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Implementation of the framework for capacity-building in developing countries

Synthesis report by the secretariat

Summary

This synthesis report has been prepared to support the Subsidiary Body for Implementation in its annual monitoring and evaluation, in accordance with decisions 2/CP.7 and 29/CMP.1, of the implementation of the framework for capacity-building in developing countries established under decision 2/CP.7. It draws on information synthesized from biennial reports, biennial update reports and national communications. The information contained in this report, presented consistently with the 15 priority areas for capacity-building in developing countries set out in the annex to decision 2/CP.7, may assist in reviewing progress in the implementation of the capacity-building framework and identifying areas where additional capacity-building support is required. Further, the report contains information on emerging or new areas for capacity-building identified in the national reports considered.

Abbreviations and acronyms

Annex II Party	Party included in Annex II to the Convention
BR	biennial report
BUR	biennial update report
CDM	clean development mechanism
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
CTF	common tabular format
GHG	greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
MRV	measurement, reporting and verification
NAMA	nationally appropriate mitigation action
NAP	national adaptation plan
NC	national communication
NDC	nationally determined contribution
PCCB	Paris Committee on Capacity-building
RCC	regional collaboration centre

I. Introduction

A. Mandate

1. The Conference of the Parties requested the secretariat to produce annually a synthesis report on activities undertaken to implement the framework for capacity-building in developing countries established under decision 2/CP.7.¹
2. The Conference of the Parties also requested the secretariat to make the report available to the Subsidiary Body for Implementation at its sessions coinciding with the annual Durban Forum on capacity-building to facilitate discussions at the Forum.² In addition, it decided that the report will serve as input to the work of the PCCB.³
3. The CMP requested the secretariat to consider in the report capacity-building activities related to the implementation of the Kyoto Protocol in developing countries.⁴

B. Scope

4. This report summarizes information on the extent of the implementation of the capacity-building framework, thus enabling annual monitoring of progress and identification of areas where additional capacity-building support is required.
5. The report contains information that can be used by the PCCB in implementing its 2021–2024 workplan⁵. The 2024 focus area of the PCCB is capacity-building support for adaptation, with a focus on addressing gaps and needs related to accessing finance for NAPs.
6. The information in this report relates to activities reported between March 2023 and February 2024 in 14 BRs,⁶ 19 BURs,⁷ 14 NCs⁸ and 11 NAPs.⁹ The information relevant to the Kyoto Protocol comes from the CDM-related sections of those national reports and the 2023 report of the CDM Executive Board to the CMP.¹⁰
7. This report is limited in scope to reporting under the Convention in the context of the 15 priority areas of the capacity-building framework.¹¹ Therefore, information on capacity-building reported in NDCs and adaptation communications under the Paris Agreement, while noted, is considered beyond the scope of the report. The evolving transparency arrangements under the UNFCCC, particularly the adoption of new reporting instruments under the Paris Agreement, including the biennial transparency report, may necessitate adjustments to the scope of these annual synthesis reports in the future.
8. A summary highlighting the main findings from the synthesized information is followed by chapters on:
 - (a) Capacity-building undertaken, and gaps and needs identified by developing country Parties within the scope of the 15 priority areas of the capacity-building framework (see chap. III below);
 - (b) Emerging or new areas for capacity-building and associated gaps and needs identified by developing country Parties (see chap. IV below);

¹ Decisions 2/CP.7, para. 9(c), and 4/CP.12, para. 1(c).

² Decision 1/CP.18, para. 78.

³ Decision 1/CP.21, para. 79.

⁴ Decisions 29/CMP.1, para. 4, and 6/CMP.2, para. 1(c).

⁵ Contained in annex I to document FCCC/SBI/2020/13.

⁶ Available at <https://unfccc.int/BR5>.

⁷ Available at <https://unfccc.int/BURs>.

⁸ Available at <https://unfccc.int/NC8>.

⁹ Available at <https://napcentral.org/submitted-naps>.

¹⁰ FCCC/KP/CMP/2023/5.

¹¹ As per decision 2/CP.7, annex, para. 15.

(c) Capacity-building support provided by Annex II and other Parties to address the gaps and needs identified within the scope of the capacity-building framework (see chap. V below);

(d) Capacity-building activities under the Kyoto Protocol (see chap. VI below).

C. Possible action by the Subsidiary Body for Implementation

9. The Subsidiary Body for Implementation may wish to use the information in this report:

(a) In monitoring and reviewing the implementation of the capacity-building framework;

(b) In considering how to enhance reporting on the impacts of capacity-building activities, as well as best practices and lessons learned and how they could inform processes under the Convention in order to enhance the implementation of capacity-building activities;¹²

(c) As input to discussions at the 13th Durban Forum on capacity-building and the 8th meeting of the PCCB.

D. Possible action by the Paris Committee on Capacity-building

10. The PCCB may wish to use the information in this report for:

(a) Enhancing coherence and coordination of capacity-building under the Convention with a focus on avoiding duplication of efforts, including through collaboration with bodies under and outside the Convention that engage in activities related to capacity-building, as appropriate and in accordance with their respective mandates;

(b) Identifying capacity gaps and needs, both current and emerging, and recommending ways to address them;

(c) Promoting awareness-raising, knowledge- and information-sharing and stakeholder engagement with bodies and relevant actors under and outside the Convention, as appropriate and in accordance with their respective mandates.

II. Summary of main findings

11. Capacity-building is integral to implementing the Convention, the Kyoto Protocol and the Paris Agreement, with capacity-building efforts described by Parties as strategic priorities and essential in all sectors. Although, when providing information on capacity-building in their reports, Parties do not always refer directly to the capacity-building framework, this report is structured according to its 15 priority areas, many of which are complementary and cross-cutting.

12. Capacity-building is progressing at the institutional, systemic and individual level: institutional arrangements are being enhanced; national policies and government entities for addressing climate change are increasingly being established; climate change expertise is increasing in developing countries; systematic procedures and methodologies for evaluating the effects of climate action are being developed; subnational frameworks for climate change response have been institutionalized; tracking reports for MRV systems are being developed to enhance transparency; policy reforms have been implemented and coordination mechanisms and frameworks to guide capacity-building efforts have been established; public awareness and participation initiatives have been implemented; a number of Parties are incorporating gender considerations and traditional knowledge into climate policies; and some developing countries have obtained financial support from various funds and

¹² As per decision 16/CP.22, para. 3.

institutions to develop and improve electronic systems for better managing climate-related information.

13. In terms of modalities for capacity-building, Parties highlighted efforts such as training, workshops, seminars, public consultations, educational initiatives and programmes, joint collaboration and cooperation between research institutions, sharing best practices for adaptation and mitigation, retaining specialists and expertise for developing and delivering reports, awareness-raising campaigns and scholarships. In addition, Parties described opportunities for capacity-building under the UNFCCC as well as other international organizations and financial institutions.

14. With regard to capacity-building needs, Parties reported requiring support for compiling GHG inventories and reporting; sectoral technology needs assessment; including consideration of gender equality in climate change related policymaking and decision-making; ensuring coordination across ministries, local government, the private sector and other stakeholders for implementing climate action; initiating appropriate legislation to facilitate access to data and data collection; sharing data among sectors; resource mobilization; knowledge management; policy reviews and educational reforms for integrating climate change learning into national education and training systems; and promoting awareness and use of Indigenous and traditional knowledge systems.

15. Parties provided details of support received or provided for capacity-building in the following areas: establishing institutional arrangements; preparing national reports; participating in international climate change negotiations; collecting and analysing data and disseminating information; using the IPCC inventory software; accessing climate finance and mobilizing resources; monitoring NAP implementation; and monitoring gender consideration, social inclusion and stakeholder participation in climate action.

16. By region, Africa received the largest share of the reported capacity-building support, followed by global, Eastern Europe, Asia and the Pacific, and Latin America and the Caribbean. The largest shares of the support were provided to projects targeting multiple areas and adaptation, followed by mitigation and technology transfer. Capacity-building support is primarily delivered by multilateral support entities and international organizations as well as by Annex II Parties through bilateral support and development agencies. Parties reported on bilateral support in the form of grants, technical assistance and loans, as well as multilateral support in the form of grants.

17. Parties have observed that the evolving nature of climate change, science and policy is leading to emerging or new areas for capacity-building not provided for under the capacity-building framework, which include establishing complementary scientific and technical capacity and scientific collaboration, developing projects in the field of information and communication technology and key enabling technologies, deploying solar-powered electricity to reduce dependence on fossil fuels, developing tools for short-term energy forecasting, promoting educational reforms and programmes, promoting inclusive green entrepreneurship, supporting climate-smart agriculture and market development, supporting the biogas sector, strengthening information, capacity and tools in the area of disaster risk management, and investigating the effects of climate change on demographic processes and the occurrence of internal migration.

III. Implementation of the capacity-building framework

A. Institutional capacity-building, including strengthening or establishing, as appropriate, national climate change secretariats or national focal points

18. Parties reported measures undertaken for enhancing institutional capacity, such as:

(a) Strengthening coordination, collaboration and partnerships between government ministries, agencies and departments, as well as partnerships with research institutions, international organizations and civil society organizations, to enhance

coordination efforts, knowledge-sharing and exchange of best practices and to leverage expertise and resources;

(b) Establishing institutions and bodies, such as ministries, departments and national focal points, to oversee the formulation and update of climate-related policies, coordinate activities and implement international climate agreements;

(c) Building technical expertise through training programmes, workshops and capacity-building initiatives to ensure that the necessary skills and knowledge for effectively addressing climate change challenges are developed;

(d) Improving capacity for data collection and analysis in order to better understand the impacts of climate change and develop evidence-based policies and measures by investing in data management systems, conducting research studies and using advanced analytical tools;

(e) Promoting public awareness and participation initiatives in order to build resilience through workshops, seminars and public consultations to educate the public about climate change and encourage active participation in mitigation and adaptation activities, as well as encouraging the integration of climate awareness and sustainability into decision-making and action at all levels of society;

(f) Enhancing policy and regulatory frameworks that support institutional capacity-building for climate change mitigation and adaptation efforts by setting targets, establishing standards, creating incentives to encourage sustainable practices, and establishing clear roles and responsibilities within ministries, as well as providing the necessary resources and support for effective policy implementation;

(g) Establishing monitoring mechanisms to assess the effectiveness of institutional capacity-building efforts and to help in identifying areas for improvement in order to ensure effective resource allocation.

19. Parties described needs for institutional capacity-building in relation to:

(a) Enhancing the knowledge and skills of institutions and individuals involved in climate change governance and management with regard to climate change science, policy implementation, international climate agreements, aligning national policies with global goals, and coordinating climate action across sectors and levels of government;

(b) Strengthening collaboration and coordination among government ministries and agencies, as well as non-governmental organizations, to ensure data provision and effective implementation of climate policies;

(c) Reinforcing institutional capacity-building in areas such as climate planning, project management, policy integration, accessing and managing financial resources for climate change initiatives and establishing long-term policies and strategies for sustainable development;

(d) Implementing resilience mechanisms for urban areas and other settlements, including in vulnerable sectors like agriculture, water and health;

(e) Enhancing planning of sector-specific climate action, appointing more focal points for climate change adaptation and increasing resources for generating data for decision-making and planning.

B. Enhancement and/or creation of an enabling environment

20. Parties reported legal and political arrangements that contribute to an enabling environment for climate action; for example, establishing national designated entities to develop and implement environmental and climate policies; undertaking MRV of adaptation action and processes; developing cross-sectoral plans and policies; subnational governments adopting regional climate change programmes; implementing comprehensive laws and regulations that provide a legal basis for effective climate action; collaborating with and including different stakeholders in policymaking; enforcing international agreements;

enhancing international cooperation and data-sharing; incorporating gender considerations and traditional knowledge into climate policies; implementing tailored policies on education, training and climate change awareness in sectors like energy, infrastructure, waste management, transport, and forestry, as well as carbon-intensive sectors; implementing climate change policies and developing a national GHG inventory system that includes working groups for different sectors and thematic teams for preparing NCs and updating BURs.

21. Parties reported that strengthening coordination between ministries, establishing institutional frameworks and updating policy documents related to NAP implementation contribute to an enabling environment for climate action by enhancing resilience, creating institutional and human capacity, increasing access to financial and technical resources, integrating climate change adaptation into national and local planning, and promoting synergies between climate action and the achievement of the Sustainable Development Goals. One Party reported that updating and communicating its NDC creates an enabling environment for achieving global climate action and ambitious national targets. Another Party described the development of NCs and GHG inventory reports as important for enhancing an enabling environment for climate action.

22. Parties highlighted the need for strong policies and regulatory frameworks to provide clear guidelines and incentives for climate action, including setting emission reduction targets, implementing carbon pricing mechanisms and promoting use of renewable energy sources. They expressed the need to reinforce awareness-raising campaigns concerning priority areas such as adaptation and mitigation, including in relation to reducing energy consumption, using renewable energy, promoting environmentally conscious consumption and resilience-building, to encourage active public participation in climate action. They expressed the need for collaboration and partnerships to foster cooperation between stakeholders, including government agencies, civil society organizations and the private sector, to enable the sharing of expertise, resources and best practices for climate action.

23. Parties highlighted the need to facilitate the transfer of clean and sustainable technologies from developed to developing countries for reducing GHG emissions and promoting climate resilience, including by providing technical assistance, capacity-building and knowledge-sharing to ensure effective adoption and implementation of climate-friendly technologies.

C. National communications

24. Parties described how preparing NCs and BURs helps to build capacity for, inter alia, establishing or strengthening institutional arrangements; developing institutional frameworks and policies for climate change adaptation and mitigation; developing robust MRV to track progress of climate action; fostering collaboration and knowledge-sharing among stakeholders, including government agencies, research institutions and civil society organizations; conducting comprehensive vulnerability assessments; enhancing understanding of the current climate situation and future climate change projections; and encouraging the development of technical expertise and skills in data collection, analysis and reporting.

25. In terms of support received, Parties reported receiving financial, technical and technological support for preparing NCs and BURs, including partnership and supervision by international experts from development partners through, for example, training programmes, knowledge-sharing and access to resources and tools. Parties highlighted technical support received for preparing NCs and BURs from government, national agencies and research institutions in terms of data, information and tools.

26. Parties highlighted capacity-building needs for preparing NCs and BURs, including the need to:

(a) Enhance technical expertise in applying GHG inventory methodologies and collecting and analysing data in order to ensure accurate and reliable reporting of GHG emissions and removals;

- (b) Provide training programmes and resources for teachers and lecturers to improve the quality of education and awareness on climate change;
- (c) Strengthen relevant institutional frameworks and coordination mechanisms by establishing clear roles and responsibilities, enhancing interministerial collaboration, enhancing the capacity of national focal points and improving communication channels;
- (d) Provide training and knowledge-sharing opportunities for government officials to enhance understanding of climate change concepts, reporting guidelines and inventory methodologies through, inter alia, workshops, seminars, peer-to-peer learning and knowledge-sharing platforms;
- (e) Invest in technological advancements and innovative tools to improve data collection, analysis and reporting.

D. National climate change programmes

27. Parties highlighted national climate change programmes with capacity-building components, such as an awareness-raising plan for 2017–2030 aimed at integrating climate awareness and sustainability into decision-making and action at all levels of society; postgraduate programmes on climate change; a technical assistance programme for strengthening climate governance, integrating adaptation into public policies and implementing adaptation projects; a national programme to improve energy efficiency; national climate change policy or strategy plans; and sectoral development plans.

28. Parties highlighted that national climate change programmes have provided technical assistance and support to stakeholders such as government agencies, local communities and civil society organizations and were delivered through capacity-building activities like training, knowledge-sharing, awareness-raising, developing skills and expertise in climate change adaptation and mitigation, and strengthening institutional frameworks.

29. Parties noted that, for such programmes to be implemented, monitoring, reporting and evaluation of adaptation action and processes, as well as provision of new and additional financial resources and assistance to developing country Parties that are particularly vulnerable to climate change, are important. Additionally, Parties highlighted the importance of updating sectoral policy documents and considering regional circumstances and areas of competence when implementing national programmes.

E. Greenhouse gas inventories, emission database management and systems for collecting, managing and utilizing activity data and emission factors

30. Parties provided examples of implemented capacity-building for preparing GHG inventories and establishing sustainable inventory management systems:

- (a) Training officers from ministries in using the methodologies set out in the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*,¹³ including to support the modelling of the GHG inventory development process;
- (b) Providing training sessions and workshops to enhance the technical skills and knowledge of individuals involved in GHG inventory preparation in relation to data collection, calculation methodologies and reporting requirements;
- (c) Promoting scalable MRV systems and strengthening the overall transparency and effectiveness of GHG inventory systems;
- (d) Facilitating the sharing of relevant knowledge and best practices at the global, regional and national level via platforms;

¹³ IPCC. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. S Eggleston, L Buendia, K Miwa, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at <http://www.ipcc-nggip.iges.or.jp/public/2006gl>.

(e) Providing technical guidance, establishing legal frameworks and enhancing collaborative efforts between government entities and stakeholders to enhance the skills and knowledge of involved parties in order to ensure the timely collection and quality of the data for the national inventory.

31. For preparing their GHG inventories, Parties reported needs for capacity-building for:

(a) Conducting awareness-raising and encouraging active public participation in priority areas such as adaptation and mitigation, including in relation to reducing energy consumption, promoting use of renewable energy and environmentally conscious consumption, and preparing households and workplaces for the negative effects of climate change;

(b) Improving collaboration with international organizations for sharing knowledge and best practices, including between entities involved in inventory preparation, such as coordination between government departments and the designated contact points of the competent ministries;

(c) Data collection, analysis and management, developing standardized methodologies, quality assurance and quality control, accessing technical tools and resources, estimating emissions, and calculating and reporting emissions by sector;

(d) Conducting research and development of country-specific emission factors;

(e) Developing national MRV systems for tracking progress and ensuring transparency of GHG inventory preparation.

F. Vulnerability and adaptation assessment

32. Many Parties described measures undertaken to build capacity for vulnerability and adaptation assessment, including:

(a) Institutional strengthening by improving coordination mechanisms, and establishing units or departments and enhancing availability of resources and tools for vulnerability and adaptation assessment;

(b) Training individuals involved in vulnerability and adaptation assessment, mobilizing climate finance for implementing adaptation policies and measures, and mainstreaming and upscaling climate change adaptation in sectoral and provincial development plans;

(c) Promoting education, research and awareness-raising through workshops and seminars to disseminate knowledge and share best practices in relation to assessing vulnerability and implementing adaptation measures;

(d) Integrating consideration of gender and youth into NAP policies and actions related to vulnerability and adaptation assessment.

33. Parties highlighted capacity-building needs in this area, including:

(a) Promoting stakeholder engagement, inter alia, by providing training on participatory approaches, facilitating multi-stakeholder dialogues and incorporating local knowledge and perspectives into vulnerability and adaptation assessment;

(b) Enhancing knowledge on scenario planning techniques to enable assessment of future climate impacts and development of adaptation strategies at the institutional and individual level;

(c) Enhancing institutional capacity to collect, analyse and interpret data for vulnerability and adaptation assessment.

G. Capacity-building for implementation of adaptation measures

34. Parties described a wide range of implemented measures for building capacity for adaptation, including:

- (a) Building the technical and scientific knowledge and skills necessary for effective adaptation planning and implementation;
- (b) Integrating adaptation into policies and planning, and mainstreaming adaptation considerations in national policies, plans and strategies across sectors, including to consolidate climate governance and implement foundational adaptation projects;
- (c) Promoting knowledge-sharing and learning to facilitate exchange of information, experience, communication strategies and best practices among countries and stakeholders, including government agencies, non-governmental organizations and communities, to enhance learning and improve adaptation efforts;
- (d) Developing training programmes and workshops to enhance knowledge and skills related to adaptation;
- (e) Strengthening institutional capacity by providing resources and support to organizations involved in adaptation efforts;
- (f) Conducting research and assessments to better understand the impacts of climate change and identify effective adaptation strategies;
- (g) Providing financial resources to support capacity-building initiatives, such as funding for training programmes and the establishment of climate change adaptation centres;
- (h) Incorporating traditional knowledge into adaptation strategies, recognizing the importance of diverse community voices and local culture, including consideration of gender and intergenerational equity;
- (i) Creating enabling environments for integrating adaptation into planning and budgeting at the national, provincial and district level;
- (j) Strengthening coordination and the institutional framework, including updating policy documents, related to NAP implementation;
- (k) Increasing support to promote energy efficiency in buildings, including the share of renewable energy used for space heating, and the energy efficiency of residential electricity demand.

35. Parties reported capacity-building provided for implementing the following adaptation actions in the following sectors:

- (a) Agriculture, including developing effective climate risk management tools in vulnerable regions, promoting alternative livelihoods, improving grasses and legumes for ruminant feeding, adopting alternative livelihoods for households dependent on natural resources, strengthening food security, establishing gene banks for animal species, promoting improved breeding and management methods, enhancing veterinary services, developing activities for soil protection, implementing water-saving irrigation systems, improving fertilizer management and ensuring animal welfare in changing climatic conditions;
- (b) Water resource management, including improving water supply and natural capacity for infiltration and water recharge, improving coordination of water consumption, managing low water levels and developing adaptive flood risk management, improving ecosystem-based adaptation through ecosystem restoration and watershed management, and effectively implementing water legislation and integrated water resource management;
- (c) Forests, including optimizing forestry levers for climate change adaptation, enhancing the function of forests as carbon sinks, promoting nature-based solutions for conserving biodiversity, selecting appropriate tree species (including forest soil-friendly management), reducing damage to wildlife, preventing forest fires and using innovative wood processing techniques;
- (d) Disaster risk reduction, including enhancing social protection by providing safe shelters for the community, effectively responding to and caring for vulnerable groups, improving coordination on disaster risk management and responding to disease in case of disaster;

(e) Private sector, including strengthening communication and partnerships between the private sector and government, improving private sector risk management through appropriate insurance policies, and improving the regulatory environment to support the local private sector and encourage foreign investment;

(f) Social and cultural, including developing a relocation strategy, strengthening use of cultural and traditional practices and knowledge, and enhancing family and community well-being;

(g) Spatial planning, including developing cross-sectoral efforts for improving climate action and promoting solutions with multiple benefits, such as developing measures related to tourism, recreation, nature and health;

(h) Health, including strengthening health systems in order to address climate-related health risks, enhancing disease surveillance and early warning systems, and promoting climate-resilient health-care facilities.

36. Identified needs in this area include capacity-building for identifying climate change vulnerabilities; developing medium- and long-term adaptation action to minimize climate impacts; integrating climate change adaptation into national, sectoral and subnational planning and budgeting processes; strengthening institutional and technical capacity for implementing identified priority adaptation actions; accessing funding for adaptation through multilateral funding mechanisms; building evidence-based support for policy implementation to enhance climate change adaptation governance and legal frameworks; providing training on greenhouse and aquaculture infrastructure, climate- and disease-resistant food crops, affordable feed for livestock and poultry, and disease-resistant animals; enhancing early warning systems for climate-related disasters; and promoting community-based disaster risk reduction measures.

H. Assessment for implementation of mitigation options

37. Regarding capacity-building undertaken for assessing, formulating and implementing mitigation options, Parties mentioned, inter alia, enhancing policy and regulation, technology transfer, promoting education and awareness campaigns, international cooperation and providing financial incentives, including carbon pricing mechanisms, such as carbon taxes or emissions trading systems.

38. Parties reported the following capacity-building support received for implementing mitigation options in several sectors:

(a) Agriculture, including providing climate-smart agriculture, adopting alternative livelihoods, promoting improved grasses and legumes for ruminant feeding, controlling nitrate use, extending analysis-based fertilizer use, establishing agriculture-based specialized organized industrial zones, and implementing land consolidation and environment-based agricultural land protection programmes;

(b) Energy, including providing alternative sources of energy, lobbying government to implement off-grid power supply for households, developing and scaling up alternative renewable energy programmes to diversify energy sources, upgrading existing technologies, transitioning to renewable energy sources like solar and wind power, and promoting sustainable practices;

(c) Transport, including implementing policies and measures to encourage modal shift to public transport, strengthening railway transport, blending ethanol and biodiesel in gasoline and diesel types respectively, and promoting use of electric and hybrid vehicles;

(d) Tourism infrastructure, including increasing demand for green and climate-resilient buildings, and increasing investment in the development of and promoting climate-resilient infrastructure;

(e) Cross-cutting, including implementing policies and measures for establishing an emissions trading system, implementing MRV of emissions, establishing a voluntary

carbon market, encouraging eco-design and energy labelling, and promoting local climate change action plans.

39. Parties identified capacity-building needs in this area, including:

- (a) Training on GHG inventories and mitigation measures, the MRV system in terms of GHG inventories and mitigation, and strengthening NDCs through MRV and increased transparency;
- (b) Enhancing technical capacity by building the knowledge and skills necessary to implement and operate mitigation technologies effectively;
- (c) Strengthening institutional capacity to develop and implement mitigation policies and measures, including through horizontal coordination, networking and managing information flows between ministries, different levels of government and civil society;
- (d) For developing robust systems for MRV of the impact of mitigation actions;
- (e) For strengthening policy and legal frameworks, inter alia, by updating and amending sectoral legislation to align with climate legislation and mainstreaming climate change considerations in key planning and decision-making, as well as incorporating climate change requirements into legislative documents related to regional and urban planning.

I. Research and systematic observation, including meteorological, hydrological and climatological services

40. Highlighting their limited institutional, technical, technological and financial resources for research and systematic observation, Parties identified capacity-building needs in this area for implementing policies while incorporating traditional knowledge and diverse community voices; enhancing systematic observation of climatic parameters and modelling capabilities; conducting gap and capacity analysis and constructing and rehabilitating basic observation stations; developing training programmes and capacity-building initiatives to enhance the skills and expertise of researchers and scientists in the field of research and systematic observation; and enhancing infrastructure and resources for effective research and systematic observation, including the availability of well-equipped laboratories and data management systems, and access to reliable and up-to-date scientific information and databases.

41. Some Parties reported capacity-building undertaken for strengthening research and systematic observation, such as:

- (a) Training meteorologists to use advanced observation techniques and instruments, such as weather radars or satellite imagery, models, statistical analysis and data visualization techniques;
- (b) Improving monitoring and forecasting of water resources, such as by using hydrological models and remote sensing technologies to assess water availability, manage floods and predict drought;
- (c) Strengthening research and the capacity to collect and analyse long-term climate data, such as temperature and precipitation records, and to interpret climate projections;
- (d) Strengthening institutional and individual knowledge, skills and resources and promoting collaboration and knowledge-sharing between institutions and countries to facilitate exchange of best practices, data and expertise;
- (e) Investing in infrastructural development and improving observation networks, data-collection systems and laboratory facilities, including installing weather stations and hydrological monitoring equipment and establishing climate data centres to ensure accurate and reliable data collection;
- (f) Improving infrastructure and equipment for effective research and observation, including providing access to advanced technologies and instruments, such as weather stations, satellite imagery and data-processing systems, and upgrading resources;

(g) Strengthening policy and institutional frameworks governing meteorological, hydrological and climatological services by providing support for the development of national strategies, legislation and regulations that promote integration of climate information into decision-making processes.

42. Some Parties reported capacity-building needs for strengthening research and systematic observation, such as:

(a) Coordinating research efforts within countries to ensure effective use of resources and to avoid duplication, and strengthening research capacity by promoting collaboration and knowledge-sharing among researchers;

(b) Enhancing expertise on climate risks and in climate modelling and numerical data analysis.

J. Development and transfer of technology

43. Parties described a wide range of capacity-building for technology development and transfer, including:

(a) Enhancing relevant institutional capacity through support provided, for example, via the Technology Mechanism;

(b) Establishing departments for supporting technology development and transfer in the water sector;

(c) Providing training programmes that include knowledge-sharing initiatives and institutional strengthening aimed at enhancing capacity for the development and transfer of climate-friendly technologies;

(d) Providing comprehensive technical advice and knowledge products for reforming the power sector;

(e) Participating in international conferences and projects related to climate change and energy efficiency;

(f) Enhancing knowledge and understanding of regional climate change projections through joint scientific publications and collaboration;

(g) Supporting innovative projects for increasing access to sustainable energy, and providing software for monitoring and reporting air pollutant and GHG emissions;

(h) Establishing national reporting systems for the GHG inventory, projections, mitigation and adaptation so as to monitor and manage emissions and identify appropriate technology for climate action.

44. Parties reported various capacity-building needs for technology transfer, including:

(a) Strengthening institutional capacity and expertise for coordinating, adopting and disseminating mitigation and adaptation technologies in priority sectors;

(b) Increasing the number of technology transfer offices to provide a link with industry and encourage demand for implementation of new products, technologies and services;

(c) Enhancing coordination and coordination between innovation systems and research and development organizations;

(d) Training and consultation services for specific sectors, such as agriculture, water and energy.

K. Improved decision-making, including assistance for participation in international negotiations

45. Parties noted activities under the Convention that have helped them in mitigating and adapting to climate change, such as provision of financial resources, transfer of technology,

research projects, systematic observation, establishing MRV systems, education, training and awareness-raising, encouraging public participation in the preparation and domestic review of NCs, assessing the economic and social consequences of response measures, working groups and multilateral meetings for sharing experience of the assessment of public adaptation policies, reporting on national inventory arrangements, communicating changes to inventory arrangements and reporting projections ‘with measures’.

46. Parties identified capacity-building needs for, inter alia, knowledge management, coordination of NAP implementation at various levels, information-sharing for monitoring implementation of climate action, enhancing research and technical capacity of government officials, training gender focal points, establishing protocols and procedures to ensure effective consultations with stakeholders and identifying gaps in the regulatory infrastructure.

47. Some Parties mentioned that financial support was received for participation in international climate change negotiations and in preparatory workshops for negotiators, which helped to enhance knowledge about negotiation processes. Other Parties highlighted the need for training on participating in international negotiations on climate change.

L. Clean development mechanism

48. Some Parties provided information on support received for implementing projects registered under the CDM, including in the areas of afforestation, renewable energy, methane capture, energy generation in landfills, energy efficiency and fuel switching. One Party highlighted the establishment of a mechanism related to the CDM for approving and submitting NAMAs to the NAMA registry. The purpose of the mechanism is to record the demand for international support for the implementation of NAMAs and to facilitate the matching of financial resources, technology and capacity-building support with these measures.

49. Parties reported various capacity gaps, including lack of national authorization, compliance with procedures, new project registration and robust accounting in the carbon market; weak market participation and development, and unclear reflection of climate change principles in national development policy documents; and insufficient financial allocation and limited capacity for adopting new technology.

M. Needs arising from the implementation of Article 4, paragraphs 8–9, of the Convention

50. The least developing country Parties reported capacity-building efforts in this area, including training in data collection and analysis and information dissemination, and accessing and managing climate finance; aligning climate policies and strategies with the budget-setting process; education and awareness-raising campaigns; improving transparency of NDC implementation and monitoring; participating in training workshops to establish robust national MRV systems; conducting exchange visits to learn best practices in different areas; monitoring consideration of gender and social inclusion in NAP implementation; developing guidelines, procedures and methodologies for verifying GHG emission reductions; approving quality control and quality assurance plans; revising MRV structures; and organizing and strengthening national capacity-building projects to improve climate change adaptation planning processes at the national and local level.

51. Reported capacity-building needs and gaps relate to securing sustainable and long-term finance in the national budget to retain specialists and experts for developing and delivering national reports, securing funding to develop electronic systems for data processing and for conducting research studies, strengthening human resources and reinforcing roles and responsibilities in the national GHG inventory process and MRV system, and training in capturing, monitoring and reporting data on monitoring, evaluation and learning. Other priority needs and gaps in this area include trained manpower and modern equipment, development and transfer of environmentally sound technologies, access to finance and technical assistance for small and medium-sized enterprises, collaboration and information-sharing among industrial stakeholders and historical sectoral data.

N. Education, training and public awareness

52. Parties emphasized the importance of education, training and public awareness in driving capacity-building and support for action. Many highlighted progress in this area, describing efforts that have contributed to capacity-building:

- (a) Providing individuals with the necessary knowledge and understanding of key climate change concepts, principles and practices, including education activities related to sanitation facilities, waste separation and sorting, and recycling;
- (b) Delivering a renewable energy education programme, including modules and tools to support decision-making at the national and regional level;
- (c) Developing and implementing a climate change and disaster risk management education and awareness programme for communities through the formal education system;
- (d) Providing training and publishing brochures on topics such as household energy and water saving, climate-secure buildings, human health and climate change, conservation of wildlife and biodiversity, and preparing for extreme weather, to equip individuals with the necessary tools and techniques to address climate change;
- (e) Developing gender-responsive and inclusive disaster risk management and climate change adaptation strategies at the regional and national level through training;
- (f) Conducting studies and research on topics such as agrarian studies, social studies, climate-resilient planning and implementation of urban rainwater management, settlement-level methodology for assessing housing vulnerability, and climate change adaptation;
- (g) Employing educational and training curriculum project experts in sectoral ministries and other government organizations.

53. Parties continued to emphasize the need for human and institutional resources, knowledge transfer, facilities and training in this area. More specifically, there are needs for, *inter alia*:

- (a) Training to enhance technical skills in inventory sectors, such as for analysing, processing and archiving data, as well as for report writing;
- (b) Training to ensure accurate MRV of GHG emission reductions in the construction sector;
- (c) Increasing educational opportunities for youth and women to better prepare for the effects of climate change;
- (d) Increasing awareness of direct and double benefits of climate change mitigation and adaptation measures and GHG emission reduction measures among individuals in relevant ministries, agencies and professional organizations;
- (e) Developing an integrated and inclusive programme across the diverse stakeholders involved in implementing and monitoring climate action;
- (f) Increasing public awareness regarding climate change and potential climate change impacts, as well as implementing campaigns focused on adaptation, mitigation, reducing energy consumption and using renewable energy in order to encourage active public participation in action;
- (g) Introducing sustainable practices such as circular economy, waste management and resource efficiency into individuals' daily lives in order to promote sustainable cultures and habits.

O. Information and networking, including establishment of databases

54. Parties described capacity-building efforts within various networks:

(a) International networks, including the Alliance of Small Island States, which aims to increase the capacity of negotiators in climate-vulnerable countries to engage in international climate negotiations, and the French Development Agency and the German Agency for International Cooperation, which provide financial and technical support to developing countries for implementing climate action;

(b) Regional networks, such as the Caribbean Community and Common Market, the Micronesia Conservation Trust and RedINGEI, which promote regional capacity-building through scholarships, training and workshops, and facilitate sustainable technical and institutional capacity-building in relation to national GHG inventories;

(c) National networks, such as national observatories on climate change, research institutions, non-governmental organizations, faith-based organizations and other organizations, which enhance international cooperation efforts, gather environmental data, support adaptation activities, support Indigenous Peoples' interests, promote information exchange and collaboration among government authorities and other stakeholders, disseminate information, contribute to public awareness on climate change issues through various activities, and register and monitor mitigation measures implemented within countries.

IV. Emerging or new areas for capacity-building and associated gaps and needs

55. The evolution of climate science and policy, and the adoption of new arrangements under the UNFCCC has led to emerging or new capacity-building efforts and needs. The emerging or new areas for capacity-building mentioned in Parties' reports, although linked to the overarching themes of the capacity-building framework, are not within the scope of its 15 priority areas.

56. Parties highlighted emerging capacity-building needs in the following areas:

(a) Developing capacity-building using other official financial flows in areas such as renewable energy, climate finance and technology transfer;

(b) Developing the engineering and construction sector through engineering, design and construction of natural hazard mitigation and prevention systems, including capacity-building for energy-efficient building design, construction and operation to address the growing energy demand in developing countries;

(c) Regional capacity-building needs in the areas of renewable energy, knowledge management and business development;

(d) Strengthening scientific and technical capacity to enable local authorities to make informed policy decisions, including preparing students for professional challenges related to climate change, and developing innovative community-based adaptation solutions based on local scientific information;

(e) Training farmers and breeders to use water- and energy-saving irrigation technologies, including investing in the water sector infrastructure and operators and users, as well as investigating historical experience and past goods practices with floods and drought;

(f) Providing training, agricultural extension services and transfer of productive assets to support market-oriented and climate-smart farming;

(g) Establishing institutionally regulated exchange of information and data, including creating common data standards, and enhancing knowledge management, research, education and stakeholder communication for adaptation;

(h) Supporting groundwater management and protection;

(i) Establishing complementary scientific and technical capacity and scientific collaboration, such as to assess regional climate change projections through regional initiatives;

- (j) Developing projects in the field of information and communication technology and key enabling technologies to promote sustainable growth;
- (k) Support for the renewable energy sector, particularly for deploying solar-powered electricity generation to help meet peak load requirements and reduce dependency on imported fossil fuels;
- (l) Developing tools for short-term energy forecasting, including assessing power supply security, integrating renewable energy policies and strengthening the enabling environment for sustainable energy investment;
- (m) Promoting important reforms and programmes, including improving the quality of education and training to provide equal opportunities for all children, reaching out to young people not in education or employment, and helping women to participate in the labour market;
- (n) Promoting inclusive green entrepreneurship to revitalize rural communities and increase their resilience to climate and other external shocks through nature-based models for green job creation, innovation and entrepreneurship;
- (o) Supporting climate-smart agriculture and market development to improve livelihoods and self-reliance for refugees and host communities through access to arable land and agricultural inputs as well as providing climate services to support agricultural practices;
- (p) Supporting the biodigester sector through developing green jobs;
- (q) Supporting income generation for local civil society organizations and encouraging local governments to implement locally-led, gender-transformative adaptation planning;
- (r) Efficient management of territorial sludge treatment and the application of more up-to-date technologies for use of sludge in sectors like agriculture;
- (s) Strengthening information, capacity and tools in relation to disaster risk management in order to efficiently manage increasing environmental risks and for appropriate preparation and adaptation;
- (t) Investigating the effects of climate change on demographic processes and the occurrence of internal migration.

V. Capacity-building support to address gaps and needs within the scope of the capacity-building framework

57. Most Annex II Parties acknowledged capacity-building support as a key component of mitigation, adaptation, and technology development and transfer. Parties provided information on how support was provided in the aforementioned areas. Some Parties provided examples of projects categorized as capacity-building, while others mentioned all projects with a capacity-building component. The extent of the information provided varies.

58. The table below provides an overview of the number of capacity-building projects reported by Annex II and other Parties. Parties reported challenges in reporting on capacity-building given its cross-cutting nature. The information provided comes from CTF table 9 provided in Parties' BRs. Capacity-building projects covering multiple areas were categorized as such. Parties included in Annex I to the Convention that are not included in Annex II are not obliged to provide capacity-building support, but such support was still reported by some Parties and is shown in the table below.

Capacity-building support reported by Parties included in Annex II to the Convention and other Parties

Party	Capacity-building projects				Total
	Mitigation	Adaptation	Multiple areas	Technology transfer	
Austria	1	4	7	–	12
Bulgaria ⁱ	–	–	–	–	–
Cyprus ^a	–	–	–	–	–
Denmark	–	2	1	–	3
France	6	–	3	–	9
Hungary ^a	–	–	–	–	–
Iceland	2	2	1	–	5
Ireland	3	13	22	–	38
Latvia ^a	–	–	4	–	4
Luxembourg	4	3	8	–	15
Malta ^a	–	1	7	1	9
Norway	6	5	5	–	16
Sweden	3	10	12	–	25
Türkiye	–	–	–	–	–
Total	25	40	70	1	136

^a Not an Annex II Party.

59. Most of the reported capacity-building support was received by Africa (44 per cent), followed by global (26 per cent), Eastern Europe (15 per cent), Asia and the Pacific (13 per cent) and Latin America and the Caribbean (2 per cent). The largest shares of the support were provided to projects targeting multiple areas (52 per cent) and adaptation (29 per cent). Of the projects, 18 per cent targeted mitigation whereas 1 per cent focused on technology transfer.

60. Some projects supported by developed countries were aimed at building the resilience of vulnerable communities to cope with and plan for climate change. Luxembourg, for instance, implemented a programme to enhance African communities' resilience in terms of preparing for, withstanding and recovering from crises and disasters. Support was also provided by Parties for implementing climate policies identified in NDCs and NAPs as well as for effective integration of climate risks into local development policies.

61. The operating entities of the Financial Mechanism, namely the Global Environment Facility and the Green Climate Fund, account for a significant share of capacity-building support provided. Support was received from various bilateral organizations, such as the African Development Bank, the German Agency for International Cooperation, the Swedish International Development Cooperation Agency, the United Nations Development Programme, the United States Agency for International Development and the World Bank.

VI. Capacity-building activities under the Kyoto Protocol

62. The 2023 report of the CDM Executive Board to the CMP emphasizes the important role of RCCs in capacity-building. During the reporting period, RCCs organized online training events, provided technical assistance to designated national authorities, mobilized climate finance for mitigation and adaptation actions outlined in NAPs and other policies or strategies, and collaborated with local and regional agencies, multilateral development banks and partners to improve the regional distribution of CDM projects. They also provided technical support to developing countries for developing CDM methodologies and standardizing baselines; encouraged Parties to undertake CDM projects by promoting the use of certified emission reductions under the Climate Neutral Now initiative; promoted the use of the CDM in development and climate strategies; promoted the benefits and broader applications of the CDM for climate financing; and promoted the use of the CDM sustainable

development tool. RCCs prioritized work in the least developed and underrepresented countries.

63. During the RCC Global Forum 2023, held during the reporting period, RCCs presented overviews of and updates to their workplans for 2023–2024, and highlighted the importance of regional partnerships through market mechanisms such as the CDM for achieving the goals of the Paris Agreement and the Sustainable Development Goals.

64. In the context of the Nairobi Framework Partnership, activities, primarily within the scope of UNFCCC climate weeks, were organized in collaboration with regional partners and supporting organizations. The regional climate weeks in 2023 were held in Kenya, Malaysia, Panama and Saudi Arabia and focused on accelerating collaboration between stakeholders in the area of carbon markets and mechanisms, including energy systems and industry; cities, urban and rural settlements, infrastructure and transport; land, ocean, and food and water; and societies, health, livelihoods and economies.
