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气候变化框架公约

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缔约方会议
第二十六届会议
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技术的开发和转让
气候技术中心和网络第二次审查

气候技术中心和网络有效实施情况第二次独立审查报告

概要

本报告载有气候技术中心和网络有效实施情况第二次独立审查的结论。报告列出所评价的每个领域的主要结论(关联性、效力、效率、影响和可持续性)、审查结论、关于增强气候技术中心和网络绩效的建议以及联合国环境规划署管理层对这些建议的反应。

目录

简称和缩略语

附件一缔约方	《公约》附件一所列缔约方
COP	缔约方会议
COVID-19	2019 冠状病毒病
CTC	气候技术中心
CTCN	气候技术中心和网络
DTU	丹麦技术大学
GCF	绿色气候基金
GEF	全球环境基金
GHG	温室气体
ICAT	气候行动透明度倡议
MDB	多边开发银行
MOU	谅解备忘录
NDA	国家指定主管部门
NDC	国家自主贡献
NDE	国家指定实体
非附件一缔约方	非《公约》附件一所列缔约方
PSP	关于技术转让的波兹南战略方案
SDG	可持续发展目标
TAP	技术行动计划
TEC	技术执行委员会
TNA	技术需要评估
开发署	联合国开发计划署
环境署	联合国环境规划署
工发组织	联合国工业发展组织

一. 导言

A. 任务

1. 缔约方会议第十六届会议设立了技术机制，[1] 目的是加强气候技术开发和转让方面的行动。该机制由两个机构组成：技术执行委员会(其政策部门)；气候技术中心和网络(CTCN)(其执行部门)。

2. 缔约方会议第十七届会议商定了使技术机制在 2012 年全面运作的安排，并通过了关于CTCN的职权范围的规定[2] 和气候技术中心主办方的遴选程序。[3] 缔约方会议还请秘书处委托相关机构每四年对 CTCN 有效实施情况进行一次独立审查，提出结论，并就缔约方会议审议的增强 CTCN 业绩问题提出建议(2021 年进行第二次审查)。[4]

3. 缔约方会议第十八届会议决定选择环境署作为伙伴机构联盟的牵头机构，担任气候技术中心主办方，最初任期五年，如果缔约方会议第二十三届会议作出相关决定，任期可延长。[5] 缔约方会议第十八届会议还通过了缔约方会议与环境署关于主办气候技术中心的谅解备忘录。[6]

4. CTCN 有效实施情况第一次独立审查报告[7] 已提交供缔约方会议第二十三届会议审议，缔约方会议第二十三届会议决定将缔约方会议与环境署关于主办气候技术中心的谅解备忘录再延长四年。[8]

5. 按照符合联合国条例采购程序，秘书处选择 EY et Associés(以下称咨询公司)进行第二次独立审查。

B. 缔约方会议可采取的行动

6. 将请缔约方会议审议 CTCN 有效实施情况第二次独立审查的结论和建议，并考虑到各缔约方在缔约方会议第二十六届会议上进一步审议这一事项的情况，确定适当的后续行动，以增强 CTCN 的业绩。

[1] 第 1/CP.16 号决定，第 117 段。

[2] 第 2/CP.17 号决定，第 133 段。

[3] 第 2/CP.17 号决定，第 136 段。

[4] 第 2/CP.17 号决定，附件七，第 20 段；第 14/CP.23 号决定，第 10 段。

[5] 第 14/CP.18 号决定，第 2 段。

[6] 第 14/CP.18 号决定，第 3 段。

[7] FCCC/CP/2017/3。

[8] 第 14/CP.23 号决定，第 5 段。

二. 方法

A. 范围

7. 咨询公司从四个方面进行审查：

(a) **关联性**：CTCN 的战略和资源是否与缔约方会议确定的优先事项和地方支持需要相关，是否适当？所考察的是第一和第二个工作方案和年度业务计划与其外部环境的一致性，并考虑到缔约方会议的决定、国家指定实体的需要、技术执行委员会政策指导、与资金机制各经营实体的协作以及以往审查中提出的建议等等；

(b) **效力**：CTCN 在技术援助、知识管理、同行学习、能力建设、联网和利益攸关方参与方面的目标有无实现？考虑到实际业务条件，对照 CTCN 的目标，评估服务和产出；

(c) **效率**：CTCN 的目标有无得到高效实现？找出遇到的困难，确定所涉成功因素，重点评估 CTCN 实施情况(例如，在治理、外部和内部组织、直接和间接资源、时间表和流程方面)以及活动和服务效率的改进情况；

(d) **影响和可持续性**：CTCN 有无实现预期成果，有无产生长期积极影响？目的是确定观察到的结果并将其与预期成果进行比较，确定实现或未实现成果所涉及的因素，评估切实产生长期积极影响的可能性以及影响的可复制性。

8. 对于每个问题，咨询公司详细说明了各分问题以及用于回答这些问题的指标和数据来源(见附件一)。

9. 关于第二次独立审查的本报告是对上文第 4 段提到的第一次独立审查的补充，第一次审查涵盖 CTCN 在 2017 年 1 月 1 日至 2020 年 12 月 31 日期间的业务和活动。本报告评估：(1) CTCN 是否有效地回应了第一次独立审查提出的建议；(2) CTCN 自设立以来活动的影响力。与 CTCN 的关联性和效率有关的问题在 CTCN 当前背景和组织框架下讨论。

10. 第二次独立审查是在全球分析的基础上进行的，在相关情况下还对具体区域或国家进行了分析。

B. 工作计划

11. 咨询公司为独立审查制定了以下方法：

(a) 起始阶段；

(b) 数据收集和分析阶段，包括以下活动：

(一) 审视大量文献，包括借鉴外部出版物以及 CTCN 文件(见附件二)，审查 CTCN 的战略、治理、业务、服务和成果(见附件六)；

(二) 约谈 CTCN 的 19 个利益攸关方，包括 CTCN 主任、来自环境署和工发组织的 CTCN 工作人员、捐助方、CTCN 咨询委员会成员和联盟合作伙伴(见附件三)；

(三) 进行三次电子调查，9参与的有：国家指定实体 43 个；联盟合作伙伴、知识合作伙伴和网络成员 118 个；CTCN 次级项目受益者 248 个(见附件四)；

(四) 对照四个开展类似活动的组织/举措(见附件五)：非洲开发银行主办的非洲气候技术中心、亚洲开发银行主办的亚洲-太平洋气候技术网络和融资中心、欧洲复兴开发银行主办的气候变化融资和技术转让中心以及美洲开发银行主办的拉丁美洲和加勒比气候技术转让机制和网络；

(五) 在 2021 年 4 月 26 日至 28 日举行的 CTCN 咨询委员会第 17 次会议期间介绍和讨论审查的初步结论；

(c) 结论和建议阶段，包括环境署管理层对建议的回应(见附件八)。

12. 这项工作在 2020 年 10 月至 2021 年 7 月进行。

三. 审查结论

13. 本章介绍的审查的主要结论来自利益攸关方的投入，并与通过案头审查收集的数据进行了交叉核对。这些结论是根据附件七所载对 CTCN 业绩的详细审查得出的，构成咨询公司对审查起始阶段确定的评价问题的答复的判断。

A. 关联性

14. **与缔约方会议决定保持一致：**CTCN 对缔约方会议决定的指导意见作出了回应，将以下内容纳入其业务和年度报告：

(a) 2019-2022 年第二个工作方案使 CTCN 国家驱动的服务与技术框架下规定的行动和活动保持一致，属于 CTCN 的工作和任务范围。该方案根据技术框架的五个关键主题安排 CTCN 的活动以及与技术执行委员会协作开展的活动。CTCN 服务按这些主题分配。

(b) CTCN 和技术执行委员会现在在其联合年度报告中列入关于它们如何将技术框架中的指导意见纳入各自的工作方案和工作计划的信息，以及关于其工作进展、在实施技术框架方面面临的挑战和吸取的经验教训的信息。

(c) 按照缔约方会议第二十一届会议的要求，[10] 开展了与技术研究、开发和示范以及内生能力和技术有关的进一步活动。例如，内生能力现已纳入技术援助决策进程，并通过能力建设活动予以发展(见附件七 A 章第 1 节)。

15. **第一次独立审查的建议：**第二个工作方案考虑到了 CTCN 第一次独立审查期间提出的建议。例如，CTCN 对建议作出了回应，力求提高透明度，加强报告工作。为此，CTCN 改进了监测和评价系统，以提高效力，并产生长期影响力，同时在线提供关于供资和捐助方协定、缔约方会议相关决定、CTCN 独立审查和建议的信息，以及关于指导其业务的监测和评价框架的信息(见附件七 A 章第 2 节)。

[9] 在第二次独立审查期间开展的调查简称为“调查”。

[10] 第 1/CP.21 号决定，第 66 段。

16. **缔约方的需求**：CTCN 提供服务遵循需求驱动的方法，以满足发展中国家的需求。利益攸关方总体上对此持积极态度，大多数利益攸关方，特别是国家指定实体，认为 CTCN 的活动和措施有用或非常有用。由于大多数发展中国家有国家指定实体，CTCN 对发展中国家需求的反应得到了支持：在 154 个非附件一缔约方中，只有 21 个没有国家指定实体。自《巴黎协定》生效以来，CTCN 与各国就国家自主贡献开展了更密切的合作。要合格，技术援助请求需要明确显示与技术援助请求表中正式列出的国家计划和国家自主贡献相一致(见附件七 A 章第 3 节)。

17. **与技术执行委员会的协作**：自 2017 年以来，CTCN 和技术执行委员会通过各自工作方案中包括的额外联合活动(例如，2020 年针对国家指定实体的“气候公约技术机制国家指定实体调查”(下称“国家实体调查”)，以支持监测和评价)加强了协作。CTCN 和技术执行委员会通过其秘书处确保在工作上协调一致，保持沟通，增加信息共享。为支持联合活动的实施，CTCN 2021 年年度业务计划建议成立一个由技术执行委员会和 CTCN 咨询委员会主席、副主席和其他成员组成的联合工作组。[11] 两个机构也可以全面考虑彼此的工作结果，进行更大程度的合作。技术执行委员会的一些技术文件是以 CTCN 的活动为基础的(例如关于内生能力[12])，但技术执行委员会的政策简报可以更系统地借鉴 CTCN 实地业务案例研究和经验教训。此外，在答复上述调查的国家指定实体中，只有 35%报告说它们利用技术执行委员会的产品来编制技术援助请求，这主要是因为利益攸关方对技术执行委员会的活动了解有限(见附件七 A 章第 4 节)。

18. **与资金机制经营实体的协作**：缔约方会议鼓励 CTCN 和技术执行委员会加强与资金机制经营实体[13] 的合作，以最大限度地使全球环境基金和绿色气候基金的大规模筹资能力与 CTCN 帮助发展中国家打造获得此类资金的能力的潜力相挂钩。自第一次独立审查以来，CTCN 已采取措施加强与各经营实体的协作。例如，技术执行委员会和 CTCN 咨询委员会主席与组成机构一起参加了绿色气候基金第四届年会，并出席了缔约方会议第二十五届会议全球环境基金适应创新挑战方案的启动仪式。虽然第一个工作方案中没有载列加强合作的措施，但第二个工作方案列出了 CTCN 将采取的三项此类措施(见附件七 A 章第 5 节)。与资金机制的联系继续加强，与绿色气候基金准备和筹备支持方案以及全球环境基金中等城市气候适应技术创新筹资试点方案的互动增加，与适应基金在 CTCN-开发署价值 1,000 万美元的气候创新加速器项目上开展了新的合作。据绿色气候基金报告，[14] CTCN 现在是绿色气候基金技术就绪支持的最大提供方。全球环境基金或绿色气候基金在 2020 年批准的技术援助请求超过了目标数(见图 32)。尽管如此，调查和访谈显示，CTCN 国家指定实体和全球环境基金业务协调中心之间仍然缺乏互动和协作，CTCN 国家指定实体与绿色气候基金国家指定主管部门[15] 之间也

[11] 技术执行委员会文件 TEC/2020/21/12，第四章，可查阅 https://unfccc.int/ttclear/tec/meetings.html。

[12] 技术执行委员会文件 TEC/2021/22/10。

[13] 第 13/CP.21、14/CP.22、15/CP.22、15/CP.23 和 14/CP.24 号决定。

[14] 见 https://www.ctc-n.org/sites/www.ctc-n.org/files/Agenda%20item%2012.3_CTCN%20AB17_Green%20Climate%20Fund.pdf。

[15] 见 https://www.ctc-n.org/sites/www.ctc-n.org/files/ab201914_4.1_ctcn_to_gef_cop25_report.pdf。

缺乏互动和协作，虽然情况没有那么严重(见附件七 A 章第 6 节)。与绿色气候基金、全球环境基金和多边开发银行共同安排活动的目标数没有达到(见图 32)。

19. **CTCN 的附加值：**所有受访者都承认 CTCN 在支持发展中国家获得国际资金和建设有利环境方面的附加值。非附件一缔约方显示出对 CTCN 类型服务的兴趣，作为对其他机制和举措的补充，CTCN 通过向潜在项目提供早期阶段支持证明其模式的有效性。[16] 特别是与由全球环境基金支持、由多边开发银行根据关于技术转让的波兹南战略方案(PSP)主办的区域气候技术和融资中心(下称 PSP 区域中心)相比，CTCN 的主要优势如下(见附件七 A 章第 7 节)：

(a) 需求驱动；

(b) 可以帮助各国向国际筹资方案和较大的资金机制申请资金；

(c) 建立在《气候公约》框架之下，正当合法，值得信赖；

(d) 拥有广泛的现成可用资源，拥有国际专门知识和技术提供者网络，与多边开发银行相比，具备更丰富的部门专门知识，同时涵盖广泛的技术领域；

(e) 与联合国系统其他实体相比，更灵活，反应更迅速，官僚做法更少；

(f) 可以为对多边开发银行和其他专注于大型举措的行为方而言可能太小的项目提供早期支持和常规支持。

20. **诱因：**尽管有这些公认的优势，利益攸关方的反馈表明，技术援助项目也可以利用其他资金来源实施(见附件七 A 章第 7 节)，但 CTCN 的介入仍然帮助项目更快地启动和部署。

21. **与其他相关气候支持方案的联系：**对四个 PSP 区域中心的比较分析表明，尽管地理覆盖范围和提供的服务可能有重叠，但 CTCN 与这些中心并不存在竞争，需求很大，CTCN 与区域中心可以共存(见附件七 A 章第 7 节)。然而，CTCN 与 PSP 区域中心之间的合作仍然局限于项目信息共享以及关于联合活动方案编制和能力建设的讨论。[17] 主办 PSP 区域中心的多边开发银行表示愿意确保在实施 PSP 项目之外继续努力，并有兴趣加强与 CTCN 的联系。2020 年 11 月，全球环境基金、PSP 区域中心和 CTCN 举行了一次对话，讨论吸取的经验教训，找出进一步合作的机会。与会者一致认为，有必要加强 CTCN 和 PSP 区域中心的联系，定期交流关于各自后备项目的信息，并利用 CTCN 的资源开展 PSP 区域中心能力建设活动。[18] 此外，PSP 区域中心在发展筹资和投资方面有明确的专门知识，经常与财政部或能源部有直接沟通渠道。这可以补充 CTCN 在拟订可融资的项目提案并通过其渠道(经常是与环境部内的国家指定实体沟通的渠道)实施这些项目方面的广泛专业知识。[19]

[16] FCCC/SBI/2019/7, 第 88 段。

[17] FCCC/SB/2020/4, 第 110 段。

[18] FCCC/SB/2020/4, 第 110 段。

[19] FCCC/SBI/2015/16, 第 85 段。

22. **将可持续发展目标纳入 CTCN 工作方案**：CTCN 变革性影响评估[20] 显示，其技术援助涉及一系列可持续发展目标(17 项中有 9 项)。关于气候行动的可持续发展目标 13 是 CTCN 支持的措施的一个内在要素。

23. **COVID-19 大流行**：疫情影响了 CTCN 在 2020-2021 年提供服务的能力，由于数字鸿沟，不同区域受影响程度不同，这给技术援助的发展和实施带来了挑战。深入的能力建设活动不得不搁置。2020 年 6 月，CTCN 咨询委员会工作队举行了一次会议，根据疫情调整 CTCN 工作计划和时间表，确保活动的连续性。鼓励执行伙伴采取措施，确保技术援助实施的连续性，包括与利益攸关方在线接触，调整工作计划和时间表，最终使所有项目得到实施。此外还努力将因 COVID-19 疫情产生的国家新需求纳入 CTCN 的服务，为此举办了专门的网络研讨会(例如关于 COVID-19 废物的无害环境管理的网络研讨会)，或将 COVID-19 应对措施纳入现有的技术援助和能力建设活动，特别是民间社会组织和社会企业家的知识共享。然而，疫情对筹款产生了影响，因为许多捐助国面临国内问题，而且丹麦筹款圆桌会议从 2020 年推迟到 2021 年举行。

B. 效力

24. **绩效**：除下文所述的一些组成部分外，CTCN 的成效，与 PSP 区域中心的成效一样，被评为令人满意。CTCN 的绩效得到普遍认可，CTCN 被确定为避免、最大限度地减少、应对气候变化不利影响相关损失和损害的圣地亚哥网络的备选运营方。[21] 然而，CTCN 的业务目标似乎主要是根据过去的成果和预算限制确定的，而不是根据改进的潜力确定的。

25. **技术援助**：虽然国家指定实体和受益者对 CTCN 技术援助的总体满意度相对参差不齐，但其他业绩指标表明技术援助活动是有效力的。在大多数情况下，CTCN 的技术援助项目、方案、战略和技术研究达到或超过了目标数。例如：

(a) 自 2017 年以来，制定中的技术援助应对计划数目每年在 30 至 50 个之间波动，除 2017 年外都在年度产出的目标区间内。尽管如此，年度目标产出从 2017 年的 50-70 降至 2019 年的 30-40(见表 7)；

(b) 技术援助请求的地域覆盖面与 CTCN 优先考虑最不发达国家和其他易受影响国家的任务相匹配。截至 2020 年 12 月 31 日，100 多个非附件一缔约方得到了 CTCN 的技术援助，在有国家指定实体的非附件一缔约方中，只有 32 个没有得到 CTCN 的技术援助；

(c) 与第一次独立审查类似，第二次审查发现，国家指定实体和受益者的技术援助请求大多得到了满足，并在能力和技能方面调动了适当的资源。利益攸关方之间的有效沟通和协调为实施工作提供了便利(见附件七 B 章第 4 节)。

26. 技术援助的成功可以从几个方面来解释：

[20] Olsen KH. 2020. *Climate Technology Centre and Network Transformational Impact Assessment*. Copenhagen: UNEP DTU Partnership.

[21] 根据第 2/CMA.2 号决定第 43 段设立，作为气候变化影响相关损失和损害华沙国际机制的一部分。

(a) 使用明确且执行良好的遴选标准，这些标准对于指导和优化申请审批过程至关重要；

(b) CTCN 孵化器方案已得到实施，但一些国家仍然缺乏编制项目和确定需求的能力和资源。尽管如此，国家指定实体大力支持拟订技术援助请求，[22] 国家指定实体与 CTCN 之间进行了有益的互动。CTCN 收到的申请 100%被认为符合条件，这些申请的质量看来非常高，这意味着在申请过程中得到国家指定实体和 CTCN 的支持是有成效的；

(c) 在整个项目生命周期中利用适当的专门知识，并在确定和规划阶段与当地利益攸关方进行有效协商(见附件七 B 章第 2 节)。[23]

27. 经确定，与技术援助有关的主要困难是，与实地现实和各国的期望相比，预算有限，另外，在执行伙伴互动和监测方面效率低下(例如遴选过程中的拖延和缺乏透明度)。

28. 技术援助请求往往偏向缓解目标，类似于在第一次独立审查期间和 PSP 区域中心看到的情况，在解决适应问题方面面临挑战(见图 6)。[24]

29. **沟通和外联**：CTCN 的沟通和外联是有效的，这要归功于有条理的做法和敬业的人员。有几种沟通方式便于向利益攸关方以及更广泛的受众提供清晰有用的信息。值得注意的是，CTCN 在社交媒体上的表现超出了预定的目标。此外，利益攸关方认为 CTCN 网站有了很大改进。利益攸关方还指出，CTCN 的情况介绍，特别是关于其影响力的介绍，得益于监测和评价系统以及知识管理系统的改进。然而，关于 CTCN 服务，人们注意到技术转让的定义和 CTCN 在技术转让方面的工作范围不够明确。CTCN 的支持侧重于与技术知识、方法和做法(软件)有关的事项，但一些利益攸关方希望支持也能涵盖设备方面(硬件)。

30. **知识管理系统**：自第一次独立审查以来，知识管理系统已经过调整，更多地注重支持性基础设施和搜索引擎优化，对载有连接外部数据库的资源的网页进行了审视，删除了运行不当的网页。CTCN 网站的内容现在更稳定，更有针对性，更易于查询。在线工具和信息材料数量从 2018 年的 17,100 份减少到 2019 年的 16,650 份，以提高清晰度和相关性。[25] 为知识管理系统作出贡献的知识合作伙伴数目保持不变，在目标范围内，2017 年至 2019 年期间系统网站的年访问量远高于目标，尽管在 2018 年有所减少。

31. **能力建设**：利益攸关方非常积极地看待能力建设活动和联网活动，2020 年几乎所有能力建设和扶持性环境目标都已实现(见图 15)。[26] 2017 年至 2019 年与同行学习、能力建设、外联、联网和利益攸关方参与有关的指标评级喜忧参半，

[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. 可查阅 https://www.dbpia.co.kr/Journal/articleDetail?nodeId=NODE10490630。

[23] 如上文脚注 22 所示。

[24] FCCC/SBI/2019/7, 第 112 段。

[25] CTCN 文件 AB/2020/15/6, 可查阅 https://www.ctc-n.org/advisory-board/meetings。

[26] 唯一没有实现的目标是 CTCN 知识平台上提供的技术说明、出版物、国家计划和其他信息资源的数目。

但总体仍然是好的。[27] CTCN 对第一次独立审查的建议作出了部分回应，继续为国家指定实体进行定期培训，并通过区域论坛和孵化器方案为请求的编制提供便利：

(a) 举办区域论坛。举办的论坛数目 2017 年至 2019 年期间没有增加，但在 2020 年比 2019 年翻了一番多(见附件七 B 章第 5 节)；

(b) 与其他协调中心和网络成员建立联系，但 CTCN 国家指定实体与其他协调中心仍然缺乏互动和合作(见上文第 18 段)。与网络成员的关系往往被认为是积极的，接受调查的网络成员中有 60%表示，其国家指定实体在它们与最终受益者之间发挥了有效的协调作用，15%不同意这一说法。

32. **监测和评价**：CTCN 与技术执行委员会协调，并在美国国际开发署的无偿支持下，审查了其监测和评价系统，以提高其报告的一致性，更好地展示 CTCN 活动的效力并衡量其影响力。[28] 2020 年的结果在 CTCN 咨询委员会第 17 次会议上公布。新的监测和评价系统于 2020 年启动，许多指标和衡量结果仍无法与以前的指标和衡量结果进行比较。在编写本报告时，已经为 2019 年和 2020 年完成的 24 项技术援助申请提供了一些影响指标的结果(预计温室气体排放量、预计受益人数和预期杠杆资金)，并收到了工作完结报告。仍然需要进一步质量保证检查的数据没有被考虑在内。由于没有完成情况报告，没有对第一个工作方案的目标实现程度进行正式分析。第一次独立审查只涵盖第一个工作方案期间的一部分工作，唯一的年度分析是通过联合年度报告或年度业务计划对照目标分析进展情况(见附件七 B 章第 6 节)。

C. 效率

33. **CTCN 咨询委员会**：过去几年来，咨询委员会会议的整体效率有了提高，这是由于各位成员在各次会议之间更经常地互动，建立了新的沟通渠道(包括分组和工作队)，并更加重视技术问题而不是政治问题。CTCN 处理其活动和财政资源的透明度有了提高，问责制得到了加强，但可以让咨询委员会成员更全面地了解 CTCN 面临的业务挑战和组织挑战。这将使咨询委员会能够与 CTCN 秘书处合作加强服务，并作为该组织在相关国家的大使支持其筹资活动。

34. **资源调动**：缔约方会议和环境署的谅解备忘录规定，气候技术中心应与环境署协作，并与 CTCN 咨询委员会协商，帮助调集资金，以支付与 CTCN 相关的费用。缔约方会议第二十四届会议赞赏地欢迎 CTCN 为履行其职能调动额外资源的努力，[29] 缔约方会议第二十五届会议请 CTCN 加强这些努力并进一步使其资金来源多样化。[30] 尽管 2018 年订有资源调集战略，但 CTCN 没有完全实现最初的目标，筹资仍然是一个挑战。总体而言，预算增加的目标没有实现。例如，第二个工作方案的目标是在 2020 年使资金总额超过 1,400 万美元，但只筹集了大约 1,250

[27] 2017 年至 2019 年期间，CTCN 主办或支持的专题活动、专题方案培训班和国家活动的数目大幅增加，但同期借调人员、参加孵化器方案的新国家、举办的区域论坛、接受培训的国家指定实体和举办的网络研讨会的数目减少或保持不变。

[28] CTCN 文件 AB/2020/15/2.2.

[29] 第 13/CP.24 号决定，第 11 段。

[30] 第 14/CP.25 号决定，第 26(a)段。

万美元(见图 19)。CTCN 资金来源多样化没有达到预期的程度，捐助者的捐款仍然不足(见附件七 C 章第 4 节)。资源调集战略中设想的“菜单办法”看来无法全面推出。CTCN 资金筹集在过去四年的变化概况如下：

(a) 关于 CTCN 的核心业务预算(来自双边捐助者和主办机构多方捐助者信托基金)，在过去三年中每年 1,000 万美元的目标没有达到。资源调集战略提出的年度目标是争取到 20 个捐助者(在 2020 年年度业务计划中降至 10 个；见图 32)，2018 年有 7 个捐助者，2019 年有 5 个，2020 年有 8 个。绿色气候基金的捐款大幅增加。奥地利、日本和大不列颠及北爱尔兰联合王国政府确认它们打算资助 CTCN 在 2021 年的活动，[31] 丹麦政府于 2020 年与 CTCN 签署了供资协定，并已提供了第一笔资金；

(b) 实物或无偿支持增加，缔约方向 CTCN 秘书处提供工作人员或直接实施技术援助项目。2018 年资源调集战略中确定的每年 200 万美元的目标没有达到。这一目标在 2020 年年度业务计划得到了修订(改为 50 万-100 万美元)，经修订的目标得以实现。2020 年，CTCN 秘书处阐述了对待无偿和实物捐助的做法，并汇编了相关经验教训；[32]

(c) 与多边开发银行的合作有了改善，但在 2017-2020 年 CTCN 未获得额外资金。2020 年，开始与欧洲复兴开发银行、伊斯兰开发银行和联合国各机构讨论共同筹资机会、联合方案拟订和技术援助执行事项；[33]

(d) 最近出现了新的关键资金来源，适应基金和国家自主贡献伙伴关系同意捐款。[34]

35. **透明度和问责制**：现已作出努力确认捐助者的捐款，CTCN 现在在网上展示供资和捐助者协议。[35] 尽管如此，一些捐助者仍然对其捐款的使用和影响力缺乏清晰度和透明度表示关切。经修订的监测和评价系统的运作预计将加强对 CTCN 影响力的报告和评价工作，并进一步改进问责制。

36. **预算编制**：CTCN 的供资情况仍然缺乏规律性和可预测性，资金往往被指定用于特定活动或地理区域(见图 20)。如果捐助者提出要求，未指定用途的资金将分配用于特定任务。这些条件以及随之而来的灵活性的缺乏使 CTCN 的资金管理变得复杂，影响了 CTCN 对国家驱动的需求作出反应的能力。此外，现无专门框架允许从资金机制向 CTCN 划拨资源，CTCN 提供免费服务(例如，没有网络成员费、活动费或技术援助费)，不会有自己的资金资源。CTCN 主要依靠少数捐助者的认捐，捐助者很容易受到其战略或宏观经济环境变化的影响(例如，COVID-19 大流行导致一些捐助者认捐额减少)。因此，CTCN 的财政自主性和可持续性可以说是相当有限的。

37. **资源分配**：对预算和支出的比较显示，在过去四年中，CTCN 的活动平均有 25%未能开展，2020 年有改善。这主要是因为缺乏强有力的规划和执行监测系

[31] CTCN 文件 AB/2021/17/15.1.

[32] FCCC/SB/2020/4.

[33] CTCN 文件 AB/2021/17/2.2, 第 22 段。

[34] CTCN 文件 AB/2021/17/15.1.

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

统，在与联盟合作伙伴达成的项目协作协议框架内计划于 2015 年交付的一些成果没有按预期交付(就活动和承付额而言)。但 2020 年提供技术援助很多，这一年是 CTCN 基本按照年度业务计划(见表 13)所列全额预算交付成果的第一年。[36] 2019 年以来收到许多请求，绿色气候基金 17 项技术援助提案的资金获得批准，增加额超过了由于 COVID-19 大流行带来的不确定性而造成其他服务领域的缺口。2020 年支出的增加还归因于其他因素，如按照年度业务计划更有重点地开展规划和执行工作，CTCN 咨询委员会与捐助者之间更好地协调，CTCN 主办方在财务协调和采购方面提供了更多的支持。[37]

38. **管理结构**：CTCN 不是一个法人实体，但作为技术机制的执行机构，通过附属机构向缔约方会议报告工作。[38] CTCN 由两个共同主办方管理：环境署(气候技术中心的主要主办方)和工发组织(气候技术中心的共同主办方)。因此，CTCN 的管理结构对于如此规模的实体来说是相当复杂的。这三个机构之间的协调可以得到改善，这可以减少相关行政工作量。工发组织注意到在与气候技术中心秘书处持续互动方面面临的困难。CTCN 的资源分布在环境署和工发组织的账户上，这一情况实造成行政和沟通方面的困难。结果，CTCN 的一些战略和业务决定，例如与第二个工作方案有关的决定，被认为没有充分考虑到主办机构的情况。不过，主办机构代表参加了 2018 年 8 月 16 日和 17 日举行的第二个工作方案规划会议，向会议提出了意见。主办方项目文件修订版被认为为 CTCN 的管理结构(角色和责任的分配以及问责)提供了一个强有力的、明确的框架，并简化了行政程序。主办机构在支持 CTCN 履行任务方面发挥了重要作用，CTCN 有机会充分利用主办机构的能力和网络。

39. **气候技术中心秘书处**：气候技术中心秘书处的人力资源有限(不到 10 名相当于全职的工作人员)，但在长期和临时咨询人的协助下，为取得许多成就奠定了基础。虽然总的人力资源在 2017 年至 2019 年期间有了增加，但由于疫情带来的招聘不确定性，人力资源在 2020 年减少。但是，CTCN 如果要向越来越多的国家提供上游援助，帮助它们编制请求，同时对其活动进行下游监测，并采取和后续行动，将需要更多的时间和技术资源。

40. **区域组织**：CTCN 在区域层面的新组织安排被认为非常有助于提高 CTCN 业务效率，促进与国家指定实体更好沟通和协调，加强对技术援助请求的支持，增进与私营和机构利益攸关方的关系。这种改进是在 2020 年进行的，当时三名工作人员开始在肯尼亚区域中心(由环境署主办)、墨西哥区域中心(由工发组织主办)和泰国区域中心(由环境署主办)工作。[39]

41. **联盟合作伙伴**：联盟合作伙伴在 CTCN 建立和运作方面发挥了关键作用，但在过去两年中，其作用一直在减少。这使希望参与 CTCN 工作的联盟合作伙伴感到失望，这些合作伙伴往往比一般网络成员更大程度上参与 CTCN 的工作。环境

[36] CTCN 对照其 2020 年年度业务计划的业绩实现率为 108%，财务执行率为 93%，原因是前几年未清偿承付款结清导致 2020 年出现负支出约 147 万美元；见 CTCN 文件 AB/2021/17/15.1。

[37] FCCC/SB/2020/4, 第 130 段。

[38] 第 1/CP.16 号决定，第 126 段。

[39] FCCC/SB/2020/4, 第 118 段。

署表示，它将与联盟合作伙伴讨论澄清它们在工作方式和合同方面不断变化的作用，并确定继续让它们参与并受益于它们的专门知识的方法。

42. **网络成员**：网络的规模在过去几年中大幅扩大(根据目标，从 2017 年的 400 名成员增加到 2020 年 12 月的 605 名成员)，[40] 来自发展中国家的成员也有了增加。这一趋势形成的原因是，成员要求简单灵活(网络成员参与和不参与的主要原因见附件七 C 章第 12 节)。网络成员作为技术援助实施方的作用正在加强，2020 年 75%新的技术援助请求项目由网络成员实施，而 2017 年这一数字为 60%。[41] 这尤其是因为对技术援助提案采取了两阶段招标程序，而且 CTCN 定期向网络成员提供的关于这些提案的反馈。CTCN 和网络成员之间的关系在很大程度上是中心辐射型的。CTCN 正在努力更多地利用其广泛的网络带来的好处，但网络成员之间的协同效应仍然有限。2019 年进行了一项调查，了解到网络成员有兴趣更多参与联网、知识共享、国家活动和配对活动，在此基础上拟订了一项行动计划。[42] 2020 年，气候技术中心发起了新的活动，成员可以借此提供专门知识并从协作中受益。这些活动包括有针对性的网络研讨会、技术诊所、区域技术简报、公益研究和青年气候创新实验室。

43. **国家指定实体**：在对参与 CTCN 工作的分析中，对附件一缔约方国家指定实体与非附件一缔约方国家指定实体作了区分。

(a) 非附件一缔约方国家指定实体(CTCN 服务的受益方)：根据第一次独立审查的建议，CTCN 加强了对国家指定实体的定期培训，同时为编制服务请求提供便利，并加强与国家其他协调中心的伙伴关系。非附件一缔约方国家指定实体中有半数表示，它们在履行职责方面得到了 CTCN 的支持。半数实体指出缺乏履行其职责所需的资源(按重要性排序为财力、物力和人力)，但向国家指定实体提供资源不属于 CTCN 的任务范围。缺乏资源的主要原因是，国家指定实体的承诺取决于其国家政府是否愿意投资于能够使其国家受益于 CTCN 服务的活动(例如，提交技术援助请求和提出援助请求)。此外，利益攸关方对国家指定实体作用的认识似乎仅限于与《气候公约》有关的体制安排的代表，除非这些实体参与了技术援助服务。总体而言，仍有必要让政府和私营部门更多了解国家指定实体(见附件七 C 章第 13 节)；

(b) 附件一缔约方国家指定实体：根据第一次独立审查的建议，CTCN 重发了 CTCN 咨询委员会在第三次会议上认可的关于附件一缔约方国家指定实体的作用和责任的指导意见，[43] 内部捐助者报告规程的更新版列入了关于这些实体参与的系统方法。对这些实体来说，其作用和任务比四年前更加明确，但对 CTCN 的其他利益攸关方来说仍然不清楚。

44. **成本效益**：CTCN 的成本效益可以被认为是高的，因为它提供的服务是基于国家驱动的需求，而不是标准化的，不是小规模的。CTCN 设法在不增加整体人力资源的情况下发展其组织结构和技能(相比之下，非洲开发银行区域中心需要

[40] FCCC/SB/2020/4, 第 119 段。

[41] FCCC/SB/2020/4, 第 101 段。

[42] FCCC/SB/2020/4, 第 100 段。

[43] CTCN 文件 AB/2014/3/3, 可查阅 https://www.ctc-n.org/sites/www.ctc-n.org/files/annex_1_ national_designated_entities_-_roles_and_responsibilities.pdf。

比预期更加多样的职能，也需要更多的资源)。[44] CTCN 采用招标程序，可选择最具经济优势的供应商实施技术援助项目，同时在众多网络成员中加强竞争。减少内部资源将靠限制项目规模和预期产出或取消一些计划中的活动，从而影响产出以及交付成果的数量和质量。改进的空间在于更好地利用网络成员(特别是技术提供商)、发达国家指定实体、CTCN 咨询委员会成员和主办机构的参与。CTCN 要进一步提高其成本效益，至关重要的是继续建设区域利益共同体，美洲开发银行 PSP 区域中心的成功就是一个例证，[45] 该中心在特定领域与主要区域机构建立了伙伴关系，调动了私人和公共投资，并支持各项区域举措协同增效作用。[46]

D. 影响和可持续性

45. **影响衡量**：正如在第一次独立审查中指出的那样，考虑到 CTCN 项目的性质，定量评估 CTCN 的影响力可能非常具有挑战性。CTCN 的活动引发系统性的、但不是瞬间可见的变化。不可能将 CTCN 的成果与 PSP 区域中心的成果进行比较，因为后者无法在第二次审查期间加以评估。[47]

46. 在 CTCN 预算范围内进行事后评价的初步努力包括：

(a) 技术执行委员会和 CTCN 联合与国家指定实体联系，了解其活动的长期影响的反馈意见。这样的活动计划每两年举行一次；

(b) CTCN 委托环境署与丹麦技术大学伙伴关系机构根据气候行动透明度倡议方法进行变革性影响评估，从选定的技术援助和能力建设方案获取影响力数据；

(c) CTCN 2021 年的预算包括利用事后调查数据对选定的技术援助项目进行扩展分析的资金，该调查因疫情而推迟到 2022 年。

47. 虽然新的监测和评价系统[48] 预计将有助于了解 CTCN 的影响力，但与影响相关的关键绩效指标似乎是预期性的，而不是观察或衡量的结果(例如，预期的资金杠杆和预期的排放量减少)。变革性影响评估指出，即使对预期成果加以估计量化，仍然没有实现这些成果的明确时间表或中间步骤。

48. **创新**：CTCN 通过其第二个工作方案和最新的年度业务计划，更加注重研究、开发和示范，并启动了青年气候创新实验室等新方法和新行动(见附件七 D 章第 1 节)。虽然在审查期间，CTCN 正在正式确定加强发展中国家创新制度的标准化办法，但该办法还不够成熟，无法对其进行评价(见附件七 D 章第 2 节)。2020 年的创新成果表明，制定的每一项目标都超额完成(见图 23)。

49. **创新－变革**：CTCN 技术援助项目规模较小，往往代表着迈向更大规模项目的初步步骤，并支持决策，而不是导致实际技术实施。CTCN 的主要作用被视为

[44] FCCC/SBI/2019/7.

[45] 该中心的能力建设活动侧重于国家指定实体的作用、工作方法和将无害环境技术纳入气候变化规划主流的最佳做法，该中心正在实现或超过其目标。

[46] FCCC/SBI/2019/7.

[47] FCCC/SBI/2019/7.

[48] 面向执行伙伴和和指定国家实体的详细准则已经拟订，为报告定量和定性核心指标提供了标准化方法(见文件 FCCC/SB/2020/4)。

通过能力建设活动和筹备工作为技术转让项目创造有利环境。变革性影响评估的结论是，技术援助本身并不推动或促进某特定技术早日采用或推广进程，而是通过对特定技术重点进行必要的研究、开发和部署或创新，为这些进程奠定基础，然后可以予以采用和推广。CTCN 主要扮演着技术外包的配对角色，在技术研究、开发、示范、融资和推广阶段作用较为有限。[49] 在接受调查的相关方中，只有 34%的国家指定实体、33%的受益者和 46%的网络合作伙伴、知识合作伙伴和网络成员(见上文第 11(b)(三)段)认为，CTCN 的活动加强了创新技术及相关知识和专门知识的部署和传播(见附件七 D 章第 3 节)。

50. **实施－技术需要评估和技术行动计划：**虽然 CTCN 已将技术需要评估和技术行动计划纳入其技术援助、能力建设和学习材料的规划，但一致性努力似乎还不够深入。2020 年对环境署－全球环境基金项目技术需求评估第二阶段的评价[50]认为，CTCN 对该项目的参与度不足，其努力仅限于参与和举办组织区域研讨会，这种参与在国家层面的影响是不够的，采取更加积极主动的态度将是非常有益的。尽管如此，2020 年获得 CTCN 支持实施技术需要评估和技术行动计划的国家数目的目标还是得以实现(28 个国家；目标是 15-20 个)。此外，技术执行委员会的一份简报[51] 指出，CTCN 的咨询(培训和帮助制定试点项目以及为供资提案编写概念说明)是成功落实技术需要评估成果的关键因素(见附件七 D 章第 4 节)。

51. **实施－发展中国家适应气候变化的发展和温室气体排放的减少：**总体而言，对国家指定实体调查作出答复的 62%的国家指定实体认为，技术援助能支持或影响可能导致减少或避免温室气体排放的活动。然而，由于在第二次独立审查时缺乏适当的数据，实际的潜在减排量尚未予以估算。作为新的监测和评价系统的一部分，技术援助完结报告中包括的指标[52] 对于估算 CTCN 活动对温室气体排放的影响至关重要，但这种估算仍然取决于实施者的资源和时间。国家指定实体表示，大家十分积极地看待 CTCN 技术援助服务对减缓和适应气候变化产生持续影响的可能性(见图 34)，主要方式是帮助提高生计应对气候变化的能力，减轻经济脆弱性，增强生态系统抵御气候引起的干扰的能力(见图 35)。[53]

52. **扶持性环境：**在对国家指定实体调查作出答复的国家指定实体中，总共有 81%表示，其国家已经落实了 CTCN 技术援助的建议(例如，与提交供资提案和政策执行有关的建议)。图 27 显示，技术援助有助于在若干方面创造扶持性环境，包括信息和提高认识、技术开发和转让的政策和监管环境以及采用、传播或推广气候技术的体制能力。例如，技术援助有助于应对政策挑战，帮助制定政策草案

[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.可查阅 https://www.mdpi.com/2071-1050/12/19/7956。

[50] 环境署，2020 年，《环境署/全球环境基金项目“技术需求评估第二阶段”的最终评价》，内罗毕：环境署。可查阅 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] 技术执行委员会，2020 年，《加强技术需求评估结果的落实工作》。波恩：技术执行委员会。可查阅 https://unfccc.int/ttclear/tec/meetings.html。

[52] 例如，每年或在项目的整个生命周期内，由于技术援助而减少或避免产生的预计二氧化碳公吨当量。

[53] 技术援助服务帮助提高健康水平和福祉、增强粮食安全和水安全、打造能抵抗气候破坏的基础设施和建筑环境的作用似乎有限。

(例如关于农林和地热能)，加强当地农民或当地广播电台广播农业气象数据的能力，并促进将气候技术纳入国家自主贡献的落实活动。总体而言，与 PSP 区域中心相比，CTCN 对创造扶持性环境的作用更大。非洲开发银行区域中心为政策和监管战略得以通过而提供直接支持的活动进展尤其缓慢。[54]

53. **能力建设和提高认识**：变革性影响评估证实，技术援助通常能提高政府行为方的认识。然而，评估也发现，很少有措施直接尝试促进行为变化，并调整与持续变革相关的社会规范。能力建设被认为能增强政府代表、开拓性私营部门、非政府组织、民间社会组织等关键行为体推动变革性措施的能力。

54. **协作和利益攸关方参与**：2020 年的协作和利益攸关方参与结果(参见图 29)显示，该领域的所有目标都已实现或超过。在这一领域也注意到很好的例子。[55] 对调查问卷作出答复的国家指定实体和受益者也证实了这一点(见上文第 11(b)(三)段)。他们认为，CTCN 扎实地帮助与当地组织(公共或私营)以及与国际组织、机构和倡议的互动、合作和伙伴关系。然而，他们也认为，CTCN 对协作和利益攸关方参与的贡献没有其对创造扶持性环境的作用那么大，而且参与往往局限于政府，而不是受益者、私营部门利益攸关方、企业家等行为者。

55. **私营部门参与**：正如 CTCN 一份关于公私伙伴关系的文件[56] 所强调的那样，尽管接近半数网络成员(49.5%)来自私营部门(主要是中小企业)，但目前在其项目中私营部门参与度很低。根据 CTCN 的一项分析，网络只有 9%的私营部门成员参与了技术援助项目，主要集中在技术周期的后期阶段。为了促进私营部门的参与，CTCN 正在专门为“休眠”的私营部门成员开展创新活动，为当地中小企业提供支持(如技术诊所、青年气候创新实验室)，并将其技术援助数字化。数字技术可以提高信息透明度，提高自动化程度，并使网络的私营部门成员之间能够直接互动。私营部门公司有兴趣支持 CTCN 的具体项目，但公司愿意投资的项目往往规模较大，而 CTCN 的项目需求较小(少于 25 万美元)，在使两者相匹配方面仍然存在障碍。此外，与私营实体签订供资伙伴关系协议的尽职调查过程通常被认为过于冗长。

56. **支持－技术支持**：约半数的调查问卷答复者(见上文第 11(b)(三)段)认为，CTCN 的活动为利益攸关方提供了评估可转让技术的途径、工具和手段；支持制定国家或部门气候技术计划；并提高利益攸关方支持、规划和监测气候技术开发和转让的能力(见图 30)。此外，在对国家指定实体调查作出答复的实体中，超过 80%的实体认为，国家利益攸关方落实了 CTCN 关于加强本国技术开发和转让的建议(见图 31)。[57]

[54] 关于就国家政策和方案向各国提供的支持和咨询，非洲开发银行在通过的国家或区域清洁能源政策和战略方面得分较低，表明其目标实现的可能性小(见 FCCC/SBI/2019/7 号文件)。

[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. 可查阅 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. 可查阅 https://www.mdpi.com/2071-1050/13/6/3185。

[57] 第一个工作方案的一个目标是到 2018 年底促进制定 50-75 项国家和部门技术计划，与此相关的数据尚缺，无法予以审查。第二个工作方案的一个目标是每年帮助 450-500 个利益攸关方增强开发、转让和部署气候技术的能力。同样，关于目标实现的信息尚缺。

57. **支持－杠杆融资**：技术援助总额约为 80 万美元，2020 年杠杆融资超过 2 亿美元，[58] 杠杆融资有成功的例子，[59] 尽管如此，利益攸关方认为 CTCN 对市场条件优化和额外资金杠杆利用的贡献相当有限。在回复国家指定实体调查的国家指定实体中，只有半数认为技术援助有助于以杠杆手段利用额外的资金或投资。同样，在对调查作出答复的国家指定实体中，只有 41%(见上文第 11(b)(三)段)认为 CTCN 的活动便利获得额外资金，例如在 CTCN 举办活动之后获得外部资金(见图 33)。

58. **共同利益**：技术援助项目的实施产生共同利益，国家指定实体调查(见图 36)和气候行动透明度倡议变革试点案例研究都重点反映了这一点，[60] 都表明 CTCN 提供的技术援助在以下方面产生的影响是积极的或非常积极的：

(a) 通过对民众的社会福祉、性别平等的进步和人权的重大积极影响，产生社会影响；

(b) 通过创造就业机会对经济产生影响；

(c) 通过帮助加强能源安全，对市场产生影响；

(d) 通过加强环境保护和保障措施，对环境产生其他影响。

59. **性别平等**：性别平等现已通过《2019-2022 年性别政策和行动计划》全面融入 CTCN 任务。[61] 作为第二次审查和国家指定实体调查的一部分工作进行的访谈证实，CTCN 在其治理结构、业务以及监测和评价系统方面已经深入执行该计划。相关行动的实施也已相当深入。变革性影响评估发现，技术援助一般能敏感注意性别问题，因为援助项目在编制时已考虑到性别层面，不会加剧先前存在的性别不平等。然而，由于在措施实施期间或实施之后，对性别平等的障碍没有直接减少或消除，因此措施可予以加强，使其能敏感注意性别问题。

60. **可持续性**：调查(见上文第 11(b)(三)段)表明，利益攸关方对 CTCN 影响力的可持续性持非常积极的态度，81%的国家指定实体、77%的受益者和 71%的联盟合作伙伴、知识合作伙伴和网络成员认为 CTCN 服务具有长期或可持续的影响力。此外，81%的国家指定实体、78%的受益者和 67%的联盟合作伙伴、知识合作伙伴和网络成员认为，CTCN 提供的服务类型可以在其他层面或其他部门复制。

四. 结论

61. 在咨询公司看来，CTCN 有效实施方面的主要成就如下：

[58] CTCN 文件 AB/2021/17/14.1, 表 8。

[59] 环境署，2020 年，区域技术简报：亚洲太平洋。哥本哈根：环境署。可查阅 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. 可查阅 https://climateactiontransparency.org/wp-content/uploads/2020/12/Transformational-Change-Case-Study-Tonga.pdf.

[61] CTCN，2019 年，2019-2022 年 CTCN 性别政策和行动计划。哥本哈根：CTCN。可查阅 https://ctc-n.org/resources/ctcn-gender-policy-and-action-plan-2019-2022。

(a) 利益攸关方认可这一需求驱动机制的**附加值**，该机制根据《气候公约》具有体制合法性，具有丰富的部门专门知识，灵活敏捷，反应能力强，在通过支持小项目来填补缺口方面具有实力，同时又不与类似的中心或举措相竞争；

(b) **机制的工作方案不断改进**，第一次独立审查中提出的大多数建议和缔约方会议的指导意见已在第二次工作方案中得到考虑；

(c) COVID-19 **危机得到妥善管理**，每个项目最终都得到实施，CTCN 服务的连续性得到保证，专门应对疫情的工作被纳入了现有技术援助、能力建设和知识分享活动之中；

(d) **沟通和外联服务有了改进**，例如，知识管理系统的内容被认为更加稳定、更有针对性、更易于查阅；

(e) CTCN **与以下实体之间的战略协作**有了改善：

(一) CTCN 咨询委员会，更多重视技术问题而不是政治问题，其成员在各次会议之间更经常互动，并建立新的沟通渠道(包括分组和工作队)；

(二) 资金机制经营实体，通过举办活动和研讨会，加强国家指定实体、国家指定主管部门和全球环境基金协调中心之间的协作；由绿色气候基金准备和筹备支持方案资助技术援助；对项目开发人员进行培训，帮助编写向绿色气候基金提交气候技术相关资金申请；

(三) 技术执行委员会，将更多联合活动纳入各自工作方案，增加信息共享；

(f) 利益攸关方认为，**气候技术中心秘书处新的区域安排**效率更高，因为这种安排改进了与国家指定实体的协调，加强了对技术援助请求的支持，并增进了与相关国家和区域行为者的关系；

(g) **考虑到** CTCN **提供的服务类型**(基于国家驱动的需求的小规模、量身定做的服务)，CTCN **的成本效益被认为是高的**；减少内部资源将靠限制项目规模和预期产出或取消一些计划中的活动，从而影响产出以及交付成果的数量和质量；

(h) **对变革的推动作用**可能具有持续性，靠的是提供信息、提高认识、加强政策和监管框架、帮助体制能力发展；

(i) **预期在适应和缓解气候变化影响方面可产生积极影响**，尽管由于服务的性质和事后评价资源有限，无法估计实际影响；

(j) 根据利益攸关方观察或预期，能产生**社会经济共同利益**，在经济福祉、性别平等和人权方面特别如此。

62. 在咨询公司看来，CTCN 有效实施方面的主要挑战如下：

(a) 考虑到缔约方会议授权的服务范围广泛，CTCN 可获得的**财政资源有限**；

(b) 正如在第一次独立审查期间注意到的那样，**资源调动仍然是一项挑战**，尽管绿色气候基金和适应基金最近增加了供资，但预期的财政资源多样化并未完全达到最初的目标；

(c) **资源的分配是务实的，但预算受到限制**，原因是缺乏可预测性，而且带条件的和指定用途的资金比例很高；

(d) CTCN 由环境署与工发组织合作主办，使 CTCN 在很大程度上受益，在互补的专门知识和网络方面特别如此，但 CTCN **管理结构面临行政和沟通方面的挑战**；

(e) 国家指定实体表示，它们**缺乏与 CTCN 互动的资源**(虽然这超出了 CTCN 的直接任务范围)，尽管 CTCN 提供了能力建设支持；

(f) 国家指定实体、网络成员、全球环境基金业务协调中心和绿色气候基金国家指定主管部门之间**协作有限**(后者因为 CTCN 准备项目增加，协作有限的情况没有那么突出)，原因是战略观点不同，人际交往和了解有限(部分原因是工作人员更替)，尽管 CTCN 安排了联网活动；

(g) CTCN **没有充分利用其广泛的网络**，网络成员之间的协同作用有限。

五. 建议

63. 咨询公司为改善 CTCN 业绩提出了 7 项建议，详见下文第 64-70 段。

A. 筹资

1. 建议 1：鼓励气候技术中心与环境署协作，并与 CTCN 咨询委员会协商，进一步加强资源调动，以支付与 CTCN 有关的费用

64. 缔约方会议决定，与气候技术中心和网络服务有关的费用应由各种来源提供资金，包括：资金机制；双边、多边和私营部门渠道；慈善来源；主办组织和网络参与者提供的财政和实物捐助。[62] 在过去四年中，许多缔约方提供了财政资源，使 CTCN 能够充分运作，并按照缔约方会议的授权履行其职能，开展活动。关于资金机制的支持，CTCN 最近从绿色气候基金和适应基金获得的资金有了增加。如果获得额外资源，CTCN 可以向发展中国家缔约方提供更多的技术支持。鼓励气候技术中心与环境署合作，并与 CTCN 咨询委员会协商，进一步使其资金来源多样化，例如，考虑到执行其先前相应战略和其他组织的经验教训，对其资源调集战略进行审查，使其更具战略性，更加切合实际。此外，气候技术中心还可考虑加强一名专职副主任的作用，为此增拨资源，或任命高级咨询人，负责加强和构建与资金机制各经营实体的关系；拓展机会，使 CTCN(通过 CTCN 区域经理或国家指定实体)进一步与全球环境基金受援国联络中心互动，确定、编制、认可 CTCN 项目，参与项目实施；加强 CTCN 服务的营销推广(宣传成果、展示影响力等)。

2. 建议 2：鼓励 CTCN 划拨专用资源，继续努力对技术援助进行定期事后影响评价

65. 如果 CTCN 能更全面地展示其技术援助在气候变化问题上的长期影响力和社会经济共同利益(包括与性别有关的问题)，那将是有益的。尽管正在作出努力(例

[62] 第 2/CP.17 号决定，第 139 段。

如，由于 COVID-19 大流行，对列入 2021 年预算的选定技术援助的扩展分析推迟到 2022 年)，但对实际影响力(而不是目前衡量的预期影响力)的估计以及事后评价资源有限。这项建议可在项目实施三至四年后根据项目抽样加以实施，由独立第三方(通过专用预算项目)或由内部专职工作人员实施。

B. 治理和组织

1. 建议 3：鼓励 CTCN 使主办机构与 CTCN 秘书处之间的沟通更加顺畅

66. 调查发现，CTCN 共同主办方(环境署和工发组织)与哥本哈根 CTCN 秘书处加强信息交流有助于改善 CTCN 管理结构。因此，建议进一步改善主办机构与 CTCN 秘书处之间的沟通。环境署作为 CTCN 和 CTCN 信托基金的主办方，尤其应想方设法确保 CTCN 的所有资源都用于其信托基金。

2. 建议 4：鼓励 CTCN 进一步与网络成员互动并改善网络成员之间的协同作用

67. CTCN 应进一步与网络成员互动并改善网络成员之间的协同作用，以便充分利用网络成员宝贵的部门专长和地域专长，更高效地提供服务。建议 CTCN 在其咨询委员会的指导下，制定并实施网络参与计划。

3. 建议 5：鼓励 CTCN 加强努力，促进国家指定实体之间的积极合作，并加大力度支持国家指定实体的能力建设，以改善技术援助

68. 鼓励 CTCN 加强附件一缔约方和非附件一缔约方的国家指定实体之间的协作，加强非附件一缔约方国家指定实体的能力建设，特别是提高其在政府机构和私营部门中的形象，并监测技术援助项目的执行情况和技术援助建议的落实情况。国家指定实体确定的主要困难之一是编制技术援助请求。因此，鼓励 CTCN 开展进一步能力建设活动，包括通过孵化器方案开展活动。

C. 定位

1. 建议 6：鼓励 CTCN 为编制第三个工作方案收集相关信息，包括对可利用现有预算满足的潜在受益者需求进行评价

69. 鼓励 CTCN 为编制第三个工作方案收集相关信息。应利用对 CTCN 服务的需求评估，进行初步分析，参考：CTCN 经验和国家指定实体调查；关于第二个工作方案各项目标实现情况的报告；以及一份财务计划，其中确定 CTCN 下一阶段将调动的财政资源(包括捐助者的认捐)。这种分析应使 CTCN 能够根据目前的预算估计数确定其可能处理的请求数目。

2. 建议 7：鼓励 CTCN 在气候技术配对方面发挥更大的作用

70. 建议让技术提供商更多参与 CTCN 的活动，并发展与现有中心、网络和机构的伙伴关系。鼓励 CTCN 将资源专门用于实施加强网络的私营部门成员之间直接互动的举措。

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]

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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

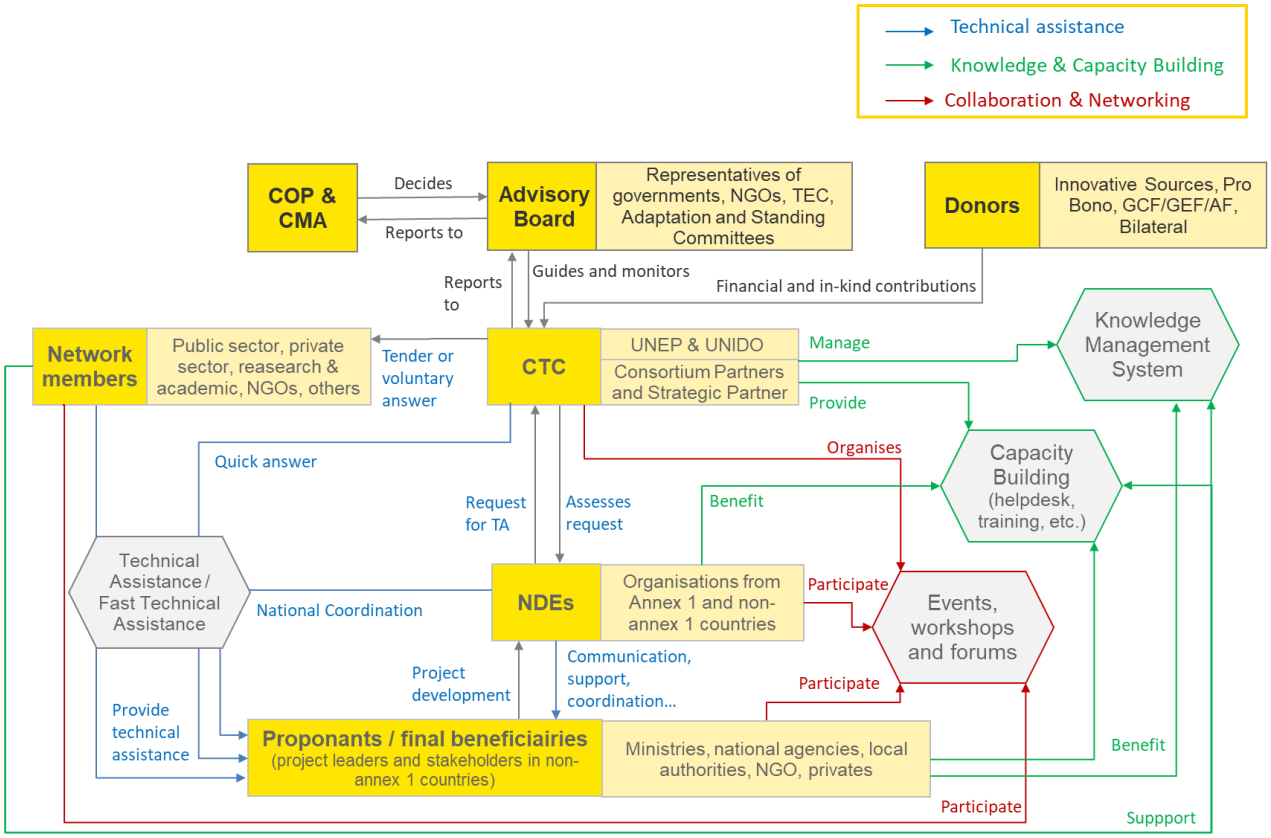
CTCN activities in the country.[7] NDE support in-country activities with the CTCN by managing national submissions (for developing countries only), facilitating engagement in the network and coordinating regional and global peer learning and collaboration, reporting and feedback.

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

[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.

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;

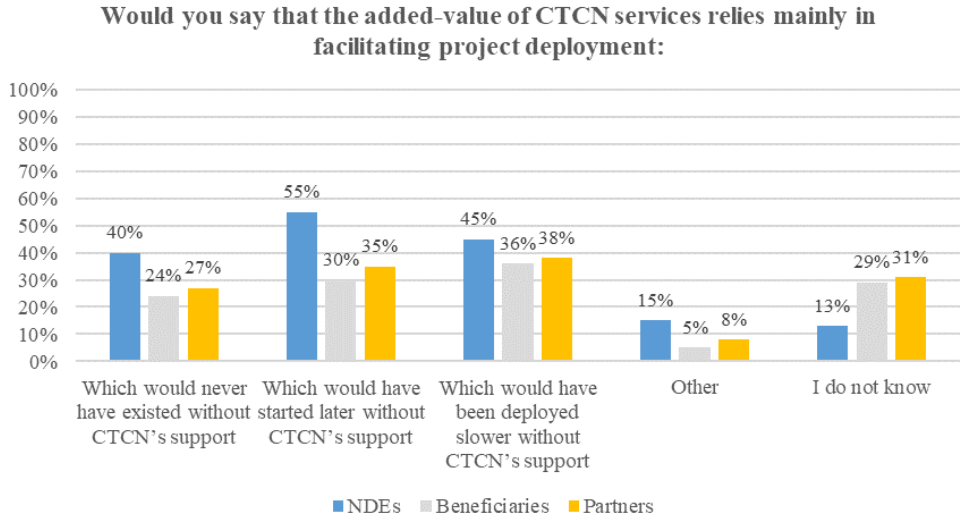
(e) Double-charging issue: when CTCN is financed through the GEF, the procedure entails a duplication of fees because they are considered by the GEF as an Executing Agency. The GEF has 18 Implementing Agencies and the CTCN is not one of them, so countries get charged if implementing the project with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

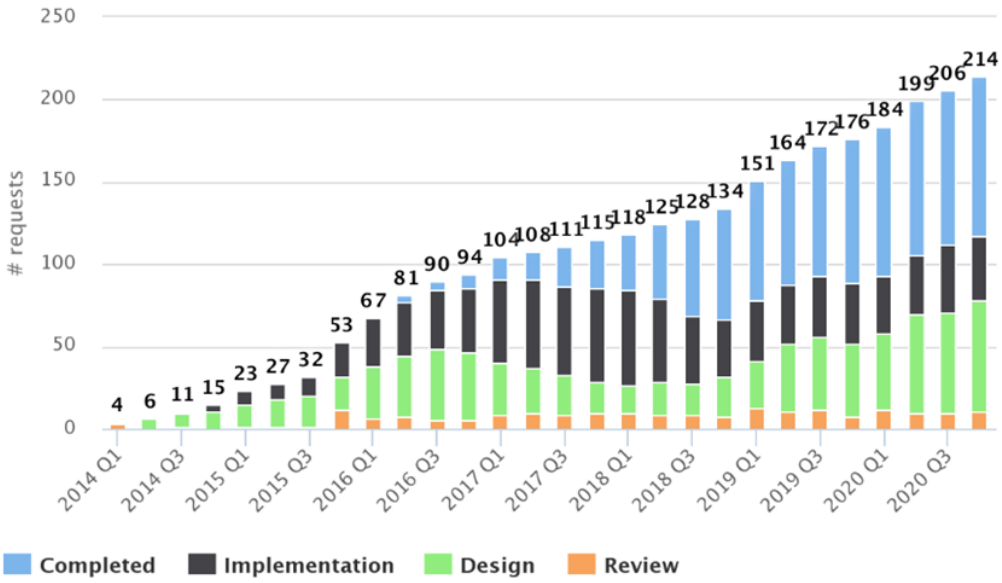
41. Have the objectives of the CTCN been achieved in terms of technical assistance / knowledge management, peer learning & capacity building / outreach, networking and stakeholder engagement?

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;

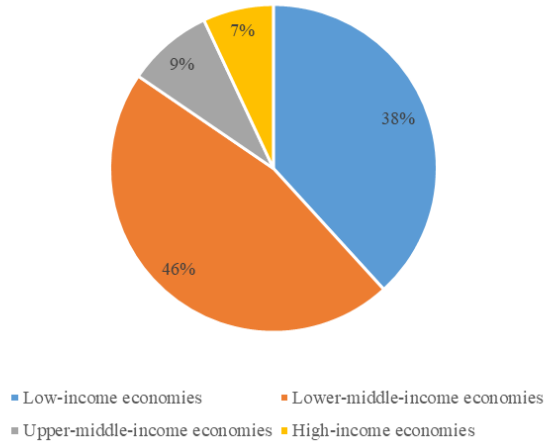
(e) 2% (2% during the first review) from Eastern Europe, which represents 5% of Non-Annex I countries.

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.

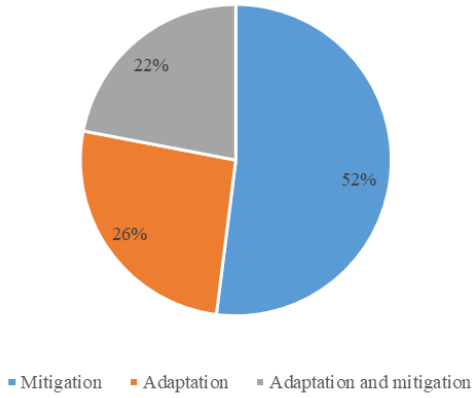
[16] See Request visualizations | Climate Technology Centre & Network (ctc-n.org).

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:

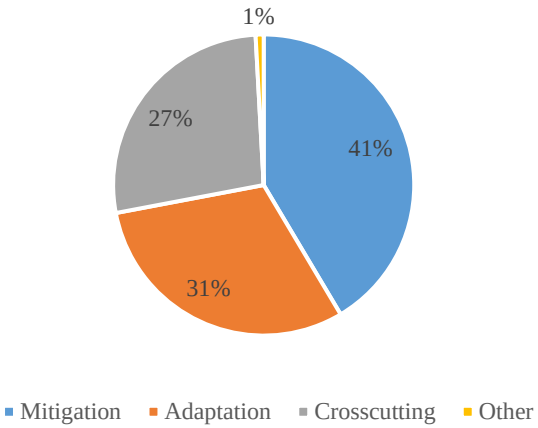
(a) Agriculture and Forestry, transport, carbon fixation and abatement (sectors);

(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

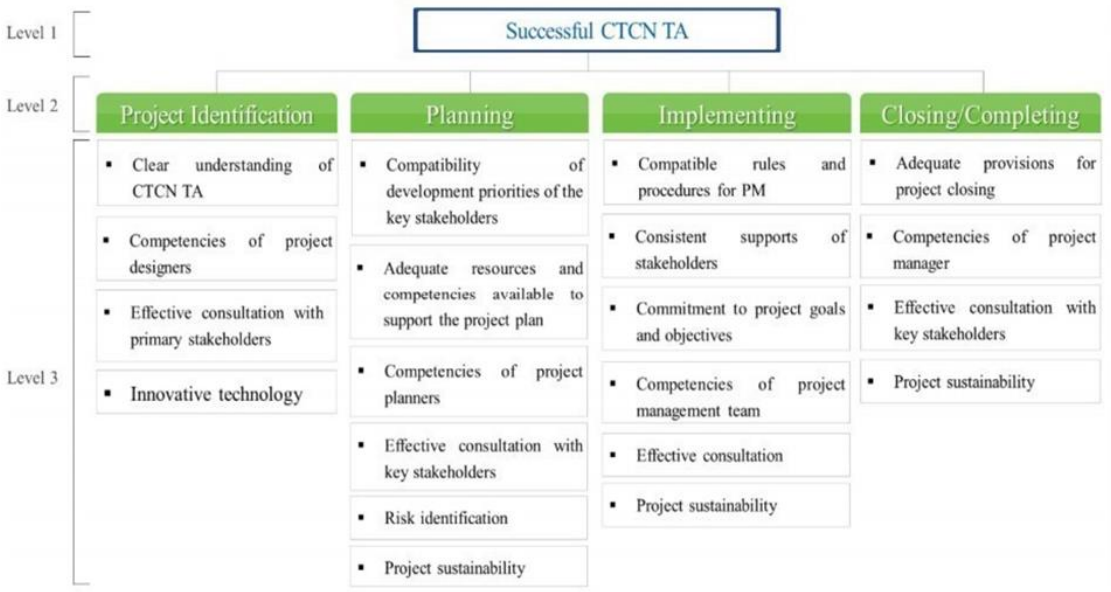
59. Lee, Wona et al. in the Journal of Climate Change Research retrieved the success factors of TA from the literature and defined under each life cycle of the CTCN TA i.e. the project identification, the planning phase, the implementation phase and the closing phase (Figure 8).[19]

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

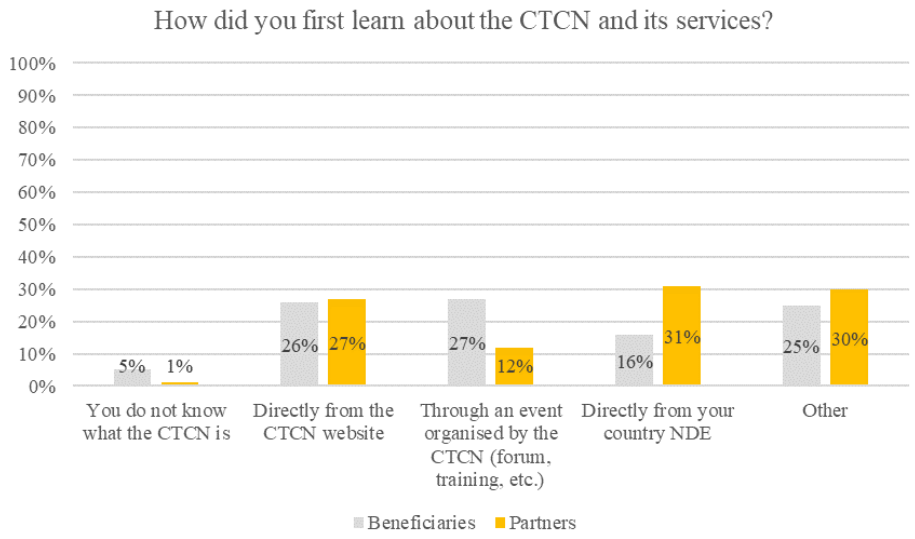
61. The CTCN formulated a communication strategy to address external and internal communication issues in a comprehensive manner. Structured approach and dedicated personnel allowed the CTCN to reach good effectiveness in communication and outreach.

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).

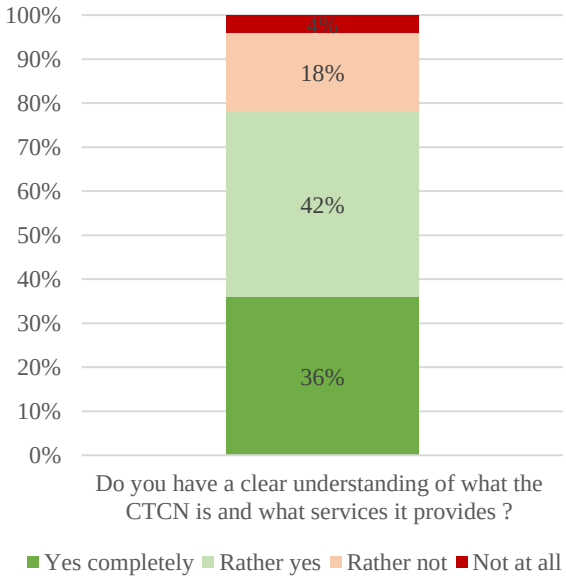


64. CTCN communication strategy has proven effective: it allowed a clear and useful information communication to stakeholders, as well as a broader audience.

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 beneficiaries

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

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)

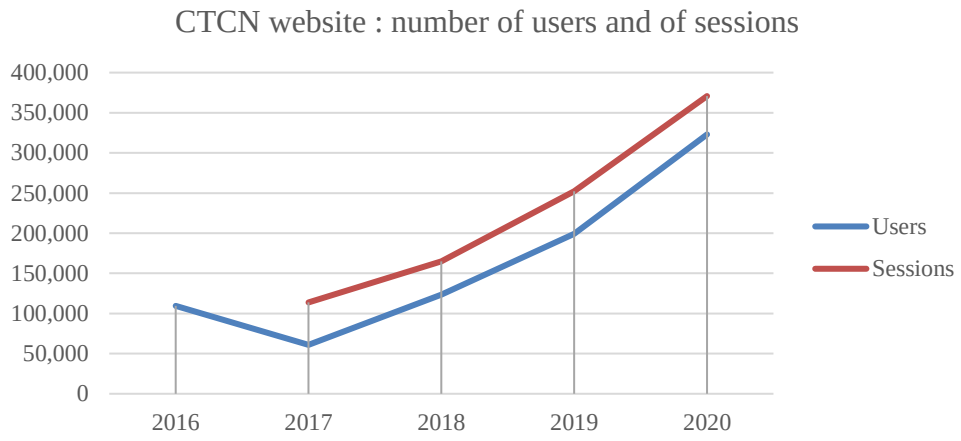
	Target	*2016*	*2017*	*2018*	*2019*	*2020*
Facebook likes (comparison with N-1)	+10% per year	1 631	2 072 (+27%)	2 453 (+18%)	2 876 (+17 %)	2 937 (+2%)
Facebook followers (comparison with N-1)	+10% per year	Not available	Not available	Not available	Not available	3 176
Twitter followers (comparison with 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;

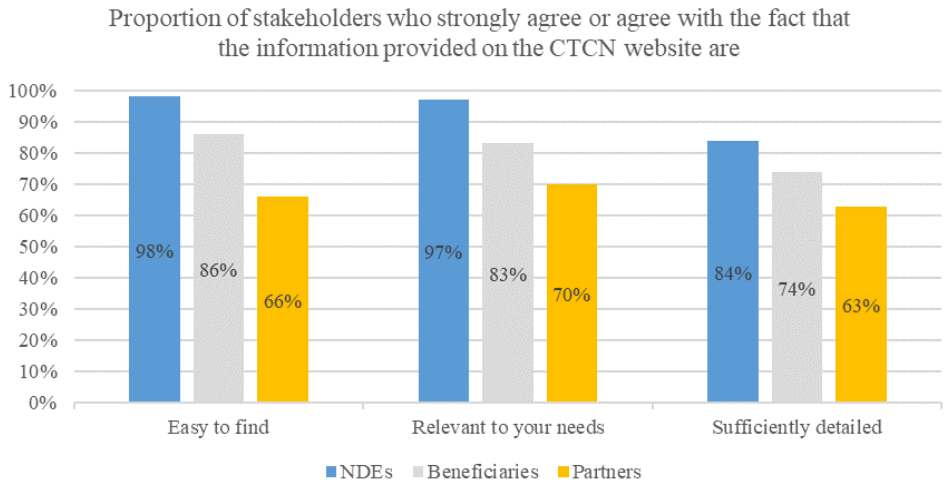
(b) Nearly 1/3 are SIDS;

(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.

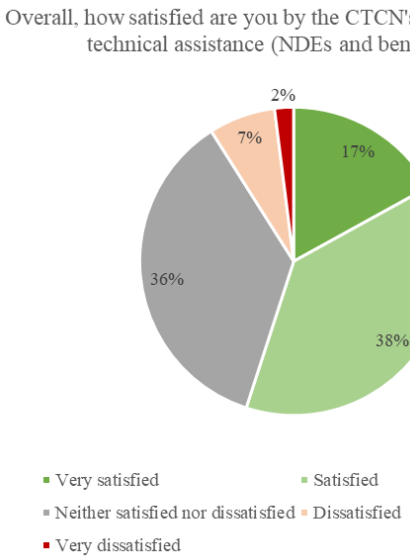
77. However, those already exist and are accessible at https://www.ctc-n.org/network. It hence seems that the visibility and access to this page should be revised.

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.

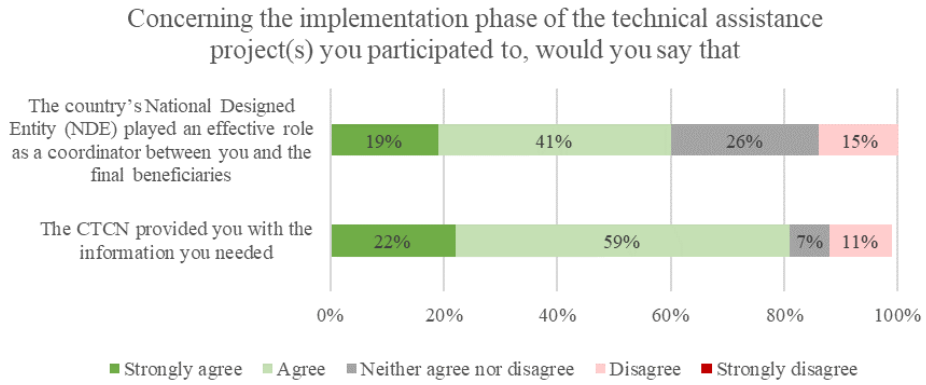
83. 75% of the beneficiaries and NDEs that responded to the electronic survey indicated that the TA that they received had been smoothly implemented, with a good communication and cooperation with and among providers. Nevertheless, even if those results are very positive, they are below the ones observed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

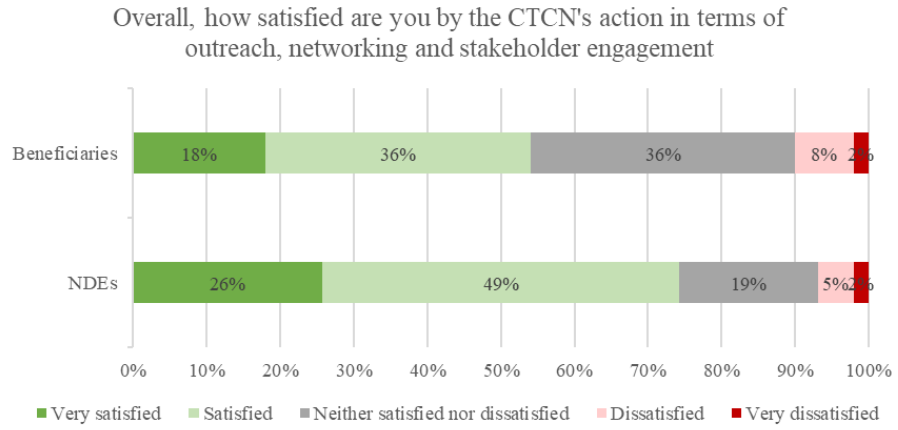
4.2.b. Number of CTCN training sessions and capacity-strengthening activities	6 per year	34 trainings
4.2.c. Number of people trained	500	2,858
4.2.d. Number of institutions trained	*	Data not collected at this time[25]
4.2.e. Percentage of technical assistance supported with a gender analysis	80%	86%

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.

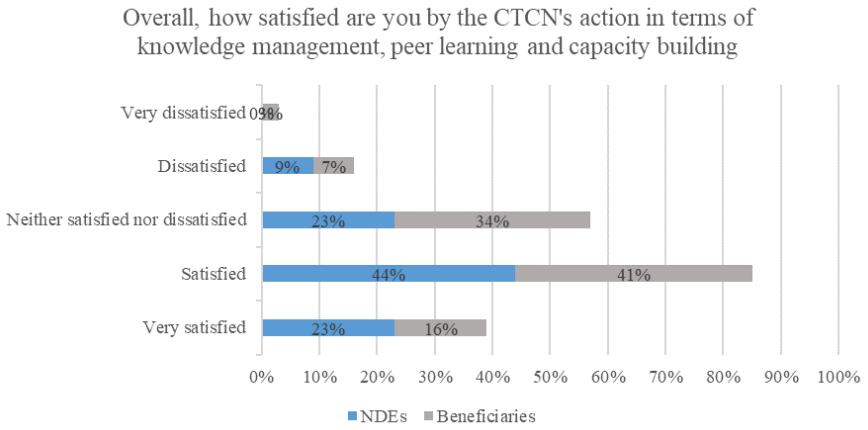
98. As shown in figure 16 and 17, capacity building activities and networking events are perceived very positively by stakeholders.

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



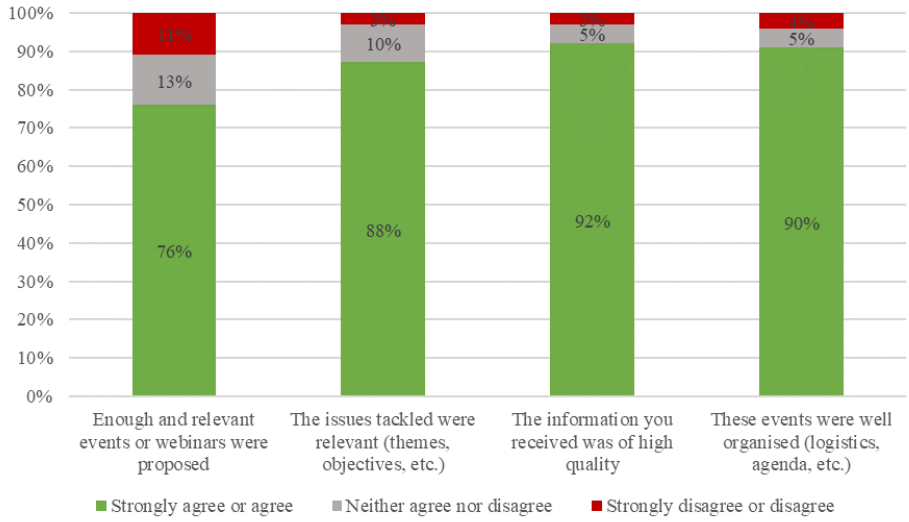
[25] Due to the virtual nature of the trainings organised, this level of data was not accurately captured.

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

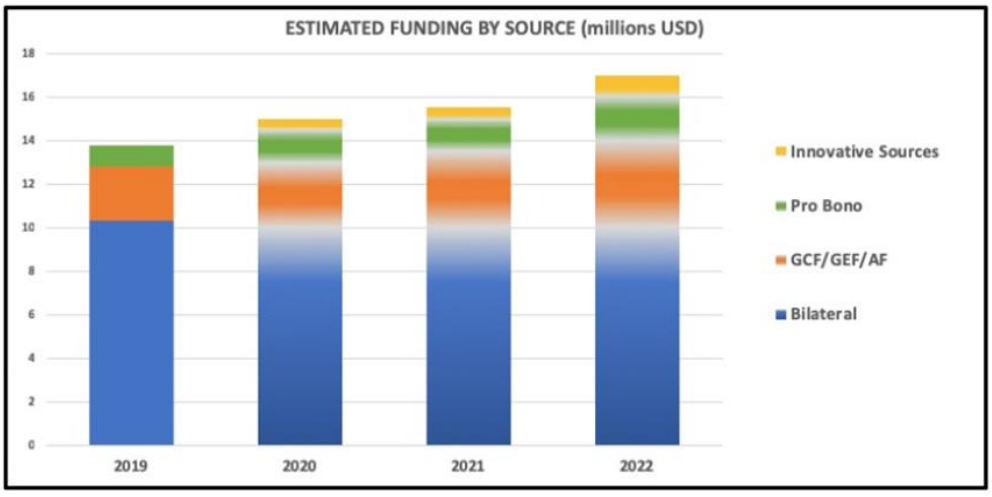
112. As shown in table 16, the target for the core operational budget of the CTCN (from bilateral donors / host agencies) and the expected diversification have not been reached accordingly during the last 3 years.

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.

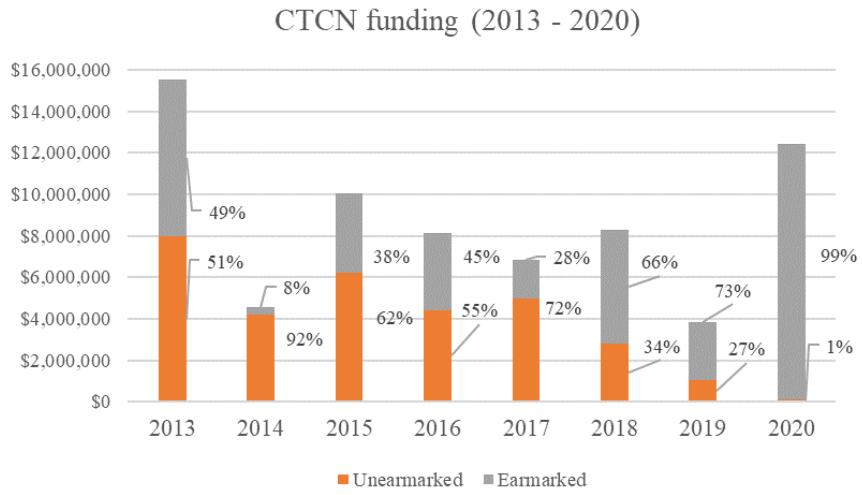
Figure 19
Estimated CTCN funding to deliver the Second Programme of Work over 2019-2022 (Sources: CTCN)



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.

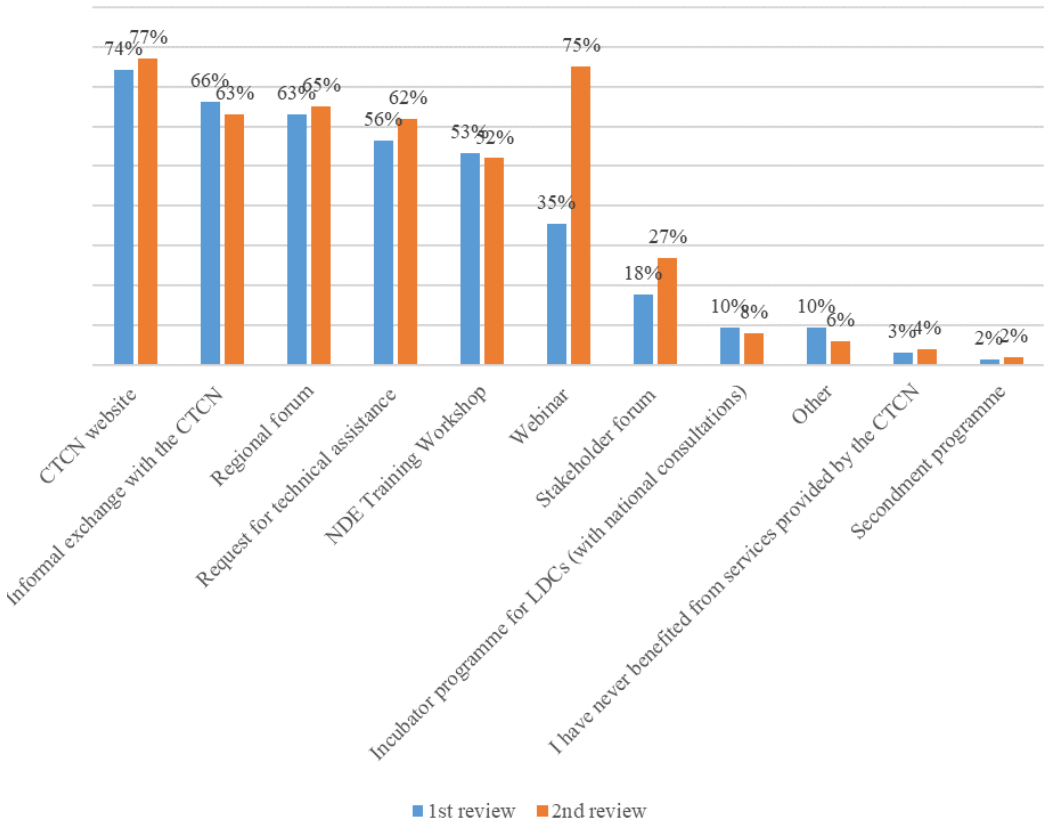
(ii) Additionally, the CTCN began to regularly provide feedback to Network Members on TA bidding proposals.[34]

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).

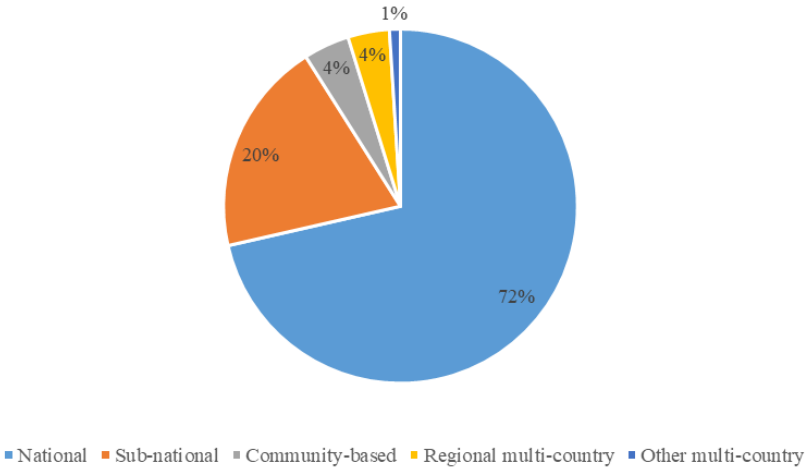
146. The first review encouraged the CTCN, its AB and other relevant actors to undertake actions to increase the efficiency of the CTCN provision of TA. CTCN response to this recommendation was based on a regional approach leading to higher impact through stronger relationships with NDEs, more regional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

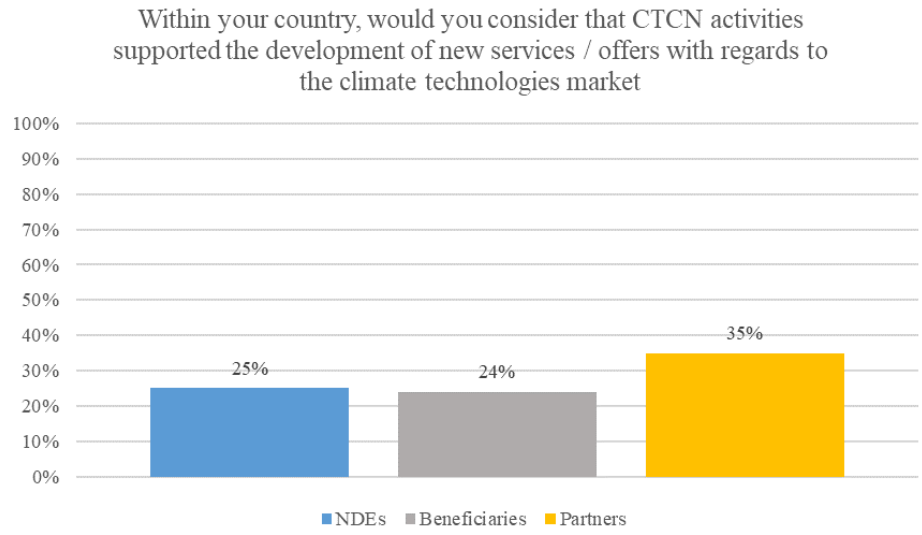
157. Following that workshop, NSI are for the first time mentioned in CTCN 2020 Annual Operating Plan in which a new KPI, without associated target, ("Number of countries with strengthened National Systems of Innovation as a result of CTCN support") is formulated.

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)

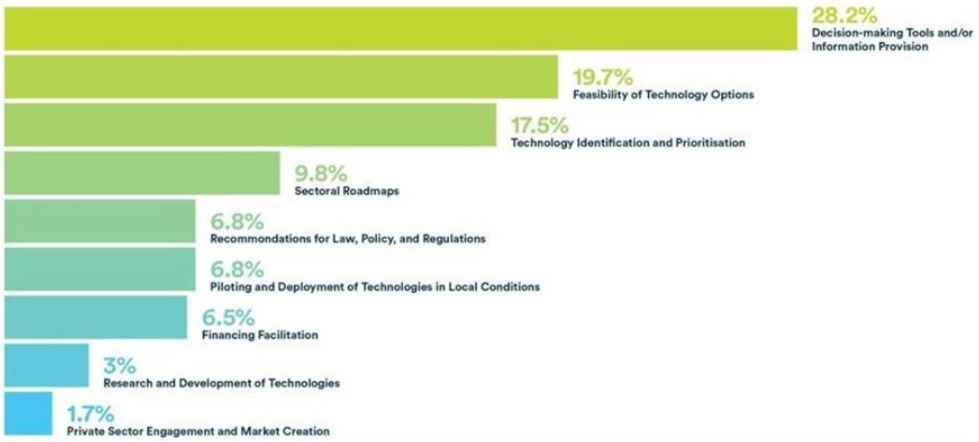


160. Also, only 34% of NDEs, 33% of beneficiaries and 46% of Consortium Partners, knowledge partners and Network Members who participated in the survey consider that

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

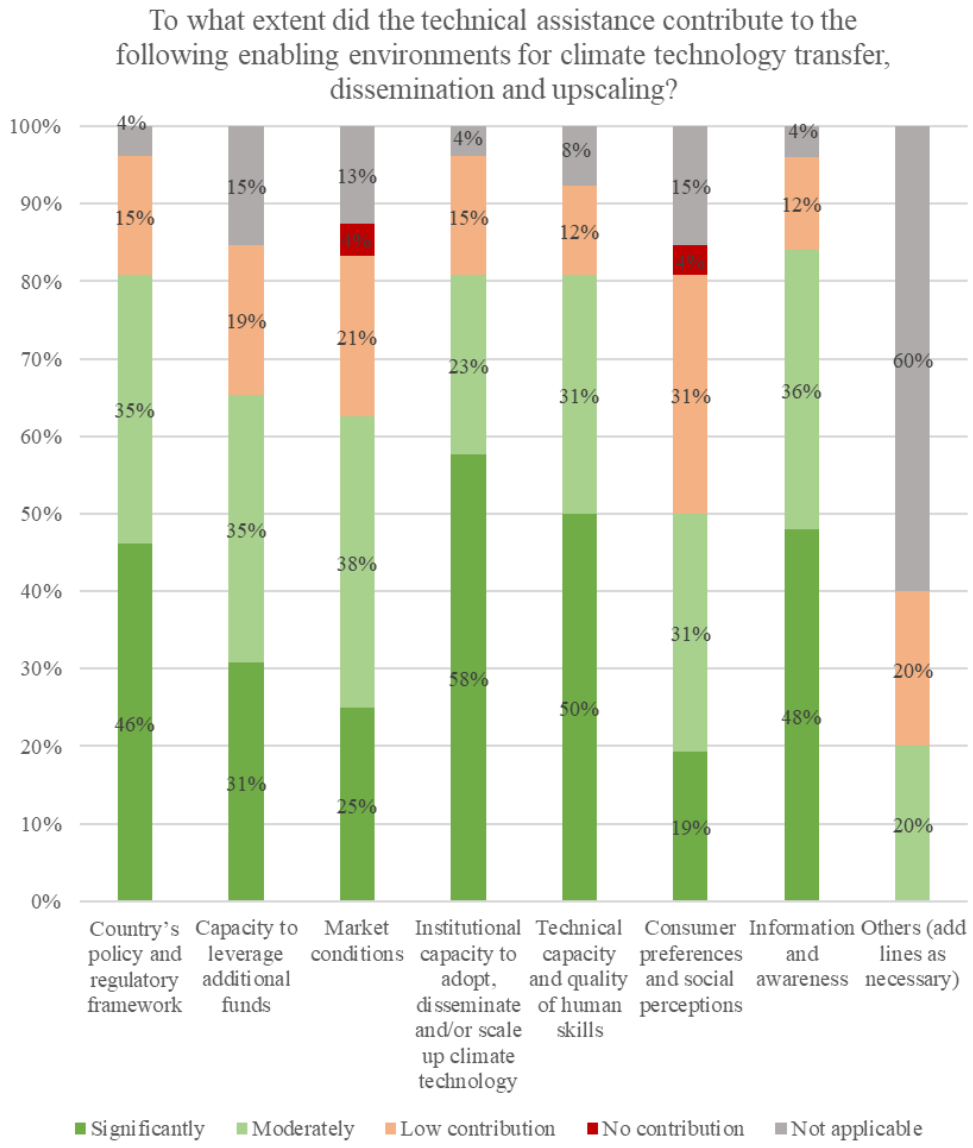
[42] UNEP. 2020. Terminal Evaluation of the UNEP/GEF Project Technology Needs Assessment Phase II. Available here.

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)

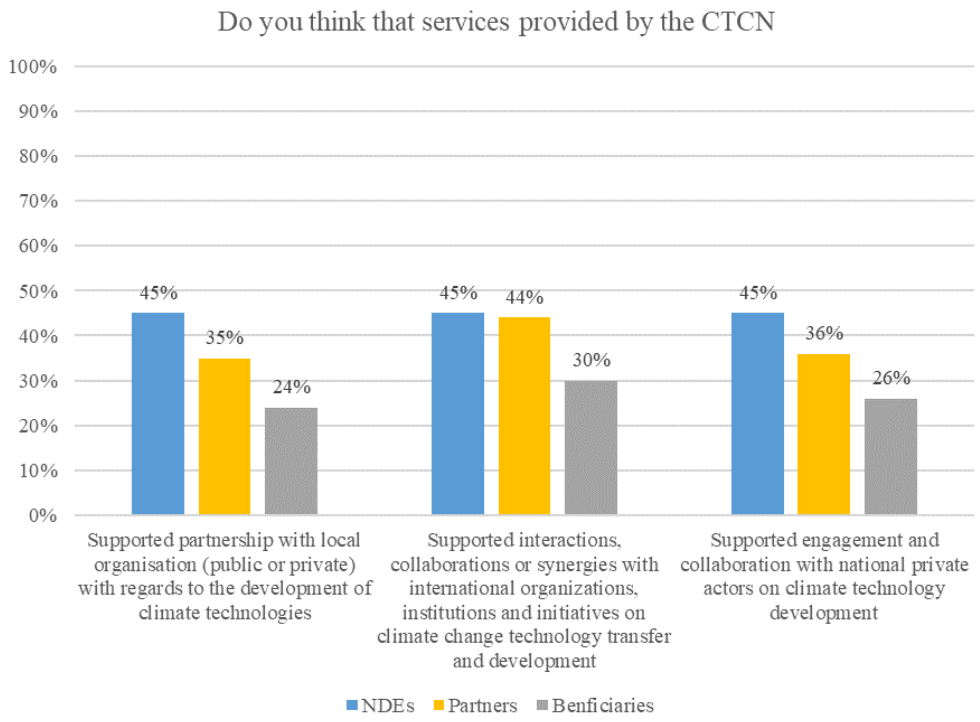


170. NDEs' perception that emerged in the survey show that the "contribution to enabling environments (e.g. policies, regulations…) that supported the development of climate-related projects" is among the main outcomes of CTCN activities.

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

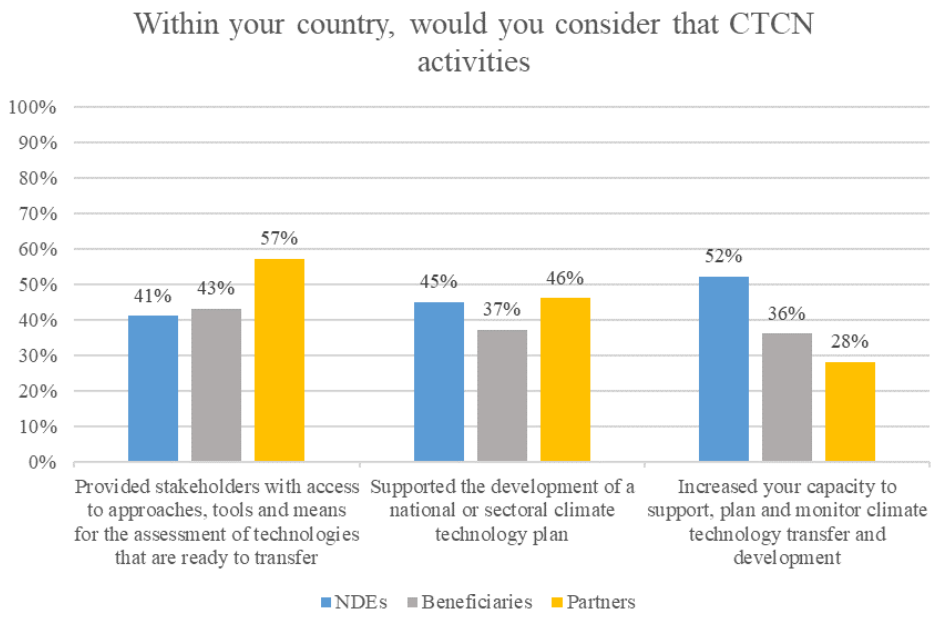
Collaboration and Stakeholder Engagement		
2020 AOP Indicators	**Target**	**2020 Results**
Outcome 3: A broad range of stakeholders collaborate in promoting gender-responsive climate technology development and transfer		
3.A. Number of engaged network members and knowledge partners	20% of Network members	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

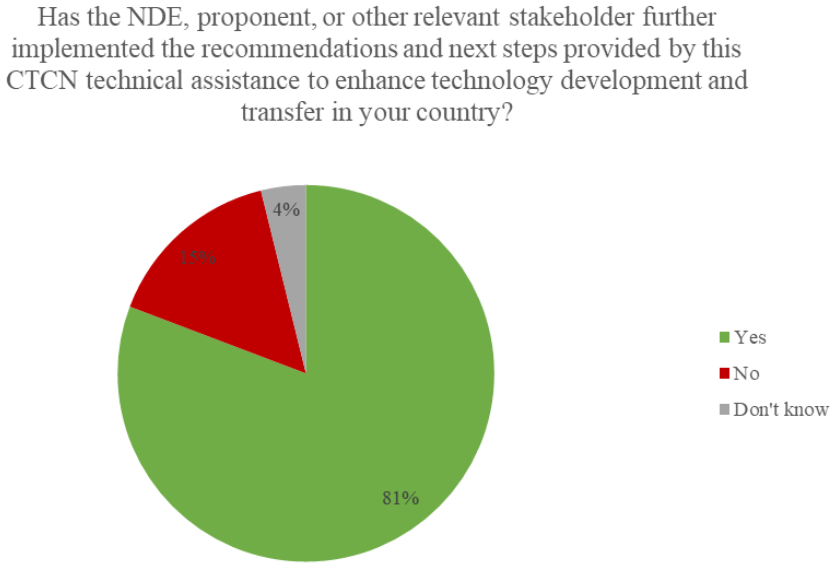
174. Figure 30 shows that stakeholders' perception on CTCN activities' impacts on technology development and transfer are rather middling. Around half of responding stakeholders consider that CTCN activities "provided stakeholders with access to approaches, tools and means for the assessment of technologies 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

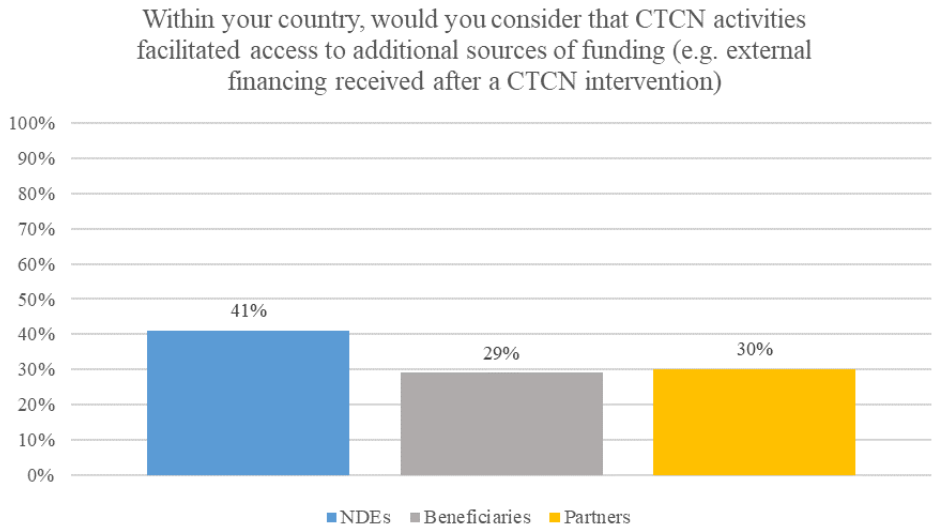
8. Leveraging funding

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)

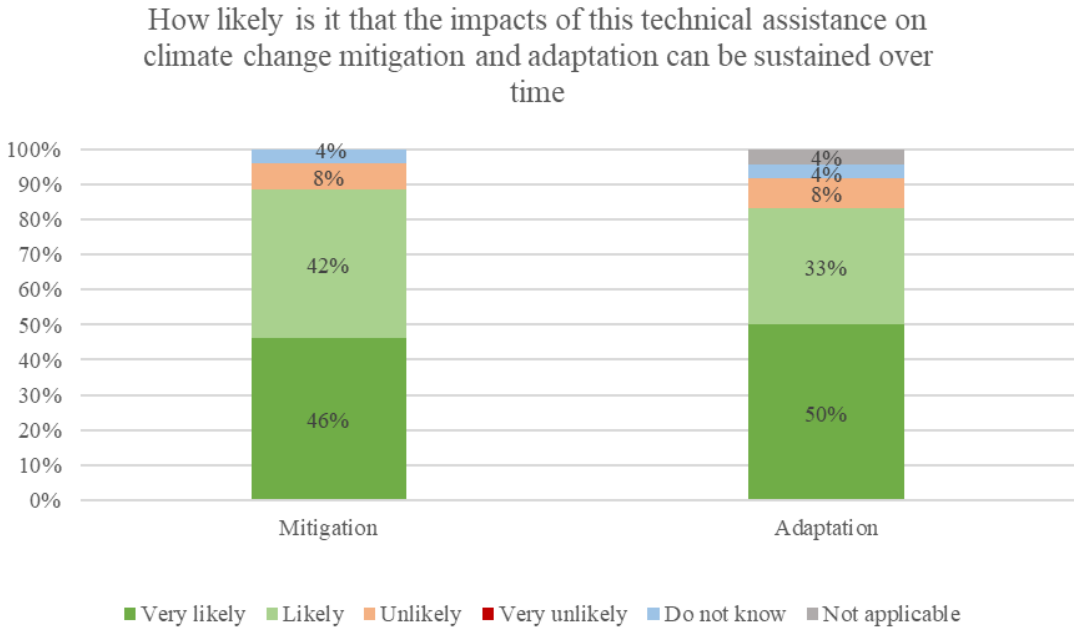


[43] Update on the work of the CTCN. 2020. Available here.

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

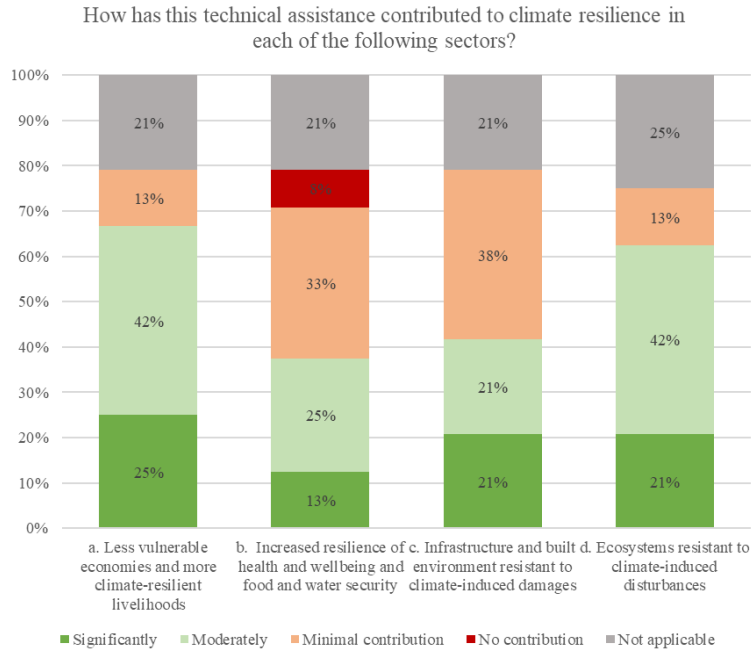
180. As shown in figure 34, NDE's perception is very positive on the likeliness of TA impacts on climate change mitigation and adaptation can be sustained over time.

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)



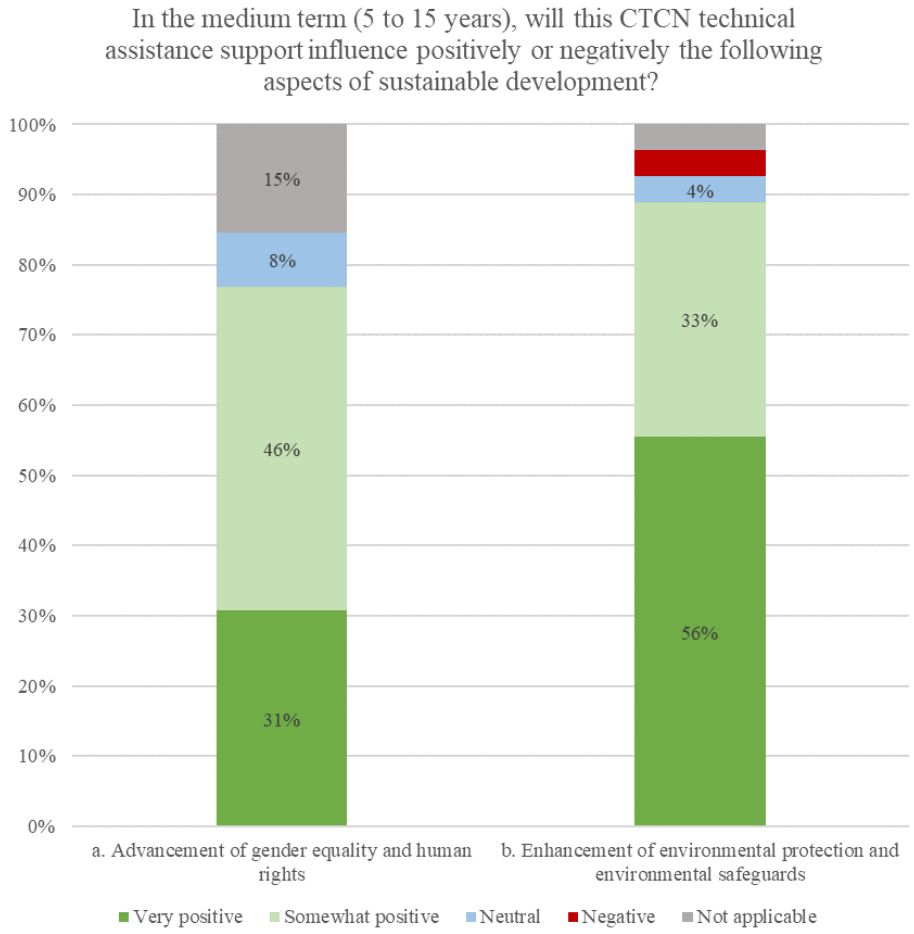
10. Socio-economic impacts

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.