or, in a few cases, exclude core/general funding from their financial reporting has resulted in a smaller share of core/general compared with climate-specific support.

53. Two thirds of all climate finance reported in the BR4s (equivalent to an annual average of USD 33.8 billion) was provided through bilateral, regional and other channels, an increase of 6.1 per cent since the BR3s. Of that, nearly two thirds was allocated to mitigation activities. While a greater overall volume of support was allocated to mitigation, at the individual level many Parties continued to view adaptation as a priority and allocated more than half of their annual support to it. In terms of sectors, the largest share of bilateral, regional and other support in 2017–2018 was reported as other (i.e. not allocated to energy, transport, industry, agriculture, forestry, water and sanitation, or cross-cutting). As a result, it is difficult to assess clear sectoral trends within the reporting period or over time. Similarly, determining trends in geographical distribution continues to prove challenging as Parties provided limited disaggregated information on recipient countries, regions, projects, programmes and activities.

54. Annual average support provided through multilateral channels constituted one third of the total support in 2017–2018, an increase of 5.7 per cent since 2015–2016. Support continues to be channelled through a range of multilateral climate funds and financial institutions (including regional development banks), as well as specialized United Nations bodies. Key channels for delivery include the World Bank and the relatively new Green

²⁰ In terms of volume, nearly all climate finance is provided by Annex II Parties (99.8 per cent).

²¹ Average annual support is calculated by summing the contributions over the biennium and calculating the average for the two-year period. Comparisons with data from previous BRs have been calculated directly, without adjusting for inflation, and take into account submissions received since the compilation and synthesis of BR3s. Data on BR3s will therefore differ from those published in the compilation and synthesis of BR3s in 2018.

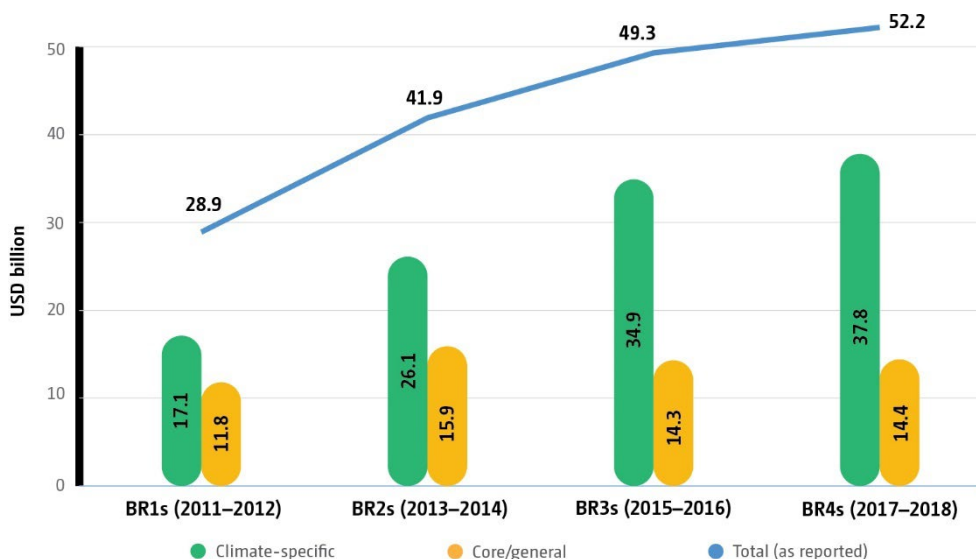
Climate Fund, which has received contributions from a wide range of developed countries (Annex II and Annex I Parties not included in Annex II), as well as nine developing countries.

55. At the same time, growing engagement with the private sector was reflected in the BR4s, highlighting the critical role public funding can play in leveraging private sector support at scale for achieving the objective of the Convention and the goals of the Paris Agreement. While many Parties are still developing their reporting capacity to track private sector flows, those with more advanced systems indicate significant potential for leveraging private funds from targeted public investments. Austria, for example, had limited ability to track private climate finance leveraged prior to 2016; however, as reported in its BR4, it has since implemented an expanded reporting system guided by developments under the OECD Research Collaborative on Tracking Private Climate Finance, and now produces annual estimates of private climate finance mobilized by public investments to get a clearer picture of its total contributions.

56. The BR4s also reflect several new trends in climate finance, including the move towards more detailed sectoral reporting (e.g. specifying subsector allocations using more specific coding such as the OECD Development Assistance Committee purpose codes); the expanded use of innovative financial instruments such as climate insurance to better reduce risks, share costs and incentivize private sector engagement; and the introduction of new reporting areas, such as gender, where Parties have underscored the need to better integrate gender considerations into climate finance, including through gender-responsive planning and gender-sensitive reporting on progress.

Figure 7

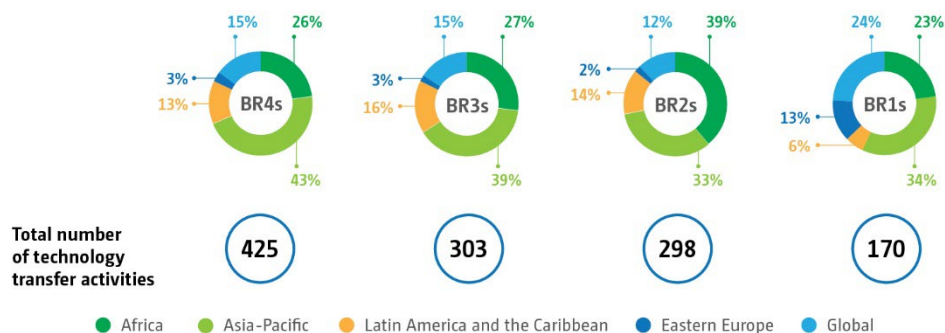
Total climate finance contributions, including climate-specific and core/general support, in 2011–2018, as reported in biennial reports



2. Technology development and transfer

57. Support for technology development and transfer activities has increased significantly, providing a strong foundation for the transformational change envisioned in the Paris Agreement. In their BR4s, Parties reported 425 activities relating to technological support (an increase of 40 per cent compared with those reported in the BR3s) (see figure 8), with more than half of the activities supporting mitigation (56 per cent), a quarter supporting adaptation (28 per cent) and the remainder supporting cross-cutting action. Annex II Parties highlighted their efforts to mainstream technology transfer activities in their development cooperation activities with a view to contributing to sustainable development and achievement of the SDGs. In this context, Parties provided examples of supported technology activities that, besides contributing to achieving climate action (SDG 13), also contribute to achieving other SDGs, such as affordable and clean energy for all (SDG 7) and industry, innovation and infrastructure (SDG 9).

Figure 8
Distribution by region of technology transfer activities reported by Annex II Parties in their biennial reports



58. Support for adaptation technology activities mainly targeted the agriculture, cross-cutting and water sectors. Many of the supported adaptation technology activities in the agriculture sector were related to agricultural practices, such as seed or crop improvement, climate-smart and/or biological farming introduction or general food security improvement. Support for mitigation technology efforts continued to focus on the energy sector. The majority of support for mitigation efforts in the energy sector was related to renewable energy and energy efficiency.

59. Annex II Parties highlighted their efforts to fully respond to the technological support needs of developing country Parties with technology activities in line with the prioritized technology needs identified by 53 non-Annex I Parties in their technology needs assessments and contained in the fourth synthesis report on technology needs.

60. To ensure sustainable uptake of climate technologies by target groups, Annex II Parties provided support for building endogenous capacities and technologies in recipient countries. Activities included collaborating with country partners in the proposal and design stage of activities and involving local people in installing and operating project-related technologies, followed up by tailored training programmes to ensure proper control, function and routine maintenance of the implemented climate technologies.

61. The predominant share of technology activities reported across the BRs has been for the deployment of mature technologies, even though support, as reported in the BR4s, for activities relating to the early stages of the technology cycle, such as research and development and demonstration, has increased compared with that for activities relating to the other stages of the technology cycle. Early-stage activities represented more than one third (36 per cent) of all supported activities.

62. Asia-Pacific has continued to benefit most from the reported technological support, with almost half (43 per cent) of all technological support focusing on the region, while support for technology for the Africa region (26 per cent) and Latin America and the Caribbean (13 per cent) has also not changed significantly since the BR3s (see figure 8).

3. Capacity-building support

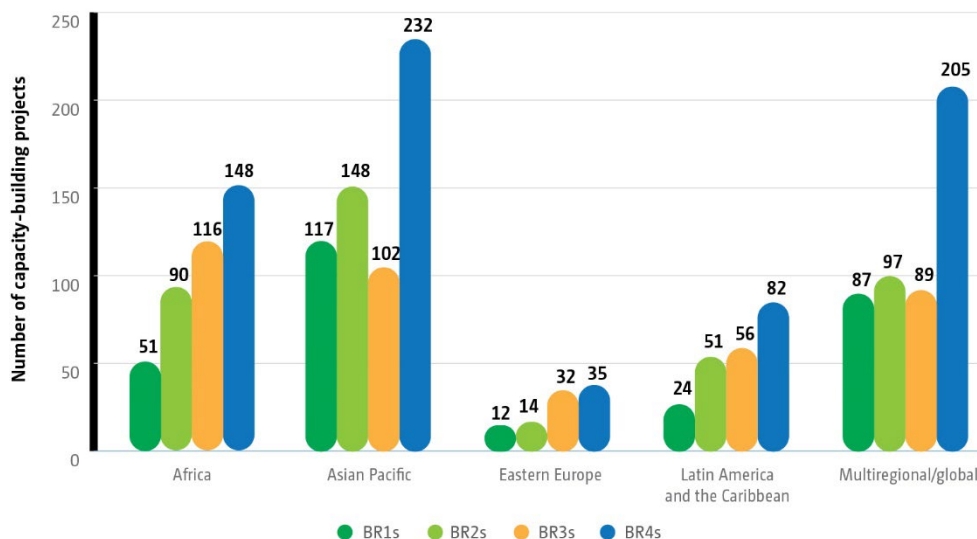
63. Support for capacity-building increased significantly in 2017–2018, with Parties acknowledging the importance of capacity-building as an essential element of climate change mitigation and adaptation policies, initiatives, projects and activities. A total of 702 supported capacity-building activities were reported in the BR4s (in CTF table 9), a 77.7 per cent increase over the number reported in the BR3s (395) and a 75.5 per cent increase over the number reported in the BR2s (400).

64. Adaptation is increasingly becoming a priority focus for capacity-building. Similar to in 2015–2016, in 2017–2018 there was more support for capacity-building projects on adaptation than for those on mitigation and other areas. Of the total 702 projects, 281 (40.0 per cent) were focused on adaptation, 201 (28.6 per cent) were reported as distinctly supporting mitigation, 193 (27.4 per cent) were supporting multiple areas and the remaining 4.0 per cent were technology transfer and other projects.

65. Asia-Pacific and Africa continue to be the priority regions for capacity-building. In 2017–2018 Asia-Pacific benefited most from the reported capacity-building support, accounting for a 33.0 per cent share of the total support for capacity-building activities, followed by multiregional and global activities (29.2 per cent share) and Africa (21 per cent share). By contrast, according to the BR3s, Africa previously had the biggest share (29.3 per cent) of capacity-building support, followed by Asia-Pacific (25.8 per cent) (see figure 9).

Figure 9

Number of capacity-building support projects reported in biennial reports, by region



66. In terms of the geographical distribution of the various types of support provided, as reported in the BR4s, 38.2 per cent of the support for adaptation was provided to the Asia-Pacific region, followed by multiregional or global support accounting for 24.0 per cent and the Africa region for 22.3 per cent. In total, 44.7 per cent of the support for mitigation was provided to multiregional or global projects, followed by Asia-Pacific and Africa accounting for 31.7 and 15.1 per cent of support, respectively. With regard to projects targeting cross-cutting projects, 30.1 per cent of support was allocated to Asia-Pacific, followed by Africa, Latin America and the Caribbean, and multiregional or global projects, accounting for 26.4, 22.3 and 19.7 per cent, respectively.

67. As reported in the BR4s, 23.8 per cent of the capacity-building projects targeted the energy sector, followed by agriculture and water with 16.4 and 15.9 per cent shares, respectively. Most of the projects on energy focused on energy efficiency and renewable energy alternatives. The Global Energy Transformation Programme, which is being implemented worldwide but with a focus on sub-Saharan Africa, stimulates investment in renewable energy in developing countries through pipeline development and private sector mobilization.

68. To ensure coherence and coordination, many Parties are linking capacity-building support with the SDGs; for instance, Denmark provided support in relation to SDG 7 (affordable and clean energy for all) through the Sustainable Energy for All initiative. Regarding how the provided capacity-building support responds to the existing and emerging capacity-building needs identified by non-Annex I Parties in the areas of mitigation, adaptation and technology development and transfer, some Parties highlighted the importance of promoting country ownership, consulting stakeholders and responding to the needs expressed by non-Annex I Parties in their national communications.

69. Bilateral collaboration through development agencies remains the main vehicle for providing capacity-building support. Several Parties highlighted the provision of capacity-building support through the operating entities of the Financial Mechanism, multilateral development organizations and United Nations organizations. The Green Climate Fund and the European Development Fund were also mentioned as important channels.