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Matters relating to capacity-building

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 in national communications, biennial update reports, national adaptation plans and the 2025 report of the Executive Board of the clean development mechanism to the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol. The information 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

Article 6.4 mechanism	mechanism established by Article 6, paragraph 4, of the Paris Agreement
CDM	clean development mechanism
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
GHG	greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
MRV	measurement, reporting and verification
NDC	nationally determined contribution
SBI	Subsidiary Body for Implementation

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 Paris Committee on Capacity-building.[3]

3. The CMP requested the secretariat to consider in the annual synthesis 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 information herein relates to activities reported between January and December 2025 in 21 national communications,[5] 16 national adaptation plans[6] and 10 biennial update reports[7] submitted by Parties not included in Annex I to the Convention. The information relevant to the Kyoto Protocol comes from the CDM-related sections of those national reports and the 2025 report of the CDM Executive Board to the CMP.[8] Owing to the commencement of reporting under the enhanced transparency framework under the Paris Agreement, there were no reports from Parties included in Annex II to the Convention to consider in preparing this synthesis report, as biennial transparency reports fall outside its scope.

6. This report is limited in scope to reporting under the Convention in the context of the 15 priority areas of the capacity-building framework.[9] The evolving transparency arrangements under the UNFCCC, particularly the adoption of new reporting instruments under the Paris Agreement, including the biennial transparency report, may affect the extent to which these annual synthesis reports can comprehensively reflect capacity-building efforts in the future.

7. A summary highlighting the main findings from the synthesized information is followed by chapters on:

(a) Capacity-building undertaken within the scope of the 15 priority areas of the capacity-building framework (see chap. III below);

(b) Capacity-building needs identified by developing country Parties (see chap. VI below);

(c) Emerging or new areas for capacity-building and associated gaps and needs identified by developing country Parties (see chap. V below);

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[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] Available at https://unfccc.int/non-annex-I-NCs. Some Parties submitted a combined national communication and biennial update report.
[6] Available at https://napcentral.org/submitted-naps.
[7] Available at https://unfccc.int/BURs.
[8] FCCC/KP/CMP/2025/2.
[9] See decision 2/CP.7, annex, para. 15.

(d)   Capacity-building support received to address the gaps and needs identified within the scope of the capacity-building framework (see chap. VI below);

(e)   Capacity-building activities under the Kyoto Protocol (see chap. VII below).

C.   Possible action by the Subsidiary Body for Implementation and the Paris Committee on Capacity-building

8.   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;[10]

(c)   As input to discussions at the 15th Durban Forum on capacity-building and the 10th meeting of the Paris Committee on Capacity-building at SBI 64.

9.   The Paris Committee on Capacity-building may wish to use the information in this report in implementing its mandates to address current and emerging gaps and needs in implementing, and to further enhance, capacity-building in developing countries.

II.   Summary of main findings

10.   Parties reported a broad range of capacity-building activities undertaken across areas including institutional development, mitigation, adaptation, technology, data management and observation systems, not only implemented at the national level but also extended to the subnational level. It was widely recognized among Parties that capacity-building plays a critical role in strengthening developing countries' ability to effectively address climate change.

11.   Parties indicated the need to further strengthen capacity-building efforts in areas related to finance and technology, with particular demand for support for implementing mitigation and adaptation technologies and improving access to financial resources for implementing relevant projects.

12.   Parties reported capacity-building activities in the form of, inter alia, workshops, training sessions, staff training and provision of expert assistance. They emphasized that continuous and long-term capacity-building initiatives are essential for achieving meaningful and sustainable improvements in climate action.

13.   Parties are increasingly recognizing the evolving nature of capacity-building needs. They expressed a particular need for enhanced capacity-building for preparing national GHG inventories and biennial transparency reports as key components for fulfilling reporting and transparency requirements under the Paris Agreement. Beyond these, Parties highlighted emerging capacity gaps in areas such as cross-cutting urban and natural resource management, carbon market mechanisms and Article 6 readiness, and just transition preparedness. These needs, while linked to the overarching themes of the capacity-building framework, fall outside the scope of its 15 priority areas.

14.   Reporting on capacity-building remains a challenge. The information presented in the Parties' reports that were considered is fragmented and not systematically organized according to specific capacity-building areas. Parties' reporting on capacity-building varies in terms of structure, scope, time frame covered and granularity of information. In addition, Parties' differing understandings of what constitutes capacity-building has resulted in inconsistencies in how capacity-building information is presented across the national reports.

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[10] As per decision 16/CP.22, para. 3.

Some reports mentioned only a few capacity-building activities, making it difficult to obtain a comprehensive understanding of the efforts undertaken.

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

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

(a) Establishing a high-level and multi-institutional council to enhance inter-institutional coordination and cooperation in relation to climate action, and creating expert working groups to support the council in addressing priority tasks related to climate issues;

(b) Strengthening the institutional framework for climate action by clarifying the roles and responsibilities of relevant institutions and allocating funding to support their effective functioning;

(c) Providing targeted training to strengthen the management capacity of national institutions in the field of climate change;

(d) Strengthening the development of subnational and regional climate change institutions, and facilitating the formulation of regional climate plans tailored to local contexts;

(e) Expanding participatory mechanisms and including local communities, the private sector and citizens in institutional decision-making processes;

(f) Establishing a robust institutional framework that promotes both public and private climate-related research efforts, particularly in areas where investment in research is limited;

(g) Delivering comprehensive capacity-building programmes for government officials to enhance their climate-related knowledge, technical expertise and governance skills.

B. Enhancement and/or creation of an enabling environment

16. Parties reported on policy and legal arrangements that contribute to an enabling environment for climate action. These include the adoption of climate change legislation; the publication of policies related to emission mitigation, environmental protection and sustainable development; the drafting of new by-laws following the enactment of national climate change laws to complete the legal framework; and the provision of policy and legal education to citizens to ensure effective implementation and enforcement of relevant laws and policies.

17. Some Parties highlighted efforts to strengthen national climate change frameworks, such as by developing long-term energy transition strategies that address energy security, internal energy markets, energy efficiency, decarbonization and innovation. Parties emphasized the importance of strategies integrating short-term climate objectives with long-term sustainability goals, ensuring close alignment between national climate strategies and other sectoral strategies, and involving both the public and private sectors in the strategy development process.

18. Many Parties reported measures undertaken for creating an enabling environment for climate action by ensuring the availability of financial support and well-functioning market mechanisms. Such measures include promoting market shifts towards energy-efficient products; providing tax exemptions and fiscal subsidies for green products; and applying market-based mechanisms to guide businesses and consumers towards making more sustainable choices.

19.   Parties indicated the importance of fostering a supportive ecosystem for climate action by ensuring regulatory stability and fair competition among companies operating in climate-relevant sectors, thereby attracting private investment and encouraging innovation in low-carbon technologies.

20.   Parties reported on efforts to provide equitable access to resources and promote meaningful participation in decision-making processes for women and youth. This includes establishing inclusive policies to ensure women and youth have unrestricted and non-discriminatory access to climate finance and education, technology options and capacity-building opportunities, and empowering them to lead and implement climate initiatives at the community, national and global level.

C.   National communications

21.   Many Parties reported on the international funding mobilized to support their process and preparation of national reporting (national communications, biennial update reports and national adaptation plans). In addition, Parties received capacity-building support through partnerships and guidance from international experts relevant to their national reporting, including through training programmes, knowledge-sharing initiatives, and access to relevant resources and analytical tools.

22.   Parties reported enhancing capacity for preparing their national reports by establishing report preparation teams composed of government officials, technical experts, data analysts, financial officers and administrative staff; conducting interviews with relevant stakeholders and collecting comprehensive data; and using a variety of tools for calculating emission levels, simulating climate change scenarios and assessing the long-term effectiveness of climate actions.

23.   Some Parties highlighted the stable and sustainable institutional arrangements that they have established to ensure the preparation and timely submission of their national communications, while at the same time enhancing the continuity, comprehensiveness and quality of their reporting.

D.   National climate change programmes

24.   Some Parties reported implementing national climate change programmes that incorporate capacity-building components. Reported measures in this regard include developing comprehensive national climate change programmes covering all climate-related sectors that strengthen the overall impact of climate action; launching technical assistance projects to support the preparation of national climate change programmes; and combining scattered climate initiatives into a coherent framework to enhance the overall effectiveness of the measures undertaken.

25.   Some Parties mentioned various components of their national climate change programmes, including identifying priority areas for achieving carbon neutrality; encouraging private sector led, mission-driven innovation in technology; increasing investment in and creating an enabling environment for the deployment of pioneering technologies; and promoting a shared understanding with relevant stakeholders and strengthening cooperation to support future climate action.

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

26.   Examples of implemented capacity-building for preparing GHG inventories and establishing sustainable inventory management systems include:

        (a)   Training programmes and workshops for technical experts focused on strengthening their skills in applying the *2006 IPCC Guidelines for National Greenhouse*

Gas Inventories[11] and related IPCC inventory software, improving use of methodologies for GHG inventory compilation and management, enhancing data collection practices and implementing robust quality assurance/quality control procedures;

(b)   A range of initiatives designed to strengthen the technical and institutional capacities of government entities, civil society and academia, such as providing training for national experts in areas such as GHG inventories and MRV systems, as well as providing specialized training in climate modelling, use of remote sensing tools and environmental database management, to ensure the production of accurate, consistent and reliable technical information;

(c)   Establishing an online GHG portal for data management and sharing regarding GHG emissions and removals in support of the development of the national GHG inventory for the energy, industry, agriculture, land use, land-use change and forestry, and waste sectors, thereby improving the accuracy and transparency of each sector's contributions to the national GHG inventory.

27.   Parties reported receiving technical and human resource support for preparing GHG inventories through bilateral and multilateral international cooperation. Capacity-building efforts include providing advanced training for staff on using the most recent IPCC guidelines, improving documentation practices and strengthening quality assurance/quality control procedures in order to meet reporting standards.

28.   Some Parties highlighted constraints on the preparation of their GHG inventories, including significant data gaps; insufficient and fragmented information on adaptation and mitigation measures; substantial inconsistencies in subnational reporting; and the absence of comprehensive national or sectoral MRV systems.

F.   Vulnerability and adaptation assessment

29.   Parties reported conducting vulnerability and adaptation assessments in line with IPCC recommendations; the simplified framework proposed by the IPCC was adopted by some Parties for assessing vulnerability and exposure to climate-related hazards and the impacts of climate change.

30.   Many Parties described measures undertaken to strengthen capacity for vulnerability and adaptation assessments, including engaging a broad range of stakeholders from government institutions, academia and civil society, which was facilitated through consultative workshops and discussion forums to ensure inclusive participation and knowledge exchange.

31.   Parties reported applying climate risk modelling to identify and assess climate vulnerabilities. This approach supported the prioritization of critical short- to medium-term actions, the development of strategies and plans, and the formulation of projects aimed at reducing climate risks and addressing both observed and projected impacts of climate change.

32.   Some Parties described their use of geographic information system data portals and other accessible resources to establish climate-related databases. Assessment projects were carried out to evaluate climate risks and vulnerabilities, and risk maps were compiled to support evidence-based decision-making on adaptation priorities, resource allocation and the planning of targeted resilience measures.

33.   Training workshops were conducted to enhance national experts' capacity to select appropriate vulnerability assessment methodologies, conduct multi-criteria analyses, identify relevant climate and socioeconomic data sets, and analyse and prioritize adaptation measures.

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[11]   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.

G. Capacity-building for implementation of adaptation measures

34. Many Parties described wide-ranging measures for capacity-building for implementing adaptation, including:

(a) Strengthening analytical and technical capacity at the national and subnational level to measure and assess adaptation, identify priority adaptation sectors and integrate nationally determined priority adaptation areas into national adaptation strategies in line with country-specific needs;

(b) Developing a comprehensive framework for adaptation, including national adaptation plans, sector-specific adaptation strategies, policies and legislation, as well as short- and long-term adaptation guidelines, and organizing awareness-raising and orientation sessions from the institutional to the community level to enhance understanding and ownership of adaptation frameworks;

(c) Strengthening institutional capacity and coordination across different levels of governance responsible for adaptation planning and implementation to ensure effective implementation of adaptation actions. This includes deploying both structural and non-structural changes in adaptation planning and implementation;

(d) Enhancing technical capacity to establish and manage national data portals for tracking environmental changes and adaptation outcomes, providing a robust foundation for adaptive management and evidence-based decision-making;

(e) Building human and technical capacity through the development and delivery of adaptation training programmes for officials, technicians, community leaders and youth, particularly on adaptation-related monitoring, analysis and evaluation;

(f) Strengthening technical capacity in developing early warning systems, and delivering programmes and projects in conjunction with the implementation of the early warning systems for improving adaptative capacity and building resilience.

35. Many Parties reported examples of capacity-building support provided for implementing adaptation action in different sectors:

(a) Implementing climate-smart agricultural programmes that promote drip irrigation systems, drought-resistant crop varieties and rainwater harvesting techniques, while providing training to farmers and agricultural technicians on addressing land degradation and improving sustainable land management practices;

(b) Providing technical guidance to herders on sustainable rangeland management and livestock production, thereby enhancing their capacity to apply scientific grazing practices;

(c) Developing a high-resolution marine climate model with projections to analyse vulnerabilities in the fisheries sector and creating long-term response strategies based on the predictions; as well as, in parallel, delivering targeted training to fishing communities to support their access to alternative livelihoods in lean or closed seasons, thereby strengthening resilience to climate change;

(d) Establishing comprehensive forest ecosystem monitoring systems and implementing appropriate forest management measures to reduce the risk of forest degradation and wildfire;

(e) Strengthening technical capacity of government agencies, utilities and local water management practitioners to deploy water-saving technologies and promoting investment in water infrastructure to reduce water losses and enhance water security, including through the adoption of recirculating aquaculture systems, stormwater collection and storage facilities, and reclaimed water treatment plants;

(f) Building capacity to design and implement nature-based solutions to protect fragile ecosystems, including expanding and diversifying protected areas, making genetic improvements to plant species, restoring desert ecosystems through the creation of oases, and planting suitable vegetation and trees to protect coastlines from erosion;

(g)   Strengthening technical, institutional and financial capacities of energy authorities, utilities and regulators to enhance the resilience of the energy sector, including by strengthening environmental safeguards, scaling up renewable energy deployment, and fostering financial innovation to support the energy transition;

(h)   Providing capacity-building support to strengthen the ability of planners, engineers and infrastructure authorities to integrate climate change considerations into the planning and design of future infrastructure and the upgrading of existing infrastructure, to enhance the disaster resilience of critical infrastructure and to improve the frequency and quality of maintenance;

(i)   Enhancing healthcare system preparedness for climate-related health risks, improving access to health services for vulnerable and high-risk populations, strengthening surveillance and prevention of climate-sensitive infectious diseases, and providing climate adaptation and health education to vulnerable populations.

H.   Assessment for implementation of mitigation options

36.   With regard to capacity-building for assessing mitigation options for implementation, Parties generally reported on the national plans, policies and strategies that they have developed to guide their mitigation actions, as well as on relevant practical measures to strengthen their ability to identify, analyse and choose appropriate mitigation options. These measures included training staff, building technical capacity to deploy renewable energy technologies as mitigation options, providing financial incentives to encourage the adoption of low-emission technologies and practices and raising public awareness of available mitigation measures and their benefits. Parties noted that limited institutional capacity, insufficient financial support and gaps in data availability and assessment methodologies limit the effectiveness and comprehensiveness of the assessment of mitigation options.

37.   Many Parties reported examples of capacity-building support provided for implementing mitigation options, including:

(a)   Strengthening technical capacity of relevant government ministries, regulatory agencies and sectoral practitioners to design, implement and enforce policies that ensure robust and effective mitigation actions, particularly in the areas of renewable energy, energy efficiency and electric vehicles;

(b)   Providing technical and procedural training for personnel working in renewable electricity generation, upgrading existing energy technologies and accelerating the energy transition process, constructing new renewable energy power plants and promoting sustainable energy practices;

(c)   Building technical and operational capacity in the industrial sector to support the replacement of traditional fossil fuels used in cement industry kilns with gas, improving electrical capacity with power factor correction equipment, recycling heat generated from industrial production processes and applying carbon dioxide storage technology;

(d)   Converting public transport vehicles from gasoline to natural gas fuelled, promoting use of electric vehicles, providing more public transportation options and raising public awareness of them, and improving road charging infrastructure;

(e)   Promoting passive house design, encouraging use of sustainable materials in construction, replacing old building lighting with energy-efficient lamps and adopting energy-efficient practices in buildings to reduce energy consumption and associated emissions;

(f)   Implementing sustainable farm management, restoring soils to mitigate land degradation resulting from climate change, providing training on applying modern agricultural and grazing technologies for farmers and herders, and adopting climate-smart agricultural methods;

(g)   Increasing knowledge and awareness of households, local communities, and waste-management personnel regarding waste sorting and management, and establishing

environmentally friendly waste-to-energy power plants and regional non-hazardous waste disposal facilities;

(h)   Conducting measurements of tourism-related GHG emissions, energy and water use, and climate-sensitive environmental impacts, establishing the monitoring of these indicators and developing mitigation plans for the tourism sector;

(i)   Encouraging a shift in citizens' behaviour towards implementing climate-friendly practices, introducing tax regulations pertaining to energy-efficient products, promoting energy labelling schemes, and creating a financial incentive mechanism to encourage the installation of renewable energy heating systems.

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

38.   Many Parties reported capacity-building undertaken for strengthening research and systematic observation, such as strengthening human resource capacity in technical departments, and upgrading equipment for the collection, transmission, processing and dissemination of research results.

39.   Some Parties reported providing financial resources and technical support to relevant organizations for enhancing technical and institutional capacity for systematic observation, particularly in relation to meteorological and hydrological forecasting and natural disaster monitoring.

40.   Parties reported establishing new observation stations to strengthen and complete national observation systems, such as developing integrated observation network platforms comprising thousands of meteorological, hydrological, glaciological and water quality monitoring stations.

41.   Continuous monitoring, observation and prediction of key climatic parameters were implemented, alongside the systematic collection of time-series data, to support climate analysis and relevant decision-making.

42.   Some Parties described advancements in the use of technology for monitoring and predicting climate-related hazards, including using software platforms integrated with artificial intelligence and sensor technologies for hazard monitoring and forecasting, and developing ultra-small, high spatial resolution satellites for low Earth orbit to enhance climate observation capabilities.

J.   Development and transfer of technology

43.   Many Parties emphasized the importance of strengthening technology-related capacity-building and technology transfer for both mitigation and adaptation to assist developing countries in achieving their climate targets.

44.   Some Parties highlighted efforts to build capacity in the energy sector, including strengthening the technical skills for developing biogas digester technologies; promoting use of solar panels and autonomous photovoltaic systems with storage technologies; improving use of stoves, solar cookers and water heaters in remote areas; and conducting research aimed at improving energy efficiency.

45.   Parties reported local technological innovations, such as solar salt production on tarpaulins; the distribution of newly developed seed varieties to farmers through local seed multipliers to ensure the seeds are well adapted to local climatic conditions; the development of community composting technologies; the use of accessible technologies for supporting beekeeping; and the implementation of water circulation technologies for improving water resource management.

46.   Parties reported efforts to establish national technology centres and networks; prepare technological guidelines to support the selection, deployment and maintenance of climate-relevant technologies in the industry, energy, agriculture and water resources sectors;

conduct studies on technology development and transfer; and organize workshops and training on technology transfer and climate information for government officials, non-governmental organizations, local businesses and community members, thereby facilitating knowledge-sharing and building local expertise on the latest mitigation and adaptation technological developments.

47.   Some Parties described polices adopted to promote enabling conditions for technology transfer, as well as providing financial support to national institutions, private sector actors and local stakeholders, and establishing mechanisms for the development and dissemination of technology.

48.   Some Parties reported their efforts to empower youth and women to engage in innovation, technology transfer, commercialization of climate-relevant technologies and products, and human capacity development, particularly in areas related to their daily lives.

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

49.   Many Parties reported the following effective approaches to capacity-building for decision-making:

(a)   Delivering technical training on climate governance and policy analysis, including for interpreting scientific assessments and translating them into policy options;

(b)   Strengthening data analysis and modelling capacities to assess climate risks, mitigation potentials and adaptation needs to support evidence-based decision-making on climate policies, planning and resource allocation.

50.   Some Parties reported support received and capacity-building activities implemented for enhancing participation in international negotiations:

(a)   Receiving financial and logistical assistance for supporting delegates' participation in international negotiations;

(b)   Conducting briefing sessions on international negotiation processes and key climate thematic agenda items;

(c)   Providing targeted training for female negotiators to enhance women's participation and representation in international negotiations.

L.   Clean development mechanism

51.   Parties with projects registered under the CDM reported a halt in new project registrations and explained that they have initiated the process of transitioning their projects to the carbon crediting mechanisms under the Paris Agreement. Therefore, no Parties reported on capacity-building activities related to the CDM.

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

52.   The least developed country Parties reported receiving targeted capacity-building efforts pursuant to Article 4, paragraph 9, of the Convention such as adopting sustainable agricultural practices that reduce GHG emissions while safeguarding food security and strengthening the resilience of agricultural systems; strengthening the capacity of water authorities; improving water management and distribution to address challenges related to access to clean water; conducting training programmes for meteorological observation and data analysis; and delivering targeted training for farmers, fishers, energy technicians and vulnerable groups. They received support and funding from the Global Environment Facility, the Green Climate Fund and the United Nations Environment Programme to implement projects relating to both mitigation and adaptation.

53. Some Parties, specifically the least developed countries, reported a number of challenges in undertaking and sustaining capacity-building efforts, including the discontinuity of capacity-building activities; inadequate and delayed financial resources; the absence or insufficiency of national GHG inventory systems; and a shortage of qualified personnel and technical experts.

N. Education, training and public awareness

54. Many 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, such as:

(a) Establishing a national climate change education centre to support both formal and non-formal education and training initiatives;

(b) For formal education and training, integrating into the curricula climate change related subjects and courses from primary to tertiary level, and providing continuing education activities such as training workshops, seminars and forums;

(c) Focusing non-formal education and training on enhancing public understanding of climate change through public education campaigns and community outreach initiatives, such as by organizing public forums, workshops and free courses;

(d) Raising public awareness of climate change impacts through campaigns via various media platforms (radio, television, social media) and distribution of informational materials (brochures, fact sheets) and videos. Materials were delivered in local languages and framed with culturally appropriate messaging through accessible media channels to reach rural and vulnerable communities.

O. Information and networking, including establishment of databases

55. Some Parties described tools used within various international, national and regional networks to facilitate the exchange of climate-related data, including the Greenhouse Gas Abatement Cost Model, Environmental Protection and Management Act information systems, MRV systems, drought monitoring systems, the data platform and library of the Enhancing National Climate Services initiative, water quality management information systems, the IPCC Data Distribution Centre and the global climate action portal (NAZCA).

56. Many Parties described capacity-building activities undertaken within networks, including conducting technical training and awareness-raising activities related to the generation, interpretation and use of climate information for key stakeholders involved in climate information and networking; enabling experts to learn how to use specific database tools for managing, analysing and sharing climate-related data; and initiating targeted projects involving international experts to facilitate peer-to-peer collaboration on climate information systems, data management and best practices.

57. Parties reported several capacity-building components related to strengthening national data and information management systems, including updating and refining existing databases and integrating scattered data into a single database management system; upgrading digital infrastructure and improving database platforms and data management tools to enhance data storage and processing capacity; and strengthening cybersecurity and data protection to ensure the reliability and security of data.

58. Some Parties reported collaboration with international organizations, and bilateral and multilateral cooperation with other Parties, to share information on specific climate change topics.

IV. Identified capacity-building needs

59. Parties reported capacity-building needs across various aspects of climate action, including for institutional and policy development, implementation of mitigation and

adaptation measures, and data analysis and information management. Capacity-building needs for accessing climate finance and technology were most frequently mentioned by most Parties.

60. Many Parties indicated that more comprehensive assessments should be undertaken to address current constraints and gaps in identifying capacity-building needs, and to support developing countries in articulating their needs more accurately and specifically.

61. Some Parties reported capacity-building needs for strengthening institutional coordination related to climate planning, implementation and reporting, including:

(a) Strengthening institutional frameworks and enhancing government officials' ability to navigate the complexities of climate change;

(b) Providing comprehensive training programmes for decision makers on the fundamentals and science of climate change;

(c) Enhancing collaboration across relevant ministries and agencies and fostering inter-ministerial coordination;

(d) Enhancing policy development and implementation by equipping officials with the skills and knowledge needed to formulate, implement and evaluate effective climate policies and regulations.

62. Parties reported capacity-building needs for mitigation, including:

(a) Improving access to technologies needed for developing renewable and sustainable energy systems, such as large-scale wind turbines, solar photovoltaic panels and bioenergy;

(b) Improving energy efficiency standards, regulations and policies;

(c) Enhancing capacity for GHG emission observation and developing robust systems for MRV of the impact of mitigation actions;

(d) Developing green materials for infrastructure to enable low-emission renovations and sustainable use in construction activities in the building sector.

63. Parties reported capacity-building needs for conducting vulnerability and adaptation assessments, including:

(a) Strengthening capacity to collect, assess and manage climate-related data, and to develop comprehensive databases that support accurate prediction of hazards;

(b) Enhancing continuous technical training for farmers, herders and fishers;

(c) Building technical and institutional capacity to develop and deploy smart agriculture, irrigation and water-management technologies;

(d) Strengthening capacity to develop and operationalize adaptation frameworks, including by prioritizing and mobilizing resources such as funding, equipment and technical support for adaptation in critical areas.

64. Some Parties reported capacity-building needs for data management, systematic observation and aspects of GHG inventories, including:

(a) Building more weather stations and completing meteorological networks;

(b) Improving data timeliness and accuracy of climate-related data by reducing delays in data collection, processing and dissemination, mitigating the lack of consistent and verifiable data, and developing comprehensive databases;

(c) Developing a clear and well-defined system for preparing GHG inventory estimates, including hardware, a data collection process, an archiving system, a quality control plan and an expert team;

(d) Providing hands-on training for government officials, technical experts and inventory compilers in using IPCC inventory software, methodologies for remote sensing and generation of land use, land-use change and forestry data.

65.   Many Parties reported inadequate funding and insufficient investment as major obstacles to effective implementation of climate action in developing countries, and reported needs for capacity-building to access climate finance, including:

(a)   Improving institutional arrangements among financial institutions by clarifying roles, strengthening coordination and ensuring effective management of climate finance, as well as enhancing systems for tracing the actual flow of climate funding to verify that resources reach intended beneficiaries and are used for intended activities;

(b)   Developing and applying standards and indicators to accurately identify climate finance flows and report financial data related to climate action, ensuring that resources intended for mitigation and adaptation are clearly distinguished, tracked and transparently reported;

(c)   Accessing and effectively utilizing international funding, such as for addressing loss and damage, and other kinds of funding provided by international organizations and development banks;

(d)   Having access to flexible financing options tailored to specific technologies.

66.   Many Parties reported needs in the area of climate education and public awareness, including establishing decentralized training centres, particularly in vulnerable rural areas; strengthening continuing education opportunities for the public; enhancing efforts in relation to targeted information campaigns; systematically integrating women and young people into awareness-raising activities; and ensuring adequate investment in education.

67.   Some Parties also reported cross-cutting capacity-building needs, including for applying artificial intelligence; carbon dioxide capture, use and storage; high-precision climate monitoring; and numerical modelling.

V.   Emerging or new areas for capacity-building

68.   The evolving nature of climate science and policy and the adoption of new arrangements under the UNFCCC have led to emerging or new capacity-building efforts and needs. Those mentioned in Parties' reports, although linked to the overarching themes of the capacity-building framework, do not fall within the scope of its 15 priority areas.

69.   Many Parties highlighted the need to strengthen institutional, technical and human capacities to support the implementation of the Paris Agreement, particularly in relation to transparency, including for preparing biennial transparency reports and meeting the reporting requirements under the enhanced transparency framework.

70.   Many Parties described capacity gaps in cross-cutting areas, including in relation to urban spatial planning, natural resources management, and integrated approaches to climate-resilient development. Parties underscored the importance of nature-based solutions in achieving sustainable and climate-resilient development pathways.

71.   Some Parties reported capacity gaps related to developing national carbon market mechanisms, including needs to update national climate legislation to incorporate provisions related to carbon markets and improve readiness to engage in the mechanisms under Article 6 of the Paris Agreement as well as other national and voluntary carbon markets.

72.   Some Parties mentioned the need to strengthen analytical and institutional capacity to assess carbon footprints across sectors, support the creation of green jobs, and enhance preparedness for implementing a just transition.

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

73.   Parties acknowledged capacity-building support as key to the implementation of climate action. Parties described support received from partners including international organizations, developed countries and other developing countries under South–South

cooperation frameworks. Parties reported support received in three main forms: support for project implementation, direct financial support and international aid (providing expertise and equipment), and provided relevant examples and best practices.

74. Parties reported support received from United Nations organizations, which is crucial for implementing projects involving agricultural adaptation, environmental monitoring, institutional strengthening, and gender mainstreaming in climate policies.

75. Parties reported funding received from international financial institutions and development banks (e.g. Adaptation Fund, African Development Bank, European Bank for Reconstruction and Development, European Investment Bank, Green Climate Fund, German Development Bank, Global Environment Facility and World Bank), which contributes significantly to financing strategic projects in the areas of clean energy, coastal adaptation, and sustainable management of natural resources, thereby strengthening countries' capacity to implement long-term action.

76. Parties reported that numerous medium- and large-scale projects have been implemented nationally with the support of external partners (e.g. German Agency for International Cooperation, Japan International Cooperation Agency and United States Agency for International Development), such as on renewable energy, clean transport, infrastructure adaptation, sustainable land management, data management and climate finance.

77. Parties reported receiving support for staff training, including workshops, technical training programmes, study visits and knowledge-exchange activities, in the areas of climate policy development, GHG inventory preparation, climate modelling, adaptation planning and use of climate information systems.

VII. Capacity-building activities under the Kyoto Protocol

78. The 2025 annual report of the CDM Executive Board to the CMP acknowledges the contribution of the UNFCCC regional collaboration centres to regional capacity-building efforts, including via support for effective implementation of the CDM, such as providing targeted guidance to CDM project participants and coordinating entities on procedural and methodological requirements, including standardized baselines, and hands-on technical assistance to these entities in preparing CDM activities for transition to the Article 6.4 mechanism. In this context, during the reporting period, the regional collaboration centres provided direct technical support for four CDM programmes of activities and 28 CDM project activities.

79. In addition, several calibration workshops were convened to enhance the capacity of CDM applicant entities and designated operational entities and members of the CDM accreditation roster of experts to perform accreditation-related functions such as validation, verification and compliance assessments, and to promote a common understanding among stakeholders of the latest regulatory requirements under the CDM as well as recently approved regulatory documents for operationalizing the Article 6.4 mechanism. The workshops also provided a platform for the exchange of relevant experience and good practices among auditing and technical experts, updating participants in the workshops on relevant regulatory developments, and supporting designated operational entities in preparing for transition to accreditation under the Article 6.4 mechanism.