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Subsidiary Body for Scientific and Technological Advice

Subsidiary Body for Implementation

Joint annual report of the Technology Executive Committee and the Climate Technology Centre and Network for 2020

Summary

This report covers the activities and performance of the Technology Executive Committee and the Climate Technology Centre and Network in 2020, including implementing the technology framework under the Paris Agreement. It contains information on the bodies' meetings, key messages and recommendations for the Conference of the Parties at its twenty-sixth session and the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its third session; information provided by the United Nations Environment Programme on matters regarding its role as host of the Climate Technology Centre; information on the bodies' incorporating guidance from the technology framework into their respective workplan and programme of work, and their joint activities for 2021 and 2022.

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* The advance English version of this document was made available on 17 December 2020.

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Contents

Abbreviations and acronyms

CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
COP	Conference of the Parties
COVID-19	coronavirus disease 2019
CTC	Climate Technology Centre
CTCN	Climate Technology Centre and Network
DTU	Technical University of Denmark
GCF	Green Climate Fund
GEF	Global Environment Facility
G-STIC	Global Sustainable Technology and Innovation Community conference
NAP	national adaptation plan
NDC	nationally determined contribution
NDE	national designated entity
NGO	non-governmental organization
PSP	Poznan strategic programme on technology transfer
Q*	quarter
SB	sessions of the subsidiary bodies
SBI	Subsidiary Body for Implementation
TEC	Technology Executive Committee
TEM	technical expert meeting
TEM-M	technical expert meeting on mitigation
TNA	technology needs assessment
TT:CLEAR	technology information clearing house
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization

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* Used exclusively in figure 1.

I. Background

A. Mandate

1.   COP 16 established the Technology Mechanism, comprising the TEC and the CTCN, to facilitate implementation of enhanced action on technology development and transfer to support action on mitigation and adaptation in order to achieve full implementation of the Convention.[1]

2.   The TEC and the CTCN prepare a joint annual report[2, 3] for consideration by the COP through its subsidiary bodies.[4]

3.   In the above-mentioned joint report,[5] the TEC and the CTCN also report to the CMA, through the subsidiary bodies, on their activities to support implementation of the Paris Agreement.[6]

4.   COP 22 invited the TEC and the CTCN to report on challenges and lessons learned in implementing their respective mandates[7] and COP 24 encouraged them to improve that reporting.[8]

5.   COP 23 requested the TEC and the CTCN to include in their joint annual report, having consulted with the high-level champions, recommendations for Parties and other organizations on ways forward and necessary actions to be taken based on the outcomes of the TEMs.[9]

6.   CMA 2 requested the TEC and the CTCN to include comprehensive information on how they have incorporated the guidance contained in the technology framework[10] into their respective workplan and programme of work in their report for 2020. Further, CMA 2 encouraged them to continue to report on the progress of their work and on challenges and lessons learned in implementing the technology framework.[11]

B. Scope of the report

7.   The joint chapter of the TEC and the CTCN is in chapter II below. Chapter III below presents the activities and performance of the TEC in 2020, including key messages and recommendations for COP 26 and CMA 3. It covers the outcomes of the 20th and 21st meetings and intersessional work of the TEC, and challenges and lessons learned in implementing its mandates. Chapter IV below presents the activities and performance of the CTCN in 2020, including key messages for COP 26 and CMA 3. It covers the outcomes of the 15th and 16th meetings and intersessional work of the Advisory Board of the CTCN and challenges and lessons learned in implementing CTCN mandates, and includes information provided by UNEP on matters regarding its role as host of the CTC.[12]

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[1] Decision 1/CP.16, para. 117.
[2] FCCC/SB/2013/1, para. 3.
[3] As per decision 2/CP.17, para. 142. See also decisions 12/CP.21, para. 2, and 15/CP.23, para. 4.
[4] Decision 2/CP.17, para. 143.
[5] See decision 15/CMA.1, para. 4.
[6] Decision 1/CP.21, para. 68.
[7] Decision 15/CP.22, para. 6.
[8] Decision 13/CP.24, para. 4.
[9] Decision 13/CP.23, para. 4.
[10] Decision 15/CMA.1, annex.
[11] Decision 8/CMA.2, paras. 2 and 4.
[12] As per decision 14/CP.18, para. 10.

C.   Possible action by the subsidiary bodies

8.   The subsidiary bodies may wish to consider the joint annual report of the TEC and the CTCN for 2020 and recommend draft decision(s) on the matter for consideration and adoption at COP 26 and CMA 3.

II.   Joint chapter of the Technology Executive Committee and the Climate Technology Centre and Network

9.   Despite challenges resulting from the COVID-19 pandemic, the TEC and the CTCN successfully undertook a number of joint activities to support technology development and transfer under the Convention and implementation of the technology framework under the Paris Agreement.

10.   The two bodies implemented their respective monitoring and evaluation systems and jointly conducted outreach to NDEs for feedback on the long-term impacts of their activities and suggestions for improving their delivery of assistance and support.

11.   They enhanced their contribution to pre-2020 ambition and implementation, particularly through the technical examination process on mitigation, and strengthened their engagement with global and regional stakeholders by jointly organizing four virtual regional TEMs-M on climate-smart cooling solutions for sustainable buildings for stakeholders in Africa, Asia-Pacific, Eastern Europe and West Asia, and Latin America and the Caribbean, held in August 2020.[13]

12.   The TEC and the CTCN ensured coherent communication under the Technology Mechanism through virtual means, their representatives participating in each other's meetings and events, and organizing, or participating in, joint events, including:

(a)   The Technology Mechanism side event at the United Nations Climate Change Conference in Madrid;[14]

(b)   The Technology Mechanism virtual event at the UNFCCC June Momentum for Climate Change;[15]

(c)   TEC and CTCN deep-dive sessions at G-STIC 2020;[16]

(d)   The panel discussion on enabling green innovation at the 10th Symposia of Green Smart Development and Vision;[17]

(e)   The Technology Mechanism virtual event at the UNFCCC Climate Dialogues 2020.[18]

13.   The bodies continued to collaborate, to the extent possible, with other constituted bodies under the Convention and the Paris Agreement and strengthen linkages with the Financial Mechanism. The TEC and CTCN Advisory Board Chairs participated in:

(a)   The Subsidiary Body for Scientific and Technological Advice– Intergovernmental Panel on Climate Change Joint Working Group meeting at SB 51;

(b)   The informal open dialogue between representatives of constituted bodies on the three functions of the Local Communities and Indigenous Peoples Platform at SB 51;

(c)   The 4th annual meeting of the GCF with constituted bodies, at COP 25, to enhance cooperation and coherence of engagement between the GCF and the Technology Mechanism;

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[13] See https://unfccc.int/ttclear/events/index.html.
[14] See https://unfccc.int/ttclear/events/2019_event8.
[15] See https://unfccc.int/ttclear/events/2020/2020_event01.
[16] See https://gstic.org/2020/themes/climate/.
[17] See http://igsdv.org/index.html.
[18] See https://unfccc.int/ttclear/events/2020/2020_event08.

(d)   The launch of the GEF Challenge Program for Adaptation Innovation at COP 25;

(e)   The Paris Committee on Capacity-building round table, at COP 25, on enhancing coherence and coordination among constituted bodies and in other processes under the Convention;

(f)   The technical part of the stocktake on pre-2020 implementation and ambition at COP 25;

(g)   The virtual dialogue, in November 2020, on experience and lessons learned from the pilot regional climate technology transfer and finance centres under the PSP.

14.   The TEC and the CTCN, through their secretariats, shared information and feedback on their work, including on identification of needs, gaps, challenges and enabling environments related to endogenous capacity, analysis of enablers for and barriers to technology development and transfer, and incorporation of gender considerations.

15.   In addition to the joint activities implemented in 2020, the bodies finalized their activities to be undertaken jointly in 2021–2022,[19] starting with technology and NDCs and gender and technology (see annex I for further details), which are designed to build on ongoing or recently completed work. The bodies will regularly take stock of the implementation of these activities, including considering other possible joint activities for the future. Through their joint activities, the TEC and CTCN also envisage enhanced engagements with NDEs and contributing to facilitating and supporting green recovery efforts in line with their respective functions.

16.   Information on how the TEC and CTCN have incorporated the guidance contained in the technology framework into their respective workplan and programme of work is contained in annex II.[20]

17.   The TEC and the CTCN are committed to continually enhancing their collaboration and look forward to organizing joint sessions of the TEC and the CTCN Advisory Board for increasing coordination of work under the Technology Mechanism to ensure Parties receive effective and coherent climate technology support in implementing their NDCs and NAPs towards achieving the goals of the Paris Agreement and the Convention.

III.   Activities and performance of the Technology Executive Committee in 2020

A.   Meetings and membership

18.   The TEC convened its 20th meeting from 1 to 3 April 2020 and 21st meeting from 17 to 20 November 2020.[21]

19.   At its 20th meeting, the TEC elected Mareer Mohamed Husny (Maldives) as its Chair and Stephen Minas (Greece) as its Vice-Chair for 2020. The TEC expressed its appreciation to Dinara Gershinkova (Russian Federation) and Stella Gama (Malawi) as former Chair and Vice-Chair for their leadership in enabling the TEC to effectively carry out its work in 2019.

20.   A list of TEC members indicating their terms of office is available on the UNFCCC website.[22]

21.   The meetings of the TEC were webcast live and attended by observers, including representatives of Parties and observer organizations, who actively engaged in addressing the

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[19] As per decision 8/CMA.2, para. 3.
[20] In response to decision 8/CMA.2, para. 2.
[21] Owing to the COVID-19 pandemic, both were virtual meetings.
[22] https://unfccc.int/process-and-meetings/bodies/election-and-membership.

issues under consideration. All meeting documents, presentations, webcasts, lists of participants and reports are available on TT:CLEAR.[23]

B. Rolling workplan for 2019–2022: implementation in 2020

22.   Despite the COVID-19 pandemic and impossibility of in-person meetings, the TEC continued its intersessional work through thematic task forces to effectively implement, with secretariat support, its rolling workplan for 2019–2022[24] in five areas: innovation, implementation, enabling environment and capacity-building, collaboration and stakeholder engagement, and support.

23.   The TEC wishes to express its appreciation for the financial contributions provided by Parties and for the active participation and support of organizations and other stakeholders, including representatives of observer organizations engaged in the work of the TEC task forces in 2020. Information on the composition of the TEC task forces is available on TT:CLEAR.[25]

1. Innovation

(a) Research, development and demonstration

24.   The TEC prepared a compilation of good practices and lessons learned in international collaborative research, development and demonstration for climate technologies.[26] Bilateral and multilateral research, development and demonstration projects and programmes in key sectors were selected, good practices and lessons from collaborative research, development and demonstration initiatives extracted, and recommendations provided to countries and stakeholders.

(b) Innovative approaches to adaptation technologies

25.   COP 25 noted the TEC initiative to promote innovative approaches to upscaling adaptation technologies, such as organizing an in-session technology day in 2020.[27] Planned as a full-day workshop during SB 52, owing to the COVID-19 pandemic the Technology Day will instead be held as a series of virtual events in 2020–2021 with different themes related to adaptation technologies. The Technology Day was officially launched at the Climate Dialogues with a session on innovative approaches to deploying, disseminating and upscaling technologies and solutions for climate-smart agriculture in collaboration with the Food and Agriculture Organization of the United Nations and the Global Alliance for Climate-Smart Agriculture.

26.   The TEC organized a deep-dive session on innovative approaches to adaptation technologies at G-STIC 2020.[28] Innovations in key aspects of adaptation technologies were featured and the importance of peer-to-peer learning, knowledge-sharing and participatory planning processes was discussed. The session outcomes will be reflected in the G-STIC Chairperson summary, to be considered by the Multi-stakeholder Forum on Science, Technology and Innovation for the Sustainable Development Goals in New York in 2021.

27.   The outcomes of the Technology Day events and session at G-STIC 2020 will inform the TEC policy brief and recommendations for Parties on how to accelerate and upscale dissemination of adaptation technologies.

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[23] http://unfccc.int/ttclear/tec/meetings.html.
[24] Available at https://bit.ly/33ASbc1.
[25] http://unfccc.int/ttclear/tec/members.html#Task.
[26] https://unfccc.int/ttclear/tec/rdandr.
[27] Decision 14/CP.25, para. 12.
[28] See https://unfccc.int/ttclear/events/2020/2020_event10.

2. Implementation

(a) Technology needs assessment

28. The TEC prepared a policy brief on enhancing implementation of the results of TNAs,[29] covering experience, lessons learned and good practices in conducting TNAs and implementing their results, on the basis of a 2019 TEC paper.[30]

29. On the basis of the policy brief, the TEC prepared relevant key messages and recommendations for COP 26 and CMA 3 (see chap. III.D below).

(b) Innovative approaches to stimulating uptake of existing technologies

30. The TEC produced a publication on innovative approaches to accelerating and upscaling climate technology implementation for mitigation and adaptation,[31] providing information on the status of innovative approaches, identifying key enabling conditions for successfully applying such approaches and including key messages and recommendations for countries and stakeholders. The publication was presented at various meetings and events in 2020.[32]

(c) Ways forward and actions to be taken based on outcomes of technical expert meetings on mitigation

31. The TEC prepared recommendations on ways forward and actions to be taken based on the outcomes of the TEMs-M in 2020 (see annex III) taking into account the outcomes of the four virtual regional TEMs organized with the CTCN (see para. 11 above) and the virtual global TEMs-M, held on 30 September and 7 and 14 October 2020.[33]

3. Enabling environment and capacity-building

(a) Enabling environments and challenges

32. The TEC prepared a paper examining enabling environments, including challenges and opportunities in incentivizing the private and public sector to engage in technology development and transfer, on the basis of TNAs, NDCs, CTCN technical assistance and TEC Briefs. The paper identifies policies and strategies for improving enabling environments and addressing challenges and informed the relevant key messages and recommendations of the TEC for COP 26 and CMA 3.

33. The TEC will update the paper with relevant information from the NDCs submitted in 2020 and finalize it by its 23rd meeting.

(b) Endogenous capacities and technologies

34. Following its work in 2019 to promote endogenous capacities and technologies, in 2020 the TEC identified and analysed relevant needs, gaps, challenges and enabling environments by collecting views from three stakeholder groups: national representatives (NDEs and TNA focal points), constituted body members and observers, and technology practitioners.

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[29] See https://unfccc.int/ttclear/tec/brief13.html.
[30] See https://bit.ly/39eFeba.
[31] See https://bit.ly/31dJC5l.
[32] See, e.g., https://youtu.be/9RK-dlwb6Dg and https://unfccc.int/ttclear/events/2020/2020_event02.
[33] See https://unfccc.int/topics/mitigation/workstreams/technical-expert-meetings.

35.   Preliminary results indicate that needs and challenges differ across the three groups, and enabling strategies and measures for enhancing national endogenous capacity broadly converge.[34] Work will continue in 2021, incorporating findings from the mapping of enabling environments and challenges referred to in paragraph 32 above.

4. Collaboration and stakeholder engagement

(a) Technologies for averting, minimizing and addressing loss and damage in coastal zones

36.   The TEC and the Executive Committee of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts finalized the joint policy brief on technologies for averting, minimizing and addressing loss and damage in coastal zones[35] launched in July 2020.[36] The TEC expresses its appreciation to all experts who contributed to the brief.

37.   On the basis of the brief, the TEC prepared relevant key messages and recommendations for COP 26 and CMA 3 (see chap. III.D below).

(b) Technical examination process on mitigation

38.   The TEC continued strengthening its engagement in the technical examination process on mitigation.[37] In addition to organizing regional TEMs-M with the CTCN, the TEC participated in the global TEMs-M in 2020 and reported on key takeaways from the regional TEMs-M.

(c) Technical expert meetings on adaptation

39.   The TEC continued to engage with and contribute to the work of the Adaptation Committee in relation to the TEMs on adaptation by providing input on the involvement of the TEC in the technical examination process on adaptation.

(d) Stakeholder engagement

40.   Through the implementation of its activities and the work of its task forces, the TEC engaged over 60 organizations and institutions, including observer organizations, NDEs, NGOs, local communities and authorities, national planners, the private sector, academia, financing institutions, and international and United Nations organizations, such as the Global Alliance for Buildings and Construction, the Global Green Growth Institute, and Sustainable Energy for All. This engagement reflects the diverse expertise the TEC has benefited from in implementing its work.

5. Support

41.   The TEC workplan contains a number of activities in the area of support for strengthening the linkages between the Technology Mechanism and the Financial Mechanism, notably by enhancing collaboration with the GCF, the GEF and the Standing Committee on Finance.[38]

(a) Green Climate Fund

42.   The TEC Vice-Chair participated in the 4th annual meeting of the GCF with constituted bodies, which focused on opportunities for cooperation during the GCF first replenishment period (2020–2023) that could support countries in submitting and implementing their NDCs.

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[34] See TEC document TEC/2020/21/8. Available at https://unfccc.int/ttclear/tec/meetings.html.
[35] See https://unfccc.int/ttclear/coastalzones/.
[36] See https://unfccc.int/ttclear/events/2020/2020_event02.
[37] As per decision 13/CP.23, para. 6.
[38] In response to decision 14/CP.22, para. 9.

43.   The GCF is in the process of operationalizing support for climate technology incubators and accelerators. The TEC will continue engaging with the GCF in this area, including by providing input and identifying follow-up actions on incubators and accelerators, including in the context of its work on national systems of innovation scheduled for 2021.

(b)   Global Environment Facility

44.   Following consideration of the TEC updated evaluation of the PSP at SBI 50,[39] the SBI invited the TEC and the CTCN to include in their joint annual report for 2020 information on the outcomes of their actions in response to relevant recommendations in the report.[40] The TEC participated in the dialogue referred to in paragraph 13 above. In addition, the TEC integrated a number of follow-up activities, scheduled to be initiated in 2021 and arising from the updated evaluation, into its workplan within the scope of existing support activities.

(c)   Standing Committee on Finance

45.   The TEC agreed to provide input to the draft guidance for the operating entities of the Financial Mechanism to be prepared by the Standing Committee on Finance as soon as the annual reports of the GCF and the GEF to COP 26 are available.

6.   Monitoring and evaluating impacts

46.   The TEC continued to monitor and evaluate the impacts of its work and implemented its monitoring and evaluation system on a trial basis,[41] which will be revised and improved to take into account experience and lessons learned from the trial (e.g. from surveys of NDEs) and the feasibility of improvements.[42]

7.   Communications and outreach

47.   The TEC continued to enhance its communications and outreach activities. At its 20th meeting, it adopted a new communications and outreach strategy with the aim of increasing both visibility and understanding of the value of its work and products and stakeholder participation in TEC events.[43]

48.   Implementation of the new strategy resulted in greater use of online tools, which facilitated outreach to a broader range of stakeholders, as did the organization of events and meetings virtually owing to COVID-19. Use of the UNFCCC Twitter account to promote TEC events and publications has increased six-fold, from 3 tweets in 2019 to 18 in 2020, resulting in increases in retweets, likes and impressions by 681, 733 and 382 per cent, respectively. The number of articles published on the UNFCCC Newsroom increased from two in 2019 to six in 2020, with a 244 per cent increase in readership. Moreover, users and page views of TT:CLEAR have increased by 12 and 8 per cent, respectively, compared with the 2019 level.

8.   Gender mainstreaming

49.   As per the general approach to gender mainstreaming adopted at its 19th meeting,[44] the TEC appointed Kinga Csontos (Hungary) and Monique Motty (Democratic Republic of the Congo) as TEC gender focal points.

50.   With the support of the secretariat gender team, the TEC identified activities in its rolling workplan that provide opportunities for integrating gender considerations.[45, 46] It

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[39] FCCC/SBI/2019/7.
[40] FCCC/SBI/2019/20, para. 71.
[41] See https://bit.ly/2SEfdZg.
[42] See TEC document TEC/2020/21/11. Available at https://unfccc.int/ttclear/tec/meetings.html.
[43] See https://bit.ly/33CSZxd.
[44] See TEC document TEC/2019/19/10. Available at https://unfccc.int/ttclear/tec/meetings.html.
[45] Per decision 21/CP.22, para. 14.
[46] See document FCCC/TP/2018/1, paras. 97–102.

invited international and observer organizations to nominate gender and technology experts to participate in TEC events in order to enhance knowledge and awareness of the gender perspectives of climate technologies. Further, it reached out to the CTCN to exchange experience on issues related to gender and technology and identify opportunities for collaboration.

C. Challenges and lessons learned

51.   The TEC reflected[47] on lessons learned and challenges in implementing its mandates and the technology framework, considering the impact of the COVID-19 pandemic on its work:

(a)   TEC members and stakeholders swiftly and flexibly adapted to new ways of working, including using virtual platforms for meetings and events, allowing the TEC to progress effectively in implementing the activities in its 2019–2022 workplan;

(b)   The shift to virtual platforms allowed more participants to attend TEC events, such as the regional TEM-Ms;

(c)   The use of virtual platforms, however, has impacted the ability of members and stakeholders, especially those from developing countries, to effectively participate in meetings and events. The TEC recognizes that virtual meetings cannot guarantee the same level of interaction among members and observers as in-person meetings. These challenges remain and may need to be addressed should the pandemic continue in 2021. Members and stakeholders are encouraged to continue participating in virtual meetings and events;

(d)   The pandemic has highlighted the importance of building a more resilient socioeconomic system, in particular taking into account the affected poor and vulnerable people. It is therefore important to integrate aspects related to vulnerability and resilience against disasters, including pandemics, into the current work of the TEC, for example TNAs, research, development and deployment, emerging climate technologies and the technical examination process;

(e)   Enhanced use of social media and closer collaboration with the UNFCCC communication and outreach team allowed the TEC to reach a broader audience;

(f)   While there is immense momentum around gender and climate change, it remains challenging for the TEC to raise awareness among policymakers in a position to create and implement effective policies in these areas;

(g)   While the TEC has identified ways to integrate gender considerations into its work, results have yet to be assessed to further strengthen the gender aspect in the work of the TEC.

D. Key messages and recommendations for the Conference of the Parties and the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement

52.   Building on work carried out in 2020, the TEC wishes to deliver the following key messages and recommendations to COP 26 and CMA 3.[48]

1. Technology needs assessment

53.   On the basis of its analysis of experience, lessons learned and good practices in conducting TNAs and implementing their results, the TEC highlights the following:

(a)   Developing countries may wish to consider promoting their TNA results domestically with a view to enhancing their implementation. The TNA results may be shared

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[47] As per decisions 15/CP.22, para. 6, 13/CP.24, para. 4, 15/CMA.1, para. 5, and 8/CMA.2, para. 4.

[48] Also available at http://unfccc.int/ttclear/policies.

with stakeholders involved in mitigation- and adaptation-related processes and activities, including NDCs and NAPs. Experts from relevant bodies, such as ministries of finance, representatives of regional development and energy and economy sectors, NDEs and national designated authorities, could be introduced to domestic TNA results as an opportunity to build on them and hence leverage their implementation potential;

(b)   Governments may have a major role to play in creating an enabling environment for technology development and transfer by strengthening legal and regulatory frameworks, including by introducing inter alia market-based development instruments for market development;

(c)   Enabling environments for technology development and transfer are often supported by effective coordination and communication among government departments and agencies and between government and private sector stakeholders with the goal of streamlining and facilitating investment in technologies and presenting an integrated approach to international technology development and transfer efforts at the national and subnational level;

(d)   Well-selected project development teams and identified relevant decision makers are key actors for successful TNA preparation and implementation of results;

(e)   The latest guidance for preparing a technology action plan includes a step for tracking implementation of results after TNA completion, but incentivizing country stakeholders to allow institutions to keep track of their implementation results remains challenging.[49] The TEC will further consider this challenge during future work on TNAs;

(f)   Tracking the implementation of TNA results is included as not only a final step in technology action plan development but also an issue to be discussed at the start of the TNA process. Country stakeholders can consider existing monitoring systems in which tracking TNA results could be included (e.g. NDC monitoring requirements under the Paris Agreement, NAPs and national communications) or identify the need for capacity-building for tracking. Another argument for tracking implementation results is that it can help to streamline the process of iterative TNAs, in which a country decides to review or repeat the TNA process;

(g)   Regional promotion of success stories, challenges and lessons learned in implementing climate technologies could be beneficial for countries in the same region with similar enabling environments and capacity levels, as it could enable replication of good practices when piloting and deploying technology-related activities and thus support enhanced implementation of climate technologies. Countries are encouraged to engage with regional collaboration centres and regional organizations to support such promotion;

(h)   Under the global TNA project, dozens of countries have completed or are currently working on a TNA. This presents a great opportunity for exchanging experience with the TNA process and post-TNA implementation. In the current set-up, TNA coordinators and consultants meet each other at regional TNA workshops. A programme in which TNA coordinators or working groups learn from a country that undertook a TNA in a previous phase, for example through site visits, could supplement that;

(i)   TNA experts involved in previous phases have already been involved in workshops and training in phase III of the global TNA project, which has enabled enhanced cooperation and learning from experience;

(j)   International cooperation on meeting technology needs could enhance implementation of TNA results. Countries' technology needs may be addressed with the support of international funding and investment stakeholders with extensive experience in financing climate mitigation and adaptation action;

(k)   Access to financial resources is among the main identified challenges to technology development and transfer in developing countries, including the least developed countries and small island developing States. Simplified approaches, where applicable, which will facilitate access to financial tools, can accelerate the technology development and

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[49] See https://unfccc.int/ttclear/tna.

transfer in developing countries. Further promotion of implementation plans and of activities may stimulate the interest of financial institutions and stakeholders in investing in climate technologies;

(l)   In their TNAs, developing countries identified the need for a combination of market stimulation and human capacity development for advancing the transition to improved enabling environments for technology development and transfer. Supporting programmes aimed at strengthening the institutional and scientific capacity of developing countries, in particular the least developed countries, is critical for creating the long-term enabling frameworks required for technology development and transfer;

(m)   In addition to actively involving donors and financial experts in the TNA process, a 'donor conference' could be organized as a final step in the TNA process, which is now planned for phases III–IV of the global TNA project. In this context, it is recommended to demonstrate actual TNA results and success stories, as this builds trust and confidence among potential public and private sector funders. Keeping track of implementation results in relation to TNA-prioritized technologies would support this;

(n)   In developing countries, the markets for climate technologies are rapidly expanding, thereby creating new opportunities for international imports, for domestic production and joint ventures across borders. Familiarizing the private sector with TNA implementation plans and engaging it in project preparation teams may enhance interest in the country's implementation activities. Private sector efforts may also be stimulated by the availability of national support mechanisms and instruments focusing on both mitigation and adaptation action.

54.   On the basis of the above, the TEC recommends that the COP and CMA encourage:

(a)   Developing countries to engage well-selected project development teams and relevant decision makers for successful TNA preparation and implementation of results;

(b)   Developing countries to promote their TNA results regionally with a view to enhancing their implementation;

(c)   Further engaging the public and private sectors with TNA implementation plans and in project preparation teams;

(d)   Relevant stakeholders to promote lessons learned, success stories and challenges in relation to implementation of climate technologies;

(e)   International cooperation and support on meeting technology needs to enhance implementation of TNA results.

2.   Technologies for averting, minimizing and addressing loss and damage in coastal zones

55.   The TEC welcomes the collaboration with the Executive Committee of the Warsaw International Mechanism in developing a joint policy brief on technologies for averting, minimizing and addressing loss and damage in coastal zones.

56.   Drawing on this joint work, the TEC highlights the following:

(a)   Various technologies and combinations thereof – hardware, software, and 'orgware' – are currently available to assess and manage climate change related risks and identify recovery and rehabilitation measures for addressing climate-related impacts in coastal zones. Experience of using such technologies can be used to derive lessons learned and opportunities for improvement;

(b)   For technologies for risk assessment, there are a number of areas where further improvements can be made: increased awareness of existing technologies; availability and accessibility of high-quality and timely data; appropriate methods and tools for considering multiple hazard types (rapid and slow onset events); and appropriate scales of governance. These areas of improvements also provide opportunities for stakeholders to engage. Scientific dialogues and ongoing efforts by international organizations and partnerships in providing capacity-building training and support mechanisms to help disseminate coastal risk assessment technologies are examples of such opportunities;

(c)   Technologies for risk retention provide measures for the protection, retention and long-term adaptability of coastal zones and may take the form of structural/engineered measures, organizational and financial planning, legal and regulatory measures, ecosystem-based approaches to adaptation, community-based adaptation, and contingency planning and innovation. These measures require an integrated cross-sectoral approach to coastal zone management. Improving technologies for coastal risk retention is a continuous process and should be supported through the systematic sharing of knowledge and practices;

(d)   The complex nature of efforts to avert, minimize and address loss and damage in coastal zones requires different technologies for recovery and rehabilitation, since recovery and rehabilitation happen over multiple time scales, and priorities may shift as a situation progresses. Policy and regulatory tools that enable systems or communities to recover from the effects of a hazard in a timely, efficient manner are available, with international programmes and mechanisms in place to support recovery and rehabilitation. These tools should be complemented by national-level disaster recovery frameworks, which can also incorporate the use of indigenous and local knowledge. Investing in technologies to reduce disaster risks with a focus on prevention and preparedness, while also ensuring an effective emergency response and rehabilitation, is crucial for averting, minimizing and addressing potential loss and damage associated with climate change impacts in coastal zones.

57.   The TEC recommends that the COP and the CMA invite Parties to consider the findings of the joint policy brief in:

(a)   Considering and seeking technological solutions to assess climate-related risks, to retain and manage risks, and to recover and rehabilitate from climate-change related impacts in coastal zones;

(b)   Formulating a more comprehensive, long-term approach to rehabilitation and recovery that harmonizes with NAPs and disaster risk reduction strategies;

(c)   Stimulating enabling environments that can facilitate the sharing of knowledge and experience among countries, build capacity and upscale dissemination of technologies for averting, minimizing and addressing loss and damage in coastal zones. This could be done through collaboration with international organizations and in close partnerships with regional and sub-regional institutions and local communities in coastal areas.

IV.   Activities and performance of the Climate Technology Centre and Network in 2020

A.   Advisory Board meetings and membership

58.   At its 15th meeting, on 18 June 2020,[50] the Advisory Board elected Ping Zhong (China) as its Chair and Moa Forstorp (Sweden) as its Vice-Chair. The Board thanked Orly Jacob (Canada) for her service as the previous Chair.

59.   The Board discussed CTCN budgetary matters, resource mobilization and monitoring and evaluation, and endorsed the 2019 financial statement of the CTCN.

60.   At its 16th meeting, held from 10 to 12 November 2020, the Board welcomed new member Bongsoo Kim (Republic of Korea) and expressed its appreciation to outgoing members Seo Gon Ko (Republic of Korea) and Sara Aagesen (Spain) for their service.

61.   The Board approved the CTCN budget, annual operating plan for 2021 and annual report to the COP and discussed the second independent review of the CTCN. A representative of the constituency of youth NGOs spoke on behalf of the indigenous peoples organizations and the women and gender constituency to indicate their aspiration for observer status on the Board, similar to that of other constituencies. It was requested that the issue be

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[50] Owing to the COVID-19 pandemic, Advisory Board meetings were held virtually in 2020.

addressed as part of the review of the Board at COP 26. All Board meeting documents and presentations are available on the CTCN website.[51]

B. Activities of the Climate Technology Centre and Network

62.   CTCN activities and priorities for each year are established in its annual operating plan, approved by the CTCN Advisory Board at its second meeting every year. The plan is informed by the CTCN four-year programme of work (the latest for 2019–2022).[52]

63.   The programme of work and annual operating plan are structured in alignment with the goals and five thematic areas of the technology framework under the Paris Agreement.

64.   Guided by its gender policy and action plan (2019–2022),[53] the CTCN has continued efforts to mainstream gender in its activities and operations, including technical assistance, capacity-building and knowledge-sharing, and has started capturing and analysing lessons learned.

65.   The CTCN expresses its sincere appreciation for the financial and substantive support provided by Parties and the active engagement of Advisory Board members, NDEs and Network members in 2020 in implementing the following activities aligned with the five thematic areas of the technology framework.

1. Innovation

66.   The CTCN launched a new concept for supporting development of youth capacity to create climate technology solutions through a series of facilitated workshops, called Youth Climate Innovation Labs, in Africa and Asia. Innovation tools such as design thinking and artificial intelligence were used to engage youth and the local private sector in technology ideation and innovation.

67.   The Adaptation Fund launched a USD 10 million small grant programme (the Adaptation Fund Climate Innovation Accelerator), with USD 5 million administered jointly by UNEP–CTCN and USD 5 million by UNDP. The aim is to assist countries in testing, evaluating, deploying and upscaling innovative adaptation practices and technologies. Moreover, the programme aims to facilitate knowledge-sharing and exchange of best practices, thus strengthening opportunities for South–South and triangular cooperation on innovation in adaptation.

68.   Supported by the Government of the Republic of Korea, the CTCN is working to establish a liaison office in Songdo with a focus on enhancing the Centre's collaboration with the GCF and work on research, development and demonstration.

69.   The CTCN was selected by the GEF as one of nine organizations to implement its Challenge Program for Adaptation Innovation. With a grant of USD 677 thousand, the CTCN will help urban planners in certain medium-sized cities (Nelson's Dockyard National Park, Antigua and Barbuda; Chokwe, Mozambique; and Kaysone Phomvihane City, Laos), to identify financial tools and mechanisms for financing adaptation technologies and build relationships between municipalities, the private sector, financial markets and infrastructure funds. A project design document is under preparation and will be submitted to the GEF Council for endorsement in early 2021.

2. Implementation

70.   CTCN will share information on its technical assistance under the implementation theme. However, technical assistance activities address all five themes of the technology framework.

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[51] https://ctc-n.org/advisory-board/meetings.
[52] https://www.ctc-n.org/calendar/events/13th-ctcn-advisory-board-meeting.
[53] See https://ctc-n.org/resources/ctcn-gender-policy-and-action-plan-2019-2022.

(a) **Collaborative technology development and transfer**

71.   Since its inception, the CTCN has collaborated with 102 developing country Parties in providing technology development and transfer assistance. It has received 216[54] requests for technical assistance, including 15 multi-country requests.[55] Of the requests, 90 have been completed, 44 are under implementation, 56 are in the response plan design phase and 26 are under review.

72.   Figure 1 shows the status over time of the 216 requests deemed eligible and prioritized according to the screening criteria endorsed by the CTCN Advisory Board.[56]

Figure 1
Status of requests for technical assistance from the Climate Technology Centre and Network (2014–2020)
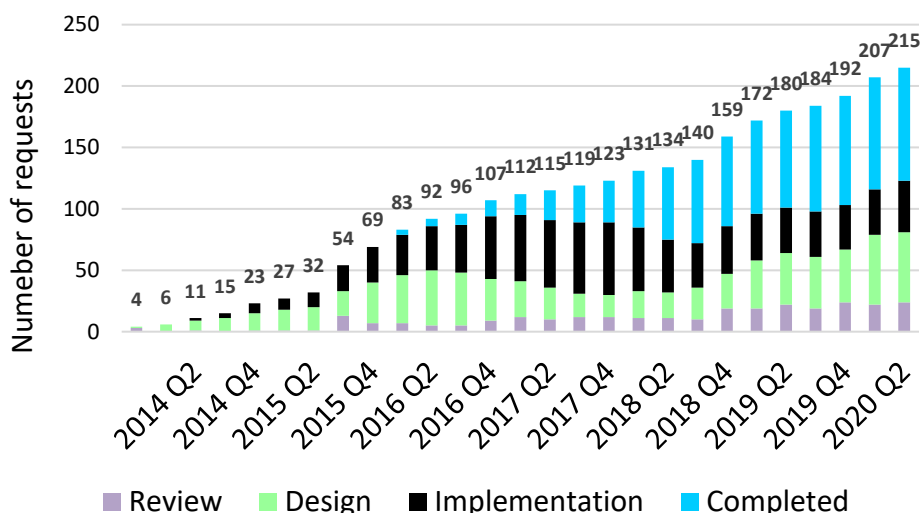
73.   In January–October 2020, the CTCN received 33 technical assistance requests compared with 43 over that period in 2019, which can be attributed to COVID-19-related constraints.

74.   See figure 2 for the distribution of technical assistance requests by type. Recent requests demonstrate the need for a combination of assistance.

Figure 2
Types of technical assistance requested from the Climate Technology Centre and Network (2014–2020)

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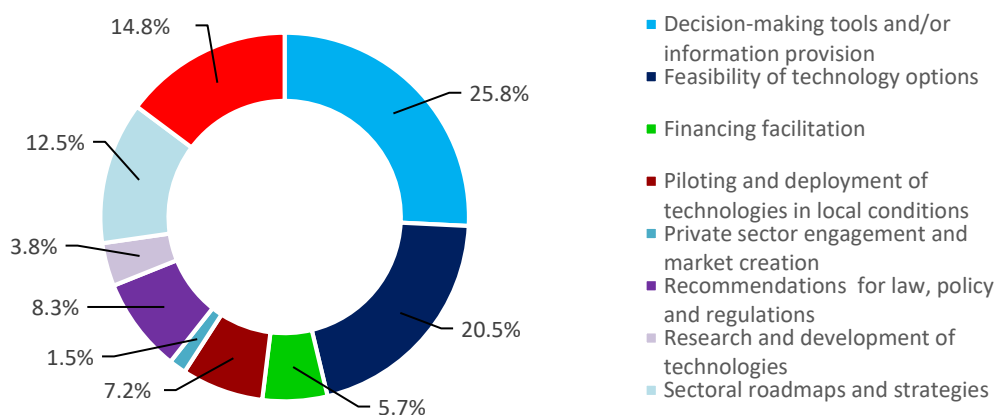
[54] Figure 1 shows 213 technical assistance requests received by the end of the third quarter of 2020. By 14 October 2020, three more requests had been received.

[55] Before 2019, a multi-country request was counted as a single request. Since 2019, it is counted according to the number of countries served.

[56] See https://ctc-n.org/about-ctcn/founding-documents.

75.   Countries have increasingly sought CTCN support (via accredited entities UNEP and UNIDO) to utilize their readiness allocation for projects focusing on priority technologies. Seventeen GCF technical assistance proposals, developed with CTCN support, have been approved for funding in 2020 so far. The GCF proposals focus on revisiting TNAs, enhancing appliance efficiency and applying building codes.

(b)   **Regional implementation**

76.   Multi-country requests, such as those related to biomass energy conversion projects spanning several African countries, have led to economies of scale and wider application of technologies ready for transfer, while programmatic approaches[57] to e-mobility in the Asia-Pacific region, for example, have led to creating enabling environments for the adoption of new technologies.

77.   Figure 3 shows the regional distribution of technical assistance demand. Requests from the least developed countries represent 58 per cent of all technical assistance requests, while small island developing account for 26 per cent.

Figure 3
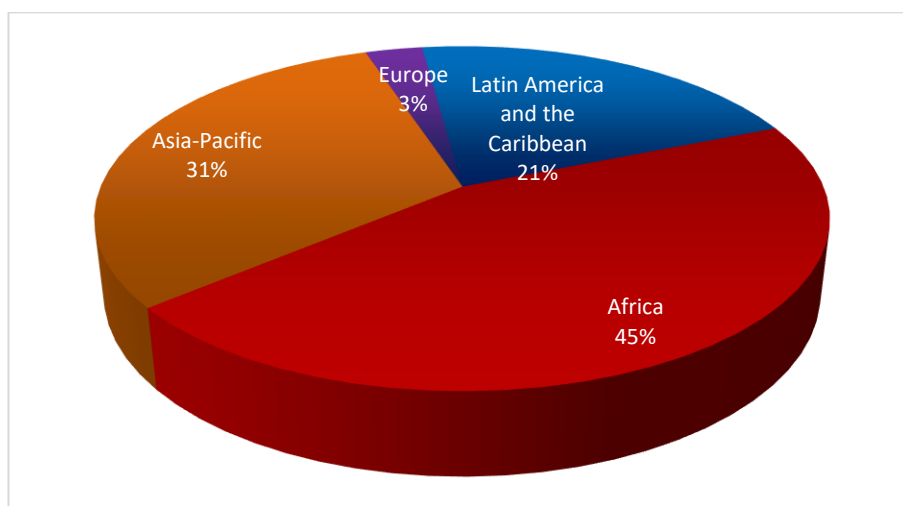**Regional distribution of requests for technical assistance from the Climate Technology Centre and Network (2014–2020)**

78.   CTCN experience has enabled identification of key trends in technical assistance, particularly at the regional level, providing opportunities for replication, upscaling and learning. In 2020, low-emission transport technologies and work with frontier markets on e-mobility emerged as priorities for programmatic approaches in Asia-Pacific; in Africa, multi-country requests for e-mobility and energy efficiency and GCF requests are high; and in Latin America and the Caribbean, circular economy and NDC partnership requests are at the forefront.

(c)   **Technology needs assessment and nationally determined contributions**

79.   Technical assistance requests continue to be anchored in countries' NDC and TNA processes. The vast majority focus on NDC implementation and 15 countries have received CTCN support for implementing TNAs and technology action plans.

(d)   **Mitigation and adaptation**

80.   Figure 4 provides a breakdown of CTCN technical assistance requests by climate change objective. A total of 58 per cent of mitigation requests relate to energy efficiency or renewable energy, while the two largest adaptation categories are agriculture and forestry (21

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[57] Programmatic approaches refer to technical assistance interventions across several countries where the focus area is the same (e.g. development of e-mobility policies or circular economy road maps) but the actual country intervention may be different.

per cent) and water (20 per cent). Although the types of mitigation and adaptation request remain quite similar to those received in 2019, an increasing number are more holistic and programmatic, including mitigation requests for e-mobility, adaptation requests for ecosystem-based adaptation and urban adaptation and resilience, and integrated mitigation and adaptation requests for developing smart cities.

Figure 4
Climate objective of requests for technical assistance from the Climate Technology Centre and Network (2014–2020)

■ Mitigation   ■ Adaptation and mitigation   ■ Adaptation
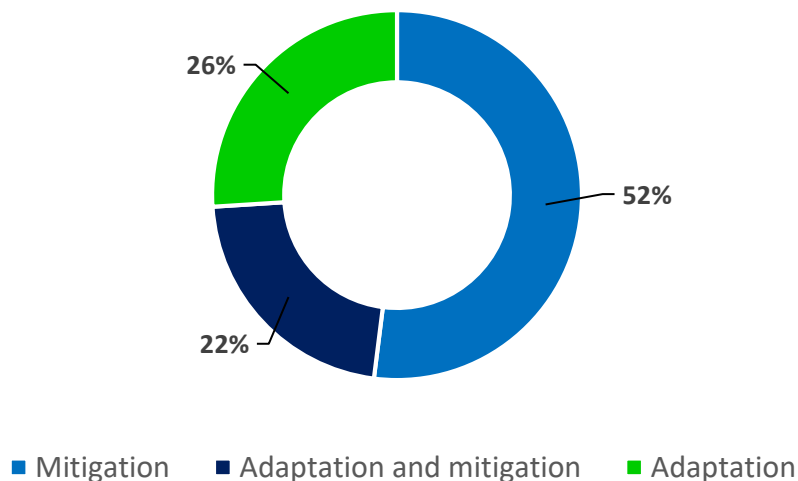
81.   The CTCN online technical assistance dashboard provides data visualizations of its technical assistance portfolio,[58] such as those presented in figures 1–4, and additional visualizations, including distribution by sector, region and involvement of consortium partners.

(e)   Gender mainstreaming

82.   The CTCN continues engaging gender experts in technical assistance through the established procedure that no less than 1 per cent of programme and operational funds is allocated to gender mainstreaming. The reference to gender and endogenous capacities in the technical assistance eligibility and prioritization criteria remains an early stage means of supporting an inclusive approach.

3.   Enabling environment and capacity-building

(a)   Enhancing public awareness

83.   The CTCN implemented its 2020 communications strategy with the aim of expanding awareness of its technology services and sharing information on adaptation and mitigation technologies. It engaged stakeholders through newsletters, web and social media content, videos and numerous events.

84.   In January–October 2020, CTCN activities were covered 598 times in global and national media and earned 29.1 million impressions on social media. The CTCN also hosted and/or presented at over 30 events.

85.   Recent CTCN publications include a research paper on its role as a climate technology and innovation matchmaker for developing countries[59] and a joint publication with The Energy and Resources Institute on women in energy.[60]

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[58] https://ctc-n.org/technical-assistance/request-visualizations.
[59] https://ctc-n.org/news/new-ctcn-publication-role-ctcn-climate-technology-and-innovation-matchmaker-developing.
[60] https://ctc-n.org/resources/women-energy-breaking-stereotypes-and-inspiring-change.

(b) Facilitating gender-responsive technologies

86. In partnership with the women and gender constituency, the CTCN continued its support for gender-responsive technologies by conducting a series of capacity development training sessions on upscaling gender-just solutions, enhancing entrepreneurship and integrating responses to COVID-19 into existing initiatives.

87. The CTCN supports information- and knowledge-sharing on the linkages between gender and climate technology by providing access to information via the gender hub on the CTCN website, which contains nearly 700 knowledge resources.

88. A capacity-building webinar on conducting a gender-responsive TNA was presented by the UNEP DTU Partnership and the CTCN in March 2020.[61] The event highlighted the TNA gender guidebook[62] and practical examples of gender mainstreaming in climate technology processes and its impacts.

(c) Assisting countries in developing and implementing policies

89. The CTCN provided significant capacity-building as part of its technical assistance services, with a focus on local stakeholders. Practical training on adaptation and mitigation technologies and financing and enabling environments was delivered at the global, regional and national level.

90. South–South learning on low-emission transport for Africa and Asia-Pacific was co-facilitated by a Network member; and cross-sectoral experience of climate technology issues was shared via the Pacific NDC Hub.

(d) Fostering private sector involvement

91. Technology clinics for small and medium-sized enterprises were organized in Africa and Asia in 2020 to generate awareness of the technologies available to businesses and the new markets that can be established through their use.

(e) Facilitating information-sharing

92. The CTCN website[63] contains over 15,000 information resources, including climate technology case studies and descriptions, national planning documents, publications, tools and webinars, in the six United Nations languages. The number of visitors to the website increased by 61 per cent in 2019–2020.

93. The most visited web pages are those related to technology descriptions and products; technical assistance requests; and the Network. Of the 30 countries that spend the most time on the website, around one third belong to the least developed countries and the small island developing States, respectively, and half are located in Africa, followed by Latin America and the Caribbean and Asia-Pacific.

94. CTCN webinars, delivered in collaboration with Network members and other partners, present new and innovative approaches to implementing technical solutions. Recent webinars have covered topics such as environmentally sound management of COVID-19 waste; and the relationship between climate change, food security and COVID-19. To date, over 6,000 participants have benefited from the 141 CTCN webinars and events delivered.

(f) Analysing information on capacity-building

95. The CTCN commissioned an analysis of selected capacity-building activities to understand the potential transformational impact of future initiatives. Capacity-building was found to enhance the abilities of key actors, namely government representatives and pioneering private sector, non-governmental and civil society organizations, to drive transformational interventions. The analysis will be published in early 2021.

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[61] https://ctc-n.org/news/recorded-webinar-conducting-gender-responsive-technology-needs-assessment.
[62] https://ctc-n.org/resources/guidance-gender-responsive-technology-needs-assessment.
[63] www.ctc-n.org.

96.   In addition, the impacts of previous gender-just climate solutions awards[64] and upscaling workshops[65] were analysed to share best practices with decision makers, climate change organizations and entrepreneurs and to promote more inclusive climate change action.

(g)   Enhancing collaboration

97.   The CTCN collaborated with the Adaptation Fund and the Paris Committee on Capacity-building to launch an adaptation and capacity-building newsletter at COP 25. The quarterly e-newsletter compiles information from bodies and organizations on adaptation-related training, publications, workshops and webinars for those engaged in strengthening resilience to climate change.

4.   Collaboration and stakeholder engagement

(a)   Engagement with national designated entities

98.   The CTCN conducts regional forums to provide opportunities for NDEs and Network members to share technology experience and discuss key issues. Topics discussed include the GCF Readiness Programme, the GEF Challenge Program for Adaptation Innovation, industrial energy efficiency, urban resilience, COVID-19 biomedical waste management and market mechanisms for accelerating technology transfer. The CTCN organized virtual meetings, including events tailored to the private sector; research, development and demonstration; and civil society. In total, there were 192 attendees from 76 countries. In addition, Germany's NDE organized webinars on private sector and market mechanisms accelerating technology transfer.

99.   The CTCN surveyed NDEs from Parties not included in Annex I to the Convention on NDC updates in August 2020. All NDEs that responded were aware of the NDC revision process, and the majority had already engaged with UNDP and the NDC Partnership. Most NDEs indicated that updates would be completed by the end of 2020 and many solicited CTCN support for developing project pipelines and concept notes for NDC implementation. The CTCN will engage with NDEs that indicated that they have no international partners to support this process.

(b)   Enhanced engagement with Network members

100.   Following a survey of Network members in 2019, the CTCN developed a Network engagement plan in 2020 that responds to members' interest in engaging more in networking, knowledge-sharing, national events and matchmaking events. A number of Network engagement initiatives were launched, including creating more knowledge-sharing and capacity-building engagement opportunities such as targeted webinars, technology clinics, pro bono research and co-producing regional technology briefs, whereby Network members can offer expertise and benefit from collaboration. Youth Climate Innovation Labs were conducted to match the Network's small and medium-sized enterprises with youth innovators to collaborate on innovative climate change solutions.

101.   In addition, the CTCN began to regularly provide feedback to Network members on technical assistance bidding proposals; and introduced a two-tier bidding process to facilitate participation of more Network members in technical assistance projects. As a result, the technical assistance implemented by Network members has increased significantly: 75 per cent of new technical assistance was implemented by Network members in 2020.

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[64] See, e.g., https://ctc-n.org/sites/www.ctc-n.org/files/resources/2019_gender_just_climate_solutions _english.pdf.

[65] See, e.g., https://ctc-n.org/sites/www.ctc-n.org/files/resources/Up-Scaling%20Gender%20Just%20 Climate%20Solutions%202019.pdf.

(c) Gender-responsive engagement

102. The CTCN strives to generate greater awareness of the important relationship between gender, climate change and technology within the climate change community. In August 2020 the CTCN presented its work on gender-responsive technology development and transfer at the Global Gender Summit. Furthermore, the CTCN has supported development of a number of gender and climate change publications in partnership with UNEP, UNIDO, the United Nations Entity for Gender Equality and the Empowerment of Women and Women Engaged in a Common Future, among others.

(d) Collaboration with youth

103. The CTCN has increasingly engaged young people in its work in recent years with the goals of offering technology services to youth and providing them with a platform for sharing their insights and experience of climate change technologies. The CTCN has continued to enhance collaboration with the constituency of youth NGOs.

104. By offering opportunities for learning and mutual exchange of knowledge and experience, such as by highlighting the work of youth innovators and co-creating articles, workshops and webinars, the CTCN supports youth engagement in climate action while building important intergenerational bridges in support of transformative technology solutions.

5. Support

(a) Collaboration between the Technology Mechanism with the Financial Mechanism

105. COP 21, 22, 24 and 25 have provided increasingly specific guidance on how the Financial Mechanism and the Technology Mechanism should collaborate to deliver solutions that address the climate technology needs of developing countries articulated in their NDCs.[66]

106. Linkages with the Financial Mechanism continue to grow, as evidenced by a new collaboration with the Adaptation Fund for the USD 10 million joint CTCN–UNDP Adaptation Fund Climate Innovation Accelerator and the GEF pilot programme on innovative financing for adaptation technologies in medium-sized cities.

107. Since 2017, the GCF and the CTCN have partnered under the GCF Readiness and Preparatory Support Programme: the CTCN provides services and expertise in response to developing countries' requests using GCF country resources. The CTCN accessed USD 5.9 million for implementing 17 GCF readiness projects between 2019 and 2020, 7 of which are complete or near completion. The CTCN contributed to the development of 12 GCF readiness proposals by countries in 2020 and will access USD 4.6 million for their implementation, pending approval of all submissions.

108. The CTCN has supported seven countries through the NDC Partnership Climate Action Enhancement Package. Some funds have been provided to the CTCN for technical assistance implementation, and the CTCN will co-finance, and in some cases fully cover, the remaining individual technical assistance costs.

(b) Response to recommendations from the evaluation of the Poznan strategic programme

109. SBI 50 considered the TEC updated evaluation of the PSP, which included recommendations regarding the PSP aimed at enhancing effectiveness of the Technology Mechanism.

110. In response, a dialogue was held in November 2020 between the GEF, the PSP regional pilot climate technology transfer and finance centres and the CTCN to identify lessons learned and options for continuing the work of the centres in a collaborative manner. Stakeholders agreed on the need to strengthen linkages between the CTCN and the PSP

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[66] Decisions 13/CP.21, 14/CP.22, 14/CP.24 and 14/CP.25.

centres; regularly exchange information on respective project pipelines; and draw on the CTCN as a resource for the PSP centres' capacity-building activities.

111. As per the recommendations of the evaluation of the PSP, the CTCN engages with multilateral development banks, specifically those hosting PSP regional pilot climate technology transfer and finance centres, with which it regularly exchanges information on project pipelines to facilitate upscaling of technologies. It has collaborated with multilateral development banks on joint activity programming and capacity-building, such as the African Development Bank on accessing climate finance; the European Bank for Reconstruction and Development and the Islamic Development Bank on project pipelines; and the Asian Development Bank on clean technologies in Asia.

(c) Enhancing the mobilization of pro bono support

112. See annex V for information on pro bono support for CTCN activities.

(d) Monitoring, evaluation and tracking of action

113. The CTCN updated its monitoring and evaluation system[67] and internal dashboard used to track, evaluate and report on activities, results and expected impacts of its services. The system will facilitate capturing the impact of CTCN activities through aggregated output, outcome and impact indicators such as anticipated funding leveraged, and anticipated emissions reduced. Detailed guidelines for implementing partners and NDEs have been developed, providing standardized methodologies for reporting on quantitative and qualitative core indicators.

114. Baseline data collected throughout 2020 will inform future yearly target levels within the updated monitoring and evaluation system.

115. Other impact measurement efforts include surveying NDEs jointly with the TEC in July 2020 to assess long-term impacts of implemented technical assistance. Overall, 81 per cent of respondents reported implementing actions on the basis of technical assistance recommendations, including leveraging technical assistance for further financing, establishing new programmes and developing new policies.

116. CTCN potential for transformational impact was assessed in collaboration with researchers at UNEP DTU Partnership using the Initiative for Climate Action Transparency transformational change methodology. The study identified transformative characteristics currently being addressed by the CTCN and provided lessons and recommendations on how to further assess and achieve transformational impacts.

C. Organizational structure of the Climate Technology Centre and Network

1. Climate Technology Centre

117. The CTCN Director, Rose Mwebaza, provides direction and strategy in the implementation of the CTCN programme of work, supported by a small team of professional and administrative staff, together with technical experts.

118. The CTCN has now fully implemented a regional approach to delivering its technology services, with three professional staff based at regional hubs in Kenya (hosted by UNEP), Mexico (hosted by UNIDO) and Thailand (hosted by UNEP). In addition, supported by the Government of the Republic of Korea, the CTCN will operationalize a liaison office in Songdo to focus on collaboration with the GCF and enhancing CTCN work on research and development, South–South learning and Network engagement in the region.

2. Climate Technology Network

119. To deliver timely mitigation and adaptation assistance, the CTCN leverages the expertise of UNEP and UNIDO, a global network of over 600 civil society, finance, private

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[67] See https://ctc-n.org/about-ctcn/monitoring-evaluation.

sector and research institutions, and NDEs in over 160 countries in the global South and North. In 2020, the Network welcomed 83 new members, bringing the total number to 605.

120.   The CTCN continuously monitors Network capacity and coverage and engages with potential members with a view to expanding its pool of expertise and ensuring appropriate representation of different organization types and regions. Of the new members, 43 are private sector organizations, followed by 14 research and academic institutions and 11 NGOs.

3.   National designated entities

121.   NDEs serve as national focal points for technology development and transfer and are considered de facto members of the Network.

122.   To date, 160 countries have nominated NDEs.[68] The results of an NDE survey conducted by the TEC and the CTCN can be found in paragraphs 140–141 below.

4.   United Nations Environment Programme

123.   COP 25 recalled the memorandum of understanding between the COP and UNEP regarding the hosting of the CTC[69] and invited UNEP to develop and implement plans to financially support operation of the CTCN so as to facilitate its effective functioning in accordance with the memorandum of understanding.[70]

124.   The CTCN is supported by its hosts in accessing funding from the Financial Mechanism, specifically the GCF, the GEF and the Adaptation Fund. UNEP supported negotiations with the Government of the Republic of Korea to establish a liaison office in Songdo for five years, held discussions with the Government of Denmark to provide continued support to the CTCN, and held discussions with the European Commission to extend the existing funding agreement and provide additional funding. In addition, discussions were held to organize a donors meeting for the CTCN, which has been postponed owing to the pandemic.

125.   COP 17 mandated the secretariat to commission periodic independent reviews of the effectiveness of the CTCN every four years.[71] The secretariat launched the second independent review of the CTCN in October 2020. The findings, including any recommendations regarding enhancing CTCN performance and a management response from UNEP, will be considered at COP 26 (see annex IV).

5.   Funding

126.   COP 18 mandated that the CTC and implementation of Network services be funded from various sources, ranging from the Financial Mechanism to philanthropic and private sector sources, as well as by financial and in-kind contributions from the co-hosts of the CTCN and from Network participants.[72] COP 17 invited Parties in a position to do so to support the CTCN by providing financial and other resources.[73]

127.   The funding secured for the CTCN since 2013 as at September 2020 is presented in the table below.

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[68] See http://unfccc.int/ttclear/support/national-designated-entity.html.
[69] Decision 14/CP.18, annex I.
[70] Decision 14/CP.25, para 25.
[71] Decision 2/CP.17, annex VII, para. 20.
[72] Decision 14/CP.18, annex I, paras. 22–23.
[73] Decision 2/CP.17, para. 141.

Financial support secured for the Climate Technology Centre and Network since 2013 as at 30 September 2020

(United States dollars)

Donor	Total contribution
European Union	14 429 688
Japan	11 509 844
Norway	8 499 850
Denmark	7 225 293
United States of America	4 930 308
Canada	4 357 277
Switzerland	4 296 515
Germany	1 158 207
Republic of Korea	1 256 575
Italy	849 653
Sweden	691 555
Finland	216 640
Ireland	216 548
Spain	227 363
Subtotal	**59 865 316**
GCF	5 894 724
Adaptation Fund	4 575 000
GEF	1 971 000
UNIDO	1 247 665
NDC Partnership	649 793
Subtotal	**14 338 183**
Total	**74 203 498**

128. At its 15th meeting, the CTCN Advisory Board provided guidance on resource mobilization efforts and decided that the general task force for all Board members will further explore new, innovative ways of mobilizing and diversifying CTCN resources.

129. The CTCN carried over approximately USD 7 million into 2020. As at 30 September 2020, it had received USD 10.7 million in 2020. Its approved annual operating budget is USD 10 million and its projected expenditure for 2020 is USD 9.9 million. The projected fund balance of the CTCN at the end of 2020 is approximately USD 11 million, including carry-over of USD 8.2 million, pending cash receipts of USD 2.8 million against previous years' commitments. The CTCN anticipates fully utilizing its allocated budget in 2021.

130. The CTCN notes an increase in budget expenditure in 2020 compared with previous years, attributed to factors such as more focused planning and implementation against the CTCN annual operating plan; better coordination between the Advisory Board and donors; and enhanced support by the hosts of the CTCN in terms of financial coordination and procurement.

131. Productive discussions have been initiated with multilateral banks and other United Nations agencies on joint programming and co-financing opportunities. The Governments of Austria, Denmark and Japan have confirmed their intention to fund CTCN activities in 2021.

D. Challenges and lessons learned

1. Coronavirus disease 2019: impacts and response

132. The numerous challenges for CTCN stakeholders stemming from COVID-19 have required the CTCN to be flexible and adapt, and in some cases reorient, its means of work.

133. Owing to travel restrictions resulting from COVID-19, the CTCN shifted its operations as much as possible to online and telephone-based training and consultations. The success of its technical assistance delivery despite the pandemic can be attributed to 2020 starting with a strong pipeline of requests developed through field visits and other in-person interactions before the pandemic. Furthermore, as a result of previous CTCN collaboration with local institutions on technical assistance delivery, implementation was greatly facilitated by in-country partners.

134. However, limitations on in-person stakeholder engagement and capacity-building at the national and local level have resulted in a weaker pipeline of technical assistance requests for 2021. Such engagement enables more in-depth discussion on technology goals, challenges and knowledge-sharing, while local capacity-building helps refine the quality of technical assistance requests.

135. Discussion and training via digital platforms have not been as effective, as reflected in the quality of technical assistance requests received and the time required to develop tailored response plans. The CTCN therefore reiterates the importance of in-country engagement and capacity-building to ensuring that processes are locally owned, thereby increasing the likelihood of interventions leading to tangible mitigation, resilience and sustainable development outcomes. Going forward, the CTCN will explore how to expand opportunities for engagement of national institutions and consultants.

136. Stakeholders experiencing greater difficulty accessing CTCN digital solutions, particularly the least developed countries, are less able to benefit from CTCN resources and services and engagement with CTCN, including for technical assistance consultations. The CTCN has facilitated Internet access to Advisory Board members for specific events or communicated primarily via telephone. More attention will be given to bridging the digital divide to ensure fair access to services.

2. Knowledge-sharing

137. The CTCN has seen increased interest in its online knowledge-sharing activities, highlighting the importance of engaging and accessible online information. While remaining focused on webinars and online training workshops, the CTCN may draw on lessons it and its partners have learned to develop more content in areas where it is and can be a thought leader. Work is under way to share information in knowledge briefs on key topics of interest to CTCN stakeholders based on technology trends identified. This presents a new opportunity for NDEs and Network members to share knowledge collaboratively.

138. The proliferation of online meetings, virtual workshops and events has led to a new form of burnout: while there was great enthusiasm for virtual events earlier in 2020, participation has slowly diminished and attention is fractured as all organizations attempt to engage stakeholders online.

3. Gender mainstreaming

139. The CTCN plans to evaluate its efforts to date to systematically and effectively mainstream gender in its operations, including into completed CTCN technical assistance, to guide enhanced ambition and action. The CTCN will continue efforts to build internal and external capacity to enhance gender mainstreaming efforts in its core service areas.

4. Monitoring and evaluation

140. As part of their recently updated monitoring and evaluation framework, the CTCN and the TEC surveyed NDEs on the impacts of CTCN technical assistance: 81 per cent of respondents indicated that their countries have implemented recommendations from CTCN technical assistance (related to submission of funding proposals, policy implementation, etc); and 62 per cent affirmed that technical assistance had a positive impact on reducing emissions in their country. Regarding sustainable development, 77 per cent of respondents indicated a very or somewhat positive advancement of gender equality and human rights achieved as a result of CTCN technical assistance; 89 per cent indicated enhancement of environmental protection and safeguards; and 96 per cent indicated positive impacts on economic and social development as a result of CTCN intervention. The summary will be publicly available soon.

141.   Such feedback provides valuable qualitative and quantitative insights to the Technology Mechanism and will be sought biannually to more systematically reflect findings in CTCN service delivery. In 2021, the CTCN will use the qualitative data from the survey to explore selected technical assistance interventions and develop case studies of NDE experience.

E.   Key messages for the Conference of the Parties and the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement

142.   The CTCN has taken measures to respond and adapt to challenges resulting from the COVID-19 pandemic. It managed to implement its workplan and maintain organizational continuity by focusing on implementing technical assistance requests already in the pipeline and shifting stakeholder engagement and capacity-building activities to online conferencing and training. The CTCN has endeavoured to maintain stakeholder engagement and enable more stakeholders to benefit from increased online resources and events.

143.   The CTCN sought to learn about countries' responses to the pandemic and identified ways to support their efforts, which included developing webinars and capacity-building measures incorporating COVID-19 considerations.

144.   The CTCN continues to enhance its collaboration with the Financial Mechanism while forging new relationships with financial institutions and Parties to mobilize resources to deliver on its mandates.

145.   The CTCN has endeavoured to make technology development and transfer more inclusive by implementing its gender action plan and engaging with the women and gender, and youth NGO constituencies to help countries effectively transition to low-carbon economies, build climate-resilient societies and systems and make progress towards the Sustainable Development Goals.

146.   Surveys and evaluations conducted or commissioned by the CTCN have highlighted that its technical assistance has laid the foundation for early adoption and scale-up of climate technologies by driving necessary research and development and/or innovation processes towards a specific technology that can be adopted and upscaled. This approach has demonstrated more holistic results, with NDEs rating the assistance highly in terms of support for economic and social development.

Annex I

Joint activities of the Technology Executive Committee and the Climate Technology Centre and Network for 2021–2022

[English only]

Area of collaboration	*Description*	*Remarks*
Technology and NDCs (technology framework guidance, paras. 12, 16 and 20)	**Background**: The technology framework provides overarching guidance to the Technology Mechanism to support the implementation of the Paris Agreement on technology-related matters, including the implementation of NDCs. The TEC and the CTCN, as the policy and implementation arm of the Technology Mechanism, carry out their mandate following this guidance. For example, the TEC works on strengthening the link between TNAs and NDCs, while the CTCN supports countries, through technical assistance, to implement technology projects as part of their NDC. **Activities:** 1. Jointly analyse technology issues (e.g. needs, challenges, linkage between policy and implementation, link to NAPs) related to NDCs on the basis of an analysis of submissions of revised NDCs (2020), and findings from both the TEC and CTCN work related to NDCs. 2. Jointly identify success stories and failures on the uptake of technologies, building on the outcomes of pre-2020 technical examination process, previous work of the TEC, and sourcing information from technology stakeholders, NDEs and Network members. 3. Develop a joint publication containing elements of points (1) and (2) above. 4. Provide a joint recommendation to CMA 26 on how to stimulate the uptake of climate technology solutions, including through the enhancement of enabling environments, to support the implementation of NDCs.	Joint activity in 2021
Gender and technology (technology framework guidance, paras. 3(b), 6, 16(c), 18, 20 and 22)	**Background**: Parties have provided guidance and mandates on gender-related matters to constituted bodies through various decisions. The technology framework also includes provisions referring to gender. In 2019, the TEC agreed to mainstream gender consideration into its workplan and subsequently appointed its gender focal points in 2020. The CTCN has already undertaken extensive work on gender since its inception, including establishing gender focal points, implementing a gender policy and action plan and developing a gender knowledge hub. This presents opportunities for synergies between the two bodies on gender mainstreaming as it relates to technology development and transfer. **Activities:** 1. Encourage and generate awareness of countries and their NDEs, TEC members, Advisory Board members on the COP guidance on the need to achieve gender balance in their Boards, in accordance with decisions 36/CP.7 and 23/CP.18, and report annually on the gender distribution of the TEC, the Advisory Board and the CTCN secretariat. 2. Support the UNFCCC secretariat in developing and maintaining a roster of gender experts to call upon for various events, workshops and activities and for consultation during technical assistance implementation.	Joint activity in 2021–2022

Annex II

Incorporation by the Technology Executive Committee and the Climate Technology Centre and Network of the guidance contained in the technology framework into their respective workplan and programme of work

[English only]

I. Technology Executive Committee

1.   As the policy arm of the Technology Mechanism, the TEC is mandated to implement its functions, further implement the technology transfer framework established under the Convention, consider its priority areas and promote coherence and synergy under the Technology Mechanism.[1] Article 10 of the Paris Agreement mandates the Technology Mechanism to serve the Paris Agreement. Further guidance was provided to the TEC in decisions 15/CMA.1 (the technology framework) and 16/CMA.1.

2.   In delivering its functions and mandates, the TEC regularly agrees on its activities for a duration of time, captured in a rolling workplan. Since its inception, the TEC has developed and implemented three rolling workplans, for 2012–2013, 2014–2015 and 2016–2018.

3.   The workplan for 2019–2022, adopted at its 19th meeting and made publicly available in September 2019, provided an opportunity for the TEC to respond to guidance from both the COP and the CMA in one integrated workplan, whereby it will support implementation of technology development and transfer under the Paris Agreement and continue supporting enhanced action on technology development and transfer under the Convention.

4.   The TEC has worked to ensure that efficiency and effectiveness are achieved by avoiding duplication and promoting complementarity of activities while still being responsive to specific guidance from each governing body. Further, the TEC considered it important to ensure the continuity, clarity and coherence of its activities to maximize the impacts of its work. Finally, for flexibility in organizing and sequencing its activities and to synchronize with the CTCN programme of work, the TEC agreed to four years as the duration of its workplan.

5.   In designing its latest workplan, the TEC took into account lessons learned from implementing its previous workplans as well as the principles of the technology framework, namely coherence, inclusiveness, results-oriented approach, transformational approach and transparency. More importantly, these principles will guide the TEC in implementing its workplan.

6.   The TEC workplan for 2019–2022 is organized into five thematic areas following the five key themes of the technology framework: innovation, implementation, enabling environment and capacity-building, collaboration and stakeholder engagement, and support. Each activity corresponds to a workstream identified by the TEC: mitigation, adaptation or cross-cutting. This organization of work is presented in five tables included in the workplan.

7.   Each activity in every thematic area was designed with technology framework and/or COP guidance in mind, taking into account the most efficient and effective ways of responding to the guidance, demonstrated by references to relevant paragraphs of the technology framework and other COP decisions in the first columns of the tables. For example, the work on research, development and demonstration (under innovation, activity 2) responds to guidance in the technology framework in the thematic areas of innovation (para. 8(b), (e), (f) and (g)), collaboration (para. 20(b) and (d)) and support (para. 25(c)). Likewise, identifying ways forward and actions to be taken based on the outcomes of the TEMs-M (under implementation, activity 5) responds to decision 13/CP.23 and guidance in the technology framework in the thematic areas of innovation (para. 8(c)), implementation

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[1] Decision 1/CP.16, paras. 119, 120, 121 and 127.

(para. 12(e)), enabling environment and capacity-building (para. 16(d) and (e)) and collaboration (para. 20(c)).

8.   The tables also detail outputs and deliverables, for example policy briefs, policy publications, guidance, and recommendations for the COP and the CMA, along with associated timelines, which reflect actual results that the TEC expects from each activity. Further, the tables indicate stakeholder groups that the TEC intends to reach out to for different activities and possible modalities for engaging them, which shows the commitment of the TEC to being inclusive and transparent.

9.   The workplan was designed with the engagement of various technology stakeholders (Parties, accredited observer organizations, United Nations agencies and international organizations, and technology experts) present at the TEC meetings when it was discussed.

10.   Once the workplan had been adopted, the TEC invited representatives of the constituencies of business and industry, environmental, research and independent, and youth NGOs and intergovernmental organizations to participate in five TEC task forces established to implement the workplan. In November 2019, the TEC launched a process to solicit interest of stakeholders in engaging in and supporting its work. A total of 36 organizations and individual experts expressed interest in engaging in the work of the TEC. The organizations and experts were engaged through various means, such as soliciting their input for case studies to be included in TEC work, including them in TEC surveys of targeted stakeholders, and inviting them to participate in TEC events.

11.   The TEC has responded in the workplan to cross-cutting mandates, such as integrating a gender perspective into the work of constituted bodies (decision 21/CP.22) and technology framework guidance (paras. 3(b), 6, 16(c), 18, 20 and 22), by agreeing to integrate gender considerations into the implementation of the workplan activities to enhance the effectiveness and inclusiveness of TEC recommendations. The TEC also established the role of and subsequently appointed gender focal points within the TEC.

12.   In response to decision 13/CP.24 and technology framework guidance (paras. 24–25), the TEC developed a system for monitoring and evaluating the impacts of its workplan activities in collaboration with the CTCN to ensure a coherent approach under the Technology Mechanism. The TEC will regularly review implementation of the system and revise it as needed.

13.   In response to decision 13/CP.24 and technology framework guidance (para. 16(a)), the TEC adopted a communications and outreach strategy to support implementation of its rolling workplan, ensure that its products are understood by and reach the target audience and enhance public awareness of the potential of climate technologies. The TEC will undertake communications and outreach activities in collaboration with the CTCN to ensure synergy and coherent messaging under the Technology Mechanism.

14.   The TEC agreed to periodically review implementation of its rolling workplan and may adjust it, as appropriate, taking into account further mandates that may be provided by the COP and the CMA.

II.   Climate Technology Centre and Network

15.   Following adoption of the technology framework, the CTCN incorporated the framework's goals and associated activities into its 2019–2022 programme of work. The programme of work is organized according to the five themes of the technology framework and represents a departure from the previous programme of work, which was structured according to the CTCN service areas. These services are now distributed across the various framework themes.

16.   In late 2019, the CTCN prepared its 2020 annual operating plan for review and approval by its Advisory Board at its 14th meeting. The plan models the programme of work in its alignment with the five themes of the technology framework and provides a matrix that displays how each of the CTCN service areas aligns with the various themes. Specific

planned activities were referenced according to the particular technology framework activity to which they contribute.

17.   In order to ensure that they could track their progress in terms of implementing the technology framework, the TEC and the CTCN jointly undertook a review and update of their monitoring and evaluation systems. In March 2020, the CTCN launched its new system, which included a theory of change and performance measurement framework, both of which are in alignment with reporting on the implementation of the technology framework. To support implementation of the new monitoring system, six data collection forms and templates intended to gather inputs on the measurement framework's 45 qualitative and quantitative indicators were created or updated. Likewise, an online data collection system was installed.

18.   Incorporating the technology framework into the planning and reporting tools described above is intended to guide, support and reinforce CTCN efforts to promote and facilitate enhanced action on technology development and transfer and thus substantively contribute to implementation of the Paris Agreement.

Annex III

Recommendations of the Technology Executive Committee on ways forward and actions to be taken based on outcomes of technical expert meetings on mitigation in 2020

[English only]

1.   Building on the outcomes of discussions during the four virtual regional TEM-Ms in 2020 on climate-smart cooling solutions for sustainable buildings, the TEC highlights the following:

(a)   The buildings sector represents one of the largest energy consuming sectors in most of the regional economies; it often consumes over one third of final energy in countries, which results in significant greenhouse gas emissions. A wide and accelerated implementation of climate-smart cooling solutions for sustainable buildings can achieve significant greenhouse gas emission reductions and contribute to meeting the 1.5 °C target of the Paris Agreement as well as provide additional economic, social and environmental benefits to the regions and their communities, such as affordable and reliable access to energy-efficient cooling, increased investment opportunities, additional sources of income and improved quality of life;

(b)   The benefits of climate-smart cooling solutions for sustainable buildings go beyond the emission reductions from fossil-fuel consumption, as demonstrated in some regions applying local knowledge and techniques. They also produce other benefits, such as usage of locally produced green building materials, reducing electricity loads on often fragile grid systems, transforming the roles of small and medium enterprises, and ensuring sustainable cooling production;

(c)   Governments' roles may range from leading in policymaking, planning and consultation processes – creating action plans, setting policies, regulations and standards that may incentivize sustainable financing, to supporting research and development of promising cooling technologies through partnership and collaboration. Governments can develop and put in place minimum energy performance standards and labelling schemes for cooling equipment. Appropriate policies and efficient governance tools often drive the required change on the ground. Policy tools and incentives may address broader issues such as urban planning, building design and interest in using energy-efficient appliances, which often leads to more demand for high-quality cooling systems and less use of energy for cooling;

(d)   Access to finance was identified as one of the main challenges to implementation of climate technologies, including smart cooling. Support for smart cooling technologies can play a vital role in the implementation and success of climate technologies. The buildings sector could have a significant return on investment owing to its potential role in offering energy-efficient solutions. Enhanced access to financial tools can accelerate the implementation of sustainable cooling solutions and strengthen the markets. A wide variety of financial instruments are readily available to support climate-smart cooling, such as green loans and sustainable bonds. A noteworthy development from the regions is the emergence of sustainable finance taxonomies, which apply not only in the energy sector but also in other sectors, beyond the production and use of energy;

(e)   Awareness-raising, capacity-building and technical field support are essential to ensuring the successful replication of climate-smart cooling solutions for sustainable buildings as well as their long-term operation and maintenance. Awareness-raising and capacity-building programmes on a long-term basis may stimulate actions on both the supply and the demand side. leading to enhanced cooling efficiency by producers and by consumers, including industrial and household;

(f)   Climate-cooling innovations that build on local knowledge and techniques can, in addition to greenhouse gas emission reductions, deliver multiple benefits, including enhancing the usage of locally produced green building materials, reducing electricity loads on often fragile grids, and reducing the amount of cooling production by taking advantage of

materials that prevent collar heat gains. Significant progress was reached in all four regions in terms of implementation, not only by employing technological solutions but also by addressing broader issues such as job creation, building indigenous and endogenous capacities, collaboration among stakeholders and access to cooling equality;

(g)   The private sector is becoming more actively engaged in supporting climate-smart cooling solutions for sustainable buildings. However, additional incentives may be required for private investors to engage in this sector, specifically in rural areas where local communities have limited ability to pay for cooling products.

2.   On the basis of the above, the TEC recommends that the COP encourage Parties to:

(a)   Introduce policies, schemes and programmes that promote climate-smart cooling solutions for sustainable buildings;

(b)   Introduce financial incentives schemes that encourage and facilitate stakeholders to shift to innovative climate-smart cooling solutions for sustainable buildings;

(c)   Promote initiatives on capacity-building and awareness-raising on climate-smart cooling solutions for sustainable buildings for both the supply and the demand side – covering producers and consumers of cooling services;

(d)   Stimulate usage of climate-smart cooling innovations that build on local knowledge and techniques and deliver environmental, economic and social benefits to regions;

(e)   Incentivize participation of the private sector in supporting climate-smart cooling solutions for sustainable buildings.

Annex IV

Action taken in response to the independent review of the Climate Technology Centre and Network

[English only]

1.   Since the independent review of the CTCN conducted in 2017, the Centre has consistently endeavoured to incorporate the recommendations contained therein. Action has been taken in the following areas.

I.   Resource mobilization and transparency

2.   The CTCN (via its host organizations) and the GCF are partnering under the GCF Readiness and Preparatory Support Programme, through which the CTCN provides services and expertise in response to developing countries' requests, utilizing GCF country resources.

3.   The CTCN has significantly updated its monitoring and evaluation system in coordination with the TEC to enhance evaluation and reporting of its impact.

4.   The CTCN now makes available online funding and donor agreements,[1] as well as documents such as relevant COP decisions, independent CTCN reviews and recommendations, and the monitoring and evaluation framework that guides its operations.[2]

II.   Technical assistance efficiency

5.   Applying a more regional focus to CTCN services has enabled the CTCN to identify regional trends in technology demand more effectively; and NDEs have gained dedicated teams for discussing their needs and accessing CTCN services. As a result, the quality of technical assistance requests and efficiency of their implementation have seen significant improvement.

6.   The CTCN introduced a two-tier bidding process to facilitate participation by more Network members in technical assistance projects, resulting in an increase in Network members applying to provide technical assistance.

III.   Network member involvement

7.   The CTCN initiated a number of activities with Network members following a Network-wide survey, including creating more knowledge-sharing and capacity-building engagement opportunities such as targeted webinars, technology clinics and co-producing regional technology briefs, whereby Network members can offer expertise and benefit from collaboration. Youth Climate Innovation Labs were conducted to match the Network's small and medium-sized enterprises with youth innovators to collaborate on innovative climate change solutions. The CTCN also began to regularly provide feedback to Network members on technical assistance bidding proposals.

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[1] See https://ctc-n.org/about-ctcn/donors.
[2] See https://ctc-n.org/about-ctcn/monitoring-evaluation.

Annex V

Pro bono contributions to support services of the Climate Technology Centre and Network

[English only]

1.   The CTCN continues its efforts to mobilize resources, including pro bono and in-kind contributions, to support programme implementation. Over USD 1 million in pro bono and in-kind support was secured for CTCN activities between January and October 2020, including support from a monitoring and evaluation expert as a result of pro bono support from the United States Agency for International Development.

2.   The pro bono approach applied by the CTCN is carefully designed to:

        (a)   Work with national focal points, thereby ensuring adoption and transfer of best possible technologies that are tailored to local conditions and meet the requirement of technology neutrality;

        (b)   Provide responsive and catalytic support to address barriers to technology and innovation;

        (c)   Ensure that all technical assistance builds endogenous capacity;

        (d)   Maintain a robust capacity development and knowledge management framework to facilitate continuous learning and support South–South cooperation;

        (e)   Create links between technical assistance and national planning processes.

3.   The CTCN analysed its experience with pro bono contributions: sometimes Network members are interested in a particular technical assistance request and tender their services for free; otherwise NDEs may request that technology providers in their countries indicate their interest in providing pro bono assistance; or NDEs may offer to financially support technical assistance implementation and launch a national tendering process to procure the necessary expertise.

4.   In all cases, the requesting country's NDE is required to approve the proposed technical assistance implementer and response plan before commencing with the arrangement, according to CTCN standard technical assistance practice. This matchmaking enables the CTCN to leverage additional resources for technology transfer and offers NDEs and Network members an additional avenue for technology engagement.

5.   The CTCN has accepted pro bono support for activities both related and not related to technical assistance, such as:

        (a)   Policy action plan for low-emission mobility in Cambodia;

        (b)   Financing strategy for transit-oriented development in Ethiopia;

        (c)   Technology road map and action plan for water recycling technologies in Namibia;

        (d)   Assessment of combined options for district heating modernization and building efficiency improvements in Serbia;

        (e)   Climate-smart city framework in Sri Lanka;

        (f)   Piloting a domestic solar water pump network in the United Republic of Tanzania;

        (g)   Technical support for disseminating solar energy technology in Togo;

        (h)   Feasibility study for carbon mineralization using carbon dioxide in Viet Nam;

        (i)   Secondment of a monitoring and evaluation expert to analyse the CTCN monitoring and evaluation system;

(j)   Capacity-building on low-emission transport through South–South cooperation.

6.   Lessons learned:

(a)   The secretariat of the CTCN makes significant efforts to operationalize and facilitate pro bono technical assistance;

(b)   In some cases, interventions made on the basis of pro bono contributions are larger than those made using traditional CTCN technical assistance, thereby providing opportunities to undertake more integrated activities within a technical assistance project and potentially across several technology implementation stages;

(c)   The more targeted collaboration between the pro bono service provider and the developing country recipient increases the potential for larger markets to be created in developing countries;

(d)   Pro bono support is welcomed not only for the delivery of technical assistance but also for conducting capacity-building activities and research on behalf of the CTCN;

(e)   The CTCN is consequently formalizing the process of soliciting pro bono support and engaging with multilateral banks, Network members and NDEs to generate awareness of opportunities to support CTCN activities.

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