Framework Convention on Climate Change

TEC/2022/24/6

Technology Executive Committee

08 March 2022

Twenty-fourth meeting

22-25 March and 28 March 2022 (TEC-CTCN Joint session)

Draft policy brief on linkages between technology needs assessment process and nationally determined contributions process

Cover note

I. Introduction

1. As per activity 1 of the thematic area Implementation of its updated workplan for 2019–2022 the TEC is to prepare a policy brief on linkages between technology needs assessment process and the nationally determined contribution process.

2. This policy brief draws upon information contained in the paper on linkages between technology needs assessment process and the nationally determined contributions process. The paper was endorsed by the TEC after its 23rd meeting.

3. At TEC 24 the task force on implementation, supported by the secretariat, will be invited to present the draft policy brief.

4. Expected action: The TEC will be invited to consider and provide comments on the draft policy brief, with a view to providing guidance to the taskforce, with a view to finalizing it after TEC 24.

II. Scope of the note

5. The annex to this note contains the draft policy brief on linkages between technology needs assessment process and the nationally determined contribution process, as prepared by the task force on Implementation.

III. Possible action by the Technology Executive Committee

6. The TEC will be invited to consider and provide comments on the draft policy brief, to provide a possible guidance to the implementation taskforce, with a view to finalizing it after TEC 24.

Annex

Draft policy brief on linkages between technology needs assessment process and nationally determined contributions process

I. Why this TEC brief?

1. This policy brief elaborates on potential linkages between technology needs assessments (TNAs) and nationally determined contributions (NDCs). TNAs have been conducted by developing countries since 2001 as a participatory process to prioritise technologies for mitigation and adaptation within countries' national sustainable development contexts. Around 15 years after conducting the first TNA, its bottom-up paradigm was reflected in the Paris Agreement and the concept of NDCs. In their NDCs countries determine actions within their national contexts that contribute to the goal of limiting global warming to well below 2ºC and preferably 1.5ºC.

2. With a view to the above, the objective of the policy brief is to provide policy recommendations to countries and relevant stakeholders on this matter. More specifically, the policy brief aims to:

(a) Increase coherence between the implementation of national plans with national strategies to achieve climate resilient and low emission development;

(b) Enhance understanding on linkages between TNAs and NDCs, and on how these could be further strengthened;

(c) Propose options to establish linkages between TNAs and NDCs which lead to implementation; and

(d) Assist the TEC in delivering relevant recommendations to Parties through the COP and CMA.

3. This TEC brief discusses new options enhancing the linkages between the TNAs and the NDCs, and why the linkages could be stronger nowadays, building on the recent developments in both processes, previous relevant work of the TEC and of other stakeholders. More specifically, the scope of the TEC policy brief discusses:

(a) Development of TNA and NDC processes and their results;

(b) Comparative analysis of most recent TNAs and NDCs including gaps and challenges;

(c) Good practices and case studies;

(d) Options to strengthen the linkages to enhance implementation;

(e) Possible ways forward;

(f) Key messages.

II. Highlights

4. There are many potential linkages between TNAs and NDCs, as argued by earlier papers by the TEC. For example, TEC (2018) compared possible NDC design and implementation steps with those in the TNA guidance, concluding that outputs from one process could be used as input for the other. Recent synthesis reports on NDCs and TNAs, indeed, highlight that the processes refer to each other in several stages of their development. Most of recent TNAs use a country's NDC as a starting point for the analysis.

5. For developing countries in general, TNAs and their technology actions plans (TAPs) help to build capacity for gathering knowledge of climate technologies, assessing what is realistic and feasible within the country contexts and determining how to implement prioritised technology solutions. Aligning this capacity with NDC processes could make NDCs more robust, which can be especially beneficial for LDCs and SIDS where most of the recent TNAs have been conducted.

6. Moreover, TNAs add ‘bottom up technology realism’ to a country’s NDC national planning, such as through TAPs which help NDC planners to consider detailed implementation actions that have been checked and brokered with country stakeholders in terms of feasibility and affordability. This could lead to a vision of a holistic approach in countries that combines formulation of NDC national targets with bottom-up assessments of technology options, including detailed implementation actions. Here, earlier TNAs could be updated in support of NDC planning, thereby utilising the TNA process for, organising stakeholder consultation, barrier analysis and TAP preparation, for example.

7. On the updating previously conducted TNAs in support of NDCs two possible options have been noted in this paper:

(a) Setting up a TNA updating infrastructure similar to the Global TNA Project, as managed by UDP, to help countries to regularly update their TNA outputs for inclusion in NDCs. This would enable continued technology-related capacity building in developing countries and peer learning by government officials. In this option, TNA updating would co-exist with NDC update processes;

(b) Integrating TNA updates within developing countries’ NDC cycles. This could involve utilising tools from the TNA process for updating information, for inclusion in an NDC, on priority technology options within the country context, sector-level implementation conditions, cost data and potential funding opportunities. Possible examples of good practice of this option are countries that utilise funding from the GCF Readiness and Preparatory Support Programme to update their earlier TNA results.

8. To support utilising these potential interlinkages, the TEC could consider the following activities. If option (A) would be pursued, the TEC could provide guidance and good practice insights on the design of such an infrastructure as well as advice on funding opportunities for it. Should option (B) be preferred by Parties, then the TEC could offer advice to Parties and, for example, the NDC Partnership, on how to use the vast knowledge base of TNAs in NDC development, and how to keep this knowledge up to date for future NDCs.

9. In a survey, received by 70 TNA coordinators, two-third of the respondents have expressed a preference for option A (with a 22 per cent response rate). For TNA countries that are SIDS, almost two-third of the TNA coordinators prefer integrating their TNA-NDC (updating) processes (option B). Regarding funding mechanisms for updating TNAs, answers from TNA coordinators were equally divided between GEF and GCF funding, with some of them suggesting (blended) funding from both mechanisms.

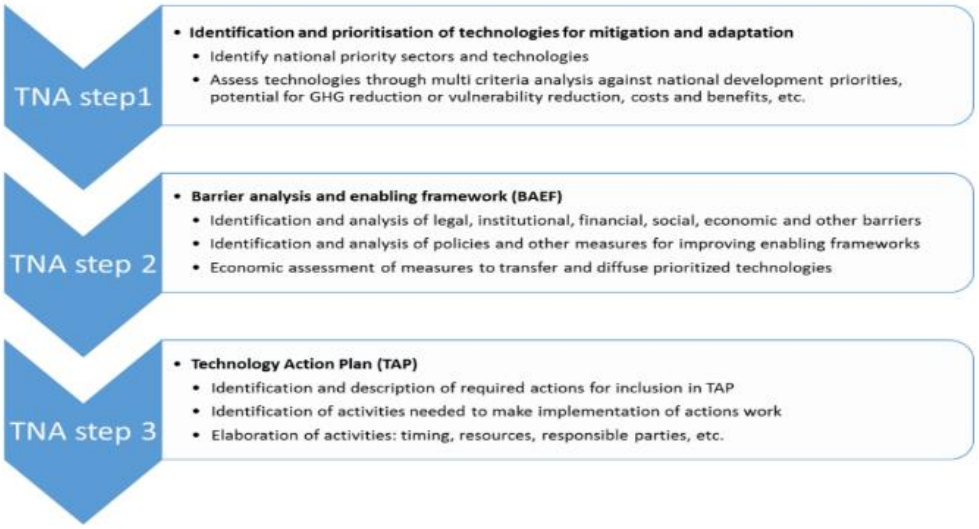
III. Background

A. Development of the TNA process and its results

10. Following the Poznan Strategic Programme on Technology Transfer, the Global TNA Project started in 2009, with support from the GEF and managed by UNEP in collaboration with the UDP. TNAs originated from a decision at COP-7 that encouraged developing country Parties to undertake assessments of country-specific technology needs. First TNA reports were conducted already in 1999.

11. The Global TNA Project offers non-Annex I Parties a stepwise decision-making procedure for the TNA process, which consists of three main stages, as shown in Figure 1: prioritisation of technologies for meeting countries’ climate and development goals, identifying barriers and enablers for scaled up and accelerated implementation of these technologies, and formulating technology action plans (TAPs).

Figure 1
Key steps and components of the TNA process



12. Through the years, the focus of TNA work has increasingly moved towards implementation. Following the renewed guidance for the Global TNA Project that was published in 2010, countries delivered well elaborated and detailed technology portfolios, which had been put together with active engagement of country stakeholders.

13. The TEC in 2016 concluded that the updated TAP guidance has significantly improved the quality of the TAP reports, with clear and consistent information on for example stakeholder roles and responsibilities, timelines, budgets, and potential funding sources. Many of the countries in Phase II of the Global TNA Project have followed the new guidance meticulously, and the TAPs are seen by stakeholders as useful documents to get TNA results towards implementation.

14. The fourth TNA synthesis report prepared by the UNFCCC in 2020 compares TNAs in phases I and II of the Global TNA Project, which leads to the following key insights:

(a) TNAs have remained highly participatory processes across the two phases with an active engagement by stakeholders from the sectors identified as strategically important for mitigation and adaptation. At the same time, more cross-sectoral stakeholders, such as the finance community, household representatives and trade unions, are generally underrepresented in TNAs. Despite the TEC call in the improved TAP guidance for stronger involvement of these types of stakeholders, little progress could be seen from Phase I to Phase II;

(b) TNA countries have become increasingly aware of their climate vulnerability, given that more attention is paid to climate change impacts in Phase II TNAs;

(c) The quality of TAPs has significantly improved in Phase II TNAs, in comparison with Phase I TNAs, in terms of completeness and level of detail. Phase II countries were assisted in their TAP development using the updated TAP guidance.

15. In a review of implementation performance of TAPs, TEC highlighted several examples of successful actions to advance implementation of TNA results, such as pilot projects carried out based on prioritised TNA technologies, with support from, e.g., UNDP and with funding provided by GEF and GCF, a governmental feed-in tariff system for renewable energy technologies prioritised by the TNA, blending of commercial bank loans with GCF funding to fund technology implementation programmes, etc.

16. These successes can, to a large extent, be ascribed to collaboration between different stakeholders around a prioritised technology and its TAP. As TEC shows, preparing for implementation is not just a matter of writing a business plan. In fact, implementation is strongly supported by effective and efficient linkages between stakeholders, for example:

(a) National ministries and multilateral development organisations to prepare guidelines for implementation, e.g., replicating rainwater harvesting projects in Lebanon;

(b) Multiple stakeholders who first collaborate within the context of a TNA and then form an 'informal sector stakeholder' group to lobby for incentives for technology implementation after completing the TNA;

(c) National government agencies and the CTCN in support of proposal preparation for funding applications at the GCF or other international funding providers, and

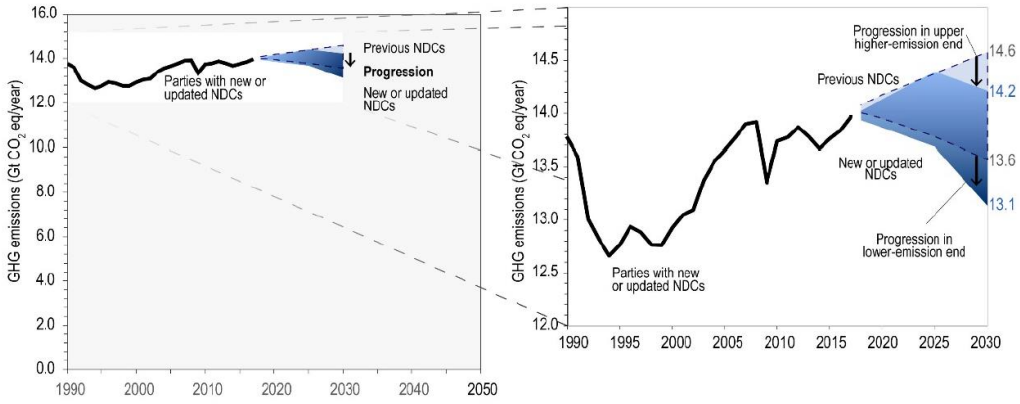
(d) Ministries within the same country to jointly work on technology solutions for adaptation or mitigation when these cut across different policy areas.

B. Development of the NDC process and its results

17. As an input for COP 26, the secretariat prepared an initial version of the NDC synthesis report, containing information from 48 new or updated NDCs, representing 75 countries (submitted by 31 December 2020). The synthesis report covers almost 30% of the global GHG emissions in 2017. By July 2021, the NDC registry showed 192 Parties had submitted their first NDCs, of which nine had also submitted a second NDC.

18. All analysed NDCs start from a national target for climate change mitigation, ranging from economy-wide absolute emission reduction targets to emission reductions below a reference scenario, such as business as usual, or targets in the form of policies and measures or relative targets (e.g., GHG emissions per unit of GDP). In comparison with previous NDCs, new or updated NDCs increasingly opt for absolute targets. Figure 2 shows the projected range of GHG emission levels according to the NDCs analysed with mid-term values (averages) of around 14.04 Gt CO2-eq. in 2025 and 13.67 Gt CO2-eq. in 2030.

Figure 2
Projected range of greenhouse gas emission levels according to nationally determined contributions (UNFCCC, 2021, p. 12)



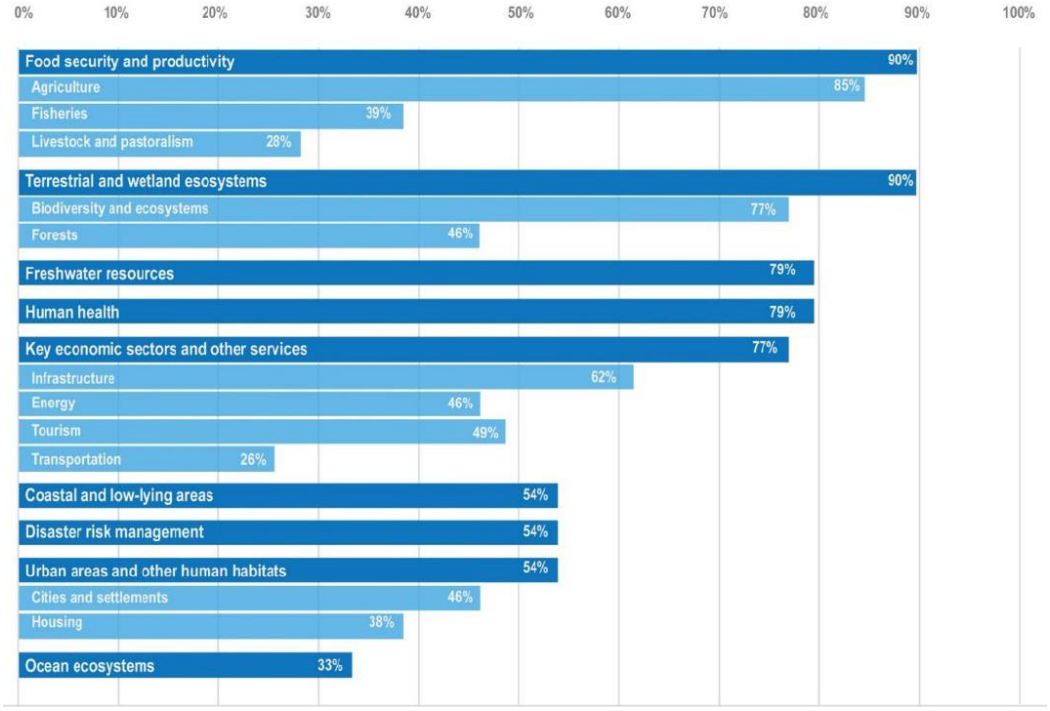
Note: The projected ranges cover the higher-emission end for unconditional elements of NDCs to the lower-emission end when also taking conditional elements of NDCs into account.

19. Contrary to many TNAs, the coverage of sectors and GHGs in the new or updated NDCs is almost country-wide, i.e., 99.2 per cent coverage of Parties' total economy-wide emissions in 2017 (the latest year for which the analysis was carried out). All analysed NDCs cover the energy sector, while in 92 per cent of the NDCs land use, land-use change and forestry are covered, followed by waste (89 per cent), and industrial processes and product use, and agriculture (both 86 per cent).

20. In terms of time frames for achieving targets, NDCs take a longer-term perspective, including net-zero emissions by 2050, with intermediate targets for 2025 or 2030, for example. These time frames align with the longer-term country and sector visions included in most of the NDCs.

21. The synthesis report concludes that analysed NDCs contain more assessments on adaptation than earlier NDCs did, thereby often building further on NAPs (see Figure 3). Frameworks for adaptation are also more integrated, national-level, rather than project-level, as in earlier NDCs. Some NDCs also establish interlinkages between mitigation and adaptation, especially in terms of emission reduction co-benefits of solutions for adaptation.

Figure 3
Share of adaptation components of NDC referring to specific adaptation priority areas and sectors



22. In terms of coverage of technology needs for mitigation and adaptation many NDCs contain information on specific technology options as identified for several areas (mostly energy-efficient appliances and processes, renewable energy technologies, low- or zero-emission vehicles and hydrogen technologies), including (policy) measures to support their implementation.

23. Regarding implementation, analysed NDCs show a divergent picture, with some countries preparing dedicated sections on means of implementation, including separate sections on finance, and others referring to implementation aspects across the NDC report. For example, half of the NDCs have a dedicated section on finance, whereas the others address financial aspects in other sections of the NDC. Only 20 per cent of the countries have included a dedicated section on capacity building in their NDC.

24. Some countries have also included in their NDCs aspects for stimulating technology innovation, such as research and development funding and business model development. In comparison to the above TNA synthesis, the identification of technology needs in NDCs seems more top-down oriented – working from a national target towards options to reach these – than bottom-up orientation of TNA's – to identify technology options and analyse what to do to upscale these.

IV. Comparative analysis of most recent TNAs and NDCs - gaps and challenges

25. This chapter contains a specific sample of countries taken to compare their TNAs and NDCs reported with a view to identify whether and to what extend the countries have used their TNA results as inputs for their NDCs. This approach will also identify some gaps and challenges preventing countries to effectively benefit from enhanced TNA and NDC linkages. To provide an objective identification, dedicated interviews were also organized with multiple TNA and NDC stakeholders.

26. The main conclusions in the Fourth TNA synthesis report have been discussed above. The linkages between TNAs and other processes under the Convention were of the topics explained in the Fourth TNA synthesis report. The report concludes the following:

(a) Most countries do not consider TNAs a stand-alone process. Instead, countries see TNAs as being complementary to national policies and plans for mitigation and adaptation, such as NDCs and NAPs;

(b) Over half the TNA reports analysed contain elaborations on possible linkages, such as TNAs being based on earlier completed NAMA and NAPA reports;

(c) Countries identify the outputs of TNAs as inputs to work on their national communications, NDCs and NAPs.

27. In their TNAs, countries refer to existing or ongoing national processes from which data or other insights were gathered as inputs for TNAs. A total of 65 per cent of the countries refer to national communications as a source of information and 31 per cent mention NAPAs and NAPs as background information for assessments of technology options for adaptation. In addition, 23 per cent of the TNA reports referred to or extracted information from INDCs and NDCs, e.g., as a backdrop for describing national climate policies and measures implemented, for example in Armenia, Guyana, and the United Republic of Tanzania.

28. The picture that has arisen from the above discussion of the latest NDC and TNA developments and their assessment reports is that developing countries frequently connect both processes, albeit to different degrees. From the TNA reports and interviews with TNA and NDC practitioners, it has become clear that for most of the latest TNA countries NDCs are the starting point for analysis on technology needs.

29. For instance, the selection of sectors for the TNAs is often based on the sectoral scope of the NDCs. Similarly, TNAs are often considered a solid tool for contributing knowledge to move forward on NDC implementation. In many countries, consultants and working groups are the same for both TNA and NDC processes, using the TNA work to build capacity which also supports NDCs. For example, in Eswatini the Centre for Sustainable Energy Research was established as a result of the country's TNA work and this center is currently involved in revising Eswatini's NDC.

30. For this policy brief, a specific sample of countries has been taken to compare their NDC and TNAs. The sample contains developing countries that completed their TNA reports after 2017 and that recently communicated the first or second NDCs. The goal of the comparison is to see whether and to what extent the countries have used their TNA results as inputs for their NDCs.

31. The sample of developing countries meeting the above criteria contains: Fiji, Grenada, Honduras, Jamaica, Panama, and Suriname. As per the focus of the TNA phase that they participated in, each of these countries is an LDC or SIDS. Their NDC and TNA (including TAP) reports have been compared using the following parameters:

(a) National development goals and climate vulnerabilities;

(b) Sector coverage;

(c) Identified barriers and enablers;

(d) Identified solutions, including mitigation and adaptation technologies, and

(e) Action plans for scaled-up implementation of the solutions.

32. The comparative analysis has shown that the way countries described their national development goals and climate vulnerabilities in their TNAs and NDCs is consistent. Similarly, the prioritization of strategic sectors and main barriers and enablers in both processes is consistent.

33. When comparing the prioritization of solutions, NDCs and TNAs become different, and little consistency was found in the proposed mitigation and adaptation technologies for analyzed countries. It was shown that countries tend to use their TNAs as starting points to develop their NDCs, but later followed their own process towards prioritizing solutions and action plans. It was shown in the analysis that this happens mainly due to a top-down orientation of NDCs, working from national targets towards options to reach these, while the TNA process has more bottom-up orientation – identifying technology options and analyze how to upscale these.

34. In conclusion, there is consistency between both processes in terms of national priorities and defining the sectoral scope, but that the identification of solutions for mitigation and adaptation is often a different process in TNAs and NDCs. This supports the observation from interviews that

TNAs use NDCs as a starting point, and sometimes, the other way around, but once started, follow their own process toward prioritising solutions and action plans.

35. The updated paper on linkages between TNAs and NDCs also includes an analysis that has been done of updated first or second version NDCs (by 38 countries). This helped to obtain an overview of the composition of and differences between NDCs. NDCs were analysed against the following parameters:

(a) GHG accounting procedures used for the NDCs;

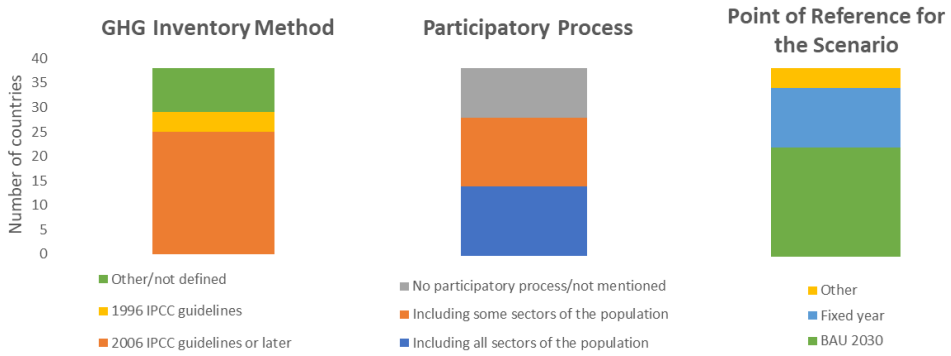
(b) Organisation of the NDC process: involving ministries and stakeholders;

(c) Type and calculation of the climate scenarios and goals foreseen in NDCs;

(d) Planning for implementation.

36. Figure 4 presents a synopsis of this overview.

Figure 4
Characterization of processes and information in recent NDCs



37. From the analysis the following can be concluded:

(a) The methods for GHG emission inventories per sector differ across NDCs, although in most cases countries apply the 2006 IPCC's guidelines;

(b) In many cases, it is not specified how stakeholders have been consulted in the participatory stages of NDC formulation;

(c) The methodology used to create scenarios, such as for business as usual and emission reductions, is often not described in detail, which complicates the replicability of the method in other countries;

(d) In many NDCs, implementation plans lack details to assess their 'bankability' and likelihood of implementation towards realizing the targets set by the NDCs;

(e) NDCs communicated by different countries largely differ, in terms of their content, level of detail, elaboration methods, quality of data sources, implementation plans, and participatory processes used in their elaboration. Consequently, it is not possible to set unified criteria for evaluating NDCs.

38. In conclusion, linkages exist between TNA process and NDC process, in particular with TNAs using NDC processes as a starting point and backdrop for the assessment. According to interviewed practitioners, countries with completed TNAs use TNA outputs in their NDC process, although not always with specific references.

39. In some cases, this is due to timing. Most of the TNA countries in Phase III of the Global TNA project have established direct links between TNAs and NDCs. However, these links are not yet visible in reports as these TNA countries have not yet completed their TAPs. Therefore, TAP preparatory work could feature in NDCs without a clear link to the reports as these are yet to be published.

V. Good practices of linkages

40. According to the TEC publication on Technology and NDC: "Stimulating the Uptake of Technologies in Support of NDC Implementation", 35 countries referenced technology needs assessments and technology action plans in their NDCs in identifying priority technology needs in adaptation and mitigation. Most of these NDCs include information on technology, however, the structure and level of detail of the information varies significantly. Some of these NDCs have a dedicated section on technology, some refer to technology in one or several sections, some include information on specific projects for technology development and transfer, and some contain detailed information on technical and financial requirements, implementing entities and time frames.

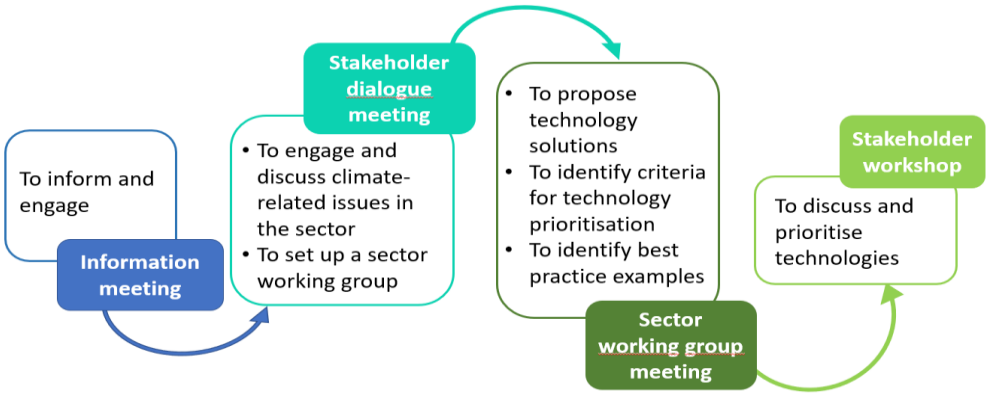
41. Two of the above sample countries, Suriname and Honduras were taken, and a short description of their NDC and TNA with identification of linkages is shown below. These examples illustrate in a simple way, how TNA and NDC results are comparable, and how NDCs refer to the TNA work done in these countries.

Suriname

42. Suriname's TNA includes an emphasis on adaptation, as most of its population is located near the coast in a low-lying area and the region is subject to climate disasters and droughts. Therefore, most of the actions identified for implementing prioritised technologies for adaptation in the TAP refer to water management and agriculture to ensure food security and people's safety. The proposed mitigation plans can be effectively integrated with the adaptation actions, as they contain passive savings through integrated design options for improved efficiency in households and buildings. The sectors to be addressed in the TNA have been determined through stakeholder participation, and the specific technical solutions were provided by local experts during collaborative workshops.

43. Suriname's NDC addresses the sectors included in its TNA and uses stakeholder participation as the method to decide on policies and means of implementation (see Figure 5). Regarding implementation plans, the NDC explicitly refers to the technology actions defined in the TAP, although these are not yet included in the NDC's project portfolio.

Figure 5
Suriname's stakeholder engagement process (CC = climate change; SWG = Sector Working Group)



Honduras

44. Honduras's TNA also stresses addressing adaptation actions, with a focus on natural catastrophes, as owing to its geographical characteristics, the country has experienced several climate-related disasters. The topics addressed in the TNA and the TAP were determined by consultation with local sector stakeholders. Many of the technologies prioritised for mitigation can be easily integrated with solutions identified for adaptation, such as improved agriculture systems and enhanced water management. Honduras' mitigation TAP also includes ongoing initiatives such as the increasing the share of renewable energies for electricity generation and obtaining energy from waste management.

45. The elaboration of the NDC included all sectors of the population, and the GHG emission reduction per sector was partially decided using modelling. Most of the technologies included in the TAP are also included in the NDC's roadmap, although there is not defined a project portfolio yet.

VI. Way forward - options to enhancing linkages

46. The previous analysis and good practices have shown that TNAs could play a vital role in filling gaps in the existing NDCs, specifically those relating to prioritizing climate technologies, their required enabling framework conditions and preparing implementation plans for their transfer and diffusion.

47. Linkages between TNA and NDC processes have been created by countries. Several NDCs contain information gathered from ongoing TNA processes. This linkage is particularly facilitated as work on TNAs and NDCs in some cases done by the same consultants and working groups, or both processes are carried out by the same institution, in most case a Ministry.

48. In terms of coordination, other areas for harmonising and aligning TNAs and NDCs could be the contact points for TNAs, which mostly are the National Designated Entities (NDEs) of participating developing countries. NDEs facilitate effective support from the CTCN by identifying priority technology needs based on TNAs. For NDCs, the responsible contact point is a country's UNFCCC national focal point, which could be a coordinated effort between different ministries or based on a national coordinating climate policy body. Coordinated efforts for TNAs and NDCs can support endorsement of TNA results by national, climate policy making. Currently, however, most TNA and NDC interactions take place informally and, on an ad-hoc basis, for example via consultants who support both processes.

49. However, how the processes are organised is only part of the story of linkages (or lack thereof) between TNAs and NDCs. A key factor is the potentially different scope of analysis between NDC and TNA. According to Article 4, paragraph 4 of the Paris Agreement, NDCs must have a national focus, and developing countries are encouraged to move over time towards economy-wide emission reduction or limitation targets.

50. TNAs mostly consider a limited number of key sectors for mitigation or adaptation as their starting point for analysis (also for practical reasons, such as budget, the sectoral scope is limited). For each sector, technology options are then prioritised and prepared for implementation with TAPs. While TNAs may, when all is added from the bottom-up, covering a large part, e.g. 75 per cent, of a country's GHG emissions or climate vulnerability, the starting point is not a top-down national climate target orientation as in NDCs.

51. The difference between top-down (NDC) and bottom-up (TNA) orientation could also result in methodological differences between the two processes. TNAs follow a highly participatory analytical process with active stakeholder engagement, which is supported by process with mainly qualitative research methods. TNAs are suitable for supporting the NDC process in countries that lack the capacity to operate quantitative (modelling) tools and record reliable data for quantitative research. Hence, the interlinkage between NDC and TNA could be strong for countries that are LDCs and SIDS.

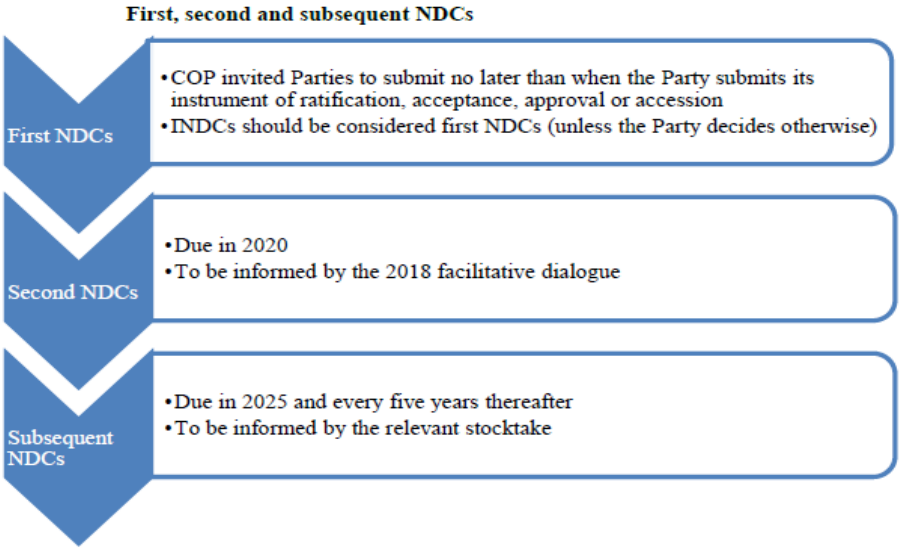
52. Moreover, TNAs add 'bottom-up technology realism' to a country's NDC planning. According to this view, top-down processes based on a national target with policies and measures to reach this, could forget what is realistic, by favouring "state of the art" technologies, that are less feasible for scaled-up implementation within a country context. TNAs, with TAPs, for instance, could help NDC planners to consider detailed implementation actions that have been checked and brokered with country stakeholders in terms of feasibility and affordability.

53. Regarding implementation, one can highlight the role of TAPs, especially after the TAP guidance was updated by the TEC in 2016. Beyond the TAPs, implementation success, whether under TNA or NDC, depends on the ability to write successful proposals, where the technical assistance of the CTCN plays outstanding role.

54. An important aspect of how to organise TNA-NDC interlinkages for a holistic climate planning and implementation, as mentioned by interviewed practitioners, is the timing of both processes. As illustrated by Figure 6 below, NDCs follow a five-year cycle of preparation and

implementation, as agreed within the context of the Paris Agreement. TNAs, instead, are implemented under the Global TNA Project, which usually has two- or three-year phases, with 25 - 30 developing countries participating per phase, which usually lasts between 18 – 24 months.

Figure 6
Timing of NDCs



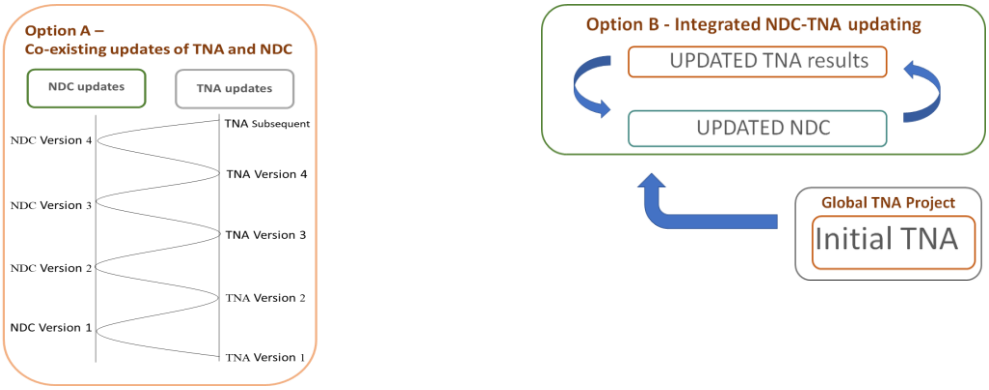
55. In an effort to renew their TNAs or bring these to the next level, several developing countries have started to utilize the GCF Readiness and Preparatory Support Programme, for conducting new or updated TNAs. This would make countries less dependent on the schedule of the Global TNA Project and enable them to align their TNAs with the NDC schedule.

56. Based on the above analysis and interviews held with TNA and NDC practitioners, two options are suggested as ways forward for updating TNA work in support of robust NDCs, as seen on the Figure 7:

(a) Option A - setting up a TNA updating/refreshing infrastructure similar to the Global TNA Project, as managed by UDP, to help countries to regularly update their TNA outputs for inclusion in NDCs. This would enable continued technology-related capacity building in developing countries and peer learning by government officials. In this option, TNA update processes would co-exist with NDC update processes;

(b) Option B - integrating updates of TNA results within developing countries' NDC cycles. This could involve utilising tools from the TNA process for updating information on priority technology options within the country context, sector level implementation conditions such as barriers and enablers, cost data and potential funding opportunities. The abovementioned example of countries utilising funding from the GCF Readiness and Preparatory Support Programme to update their earlier TNA results could be in line with this option.

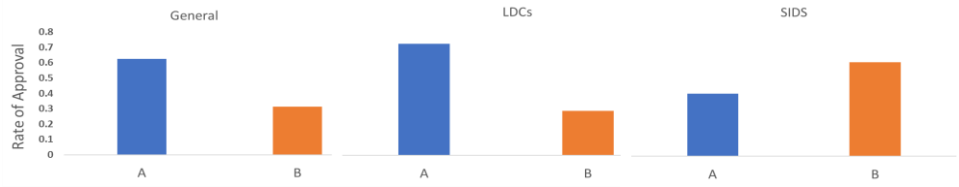
Figure 7:
Options for integrating the TNA-NDC processes



57. Regarding the option (A), an institutional structure for TNA updates would further strengthen countries' capacity and resources for technology prioritisation and planning, "as TNAs are a 'huge resource bank', such as with technology factsheets, from which other processes benefit." However, concern was expressed by developing countries that continued co-existing processes could place an extra burden on policy makers and stakeholders.

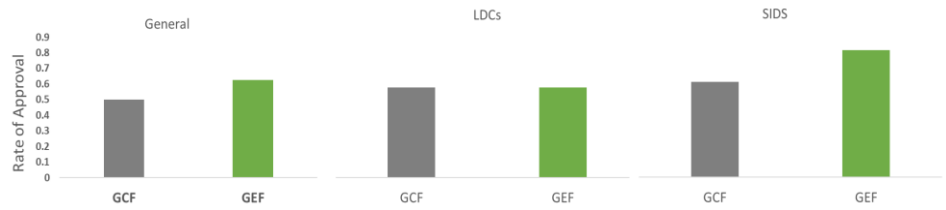
58. Both options have been communicated with TNA coordinators, with the support of UDP, in the form of a questionnaire. Of the 70 coordinators who received the questionnaire, 16 responded (response rate of 22%). Two-thirds of the respondents expressed their preference for Option A (co-existing TNA and NDC processes, informing each other). Analysing the answers from LDCs and SIDS separately shows that coordinators from SIDS prefer Option B (integrating TNA and NDC updates); and answers from TNA coordinators of LDCs are in line with the overall picture of two-third being in favour of Option A (see Figure 8).

Figure 8
Processes Preference for NDC-TNA coordination options A or B per country type



59. TNA coordinators were also asked which funding mechanism they would consider for future updates of their countries' TNAs. As possible answers, the options of GEF and GCF funding were provided, as well as 'other'. As shown in Figure 9, respondent generally expressed a slight preference for GEF funding, with coordinators from SIDS having a stronger preference for this than coordinators from LDCs. Some of the respondents suggested that funding could come from both mechanisms, for example through blending of funds.

Figure 9
Preference for GCF or GEF funding per country type



60. In order to support developing countries in integrating the technology prioritisation and implementation perspective in holistic NDC processes, the TEC could consider the following ways forward:

(a) If option A would be pursued, the TEC could provide guidance and good practice inputs to the design of such a TNA updating infrastructure and advice on funding opportunities for it;

(b) Should Parties prefer option B, then the TEC could offer advice to Parties (including NDEs) and, inter alia organizations such as the NDC Partnership, on how to tap into the vast knowledge base of TNAs, for use in NDC development, and how to keep this knowledge up to date for future NDCs.

VII. Key findings

61. This chapter drafts some key findings which could be considered by the TEC and other stakeholders in drafting recommendations to Parties on this relevant and important issue.

62. TNA is a robust, proven planning tool for climate policies in developing countries. While TNAs seem to focus on technologies, the scope is broader as it actually prioritises soft and hard technology solutions for mitigation and adaptation. These solutions are also relevant for developing country NDCs and NAPs.

63. The latest NDCs and TNAs show that developing countries frequently connect work in both processes, albeit to different extents and often in a non-explicit, informal way. In many of the latest TNA cases, NDCs are the starting point for analysis on technology needs for climate and development. This is further enhanced as in many countries the consultants and working groups are the same for TNA and NDC processes.

64. The analysis shows that there is consistency between TNA and NDC processes in terms of setting national priorities and defining the sectoral scope. With a view to identifying solutions for mitigation and adaptation, TNAs and NDCs tend to become more diverse. One reason for this could be that NDCs and TNA, once started, apply different analytical methods for prioritising solutions and action plans. Another reason is that the latest TNAs often do not have completed reports yet, so that links between TNAs and NDCs are not yet visible in reports.

65. The TNAs can make strong contributions to NDCs in developing countries, thereby holistically combining 'bottom-up technology realism' to national climate target setting. As the latest phases of the Global TNA Project focus mainly on LDCs and SIDS, it is most likely that the strongest TNA contribution to the NDC formulation can be identified in these countries. This is also in line with their special position in the Article 4 of the Paris Agreement.

66. In addition, the policy brief has identified tools from the TNA process which developing countries can in general use in their NDC design and planning, such as tools for identification and clearing of barriers, enabling actions and TAP guidance, as well as stakeholder engagement.

67. Based on the review of synthesis reports it is suggested that TNA updates could:

(a) be institutionalised, similar to the present structure of the Global TNA Project, with capacity and peer learning support;

(b) carried out as integrated steps of the NDC process in countries.

68. TNA offers multiple implementation experiences of adaptation and mitigation technologies, for which overcoming of existing barriers by effective enablers was necessary, as well as composing multisectoral expertise teams with experience in planning, financing, budgeting, and technology operation and maintenance. Such implementation experiences can be used for planning and implementing NDCs in developing countries.