ADVANCE VERSION

United Nations

FCCC/CP/2021/3

Framework Convention on Climate Change

Distr.: General
20 August 2021

Original: English

Conference of the Parties
Twenty-sixth session
Glasgow, 31 October to 12 November 2021

Item x of the provisional agenda
Development and transfer of technologies
Second review of the Climate Technology Centre and Network

Report on the second independent review of the effective implementation of the Climate Technology Centre and Network

Summary

This report contains the findings of the second independent review of the effective implementation of the Climate Technology Centre and Network. It provides the main findings for each area that was evaluated (relevance, effectiveness, efficiency and impacts and sustainability), the conclusions of the review, the recommendations for enhancing the performance of the Climate Technology Centre and Network and the management response of the United Nations Environment Programme to those recommendations.

Contents

Abbreviations and acronyms

Annex I Party	Party included in Annex I to the Convention
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
GHG	greenhouse gas
ICAT	Initiative for Climate Action Transparency
MDB	multilateral development bank
MOU	memorandum of understanding
NDA	national designated authority
NDC	nationally determined contribution
NDE	national designated entity
non-Annex I Party	Party not included in Annex I to the Convention
PSP	Poznan strategic programme on technology transfer
SDG	Sustainable Development Goal
TAP	technology action plan
TEC	Technology Executive Committee
TNA	technology needs assessment
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization

I. Introduction

A. Mandate

1. COP 16 established the Technology Mechanism[1] with the objective of enhancing action on climate technology development and transfer. The Mechanism consists of two bodies: the TEC, its policy arm, and the CTCN, its implementation arm.

2. COP 17 agreed on arrangements to make the Technology Mechanism fully operational in 2012 and adopted the terms of reference for the CTCN[2] and the selection process for the host of the CTC.[3] It also requested the secretariat to commission an independent review of the effective implementation of the CTCN every four years, with the findings, including any recommendations regarding enhancing the performance of the CTCN, considered by the COP (in 2021 for the second review).[4]

3. COP 18 decided to select UNEP, as the leader of the consortium of partner institutions, as the host of the CTC for an initial term of five years, with possible renewal if so decided by COP 23.[5] COP 18 also adopted the MOU between the COP and UNEP regarding the hosting of the CTC.[6]

4. The report on the first independent review of the effective implementation of the CTCN[7] was submitted for consideration by Parties at COP 23, which decided to renew the MOU between the COP and UNEP regarding the hosting of the CTC for a further four years.[8]

5. Following a procurement process consistent with United Nations regulations, the secretariat selected EY et Associés (hereinafter referred to as the consultant) to conduct the second independent review.

B. Possible action by the Conference of the Parties

6. The COP will be invited to consider the findings of and recommendations arising from the second independent review of the effective implementation of the CTCN, and to determine any appropriate follow-up actions for enhancing the performance of the CTCN, taking into account further deliberations among Parties on this matter at COP 26.

II. Methodology

A. Scope

7. The consultant organized the review on the basis of four areas:

(a) **Relevance**: are the strategy and resources of the CTCN relevant and appropriate to the priorities set by the COP and to local support needs? This question investigates the consistency of the first and second programmes of work and the annual operating plans with their external context and takes into account, for example, COP decisions, NDE needs, TEC policy guidance, collaboration with the operating entities of the Financial Mechanism and recommendations from past reviews;

(b) **Effectiveness**: have the objectives of the CTCN relating to technical assistance, knowledge management, peer learning, capacity-building, networking and

[1] Decision 1/CP.16, para. 117.
[2] Decision 2/CP.17, para. 133.
[3] Decision 2/CP.17, para. 136.
[4] Decisions 2/CP.17, annex VII, para. 20, and 14/CP.23, para. 10.
[5] Decision 14/CP.18, para. 2.
[6] Decision 14/CP.18, para. 3.
[7] FCCC/CP/2017/3.
[8] Decision 14/CP.23, para. 5.

stakeholder engagement been achieved? This question assesses the services and outputs delivered by the CTCN against its objectives, taking into account actual operating conditions;

(c) **Efficiency**: have the objectives of the CTCN been achieved efficiently? This question focuses on assessing the implementation of the CTCN (in terms of, for example, governance, external and internal organization, direct and indirect resources, timelines and processes) and any improvements in productivity of its activities and services by identifying the difficulties encountered and success factors involved;

(d) **Impacts and sustainability**: did the CTCN achieve expected outcomes and provide long-term positive effects? This question aims to identify observed outcomes and compare them with expected outcomes, identify the factors involved in the achievement or non-achievement of outcomes and assess the likelihood of tangible positive long-term effects as well as the replicability of their impacts.

8. For each question, the consultant detailed subquestions as well as indicators and data sources to be used to answer the questions (see annex I).

9. This report on the second independent review complements that on the first independent review referred to in paragraph 4 above, which covers the operations and activities of the CTCN from 1 January 2017 to 31 December 2020. This report assesses (1) whether the CTCN effectively responded to the recommendations arising from the first independent review and (2) the impacts of CTCN activities since its inception. Questions relating to the relevance and efficiency of the CTCN are addressed against the background of the current context and organization of the CTCN.

10. The second independent review is based on a global analysis, with specific regions or countries also analysed where relevant.

B. Workplan

11. The consultant developed the following methodology for the independent review:

(a) Inception phase;

(b) Data collection and analysis phase, including the following activities:

(i) An extensive literature review, including review of the strategy, governance, operations, services and outcomes of the CTCN (see annex VI), drawing on external publications as well as CTCN documents (see annex II);

(ii) Interviews with 19 stakeholders of the CTCN comprising the Director of the CTCN, CTCN staff from UNEP and UNIDO, donors, members of the CTCN Advisory Board, and consortium partners (see annex III);

(iii) Three electronic surveys,[9] engaging 43 NDEs; 118 consortium partners, knowledge partners and Network members; and 248 CTCN subproject beneficiaries (see annex IV);

(iv) Benchmarking against four organizations/initiatives with similar activities (see annex V): African Climate Technology Centre hosted by the African Development Bank, Asia-Pacific Climate Technology Network and Finance Center hosted by the Asian Development Bank, Finance and Technology Transfer Centre for Climate Change hosted by the European Bank for Reconstruction and Development, and the Climate Technology Transfer Mechanisms and Networks in Latin America and the Caribbean project hosted by the Inter-American Development Bank;

(v) Presentation and discussion of the preliminary findings of the review during the 17th CTCN Advisory Board meeting held from 26 to 28 April 2021;

(c) Conclusion and recommendations phase, including a management response from UNEP on the recommendations (see annex VIII).

[9] The survey conducted during this second independent review is referred to as “the survey”.

12. The work was undertaken between October 2020 and July 2021.

III. Review findings

13. The main findings of the review, presented in this chapter, come from the inputs of stakeholders, cross-checked with data collected through desk reviews. These findings are based on the detailed review of the performance of the CTCN presented in annex VII and constitute the consultant's judgment on the responses to the evaluation questions defined during the inception phase of the review.

A. Relevance

14. **Alignment with COP decisions**: the CTCN responded to guidance from COP decisions by incorporating the following into its operations and annual reporting:

(a) Its second programme of work, for 2019–2022, aligns CTCN country-driven services with actions and activities specified under the technology framework and falls within the scope of work and mandate of the CTCN. The programme organizes the activities of the CTCN and those undertaken collaboratively with the TEC according to the five key themes of the technology framework. CTCN services are distributed under these themes.

(b) The CTCN and the TEC now include in their joint annual reports information on how they have incorporated the guidance in the technology framework into their respective programmes of work and workplans, as well as on the progress of their work and on challenges and lessons learned in implementing the technology framework.

(c) As requested at COP 21,[10] further activities related to technology research, development and demonstration and endogenous capacities and technologies were implemented. Endogenous capacities, for instance, are now incorporated in the decision-making process for technical assistance and are developed through capacity-building activities (see annex VII, chap. A.1).

15. **Recommendations from the first independent review**: the second programme of work considers the recommendations formulated during the first independent review of the CTCN. For example, the CTCN responded to the recommendation to strengthen its transparency and reporting. It did so by refining its monitoring and evaluation system in order to improve its effectiveness and capture long-term impacts and by making available online information on funding contributions and donor agreements, relevant COP decisions, independent CTCN reviews and recommendations, and information on the monitoring and evaluation framework that guides its operations (see annex VII, chap. A.2).

16. **Parties' needs**: the provision of CTCN services follows a demand-driven approach that responds to developing countries' needs. Stakeholders perceive it positively on the whole, with the majority, particularly NDEs, considering CTCN activities and interventions relevant or very relevant. The response of the CTCN to developing countries' needs is supported by the presence of NDEs in most developing countries: of the 154 non-Annex I Party members, only 21 do not have an NDE. Since the Paris Agreement entered into force, the CTCN has been working more closely with countries on their NDCs. To be eligible, technical assistance requests need to explicitly demonstrate alignment with national plans and NDCs, as formalized in the technical assistance request form (see annex VII, chap. A.3).

17. **Collaboration with the TEC**: since 2017, collaboration between the CTCN and the TEC has been stepped up through additional joint activities included in their respective programmes of work (e.g. the "UNFCCC Technology Mechanism NDE survey" (hereinafter NDE survey) addressed to NDEs in 2020 to support monitoring and evaluation). Through their secretariats, the CTCN and the TEC have ensured coherent communication and increased information-sharing in relation to their work. To support the implementation of joint activities, the 2021 annual operating plan of the CTCN suggests establishing a joint task force composed of the Chairs, Vice-Chairs and other members of the TEC and the CTCN

[10] Decision 1/CP.21, para. 66.

Advisory Board.[11] However, the two bodies could collaborate to a greater extent by considering the full scope of each other's results. Although some TEC technical papers build on CTCN activities (e.g. on endogenous capacities[12]), TEC policy briefs could more systematically draw on case studies and lessons learned from on-the-ground CTCN operations. Also, only 35 per cent of NDEs that responded to the aforementioned survey reported using TEC products to prepare technical assistance requests, mainly because of limited stakeholder awareness of TEC activities (see annex VII, chap. A.4).

18. **Collaboration with the operating entities of the Financial Mechanism**: the CTCN and the TEC were encouraged by the COP to foster cooperation with the operating entities of the Financial Mechanism[13] to maximize linkages between the large-scale financing capacities of the GEF and the GCF and the potential of the CTCN to build developing countries' capacities to access such funding. Since the first independent review, the CTCN has taken steps to increase collaboration with the operating entities. For example, the TEC and the Chairs of the CTCN Advisory Board participated in the 4th annual meeting of the GCF with the constituted bodies and attended the launch of the GEF Challenge Program for Adaptation Innovation at COP 25. While no measures to enhance cooperation were included in the first programme of work, the second programme of work sets out three such measures to be taken by the CTCN (see annex VII, chap. A.5). Linkages with the Financial Mechanism continue to grow, as evidenced by the ramping up of its engagement with the GCF Readiness and Preparatory Support Programme and the GEF pilot programme on innovative financing for climate adaptation technologies in medium-sized cities, and the new collaboration with the Adaptation Fund on the USD 10 million CTCN–UNDP Climate Innovation Accelerator. As reported by the GCF,[14] the CTCN is now the largest provider of GCF readiness support for technology. The target number of technical assistance requests granted by the GEF or the GCF was exceeded in 2020 (see figure 32). Nonetheless, surveys and interviews have shown a continued lack of interaction and collaboration between CTCN NDEs and GEF operational focal points, and to a lesser extent between CTCN NDEs and GCF NDAs[15] (see annex VII, chap. A.6). Further, the target number of events to be co-organized with the GCF, the GEF and MDBs was not met (see figure 32).

19. **Added value of the CTCN**: the added value of the CTCN in terms of supporting developing countries in accessing international funds and building enabling environments was acknowledged by all interviewees. There is a demonstrated appetite from non-Annex I Parties for CTCN-type services to complement other mechanisms and initiatives, and the CTCN has proven the effectiveness of its model by providing early stage support to potential projects.[16] The main strengths of the CTCN, notably in comparison with the regional climate technology and finance centres supported by the GEF and hosted by MDBs under the PSP (hereinafter referred to as PSP regional centres), are as follows (see annex VII, chap. A.7):

(a) It is demand driven;

(b) It can assist countries in applying for funding from international funding programmes and larger financial mechanisms;

(c) It has been established under the umbrella of the UNFCCC, making it legitimate and trustworthy;

(d) It has a wide range of ready-to-use resources, a network of international expertise and technology providers and stronger sectoral expertise than MDBs while covering a wide range of technology areas;

(e) It is more agile and responsive and less bureaucratic than other entities in the United Nations system;

[11] TEC document TEC/2020/21/12, chap. IV, available at https://unfccc.int/ttclear/tec/meetings.html.
[12] TEC document TEC/2021/22/10.
[13] Decisions 13/CP.21, 14/CP.22, 15/CP.22, 15/CP.23 and 14/CP.24.
[14] See https://www.ctc-n.org/sites/www.ctc-n.org/files/Agenda%20item%2012.3_CTCN%20AB17_Green%20Climate%20Fund.pdf.
[15] See https://www.ctc-n.org/sites/www.ctc-n.org/files/ab201914_4.1_ctcn_to_gef_cop25_report.pdf.
[16] FCCC/SBI/2019/7, para. 88.

(f) It can provide early stage support and support for projects that may be too small for MDBs and other players focused on larger initiatives.

20. **Incentive**: despite those recognized strengths, stakeholder feedback suggests that technical assistance projects could also have been implemented through other funding sources (see annex VII, chap. A.7), but that CTCN intervention nevertheless helped projects to start and be deployed more quickly.

21. **Links with other related climate support programmes**: a comparative analysis with the four PSP regional centres showed that, despite potential overlaps in their geographical coverage and delivered services, there is no competition between the CTCN and the centres as there has been enough demand for them to coexist (see annex VII, chap. A.7). However, cooperation between the CTCN and the PSP regional centres has remained limited to information-sharing on projects and discussions on joint activity programming and capacity-building.[17] The MDBs implementing the PSP regional centres expressed a willingness to ensure the continuation of the efforts beyond the implementation of the PSP and an interest in strengthening links with the CTCN. In November 2020, a dialogue was held among the GEF, the PSP regional centres and the CTCN to identify lessons learned and opportunities for further collaboration. Participants agreed on the need to strengthen linkages between the CTCN and the PSP regional centres, regularly exchange information on respective project pipelines, and draw on the CTCN as a resource for the PSP regional centres' capacity-building activities.[18] Additionally, the PSP regional centres have clear expertise in development finance and investment, and often have direct communication channels with ministries of finance or energy. This could complement the broad-ranging expertise of the CTCN in designing bankable project proposals and implementing them through its channels, which are often with NDEs housed within ministries of environment.[19]

22. **Integration of the SDGs into the CTCN programme of work**: the CTCN transformational impact assessment[20] showed that its technical assistance addresses a range of SDGs (9 out of 17). SDG 13 on climate action is an inherent element of CTCN-supported interventions.

23. **COVID-19 pandemic**: the pandemic affected the ability of the CTCN to deliver its services in 2020–2021, albeit to a varying extent from region to region, according to the digital divide, which posed challenges for the development and implementation of technical assistance. In-depth capacity-building activities had to be put on hold. In June 2020, a meeting of the CTCN Advisory Board task force was held to adapt the workplans and timelines of the CTCN to the circumstances arising from the pandemic and ensure the continuation of activities. Implementing partners were encouraged to take measures to ensure the continuity of technical assistance implementation, including engaging with stakeholders online and adapting workplans and timelines, ultimately leading to all projects being implemented. Efforts were also made to integrate new country needs due to the COVID-19 pandemic into CTCN services, such as through dedicated webinars (e.g. on environmentally sound management of COVID-19 waste), or to integrate COVID-19 responses into existing technical assistance and capacity-building activities, notably knowledge-sharing among civil society organizations and social entrepreneurs. The pandemic has impacted fundraising, however, owing to many donor countries facing domestic issues and the postponement from 2020 to 2021 of a fundraising round table in Denmark.

B. Effectiveness

24. **Performance**: with the exception of some components described below, the effectiveness of the CTCN, like that of the PSP regional centres, is rated as satisfactory. The performance of the CTCN is globally recognized, and the CTCN was identified as an option for operating the Santiago network for averting, minimizing and addressing loss and damage

[17] FCCC/SB/2020/4, para. 110.
[18] FCCC/SB/2020/4, para. 110.
[19] FCCC/SBI/2015/16, para. 85.
[20] Olsen KH. 2020. *Climate Technology Centre and Network Transformational Impact Assessment*. Copenhagen: UNEP DTU Partnership.

associated with the adverse effects of climate change.[21] However, it appears that the operational objectives of the CTCN have mostly been determined on the basis of past results and budget constraints rather than potential for improvement.

25. **Technical assistance**: while the overall satisfaction of NDEs and beneficiaries with CTCN technical assistance is relatively mixed, other performance indicators point to the effectiveness of technical assistance activities. In most cases, the CTCN met or exceeded the target number of technical assistance projects, programmes, strategies and technical studies. For instance:

(a) Since 2017, the number of technical assistance response plans being designed has fluctuated between 30 and 50 per year, which is in the target range of annual output except for 2017. Nonetheless, yearly target output decreased from 50–70 in 2017 to 30–40 in 2019 (see table 7);

(b) The geographical coverage of technical assistance requests matches the mandate of the CTCN to prioritize the least developed countries and other vulnerable countries. More than 100 non-Annex I Parties, including all but 32 non-Annex I Parties with an NDE, had received technical assistance from the CTCN as at 31 December 2020;

(c) Similarly to the first independent review, the second review found that the requests of NDEs and beneficiaries for technical assistance have mostly been addressed well and that appropriate resources in terms of capacity and skills have been mobilized. Implementation is facilitated by effective communication and coordination among the stakeholders involved (see annex VII, chap. B.4).

26. The success of technical assistance can be explained by:

(a) The use of clear and well-implemented selection criteria, which are critical in guiding and optimizing the request approval process;

(b) Strong support from NDEs[22] for elaborating technical assistance requests, as well as useful interactions between NDEs and the CTCN, though some countries still lack capacity and resources for preparing projects and defining needs despite the implementation of the CTCN Incubator Programme. With 100 per cent of the requests received by the CTCN deemed eligible, it appears that the requests are of very high quality, which implies that support from NDEs and the CTCN during the request process is effective;

(c) The use of appropriate expertise throughout the project's life cycle and effective consultation of local stakeholders during the identification and planning phases (see annex VII, chap. B.2).[23]

27. The main difficulties identified in relation to technical assistance were limited budgets compared with on-the-ground realities and countries' expectations, and inefficiencies in the engagement and monitoring of implementing partners (e.g. delays and lack of transparency in the selection process).

28. Technical assistance requests tend to be skewed towards mitigation objectives, similarly to what was observed during the first independent review and by the PSP regional centres, which have faced challenges in addressing adaptation (see figure 6).[24]

29. **Communications and outreach**: communications and outreach of the CTCN are effective thanks to a structured approach and dedicated personnel. Several means of communication allowed clear and useful information to be provided to stakeholders as well as a broader audience. Notably, CTCN performance on social media has exceeded the defined objectives. Further, stakeholders considered that the CTCN website has improved considerably. They also noted that CTCN storytelling, on its impacts in particular, has

[21] Established by decision 2/CMA.2, para. 43, as part of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts.

[22] Lee W, Bak I, Kim H-J, et al. 2020. What Leads to the Success of Climate Technology Centre and Network Pro Bono Technical Assistance? *Journal of Climate Change Research*. 11(5–1): pp.353–366. Available at https://www.dbpia.co.kr/Journal/articleDetail?nodeId=NODE10490630.

[23] As footnote 22 above.

[24] FCCC/SBI/2019/7, para 112.

benefitted from improvements in the monitoring and evaluation system and the knowledge management system. As regards CTCN services, however, a lack of clarity was observed in relation to the definition of technology transfer and the scope of CTCN work on it. CTCN support focused on matters related to know-how, methods and practices (software), but some stakeholders expected its support to cover equipment aspects (hardware), too.

30. **Knowledge management system**: since the first independent review, the system has been adapted to focus more on supportive infrastructure and search engine optimization, including review and removal of broken web pages containing resources linked to external databases. As a result, content on the CTCN website is now more stable, tailored and accessible. The number of online tools and information materials was reduced from 17,100 in 2018 to 16,650 in 2019 to improve clarity and relevance.[25] The number of knowledge partners contributing to the knowledge management system remained constant and within the target range, while annual numbers of system website visits were well above target between 2017 and 2019, despite a decrease in 2018.

31. **Capacity-building**: capacity-building activities and networking events were perceived very positively by stakeholders, with almost every capacity-building and enabling environment target met in 2020 (see figure 15).[26] Indicator ratings between 2017 and 2019 related to peer-learning, capacity-building, outreach, networking and stakeholder engagement were more mixed but remained positive.[27] The CTCN has partly responded to the recommendation from the first independent review to continue training NDEs regularly and facilitating the elaboration of requests through regional forums and the Incubator Programme by:

(a) Organizing regional forums. The number of forums organized in 2020 more than doubled from 2019, following no increase between 2017 and 2019 (see annex VII, chap. B.5);

(b) Establishing contact with other focal points and Network members, though there is a still a lack of interaction and collaboration between CTCN NDEs and other focal points (see para. 18 above). Relationships with Network members tended to be perceived positively, with 60 per cent of Network members surveyed stating that their country NDE played an effective role as a coordinator between them and the final beneficiaries, and 15 per cent disagreeing with this statement.

32. **Monitoring and evaluation**: in coordination with the TEC and with pro bono support from the United States Agency for International Development, the CTCN reviewed its monitoring and evaluation system to enhance the consistency of its reporting and better demonstrate the effectiveness of CTCN activities and measure their impacts.[28] The 2020 results were made available at the 17th CTCN Advisory Board meeting. The new monitoring and evaluation system was launched in 2020 and therefore many of the indicators and measurements could not yet be compared with previous indicators and measurements. At the time of writing of this report, some results of impact indicators (anticipated GHG emissions, anticipated number of beneficiaries and anticipated funding leveraged) were available for 24 technical assistance requests completed in 2019 and 2020 for which closure reports were received. Data that still required further quality assurance checks were not considered. There was no formal analysis of the degree to which the targets from the first programme of work were achieved owing to the absence of a completion report. Rather, the first independent review only covered part of the period of the first programme of work and the only annual analysis was of the progress against targets through joint annual reports or annual operating plans (see annex VII, chap. B.6).

[25] CTCN document AB/2020/15/6, available at https://www.ctc-n.org/advisory-board/meetings.

[26] The only target not met related to the number of technology descriptions, publications, national plans and other information resources made available on the CTCN knowledge platform.

[27] While the number of thematic events, thematic programme training sessions and national events hosted or supported by the CTCN increased significantly between 2017 and 2019, the number of secondees, new countries enrolled in the Incubator Programme, regional forums organized, NDEs trained and webinars held decreased or remained the same during the same period.

[28] CTCN document AB/2020/15/2.2.

C. Efficiency

33. **CTCN Advisory Board**: the overall efficiency of Advisory Board meetings has improved over the past few years thanks to more regular interaction among members between meetings, the establishment of new communication channels (including subgroups and task forces) and a stronger emphasis on technical than political issues. The transparency and accountability with which the CTCN approaches its activities and financial resources have been reinforced, but a fuller picture could be given to Advisory Board members on the operational and organizational challenges facing the CTCN. This would enable the Advisory Board to engage with the CTC secretariat in enhancing service delivery and support its fundraising as the domestic ambassador of the organization.

34. **Resource mobilization**: the MOU between the COP and UNEP states that the CTC, in collaboration with UNEP and in consultation with the CTCN Advisory Board, shall help to mobilize funds to meet the costs associated with the CTCN. COP 24 welcomed with appreciation the efforts of the CTCN to mobilize additional resources for implementing its functions,[29] while COP 25 requested it to enhance these efforts and further diversify its sources of funding.[30] Despite its 2018 resource mobilization strategy, the CTCN did not fully deliver on its initial targets, and funding remains a challenge. Overall, the objective of budgetary increase has not been met. For instance, the second programme of work aimed to achieve total funding in excess of USD 14 million in 2020, but only approximately USD 12.5 million was raised (see figure 19). The expected diversification of CTCN funding sources did not occur to the extent expected, and donor contributions remain insufficient (see annex VII, chap. C.4). It appears that the "menu approach" envisioned in the resource mobilization strategy could not be fully rolled out. An overview of the evolution of CTCN funding over the past four years is as follows:

(a) Regarding the core operational budget of the CTCN (from bilateral donors and host agencies multi-donor trust fund), the target of USD 10 million per year was not reached over the last three years. Of the annual target of 20 donors set out in the resource mobilization strategy (lowered to 10 in the 2020 annual operating plan; see figure 32), 7 donors were engaged in 2018, 5 in 2019 and 8 in 2020. There was a significant increase in contributions from the GCF. The Governments of Austria, Japan and the United Kingdom of Great Britain and Northern Ireland confirmed their intention to fund CTCN activities in 2021[31] and the Government of Denmark signed a funding agreement with the CTCN in 2020 and has already provided its first funding instalment;

(b) In-kind or pro bono support increased, with Parties making staff available to the CTC secretariat or directly implementing technical assistance. The target of USD 2 million per year defined in the 2018 resource mobilization strategy was not reached. This target was revised in the 2020 annual operating plan (USD 0.5–1 million) and consequently achieved. In 2020, the CTC secretariat elaborated on its approach to pro bono and in-kind contributions and formulated relevant lessons learned;[32]

(c) Collaboration with MDBs has improved but did not result in additional funding to the CTCN in 2017–2020. In 2020, discussions were initiated with the European Bank for Reconstruction and Development, the Islamic Development Bank and United Nations agencies on co-financing opportunities, joint programming and technical assistance implementation;[33]

(d) New key sources of funding have recently emerged, with agreed contributions from the Adaptation Fund and the NDC Partnership.[34]

[29] Decision 13/CP.24, para. 11.
[30] Decision 14/CP.25, para. 26(a).
[31] CTCN document AB/2021/17/15.1.
[32] FCCC/SB/2020/4.
[33] CTCN document AB/2021/17/2.2, para. 22.
[34] CTCN document AB/2021/17/15.1.

35. **Transparency and accountability**: efforts have been made to acknowledge donor contributions – the CTCN now displays funding and donor agreements online.[35] Nonetheless, some donors still expressed concerns about the lack of clarity and transparency regarding the use and impact of their contributions. The operationalization of the revised monitoring and evaluation system is expected to enhance the reporting and evaluation of CTCN impacts and further improve accountability.

36. **Budgeting**: CTCN funding is still characterized by a lack of regularity and predictability and tends to be earmarked for specific activities or geographical areas (see figure 20). Unearmarked funds are allocated to specific tasks when requests from donors arise. These conditionalities and the subsequent lack of flexibility make the management of CTCN funding complex and hinder the ability of the CTCN to respond to country-driven demands. Additionally, there is no dedicated framework for allocating resources from the Financial Mechanism to the CTCN, and the CTC does not generate its own financial resources owing to its provision of free-of-charge services (e.g. there are no Network membership fees, event fees or fees for technical assistance). The CTCN mainly depends on pledges from a few donors, which are vulnerable to changes in their strategies or the macroeconomic context (the COVID-19 pandemic, for example, resulted in smaller pledges from some donors). Consequently, the financial autonomy and sustainability of the CTCN can be rated as rather limited.

37. **Resource allocation**: a comparison of budget and expenditure shows that CTCN activities underdelivered by 25 per cent on average in the past four years, with improvement in 2020. This is mainly due to the lack of a robust planning and implementation monitoring system and the fact that some deliverables planned in 2015 within the framework of project collaboration agreements with consortium partners were not executed as anticipated (in terms of both activities and committed amounts). However, 2020 was the first year in which the CTCN almost delivered in accordance with the full budget set out in its annual operating plan (see table 13),[36] driven by significant delivery of technical assistance. The significant pipeline of requests from 2019 and the approval of funding for 17 GCF technical assistance proposals outweighed the gaps in other service areas due to the uncertainties arising from the COVID-19 pandemic. This increase in expenditure in 2020 is also attributed to other factors, such as more focused planning and implementation in line with the annual operating plan, better coordination between the CTCN Advisory Board and donors and enhanced support from the hosts of the CTCN in terms of financial coordination and procurement.[37]

38. **Management structure**: the CTCN is not a legal entity but, as the implementation arm of the Technology Mechanism, reports to the COP through the subsidiary bodies.[38] It is managed by two co-hosts: UNEP (main host of the CTC) and UNIDO (co-host of the CTC). Consequently, the management structure of the CTCN is fairly complex for an entity of its size. Coordination between the three bodies could be improved, which could reduce the level of associated administrative work. UNIDO has noted challenges in consistent engagement with the CTC secretariat. The fact that CTCN resources are spread across both UNEP and UNIDO accounts creates administrative and communication challenges. As a result, some strategic and operational decisions of the CTCN – such as those related to the second programme of work – were perceived as not fully taking into account the circumstances of the host agencies. However, host agency representatives took part in and provided inputs to the planning meeting for the second programme of work, which was held on 16 and 17 August 2018. The revised version of the project document of the hosts is deemed to provide a strong, clear framework for the management structure of the CTCN (distribution of roles and responsibilities, and accountability) and streamline administrative procedures. Host agencies have played a fundamental role in supporting the CTCN in delivering its mandate, and there are opportunities for the CTCN to fully leverage their capabilities and networks.

[35] https://www.ctc-n.org/about-ctcn/donors.

[36] The CTCN has achieved 108 per cent performance against its 2020 annual operating plan with a financial implementation rate of 93 per cent due to negative expenditures of approximately USD 1.47 million in 2020 resulting from the closure of unliquidated commitments from previous years; see CTCN document AB/2021/17/15.1.

[37] FCCC/SB/2020/4, para. 130.

[38] Decision 1/CP.16, para. 126.

39. **CTC secretariat**: the human resources of the CTC secretariat are limited (fewer than 10 full-time equivalent staff) but have nonetheless provided the basis for many accomplishments with the assistance of long-term and ad hoc consultants. While these combined human resources increased between 2017 and 2019, they declined in 2020 owing to recruitment uncertainties arising from the pandemic. However, if the CTCN is to provide upstream assistance to a growing number of countries in preparing their requests as well as downstream monitoring and follow-up of its activities, more time and technical resources will be required.

40. **Regional organization**: the new organizational arrangements of the CTCN at the regional level are deemed to be highly relevant for improving the efficiency of CTCN operations, facilitating better communication and coordination with NDEs, enhancing support for technical assistance requests, and boosting relationships with private and institutional stakeholders. Such an improvement was undertaken in 2020, when three staff members started working from regional hubs in Kenya (hosted by UNEP), Mexico (hosted by UNIDO) and Thailand (hosted by UNEP).[39]

41. **Consortium partners**: they were critical in establishing and operationalizing the CTCN, but their role has been declining over the past two years. This has led to the disappointment of consortium partners keen to continue their involvement in the CTCN, often to a larger extent than regular Network members. UNEP has stated that it will clarify with consortium partners their evolving role in terms of modalities of work and contracts and identify ways to continue involving them and benefitting from their expertise.

42. **Network members**: the size of the Network has grown significantly over the past few years (from 400 members in 2017 to 605 as at December 2020, in line with targets)[40] and membership from developing countries has increased. This trend may be explained by the flexible, limited membership requirements (the main reasons for the engagement and non-engagement of Network members are given in annex VII, chap. C.12). The role of Network members as technical assistance implementers is strengthening, with 75 per cent of new technical assistance requests implemented by Network members in 2020, compared with 60 per cent in 2017.[41] This is thanks in particular to the operationalization of a two-stage bidding process on technical assistance proposals and the regular feedback provided by the CTCN to Network members on these proposals. The relationship between the CTC and Network members is largely of a hub-and-spoke type. The CTCN is working to take more advantage of the benefits of its extensive network, but synergies among Network members are still limited. An action plan was developed in response to a survey launched in 2019 that captured Network members' interest in engaging more in networking, knowledge-sharing, national events and matchmaking events.[42] In 2020, the CTC initiated new activities whereby members can offer expertise and benefit from collaboration. These activities include targeted webinars, technology clinics, regional technology briefs, pro bono research and the Youth Climate Innovation Labs.

43. **NDEs**: a distinction is made between NDEs from Annex I Parties and those from non-Annex I Parties in the analysis of their involvement with the CTCN:

(a) NDEs from non-Annex I Parties (the beneficiaries of CTCN services): following the recommendations of the first independent review, the CTCN enhanced the regular training of NDEs while facilitating the elaboration of service requests and strengthening its partnership with other national focal points. As a result, half of the NDEs from non-Annex I Parties stated that they received support from the CTCN in fulfilling their role. While half of them noted a lack of resources (financial, material and human, in order of importance) with which to perform their role, the provision of resources to NDEs falls outside the mandate of the CTCN. The main reason for this lack of resources is that the commitment of the NDEs hinges on the willingness of their national governments to invest in activities that would allow their countries to benefit from CTCN services (e.g. submitting technical assistance requests and making the request for assistance). Additionally, stakeholder

[39] FCCC/SB/2020/4, para. 118.
[40] FCCC/SB/2020/4, para. 119.
[41] FCCC/SB/2020/4, para. 101.
[42] FCCC/SB/2020/4, para. 100.

awareness of the role of NDEs appears to be limited to representatives of UNFCCC-related institutional arrangements, unless they have been involved in technical assistance services. Overall, there is still a need to raise awareness of NDEs within government and the private sector (see annex VII, chap. C.13);

(b) NDEs from Annex I Parties: following a recommendation from the first independent review, the CTCN reposted the guidance endorsed by the CTCN Advisory Board at its 3rd meeting on the roles and responsibilities of NDEs from Annex I Parties,[43] and a systematic approach to their engagement was included in an updated version of the internal donor reporting protocol. As a result, their role and mandate are clearer to them than four years ago but remain unclear to other CTCN stakeholders.

44. **Cost-effectiveness**: the CTCN can be considered as cost effective given that the services it provides are based on country-driven demand rather than being standardized and of small scale. The CTCN managed to develop its organizational structure and skills without increasing human resources overall (the African Development Bank regional centre, in contrast, required a wider variety of roles and more resources than expected).[44] The CTCN uses a tendering process that allows the most economically advantageous providers to be selected for technical assistance implementation, alongside reinforcing competition among a large number of Network members. Fewer internal resources would have involved limiting the scope of the projects and expected outputs or cancelling some planned activities, thereby affecting the quantity and quality of outputs and outcomes delivered. Room for improvement lies in better leveraging the engagement of Network members (and notably technology providers), developed country NDEs, CTCN Advisory Board members and host agencies. For the CTCN to further enhance its cost-effectiveness, it is crucial to continue building regional communities of interest, as exemplified by the successful PSP regional centre of the Inter-American Development Bank,[45] which has built partnerships with leading regional institutions in specific areas, mobilized private and public investment, and supported synergies among regional initiatives.[46]

D. Impacts and sustainability

45. **Impact measurement**: as found during the first independent review, quantitatively assessing the impact of the CTCN is likely to be very challenging considering the nature of its projects. Its interventions trigger systemic but not instantaneously visible change. A comparison of CTCN outcomes with those of the PSP regional centres was not possible as the latter could not be assessed during the second review.[47]

46. Initial efforts to conduct ex post evaluations within the limitations of the CTCN budget include the following:

(a) The TEC and the CTCN jointly conducted outreach to NDEs for feedback on the long-term impacts of their activities. Such an initiative is planned to take place every two years;

(b) The CTCN captured impact data from selected technical assistance and capacity-building programmes by commissioning the UNEP DTU Partnership to conduct a transformational impact assessment based on the ICAT methodology;

(c) The 2021 budget of the CTCN includes funding for an extended analysis of selected technical assistance using data from an ex post survey, which was postponed to 2022 owing to the pandemic.

[43] CTCN document AB/2014/3/3, available at https://www.ctc-n.org/sites/www.ctc-n.org/files/annex_1_national_designated_entities_-_roles_and_responsibilities.pdf.

[44] FCCC/SBI/2019/7.

[45] The centre's capacity-building activities focus on the role of NDEs and methodologies and best practices for mainstreaming environmentally sound technology in climate change planning, and the centre was on track to achieve or exceed its targets.

[46] FCCC/SBI/2019/7.

[47] FCCC/SBI/2019/7.

47. While the new monitoring and evaluation system[48] is expected to help capture CTCN impacts, impact-related key performance indicators appear to be anticipated rather than observed or measured (e.g. anticipated funding leveraged and anticipated emissions reduced). The transformational impact assessment states that even if estimated quantifications of anticipated outcomes are provided, there is still no clear timeline or intermediary steps for realizing those outcomes.

48. **Innovation**: with its second programme of work, as well as its latest annual operating plans, the CTCN enhanced its focus on research, development and demonstration and initiated new approaches and actions such as the Youth Climate Innovation Labs (see annex VII, chap. D.1). Although the CTCN was in the process of formalizing a standardized approach to strengthening national systems of innovation in developing countries during the review, the approach was not mature enough to be evaluated (see annex VII, chap. D.2). Innovation results in 2020 showed that every target formulated was exceeded (see figure 23).

49. **Innovation – transformational changes**: CTCN technical assistance projects are small scale and tend to represent the initial steps towards larger-scale projects and support decision-making rather than lead to actual technology implementation. The CTCN is mainly perceived as a creator of enabling environments for technology transfer projects, primarily through capacity-building activities and preparatory work. The transformational impact assessment concludes that technical assistance itself does not drive or facilitate early adoption or scale up processes but lays the groundwork for these processes by focusing the necessary research, development and deployment or innovation processes on a specific technology, which can then be adopted and scaled up. The CTCN has mainly played its role as a matchmaker for technology outsourcing, being more limited at the technology research, development and demonstration and finance stage and at the technology diffusion stage.[49] Only 34 per cent of NDEs, 33 per cent of beneficiaries and 46 per cent of consortium partners, knowledge partners and Network members who participated in the survey (see para. 11(b)(iii) above) considered that CTCN activities enhance the deployment and diffusion of innovative technologies and related knowledge and expertise (see annex VII, chap. D.3).

50. **Implementation – TNAs and TAPs**: while the CTCN has incorporated TNA and TAP elements into the design of its technical assistance, capacity-building and learning materials, this effort at coherence does not seem to go far enough. A 2020 evaluation of the UNEP–GEF project Technology Needs Assessment Phase II[50] concluded that the CTCN is insufficiently engaged in the project, with its efforts limited to involvement in and co-organization of regional workshops, that the impact of this engagement at the national level is insufficient and that a more proactive attitude would be very beneficial. Nevertheless, the 2020 target for the number of countries receiving support from the CTCN for implementing TNAs and TAPs was met (28 countries; target was 15–20). Also, one TEC Brief[51] identified advice from the CTCN (training and help with developing pilot projects and writing concept notes for funding proposals) as a key factor in successfully implementing the results of TNAs (see annex VII, chap. D.4).

51. **Implementation - climate-resilient development and reduction of GHG emissions in developing countries**: overall, 62 per cent of the NDEs that responded to the NDE survey considered that technical assistance supports or influences activities that might result in reduced or avoided GHG emissions. However, the actual potential emission reduction has not been estimated owing to the lack of proper data at the time of the second independent

[48] Guidelines for implementing partners and NDEs have been developed, providing standardized methodologies for reporting on quantitative and qualitative key indicators (see document FCCC/SB/2020/4).

[49] Lee WJ and Mwebaza R. 2020. The Role of the Climate Technology Centre and Network as a Climate Technology and Innovation Matchmaker for Developing Countries. *Sustainability*. 12(19): pp.7956. Available at https://www.mdpi.com/2071-1050/12/19/7956.

[50] UNEP. 2020. *Terminal Evaluation of the UNEP/GEF Project "Technology Needs Assessment Phase II"*. Nairobi: UNEP. Available at https://wedocs.unep.org/bitstream/handle/20.500.11822/32207/4948_2020_te_unep_gef_fsp_spcc_technology_needs_assessment_phase_II.pdf?sequence=1&isAllowed=y.

[51] TEC. 2020. *Enhancing implementation of the results of technology needs assessments*. Bonn: TEC. Available at https://unfccc.int/ttclear/tec/documents.html.

review. As part of the new monitoring and evaluation system, indicators[52] included in technical assistance closure reports will be essential to estimating the impacts of CTCN activities on GHG emissions, but such estimation remains dependent on implementers' resources and time. NDEs indicated a very positive perception of the likeliness of CTCN technical assistance services having sustained impacts on climate change mitigation and adaptation (see figure 34), mostly through their contribution to making livelihoods more climate resilient, economies less vulnerable and ecosystems resistant to climate-induced disturbances (see figure 35).[53]

52. **Enabling environment**: a total of 81 per cent of the NDEs that responded to the NDE survey indicated that their countries have implemented recommendations from CTCN technical assistance (related, for example, to submission of funding proposals and policy implementation). Figure 27 shows that technical assistance contributes to several factors promoting enabling environments, including information and awareness-raising, policy and regulatory environments for technology development and transfer, and institutional capacity to adopt, disseminate or scale up climate technology. For example, technical assistance has addressed policy challenges, enabled development of policy drafts (e.g. on agroforestry and geothermal energy), strengthened the capacity of local farmers or local radio stations to broadcast agrometeorological data and facilitated the integration of climate technology in NDC implementation activities. Overall, the contribution of the CTCN has an impact on enabling environments that is greater than that of PSP regional centres. The activities of the African Development Bank regional centre in particular have advanced more slowly on providing direct support for adopting policy and regulatory strategies.[54]

53. **Capacity-building and awareness-raising**: the transformational impact assessment confirms that technical assistance commonly raises awareness among government actors. However, it also found that few interventions have made direct attempts to stimulate behavioural change and adapt social norms associated with sustained transformational change. 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.

54. **Collaboration and stakeholder engagement**: the 2020 collaboration and stakeholder engagement results (see figure 29) show that all targets in this area were met or exceeded. Examples of good performance in this area were also observed.[55] The latter was also confirmed by the NDEs and beneficiaries that responded to the survey (see para. 11(b)(iii) above). They considered that the CTCN made a solid contribution to interactions, collaborations and partnerships with local organizations (public or private) as well as with international organizations, institutions and initiatives. Nevertheless, they also considered that the contribution of the CTCN to collaboration and stakeholder engagement is not as significant as its impact on enabling environments, and that engagement tends to be limited to governments rather than actors such as beneficiaries, private sector stakeholders and entrepreneurs.

55. **Private sector engagement:** as highlighted in a CTCN paper on public–private partnerships,[56] engagement of the private sector in its projects is currently low despite almost half of the Network's members (49.5 per cent) stemming from the private sector (mainly

[52] Such as anticipated metric tonnes of carbon dioxide equivalent reduced or avoided as a result of technical assistance on an annual basis or over the life cycle of the project.

[53] The contribution of technical assistance services to the increased resilience of health and well-being, food and water security, and infrastructure and built environments resistant to climate damage appears to be limited.

[54] Regarding support and advice provided to countries on national policies and programmes, the African Development Bank received a low score for national or regional clean energy policies and strategies adopted, indicating a low probability of achieving its target (see document FCCC/SBI/2019/7).

[55] Lee W, Bak I, Kim H-J, et al. 2020. What Leads to the Success of Climate Technology Centre and Network Pro Bono Technical Assistance? *Journal of Climate Change Research*. 11(5–1): pp.353–366. Available at https://www.dbpia.co.kr/Journal/articleDetail?nodeId=NODE10490630.

[56] Lee WJ, Juskenaite I and Mwebaza R. 2021. Public–Private Partnerships for Climate Technology Transfer and Innovation: Lessons from the Climate Technology Centre and Network. *Sustainability*. 13(6): pp.3185. Available at https://www.mdpi.com/2071-1050/13/6/3185.

small and medium-sized enterprises). According to a CTCN analysis, only 9 per cent of private sector Network members participated in technical assistance projects, mostly focusing on the latter stages of the technology cycle. To boost private sector participation, the CTCN is carrying out innovative activities specifically for 'dormant' private sector Network members to support local small and medium-sized enterprises (e.g. technology clinics, the Youth Climate Innovation Labs) and digitalizing its technical assistance. Digital technologies can enhance information transparency, increase automation and enable direct interaction among private sector Network members. Private sector companies are interested in supporting specific CTCN projects, but hurdles remain in matching the scale of projects that companies are willing to invest in (rather large projects) to the small needs of CTCN interventions (less than USD 250,000). Additionally, the due diligence process of concluding a funding partnership agreement with a private entity is often deemed too lengthy.

56. **Support – technical support**: around half of the respondents to the survey (see para. 11(b)(iii) above) considered that CTCN activities provided stakeholders with access to approaches, tools and means for assessing technologies that are ready for transfer; supported the development of national or sectoral climate technology plans; and increased stakeholder capacity to support, plan and monitor climate technology development and transfer (see figure 30). In addition, more than 80 per cent of respondents to the NDE survey considered that the relevant national stakeholders implemented the recommendations of the CTCN to enhance technology development and transfer in their country (see figure 31).[57]

57. **Support - leveraging funding**: despite technical assistance amounting to around USD 800,000 resulting in the leveraging of over USD 200 million in 2020,[58] and despite examples of successful leveraging,[59] stakeholders considered the contribution of the CTCN to optimizing market conditions and leveraging additional funds to be rather limited. Only half of the NDEs that responded to the NDE survey believed that technical assistance helps to leverage additional funding or investment. Similarly, only 41 per cent of the NDEs responding to the survey (see para. 11(b)(iii) above) thought that CTCN activities facilitated access to additional sources of funding, such as external financing received after a CTCN intervention (see figure 33).

58. **Co-benefits**: the implementation of technical assistance projects generates co-benefits, as highlighted by the NDE survey (see figure 36) and the ICAT transformational change pilot case study.[60] They both show that the impact of technical assistance provided by the CTCN is positive or very positive in terms of:

(a) Social impacts, through significant positive effects on the social well-being of populations and the advancement of gender equality and human rights;

(b) Economic impacts, through job creation;

(c) Market impacts, through, for example, contribution to energy security;

(d) Other environmental impacts, through the enhancement of environmental protection and safeguards.

59. **Gender equality**: gender equality is now fully embedded in the CTCN mandate through the 2019–2022 Gender Policy and Action Plan.[61] Interviews held as part of the

[57] Data related to the target to facilitate 50–75 national and sectoral technology plans by the end of 2018, as set out in the first programme of work, were not available for review. Similarly, information about the achievement of the target in the second programme of work to provide 450–500 stakeholders with enhanced capacities to develop, transfer and deploy climate technologies each year was not available yet.

[58] CTCN document AB/2021/17/14.1, table 8.

[59] UNEP. 2020. *Regional Technology Brief: Asia Pacific*. Copenhagen: UNEP. Available at https://unepdtu.org/publications/regional-technology-brief-asia-pacific.

[60] Tabrizi S. 2019. *ICAT Transformational Change Pilot Case Study: Development of a Tonga Energy Efficiency Master Plan*. ICAT, UNEP DTU Partnership, Verra, World Resource Institute and CTCN. Available at https://climateactiontransparency.org/wp-content/uploads/2020/12/Transformational-Change-Case-Study-Tonga.pdf.

[61] CTCN. 2019. *CTCN Gender Policy and Action Plan 2019-2022*. Copenhagen: CTCN. Available at https://www.ctc-n.org/resources/ctcn-gender-policy-and-action-plan-2019-2022.

second review and the NDE survey confirmed that the CTCN is well advanced in implementing the plan in its governance structure, operations, and monitoring and evaluation system. Implementation of associated actions is also well advanced. The transformational impact assessment found that technical assistance interventions are generally gender sensitive as their design considers the gender dimension and does not exacerbate pre-existing gender inequalities. Nevertheless, as barriers to gender equality are not directly reduced or removed during or after the implementation of the interventions, the interventions can be strengthened to become gender responsive.

60. **Sustainability**: the survey (see para. 11(b)(iii) above) indicated that stakeholders are very positive about the sustainability of CTCN impacts, with 81 per cent of NDEs, 77 per cent of beneficiaries and 71 per cent of consortium partners, knowledge partners and Network members of the view that CTCN services have a long-lasting or sustainable impact. Also, 81 per cent of NDEs, 78 per cent of beneficiaries and 67 per cent of consortium partners, knowledge partners and Network members considered that the types of services offered by the CTCN are replicable at other levels or in other sectors.

IV. Conclusions

61. From the perspective of the consultant, the main successes regarding the effective implementation of the CTCN are the following:

(a) The **added value** of this demand-driven mechanism, which has institutional legitimacy under the UNFCCC, is recognized by stakeholders, as are its strong sectoral expertise, agility and responsiveness, and strength in filling a gap by supporting small projects, without any competition from similar centres or initiatives;

(b) There has been **continuous improvement in its programmes of work**, with most of the recommendations from the first independent review and guidance from the COP having been taken into consideration in the second programme of work;

(c) The **COVID-19 crisis was well managed**, with every project ultimately implemented, the continuity of CTCN services ensured, and dedicated pandemic responses integrated into existing technical assistance, capacity-building and knowledge-sharing activities;

(d) There has been an **improvement in communication and outreach services**, with knowledge management system content, for example, considered to be more stable, tailored and accessible;

(e) **Strategic collaboration between the CTCN and the following entities** has improved:

(i) The CTCN Advisory Board, through more regular interactions of members between meetings and the establishment of new communication channels (including subgroups and task forces), with more emphasis on technical rather than political issues;

(ii) The operating entities of the Financial Mechanism, through the organization of events and workshops to increase collaboration among NDEs, NDAs and GEF focal points; technical assistance funded by the GCF Readiness and Preparatory Support Programme; and training for project developers in preparing climate technology related funding submissions to the GCF;

(iii) The TEC, through additional joint activities included in their respective programmes of work and increased information-sharing;

(f) **The new regional organization of the CTC secretariat** is perceived by stakeholders as more efficient because it improves coordination with NDEs, enhances support for technical assistance requests, and boosts relationships with relevant national and regional actors;

(g) The CTCN is considered to be **cost effective given the type of services it provides** (small-scale, tailored services based on country-driven demand); fewer internal

resources would have involved limiting the scope of the projects and expected outputs or cancelling some planned activities, thereby affecting the quantity and quality of outputs and outcomes delivered;

(h) The **contribution to transformational change** is likely to be sustainable thanks to information provision, awareness-raising, the enhancement of policies and regulatory frameworks, and the contribution to institutional capacity development;

(i) There are **expected positive impacts in terms of adaptation and mitigation**, despite it not being possible to estimate actual impacts because of the nature of the services and limited ex post evaluation resources;

(j) Stakeholders have observed or anticipate **socioeconomic co-benefits,** particularly in terms of economic well-being, gender equality and human rights.

62. From the perspective of the consultant, the main challenges regarding the effective implementation of the CTCN are the following:

(a) **Limited financial resources** are available to the CTCN considering the broad scope of its services mandated by the COP;

(b) **Resource mobilization remains a challenge**, as was observed during the first independent review, with the expected diversification of financial resources not fully meeting initial targets despite a recent increase in funding from the GCF and the Adaptation Fund;

(c) **Resources are allocated pragmatically, but the budget is constrained** owing to a lack of predictability and a high proportion of conditioned and earmarked funds;

(d) Although the CTCN largely benefits from being hosted by UNEP in collaboration with UNIDO, notably in terms of complementary expertise and networks, its **management structure faces administrative and communication challenges**;

(e) Although this is outside the immediate CTCN mandate, NDEs have stated that they face a **lack of resources to engage with the CTCN** despite the capacity-building support provided by the CTCN;

(f) **Collaboration is limited** among NDEs, Network members, GEF operational focal points and GCF NDAs (the latter to a lesser extent thanks to an increase in CTCN readiness projects), owing to different strategic views and limited interpersonal knowledge (partly due to staff turnover), and despite networking events organized by the CTCN;

(g) The CTC is **not taking full advantage of its extensive Network**, and synergies among the Network's members are limited.

V. Recommendations

63. The consultant provided seven recommendations, detailed in paragraphs 64–70 below, to enhance the performance of the CTCN.

A. Funding

1. Recommendation 1: encourage the CTC, in collaboration with UNEP and in consultation with the CTCN Advisory Board, to further enhance resource mobilization so as to meet the costs associated with the CTCN

64. The COP decided that the costs associated with the CTC and mobilization of the services of the Network should be funded from various sources, including the Financial Mechanism; bilateral, multilateral and private sector channels; philanthropic sources; and financial and in-kind contributions from the host organization and participants in the Network.[62] In the past four years many Parties provided financial resources that enabled the CTCN to become fully operational and perform its functions and activities as mandated by the COP. Regarding support under the Financial Mechanism, the CTCN recently obtained an

[62] Decision 2/CP.17, para. 139.

increase in funding from the GCF and the Adaptation Fund. If additional resources were provided, the CTCN could scale up its provision of technical support to developing country Parties. The CTC, in collaboration with UNEP and in consultation with the CTCN Advisory Board, is encouraged to further diversify its sources of funding, for example by conducting a review of its resource mobilization strategy to make it more strategic and realistic, taking into account experience and lessons learned from the implementation of its previous corresponding strategy and from other organizations. In addition, it may consider strengthening the role of and resources for a dedicated deputy director or appointing senior consultants who would be in charge of strengthening and structuring relationships with the operating entities of the Financial Mechanism; developing opportunities for the CTCN to further engage with GEF recipient countries' focal points (through CTCN regional managers or NDEs) on identifying, developing and endorsing CTCN projects in order to be engaged in project implementation; and enhancing the marketing of CTCN services (communicating achievements, demonstrating impacts, etc.).

2. Recommendation 2: encourage the CTCN to allocate dedicated resources to pursue its efforts to conduct regular ex post impact evaluations of technical assistance

65. The CTCN would benefit from demonstrating more thoroughly the long-term climate change related impacts and socioeconomic co-benefits (including with regard to gender-related issues) of its technical assistance. Despite ongoing efforts (e.g. the extended analysis of selected technical assistance included in the 2021 budget was postponed to 2022 owing to the COVID-19 pandemic), estimates of actual impacts (as opposed to anticipated impacts, which are currently measured) as well as ex post evaluation resources were limited. This recommendation could be carried out on a sample of projects three to four years after implementation, either by independent third parties (through a dedicated budget line) or by dedicated internal staff.

B. Governance and organization

1. Recommendation 3: encourage the CTCN to further streamline communication between the host agencies and the CTC secretariat

66. It was found that the CTCN management structure could benefit from strengthened information flow between the CTC co-hosts (UNEP and UNIDO) and the CTC secretariat in Copenhagen. Hence, it is recommended to continue streamlining communication between the host agencies and the CTC secretariat. Notably, UNEP as host of the CTCN and the CTCN Trust Fund should look for ways to ensure that all CTCN resources are directed towards its Trust Fund.

2. Recommendation 4: encourage the CTCN to further engage with and improve synergies among Network members

67. The CTCN should further engage with and improve synergies among Network members in order to take full advantage of its members' valuable sectoral and geographical expertise, allowing for a more efficient delivery of its services. It is recommended that the CTCN, guided by its Advisory Board, develop and operationalize a network engagement plan.

3. Recommendation 5: encourage the CTCN to enhance efforts to stimulate active collaboration between NDEs and reinforce its capacity-building support for NDEs to provide improved technical assistance

68. The CTCN is encouraged to enhance collaboration between NDEs from Annex I Parties and non-Annex I Parties, as well as to reinforce capacity-building provided to non-Annex I Party NDEs, notably by raising their profiles among government agencies and the private sector and monitoring the implementation of technical assistance and the operationalization of technical assistance recommendations. One of the main difficulties identified by NDEs is in relation to elaborating technical assistance requests. The CTCN is

therefore encouraged to carry out further capacity-building activities, including through the Incubator Programme.

C. Positioning

1. Recommendation 6: encourage the CTCN to collect relevant information for preparing its third programme of work, including an evaluation of potential beneficiary needs that could be addressed with the available budget

69. The CTCN is encouraged to collect relevant information for preparing its forthcoming third programme of work. A preliminary analysis should be performed using an assessment of the demand for CTCN services based on CTCN experience and a survey of NDEs; a report on the achievement of targets in the second programme of work; and a financial plan that identifies financial resources to be mobilized by the CTCN during the next period (including pledges from donors). Such an analysis should allow the CTCN to determine the share of requests it could potentially address given the current budget estimates.

2. Recommendation 7: encourage the CTCN to reinforce its position as a climate technology matchmaker

70. It is recommended to further enhance the engagement of technology providers within the CTCN and the development of partnerships with existing centres, networks and institutions. The CTCN is encouraged to dedicate resources to the implementation of initiatives that enhance direct interaction between the private sector Network members.

Annex I*

[English only]

Evaluation grids

1. Relevance
Question: **Are the strategy and the resources of the CTCN relevant and appropriate regarding priorities given by the COP and the local needs for support?**
Subquestions: a) To what extent is the second work plan of the CTCN aligned with COP decisions or has to be revised? b) To what extent were the interventions undertaken under the CTCN relevant to the country's context and needs for support (at the time of the evaluation and at the time the project was being developed), and within the boundaries of the CTCN mandate? c) To what extent have the recommendations from the different evaluations conducted over the last four years, in particular the first independent CTCN review, been considered? To what extent were the CTCN design, organization and services adapted to meet these recommendations? How could the current structure be further enhanced? d) To what extent are the services offered by the CTCN complementary with policy guidance given by the TEC (within second PoW + annual operational plans), with the UNFCCC Financial Mechanism (GEF and GCF), and with other related climate support programs (provided by bilateral cooperation agencies, development banks, universities and research centers, NGOs or private sector technology providers)? Have potential synergies (whether on-going or completed) been optimized? How can synergies be improved in the future? e) To what extent did the CTCN respond adequately to changes in the macroeconomic, technological and political context that occurred over the course of its implementation? How can it be adapted in the future to changes which have taken place since the first independent review?
Indicators and Data sources: • Identification of the main changes in the work plan of the CTCN (comparison between the first and second PoW, the annual operational plans and CTCN theory of change) and the main decisions of the COP regarding the CTCN • Listing of recommendations from the different evaluations and identification of answers provided by the CTCN (analysis of the adequate section in the joint annual reports of the TEC and the CTCN as well as Advisory Board presentations on "CTCN Actions in response to review recommendations") • Flow charts mapping procedures and processes (for technical assistance, network…) • Mapping of linked international climate change policies and comparative matrix for objectives and activities (analysis of other funding documents) • Identification of Non-Annex I countries' needs for support regarding CC mitigation and adaptation (through preliminary literature review, incl. fourth synthesis report on technology needs, and focus on 5 countries**)**, and comparison with the CTCN services • Global analysis of macroeconomic technological and political context changes (through preliminary literature review and focus on 5 countries) • Perception of partners (Advisory Board, Consortium Partners, etc.) on the program's relevance in addressing these issues (through interviews and survey) • Perception of NDEs and beneficiaries on the program's relevance in addressing their needs (through interviews and survey)

* Owing to time constraints, the annexes have not been formally edited.

2. Effectiveness

Question: Have the objectives of the CTCN been achieved in terms of technical assistance/knowledge management, peer learning & capacity building/outreach, networking and stakeholder engagement?

Subquestions:

a) To what extent have the CTCN raised awareness of its services in developing countries (e.g. by involving stakeholders from developing countries in technical assistance, capacity-building and networking activities of the CTCN)? (cf. Recommendation 9) To what extent have the CTC communication (10% increase per year of people reached through social media channels and 30 mentions of CTCN in media per year)[1] and organization (including the incubator programme and Regional forums) supported a coordinated identification and submission of relevant requests for technical assistance from developing countries? To what extent have the CTC regularly trained developing country NDEs and facilitated the elaboration of requests (e.g. by capitalizing on successful TA projects to facilitate their replication in other countries, better anticipating the planning and organization of events and webinars)? (cf. Recommendation 8)

b) To what extent have fast technical assistance (small-scale TA, costing less than USD15k) and Multi-country technical assistance been prioritized and implemented? To what extent have the CTCN responded to a higher number of requests in a timely manner (30 TA requests per year),[2] and reduced the amount of time spent by the CTCN refining requests? To what extent were TA linked to developing countries' priorities identified in their NDCs?

c) To what extent was the knowledge management system (KMS) supplemented with complementary material (e.g. best practices and lessons learnt from countries climate technology R&D policies and activities) (200 technology descriptions, publications, national plans… made available on the KMS per year (incl. 30-40 new knowledge resources related to RD&D and new and innovative technologies and 80-100 deliverables produced during TA) and 10% increase per year of KMS site visits) and linked to additional external databases and other resources? To what extent did the CTCN direct outreach to academic and innovation centres as well as non-governmental organizations and municipal governments (4-5 climate technology RD&D-related events organized per year, mobilizing 150-200 participants per year)?[3]

d) To what extent were regular and relevant webinars (600 participants per year) and training sessions (6 per year and 500 participants per year) organized on time and were perceived as useful by the participants (>90% satisfaction and >90% participants have reported effects)?[4] To what extent were enough capacity building workshops and remote technical advice and helpdesk organized by the CTCN? To what extent were they relevant, on time, and perceived as useful by the participants?

e) To what extent were enough and relevant international events or forum, public/private workshops and regional networking meetings organized by the CTCN (15 events per year and 2 000 participants over the 5 years)?[5] To what extent were they relevant, on time, and perceived as useful by the participants?

f) To what extent have the CTCN enhanced the reporting and evaluation of its impact (e.g. by finalizing and applying a monitoring and evaluation framework, by performing ex-post evaluation of technical assistances)? To what extent have reinforced the communication on its impacts towards the Advisory Board (e.g. through quarterly dashboards on progress on strategic KPIs) and donors (e.g. during an annual donor forum)? (cf. Recommendation 10)

g) What are the main differences between the first and the second PoW? Are these changes and unplanned activities consistent, in keeping with the CTCN mandate (given by the COP)? Is there any lack to completely fulfil the CTCN mandate? Were lessons learnt from the implementation of the first PoW identified and taken into account?

h) What are the major factors influencing the achievement/non-achievement of targeted output to date (difficulties and success factors)? What can be enhanced to make the organization of events and trainings, the provision of technical assistance and the dissemination of information have greater impact?

[1] Quantitative targets come from the 2019 CTCN Performance Measurement Framework.
[2] Ibid.
[3] Ibid.
[4] Ibid.
[5] Ibid.

Indicators and Data sources:

- Analysis of monitoring and evaluation related documents (M&E framework, case study from UNEP, annual reports and other reporting documents)
- Review of output indicators values and reliability
- Quantitative analysis of services provided by the CTCN: TA requests/answers/projects, trainings, events, KMS visits… (via data base analysis)
- Thorough analysis of available documents related to a sample of sub-projects (e.g. participants & calendar of events, content of TA, participants and program of trainings, evaluation forms…)
- Perception of partners (advisory board, Consortium Partners, etc.) on the program's deployment and achievement in terms of outputs (through interviews and survey)
- Perception of NDEs and beneficiaries regarding the deployment and the usefulness of different services (TA, KMS, training…) (through interviews, surveys and feedbacks)
- SWOT analysis of the CTCN services (technical assistance, network…)

3. Efficiency

Question:
Have the objectives of the CTCN been achieved efficiently by the implementation of the CTCN and the deployment of its services?

Subquestions:

a) To what extent have the CTCN governance (AB, consortium organization…) ensured its responsiveness (application of COP decisions, communication with UNFCCC and TEC…)? and been enhanced (revision of the AB mandate in order to clarify its role, change of nomination process for AB members in order to ensure the selection of members with enough technical capabilities)? (cf. Recommendation 2)

b) To what extent were enough financial resources mobilized? To what extent have the CTCN identified additional financial resources (e.g. regular mapping, new position dedicated to fund-raising and engaging in dialogue with donors (10% increase in funding mobilized for CTCN activities and 20 donors engaged per year)? (cf. Recommendation 4) To what extent have the GEF and the GCF facilitated the provision of sustained funding for CTCN activities and enhanced operational linkages between the organizations, in line with their respective mandates (e.g. by institutionalizing a relationship between NDEs and NDAs) (6 events and trainings co-organized per year, 10 to 12 CTCN TA supported per year, and 3 to 5 technology proposals developed per year through CTCN TA supported)? (cf. Recommendation 5) To what extent was the transparency of its funding arrangements strengthened (e.g. documented on the website)? (cf. Recommendation 10) To what extent were in-kind and pro-bono support mobilized (USD 0.5M to 1M per year)? To what extent were financial resources allocated appropriately and efficiently across the activities (as planned within the budget scenarios)?[6]

c) To what extent was the CTC appropriately staffed (adapted to the needs), and could field the right expertise?

d) To what extent was the organization of the CTC (consortium of organizations, different sites, etc.) efficient (clear distribution of roles, coordination…)? To what extent have the new geographic organization of the CTCN (inc. a single point of contact for NDEs) deepened the engagement of the CTCN through more integrated delivery of its core services and better leverage multi-country solutions to mutual challenges faced within regions?

e) To what extent was the network (Consortium and knowledge partners) mobilized and provided additional and valuable sources of expertise, knowledge and support (620 Network Members in 2020)? To what extent have the CTCN reinforced the involvement of Network Members and private sector in its activities (e.g. through solicitations for providing technical assistance or knowledge, or networking events)? (cf. Recommendation 9) (20% of engaged Network Members and knowledge partners and >90% of Network Members satisfied).[7]

f) To what extent have CTCN activities reinforced NDEs' capacities to implement their role? To what extent is the role of the NDE clear for country representatives? To what extent was the role of developed country NDEs clarified to facilitate the mobilization of expertise, collaboration and fund-raising (e.g. by creating working groups including NDEs from developed countries)? (cf. Recommendation 3) Is it efficient in terms of projects coordination? To what extent have countries

[6] Ibid.
[7] Ibid.

enhanced awareness of their NDE by relevant stakeholders and supported their NDE through national institutions and cooperation with other national UNFCCC focal points (e.g. through the organization of annual UNFCCC focal point forums, consultation process to identify, select and refine TA requests)? (cf. Recommendation 1)

g) To what extent were partnerships with peers (GEF, GCF, Development Banks, etc.) and organizations with complementary skills, networks and resources developed? To what extent were synergies with actions / historical investments been identified? Synergies with?

h) To what extent have the CTCN management structure, processes and procedures, communication and M&E optimized its operation? To what extent has the efficiency of the CTCN's provision of TA been increased (e.g. better control of deadlines, more TA tenders opened to Network Members, pools of expertise within the Network, identification of TA best practices and successful TA projects, promotion of multiregional TA)? (cf. Recommendation 6)

i) To what extent has the CTCN been cost-effective in achieving outputs, relative to comparable initiatives of UN and/or other stakeholders in the sector? To what extent has the CTCN provided value for money (considering the costs and outputs)? Could the results have been achieved with fewer resources without reducing the quality and quantity? What could have been done to improve cost-effectiveness?

Indicators and Data sources:

- Achievement of outputs given by the answers to the questions related to effectiveness
- Quantitative analysis of direct resources and costs: fund raising, expenses, CTC staffs and associated… (through data base analysis)
- Ratios between benefits achieved (technology transfers, partnership, trainings, knowledge) and funds disbursed for different activities
- Analysis of indirect resources and costs: partners' contributions, NDEs resources, time consumption for request applicant… (through interviews, surveys and the analysis of a sample of projects)
- Simplified benchmarking with comparable initiatives (through interviews with partners and a preliminary literature review): assessment of resources vs. performances, review of the organization and identification of best practices
- Perception of partners (advisory board, Consortium Partners, etc.) on the program's efficiency (through interviews and survey)
- Perception of NDEs and beneficiaries regarding the deployment (TA, KMS, training…) (through interviews, surveys and feedbacks)

4. Impacts and sustainability

Question:
Did the CTCN reach its expected outcomes and provide long term positive effects?

Subquestions:

a) To what extent did CTCN activities increase the capacity of developing country Parties to identify socially and environmentally sound technology needs? To what extent did the CTCN support countries:
    a. to make stakeholders and the general public aware of climate technology development and transfer tools, approaches and methods?
    b. to develop and implement national and sectoral technology plans?
    c. to undertake and update TNAs, as well as enhance the implementation of their results and strengthen links to NDCs and NAPs?
    d. to provide stakeholders with access to approaches, tools and means for the assessment of technologies that are ready to transfer?
        i. Target of the first PoW: 50 to 75 national and sectoral technology plans by the end of 2018
        ii. Target of the second PoW: 450 to 500 stakeholders with enhanced capacities to develop, transfer and deploy climate technologies per year

b) To what extent did CTCN activities enhance the deployment and diffusion of innovative technologies and associated knowledge/expertise in developing country Parties? To what extent did the CTCN support countries:

a. to incentivize innovation, including by strengthening National Systems of Innovation (NSI) and technology innovation centres in developing country Parties?
b. to create synergies and to enable the exchange of best practices, experience and knowledge on technology development and transfer?
c. sharing information on international technology RD&D partnerships and initiatives, good practices and lessons learned from countries' climate technology RD&D policies and activities?
d. for developing, deploying and disseminating existing innovative technologies and scaling-up and diffusing emerging climate technologies?
e. for long-term technological transition pathways towards the widespread uptake of climate technologies?
    i. Target of the first PoW: none
    ii. Target of the second PoW: >90% of workshop/trainings participants reporting increased knowledge, capacity and/or understanding

c) To what extent did CTCN activities enhance enabling environments that support the development of climate-related projects? To what extent did the CTCN support countries:
    a. to address barriers to the development and transfer of socially and environmentally sound technologies?
    b. to enhance enabling environments to promote endogenous and gender- responsive technologies for mitigation and adaptation actions?
    c. to develop / implement policies which incentivize the private and public sector to fully realize the development and transfer of climate technologies?
        i. Target of the first PoW: none
        ii. Target of the second PoW: 10-12 policies, strategies, plans, laws… proposed, adopted or implemented as a result of the TA per year

d) To what extent did CTCN activities increase the capacity of developing country Parties to prepare and implement technology projects to support action on low emission and climate-resilient development?
    a. To what extent did the CTCN support countries in a country-driven manner?
        i. Target of the first PoW: implementation of 100 new country-drive technology projects by the end of 2018
        ii. Target of the second PoW: 25-30 countries developing, transferring and deploying new and existing technologies as a result of CTCN support per year
    b. To what extent did CTCN activities allow the adoption and use of new and existing technologies in developing countries for NDC and NAP implementation?
        i. Indicator of the first PoW: none
        ii. Indicator of the second PoW: Anticipated number of technologies identified, transferred or deployed as a result of CTCN support

e) To what extent did CTCN activities support collaboration and engagement of stakeholders? To what extent did the CTCN support countries:
    a. <u>at local level</u>: better collaboration and engagement with relevant stakeholders, including local communities and authorities, national planners, the private sector and civil society organizations in the planning and implementation of Technology Mechanism activities? better engagement between NDEs and relevant stakeholders, including by providing guidance and information?
    b. <u>at global level</u>: for collaboration and synergy with relevant international organizations, institutions and initiatives? including academia and the scientific community, to leverage their specific expertise, experience, knowledge and information, particularly on new and innovative technologies? Including capacity-building organizations and institutions, including those under the Convention?
        i. Target of the first PoW: 18 twinning arrangements by the end of 2018
        ii. Targets of the second PoW:
            1. 2-3 facilitated or enabled South-South collaborations per year
            2. 4-5 facilitated or enabled RD&D collaborations per year

f) To what extent did CTCN activities support engagement and partnership with the private sector? To what extent did the CTCN support countries:

    a. to foster private sector involvement by designing and implementing policies, regulations and standards that create enabling environments and favourable market conditions for climate technologies?

b. for building partnerships between the public and private sector in the development and transfer of climate technologies?
c. better engagement and collaboration with the private sector to leverage expertise, experience and knowledge regarding effective enabling environments that support the implementation of the Paris Agreement?
    i. Target of the first PoW: 13 public-private partnerships by the end of 2018
    ii. Target of the second PoW: 4-5 private sector collaborations per year

g) To what extent did CTCN activities facilitate access to additional sources of funding? To what extent did the CTCN support:
    a. stimulating climate technology investments deriving from CTCN assistance?
    b. better collaboration of the Technology Mechanism with the Financial Mechanism (GEF and GCF funded programs built on CTCN TAs)?
    c. access to financing for innovation, including for RD&D, enabling environments and capacity-building, developing and implementing the results of TNAs, and engagement and collaboration with stakeholders, including organizational and institutional?
        i. Target of the first PoW: $0.6 billion climate in technology investments
        ii. Target of the second PoW: 10:1 anticipated amount of funding/investment leveraged (in USD) as a result of technical assistance

h) To what extent did CTCN activities support the observation, monitoring and evaluation processes that ensure impacts are clearly reported? To what extent did the CTCN support countries:
    a. to improve climate change observation systems and related information management in developing country Parties?
    b. to better plan, monitor and achieve technological transformation in accordance with the purpose and goals of the Paris Agreement?
        i. Target of the first PoW: none
        ii. Target of the second PoW: none

i) To what extent did CTCN activities allow climate change resilient development and reduction of GHG emissions in developing countries? To what extent did the CTCN support countries:
    a. to reduce or avoid metric tons of CO2 equivalent (tCO2e) emissions as a result of CTCN TA?
    b. to increased economic, health, infrastructure, built environment, or ecosystems resilience to climate change impacts reported by CTCN participant countries?

j) What are the major factors influencing the achievement/non-achievement of outcomes to date, the replicability of the programme at other levels or in other sectors, and the likelihood of post-completion effects and lasting positive impacts?

k) What unintended outcomes (positive and negative) and changes (direct and indirect) have occurred as a result of the CTCN?

l) Is the CTCN necessary (in its current format) to expect sustainable effects? Could any other existing program / tool replace the CTCN effectively (and why)?

Indicators and Data sources:

- Analysis of monitoring and evaluation related documents (case study from UNEP, annual reports and other reporting documents)
- Analysis of network partners mobilization (list of participants, contributions…) and relations
- Review of outcome indicators values and reliability
- Benchmark (added-value of the CTCN)
- Thorough analysis of available documents related to a limited sample of sub-projects (e.g. evaluations and other assessments, press review…)
- Global literature review regarding climate change policies, collaboration and investments (impacts, changes…)
- Global analysis of climate change context changes in terms of mitigation and adaptation (through preliminary literature review and focus on 5 countries)
- Perception of partners (advisory board, Consortium Partners, etc.) on the program's effects and impacts (through interviews and survey)
- Perception of NDEs and beneficiaries regarding the benefits of the CTCN and the effects of their projects and policies (through interviews, surveys and feedbacks)

Annex II

[English only]

Bibliography

Decisions of the COP:
UNFCCC. 2011. *CTCN functions.* Available at < http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf#page=20 >.
UNFCCC. 2011. *Appendix IV. Composition and mandate of the Technology Executive Committee.* Available at < http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf#page=30 >.
UNFCCC. 2012. *Annex VII. CTCN terms of reference.* Available at < http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf#page=47 >.
UNFCCC. 2012. *Annex VIII. Criteria to be used to evaluate and select the host of the Climate Technology Centre and Network and information required to be included in the proposals.* Available at < http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf#page=50 >.
UNFCCC. 2013. *Annex I. COP-UNEP memorandum of understanding.* Available at < http://unfccc.int/resource/docs/2012/cop18/eng/08a02.pdf#page=10 >.
UNFCCC. 2013. *Annex II. Constitution of CTCN Advisory Board.* Available at < http://unfccc.int/resource/docs/2012/cop18/eng/08a02.pdf#page=15 >.
UNFCCC. 2014. *Annex 1. Modalities and procedures of the Climate Technology Centre and Network.* Available at < http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf#page=28 >.
UNFCCC. 2014. *Annex II. Rules of procedure of the Advisory Board of the Climate Technology Centre and Network.* Available at < http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf#page=32 >.
CTCN. 2016. *Countries Pledge Millions for Technology Transfer to Implement Paris Agreement (article)* Available at < https://www.ctc-n.org/news/countries-pledge-millions-technology-transfer-implement-paris-agreement >.
UNFCCC. 2015. *Adoption of the Paris Agreement ANNEX: Paris Agreement – Article 10.* Available at < https://unfccc.int/files/home/application/pdf/decision1cp21.pdf#page=29 >.
UNFCCC. 2015. *Enhancing climate technology development and transfer through the Technology Mechanism.* Available at < https://unfccc.int/resource/docs/2015/cop21/eng/10a02.pdf#page=27 >.
UNFCCC. 2015. *Linkages between the Technology Mechanism and the Financial Mechanism of the Convention.* Available at < https://unfccc.int/resource/docs/2015/cop21/eng/10a02.pdf#page=28 >.
UNFCCC. 2017. *Linkages between the Technology Mechanism and the Financial Mechanism of the Convention.* Available at < https://unfccc.int/resource/docs/2016/cop22/eng/10a02.pdf#page=3 >.
UNFCCC. 2017. *Enhancing climate technology development and transfer through the Technology Mechanism.* Available at < https://unfccc.int/resource/docs/2016/cop22/eng/10a02.pdf#page=5 >.
UNFCCC. 2018. *Review of the effective implementation of the Climate Technology Centre and Network.* Available at < https://unfccc.int/resource/docs/2017/cop23/eng/11a02.pdf#page=4>.
UNFCCC. 2018. *Enhancing climate technology development and transfer through the Technology Mechanism.* Available at < https://unfccc.int/resource/docs/2017/cop23/eng/11a02.pdf#page=6 >.
UNFCCC. 2018. *Report of the Conference of the Parties on its twenty-fourth session, held in Katowice from 2 to 15 December 2018 - FCCC/CP/2018/10/Add.2.* Available at < https://unfccc.int/sites/default/files/resource/cp2018_10_add2_advance.pdf >.
UFCCC. 2019. *Report of the Conference of the Parties on its twenty-fifth session, held in Madrid from 2 to 15 December 2019 - FCCC/CP/2019/13/Add.2.* Available at < https://unfccc.int/sites/default/files/resource/cp2019_13a02_adv.pdf >.
UNFCCC. 2019. *Review of the Climate Technology Centre and Network.* Available at < https://unfccc.int/sites/default/files/resource/cp2018_10_add2_advance.pdf#page=2 >.
UNFCCC. 2019. *Enhancing climate technology development and transfer through the Technology Mechanism.* Available at < https://unfccc.int/sites/default/files/resource/cp2018_10_add2_advance.pdf#page=3 >.
UNFCCC. 2019. *Linkages between the Technology Mechanism and the Financial Mechanism of the Convention.* Available at < https://unfccc.int/sites/default/files/resource/cp2018_10_add2_advance.pdf#page=5 >.
UNFCCC. 2020. *Enhancing climate technology development and transfer through the Technology Mechanism.* Available at < https://unfccc.int/sites/default/files/resource/cp2019_13a02_adv.pdf#page=17 >.
UNFCCC. 2020. *Technology COP decisions.* Available at < https://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/NEG_key_doc/45bb43c4668c40e3bdadab864e9acff6/02ea21f928b641219093661bb25c6236.pdf >;
CMA decisions:
UNFCCC. 2019. *Technology framework under Article 10, paragraph 4, of the Paris Agreement*. Available at < https://unfccc.int/sites/default/files/resource/cma2018_3_add2_new_advance.pdf#page=4 >.
UNFCCC. 2019. *Scope of and modalities for the periodic assessment referred to in paragraph 69 of decision 1/CP.21*. Available at < https://unfccc.int/sites/default/files/resource/cma2018_3_add2_new_advance.pdf#page=11 >.
UNFCCC. 2020. *Enhancing climate technology development and transfer to support implementation of the Paris Agreement*. Available at < https://unfccc.int/sites/default/files/resource/cma2019_06_add.01_.pdf#page=25 >.

Programmes of Work:
CTCN. 2013. *Programme of Work Climate Technology Centre and Network.* Available at < https://www.ctc-n.org/files/f2137b4434244bdeafe3a24bad2c5273.pdf >.
CTCN. 2019. *Programme of Work 2019-2022 Climate Technology Centre and Network.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ctcn_programme_of_work_2019-2022.pdf >.
Operating plans:
CTCN. 2017. *Annual Operating Plan Climate Technology Centre and Network (fourth year of operations) - AB/2017/9/8.2.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab20179_8.2_draft_revised_annual_operating_plan_2017_v3.pdf >.
CTCN. 2017. *Annual Operating Plan Climate Technology Centre and Network (fifth year of operations) - AB/2017/10/8.3.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab201710_8.3_draft_annual_operating_plan_2018_v8_-_ab_approved.pdf >.

CTCN. 2019. *Annual Operating Plan and Budget – 2019.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab201812_8.3_aop_and_budget_2019_draft_final.pdf >.
CTCN. 2020. *Annual Operating Plan and Budget – 2020.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab2019_10.1_ctcn_annual_operating_plan_budget_2020_final.pdf >.
CTCN. 2021. Proposed CTCN Annual Operating Plan and Budget – 2021.

Annual reports:
CTCN. 2017. *2017 Progress Report.* Available at < https://www.ctc-n.org/resources/2017-ctcn-progress-report >.
UNFCCC. 2017. *Joint annual report of the Technology Executive Committee and the Climate Technology Centre and Network.* Available at < https://unfccc.int/sites/default/files/resource/docs/2017/sb/eng/l04r01.pdf >.
CTCN. 2018. *2018 Progress Report.* Available at < https://www.ctc-n.org/resources/2018-ctcn-progress-report >.
UNFCCC. 2018. *Joint annual report of the Technology Executive Committee and the Climate Technology Centre and Network for 2018.* Available at < https://unfccc.int/sites/default/files/resource/SB_2018_2.pdf >.
CTCN. 2019. *2019 Progress Report.* Available at < https://www.ctc-n.org/resources/2019-ctcn-progress-report >.
CTCN. 2019. *2019 Annual Report.* Available at < https://www.ctc-n.org/sites/d8uat.ctc-n.org/files/AB.2020.15.4.1%202019%20Annual%20Report%20FINAL%20%281%29.pdf >.
CTCN. 2019. *Climate Technology Centre and Network 2018 Annual Report.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab201913_3.1_draft_ctcn_2018_annual_report.pdf >.
UNFCCC. 2019. *Joint annual report of the Technology Executive Committee and the Climate Technology Centre and Network for 2019.* Available at < https://unfccc.int/sites/default/files/resource/sb2019_04_adv.pdf >.
CTCN. 2020. CTCN Final Financial Report. Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/AB17_15.1_2020%20Final%20Financial%20Report_FOR%20ENDORSEMENT_Revised%2028%20April%202020.pdf >.
CTCN. 2021. *Joint annual report of the Technology Executive Committee and the Climate Technology Centre and Network for 2020.* Available at < https://unfccc.int/sites/default/files/resource/sb2020_04_adv.pdf >.
CTCN. 2021. *Annual Operating Plan Report for 2020.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/2020%20Annual%20Operating%20Plan%20Report%20DRAFT.pdf>
Reports of the Advisory Board meetings:
CTCN. 2021. 17th Meeting of the Advisory Board to the Climate Technology Centre and Network (CTCN) 2020 Report.
CTCN. 2020. 16th Meeting of the Advisory Board to the Climate Technology Centre and Network (CTCN) Report.
CTCN. 2020. 16th Meeting of the Advisory Board to the Climate Technology Centre and Network (CTCN) Directors update.
CTCN. 2020. 15th Meeting of the Advisory Board to the Climate Technology Centre and Network (CTCN) Report.
CTCN. 2020. 15th Meeting of the Advisory Board to the Climate Technology Centre and Network (CTCN) Report from the CTCN Advisory Board Taskforce Meeting. Available at < https://www.ctc-n.org/sites/d8uat.ctc-n.org/files/AB2020.15.1.2%20Report%20from%20AB%20Taskforce%20Meeting%20March%202020%20%28revised%29%20%281%29.pdf >.
CTCN. 2019. 14th Meeting of the Advisory Board to the Climate Technology Centre and Network (CTCN) Report.
CTCN. 2019. 13th Meeting of the Advisory Board to the Climate Technology Centre and Network (CTCN) Report.
CTCN. 2019. 13th Meeting of the Advisory Board to the Climate Technology Centre and Network (CTCN) Engagement with the Financial Mechanism. Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab201913_4c_ctcn_engagement_with_gcf_gef_af.pdf >.
CTCN. 2018. 12th Meeting of the Advisory Board to the Climate Technology Centre and Network (CTCN) Report.
Monitoring & Evaluation:
CTCN. 2016. *Relevant COP Decisions on Monitoring and Evaluation Processes - AB/2016/7/9.1.* Available at < https://www.ctc-n.org/files/ab20167_9.1_cop_decisions_on_evaluation_v1.pdf >.
CTCN. 2020. *Climate Technology Centre & Network Monitoring and Evaluation System.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/resources/ctcn_me_system.pdf >.

Technical Assistance:
CTCN. 2017. CTCN Technical Assistance – As of 17 July 2017. Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab201710_7.1_ctcn_ta_in_a_snapshot_v7.pdf >.
CTCN. 2018. CTCN Technical Assistance – As of 14th September 2018. Available at < https://www.ctc-n.org/files/ab201812_s.3_ctcn_ta_snapshot.pdf >.
Lee, Wona et al.. 2020. "What Leads to the Success of Climate Technology Centre and Network Pro Bono Technical Assistance?", *Journal of Climate Change Research 2020*, Vol. 11, No. 5-1, pp. 353~366. Available at < http://ekscc.re.kr/xml/26717/26717.pdf >.
UNEP, UNFCCC. 2020. *Regional Technology Brief: Asia Pacific.* Available at < https://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/TNA_key_doc/e247e8710df74cb7b394981905ad8806/292029a852fd48909fc9874a00959a1c.pdf >.
KMS:
CTCN. 2017. *CTCN Knowledge Management System in a Snapshot – As of 1 March 2017.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab20179_7.4_ctcn_kms_in_a_snapshot_v2.pdf >.
CTCN. 2017. *CTCN Knowledge Management System in a Snapshot – As of 17 July 2017.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab201710_7.4_kms_in_a_snapshot_v2.pdf .
CTCN. 2018. *CTCN Knowledge Management System in a Snapshot – As of 7 February 2018.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab201811_s.4_kms_in_a_snapshot.pdf >.
CTCN. 2018. *CTCN Knowledge-Sharing Snapshot- 3-5 October 2018.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab201812_s.2_kms_snapshot.pdf >.
Capacity Building:
CTCN. 2017. *CTCN Capacity Building in a Snapshots- 29-31 August 2017.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab201710_7.2_ctcn_cb_in_a_snapshot_v2.pdf >.
CTCN. 2018. *CTCN Capacity Building in a Snapshots - 7-9 March 2018.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab201811_s.2_ctcn_cb_in_a_snapshot.pdf >.
CTCN. 2018. *CTCN Capacity Building in a Snapshots - 3-5 October 2018.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/201812_s.6_capacity_building_snapshot.pdf >.
Network:
CTCN. 2017. *Climate Technology Network in a snapshot – As of 9 Feb 2017.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab201811_s.3_network_in_a_snapshot.pdf >.
CTCN. 2017. *Climate Technology Network in a snapshot – As of 1 March 2017.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab20179_7.3_ctcn_network_in_a_snapshot_v2.pdf >.
CTCN. 2017. *Climate Technology Network in a snapshot – As of 13 July 2017.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab201710_7.3_network_in_a_snapshot_v1.pdf >.
CTCN. 2018. *Climate Technology Network snapshot - 3-5 October 2018.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ab201812_s.5_network_snapshot.pdf >.
CTCN. 2019. *CTCN Perceptions: Results of a small-scale survey conducted in September 2018 and March 2019. Available at* < https://www.ctc-n.org/sites/www.ctc-n.org/files/item_6_-_network.pdf >.
NDE:
CTCN. 2015. *CTCN Operating Manual for National Designated Entities (NDEs).* Available at < https://www.ctc-n.org/sites/default/files/documents/NDE%20Manual%20Version%201.2_April%202015.pdf >.
CTCN. Date unknown. *Annex 1 National Designated Entities (NDEs) for the CTCN*. Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/annex_1_national_designated_entities_-_roles_and_responsibilities.pdf >.
Technology Mechanism. 2020. UNFCCC Technology Mechanism NDE Survey
Reviews:
UNFCCC. 2017. *Report on the independent review of the effective implementation of the Climate Technology Centre and Network*. Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/resources/report_of_the_ctcn_independent_review_2017.pdf >.
CTCN 2017. *Least Developed Countries' experiences with the UNFCCC Technology Mechanism.* Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/resources/least_developed_countries_experiences_with_the_unfccc_technology_mechanism.pdf>.
Danida. 2018. *CTCN Danida Review Report*. Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/ctcn_danida_review_report_2018.pdf >.
UNEP Evaluation Office. 2020. *Terminal Evaluation of the UNEP-ADB-GEF Project "Pilot Asia-Pacific Climate Technology Network and Finance Center" (AP-CTNFC).* Available at < https://wedocs.unep.org/bitstream/handle/20.500.11822/32547/4512_2020_te_spcc_fsp_asia_pacific_climate_technology_network_and_finance_centre_ctnfc.pdf?sequence=1&isAllowed=y >.
Technology Executive Committee:
TEC. 2015. *Evaluation of the Poznan strategic programme on technology transfer: final report by the Technology Executive Committee*. Available at < https://unfccc.int/resource/docs/2015/sbi/eng/16.pdf >.
TEC. 2019. *Potential areas for collaboration and joint activities of the Technology Executive Committee and the Climate Technology Centre and Network*. Available at

< https://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/tn_meetings/38226d0e16d94e318968ec14bca3c181/eeea196770f245bcb1b95e5017f1b6c3.pdf >.
TEC. 2019. *Updated evaluation of the Poznan strategic programme on technology transfer*. Available at < FCCC/SBI/2019/7 (unfccc.int) >.
TEC. 2020. TEC Brief #13. *Enhancing implementation of the results of technology needs assessments.* Available at < https://unfccc.int/ttclear/tec/brief13.html >.
TEC. 2021. TEC/2021/22/10. *Needs, gaps, challenges, enablers and measures to develop and enhance endogenous capacities and technologies.* Available at < 1d526fcd8be543c39018688803af86e9.pdf (unfccc.int) >.
CTCN Publications:
CTCN. 2018. *CTCN Input on the collaboration between GEF focal points and the national designated entities for technology development and transfer – Decision 10/CP.23, paragraph 13 (a)*. Available at < CTCN Input on the collaboration between GEF focal points and the national designated entities for technology development and transfer >.
CTCN. 2020. *The Role of the Climate Technology Centre and Network as a Climate Technology and Innovation Matchmaker for Developing Countries.* Available at < https://www.ctc-n.org/resources/role-climate-technology-centre-and-network-climate-technology-and-innovation-matchmaker >.
ICAT, CTCN, ICAT. 2020. *Transformational Change Pilot Case Study: Development of a Tonga Energy Efficiency Master Plan*. Available at <Transformational-Change-Case-Study-Tonga.pdf (climateactiontransparency.org) >.
CTCN. 2021. *Public–Private Partnerships for Climate Technology Transfer and Innovation*. Available at < https://www.ctc-n.org/news/new-ctcn-publication-public-private-partnerships-climate-technology-transfer-and-innovation >.
CTCN. Introduction to the Linkages with Financial Mechanism. Available at < https://www.ctc-n.org/sites/d8uat.ctc-n.org/files/%28Session%203%29%20GCF%20-GEF-AF.pdf >.
CTCN. Donors of the CTCN. Available at < https://www.ctc-n.org/about-ctcn/donors >.
CTCN. CTCN Monitoring and Evaluation. Available at < https://www.ctc-n.org/about-ctcn/monitoring-evaluation >.
CTCN. Annex 1 National Designated Entities (NDEs) for the CTCN. Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/annex_1_national_designated_entities_-_roles_and_responsibilities.pdf >.
Zhong. 2020. Update on the work of the CTCN. 2020. Available at < https://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/2020_event08/c095f1607c7c4109b0bf23af57726255/c168668562d34b729de697c56c8f76e7.pdf >.
Other:
Olsen K.H. et al. 2020. *CTCN Transformational Impact Assessment - Executive Summary*.
Radka, M. 2019. *Collaboration between GEF focal points and national designated entities - Letter to the GEF*. Available at < CTCN input to the GEF COP25 report – Collaboration between GEF focal points and national designated entities, 19 July 2019 >
Saleemul. 2021. Dealing with loss and damage in COP26. The Daily Star. Available at < https://www.thedailystar.net/opinion/politics-climate-change/news/dealing-loss-and-damage-cop26-2041965 >.
GCF. 2021. GCF Support to Climate Technologies - 17th Meeting of the Advisory Board to the CTCN. Available at < https://www.ctc-n.org/sites/www.ctc-n.org/files/Agenda%20item%2012.3_CTCN%20AB17_Green%20Climate%20Fund.pdf >.

Annex III

[English only]

List of interviewees

Type of actor	*Organization*	*Position*
CTCN	UNEP	Director and secretary Advisory Board
	UNIDO	Deputy Director
	UNEP	Regional Manager Africa
	UNIDO	Knowledge and Communications Manager
	UNEP	Associate Program officer
CTCN Hosts	UNEP	Chief, Energy Branch
	UNIDO	Director, Department of Energy
		Industrial Development Officer
Consortium partners	AIT	Professor, Department of Water Engineering and Management
	CATIE	Head of Unit, Economy, Environmental and Sustainable Agribusiness Research Unit, Division for Green and Inclusive Development
	ENDA	Programme Coordinator, Enda Energy
Advisory Board members	CTCN-AB	Chair of the AB of the CTCN
		Vice-Chair of the AB of the CTCN
		Chair of the TEC
		Non-Annex I country representative
		Annex I country representative
		Research and Independent Non-Governmental Organisations (RINGOs)
Donors	EU	Senior Policy Officer, DG DEVCO
	Japan	AB Member (in contact with Japan Ministries)
	Interviews conducted as part of the benchmarking process	
Regional climate technology and finance centers supported by the GEF under the Poznan strategic programme	GEF	Focal point
	AfDB	Focal point
	EBRD	Focal point
	ADB	Focal point
	IDB	Focal point

Annex IV

Detailed methodology for the survey

[English only]

1. E-survey questionnaires elaboration:

1. The survey aims at collecting data from multiple and similar interlocutors. The data is collected to get inputs on the deployment and achievements of the CTCN and reviews on the relevance and efficiency of the CTCN's action. The survey is also used to understand the needs of beneficiaries, countries and partners; and to gather proposals for improvement. It targets Knowledge partners, Consortium Partners, Network Members, NDEs, and beneficiaries (technical assistance request applicant, participants to events, etc.).

2. The format of the survey is adapted to the different respondents and the text available in English, French and Spanish. The survey is short and requires less than ten minutes to complete. It includes a majority of closed questions (multiple choice) and few open questions (text).

2. E-survey administration:

3. The survey was elaborated by the end of November 2020.

4. The e-survey tool used allows to edit questions on a user-friendly web-interface, to send automatic reminder until the end of the survey, to perform automatic statistics and calculation on the results and to download all data under Excel. As a result, the output of the survey consists both of graphs and statistical analyses and of anonymous verbatim.

5. The survey was sent to the email addresses of the different stakeholders given by the CTC and retrieved from the CTCN website. The first sending took place mid-January and the survey remained open for one month with three reminders sent to the targets. The survey closed mid-February 2021.

3. E-survey response rates:

6. The table below presents the response rates of the different target stakeholders.

Survey targets	*No. of e-mails sent*	*No. of replies (answered question 1)*	*Rate*	*No. of survey completed (answered the last question*	*Rate*
NDEs	191	68	36%	43	23%
Network members, Consortium & Knowledge Partner	641	198	31%	118	18%
Beneficiaries	1737	422	24%	248	14%
Beneficiaries – TA proponent	72	25	35%	22	31%
Beneficiaries – Training participants	398	74	19%	41	10%
Beneficiaries – Webinar attendees	1267	323	25%	185	15%

Annex V

General mapping of comparable organisations / initiatives

[English only]

Name	*Geographical perimeter (targeted regions/ countries)*	*Year of inception*	*Type of services/activities*
AfDB's ACTC	Sub-Saharan African countries	2014	Technical assistance / research grants for: - Knowledge creation and networking - Support for Policy and institutional Reform - Program and Project Support
ADB's CTFC	Asia-Pacific Region	2012	- Implementation of national and regional centers, networks, organizations, and initiatives (UNEP-led) - Building national and regional technology transfer centers and centers of excellence (UNEP-led) - Development and implementation of country driven transfer policies, programs, demonstration projects, and scale-up strategies (UNEP-led) - Integrating climate technology financing needs into national development strategies, plans, and investment priorities (ADB-led) - Catalysing investments in EST deployment (ADB-led) - Establishing a 'marketplace' of owners/users of low-carbon technologies to facilitate their transfer (ADB-led)
EBRD's FINTECC	South-eastern Europe Central Europe and Baltic States Eastern Europe and the Caucasus Central Asia	2015	- Incentive grants for introducing eligible technologies, which are available as a complement to EBRD financing (5–25 per cent of the projects) - Regional technology transfer networks to foster knowledge-sharing on policies and practices - Institutional capacity-building to assist climate technology transfer (improvement of policy environments and legislative frameworks)
IDB's Climate Technology Transfer Mechanisms and Networks in Latin America and the Caribbean project	Latin America and the Caribbean	2012	- Institutional-capacity building and analytical tools to address climate technologies-related issues in national and sectoral policies and plans; - Climate technology transfers through technology networks and centres - Promotion of public and private investment in order to ensure sustainability

Annex VI

Background of the CTCN

[English only]

A. Mandate of the CTCN

1. In 2010, the COP established the Technology Mechanism with the objective of enhancing action on climate technology development and transfer. The mechanism consists of two bodies: The Technology Executive Committee and the Climate Technology Centre and Network. In 2011, the COP adopted the CTCN's terms of reference. In 2012, the COP selected UNEP, as the leader of the consortium of partner institutions, as the host of the Climate Technology Centre for an initial term of five years, with possible renewal if so decided by the COP in 2017. In 2013, the COP adopted the modalities and procedures of the CTCN, effectively allowing the CTCN to start its work and making it operational.

2. In accordance with its TOR, the CTCN has the following functions:[1]

(a) At the request of a developing country Party:

(i) Providing advice and support related to the identification of technology needs and the implementation of environmentally sound technologies, practices and processes;

(ii) Facilitating the provision of information, training and support for programmes to build or strengthen capacity of developing countries to identify technology options, make technology choices and operate, maintain and adapt technology;

(iii) Facilitating prompt action on the deployment of existing technology in developing country Parties based on identified needs;

(b) Stimulating and encouraging, through collaboration with the private sector, public institutions, academia and research institutions, the development and transfer of existing and emerging environmentally sound technologies, as well as opportunities for North–South, South–South and triangular technology cooperation;

(c) Facilitating a network of national, regional, sectoral and international technology centres, networks, organization and initiatives with a view to:

(i) Enhancing cooperation with national, regional and international technology centres and relevant national institutions;

(ii) Facilitating international partnerships among public and private stakeholders to accelerate the innovation and diffusion of environmentally sound technologies to developing country Parties;

(iii) Providing, at the request of a developing country Party, in-country technical assistance and training to support identified technology actions in developing country Parties

(iv) Stimulating the establishment of twinning centre arrangements to promote North–South, South–South and triangular partnerships, with a view to encouraging cooperative research and development;

(v) Identifying, disseminating and assisting with developing analytical tools, policies and best practices for country-driven planning to support the dissemination of environmentally sound technologies;

(d) Performing other such activities as may be necessary to carry out its functions

[1] Decision 1/CP.16, para. 123.

3. In accordance with its TOR, the roles and responsibilities of the Climate Technology Centre and its network are as follows:[2]

(a) The CTC shall manage the process of receiving and responding to requests from developing country Parties and shall work with the Network to respond to such requests. The Climate Technology Centre will receive these requests from developing country Parties through the national entity designated for this purpose under decision 4/CP.13.

(b) The CTC would respond to requests by developing country Parties either by itself or by identifying the appropriate organizations in the Network in consultation with the requesting developing country Party. The Centre will:

(i) Receive and assess requests and refine and prioritize those requests in conjunction with the nationally designated entity with the aim of establishing its technical feasibility;

(ii) Respond to requests, through either the Centre or the Network, based on the use of the most appropriate capacity and expertise in accordance with its approved modalities and procedures.

(c) The members of the Network will undertake the substantive work to address requests made to the Climate Technology Centre by developing country Parties.

4. The Technology Mechanism established under the Convention also serves the Paris Agreement. As part of the Paris Agreement, a technology framework was established to provide overarching guidance to the work of the Technology Mechanism in promoting and facilitating enhanced action on technology development and transfer in order to support the implementation of the Paris Agreement. CMA.1 adopted the technology framework and decided that the TEC and the CTCN, consistently with their respective functions, mandates and modalities of work, shall implement the technology framework in close collaboration under the guidance of the CMA.[3]

B. Services of the CTCN

5. The CTCN has three core services: (i) providing technical assistance at the request of developing countries to accelerate the transfer of climate technologies; (ii) creating access to information and knowledge on climate technologies and (iii) fostering collaboration among climate technology stakeholders via the Centre's network of regional and sectoral experts from academia, the private sector, and public and research institutions.

1. Technical Assistance

6. The CTCN provides technical targeted assistance in response to requests submitted by developing countries via their National Designated Entities (NDEs). The CTCN does not provide funding directly to countries, but instead supports the provision of technical assistance provided by experts on specific climate technology sectors. The CTCN also provides Fast Technical Assistance which consists of a short time response (up to 2 months) with a limited value of 15,000 USD, and referring to technology prioritisation, endogenous technologies assessment, policies and measures that are immediate priorities for the requesting country.

2. Knowledge Management

7. The CTCN hosts a web-based knowledge management system that aims to provide access to climate adaptation and mitigation technology information, tools, services, reports and training across numerous sectors such as agriculture, energy, industry, water, etc.[4] It constitutes the largest database for climate technology resources where countries and institutions can propose learnings (17,000+ resources), facilitating the sharing of web-based

[2] Decision 2/CP.17, annex VII, para. 4-6.
[3] Decision 15/CMA.1.
[4] Available at: https://www.ctc-n.org.

peer-to-peer learning and training. It also enables the CTCN to process NDEs request quickly while tracking and managing its workflow.

3. Capacity-building

8. The CTCN facilitates the provision of information, training and support to build and/or strengthen the capacity of developing countries to identify technology options, make technology choices and operate, maintain and adapt technology.

4. Networking /events

9. The CTCN organises a series of events and Regional Forums to create synergies and to enable the exchange of best practices, experience and knowledge on technology development and transfer amongst NDEs, Network Members and climate technology stakeholders.

C. Organizational structure of the CTCN

1. Advisory Board

10. Strategic guidance originating from the COP and the CMA is delivered to the CTC by the Advisory Board which:[5]

11. Provides guidance on:

(a) The report of the CTCN;

(b) Prioritization criteria.

12. Approves:

(a) The report of the CTCN;

(b) Prioritization criteria for responding to requests from developing country Parties;

(c) Criteria regarding the structure of the Network and the designation of organizations as members of the Network;

(d) The programme of work.

13. Endorses:

(a) The appointment of the director;

(b) The budget;

(c) The financial statement;

(d) Ensure the application of fiduciary standards, and legal and ethical integrity;

(e) Monitor, assess and evaluate the timeliness and appropriateness of the responses of the CTCN to requests.

14. The Constitution of the Advisory Board was agreed upon at COP 18.[6] The Advisory Board meets twice a year, and at the time of the inception report 16 meetings had already been held.

2. Climate Technology Centre

15. The CTCN includes a Centre, managed by UNEP, in collaboration with UNIDO, and supported by the Consortium composed of 11 partner organizations:

(a) Asian Institute of Technology (Thailand);

(b) Bariloche Foundation (Argentina);

[5] Decision 2/CP.17, annex VII.
[6] Decision 14/CP.18, annex II.

(c) Council for Scientific and Industrial Research (South Africa);

(d) The Energy and Resources Institute (India);

(e) Environment and Development Action in the Third World (Senegal);

(f) Tropical Agricultural Research and Higher Education Center (Costa Rica);

(g) World Agroforestry Centre (Kenya);

(h) Deutsche Gesellschaft für Internationale Zusammenarbeit (Germany);

(i) The Netherlands Organisation for Applied Scientific Research (The Netherlands);

(j) National Renewable Energy Laboratory (United States of America);

(k) UNEP-DTU & UNEP-DHI Partnerships (Denmark).

16. The terms of the collaboration between UNEP and UNIDO, as hosts of the Climate Technology Centre, and the Consortium members are governed in separate MoUs. UNEP hosts the CTC as a dedicated entity within UNEP, to the extent consistent with UNEP regulations, rules, and procedures, UNEP Governing Council decisions, and the provisions of the host agreement. UNEP provides its inputs through its Energy, Climate and Technology Branch that coordinates contribution from other UNEP Branches and Divisions. On UNIDO's side, the Programme is anchored in the Energy Branch.

3. Network

17. CTCN is a global network of more than 600 members and provides services to all developing countries in Africa, Asia and the Pacific, and Latin America and the Caribbean, and least developed countries in particular.

18. The Network aims to integrate a variety of stakeholders ranging from regional climate technology centers and networks to intergovernmental, international, regional and sectoral institutions, organizations, partnerships and initiatives that could contribute to technology deployment and transfer as well as research, academic, financial, non-governmental, private-sector and public-sector organizations and partnerships. To be part of the network, the organizations need to go through a formal application process, and to demonstrate that they meet the criteria for Network Membership, approved by the Advisory Board.

19. Knowledge partners support CTCN's mandate to foster collaboration and access to information and knowledge in order to accelerate climate technology transfer. Through its knowledge partner network, the CTCN generates, manages and shares knowledge, experience and good practices at the national, regional and global level, taking into account traditional knowledge and practices. Knowledge partners include Consortium Partners, Network Members, UN agencies, academic institutions, non-governmental organizations, private sector and other reliable sources of climate technology information.

20. The CTCN aims to strengthen developing countries' industrial SMEs in order to move from conventional technologies to climate technologies. The Private Sector Hub consists of the following elements: 1) introducing climate technologies and international suppliers to the local SMEs, 2) creating linkages to finance, 3) building the capacity and awareness of the local industrial SMEs.

4. National Designated Entities

21. CTCN is acting upon local and national ownership and country driven needs that are expressed to it by a NDE. The establishment of an NDE by a Party to the UNFCCC is a necessary step for participation in the CTCN process. NDE act as intermediaries between relevant national stakeholders and CTCN in order to ensure a coordination of requests from relevant ministries, focal points for other UNFCCC mechanisms, private sector, civil society and academia. 161 NDEs of developed and developing countries serve as focal points on

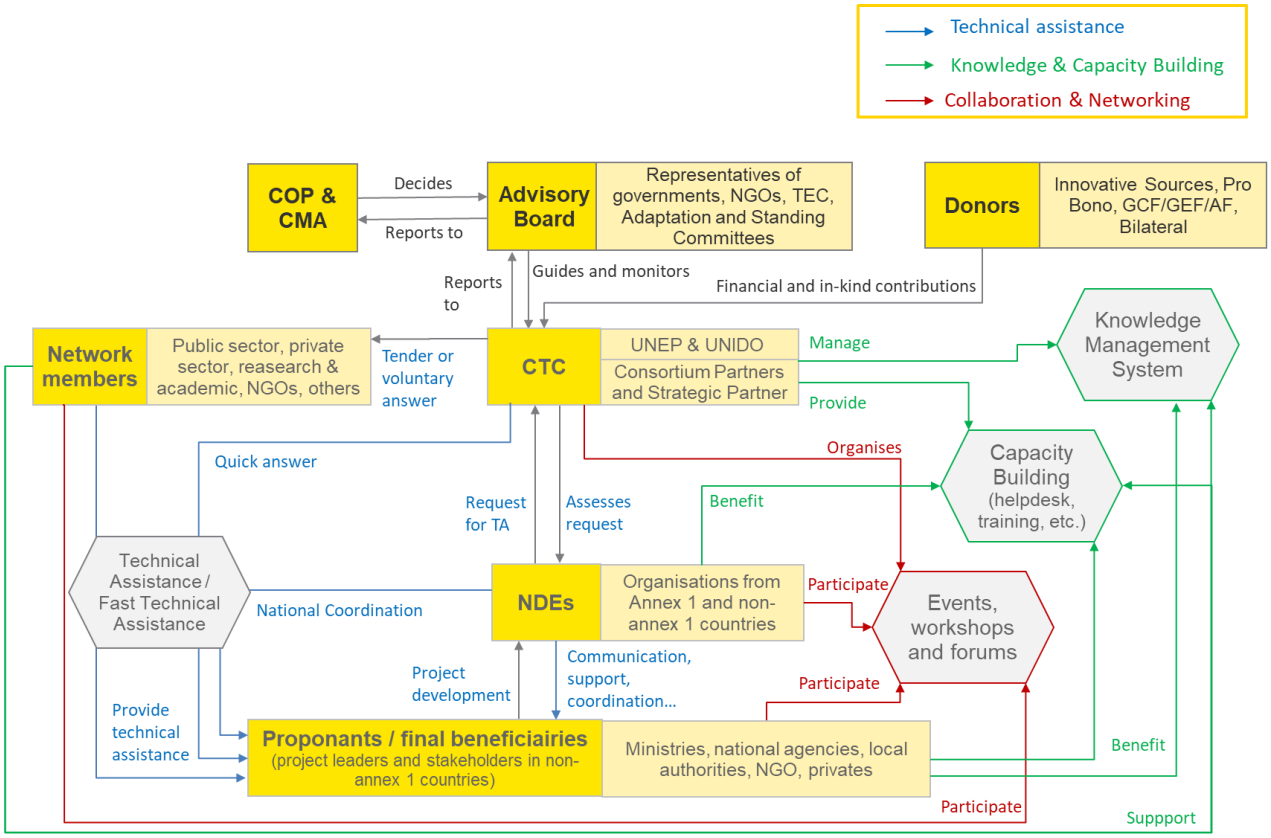
CTCN activities in the country.[7] NDE support in-country activities with the CTCN by managing national submissions (for developing countries only), facilitating engagement in the network and coordinating regional and global peer learning and collaboration, reporting and feedback.

22. Requests for technical assistance from developing countries through their NDEs that act as CTCN focal point in the countries are received by the CTC and responded to with support along all stages of the technology cycle, from identification of technology needs, through assessment, selection and piloting of technological solutions, to their customization and widespread deployment.

23. To help deliver the transformational change envisioned by the Paris Agreement, the CTCN reorganized its operations along a geographic model in 2018. From an operational standpoint, country focal points for climate technology (NDEs) now have a single point of contact within the CTCN rather than multiple focal points based on the type of service requested (e.g. technical assistance, capacity building, network outreach). This approach enables the CTCN to deepen its engagement through more integrated delivery of its core services and to better leverage multi-country solutions to mutual challenges faced within regions.

24. Figure 1 presents the overall organizational structure of the CTCN.

Figure 1
Overall organizational structure of the CTCN (Source: EY)



D. Expected resources, outputs and outcomes of the CTCN

25. The first PoW for the CTCN covers the period 2013-2018. It provides targets related to the key services that form the core mandate of the CTCN, and the organisation activities

[7] CTCN. 2019. Programme of Work 2019-2022 Climate Technology Centre and Network. Available at <ctc-n.org/sites/www.ctc-n.org/files/ctcn_programme_of_work_2019-2022.pdf>.

of the CTCN to deliver these services. It also describes how the CTCN will deliver on these targets over the next five years.

26. The second PoW for the CTCN covers the period 2019-2022. Its term aligns with the renewal of the hosting agreement between the COP and UNEP regarding the hosting of the CTC as decided by COP 23 in December 2017.

27. To further accelerate the development and transfer of climate technologies, the technology framework establishes principles and puts forward actions and activities across five key themes: (a) innovation; (b) implementation; (c) enabling environment and capacity-building; (d) collaboration and stakeholder engagement; and (e) support. The CTCN second PoW organizes the activities of the CTCN, and those undertaken collaboratively with the TEC, according to this structure and ensures coherence with corresponding guidance from Parties to the UNFCCC and its Advisory Board.

28. The annual operating plans include indicators and targets linked to the specific activities of the CTCN in line with the Theory of Change, Logical Framework and Performance Measurement Frameworks that are part of the CTCN M&E Framework. To allow flexibility, annual operating plans set targets on an annual basis in line with resources available to support its operations, and provide detail on the activities of the CTCN that fall within its mandate as the implementation arm of the Technology Mechanism – such as its work to support the needs of developing countries, in particular Least Developed Countries and Small Island Developing States.

29. Figure 2 presents a visual model of the CTCN at a strategic level. It presents logical pathways that capture actions and results likely to lead to transformational change, and how the expected activities, outputs, and outcomes are interwoven in order to respond to the technology framework themes and actions. It aims to provide clarity about what the CTCN wants to achieve and how and enables evidence-based reflection on how services could be better designed.

Figure 2

Visual model of the CTCN at a strategic level (Source: CTCN. 2020. Climate Technology Centre & Network Monitoring and Evaluation System)

A1: CTCN secures reliable funding to undertake its operations; A2: Sufficient human capacity among CTCN, NDE, other stakeholders to undertake POW; A3: Private sector engagement on RD&D and climate tech transfer; A4: International and national level political will for RD&D and incentives supporting tech transfer; A5: The UNFCCC remains a key body for facilitating and supporting global climate change technology development, transfer and deployment

30. To effectively implement its PoW, the CTCN requires financial resources for its operations with the potential to scale up in accordance with needs.

31. In accordance with the guidance contained in UNFCCC decision 2/CP.17, para. 139, the CTCN developed a strategy to finance its Second PoW in early 2018. The Strategy establishes the rationale and approach to be adopted by the organization across primary target groups. In its first five years of operations the CTCN was funded primarily through voluntary contributions from developed country parties and regional organizations. It has also received targeted project support from the GEF and the GCF, from three national governments on a pro bono basis, and from its co-hosts UNEP and UNIDO. Total funds secured for the activities of the CTCN through the end of 2018 totalled approximately USD 60 million.

32. Table 1-5 present intended outcomes and actions and activities implemented by CTCN according to those five themes as detailed in the Second PoW of the CTCN.

Table 1
Innovation

Actions and activities by the CTCN	*Intended outcomes (aligns with technology framework activity)*
Technical Assistance is delivered to improve policy environments, strategies, legal and regulatory frameworks. Capacity building to strengthen institutional arrangements.	Countries are supported to incentivize innovation, including National Systems of Innovation (NSI).
The CTCN's knowledge-sharing activities and online knowledge platform will be supplemented with best practice and lessons learned from countries' climate technology RD&D policies and activities, including through links to additional external databases and other resources.	Providing information and facilitating the sharing of information on international technology RD&D partnerships and initiatives, good practices and lessons learned from countries' climate technology RD&D policies and activities.
Technical Assistance is focused on priority technologies with the potential for transformative impact. Knowledge related to innovative technologies and best-practice examples are sourced and promoted through CTCN knowledge platform and media channels.	Countries are supported for the development, deployment and dissemination of existing innovative technologies and the scale-up and diffusion of emerging climate technologies.
Technical Assistance is delivered in support of Technology Needs Assessments, Technology Action Plans, NDCs, and NAPs.	Countries are receiving support for long-term technological transition pathways towards the widespread uptake of climate technologies.
CTCN promotes the engagement of countries in RD&D activities through South-South, North-South and triangular collaboration and within selected international initiatives.	Countries are receiving support for initiating joint climate technology RD&D activities.
Technical Assistance is increasingly implemented by Network Members Capacity building is delivered to small and medium sized enterprise Knowledge Sharing initiatives focused on private sector partners are enhanced and an online platform for private sector engagement is created.	Partnerships are built between the public and private sector in the development and transfer of climate technologies.

Table 2
Implementation

Actions and activities by the CTCN	*Intended outcomes (aligns with technology framework activity)*

Technical Assistance is provided to countries to develop TNAs and TAPs, delivered in close collaboration with the GEF and GCF Capacity Building is delivered to countries to make effective use of TNA findings and Technology Action Plans and roadmaps Learning from experiences in developing and implementing TNAs is facilitated through the sharing of information on the CTCN knowledge platform which will be supplemented with best practice and lessons learned on TNAs, at regional forums, and at UNFCCC meetings.	Countries are supported to undertake and update TNAs, as well as enhance the implementation of their results and strengthen links to NDCs and NAPs.
Capacity is built through on-the-job and curriculum-based training on technology identification and assessment methods CTCN knowledge portal provides access to updated and relevant tools and resources for technology identification.	Recommendations have been identified and developed to provide stakeholders with access to approaches, tools and means for the assessment of technologies that are ready to transfer.
Technical Assistance is delivered to develop and strengthen policies, plans and legal and regulatory frameworks, and to identify barriers to the development and transfer of socially and environmentally sound technologies.	Countries are able to enhance enabling environments and address barriers to the development and transfer of socially and environmentally sound technologies.
Technical Assistance is provided to countries to develop TNAs and TAPs, delivered in close collaboration with the GEF and GCF Capacity Building is delivered to countries to make effective use of TNA findings and Technology Action Plans and roadmaps Learning from experiences in developing and implementing TNAs is facilitated through the sharing of information on the CTCN knowledge platform which will be supplemented with best practice and lessons learned on TNAs, at regional forums, and at UNFCCC meetings.	Countries are supported to undertake and update TNAs, as well as enhance the implementation of their results and strengthen links to NDCs and NAPs.
Capacity is built through on-the-job and curriculum-based training on technology identification and assessment methods CTCN knowledge portal provides access to updated and relevant tools and resources for technology identification.	Recommendations have been identified and developed to provide stakeholders with access to approaches, tools and means for the assessment of technologies that are ready to transfer.

Table 3
Enabling environment and capacity-building

Actions and activities by the CTCN	*Intended outcomes (aligns with technology framework activity)*
Knowledge-gathering through leveraging the expertise of Network Members including expanding the network and enhancing its connectedness, and Knowledge partners, and gathering lessons learned from technical assistance Knowledge-sharing through continuously updated and relevant resources in the CTCN	Stakeholders and the general public are increasingly aware of climate technology development and transfer tools, approaches and methods.

Actions and activities by the CTCN	*Intended outcomes (aligns with technology framework activity)*
knowledge platform, webinars and targeted communications.	
Technical Assistance is delivered to identify and develop efficient financing options for climate technologies, and to strengthen policies, plans and legal regulatory frameworks Capacity Building to support the development of national strategies and action plans, supportive policy environments, and legal.	Countries build investment friendly environments, including national strategies and action plans, policy environments, legal and regulatory frameworks and other institutional arrangements.
Technical Assistance implementation fully incorporates the CTCN gender guidelines and support is provided to requesting countries to develop their own gender-responsive initiatives, frameworks, policies and programs. Capacity building is delivered to public, non-governmental, and private sector and fully incorporates the CTCN gender guidelines. Capacity building to develop gender-responsive and endogenous technologies in developing countries is delivered.	Countries enhance enabling environments to promote endogenous and gender Technical Assistance implementation fully incorporates the CTCN gender guidelines and support is provided Number of Network Members with gender expertise increased 8 responsive technologies for mitigation and adaptation actions.
Engagement initiatives focused on private sector partners are convened Capacity building is delivered to small- and medium-sized enterprises and public sector institutions to enhance their understanding of efficient tools, policy instruments and incentives to support technology transfer.	Countries have developed/implemented policies and enhanced enabling environments which incentivize the private and public sector to fully realize the development and transfer of climate technologies.
Capacity is built within the private sector to carry out market assessments of climate technologies Capacity is built in the public sector to understand the needs and appropriate incentives to spur adoption of climate technologies by the private sector.	Governments are fostering private sector involvement by designing and implementing policies, regulations and standards that create enabling environments and favourable market conditions for climate technologies.
Learning is facilitated based on good practices and lessons learned from countries' climate technology policies and activities and shared online.	Information is shared and networking enhanced to create synergies and to enable the exchange of best practices, experience and knowledge on technology development and transfer.
Engagement is enhanced through workshops and meetings with capacity-building institutions through UNFCCC Climate Weeks, inputs to GCF regional Dialogue.	Collaboration is enhanced with existing capacity-building organizations and institutions, including those under the Convention.
Learning is provided to NDEs including through regional forum, thematic training workshops, online knowledge platform and support for national events.	Capacity of NDEs of all Parties, especially those in developing countries, is increased.
Technical Assistance is delivered to support the identification of efficient technologies and assessment methods Capacity is built through training of relevant government officials to plan, monitor and achieve technological transformation.	Capacities of Parties to plan, monitor and achieve technological transformation in accordance with the purpose and goals of the Paris Agreement is increased.

Table 4
Collaboration and stakeholder engagement

Actions and activities by the CTCN	*Intended outcomes (aligns with technology framework activity)*
CTCN to foster partnerships and host events with key stakeholders. These partnerships will feature NDEs as pivotal actors to link them to stakeholders, including the private sector, as well as to support enhanced engagement among Network Members.	Enhanced collaboration and engagement with relevant stakeholders, including local communities and authorities, national planners, the private sector and civil society organizations in the planning and implementation of Technology Mechanism activities.
CTCN to partner with Regional Development Banks, local financial institutions and private sector associations. Technical Assistance will focus on strengthening private sector access to finance through scale-up of pre-feasibility studies to define market barriers and enable investors to access those markets. Capacity Building will also be provided to assist stakeholders with technology identification, and regional forums will provide opportunities for matchmaking with relevant partners.	Enhanced engagement and collaboration with the private sector to leverage expertise, experience and knowledge regarding effective enabling environments that support the implementation of the Paris Agreement.
Events, including specific thematic workshops at sub-regional level will be organized with NDEs to empower them in their role as technology focal points of the UNFCCC.	Enhanced engagement between NDEs and relevant stakeholders, including by providing guidance and information.
The expertise of academia, research institutions and relevant international organizations will be leveraged through knowledge partnerships and at CTCN events and regional forums to assist beneficiaries on new and innovative technologies. Those actions will prepare the ground for scale-up purposes. These activities include also new and innovative technologies that require an initial assessment to verify their potential for growth and deployment.	Enhanced collaboration and synergy with relevant international organizations, institutions and initiatives, including academia and the scientific community, to leverage their specific expertise, experience, knowledge and information, particularly on new and innovative technologies.
CTCN to foster partnerships and host events with key stakeholders. These partnerships will feature NDEs as pivotal actors to link them to stakeholders, including the private sector, as well as to support enhanced engagement among Network Members.	Enhanced collaboration and engagement with relevant stakeholders, including local communities and authorities, national planners, the private sector and civil society organizations in the planning and implementation of Technology Mechanism activities.

Table 5
Support

Actions and activities by the CTCN	*Intended outcomes (aligns with technology framework activity)*
Events and Workshops will be convened that connect NDE with UNFCCC climate focal points with focal points for the GCF and GEF. Technical Assistance will be undertaken that is funded by the GCF Readiness and Preparatory Support Programme. Capacity Building, including	Collaboration of the Technology Mechanism with the Financial Mechanism is enhanced and support for technology development and transfer is strengthened.

the Vision to Concept approach developed by the CTCN, will train project developers to prepare climate technology-related submissions to the GCF	
Technical Assistance will be provided to developing countries upon their request. Capacity Building designed to raise awareness of funding opportunities for climate technologies will be undertaken. Events and workshops will be convened to bring together developing country focal points, including NDE, with Network Members possessing project development finance expertise as well as with representatives from international financial institutions.	Enhanced technical support is provided to developing country Parties in a country-driven manner. Access to financing for innovation, including for RD&D, enabling environments and capacity-building, developing and implementing the results of TNAs, and engagement and collaboration with stakeholders, including organizational and institutional support are facilitated.
Donor engagement strategy of the CTCN to be implemented Modalities and opportunities for pro bono and in-kind support to be communicated to countries and institutions with available resources and expertise, including through their NDEs. Partnerships with organizations with complementary skills, networks, and resources will be developed.	Mobilization of various types of support, including pro bono and in-kind, from various sources for the implementation of actions and activities in each key theme of the technology framework is enhanced.

Annex VII

Supporting data on the performance of the CTCN

[English only]

1. This annex presents supporting data on the performance of the CTCN described in Chapter III of this report. The underlined text corresponds to the evaluation questions covered in the respective section.

A. Relevance

2. Are the strategy and the resources of the CTCN relevant and appropriate regarding priorities given by the COP and the local needs for support?

1. Alignment with COP decisions

3. The surveys and interviews conducted for the purpose of this review indicate that the CTCN was set up in accordance with COP decisions. The CTCN secretariat was reactive to include successive COP decisions to its agenda and operations and submit required amendments to the deliberations of the Advisory Board.

4. The first PoW, approved by the CTCN Advisory Board in 2013, provided a roadmap for the start-up phase of the CTCN through the establishment of its three core service areas formulated in its terms of reference:[1] responding to country requests for technical assistance; building local capacity and networks; and increasing information flows and knowledge-sharing.

5. At COP21, the TEC and the CTCN were requested to undertake further work on technology RD&D and on the development of endogenous capacities and technologies.

6. Regarding RD&D, the second PoW, as well as Annual Operating Plan, contain actions covering RD&D through:

(a) knowledge-sharing activities and online knowledge platform climate technology RD&D;

(b) promotion of the engagement of countries in RD&D activities through South-South, North-South and triangular collaboration and within selected international initiatives;

(c) assistance to countries in developing national institutional, legal and regulatory frameworks to encourage climate technology RD&D and uptake.

7. Endogenous capacities seem to have earned better consideration in the last four years. They are now incorporated in decision making process for TA. The topic has also been included in CTCN strategy of intervention on capacity building. Following a TEC survey on endogenous capacities and technologies identifying needs, gaps, challenges and enabling environments, endogenous capacities have also been identified in the 2021 Annual Operating Plan as an area of collaboration with the TEC.

2. Consideration of past evaluations

8. The second PoW also considers the recommendations that have been formulated during the first independent review of the CTCN. The extent to which each recommendation has been considered by the CTCN is presented in Table 6.

[1] Decision 2/CP.17, §139 and Annex VII.

Table 6
CTCN response to first independent review recommendations (Source: CTCN)

Review Recommendation	*CTCN Response*
Recommendation 1: Encourages countries to clearly identify NDEs and support them through national institutions and other UNFCCC focal points.	• CTCN continued to support the information sharing among focal points of various climate initiatives, and to establish the linkages between focal points under the Convention, by inviting both NDEs and NDAs to various Regional Fora. • CTCN further supported NDEs in organizing national events to improve the preparation of country activities on technology transfer.
Recommendation 2: Encourages the COP to ensure that the governance of the CTCN continues to respond to its current and projected needs in terms of strategic and technical guidance.	• CTCN AB12 considered and provided guidance on CTCN Second PoW (2019-2022).
Recommendation 3: Encourages the CTCN to clarify the roles of NDEs from developed countries.	• CTC developed a guide describing possible roles and responsibilities of Annex I NDEs that was endorsed at the 4th meeting of the Advisory Board.[2] • CTCN has been working with donor partners, particularly Japan and the Republic of Korea, to implement modalities for channelling pro-bono support to CTCN activities and aims to continue these efforts with a focus on technical assistance provided through developed country NDEs. • Systematic approach to developed country NDE engagement is a component of the updated internal donor reporting protocols.
Recommendation 4: Encourages UNEP and UNIDO as hosts of the CTCN, to identify potential sources of additional financial resources.	• CTCN engaged a deputy director in February 2019 to lead resource mobilization efforts. • The CTCN collaborated with regional banks and financiers via regional focal points. • UNEP and UNIDO have engaged their leadership to raise the profile of the CTCN among public and private stakeholders.
Recommendation 5: Encourages the CTCN to continue exploring with the GEF and the GCF how to further facilitate provision of sustained funding for CTCN activities, in line with their assigned mandates. Recommendation 6: Encourages the CTCN, the GEF and the GCF to enhance operational linkages.	• CTCN experienced gradually smoothing collaborative modalities with GCF. 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. • The results of CTCN survey on NDE-GEF OFPs collaboration were included

[2] Available here.

Review Recommendation	*CTCN Response*
	to the report of GEF to the 24th Session of the COP to the UNFCCC. • At COP 24, the Parties invited the CTCN, GEF, and the GCF to continue enhancing their collaboration and noted the need for the engagement in supporting developing country Parties. The Parties also invited the developing countries to seek support from the CTCN to develop and submit the technology-related projects to the operating entities of the Financial Mechanism for implementation. • The CTCN discusses on a continuous basis with the GCF and GEF Secretariat the possible ways to further enhance the engagement with the entities of the Financial Mechanism, while the Regional approach and forums allow for strengthening linkages among technology and financial focal points.
Recommendation 7: Encourages the CTCN, its Advisory Board and other relevant actors to undertake actions to increase the efficiency of the CTCN provision of technical assistance.	• The CTCN developed a streamlined fast technical assistance process (launched in 2018). • The Centre's alignment of services with a more regional focus has enabled the CTCN to identify regional trends more effectively in terms of technology demand; and NDEs have gained a dedicated team for discussing their needs and accessing CTCN services. • The CTCN introduced a two-tier bidding process to facilitate the participation of more Network members in technical assistance projects, which has led to an increase in the number of Network members applying to provide technical assistance.
Recommendation 8: Encourages the CTCN to continue training NDEs regularly and facilitating the elaboration of requests through regional fora and its Incubator Programme.	• The CTCN continued to conduct each year the Regional Fora for NDEs (online for the 2020 edition) with the objective to train them on how best to tap the services of CTCN and link with other mechanisms under the Convention and stakeholders outside of it. • The CTCN continued to implement the 'Vision to Concept' capacity building module to help countries develop a pipeline of concept notes for submission to the GCF based on the project ideas identified as priorities in the countries' climate change process. • The CTCN continued implementing its Incubator Programme for LDCs. The CTCN Incubator Programme provides tailored support to NDEs from Least Developed Countries (LDCs) to achieve the mitigation and adaptation targets included in their Nationally Determined Contributions (NDCs) through the development of technology roadmaps.

Review Recommendation	*CTCN Response*
	• Through the regional re-organization, NDEs have gained a single point of contact for discussing their needs and accessing CTCN services.
Recommendation 9: Encourages the CTCN to continue raising awareness of its services among developing countries.	• The CTCN transitioned to a regional approach to service delivery, which enables CTCN regional managers to interact more consistently with NDEs and other stakeholders in their regions. • The CTCN continued to raise awareness about its services. In 2018, the CTCN conducted specific training programmes, bringing together various stakeholders including Network members, NDEs and Consortium partners, and organized 9 technology events at COP24 engaging 750 attendees. In 2019, the CTCN continued to deliver strengthened communication through implementing regionally tailored strategies, sharing information on climate technologies and further generating awareness of its services. • The CTCN prepared communication material highlighting the benefits and value-added of its Network and incorporated them in its Progress reports. • The CTCN maintains an active mailing list of twelve thousand subscribers in order to circulate invitations to regional NDE forums, stakeholder forums and technology events, share information about upcoming webinars hosted by the CTCN and its partners, and notify Network members of opportunities to bid on technical assistance.
Recommendation 10: Encourages the CTCN to reinforce the involvement of Network Members as they constitute an additional pool of relevant expertise and resources.	• The CTCN continued building and strengthening its Network with a wide range of sectoral expertise. As of 2020, 75% of TA are being provided by its Network. • As a result of a survey of its Network members in 2019, the CTCN developed in 2020 a Network engagement plan that responds to Network members' interest to engage more in networking, knowledge sharing, national events, and matchmaking events. • The CTCN increased its provision of feedback to Network members on technical assistance bidding proposals. • Each member was granted login access to share information resources on the CTCN website. • Efforts were made to increase online engagement by improving the user-friendliness of the CTCN web portal, simplifying the search, filter and menu structures, and increasing the transparency of funding and M&E information;

Review Recommendation	*CTCN Response*
	• Additional knowledge sharing, and capacity building engagement opportunities were initiated, such as targeted webinars, technology clinics, and co-creation of regional technology briefs, where members can offer their expertise and benefit from collaborative activities. Additional efforts focused on outreach, particularly to academia and research institutions, and raising awareness of the climate technology resources available via the CTCN web portal. The CTCN has engaged its Advisory Board in this process and will report on progress at COP 26.
Recommendation 11: Encourages the CTCN to strengthen transparency and reporting. Recommendation 12: Encourages the CTCN to strengthen its processes and capacities in terms of reporting and evaluation of its impacts.	• The CTCN revised and updated its M&E system in coordination with the TEC in order to enhance reporting and evaluation of its impact. • The CTCN has developed an internal M&E dashboard on its website for storing, aggregating and disseminating data on the impact of technical assistance. Next steps include operationalizing the M&E dashboard and making more impact data available online. • The CTCN now displays funding and donor agreements online,[3] as well as documents such as relevant COP decisions, independent CTCN reviews and recommendations, and the monitoring and evaluation framework that guides CTCN operations.[4]
Recommendation 13: Encourages the Advisory Board, through the COP, to take on and operationalize the recommendations of this review.	NA

9. The CTCN also developed its 2018 Annual Report in response to recommendations from the DANIDA evaluation report.

3. Developing countries needs

10. As CTCN services are provided according to a demand-driven approach, most stakeholder agree that it responds to developing countries' needs. This is also reflected in surveys' answers:

(a) Only 4% of NDEs who responded to the survey have never benefited from services provided by the CTCN in the past four years;

(b) To the question "Concerning the implementation phase of the technical assistance project(s) you participated to, would you say that the technical assistance corresponded to an important need of the country in terms of technology transfer?" almost 90% of the Consortium Partners, knowledge partners and Network Members who responded to the survey indicated that they agree or strongly agree. This corresponds to the results obtained during the first independent review, where they were slightly more than 90% with similar answers. No respondent indicated that they disagreed with this statement;

[3] Available here.
[4] Available here.

(c) To the question "How relevant the activities/interventions of the CTCN were/are to your country's context and needs for support" 63% of beneficiaries indicated "very relevant" or "rather relevant" and only 6% "irrelevant". Responding NDEs were more positive, but also more contrasted as 85% answered "very relevant" or "rather relevant" and 13% "irrelevant".

11. The gap between NDEs' and beneficiaries' perception could be explained by the fact that NDEs have a more global understanding of a country's needs. Moreover, although CTCN services are demand driven, NDEs could be required to adapt to some level country's demands to CTCN framework.

12. Following the entry into force of the Paris Agreement, the CTCN also started to work more closely in relation to country NDCs in order to further support the implementation of the Paris Agreement. The CTCN continues to design and implement technical assistance at the request of developing countries in line with their NDCs as its principal implementation activity: to be eligible, requests need to explicitly demonstrate alignment with national plans and NDCs, as formalized in the technical assistance request form.

13. Nevertheless, only 52% of responding NDEs, 36% of responding Consortium Partners, knowledge partners and Network Members and 36% of responding beneficiaries consider that the CTCN contributed to the implementation of country's NDCs.

4. Collaboration and complementarity with the TEC

14. In several decisions, the COP requested the CTCN to enhance its collaboration with the TEC.[5]

15. From collected information, the reviewer can conclude that over the years, collaboration between CTCN and the TEC improved, both at strategical and operational level.

16. At operational and technical level, CTCN and TEC work together to adapt their programs to integrate a set of common/joint activities as requested by the COP. In 2020, the two bodies also implemented the monitoring and evaluation system and conducted outreach to NDEs to contribute to the process of monitoring and evaluating the impact of the TEC and CTCN activities through a joint survey.

17. Also, the CTCN and the TEC have increased sharing of information through their secretariats on their work, notably 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.

18. The TEC and the CTCN ensured coherent communication through virtual means, their representatives participating in each other's meetings and events, and organizing, or participating in, joint events, including the TEC and CTCN deep-dive sessions at G-STIC 2020 or The Technology Mechanism virtual event at the UNFCCC Climate Dialogues 2020 for example. Also, TEC and CTCN jointly organized in August 2020 four virtual regional Technical Experts Meetings on Mitigation 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.

19. At strategical level, continuity of collaborative practices observed in the first review, such as the participation of the TEC Chair and Vice-Chair to Advisory Board meetings of the CTCN, are still in place. To support the implementation of joint activities, the 2021 Annual Operating Plan suggests establishing a joint taskforce composed of the Chairs and Vice Chairs of the TEC and CTCN Advisory Boards and opened to other members of the TEC and CTCN.[6] The joint taskforce will lead on the execution of all agreed joint activities and is responsible for further elaborating on the scope of each joint activity, including the timeline. Also, the task force may establish an internal arrangement to effectively carry out the work.

[5] Decisions 25/CP.19, 1/CP.21, 12/CP.21, 15/CP.22, 13/CP.23, 15/CP.23, 13/CP.24, 14/CP.25.

[6] Section IV, Proposed CTCN Annual Operating Plan and Budget – 2021.

Finally, the UNFCCC and CTCN secretariats will facilitate the work of the joint taskforce by organizing the work and preparing the documentation.

20. Questioned stakeholders observed increased sharing of information and exchange of technical data across different areas of work between the two secretariats. However, several interviewees have also reported that room for improvement remains. For instance, TEC policy briefs could have been used by countries to help identify priorities and develop request for technical assistance from the CTCN to a greater extent: as of 2020, 65% of NDEs who answered the UNFCCC Technology Mechanism NDE Survey did not use TEC products to prepare technical assistance requests for the CTCN. This is mainly explained by the lack of NDEs awareness about TEC activities in that matter. It corroborates testimonies of different interviewed stakeholders who regret the lack of clarity and outreach of TEC's Terms of Reference and mandate.

5. Cooperation with the Financial Mechanism

21. While no cooperation activity was integrated into the first PoW, the second PoW identifies three actions to be taken by the CTCN with such intended outcome:

(a) "Events and Workshops will be convened that connect NDE with UNFCCC climate focal points with focal points for the GCF and GEF." For instance, GCF and CTCN have organized parallel regional meetings for national designated representatives of both GCF and CTCN to exchange updates and identify areas to work together (e.g. meetings were organized in Tonga, Indonesia and Georgia). However, CTCN' NDEs cooperation with GEF' OFPs, and to a lesser extent (thanks to the increased number of CTCN readiness projects) remains at a low level due to different strategic views and limited interpersonal knowledge (partly due to administrative turnover).

(b) "Technical Assistance will be undertaken and funded by the GCF Readiness and Preparatory Support Programme." Six CTCN Technical Assistance projects funded through GCF Readiness and Preparatory Support are now completed or near completion (Ghana, Tonga, Myanmar, Bahamas, Mauritius, Palestine). Other Readiness proposals were approved in 2019-2020 (13 in Africa, 4 in Asia) and 12 additional ones from Africa and Latin America are in the pipeline for 2020-2021. As reported by the GCF,[7] the CTCN is also now the largest provider of GCF readiness support for technology. The CTCN also engaged with the GEF through the integration to GEF-5 MSP of TAs within the UNIDO project for Promoting Accelerated Transfer and Scaled up Deployment of Mitigation Technologies through the CTCN.[8]

(c) "Capacity Building, including the Vision to Concept approach developed by the CTCN, will train project developers to prepare climate technology-related submissions to the GCF." Indeed, among the reasons why the CTCN was preferred is the capacity building of local institutions through CTCN's mandatory engagement of local institutions by Network implementers, as well as dedicated GCF comments-addressal system in the CTCN through dedicated experts.[9]

[7] GCF. 2021. GCF Support to Climate Technologies - 17th Meeting of the Advisory Board to the CTCN. Available here.

[8] Technical Assistances within the CTCN GEF Pilot include:
- Chile – To support the replacement of F-refrigerants used in refrigeration system in food processing production and exports (fruits and vegetables)
- Dominican Republic – Development of Advanced energy-efficient lighting technologies
- ECOWAS – Mainstreaming gender for a climate resilient energy system in West Africa
- Gambia - Recycling of organic waste for energy and smallholder livelihood
- Paraguay – Environmental flows and river basin management for the Tebicuary river
- Viet Nam – Bio-waste minimization and valorization for low-carbon production in rice sector
- Zimbabwe – Piloting rapid uptake of industrial energy efficiency and efficient water utilization in the industrial sector
- Uganda – Formulating geothermal energy policy, legal and regulatory framework
UNIDO project for Promoting Accelerated Transfer and Scaled up Deployment of Mitigation Technologies through the CTCN. Available here.

[9] See Introduction to the Linkages with Financial Mechanism (ctc-n.org).

22. Additional steps have been taken by the CTCN towards collaboration of the Technology Mechanism with the Financial Mechanism following the two related recommendations:

(a) Encourages the CTCN to continue exploring with the GEF and the GCF how to further facilitate provision of sustained funding for CTCN activities, in line with their assigned mandates;

(b) Encourages the CTCN, the GEF and the GCF to enhance operational linkages.

23. In response to those recommendations, the CTCN implemented the regional approach, which brought a closer alignment with GCF structure and enhanced coordination with other important focal points (GEF/GCF/etc.). Forums took also placed, strengthening linkages among technology and financial focal points. Finally, the CTCN experiences gradually smoothing collaborative modalities with GCF in general.

24. While the 2018 and 2019 Annual Operating Plans confirmed the engagement of the CTCN towards general collaboration, only one concrete action is identified in the 2018 Annual Operating Plans: Replicate the workshop on 'Mainstreaming Technology in Climate Action Plans' in other sub-regions in order to bring together the national focal points of climate initiatives such as the CTCN, GCF, and GEF as well as officials responsible for country TNAs, NAMAs, and NAPs to discuss country priorities and strengthen synergies to accelerate technology transfer.

25. The 2020 and 2021 Annual Operating Plans, reiterate CTCN intentions formulated in the PoW to organise "Events with NDEs, UNFCCC, GCF, GEF, and Adaptation Funds' focal points, as well as Network Members to enhance collaborations as well as" "Secure financial resources from bodies under financial mechanism". Also, "Technical support to developing countries for facilitating access to financing" and "capacity building to increase capacity of countries to access financing in support of climate technology priorities" could include activities aiming at with the operating entities of the Financial Mechanism.

26. The CTCN has also 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.

6. Financial and operational linkages between the Technology and Financial Mechanism

27. Financial linkages with the GEF and the GCF can be synthesised as follows:

(a) The contribution of the GEF have been limited to the one received in 2015 (USD 1 971 000) as part of GEF-5 In 2020, the CTCN successfully bid to deliver on GEF Adaptation Program and was selected as a grant recipient of USD 677 000;

(b) In total, USD 6 657 975 were received from the GCF during the period 2017 – 2020, with an important increase in contribution in 2020.

28. Operational linkages with the Financial Mechanism continue to grow, as evidenced by the ramping-up of the partnership with GCF Readiness and Preparatory Support Programme, with the GEF pilot programme on innovative financing for adaptation technologies in medium-sized cities, as well as the new collaboration with the Adaptation Fund for the USD 10 million joint CTCN–UNDP Adaptation Fund Climate Innovation Accelerator (UNEP-CTCN and UNDP administrate USD 5 million each).[10]

29. No specific target related to collaborating with the Adaptation Fund was set at the time the Resource Mobilization Strategy was elaborated, in the extent that the CTCN was having weak linkages with the Adaptation Fund back then. In 2020, the CTCN also 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,

[10] CTCN. 2020. Joint annual report of the TEC and the CTCN for 2020. Available here.

publications, workshops and webinars for those engaged in strengthening resilience to climate change.

30. Considering operational relations with the GCF, increased collaboration and better communication between their secretariats have been noticed at the upstream level. It is mainly epitomized by the ramping-up of the partnership with GCF Readiness and Preparatory Support Programme through which the CTCN provides services and expertise in response to developing countries' requests utilising GCF country resources. Indeed, one can observe the following:

(a) 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.

(b) Regular communication also take place to create synergies on capacity-building and knowledge management (many resources from other UNFCCC agencies are available on the CTCN website), as well as to make sure there are no replication of projects (in the case of countries making requests to different UN entities).

(c) The new liaison office in South Korea is deemed to be a good opportunity to enhance collaboration between the GCF and the CTCN,[11] but room for stronger coordination remain between national focal points of the CTCN (NDEs) and the ones of the GCF (NDAs).

(d) Nonetheless, it has also been stressed that contributions from GCF Readiness Programme contributions might not a viable solution for the CTCN on the long term for two main reasons:

(i) GCF contributions do not sustain the operational budget of the CTCN, which is where the inherent funding difficulty is.

(ii) It also brings the risk of the CTCN becoming a "contractor" of the GCF. Their relationship is thus improving but must remain balanced: the CTCN should keep its freedom (specifically on the groundwork) while the GCF could utilize the outcomes of CTCN interventions to allow governments to subsequently implement bigger projects.

31. Regarding operational relations with the GEF, as pointed by most of the interviewees, tangible collaborations (beyond formal communications) between GEF's OFPs and CTCN NDEs are deemed to be problematic. This can be further evidenced by the results of the survey conducted by the CTCN mid-2018, where 64% of the 69 responding NDEs stated that they do not have information regarding the GEF portfolio in their respective countries, while 60% recognized that they did not participate in the GEF portfolio formulation exercise in their country.[12] In July 2019, the CTCN admitted that they were "not aware of any activities that might have been undertaken by the GEF to support in-country collaboration to implement relevant guidance from the COP."[13] The main operational impediments for GEF and CTCN to collaborate are the following:

(a) The GEF do not advocate for specific constituencies: it has no power in deciding how the countries program their money, as it is not the GEF money but the recipient's money;

(b) The CTCN is not a recipient country nor a donor country, so it cannot engage the same way countries do with the GEF, it cannot speak up on the needs of countries. The

[11] Report from the CTCN Advisory Board Taskforce Meeting (held 30-31 March 2020).

[12] CTCN. 2018. CTCN Input on the collaboration between GEF focal points and the national designated entities for technology development and transfer – Decision 10/CP.23, para. 13 (a). Available here.

[13] Radka. 2019. Collaboration between GEF focal points and national designated entities - Letter to the GEF. Available here.

CTCN must engage with the countries first and then request the GEF for funding having the endorsement of the countries (beneficiaries do not need to be the GEF focal points);

(c) GEF replenishment process is completely apart from the UNFCCC process;

(d) People speaking at the GEF council and the one negotiating under UNFCCC are not the same. There is a need for more consistency/collaboration within each country under these two frameworks;

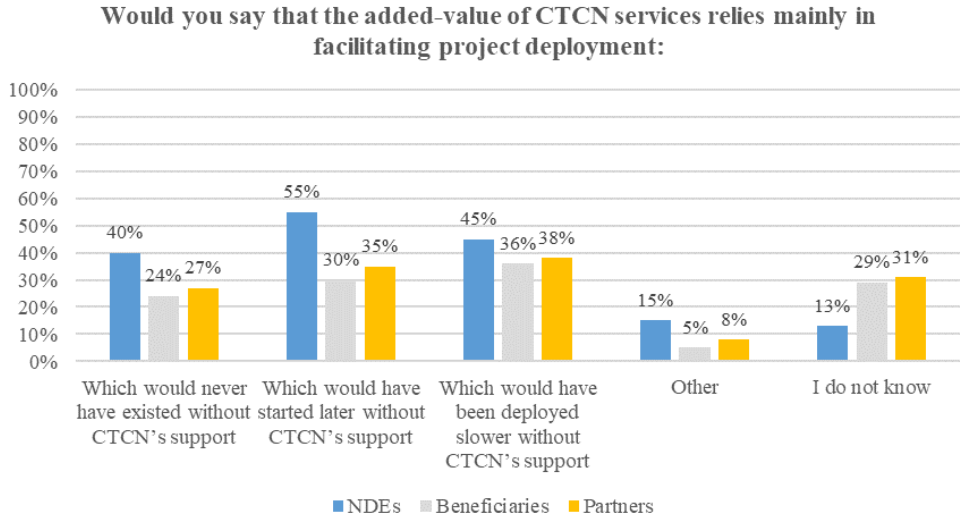
(e) Double-charging issue: when CTCN is financed through the GEF, the procedure entails a duplication of fees because they are considered by the GEF as an Executing Agency. The GEF has 18 Implementing Agencies and the CTCN is not one of them, so countries get charged if implementing the project with the CTCN.

7. Links with other related climate support programs and added value of the CTCN

32. To the question "Why did you request technical assistance from the CTCN?" of the electronic survey, 58% of the responding beneficiaries indicated that the CTCN's focus on climate change technologies was well aligned with their own objectives, and about 30% of them had been looking for such technical assistance for a long time without finding an adequate programme. Those figures are almost identical to the one observed during the first review.

33. As presented in Figure 3, stakeholders' feedback suggests that technical assistance projects might have been implemented through other funding sources (deadweight effect). However, they also seem to reckon that projects started and were deployed faster thanks to CTCN intervention.

Figure 3
Value-added of CTCN according to NDEs, beneficiaries and Consortium Partners, knowledge partners and Network Members (Source: EY)



34. When asking NDEs and beneficiaries if they could identify other organizations that provide similar services, most of them either answered that they could not identify any organization like the CTCN, or listed organizations related to the CTCN, such as UN bodies (e.g. UNEP, UNIDO, UNDP, FAO, GCF, GEF). Some also listed multilateral and bilateral development banks (ADB, AfDB, IDB, World Bank, and JICA), international organizations (IEA, IRENA, Global Green Growth Institute, NDC Partnerships / World Resources Institute), development organizations (e.g. UK Department for International Development, AFD, GIZ, USAid) and EU development programs (Euroclima+).

35. Like the CTCN, PSP regional centres have been operating as climate technology project accelerators and their activities often include TA for scaling up the investment in and technology assessment of climate technologies for climate change-related projects. However,

no competition between the CTCN and regional centres has been observed on the ground as demand has proved largely enough for them to co-exist.

36. There has been sporadic collaboration between the CTCN and the PSP regional centres on different fronts, notably on:

(a) Exchange of information on implemented activities by the different parties;

(b) Project origination (e.g. The ACTFCN pipelines have been shared, and TA requests in areas that are not covered by the ACTFCN will be transferred to the CTCN. The IADB supports CTCN identifying relevant opportunities. Also, the FINTECC reviews all requests received by the CTCN from EBRD countries of operation and provides input where possible.);

(c) Events (e.g. hosts MDBs have participated to some CTCN Regional Forums);

(d) Network (e.g. The association of IADB with CTCN Consortium Partners - the Bariloche Foundation and the Tropical Agricultural Research and Higher Education Center - contributes to its objective of supporting the operations of the CTCN and facilitates coordination of their efforts and activities.).

37. The possibility of providing joint support to some countries is also being assessed (e.g. joint advisory project in the Balkans with FINTECC).[14]

38. However, despite those collaborative activities, interviewees mentioned a rather limited overall cooperation. The Updated evaluation of the Poznan strategic programme on technology transfer explain that there have been very few specific opportunities for the CTCN to provide TA services in the context of the pilot regional centres and that no specific efforts to collaborate capacity building programmes have been made. It argues that "beyond attending meetings and exchanging ideas on project proposals, and a few cases of the CTCN providing TA for a bank project, synergies were not explored more systematically." Coordination and collaboration between the CTCN and the regional banks on the PSP regional centres has generally been ad hoc and limited to information-sharing. There have been very few specific opportunities for the CTCN to provide TA services in the context of the pilot regional centres, and no specific efforts to collaborate capacity building programmes have been made.

39. Even if some institutions, such as the IDB, have partnered with a range of developed country institutions at the regional level in an effort to ensure the continuity of programming after the PSP funding in GEF-5 ends, most regional centres will stop their activities when GEF funding comes to an end. MDBs seem however willing to guarantee the continuance of the regional centre efforts beyond the implementation of the PSP. They also expressed the interest in strengthening the links with the CTCN. MDBs redefinition of their approach on climate technology investments represents a good window of opportunity for them and the CTCN to reimagine their collaborative efforts. In November 2020 a dialogue was held between the GEF, the regional centres and the CTCN to identify lessons learned and opportunities for further collaboration. Stakeholders agreed on "the need to strengthen linkages between the CTCN and the regional centres; regularly exchange information on respective project pipelines; and draw on the CTCN as a resource for the regional centres' capacity-building activities".

40. It also observed "the need for and benefits of long-term engagement with national focal points, including NDEs, institutions and stakeholders overall, and the importance of capacity development support, identified in relation to three of the pilot regional centres". This advocates for continued engagement and a role for the CTCN through its support of

[14] The Updated evaluation of the Poznan strategic programme on technology transfer (TEC, 2019) also explains that despite the fact that there has been some collaboration between the CTCN and the regional banks (e.g. the CTCN providing TA to EBRD for preparing a financial proposal for fuel-switching in Bosnia and Herzegovina, organizing capacity-building workshops with AfDB, and supporting project preparation for IADB (the latter by CTCN Consortium Partners), these are most likely isolated cases and not necessary linked to PSP programming.

NDEs. Furthermore, it is unclear whether PSP TA services have been readily available to NDEs.

B. Effectiveness

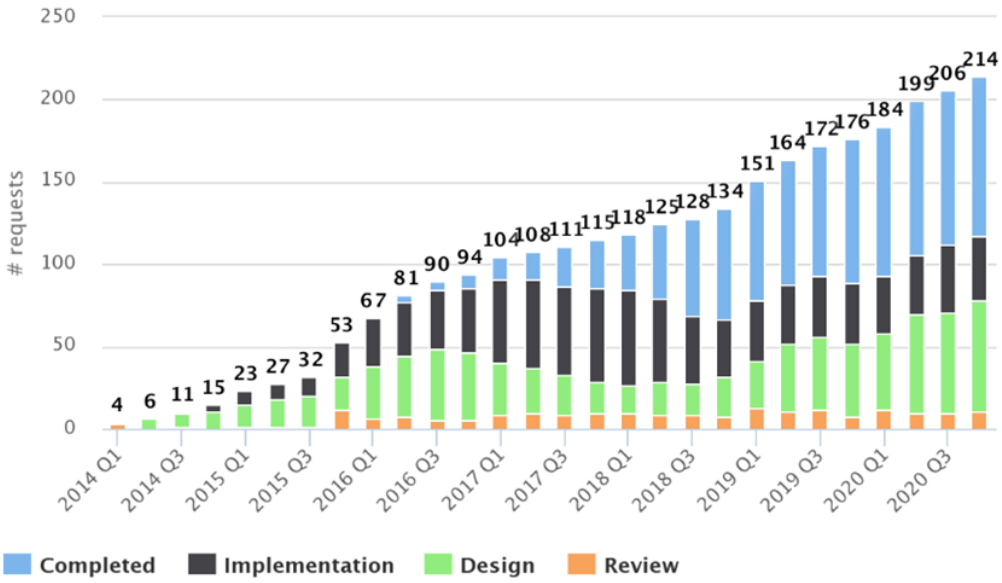
41. Have the objectives of the CTCN been achieved in terms of technical assistance / knowledge management, peer learning & capacity building / outreach, networking and stakeholder engagement?

1. TA requests

42. Between 2014 and 2016, the number of requests with response plans under design kept increasing (Figure 4). After 2016 however, the trend varies and between 2017 and 2019 the number of requests with response plans under design fluctuates between 30 and 50 per year. Since 2019, however they increase again.

43. No information is yet available on the achievement of the objective of 30 requests received per year formulated in the 2019 CTCN Performance Measurement Framework.

Figure 4
Requests by stage (full history) (Source: CTCN, 2021)



44. It is noted that yearly target outputs decreased between 2017 and 2019: it went from 50 – 70 to 30 – 40 for TA response plans under design, and from 40 – 60 to 25 –35 regarding TA under implementation and concluded (Table 7).

Table 7
Technical assistance in response to country requests (Source: CTCN / EY analysis)

	2017		*2018*		*2019*	
	Target Outputs	Realised	Target Outputs	Realised	Target Outputs	Realised
TA requests with response plans under design	50 -70	31	50 -70	51	30 - 40	40
TA requests under implementation and concluded	40 - 60	75	30 - 50	78	25 - 35	41

45. Section A on relevance showed that TAs were relevant to developing countries' needs. This corroborates the fact that the CTCN implemented different operating modes to select the right projects, notably selection criteria and NDEs engagement.

46. Selection criteria which are critical in guiding and optimizing the request approval process, are clear and well implemented. This is confirmed by the fact that 80% of the

beneficiaries and 90% of the NDEs who responded to the surveys indicated that the selection criteria were available and clear.

47. Interviewed NDEs and beneficiaries have reported that the submission of a request was almost systematically preceded by several iterations with the CTCN to better frame the request and ensure that it was the most appropriate with regards to country needs and CTCN capacities.

48. Material obtained through interviews and surveys suggest that efficient support is provided by NDEs for TA requests elaboration and that interaction and iteration with the CTCN are useful. For instance, 94% of the NDEs respondents agreed that enough support was provided by the CTCN team during the process and 80% of beneficiaries assert that they received enough support from their NDE representative during the process.

49. Nevertheless, and despite the use of the Incubator program, several interviewees also underlined the fact that some countries lack of capacities and resources to submit qualitative TA requests. Those require bigger resources on project preparation and better definition of needs. Defining and refining the requests submitted by NDEs to the CTCN require deeper analysis needed to find bottlenecks and the TA more effective, which cannot be done by most of the NDEs.

50. The mandate given to the CTCN established that its services should be provided at the request of a developing country Parties. The process and procedures subsequently organize the technical assistance request process starting from the initiative of developing countries. Since CTCN set-up, the CTCN consistently ensured a balanced geographical coverage of beneficiaries, with a focus on LDCs that was reinforced by the Incubator Programme.[15]

51. The geographical coverage of technical assistance requests submitted to date matches the mandate given to the CTCN of prioritizing technical assistance towards least developed countries and other vulnerable countries. Moreover, like during the first review, requests are well distributed with regards to the global distribution of Non-Annex I countries and LDCs:[16]

(a) 48% (against 44% during the first review) of requests originate from Africa, which represents 35% of Non-Annex I countries;

(b) 27% (against 29% during the first review) from Asia, which represents 29% of Non-Annex I countries;

(c) 19% (against 22% during the first review) from Latin America and the Caribbean, which represent 21% of Non-Annex I countries;

(d) 4% (against 3% during the first review) from Oceania, which represents 9% of Non-Annex I countries;

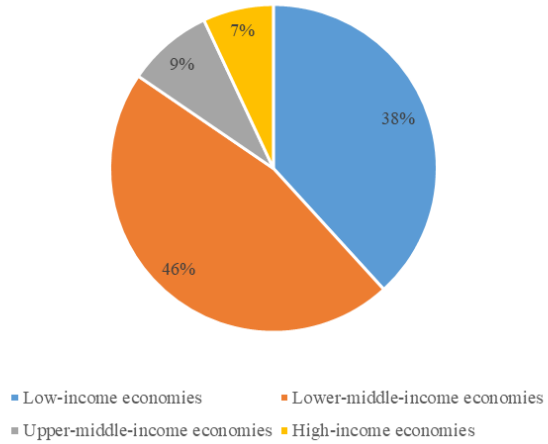
(e) 2% (2% during the first review) from Eastern Europe, which represents 5% of Non-Annex I countries.

52. Figure 5 also shows that geographical coverage of technical assistance focuses no lower-middle-income and low-income economies.

[15] The CTCN particularly supported NDEs of the least developed countries (LDCs) through its Incubator Programme providing specific and intensive training. The Programme was presented at the 4th AB meeting.

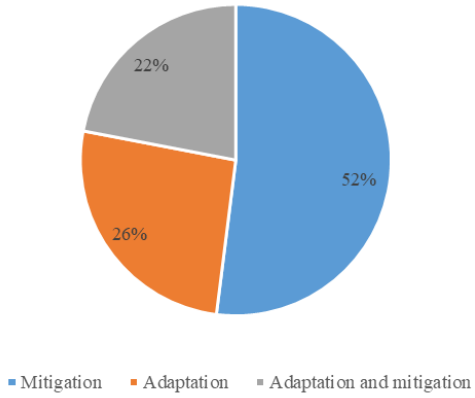
[16] See Request visualizations | Climate Technology Centre & Network (ctc-n.org).

Figure 5
Distribution of requests per level of income (Source: CTCN, 2021)



53. Similarly, to what was observed during the first review, the thematic distribution of requests is rather skewed towards mitigation objectives. Figure 6 shows that more than half of the TA requests aim at mitigation and a bit less than a quarter for adaptation and mitigation.

Figure 6
Distribution of requests by objective (Source: CTCN, 2021)



54. Interviewees have underlined the relevant expertise of the implementing partners. Network Members distribution by type of scheme shows indeed that presence in mitigation (the most represented scheme) is well aligned with distribution of requests (Figure 7).

55. However, compared to a relatively high number of TA requests, there is a lower Network presence in:

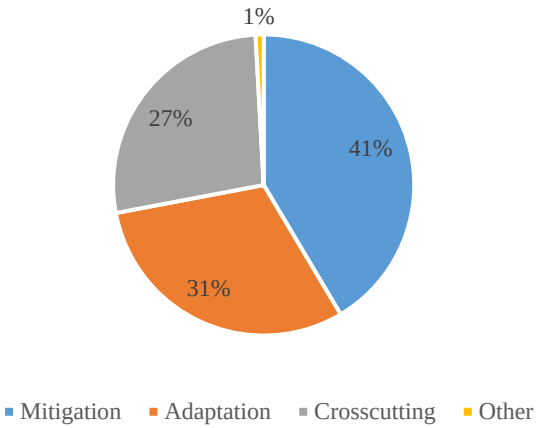
(a) Agriculture and Forestry, transport, carbon fixation and abatement (sectors);

(b) Economics and financial decision-making (cross-sectional enablers);

(c) Gender, Endogenous technologies (approach).[17]

[17] CTCN, Director's update AB/2020/15.

Figure 7
Distribution of network partners according to scheme (Source: CTCN, 2021)



56. With new areas of intervention, such as circular economy and "build back better",[18] the CTCN covered themes became numerous and diverse. While recognising that it is thereby fulfilling its mandate, some stakeholders get the impression that CTCN has "lost focus".

57. The main factor of success for TA requests is stakeholders' interactions particularly the good coordination and communication between NDEs and the CTCN, as well as between NDEs and beneficiaries. The clarity of the CTCN Proposal form and request process has also been mentioned by stakeholders.

58. The main difficulties identified for NDEs are funding sourcing for technical proposal, as well as the lack of support and responsiveness in identifying the implementer. For beneficiaries it is delays in the process as well as the lack of transparency in the selection of the implementer.

2. TA success factors

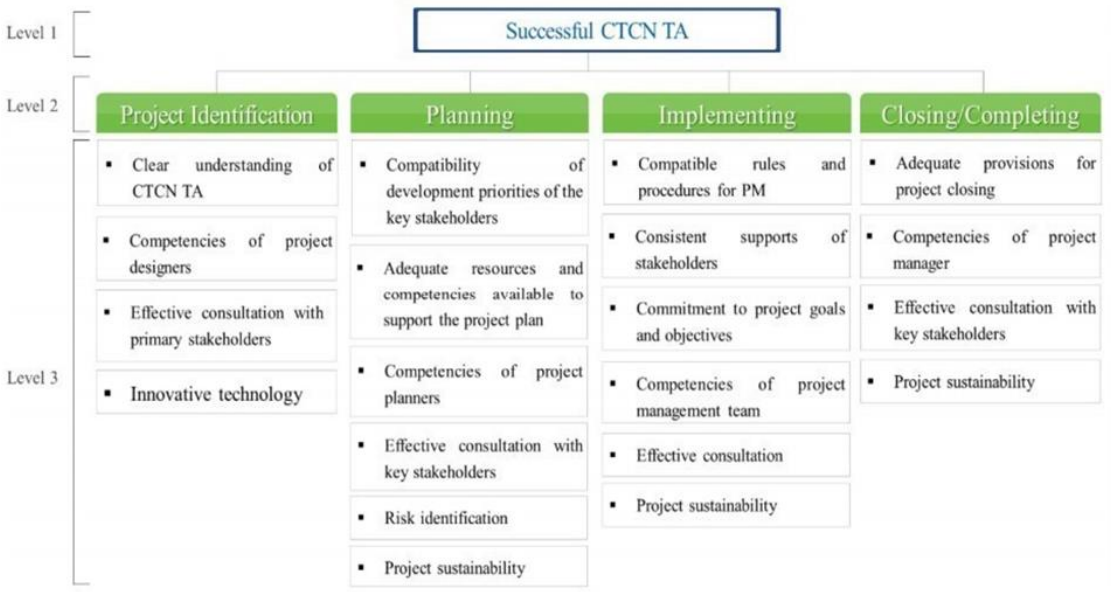
59. Lee, Wona et al. in the Journal of Climate Change Research retrieved the success factors of TA from the literature and defined under each life cycle of the CTCN TA i.e. the project identification, the planning phase, the implementation phase and the closing phase (Figure 8).[19]

60. The results of the comparison of the critical success factors from two CTCN TA's life cycle provided by the Korean NDE show that relevant experts were considered the most important critical success factors in each stage. Moreover, the two critical success factors recognized as the most important, "effective consultation" and "project sustainability", overlap throughout the life cycle; effective consultation being the most important during the project identification/planning phase, and project sustainability being the most important during the implementing/closing phase."

[18] "Build Back Better" refers to efforts made to build back better climate resilient systems post COVID-19 pandemic.

[19] Lee et al..2020. "What Leads to the Success of Climate Technology Centre and Network Pro Bono Technical Assistance?" Journal of Climate Change Research 2020, Vol. 11, No. 5-1, pp. 353~366. Available here.

Figure 8
Success factors retrieved from the literature under each life cycle of the CTCN TA. (Source: Lee, Wona et al., 2020)



3. Communication and outreach

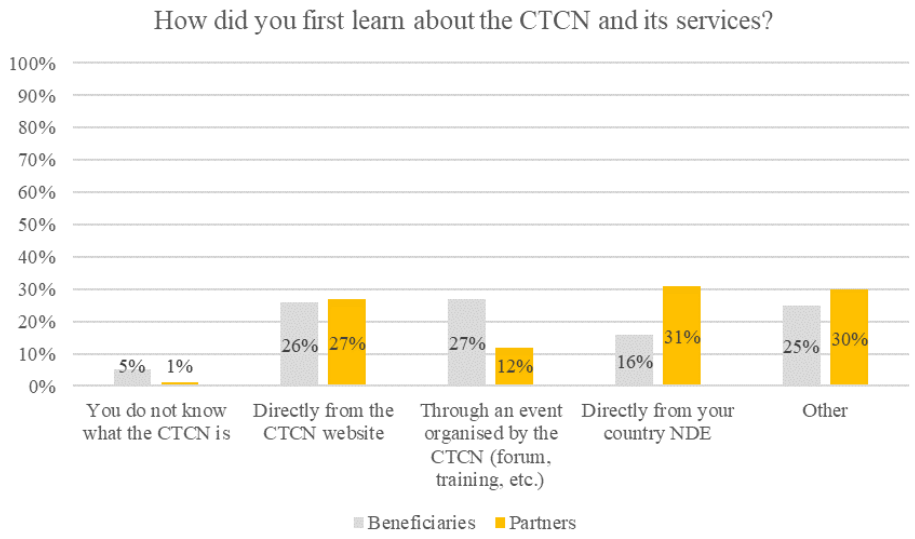
61. The CTCN formulated a communication strategy to address external and internal communication issues in a comprehensive manner. Structured approach and dedicated personnel allowed the CTCN to reach good effectiveness in communication and outreach.

62. Stakeholders agree that CTCN communication approach and outreach is standing at a high level (compared to other UN projects), and that in the last couple of years there were significant improvements in CTCN story-telling, notably around its impacts thanks to the improvements in the M&E and Knowledge Management systems.

63. Several means of communication have been developed, among which brochures, joint annual reports, social media, newsletters and most notably the Knowledge Management System and the website. Figure 9 shows that the website is an efficient tool regardless of the category of actors. It also shows that NDEs have a higher outreach on partners than beneficiaries. Partners' awareness about the CTCN is mainly achieved through events organised by the CTCN. Other means include notably word of mouth.

Figure 9

Answers of beneficiaries and Consortium Partners, knowledge partners and Network Members (here called 'partners' to the question: "How did you first learn about the CTCN and its services?" (Source: EY).

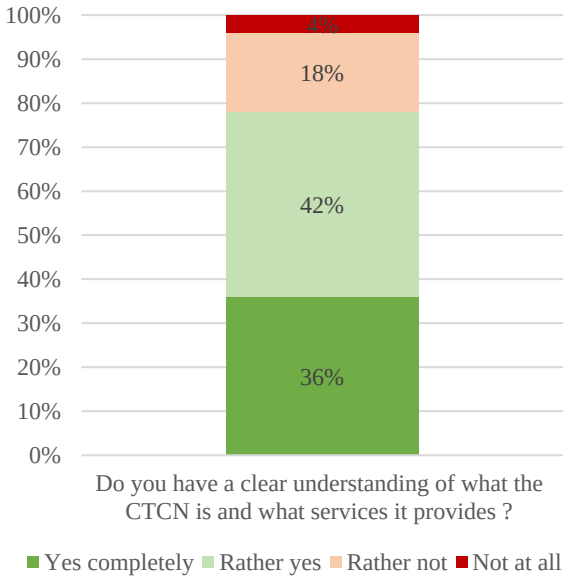


64. CTCN communication strategy has proven effective: it allowed a clear and useful information communication to stakeholders, as well as a broader audience.

65. Figure 10 shows that a majority of beneficiaries (78%) who answered the survey consider having a clear understanding of what the CTCN is and what services it provides.

Figure 10

Beneficiaries' understanding of what the CTCN is and what services it provides (Source: EY)



66. Nevertheless, according to the Terminal Evaluation of the UNEP-ADB-GEF Project "Pilot Asia-Pacific Climate Technology Network and Finance Center"[20] the majority of informants demonstrated difficulty to distinguish between the Asia pilot project and the CTCN, both of which were launched in the same era and managed by UNEP.

67. The information and support given by the CTCN (core team and consortium members) were satisfactory and helped the beneficiaries submitting their requests; 85% of

[20] Evaluation Office - United Nations Environment Programme. May 2020.

beneficiaries and 94% of NDEs indicated that enough information was available on the submission process. Those results, similar to those obtained during the first review, are very positive.

68. Considering specifically the efforts put in social media, CTCN performance on social media seems very good relatively to defined objectives. Between January and December 2020, CTCN activities were covered 752 times in global and national media and earned 38 million impressions on social media. Every year between 2017 and 2019, the number of social media followers steadily increases and is every year well above defined target (Table 8).

Table 8
KPIs on social media outreach (Source: CTCN)

	2017		*2018*		*2019*	
Social Media	Target Outputs	Realised	Target Outputs	Realised	Target Outputs	Realised
Number of social media followers	2 400	4 000	2 400	4 700	2 500	5 796

69. The 2019 CTCN Performance Measurement Framework formulates the objective of 10% increase per year of people reached through social media channels and 30 mentions of CTCN in media per year. These targets were also achieved as shown in the Table 9.

Table 9
KPIs on social media outreach (Source: CTCN)

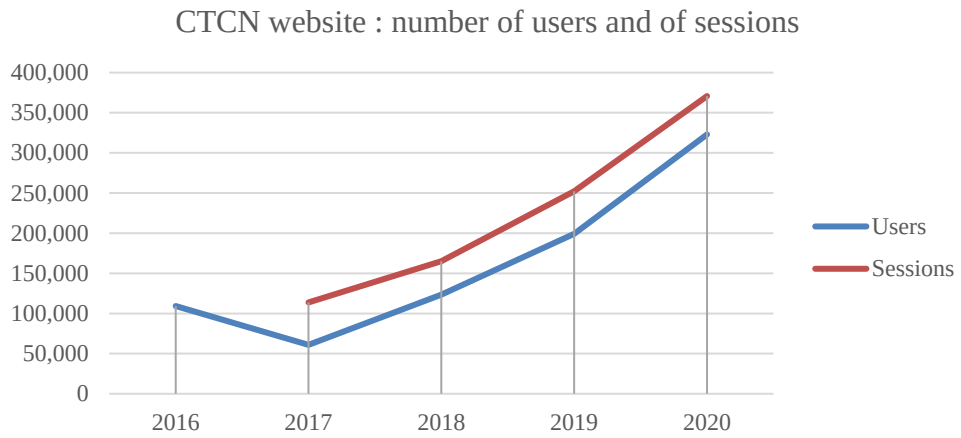
	Target	*2016*	*2017*	*2018*	*2019*	*2020*
Facebook likes (comparison with N-1)	+10% per year	1 631	2 072 (+27%)	2 453 (+18%)	2 876 (+17 %)	2 937 (+2%)
Facebook followers (comparison with N-1)	+10% per year	Not available	Not available	Not available	Not available	3 176
Twitter followers (comparison with N-1)	+10% per year	967	1 539 (+59%)	2 270 (+47%)	2 920 (+29 %)	3 579 (+23%)
Articles contained references to the CTCN	30	80	68	57	86	752

70. Stakeholders consider that the CTCN website has considerably improved, in terms of clarity and articulation, and appreciate the fact that now information is available in most official UN languages. The fact that 26% of beneficiaries first learned about CTCN and its services directly from the CTCN website, when they were only 9% during the first review, shows the good visibility it reached and good SEO performance.[21]

71. External communication performed through the CTCN website has proven to be efficient to expand the audience as well. Figure 11 shows that the number of CTCN website's users has increased by +195% between 2016 and 2020 and that the number of sessions increased by 226% between 2017 and 2020. Also, 27% (against 20% during the first review) of the Consortium Partners, knowledge partners and Network Members who answered the survey first learned about CTCN and its services directly this way.

[21] Search engine optimisation.

Figure 11
CTCN website: number of users and of sessions between 2016 and 2020 (Source: CTCN)



72. The website is reaching the LDCs and other highly vulnerable countries, which are meant to be prioritized to receive CTCN services. Among the top 30 countries who spent the most time on CTCN website:[22]

(a) 1/3 are LDCs;

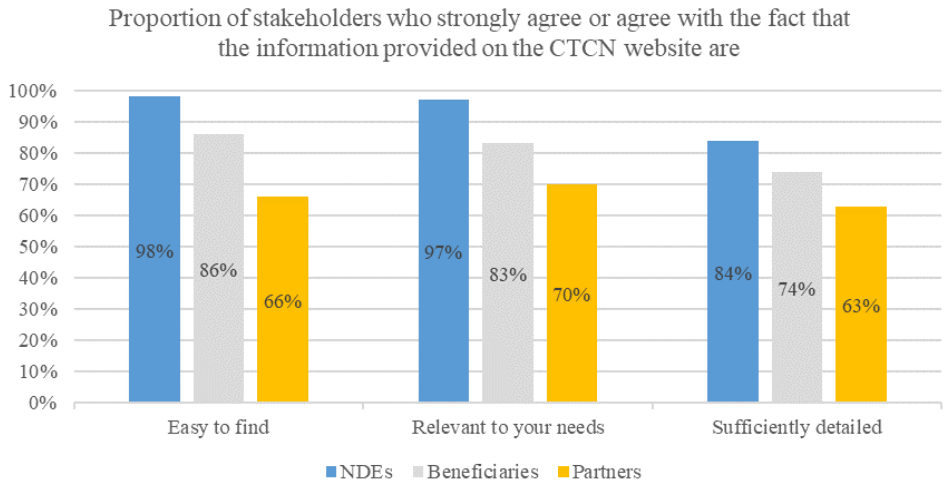
(b) Nearly 1/3 are SIDS;

(c) Africa represents half of the top users;

(d) Followed by Latin America and the Caribbean and the Asia-Pacific.

73. In general, the perception of the website differs across stakeholder category but remains very positive (figure 12).

Figure 12
Perception of stakeholders of CTCN website by category (Source: EY)



74. The survey hence put light on overall very positive feedbacks on the CTCN website, with similar results as the one obtained during the first review for NDEs and beneficiaries.

75. However, the level of satisfaction of Consortium Partners, knowledge partners and Network Members decreased since the first review. As 89% of them consider information easy to find, 93% consider information relevant to their need and 83% consider information sufficiently detailed.

[22] AB16 directors update.

76. Also, some specific remarks were made notably to have spaces dedicated to specific publics:

(a) Dedicated space for NDEs that could be a platform for communication vital information on the CTCN activities and dissemination of information including funding cycles and application processes;

(b) Dedicated 'open-to-bidding TA' and potential projects pipeline page.

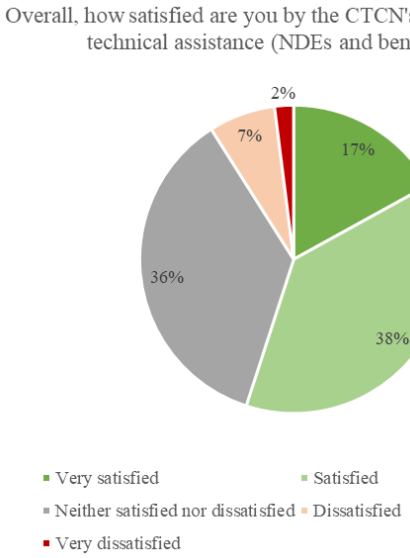
77. However, those already exist and are accessible at https://www.ctc-n.org/network. It hence seems that the visibility and access to this page should be revised.

4. Technical assistance implementation

78. Overall, only 55% of the NDEs and beneficiaries who responded to the survey expressed a good level of satisfaction with the TA service (including 17% very satisfied) (figure 13). This is rather low given the fact that they were 79% (including 28% very satisfied) during the first review.

79. This middling result can be nuanced by the fact that the rest of respondents are rather without opinion (36%) than dissatisfied (9%) and that the other indicators, considering specific aspects of TAs, are rather much more positive.

Figure 13
NDEs' and beneficiaries' level of satisfaction with CTCN TA activities (Source: EY)



80. The vast majority of responding NDEs (89%) who already benefited from the implementation of a TA project, agreed that the TA fully responded to their initial request (54% agreed and 35% strongly agreed). These results are rather aligned with those obtained during the first review (53% agreed and 41% strongly agreed). Similarly, 73% of the beneficiaries who responded agreed or strongly agreed that the TA received responded to their initial request (against 71% in the first review). This corroborates with the fact that 77% of the Consortium Partners, knowledge partners and Network Members having participated in a TA implementation agreed that the Response Plan and ToR tendered by the CTCN corresponded to the expectations of the final beneficiaries (against 100% during the first review).

81. 69% of NDEs and 69% of beneficiaries consider that the TA received mobilised the appropriate resources (in terms of capacity and skills of TA providers). Those results are similar to the ones observed during the first review. Some beneficiaries however consider that dedicated budgets do not always consider the reality on the ground and are not necessarily adapted to countries expectations. The main difficulties mentioned by NDEs is the budget and support that they receive.

82. National or local ownership is identified as a factor of success, but at the same time lack of systematic direct engagement of local consultants is also mentioned as a main difficulty by beneficiaries.

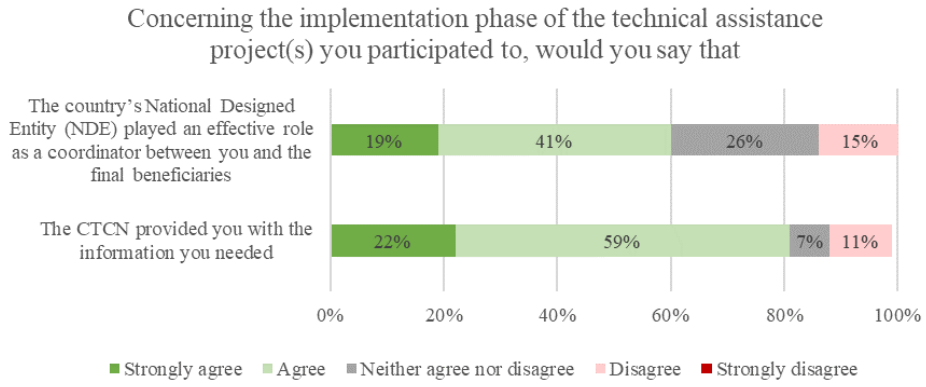
83. 75% of the beneficiaries and NDEs that responded to the electronic survey indicated that the TA that they received had been smoothly implemented, with a good communication and cooperation with and among providers. Nevertheless, even if those results are very positive, they are below the ones observed during the first review (where 90% of the beneficiaries and NDEs that responded to the electronic survey indicated that the TA they received had been smoothly implemented, with a good communication and cooperation with and among providers).

84. Also, while part of beneficiaries and NDEs identify the agility of the CTCN in providing guidance and effectively responding to queries as a factor of success, others brought up as main difficulties a lack of CTCN implication in the follow up of the companies providing TA and monitoring results.

85. Considering partners, they see the CTCN as playing a supporting and quality assurance role while giving the TA providers the opportunity to do their job accordingly with technical criteria: even if more than 10% disagree with this statement, a vast majority (81%) of Consortium Partners, knowledge partners and Network Members who responded to the survey asserts that the CTCN provided the information needed.

86. Results are rather positive when looking at partners perception on NDE's coordination role: 60% of Consortium Partners, knowledge partners and Network Members who responded to the survey asserts that the country's NDE played an effective role as a coordinator between them and the final beneficiaries (figure 14).

Figure 14
Partners' perception on the implementation phase of the technical assistance project(s) (Source: EY)



5. Provision of capacity building, networking events and KMS

87. KPIs provided by the CTCN on peer learning and capacity building show mixed results (Table 10):

(a) The number of regional forums has been stable between 2017 and 2019, although it has always been under the target or in the low part of the target range;

(b) 7 virtual forums occurred in 2020 (more than doubled compared to 2019);

(c) In 2019 the number of thematic programme trainings increased and went above target for the first time;

(d) National events supported increased in 2019 but did not reach the new target;

(e) The number of trained NDEs respects the objectives in 2018 and 2019;

(f) The number of webinars has been decreasing between 2017 and 2019 and remained under the target in the last two years (to date, over 6,000 participants have benefited

from the 141 CTCN webinars and events delivered.). In 2020 the CTCN hosted 11 webinars (non-TA related), which is above 2019 results and 2019 objectives.

(g) The number of new countries enrolled in the Incubator programme decreased to 0 in 2019;

(h) The number of secondees has been stable between 2017 and 2019 and has been reaching the annual target;

(i) Between January and December 2020, the CTCN hosted 26 events throughout the year aimed at enhancing knowledge and awareness of climate technology actions and attracted over 2,000 participants. Due to the COVID-19 pandemic, most events were held virtually, facilitating outreach to a broader range of stakeholders.

Table 10
KPIs on peer learning and capacity building (Source: CTCN)

	2017		*2018*		*2019*	
Peer learning and capacity building	Target Outputs	Realised	Target Outputs	Realised	Target Outputs	Realised
Regional Forums organized	6 - 8	5	6 - 9	3	3 - 5	3
Thematic programme trainings	5 - 10	4	5 - 10	4	10 - 12	10
National events supported	5 - 10	6	5 - 10	4	20 - 25	16
Number of trained CTCN NDEs	100	75	100	118	80 - 100	83
Webinars organized	10 - 15	17	10 - 15	9	10 - 12	5
Number of new countries enrolled in the Incubator Programme	4 - 6	5	4 - 6	5	10	0
Number of Secondees	4 - 6	4	2	4	4	4

88. While 13 regional forums were conducted in 2015-2017, Table 10 shows that regional forums organization did not improve particularly.

89. Considering KPIs on outreach, networking and stakeholder engagement, one can observe (Table 11):

(a) A drastic increase in the number of thematic events hosted in 2019 compared to 2017 and 2018. With 30 events that year, the CTCN was well above the target;

(b) A number of private sector engagement events which is higher in 2019 than in 2017 but is under the new target.

Table 11
KPIs on outreach, networking and stakeholder engagement (Source: CTCN)

	2017		*2018*		*2019*	
Outreach, networking and stakeholder engagement	Target Outputs	Realised	Target Outputs	Realised	Target Outputs	Realised
Number of thematic events hosted	4 - 6	5	4 - 6	NC	4 - 6	30
Number of Private Sector Engagement Events	3 - 4	4	3 - 4	NC	10 - 12	6

90. During the first independent review, the CTCN was encouraged to continue raising awareness of its services among developing countries. The solutions implemented by the CTCN were aiming in three main directions:

(a) Participation in regional events (including other than regional forums such as climate weeks): the number of NDEs participating to such regional events is not available.

(b) Exposing CTCN to broader audiences: the exposition of CTCN to broader audiences has already been illustrated with the increase of website and social media outreach

developed previously. No data allow to conclude on the role of capacity building activities and networking events to reach this goal.

(c) Providing opportunities to Network and NDEs to raise profile/interact: the provision of opportunities to Network to raise profile/interact seems to have been effective as:

(i) more than 60% responding Consortium Partners, knowledge partners and Network Members identified "networking with other actors involved in climate change mitigation and adaptation" as one of the main reasons to join CTCN;

(ii) more than 60% responding Consortium Partners, knowledge partners and Network Members consider that they "created contacts with new organisations" as a direct result of CTCN services.

91. Considering the provision of opportunities to NDEs to raise profile/interact stakeholders, interviews have shown that NDEs' interactions are still considered as insufficient. Also 35% of NDE respondents to the survey:

(a) consider not being enough supported by other national institutions in performing their NDE role (only 34% consider the opposite and 31% have no opinion);

(b) consider their action as not being enough supported by the private sector in their country (only 34% consider the opposite and 32% have no opinion).

92. Also, stakeholder's awareness about NDEs role is limited to representatives of UNFCCC-related institutional arrangements e.g. only 44% of responding beneficiaries consider that NDEs function, contact and role are clear, while this figure increases above 75% if one considers answers of beneficiaries who realised TA request at least once.

93. A structural change occurred in the CTCN KMS since the first independent review. Due to need for content management migration in 2019, it focused more on supportive infrastructure and SEO activities, including review and removal of broken pages with resources linked to external knowledge databases. As a result, the content is now more stable, curated and accessible. As shown in the table below, the number of online tools and information material decreased drastically for the sake of clarity and relevance.

94. The number of knowledge partners contributing to the KMS remained stable and within the target range. Moreover, annual numbers of KMS site visits between 2017 and 2019 have been well above target despite a decrease in 2018 (Table 12).

Table 12
KPIs on Knowledge Management (Source: CTCN)

	2017		*2018*		*2019*	
Knowledge Management	Target Outputs	Realised	Target Outputs	Realised	Target Outputs	Realised
Online tool and information material, including coverage of lessons and best practices captured	11 500	16 800	11 500	17 100	3 000	16 650[23]
Number of knowledge partners contributing to KMS	20 - 30	30	20 - 30	25	25 - 30	29
Annual number of KMS site visits	80 000	122 957	100 000	112 000	100 000	251 516

95. 2020 Enabling Environment and Capacity Building results are presented in Figure 15. When available, data shows that every target but one (Number of technology descriptions, publications, national plans, and other information resources made available on the CTCN knowledge platform) has been met.

[23] CTCN. 2019. 2019 Annual Report. Available here.

Figure 15
Enabling Environment and Capacity Building 2020 results (CTCN, 2021)

Enabling Environment and Capacity Building		
2020 AOP Indicators	**Target**	**2020 Results**
Outcome 4: Stakeholders have the necessary capacity and enhanced institutional and legal frameworks to develop, deploy and diffuse climate technologies		
4.A. Number of stakeholders with enhanced technical capacities to develop, deploy and diffuse climate technologies	450-500	2,858
4.B Anticipated number of policies, strategies, plans, laws, agreements or regulations proposed, adopted, or implemented as a result of the TA (disaggregated by mitigation, adaptation, type)	10-12	11 policies, strategies, plans, laws, agreements or regulations proposed, adopted, or implemented as a result of TAs in 2020
Output 4.1: Facilitation of widespread public awareness on climate technology		
4.1.a. Number of technology descriptions, publications, national plans, and other information resources made available on the CTCN knowledge platform	200	140
4.1.b. Number of participants in CTCN webinars	600	1,097 Participants
4.1.c. Total number of CTCN events	15	24
4.1.d. number of participants attending CTCN events	2000	1,023
4.1.e. Number of site visits to CTCN knowledge portal	130,000	402,609
4.1.f. number of people reached through CTCN social media channels	250,000	38 M
4.1.g. Number of mentions of CTCN in media	30	752
Output 4.2: Enabling environments created for the development and transfer of socially and environmentally sound technologies		
4.2.a. Number of policies, strategies, plans, laws, agreements or regulations supported by CTCN for tech transfer (disaggregated by country, type, adaptation, and mitigation)	*	Data not collected at this time[24]

[24] The source of verification for this indicator is the TA closure reports. In this first year of implementation of the M&E system, this level of data was not accurately captured.

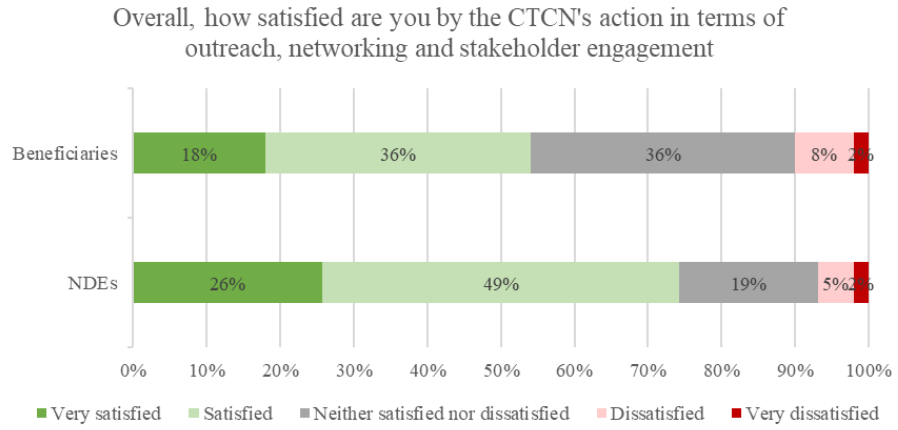
4.2.b. Number of CTCN training sessions and capacity-strengthening activities	6 per year	34 trainings
4.2.c. Number of people trained	500	2,858
4.2.d. Number of institutions trained	*	Data not collected at this time[25]
4.2.e. Percentage of technical assistance supported with a gender analysis	80%	86%

96. The second PoW also formulates the target of more than 90% of workshop/trainings participants reporting increased knowledge, capacity and/or understanding. Due to the restrictions imposed by the Coronavirus pandemic and the virtual nature of the trainings and events organised throughout 2020, this level of data was not accurately captured.

97. No data was found on the achievement or not of the target formulated in the first PoW: 50 to 75 national and sectoral technology plans by the end of 2018. Neither of the second PoW target of 450 to 500 stakeholders with enhanced capacities to develop, transfer and deploy climate technologies per year.

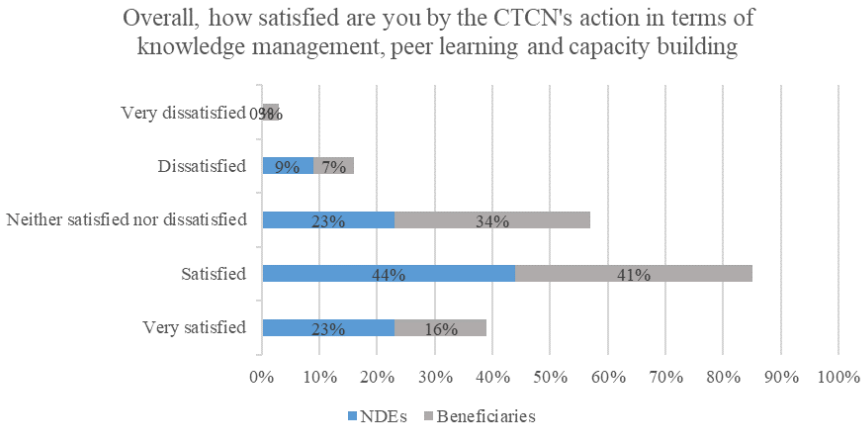
98. As shown in figure 16 and 17, capacity building activities and networking events are perceived very positively by stakeholders.

Figure 16
Level of satisfaction of NDEs and beneficiaries regarding outreach, networking and stakeholder engagement (Source: EY)



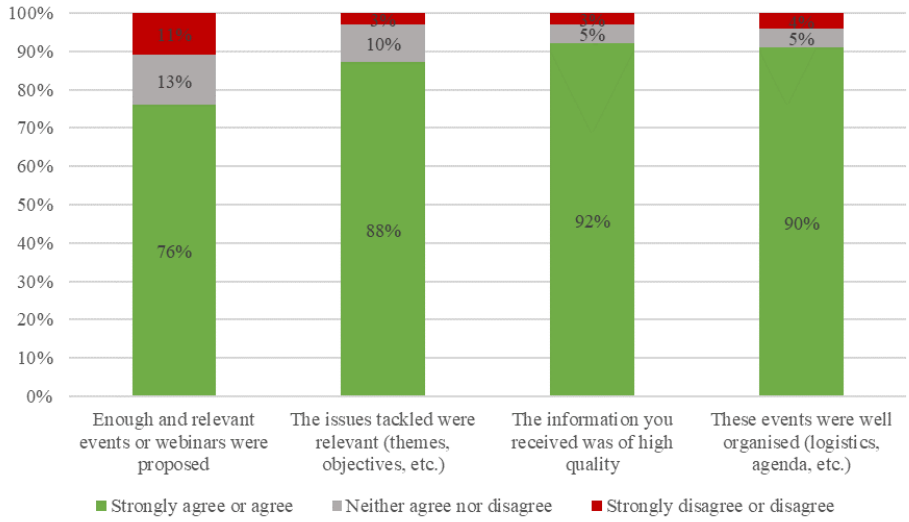
[25] Due to the virtual nature of the trainings organised, this level of data was not accurately captured.

Figure 17
Level of satisfaction of NDEs and beneficiaries regarding Knowledge management, peer learning and capacity building (Source: EY)



99. Like in the first review, NDEs, Consortium Partners, knowledge partners and Network Members, as well as beneficiaries together, largely consider that enough and relevant events or webinars were proposed, issues tackled were relevant, information received was of high quality and events were well organised (figure 18).

Figure 18
Evolution of stakeholders' perception of CTCN events / trainings (NDEs, partners, beneficiaries together) (Source: EY)



100. Areas of improvement identified by stakeholders are the following:

(a) Workshops are not sufficiently long to get enough time for reflection and learning, as well as interactions;

(b) There is a lack of translation of content;

(c) There is a lack of inter-institutional or sectoral articulation (public sector, private sector and non-profit organisations).

6. Elaboration of the M&E system

101. Challenges of building the M&E system include the following:

(a) The biggest challenge consists in passing from M&E to M&E&L to reflect the learnings.

(b) second biggest challenge was to get every component of CTCN activities into the 5 themes of the second PoW (innovation, implementation, enabling environment and

capacity building, collaboration and stakeholder engagement, support), and dividing the transverse indicators on every level by outputs/outcomes/impacts.

(c) Other challenge was to fully integrate the transformational change of the Paris Agreement.

(d) At the beginning of its operationalisation, on-the-ground implementers were a bit challenged to provide this data, but as it was always part of the implementation process (to give feedback on how the money has been spent) and as they received guidance from CTCN to fill in and review the data (through trainings and webinars), there was no reluctance from implementers to provide such information. The number of indicators was eventually reduced, and guidance were clarified.

102. Elements of improvement regarding the M&E system are the following:

(a) Many lessons learned in this area: before, the M&E system was very much focused on outputs, but it was very challenging to capture the outcomes. There was a lack of tools (such as the M&E guidance to implementers) to adapt CTCN's responses,

(b) The question on how to have more comprehensive information is being addressed in the good direction (along with the 5-years periodic assessment of the Technology Mechanism of the effectiveness and adequacy of support regarding the work of the CTCN).

C. Efficiency

103. Have the objectives of the CTCN been achieved efficiently by the implementation of the CTCN and the deployment of its services?

1. State of Host agreement between UNEP and UNIDO

104. UNEP and UNIDO are legally not co-equal entities (UNEP is the main Host agency while UNIDO is subordinate), but both institutions are accountable to Parties in their ability to host the CTCN. The CTCN is thus working between both agencies (Staff and budgets are split on both sides).

105. Several interviewees (AB members, Donors) reported that the distinct role and actions of each Host Agency are not fully clear. It has been pointed out that the renewed version of the Project Document (as part of the joint agreement between UNEP and UNIDO to host the CTCN) could make the management relationship between both agencies more even while simplifying communication channels and procedures (perceived as too complex and lengthy).

106. Beyond the work related to the CTCN, strategic and operational collaboration between UNEP and UNIDO is functioning well. Host agencies, and notably the UNIDO, have expressed increasing difficulties in engaging with the CTC Secretariat on a consistent basis. The revised version of the Project Document is deemed to provide a stronger and clearer framework on CTCN's management structure (distribution of roles, responsibilities and accountability) and streamline administrative procedures. It is deemed crucial that UNEP and UNIDO maintain the highest standard of a working relationship between them as well as with the CTC Secretariat.

2. Advisory Board

107. In the past years a stronger emphasis on technical issues rather than political ones can be observed with the AB. In 2020, AB members committed in supporting the CTCN on funding-related matters,[26] provided guidance on resource mobilization efforts and set up a general taskforce to explore innovative ways of mobilizing and diversifying CTCN resources.[27]

[26] Fifteenth meeting of the Advisory Board - Summary of the Meeting.
[27] CTCN. 2020. Joint annual report of the TEC and the CTCN for 2020. Available here.

108. According to interviewees, the AB is rightly sized and its composition well-balanced with regard to several criteria such as developed/developing country balance, representation of the NGO community and representatives of UNFCCC Constituted Bodies. Involving technical experts is also very important to give concrete substance to the meetings.

109. It is stressed that a balance between members who are climate negotiators and those who are not should remain, to the extent that political considerations may impede the quality of the strategic advices given by the AB for the CTCN to deliver on its mandate.

3. CTCN budgeting and spending

110. The comparison between budgeting and expenditure shows that CTCN activities have been underperforming by 25% on average in the past 4 years, with a recent improvement in 2020 (Table 13).

Table 13
CTCN budget, expenditures and funding – 2017-2020) (Source CTCN / EY analysis)

Year	*2017*	*2018*	*2019*	*2020*	*Total*
Budget	$ 13,700 000,00	$ 9 110 000,00	$ 9 210 000,00	$ 10 000 000,00	**$ 42 020 000,00**
Expenditure	$ 9 614 150,00	$ 5 972 138,00	$ 6 548 917,00	$ 9 309 652,00	**$ 31 444 857,00**
Funding	$ 6 864 153,48	$ 8 292 654,93	$ 3 823 964,87	$ 12 427 700,25	**$ 31 408 473,53**
Gap - Budget VS. Exp.	-30%	-34%	-29%	-7%	**-25%**
Gap - Funding VS. Exp.	-29%	39%	-42%	33%	**-0,1%**

111. Before 2020, CTCN was systematically underspending. As shown in table15, in 2020, expenditures were concentrated on TA activities leading to a strong surplus in comparison with dedicated budget (54%). This is outweighed by the fact that other services' expenditures are much lower than their own dedicated budgets resulting in an overall equilibrium.

Table 14
Quantitative information on resource allocation by service areas (first Programme of Work) (Sources: CTCN / EY analysis)

	2017				2018			
CTCN Services Areas	Budget (USDs)	Expenditure (USDs)	Gap (USD)	Gap (%)	Budget (USD)	Expenditure (USD)	Gap (USD)	Gap (%)
Technical Assistance	8 300 000	6 666 270	(1 633 730)	-20%	4 900 000	2 369 426	(2 530 574)	-52%
Outreach, Networking & Stakeholder Eng.	1 200 000	627 116	(572 884)	-48%	710 000	779 291	69 291	10%
KMS, peer learning and capacity building	1 700 000	642 313	(1 057 687)	-62%	1 000 000	963 179	(36 821)	-4%
CTCN Operations	2 500 000	1 678 451	(821 549)	-33%	2 500 000	1 860 242	(639 758)	-26%
TOTAL (net of PSC)	**13 700 000**	**9 614 150**	**(4 085 850)**	**-30%**	**9 110 000**	**5 972 138**	**(3 137 862)**	**-34%**

Table 15
Quantitative information on resource allocation by service areas (second Programme of Work) (Sources: CTCN / EY analysis)

	2019				2020			
CTCN Services Areas	Budget (USDs)	Expenditure (USDs)	Gap (USD)	Gap (%)	Budget (USDs)	Expenditure (USDs)	Gap (USD)	Gap (%)
Technical Assistance	5 050 000	3 044 654	(2 005 346)	-40%	4 840 000	6 734 100	1 894 100	39%
Outreach, Networking & Stakeholder Eng.	930 000	687 255	(242 745)	-26%	1 500 000	471 257	(1 028 743)	-69%
KMS, peer learning and capacity building	830 000	681 109	(148 891)	-18%	1 260 000	1 071 463	(188 537)	-15%
CTCN Operations	2 400 000	2 135 899	(264 101)	-11%	2 400 000	1 032 832	(1 367 168)	-57%
TOTAL (net of PSC)	**9 210 000**	**6 548 917**	**(2 661 083)**	**-29%**	**10 000 000**	**9 309 652**	**(690 348)**	**-7%**

4. Resource Mobilization Strategy

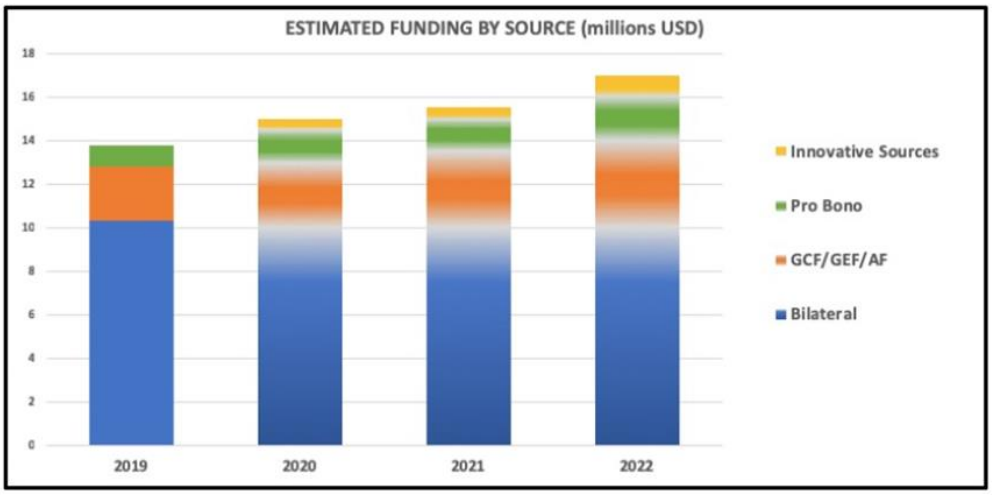
112. As shown in table 16, the target for the core operational budget of the CTCN (from bilateral donors / host agencies) and the expected diversification have not been reached accordingly during the last 3 years.

Table 16
State of the Resource Mobilization Strategy as of 2020 (Sources: CTCN / EY analysis)

	2018			*2019*			*2020*		
	Target	*Actual*	*Gap (%)*	*Target*	*Actual*	*Gap (%)*	*Target*	*Actual*	*Gap (%)*
Bilateral donors / host agencies	-	7 254 606	-	*10 000 000*	3 623 447	-64%	*10 000 000*	6 400 069	-36%
In-kind/pro bono, Financial Mechanism, MDBs	*5 000 000*	2 715 534	46%	-	620 446	-	-	5 889 069	-
Bilateral pro-bono/in-kind support	-	1 000 000	-	*2 000 000*	419 948	-79%	*2 000 000*	719 190	-64%
GCF	*1 000 000*	915 384	-8%	*4 000 000*	200 518	-95%	*4 000 000*	5 041 923	-26%
GEF	-	-	-100%	-	-	-100%	*1 800 000*	-	-100%
AF	-	-	-	-	-	-	-	650 000	-
NDC Partnership	-	-	-	-	-	-	-	321 680	-
Other MDBs	-	-	-	-	-	-	-	-	-
Private sector / philanthropic / innovative sources	-	-	-	*5 000 000*	-	-100%	*5 000 000*	-	-100%

113. Figure 19 illustrates the estimated funding for the CTCN to deliver on the Second PoW. Overall, the objectives in terms of budgetary increase have not been met. For instance, the Second PoW was targeting a total funding higher than USD 14 million in 2020, while approximately USD 12.5 million was raised. The expected diversification of CTCN funding sources did not occur as far as initially expected while donors' contributions remained insufficient.

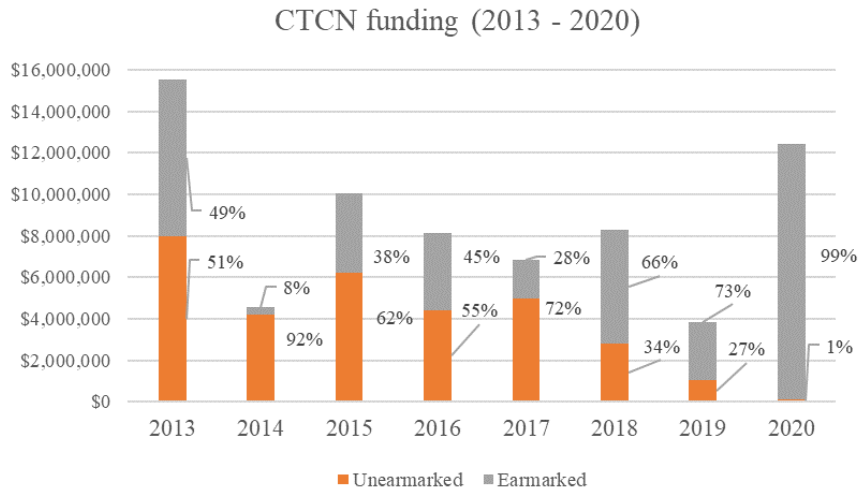
Figure 19
Estimated CTCN funding to deliver the Second Programme of Work over 2019-2022 (Sources: CTCN)



5. CTCN funding

114. The funding of the CTCN is still characterized by a strong proportion which is earmarked on specific activities or geographical areas (figure 20).

Figure 20
Breakdown of CTCN funding since its inception (Sources: CTCN / EY analysis)



6. Reasons of the non-achievement of the "menu approach" (Resource Mobilization Strategy)

115. Interviewees indicated that few foundations can give to the CTCN, as it cannot precisely define the projects in which they could contribute (but rather request money for general technology transfer projects).

Private sector companies would be interested in supporting specific CTCN projects, but hurdles remain in matching the scale of projects that companies are willing to fund (rather large projects) and the small needs of CTCN interventions (up to USD 250,000). Additionally, the due diligence process to establish a funding partnership agreement with a private entity is deemed to be too lengthy to do matchmaking on specific projects. Operationalizing the recommendations from the recent paper released by the CTCN[28] will be highly relevant for enhancing short and long-term public-private partnerships.

7. Deputy Director position

116. The term of the Deputy Director position (in charge of resource mobilization, M&E, donor engagement, and partnerships) lasted for two years and ended in December 2020. The initial expectations could not fully be met, but the relevance of a similar position within CTCN Staff have not been questioned by interviewed stakeholders. Clear framework conditions and dedicated resources appear as being crucial for a potential re-appointment of a similar position, which is key for the CTCN to continue improving its capacity to leverage funding from diversified sources and engage with its Network.

8. Role of UNEP and UNIDO in supporting the CTCN in mobilizing funding

117. It was recommended in the first Independent Review that UNEP and UNIDO be engaged in identifying potential sources of additional funding. Improvements and substantial work have been conducted, but the lack of clarity in the institutional logic also limited the commitment of the Host agencies, and thus the collaborative work needed with the CTC Secretariat regarding resource mobilization. More collaborative work based on clearer definition of roles and responsibilities is needed to fully sustain CTCN's financial resources.

118. UNEP has been working with the Government of the Republic of Korea to strengthen the link between the CTCN and the GCF. It also facilitated the work with MDBs, but work remains to be done at the institutional level.

[28] Lee et al. 2021. Public–Private Partnerships for Climate Technology Transfer and Innovation: Lessons from the Climate Technology Centre and Network. Sustainability.

119. UNEP has been able to collect non-earmarked money through the multi-donor trust fund, but still not enough compared to the amount needed for CTCN to operate in full alignment with its mandate. The CTCN would highly welcome more funds to be passed through the UNEP Trust Fund, which also requires administrative procedures to be facilitated.[29]

120. Both UNEP and UNIDO helped in fostering the dialogue with governments according to the specificities of their institutional relationships (UNIDO worked with Switzerland, Sweden and Japan, while UNEP discussed with the UK, Norway, Denmark, Canada and the USA).

9. Communication and engagement of Donors

121. Despite communications during AB meetings, donors state that they do not have enough means to check on numbers and follow-up on progress made at project-level (e.g. web stream-basis monitoring), and are sometimes subject to hardships in justifying their contributions in front of their national institutions (parliament and ministries). Looking ahead, Donors put large expectations in the operationalization of the revised M&E system, as it will allow enhanced reporting and evaluation of CTCN impacts and further improve accountability and transparency.

122. Donors also suggest that they wish to contribute to the CTCN, not only in providing funds, but also in a more tangible manner (in-kind/pro-bono support). Some lack of willingness/reluctance to collaborate with Donors' delegations have been reported. Donors wish the CTCN to better indicate what kind of support would be helpful for their activities in order to engage in a consistent and useful collaboration.

10. Operationalisation of the regional organisation

123. With the second PoW, a new geographic organization of the CTCN has been implemented. Such organisation, with a single point of contact for NDEs presents several advantages, including stronger communication with NDEs and enhanced support for TA requests. 73% of interrogated NDEs consider that the new geographic organisation deepened the engagement of the CTCN though more integrated delivery of its core services.

124. Prior to adopting a geographic model, stakeholder engagement was predominantly achieved through interaction with NDEs. As part of the geographic model, CTCN teams are deemed to develop and maintain direct relationships with local actors, including with regional banks, co-host offices, regionally active donors and the private sector. Other expected advantages from this organization include:

(a) Closer to the ground operations and experts, which allows better alignment with regional initiatives and priorities as well as a more cost-effective and time-efficient follow-up of projects;

(b) Closer alignment with GCF structure and enhanced coordination with other important focal points (GEF/GCF/etc.);

(c) Better balanced workload;

(d) Easier implementation of cross-sectional operations.

125. While no major difficulties have been identified in the operationalisation of this new organisation, it has been mentioned that directly sending new regional managers across the globe, notably with the time zone differences, could jeopardize internal communication which is crucial during their integration period.

11. Renewed involvement of Consortium Partners

126. If the CTCN is to sustain the relationship with its Consortium Partners and utilize them to their full remaining potential, it will need to set up improved channels of

[29] Report from the CTCN Advisory Board Taskforce Meeting (held 30-31 March 2020).

communication with its Secretariat, as well as between them (to share best practices and ensure no overlaps between their work).

127. The CTCN should ask Consortium Partners themselves how they want to be involved in the delivery of its services. Innovative ways to engage them could be explored, including:

(a) NDCs renewal projects could be a good opportunity to engage them.

(b) Consortium Partners have a coordinating / diplomatic / conciliating / mediating role in the geographies in which they operate, and the CTCN could continue to rely on them for their local knowledge.

(c) CTCN's financial resources are certainly limited, but above all the technical management of requests appear as not sufficient. The Consortium Partners could be more mobilized to assist in that regard.

(d) Utilizing the research / educational institutes among the Consortium Partners, who are generally less business-oriented than most of the private sector Network Members, would allow the CTCN to be more productive.

(e) Consortium Partners and Network Members could get more affiliated to build regional hubs along with local NDEs.

(f) Options to renew their engagement along the value chain of CTCN services:

(i) The CTCN do not want the Consortium Partners to respond to the requests when they previously elaborated the countries Response Plans. This appear as a missed opportunity to gain efficiency and productivity in delivering CTCN's services;

(ii) Consortium Partners could remain engaged on the ground and keep updating their data (which would be of interest for continuous update on local knowledge);

(iii) CTCN could work with Consortium Partners at the beginning of the project to frame the needs according to local specificities (fed by updated data and information which are necessary for framing purposes);

(iv) During project implementation, Consortium Partners should be given some space as they have a good knowledge about the countries (technical & political aspects);

(v) Consortium Partners could be involved in the ex-post impact assessment with a role of coordinator / evaluator based on their knowledge from the field.

12. Network engagement

128. Overall, Network Members indicated in the survey that they are satisfied with the CTCN in terms of commercial opportunities (58%), connection (60%), visibility (44%) and knowledge (55%). Additionally, the small-scale surveys conducted in September 2018 and March 2019 within the BINGO network listed the following reasons for members to be part of the CTCN Network:[30] global networking; local/regional networking; developing technology.

129. However, the survey conducted for this independent review also illustrates the lack of engagement from the members of CTCN's network. Table 16 shows that only 17% of the 117 respondents consider having been very involved in one of the three core services of the CTCN, while 43% were somewhat involved and 39% were not involved.

Table 16
Answers to the question "Overall, how much do you consider having contributed to the CTCN's action since you joined in?" (Source: EY)

Overall, how much do you consider having contributed to the CTCN's action since you joined in?	*Very involved*	*Somewhat involved*	*Not involved*	*Total number of respondents*

[30] CTCN Perceptions: Results of a small-scale survey conducted in September 2018 and March 2019 (referred as the "BINGO network small-scale survey"). Available here.

Outreach, networking and stakeholder engagement	16%	49%	35%	118
Knowledge management, peer learning and capacity building	16%	43%	41%	117
Technical assistance	20%	38%	42%	117
Average on the three core services	**17%**	**43%**	**39%**	

130. The main reasons for the non-engagement of these Network members can partly be explained by the following aspects listed in the BINGO network small-scale survey: the advantages of network membership are not clear; it is complicated to become a member (membership application) and the bidding system itself is onerous.

131. The CTC Secretariat is fully aware of the room for improvements regarding the involvement of its Network and has been working on it for the past two years. Following a Network-wide survey conducted in 2019, a dedicated AB Taskforce was set up in 2020 to find ways to enhance network engagement and suggested a set of short- and long-term actions (referred to as a Network engagement plan).[31] Their operationalization is to take place in the coming years. Short-term actions include increased online communication with network via software programme, new targeted events for best practise sharing and matchmaking, learning opportunities and partnerships, as well as the alignment of network activities with the CTCN communication strategy. Proposed long-term actions for network engagement include the provision of further non-TA opportunities, identification of gaps in membership for targeted recruitment, simplification of the technical assistance bidding process. The CTCN also initiated a set of new tailored activities where members can offer expertise and benefit from collaboration (e.g. targeted webinars, technology clinics and regional technology briefs).[32]

132. Regarding the bidding process:

(a) 82% of members who responded to the review survey participated in a TA tendering process. These results advocate in favour of good members' involvement and activity.

(b) The two main reasons given to explain the absence of participation in the bidding process are the following:

(i) The respondent did not get the information that those tenders were open for participation;

(ii) The compensation offered by the CTCN was too low to consider the TA mission.

(c) Some dissatisfaction with the level of information disclosed related to the evaluation of the offers exists among bidding members. They would appreciate the CTCN to share the evaluation criteria and the score of their respective offer in order to learn what can be improved next. Also, a few Network Members regret that there is no open discussion around budgets. Such information could help partners to better tailor their technical response. Some members also note that the tendering process happen to be too long.

(d) Nonetheless, these results are not a faithful representation of the recent actions implemented in 2020 by the CTCN to improve its bidding process:

(i) The CTCN shifted to a two-stage bidding process for Network members to bid through the UN Global Marketplace. This new bidding process received positive feedback, as it is deemed to have fostered new network membership from developing countries as well as biddings on TAs to increase.[33]

[31] Report from the CTCN Advisory Board Taskforce Meeting (held 30-31 March 2020).
[32] CTCN. 2020. Joint annual report of the TEC and the CTCN for 2020. Available here.
[33] Sixteenth meeting of the Advisory Board - Summary of the Meeting.

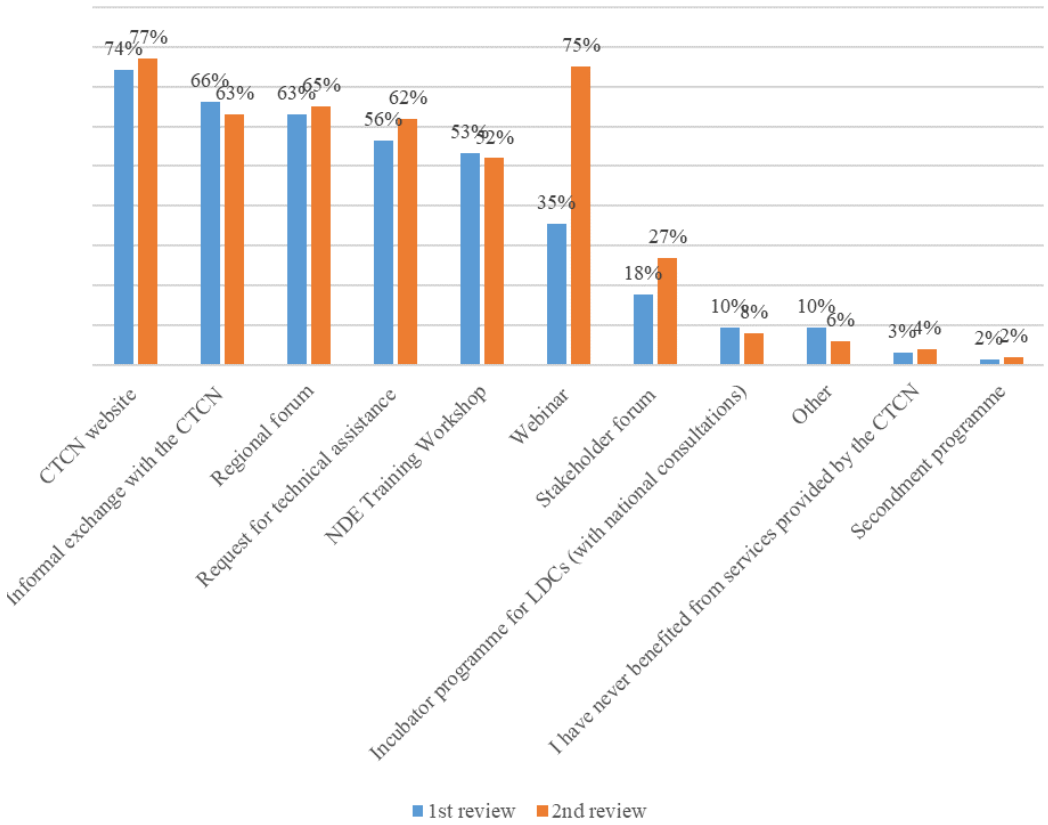
(ii) Additionally, the CTCN began to regularly provide feedback to Network Members on TA bidding proposals.[34]

133. Finally, engagement of Network members can also be illustrated by their communications on the fact that they belong to this network (e.g. announcements in the news about new members who claim to have joined the CTCN network). Network Members also happen to support CTCN activities by seconding experts or providing direct access to innovative technology (for example, in India, a Network member is sharing its water harvesting technology with rural farmers to protect their crops from increasingly harsh weather).[35]

13. NDE's engagement

134. As stakeholders reckon that capacity-building activities are necessary to empower NDEs, the CTCN followed the recommendation of the first independent review to encourage the CTCN to continue training NDEs regularly and facilitating the elaboration of requests through its regional forums and Incubator Programme. Figure 21 shows that CTCN services are used in similar proportion as during the first review, except for webinars whose use have increased significantly. This online format is deemed to be a good channel to push for further capacity-building activities towards NDEs.

Figure 21
Different services provided by the CTCN used by responding NDEs (62 respondents for the 1st review 52 respondents for the 2nd review)



135. Although some interviewed stakeholders mentioned NDEs' turnover as an obstacle to their skill improvement, it is worth noting that almost 50% of the NDEs who answered the review survey have been performing this role for more than 4 years and only 25% for 2 years or less. Moreover, the regional model now implemented by CTCN helps developing direct

[34] CTCN. 2020. Joint annual report of the TEC and the CTCN for 2020. Available here.
[35] CTCN progress report 2019.

communication and guidance between CTCN and NDEs and as such is deemed as key for NDEs capacity improvement.

136. Despite those different services, only 52% of responding NDEs consider that their action is being supported by the CTC, 16% consider that it is not the case. Some of them regret that they are not supported to participate in the implementation and monitoring of the TA. Other interviewees also identified a lack of communication and outreach, while the language barrier is also a recurring difficulty for some NDEs.

137. Difficulties were also noted in finding the right TA implementer:

(a) Where there is strong capability in a country, the requests will be for more complex assistance which may not be obvious to the selection team of the CTCN. In these cases, it is suggested that the CTCN team come back to the NDE as quickly as possible in order to have a better understanding of the request and make the search for the technical expert quicker and more relevant.

(b) Restrictive criteria regarding the characteristics of the implementer are a difficulty. Some network member cannot respond to the request as expected from requesters.

(c) To further ease, the CTCN should recommend the most relevant delivery partners for supporting developing proposals.

138. NDEs have reported that they sometimes lack support and recognition from their national ecosystem and other UNFCCC focal points. This is mainly due to the fact that NDEs do not have a dedicated budget to undertake their role, and their commitment relies on the willingness of countries and governments to invest time and money in CTCN activities. This is reflected in the survey, where:

(a) 36% of NDE respondents consider that their human resources are not sufficient to perform their role;

(b) 60% of NDE respondents consider that their financial resources are not sufficient to perform their role;

(c) 47% of NDE respondents consider that their equipment or material resources are not sufficient.

139. In the first independent review, NDEs already reported a lack of support and recognition at the national level. Following the recommendation of the review to encourage countries to enhance awareness of their NDE by relevant stakeholders and support their NDE through national institutions and cooperation with other national UNFCCC focal points, CTCN reposted the guidance endorsed by the Board at AB3 for Annex I NDEs and strengthened partnership with UNFCCC country focal points, including for the Financial Mechanism (a series of regional focal points meetings at subregional level (GEF, GCF, TNA, NAMA, etc.) was conducted in 2016/2017 and continued since then, and the connection was made with GEF and GCF proposals).

140. The Regional forums (annual networking events) is a way to raise the profile of NDEs especially since they take place during UNFCCC regional climate weeks. These Fora provide opportunities for NDEs and Network members to share technology experience and discuss cross-cutting topics (e.g. industrial energy efficiency, urban resilience, COVID-19 biomedical waste management and market mechanisms for accelerating technology transfer). In August 2020, the CTCN surveyed Non-Annex I NDEs on NDC updates, and most of them indicated that updates would be completed by the end of 2020. Many solicited CTCN support for developing project pipelines and concept notes for NDC implementation. The CTCN plans to engage with NDEs that indicated that they have no international partners to support this process.[36]

141. 87% of them consider themselves as clearly identified as the CTCN and UNFCCC technology focal point in their country. However, 34% of NDE respondents consider not being enough supported by other national institutions in performing their NDE role and 34% consider their action as not being enough supported by the private sector in their country.

[36] CTCN. 2020. Joint annual report of the TEC and the CTCN for 2020. Available here.

Hence, it seems that there is still a need to raise NDEs profile towards government and private sector. The involvement of NDEs also depends on them being directly linked to their governments and their institutional location, on which neither the COP nor the CTCN have a say. The CTCN could be directly linked with their respective Official Development Assistance to have better complementarity of the program.

142. Interviews also confirmed that stakeholder's awareness about NDEs role is limited to representatives of UNFCCC-related institutional arrangements. For instance, only 44% of CTCN services' beneficiaries consider that NDEs function, contact and role as clear. However, if one considers answers of beneficiaries who realised TA request at least once, this figure increases to above 75%.

143. When asked why they requested TA from the CTCN, 41% of beneficiaries involved in TA requests consider that they were strongly influenced and supported by their country's NDE (against 44% during the first review), 26% were strongly influenced and supported by a partner organisation of the CTCN (against 24% during the first review) and 30% were looking for such TA for a long time (36% during the first review).

14. Cost-effectiveness of Technical Assistance

144. Survey's respondents generally agreed that selection of TA implementers is sometimes too restrictive on budget matters, which goes hand in hand with a perception that budgets allocated to TA preparation and implementation sometimes happens to be too small for the expected results. Nonetheless, survey's answers demonstrated a good level of satisfaction with the projects delivered by the CTCN, as 73% of beneficiaries indicated that the TA they received fully responded to their initial request.

145. During the first review several NDEs and beneficiaries who were interviewed and participated to the survey indicated that the delay between the submission and the start of implementation was too long. Today, 76% of the survey's respondents (NDEs and beneficiaries) indicated that they received an answer to their request in short-enough time (similarly they were 74% in the first review).

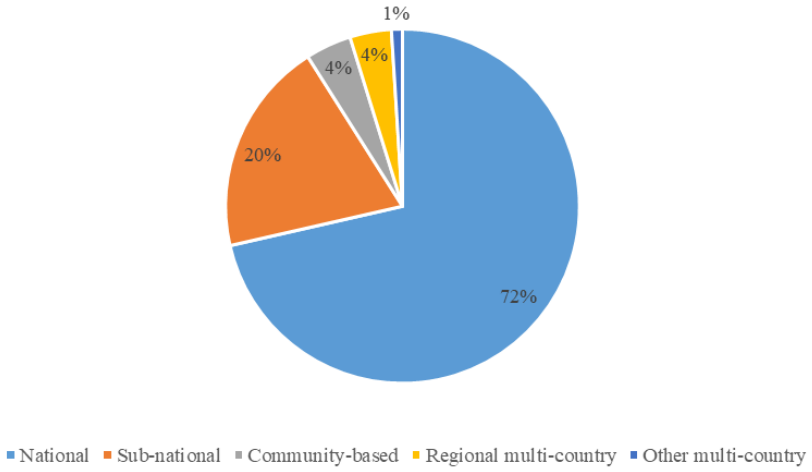
146. The first review encouraged the CTCN, its AB and other relevant actors to undertake actions to increase the efficiency of the CTCN provision of TA. CTCN response to this recommendation was based on a regional approach leading to higher impact through stronger relationships with NDEs, more regional TA requests and potential replication of priority themes among countries with common needs.

147. Regional and multi-country projects were noticed as efficient initiatives to share the costs of technical assistance projects and ensure high transferability throughout developing countries. 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. In 2020, the CTCN identified key trends in TA, particularly at the regional level,[37] providing opportunities for replication, upscaling and learning, and subsequent cost-effectiveness improvement. In Asia-Pacific, low-emission transport technologies and work with frontier markets on e-mobility emerged as priorities for programmatic approaches. In Africa, multi-country requests for e-mobility and energy efficiency and GCF requests are high. Finally, in Latin America and the Caribbean, circular economy and NDC partnership requests are at the forefront.

148. Figure 22 shows that multi-country requests remain marginal with only 4% of requests.

[37] CTCN. 2020. Joint annual report of the TEC and the CTCN for 2020. Available here.

Figure 22
Distribution of requests by geographical scope (Source: CTCN, 2021)



149. Fast TA were to provide swifter response. In 2019, 22 Fast TA projects were implemented (against an objective set between 25- 40 for that year). Not enough data to date can support how cost-efficient fast Technical Assistance delivery are.

D. Impacts and sustainability

150. Did the CTCN reach its expected outcomes and provide long term positive effects?

1. Innovation and RD&D

151. As already mentioned in the section dedicated to the relevance of its activities, the CTCN did enhance its focus on RD&D, with the second PoW, as well as in its Annual Operating Plans with the integration of the following actions:

(a) knowledge-sharing activities and online knowledge platform climate technology RD&D;

(b) promotion of the engagement of countries in RD&D activities through South-South, North-South and triangular collaboration and within selected international initiatives;

(c) assistance to countries in developing national institutional, legal and regulatory frameworks to encourage climate technology RD&D and uptake.

152. Also, new approaches and actions are being taken:

(a) 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.

(b) 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 RD&D.

(c) The CTCN was selected by the GEF as one of nine organizations to implement its Challenge Program for Adaptation Innovation.[38]

[38] "With a grant of 677 thousand USD, the CTCN will help urban planners in the medium-sized cities of Nelson's Dockyard National Park in Antigua and Barbuda; Chokwe in Mozambique; and Kaysone Phomvihane City in Laos to identify financial tools and mechanisms for financing adaptation technologies and build relationships between municipalities, the private sector, financial markets and

153. 2020 Innovation results are presented in figure 23. They show that every target formulated was exceeded.

Figure 23
2020 Innovation results (CTCTN, 2021)

Innovation		
Indicator	**Target**	**2020 Results**
Outcome 1: Key stakeholders develop, deploy, and diffuse new and existing innovative climate technologies		
1.A. Number of countries developing, transferring and deploying new and existing climate technologies as a result of CTCN support	25-30 countries served	75 countries served[39]
1.B. Number of anticipated cooperative research, development, and demonstration programmes within and between developed and developing country Parties facilitated as a result of CTCN TA	4-5 matchmaking & pro bono opportunities realized	8 pro-bono opportunities realised 2 matchmaking events completed (SME technology clinic in Kenya and Tanzania)
Output 1.1: Knowledge sharing on climate technology RD&D and new and innovative technologies		
1.1.a. Number of climate technology RD&D-related knowledge sharing workshops and events [does not include trainings]	5 – 10	12
1.1.b. Number of participants in climate technology RD&D-related workshops and events (gender- and country disaggregated)	150-200	823 participants
1.1.c. Number of knowledge resources related to RD&D and new and innovative technologies made available on the CTCN knowledge platform	30-40	40 knowledge resources
Output 1.2: Countries assisted in developing national institutional, legal and regulatory frameworks to encourage climate technology RD&D and uptake		
1.2.a. Number of countries receiving CTCN support for national institutional, legal and regulatory frameworks to encourage climate technology RD&D and uptake	*	23 countries (through 28 technical assistances)
1.2.b. Number of countries with strengthened National Systems of Innovation as a result of CTCN support	*	0

2. National Systems of Innovation

154. The CTCN, in collaboration with TERI, organised in 2018 an expert meeting on NSI . The meeting discussed options for a standardized approach to strengthen NSI in developing countries, in response to the mandate received by the CTCN to undertake further work to strengthen RD&D of climate technologies in developing countries.

155. It was concluded that in response to TA requests, the CTCN could provide support to developing countries on:

infrastructure funds. A project design document is under preparation and will be submitted to the GEF Council for endorsement by July 2021." (CTCN. 2020. 17th Meeting of the Advisory Board to the Climate Technology Centre and Network (CTCN) 2020 Annual Report. AB/2021/17/14.1).

[39] Considering all TAs implemented in 2020, including those that started in 2020 (48 TAs) and those that started earlier but with ongoing implementation (61 TAs). If only considering TAs started in 2020 (48 TAs), then it would be 39 countries served.

(a) Strengthening enabling frameworks (e.g. sector-specific innovation roadmaps; policies that incentivize investments in innovation; standards and certifications for emerging technologies; procurement guidelines);

(b) Strengthening capacity of "coordinating institutions";

(c) Developing technology elements of funding proposals;

(d) Facilitating stakeholder cooperation (e.g. stimulate the linkages between government, academia, the private sector and research organization/institutions);

(e) Facilitating twinning arrangements between countries' research institutions on climate technology innovation.

156. Also, independent of country requests, the CTCN could:

(a) Develop a methodology to map and qualitatively assess national and regional institutions engaged in innovation;

(b) Share information related to innovation for climate technology: best practices, tools, costs and performance of specific technologies, etc.;

(c) Develop indicators to measure innovation.

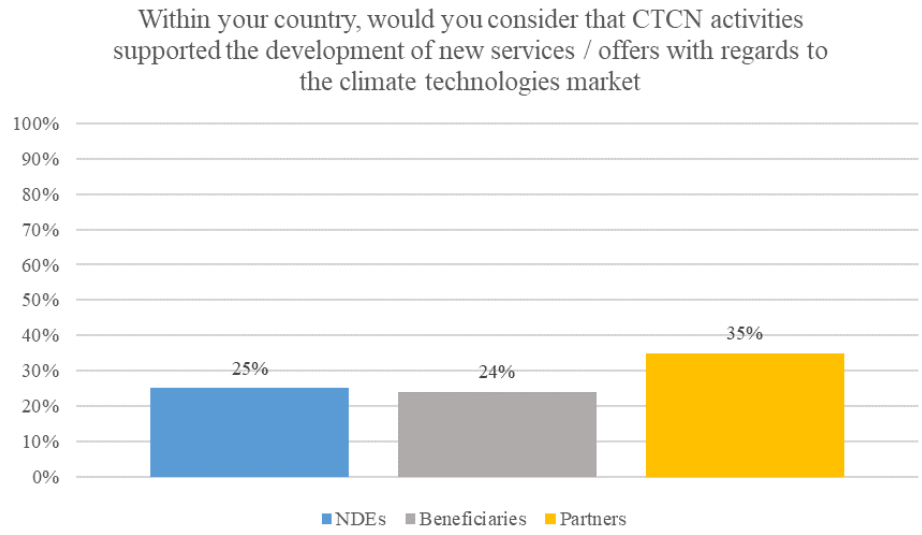
157. Following that workshop, NSI are for the first time mentioned in CTCN 2020 Annual Operating Plan in which a new KPI, without associated target, ("Number of countries with strengthened National Systems of Innovation as a result of CTCN support") is formulated.

158. 2021 Annual Operating Plan goes further and mentions the fact that CTCN activities focus on delivering, through collaborative efforts and joint activities with existing programmes and initiatives, new and innovative mechanisms for private sector engagement, NSI and collaborative RD&D. Also, in 2021 the TEC is supposed to work on NSI. Activities supported by CTCN under the theme "Innovation" will include TA which "support designing policies, institutional, regulatory frameworks and planning processes on innovation, establishing or strengthening national systems of innovation".

3. Implementation

159. Stakeholders' opinion shows that CTCN activities do not support to a great extent the development of new services / offers with regards to climate technologies market (figure 24).

Figure 24
Stakeholders' perception on CTCN support on the development of new services / offers with regards to the climate technologies market (Source: EY)

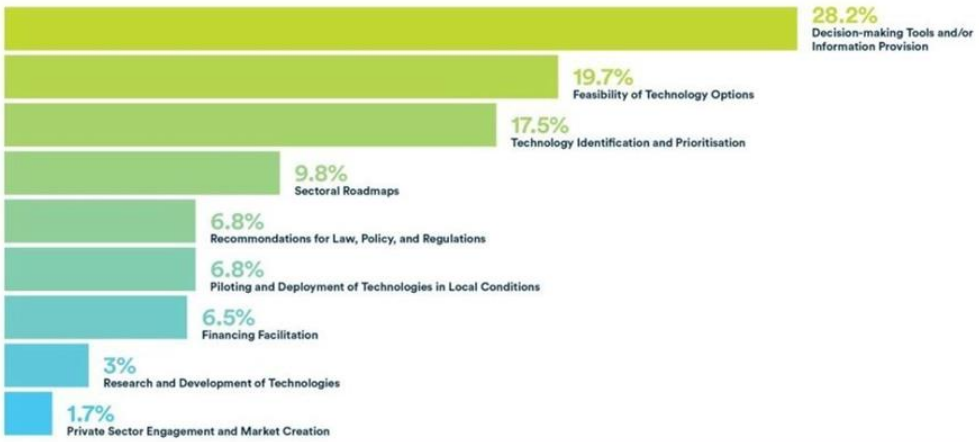


160. Also, only 34% of NDEs, 33% of beneficiaries and 46% of Consortium Partners, knowledge partners and Network Members who participated in the survey consider that

CTCN activities enhanced the deployment and diffusion of innovative technologies and related knowledge/expertise.

161. Looking at TA specifically, figure 25 shows that the CTCN has mainly played its role as a matchmaker for technology outsourcing at the 1st Stage of technology transfer, including "decision-making tools and/or information provision", "Feasibility of technology options", "Technology identification and prioritization" and other policy recommendations. The role of the CTCN for technology RD&D and finance stage (2nd Stage), including "Piloting and deployment of Technologies in local conditions", "Financing Facilitation", and "Research and Development of Technologies" is much less important. This is even more so for technology diffusion i.e. private sector engagement and market creation (3rd Stage).

Figure 25
Distribution of the CTCN TA requests by type of assistance (CTCN, 2020)[40]



4. Technology Needs Assessments and Technology Action Plans

162. While the first program of work did not cover TNAs and TAPs, the second PoW asserts that the CTCN and its expert implementing partners will continue to build on the findings of TNAs and TAPs, as appropriate, and seek to partner with countries and multilateral funding agencies to help them determine the approach best-suited to the national situation and stage of industrialization of the requesting country.

163. Actions and activities implemented by the CTCN to support countries to undertake and update TNAs in the present program of work include:

(a) TA;

(b) Capacity-building events on how to make effective use of TNA findings and TAPs and roadmaps;

(c) Sharing of information on the CTCN knowledge platform, which will be supplemented with best practice and lessons learned on TNAs, at regional forums, and at UNFCCC meetings.

164. Indeed, the CTCN has incorporated TNA and TAP elements into the design of TA response plans and supported over 10 countries to develop TNA-related GCF Readiness Proposals, which include development of concrete concept notes for scaled up funding.[41] As already mention, projects are also selected on the basis of their relevance to TNAs and NDCs in relation to national priorities.

165. However, actions taken by CTCN to integrate TNA and TAP in TA selection and implementation, as well as in capacity building and learning material do not seem to go far

[40] CTCN. 2020. The Role of the Climate Technology Centre and Network as a Climate Technology and Innovation Matchmaker for Developing Countries. Available here.

[41] AOP 2021. CTCN. The Joint annual report of the TEC and the CTCN for 2020 states that AOP 2021 15 countries have received CTCN support for implementing TNAs and technology action plans.

enough. The Terminal Evaluation of the UNEP/GEF Project TNA Phase II[42] reckons that "CTCN is seen by all involved parties – implementing and executing agency and national teams – as an agency that can play a pivotal role in bridging the gap between TAP preparation, a key outcome of the TNA process, and implementation of project ideas, via support to develop those ideas effectively and thereby aligning towards financing mechanisms (such as GCF). This is also in line with CTCN's mandate. However, it still is felt that CTCN is insufficiently engaged in the project – merely via involving in regional workshops and co-organization of regional workshops. The impact of this engagement at national level is insufficient and a more pro-active attitude from CTCN would be very beneficial. This could be addressed via direct bilateral communication (bi-annual meetings) between UNEP DTU Partnership / UNEP and CTCN to share the progress of the project and lessons learned."

166. In 2020, 28 countries received support to implement the TNA, TAPs and NDCs.

167. 2020 Implementation results are presented in figure 26.

Figure 26
2020 Implementation results

Implementation		
2020 AOP Indicators	**Target**	**2020 Results**
Outcome 2: Countries have clear pathways with identified support options to enhance technology development and transfers		
2.A. NDE feedback on potential uptake of CTCN TA and non-TA recommendations and products to enhance technology development and transfer	*	74%
2.B. Number of countries having received support from CTCN to implement TNAs and TAPs	15-20	28
2.C Amount of funding/investment mobilised or leveraged (in USD) for all activities of the technology framework as a result of the TAs (disaggregated by public national/international sources, private sector national/international sources)	10:1 (external finance: CTCN investment)	CTCN Investment: 1.589.620 USD Funding leveraged: over 250 million USD
Output 2.1: Enhanced planning tools and processes for technology development and transfer		
2.1.a. Number of CTCN technical assistance supported (disaggregated between TA and FTA)	30 new requests supported	48 new requests supported in 2020 (4 FTAs; 44 TAs))
2.1.b. Lessons learned from TA implementation available on CTCN knowledge platform	*	Updated information & lessons learnt were developed for 4 completed technical assistance cases
2.1.c Number of technology feasibility studies conducted and sectoral road maps developed	*	Out of the 17 TAs that were completed in 2020, 12 TAs involved the production of technology feasibility studies and the development of sectoral road maps and strategies.

5. Enabling environment

168. Aligned with the fact that its activities that support necessary R&D and/or innovation processes towards a specific technology that can be adopted and upscaled, surveys and

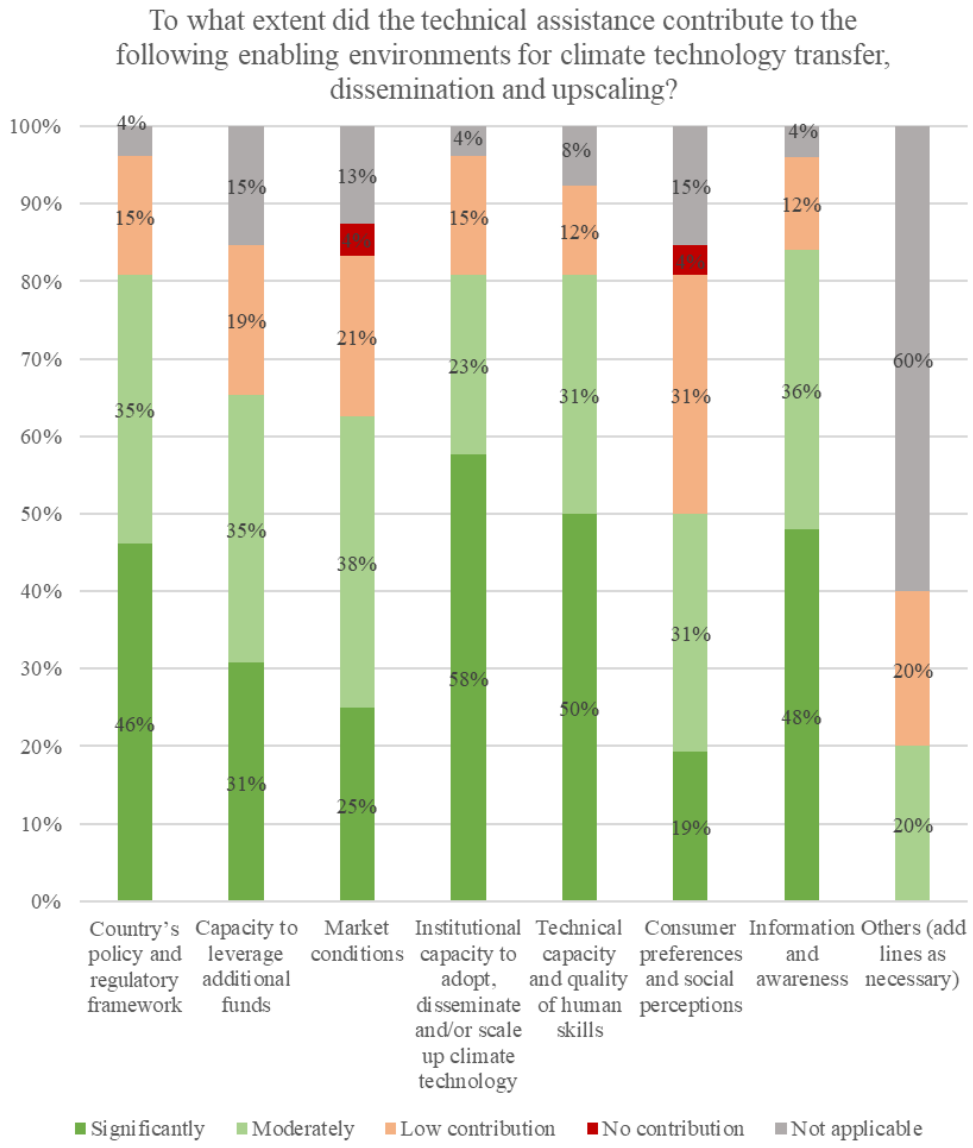
[42] UNEP. 2020. Terminal Evaluation of the UNEP/GEF Project Technology Needs Assessment Phase II. Available here.

evaluations conducted or commissioned by the CTCN have highlighted that its TA has laid the foundation for early adoption and scale-up of climate technologies.

169. Figure 27 shows that TA contributes to several factors in favour of creating enabling environments.

Figure 27

NDEs answer to the question "To what extent did the technical assistance contribute to the following enabling environments for climate technology transfer, dissemination and upscaling?" (Source: UNFCCC Technology Mechanism NDE Survey)

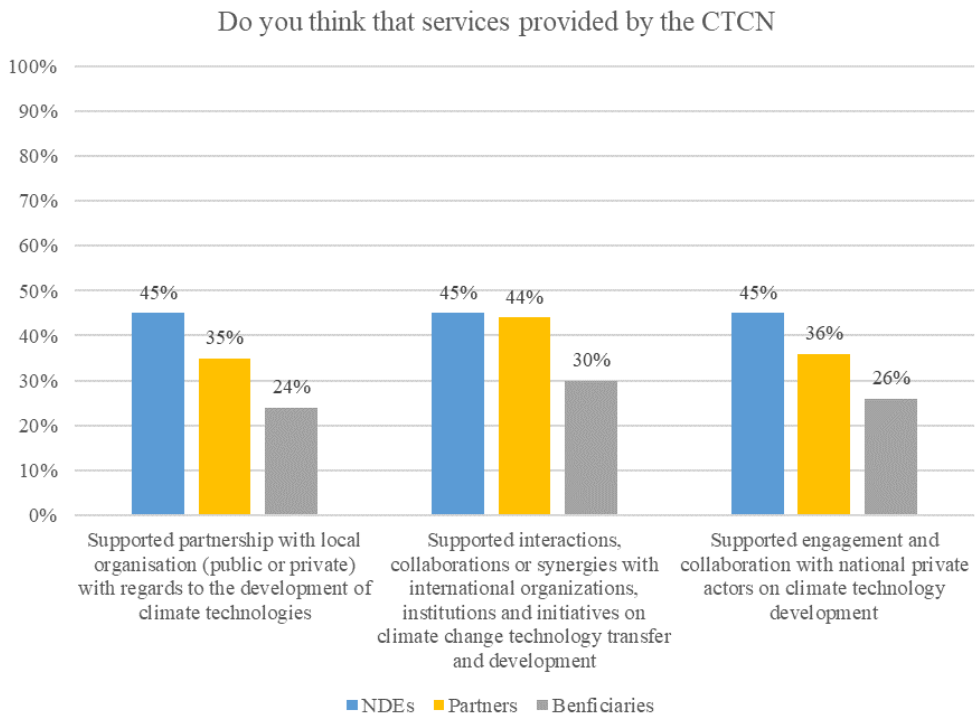


170. NDEs' perception that emerged in the survey show that the "contribution to enabling environments (e.g. policies, regulations…) that supported the development of climate-related projects" is among the main outcomes of CTCN activities.

6. Stakeholders' engagement

171. One of the five structuring themes of the PoW is dedicated to "Collaboration and stakeholder engagement" with the aim to enhance the number and quality of interactions between NDEs and all stakeholders critical to accelerating the transfer of climate technologies. Figure 28 shows NDEs', beneficiaries', Consortium Partners', knowledge partners' and Network Members' perception on CTCN support on collaboration and stakeholders' engagement.

Figure 28
Stakeholders' perception on CTCN support on collaboration and engagement by category of stakeholders (Source: EY)



172. According to some beneficiaries who responded to the survey, the CTCN do not often use local consultants or companies to deliver TA.

173. 2020 Collaboration and Stakeholder Engagement results are presented in figure 29. They show that targets were all met or exceeded.

Figure 29
2020 Collaboration and Stakeholder Engagement results

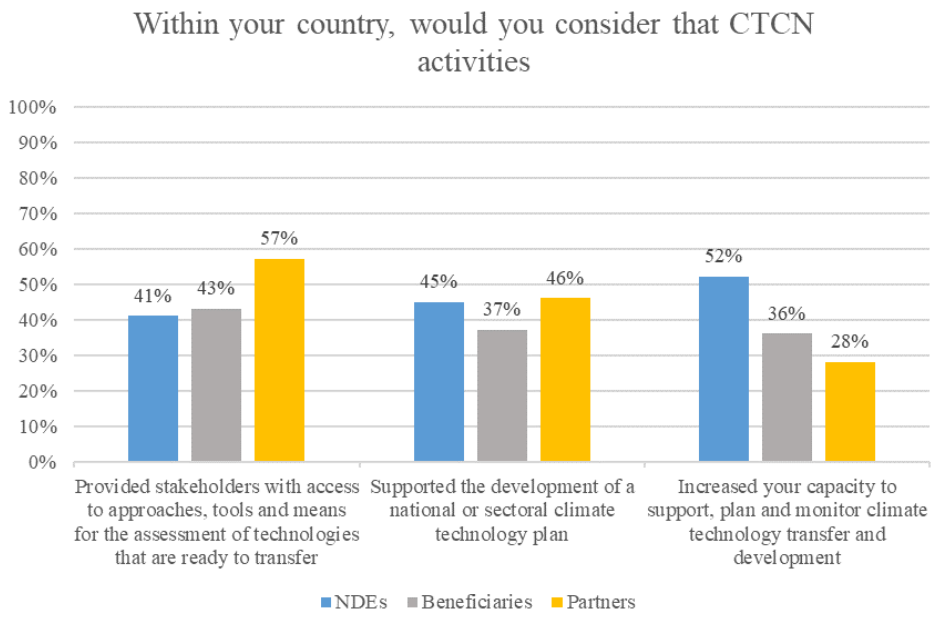
Collaboration and Stakeholder Engagement		
2020 AOP Indicators	**Target**	**2020 Results**
Outcome 3: A broad range of stakeholders collaborate in promoting gender-responsive climate technology development and transfer		
3.A. Number of engaged network members and knowledge partners	20% of Network members	44%
3.B. Percentage of new CTCN TA implemented through Network Members	75 to 80% of TA implementers contracted in 2020	75%
3.C. Overall satisfaction of key stakeholders with CTCN services	Average satisfaction 3.5/5	Network Member Survey: On average, respondents indicating all four activities were 'useful, beneficial or moved as planned'.
Output 3.1: Enhanced platforms and tools for collaboration and learning on climate technology development and transfer		
3.1.a. Number of deliverables produced during the technical assistance (disaggregated by type, excluding mission, progress and internal reports)	80-100	200
Output 3.2: Active partnerships between scientific community, authorities, private sector, CSOs, and financial institutions		

3.2.a. Total number of members in the CTC Network (disaggregated by region, type, approach, enabler and expertise)	620	The total number of Network members up to 31 December 2020 is 624.
3.2.c. Number of South-South collaborations enabled during or through CTCN TA support, when stakeholders from other countries were involved in the assistance	2-5	13 in total: 8 Pro-bono Technical Assistances; 2 LAC; 2 Asia Pacific; 1 global

7. Support

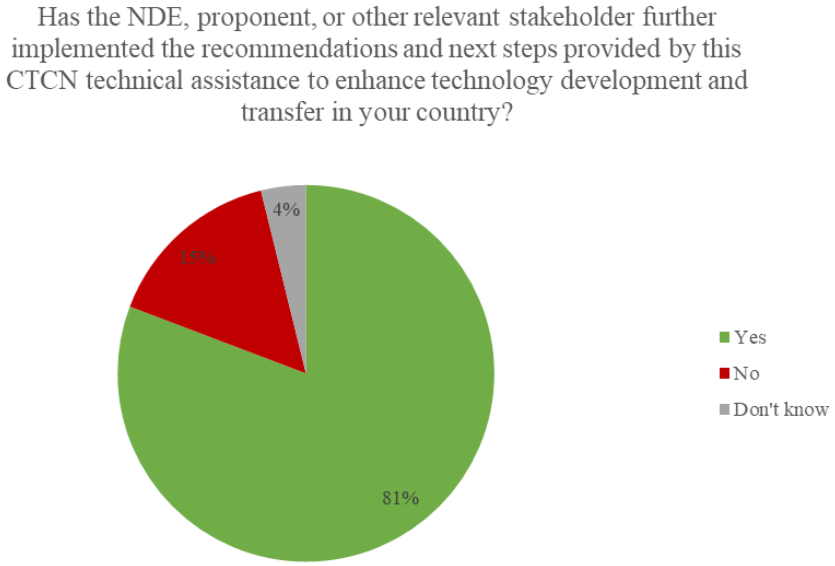
174. Figure 30 shows that stakeholders' perception on CTCN activities' impacts on technology development and transfer are rather middling. Around half of responding stakeholders consider that CTCN activities "provided stakeholders with access to approaches, tools and means for the assessment of technologies that are ready to transfer", "supported the development of a national or sectoral climate technology plan" or "increased their capacity to support, plan and monitor climate technology transfer and development."

Figure 30
Stakeholders' perception of CTCN activities outcome (Source: EY)



175. Besides, more than 80% of responding NDEs to the UNFCCC Technology Mechanism NDE Survey consider that the NDE, proponent, or other relevant stakeholders further implemented the recommendations and next steps provided by the CTCN TA to enhance technology development and transfer in their country (figure 31).

Figure 31
NDEs answer to the question "Has the NDE, proponent, or other relevant stakeholder further implemented the recommendations and next steps provided by this CTCN technical assistance to enhance technology development and transfer in your country?" (Source: UNFCCC Technology Mechanism NDE Survey)



176. 2020 Results under the Support theme are presented in figure 32.

Figure 32
2020 Results under the Support theme

Support		
2020 AOP Indicators	**Target**	**2020 Results**
Outcome 5: Financial and technical resources identified and available to support climate technology development and transfer		
5.A. Annual percentage increase of funding mobilised for the activities of the CTCN	10% increase in funding mobilised for the activities of the CTCN	Increase of 225% from 2019 to 2020 41% of the total income in 2020 was from GCF - $5,041,923. Increase from 2019 to 2020 attributed to GCF only is 32%
Output 5.1: Multi-tier collaboration with Financial Mechanism operating entities		
5.1.a. number of events co-organised with operating entities of the Financial Mechanism (GEF, GCF), MDBs	6	1 event Virtual dialogue on experience and lessons learned from the pilot regional climate technology transfer and finance centres under the PSP.
5.1.b. Extent of mutually beneficial engagement (financial, technical or other) between the operating entities of the Financial Mechanism (GEF, GCF), MDBs, and the CTCN	*	GCF – 21 Readiness Proposals GEF - Piloting Innovative Financing for Climate Adaptation Technologies in Medium-Sized Cities Adaptation Fund - AFCIA MDBs - IsDB & EBRD active collaboration
5.1.c. Number of technical assistance supported by the GEF/GCF (disaggregated by adaptation/ mitigation)	10-12	25 TAs supported by GCF/GEF GCF – 21 Readiness Projects under implementation or newly approved in 2020 GEF – 4 technical assistance projects supported under the GEF project "Promoting Accelerated Transfer and

		Scaled-up Deployment of Mitigation Technologies"
Output 5.2: Diversification and mobilisation of the types and sources of technical and financial support available to countries		
5.2.a. Value of pro bono and in-kind support secured for CTCN activities	$500,000 - 1 million	$719,190 - from the Republic of Korea to implement 8 TAs.
5.2.b. Level of donor engagement	10 donors engaged	8 donors engaged
5.2.c. Number of technology proposals developed through CTCN technical assistance that are supported by the GEF/GCF	3-5	9

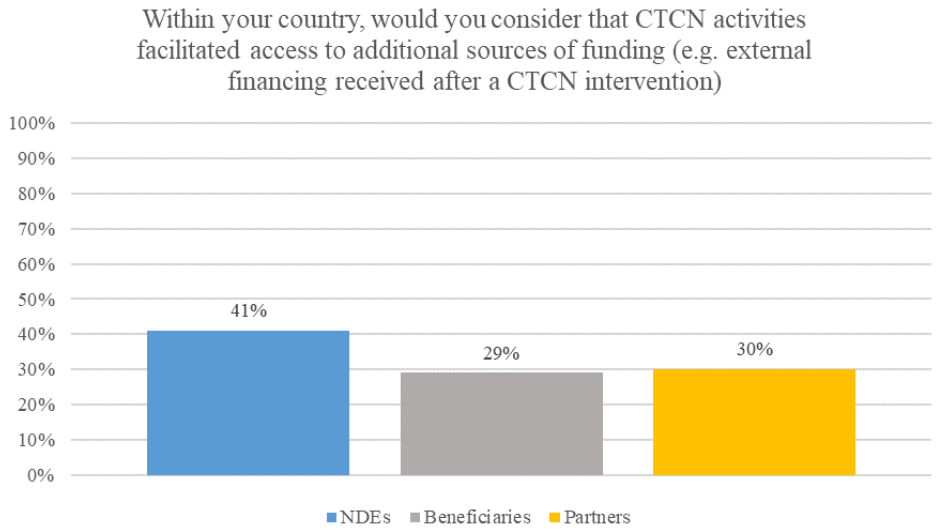
8. Leveraging funding

177. The CTCN activities have a positive impact on leverage for additional funding or investment: in 2020, CTCN TAs of about USD 800,000 resulted in the leveraging of over USD 200 million.[43]

178. The UNFCCC Technology Mechanism NDE Survey shows that CTCN contribution to leverage additional funds is moderate: 66% of interrogated NDEs consider that the TA contributed to leverage additional funds.

179. Only half of the NDEs who responded the UNFCCC Technology Mechanism NDE Survey agreed to the fact that TA helps leverage additional funding or investment. This is confirmed by the survey conducted for the review: only 41% of responding NDEs consider that CTCN activities facilitated access to additional sources of funding (e.g. external financing received after a CTCN intervention) (figure 33).

Figure 33
Stakeholders' perception of CTCN activities impact on access to additional sources of funding (e.g. external financing received after a CTCN intervention (Source: EY)

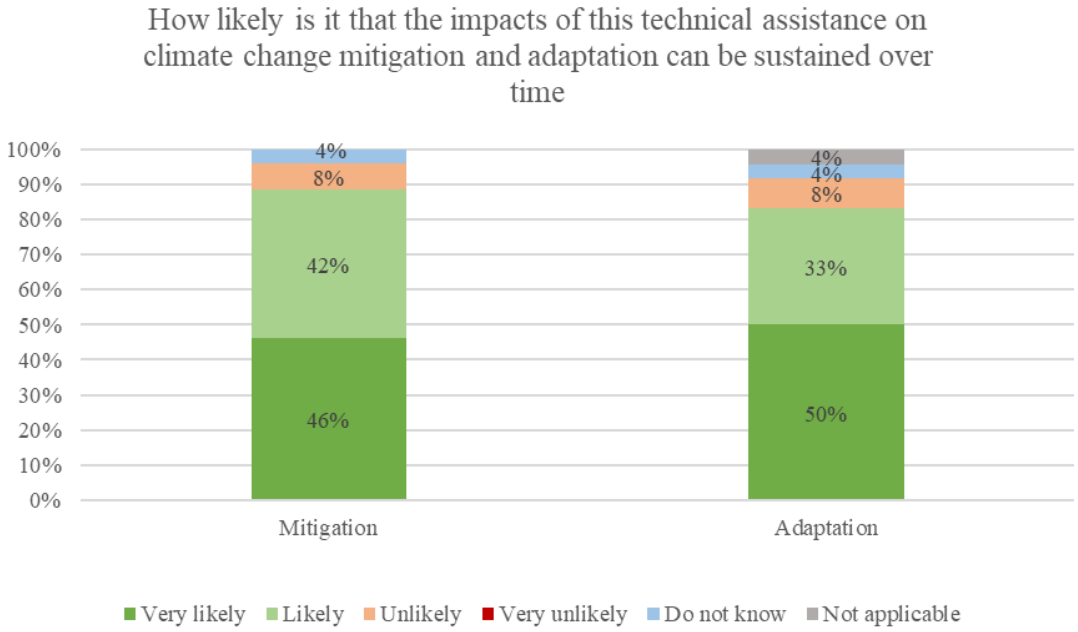


[43] Update on the work of the CTCN. 2020. Available here.

9. Climate change resilient development and reduction of GHG emissions in developing countries

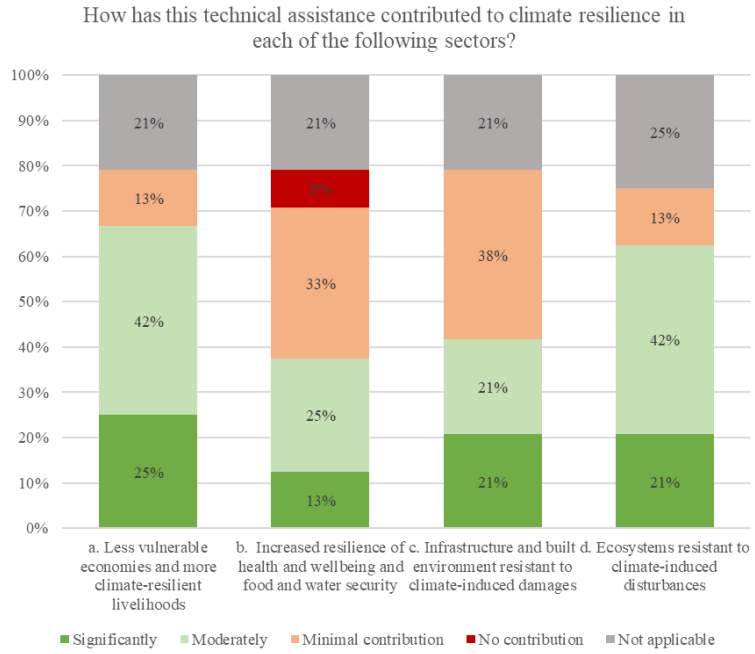
180. As shown in figure 34, NDE's perception is very positive on the likeliness of TA impacts on climate change mitigation and adaptation can be sustained over time.

Figure 34
NDEs' answer to the question "How likely is it that the impacts of this technical assistance on climate change mitigation and adaptation can be sustained over time" (Source: UNFCCC Technology Mechanism NDE Survey)



181. As shown in figure 35, 67% of the NDEs who responded to the UNFCCC Technology Mechanism NDE Survey replied that TA contributes to Less vulnerable economies and more climate-resilient livelihoods. In addition, 38% of the NDEs who responded to the UNFCCC Technology Mechanism NDE Survey showed significant and moderate contribution to increased resilience of health and wellbeing and food and water security.

Figure 35
NDEs answer to the question "How has this technical assistance contributed to climate resilience in each of the following sectors?" (Source: UNFCCC Technology Mechanism NDE Survey)



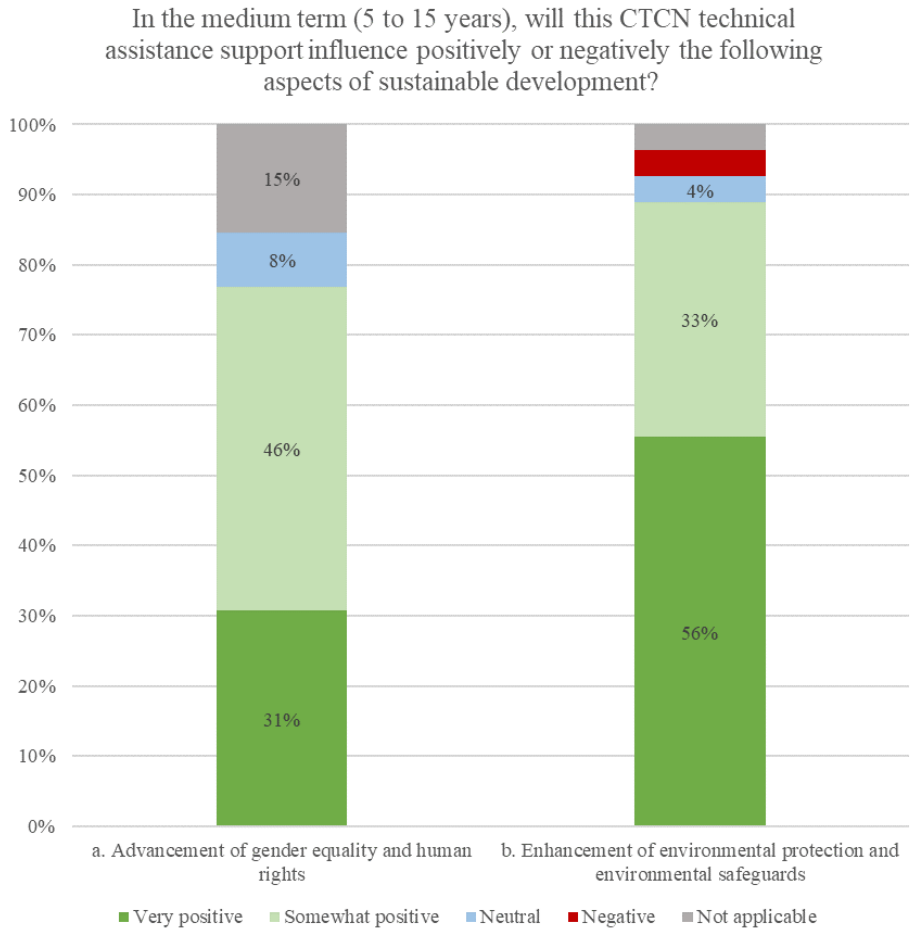
10. Socio-economic impacts

182. The UNFCCC Technology Mechanism NDE Survey shows that the influence of TA is positive or very positive on (figure 36):

(a) Economic and social wellbeing of population (96% of answers);

(b) Advancement of gender equality and human right (77% of answers).

Figure 36
NDEs answer to the question "In the medium term (5 to 15 years), will this CTCN technical assistance support influence positively or negatively the following aspects of sustainable development?" (Source: UNFCCC Technology Mechanism NDE Survey



183. Results obtained through the independent review survey are more nuanced, as stakeholders' perceptions that emerged show that the "inclusion of social issues in climate technology development (e.g. endogenous or gender- responsive technologies)" is seen as one of the minor outcomes CTCN activities.

184. 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 technologies. The CTCN has continued to enhance collaboration with the constituency of youth NGOs. 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.

185. Looking at gender equality specifically, the issue is now fully embedded in CTCN's mandate through CTCN 2019- 2022 Gender Policy and Action Plan. The following table considers the level of implementation of the main actions formulated in the document. Implementation seems well advanced.

Action plan content (main actions)	*Results*
Governance	
Strive to achieve gender parity in the appointment of its management and staff, including at top managerial levels.	No information to date
Encourage and generate awareness among CTCN NDEs and Advisory Board members of 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 will report annually on the gender distribution of both the Board and CTCN Secretariat.	The CTCN Advisory Board is currently comprised of 8 women vs. 17 men: 32% female vs 68% male. This composition represents a slight improvement over the years. As a comparison, the Advisory Board at AB10 comprised of 26% female and 74% male members. (However, in 2019 it was 61% vs 39%). CTCN Secretariat is currently comprised of 13 women and 6 men.
Maintain a gender focal point.	Yes
Operations - TA	
Use criteria for prioritization of technical assistance's will continue to reflect if the request for technical assistance promotes and demonstrates gender equality, and empowerment of vulnerable groups, including women and youth.	Yes - CTCN's criteria for prioritization of technical assistance reflect if the request for technical assistance promotes and demonstrates gender equality, and empowerment of vulnerable groups, including women and youth.
Require that requests include a description of anticipated gender and other co-benefits that are likely to be generated as a result of the technical assistance.	Yes - Dedicated space in TA request form.
Require CTCN experts to reflect on gender and co-benefits of the technical assistance.	Yes
Allocate not less than 1% of the budget and resources for technical assistance to explicitly target gender mainstreaming	Yes
Require that all TAs consult CTCN gender mainstreaming guidelines during response plan design and implementation.	Yes - CTCN Gender Mainstreaming Tool for Response Plan Development is to be viewed as an initial gender mainstreaming guideline during the development of response plans and applies to design, implementation and monitoring of technical assistance.
Develop sector specific gender mainstreaming guidelines, e.g. for energy, water, agriculture and waste management sectors.	No information to date
Make available best practice examples of how gender integration at the request, implementation and M&E stage could look like.	No information to date
Require that TA implementers report and are assessed on gender integration	Yes - The new M&E system include the following KPIs: "number of participants men / women" and "% of men / women that significantly or moderately increased their capacities". At that stage less than ½ TA report those data.

Action plan content (main actions)	*Results*
	The Gender Mainstreaming Tool for Response Plan Development includes examples of appropriate gender indicators.
Operations - Network	
Establish a roster of climate technology and gender specialists	No information to date
Integrate gender equality guidelines into the Network Code of Conduct	Apparently, no integration of gender equality guidelines into the Network Code of Conduct as mentioned by the action plan.
Encourage women-led technology companies and gender and climate technology organizations to join the Network	Yes - In 2019, one could count 44 Network Members with gender expertise while the objective was to reach 20-25.
Organise: - webinars on gender and climate technologies (1-2 per year) - Training sessions on specific gender and climate technology issues at regional forums, focal point workshops, COP's and other related events	Yes - 42% of the Network Members who answered the survey consider that as a direct result of CTCN services, got relevant information on gender-specific approaches to climate change mitigation and adaptation
Encourage the participation of UNFCCC national gender focal points in regional forums to facilitate connections between ministries, policy-makers, CSOs and other relevant stakeholders	In 2019, the CTCN enhanced its collaboration with the UNFCCC Women and Gender Constituency through the organization of the Gender Just Climate Solutions Award. At AB14, the Board took part in a gender workshop organized by UNFCCC Gender Team, and CTCN Gender Focal Point, on steps towards understanding unconscious gender bias and work underway through the Gender Action Plan of the UNFCCC and the Gender Strategy of the CTCN. The following gender-related Training/Workshops were hosted in 2019: - Mainstreaming gender in Technology Needs Assessments - Women in energy: breaking stereotypes and inspiring change - Upscaling gender-just climate solutions - Gender training and technology for TEC members - Gender and technology training for CTCN Advisory Board members Women in energy: breaking stereotypes and inspiring change (Webinar)
Provide targeted support for capacity building of women professionals, policymakers, researchers, civil society organization leaders and entrepreneurs in climate technology sectors	No information to date
Require gender indicators, outcomes and impacts as well as provide relevant sex-disaggregated data through the CTCN closure reports	Partially – the new M&E system include the following KPIs: "number of participants men / women" and "% of men / women that significantly or moderately increased their capacities". At that stage less than ½ TA report those data.

Action plan content (main actions)	*Results*
Operations - Knowledge Sharing and Communication	
Gather, manage and share an updated set of online tools and publications on gender and climate change via the CTCN web platform (including resources developed by its hosting organizations).	Yes - The CTCN online Gender Hub now contains nearly 700 publications, tools and case studies on gender and climate. In addition, the CTCN collaborated with its Consortium Partner *The Energy and Resources Institute (TERI)* to develop case studies on women's empowerment in energy supply chains in India and Nepal.
Identify and share best practices on gender and climate-related technologies through CTCN web platform, social media, and events.	Yes
Develop content (including in collaboration with partners and experts).	Yes - CTCN Communication and Knowledge products produced in 2019 include: - Gender-Just Climate Solutions Publication 2019 - Gender resource guide - Women in Energy: Breaking Stereotypes and Inspiring Change - Case studies on gender mainstreaming of energy supply chains in India and Nepal. In 2020, 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.
Encourage organizations with expertise in gender and climate technology to share their expertise with the Network.	No information to date.
Host and co-host events with a targeted gender and climate technology component as well as integrate gender awareness.	Yes - The following gender-related events were hosted in 2019: - Gender-Just Climate Solutions Award ceremony - SB50: The impact of the Lima Work Programme on Gender and its Gender Action Plan. The CTCN reported on its response to the Gender Action Plan while contributing to the acceleration of technology development and transfer and facilitated workgroup discussions - SB50: Implementing gender responsive NDC's from the bottom up. The CTCN was invited to present at the Women and Gender Constituency event - Press conference: Presenting winners of the Gender-Just Climate Solutions Award. In 2020, series of capacity development training sessions on upscaling gender-just solutions were conducted and A capacity-building webinar on conducting a gender-

Action plan content (main actions)	*Results*
	responsive TNA was presented by the UNEP DTU Partnership and the CTCN.
Develop current climate technology taxonomy by including more gender-related terms.	No information to date.
Seek to ensure a representation of both women and men, with a geographical balance, in its communication and outreach and seek to challenge gender stereotypes through the use of gender-inclusive language and images in its communication and outreach.	No information to date.
M&E	
Monitor and evaluate: - the status of equal participation of men and women in CTCN activities as well as special measures taken to incentivize gender balance. - gender integration in knowledge generation, management and dissemination. - the mainstreaming of gender in technical assistance design, implementation, budget, monitoring and evaluation phases as well as in capacity building activities.	Yes, the new M&E system integrate those considerations.

Annex VIII

Management response of the United Nations Environment Programme to the second independent review of the Climate Technology Centre and Network[1]

[English only]

[1] The management response of UNEP was received on 11 August 2021. It is reproduced here as submitted by UNEP.

Economy Division

UN environment programme

Management Response of the UN Environment Programme

Introduction

COP 23 requested the UNFCCC secretariat to commission the second independent review of the effective implementation of the Climate Technology Centre and Network (CTCN), and report on the findings of the review including any recommendations regarding enhancing its performance for consideration by the COP in 2021.[1]

The second independent review, conducted by Ernst and Young et Associés ("the consultant"), covers CTCN's operations and activities from 1 January 2017 to 31 December 2020. It also appraises how the CTCN has responded to the recommendations made in the first independent review (as requested by COP 24) and assesses the impacts of CTCN's activities since its inception.

The consultant formulated several recommendations to enhance the performance of the CTCN covering aspects related to CTCN's funding, governance and organization, and positioning. Not all the recommendations resulting from the independent review are directed solely at the UN Environment Programme as the CTCN's host organization. All the recommendations, however, are pertinent to the effective functioning of the CTCN and its ability to deliver on COP mandates, and they are best appreciated as a whole.

Recommendations

Funding

Recommendation 1: encourage the CTC, in collaboration with UNEP and in consultation with the CTCN Advisory Board, to further enhance resource mobilization so as to meet the costs associated with the CTCN

The COP decided that the costs associated with the CTC and mobilization of the services of the Network should be funded from various sources, including the Financial Mechanism; bilateral, multilateral and private sector channels; philanthropic sources; and financial and in-kind contributions from the host organization and participants in the Network. In the past four years many Parties provided financial resources that enabled the CTCN to become fully operational and perform its functions and activities as mandated by the COP. Regarding support under the Financial Mechanism, the CTCN recently obtained an increase in funding from the GCF and the Adaptation Fund. If additional resources were provided, the CTCN could scale up its provision of technical support to developing country Parties. The CTC, in collaboration with UNEP and in consultation with the CTCN Advisory Board, is encouraged to further diversify its sources of funding, for example by conducting a review of its resource mobilization strategy to make it more strategic and realistic, taking into account experience and lessons learned from the implementation of its previous corresponding strategy and from other organizations. In addition, it may consider strengthening the role of and resources for a dedicated deputy director or appointing senior consultants who would be in charge of strengthening and structuring relationships with the operating entities of the Financial Mechanism; developing opportunities for the CTCN to further engage with GEF recipient countries' focal points (through CTCN regional managers or NDEs) on identifying, developing and endorsing CTCN projects in order to be engaged in project implementation; and enhancing the marketing of CTCN services (communicating achievements, demonstrating impacts, etc.).

[1] Decision 14/CP.23, paragraph 10.

Response

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The CTCN's second Programme of Work (2019 – 2022) established a funding target of 62 million USD. Despite the ambitious Programme of Work and enhanced funding target, the 2019 – 2022 annual budgets saw reduced ambitions that reflected the actual funding available each year. To date, Parties have provided 18 million USD in voluntary contributions to fund the four-year programme, which has been complemented by an additional 12 million USD mobilized from the CTC's host institutions, the entities of the financial mechanism, and pro-bono contributions.

In collaboration with its host institutions, the CTC will continue to seek Advisory Board guidance regarding resource mobilization, including through the AB Taskforce. Under the guidance of the Advisory Board, the CTC has examined different funding scenarios that are in line with the CTC's mandate and based on experience with past resource mobilization efforts. Considerations include modalities to increase the CTCN's efficiencies through greater funding predictability over the next Programme of Work; increased contributions to the Multi-Donor Trust Fund; multi-year funding commitments; and new sources of funding from private and multilateral sources.

Furthermore, a donor roundtable will be convened by the CTC and its host institutions during COP26, under the auspices of the governments of Denmark and the United Kingdom, to renew and strengthen sustained funding for the CTCN.

The CTC's resource mobilization efforts will be further supported by the senior consultant engaged through UNEP in 2020 who is responsible for expanding the donor base, strengthening and structuring relationships with the entities of the Financial Mechanism, and working with CTCN regional managers to identify, develop and implement projects that enhance CTCN services.

As noted in the first independent review of the CTCN, the level, type, and predictability of funding determines the reach and ultimately the overall effectiveness of the CTCN. Both UNEP and UNIDO have regularly engaged with potential donors to secure additional funding for the CTCN. UNEP will continue to support the CTC's efforts to formalize arrangements with the entities of the Financial Mechanism with the objective of identifying and developing with them multi-year joint programmes.

Recommendation 2: encourage the CTCN to allocate dedicated resources to pursue its efforts to conduct regular ex post impact evaluations of technical assistance

The CTCN would benefit from demonstrating more thoroughly the long-term climate change related impacts and socioeconomic co-benefits (including with regard to gender-related issues) of its technical assistance. Despite ongoing efforts (e.g. the extended analysis of selected technical assistance included in the 2021 budget was postponed to 2022 owing to the COVID-19 pandemic), estimates of actual impacts (as opposed to anticipated impacts, which are currently measured) as well as ex post evaluation resources were limited. This recommendation could be carried out on a sample of projects three to four years after implementation, either by independent third parties (through a dedicated budget line) or by dedicated internal staff.

Response

With the CTCN technical assistance process firmly in place, the CTC recognizes the need to build on initial efforts to demonstrate more thoroughly the long-term impacts of its services.

Since the first independent review of the CTCN, the TEC and the CTCN developed a new joint M&E framework to track and assess anticipated impact data that complements data on immediate outputs of technical assistance and other activities. Considering the nature of CTCN interventions, most of which focus on creating enabling conditions for further scale-up and implementation of climate technologies, the transformational impacts of such interventions are based on forecasts and anticipated results rather than already realized impacts.

The CTCN hopes to conduct a deep-dive analysis of selected, completed technical assistance interventions three to four years post-implementation. The evidence obtained will help determine the extent to which the CTCN's technical assistance achieved its objectives. Additional financial resources would, however, be required to conduct such an analysis; the CTCN will seek the guidance of the Advisory Board on possible funding sources.

Governance and organization

Recommendation 3: encourage the CTCN to further streamline communication between the host agencies and the CTC secretariat

It was found that the CTCN management structure could benefit from strengthened information flow between the CTC co-hosts (UNEP and UNIDO) and the CTC secretariat in Copenhagen. Hence, it is recommended to continue streamlining communication between the host agencies and the CTC secretariat. Notably, UNEP as host of the CTCN and the CTCN Trust Fund should look for ways to ensure that all CTCN resources are directed towards its Trust Fund.

Response

The CTC commits to streamlining communication with its host agencies at the management and operational levels, including through strengthening existing communication channels while maintaining the CTCN's responsiveness and agility.

Recognizing the challenges of having financial resources spread across different UNEP and UNIDO accounts, the host agencies will explore ways of directing resources to the CTCN's multi-donor trust fund. This would reduce the administrative and reporting burden. Donor preferences and requirements partly determine the accounts into which funds are placed, however, so the host agencies will remind donors about the advantages of using the dedicated multi-donor trust fund.

Recommendation 4: encourage the CTCN to further engage with and improve synergies among Network members

The CTCN should further engage with and improve synergies among Network members in order to take full advantage of its members' valuable sectoral and geographical expertise, allowing for a more efficient delivery of its services. It is recommended that the CTCN, guided by its Advisory Board, develop and operationalize a network engagement plan.

Response

The CTC has made many efforts to enhance Network engagement in recent years, especially as the Network continues to grow: over 650 climate technology stakeholders, including academic, finance, non-government, private sector, public sector, and research entities, have joined the CTC Network to date.

The CTC will continue to stimulate active engagement with its Network and utilize more fully the knowledge and resources available within the Network. It will develop and put into effect a network engagement plan based on the findings from the CTCN's Network survey conducted in 2019, feedback received from members, and past successes in engaging Network members that can be expanded.

Recommendation 5: encourage the CTCN to enhance efforts to stimulate active collaboration between NDEs and reinforce its capacity building support for NDEs to provide improved technical assistance

The CTCN is encouraged to enhance collaboration between NDEs from Annex I Parties and non-Annex I Parties, as well as to reinforce capacity-building provided to non-Annex I Party NDEs, notably by raising their profiles among government agencies and the private sector and monitoring the implementation of technical assistance and the operationalisation of technical assistance recommendations. One of the main difficulties identified by NDEs is in relation to elaborating technical assistance requests. The CTCN is therefore encouraged to carry out further capacity-building activities, including through the Incubator Programme.

Response

Building capacity of NDEs and national stakeholders to strengthen the skills needed to develop and monitor technical assistance requests is essential to the work and mandate of the CTCN. The CTCN uses various approaches for identifying capacity development needs of NDEs and is acting to meet those needs.

The CTC will continue to undertake capacity building activities and provide tailored support to NDEs from LDCs and SIDS. If additional funding is available it will strengthen capacity building programmes that help all developing country NDEs develop technical assistance requests in strategic areas following a programmatic approach. With additional resources, the CTCN could also further support the development of technology road maps for NDC implementation.

Positioning

Recommendation 6: encourage the CTCN to collect relevant information for preparing its third programme of work, including an evaluation of potential beneficiary needs that could be addressed with the available budget

The CTCN is encouraged to collect relevant information for preparing its forthcoming third programme of work. A preliminary analysis should be performed using an assessment of the demand for CTCN services based on CTCN experience and a survey of NDEs; a report on the achievement of targets in the second programme of work; and a financial plan that identifies financial resources to be mobilized by the CTCN during the next period (including pledges from donors). Such an analysis should allow the CTCN to determine the share of requests it could potentially address given the current budget estimates.

Response

The CTC, in collaboration with UNEP and UNIDO and with the guidance of the Advisory Board, will prepare its third Programme of Work in early 2022 for endorsement by the Advisory Board at its September 2022 meeting. In designing the Programme of Work with the aim of strengthening its quality and improving outcomes, the CTC will incorporate data and findings from ongoing programme monitoring and that obtained through evaluations, the independent review, biannual NDE survey results, CTCN technical assistance and capacity building closure reports completed by implementing entities, and NDE feedback on completed technical assistance. This will be complemented by guidance provided by the Technology Framework and subsequent COP decisions.

The Third Programme of Work will be prepared during unprecedented times – in a post Covid-19 world with heightened climate impacts and a global call to action to Net Zero. In collecting information relevant for the 3rd Programme of Work, the CTCN will additionally focus on identifying and implementing transformational technologies that contribute to the implementation of enhanced NDCs and Net Zero goals. The CTCN will stress opportunities for supporting national efforts to build back forward in a post COVID-19 world, one in which digital technology has been identified as critical to addressing the links between climate change, nature, and sustainable development.

Recommendation 7: encourage the CTCN to reinforce its position as a climate technology matchmaker

It is recommended to further enhance the engagement of technology providers within the CTCN and the development of partnerships with existing centres, networks and institutions. The CTCN is encouraged to dedicate resources to the implementation of initiatives that enhance direct interaction between the private sector Network members.

Response

Through its core service areas, the CTCN has positioned itself as a key climate technology matchmaker for technology transfer globally, with over 350 technology transfer projects realized in 106 countries.

Over one half of the CTC's Network members are from the private sector, and many represent small and medium-sized enterprises (SMEs). The CTC engages its private sector network members through opportunities to bid for technical assistance implementation; opportunities for capacity building; joint webinars that allow sharing of experience; workshops; on-line presentations, and development of joint knowledge resources. Building on the successful outcomes of these initiatives, the CTCN will continue to expand partnerships for technology transfer, capacity building and resource mobilization. The CTCN will also seek Advisory Board guidance regarding additional financial resources that would allow enhanced interactions between Network members.