United Nations Framework Convention on Climate Change

Preparing for the implementation of the proposed Technology Mechanism:

A working paper of the Expert Group on Technology Transfer

Bonn, Germany, 4 November 2010

Executive Summary

The Bali Action Plan, agreed by the Conference of Parties to the UNFCCC in 2007, initiated a comprehensive process to enable the full, effective and sustained implementation of the Convention through long-term cooperative action, now, up to and beyond 2012. The need to enhance action on technology development and transfer to support action on mitigation and adaptation was recognised as one of the main building blocks of the negotiation process.

Towards the end of 2009 Parties began to converge around the concept of establishing a new Technology Mechanism under the Convention, that would become the centre piece of an agreed outcome on technology development and transfer. The Technology Mechanism and its components (the Technology Executive Committee and Climate Technology Centre and Network) were agreed to be established under the Copenhagen Accord.

In June 2010, Parties returned to the negotiating table and confirmed the high level of agreement on the establishment of the Technology Mechanism and that the negotiating text represented an accurate reflection of the consensus that had been achieved in Copenhagen. In June, Parties also approved the EGTT programme of work and provided the EGTT with guidance on its proposal to undertake preliminary work to elaborate options for the operational modalities of the Technology Executive Committee (TEC) and Climate Technology Centre and Network (CTC and Network).

This document presents work in progress to explore options for operational modalities of the proposed Technology Mechanism. The paper is set within the context of the ongoing negotiations on the proposed Technology Mechanism, and while recognising that the choices of modalities will be affected as Parties form consensus on the outstanding issues under negotiation, in keeping with the mandate, the paper is focused on the areas of the negotiating text where there is a high level of consensus. The paper has been prepared to stimulate discussion among EGTT members. The EGTT may wish to consider, whether and if so, how this paper could be improved to further advance the thinking on how to implement the proposed Technology Mechanism.

The TEC, as a high-level body that sets policy and guides the CTC and Network, would be the policy arm that provides the broad framework, directions and strategy for technology development and transfer under the Convention, informed by its global overview of technology needs and analysis of policy and technical issues. The CTC and Network would be the operational arm, delivering services and support at the request of developing country Parties, developing tools, policies and best practices for country-driven planning, and stimulating the collaborative development and transfer of existing and emerging technologies.

The Network that the CTC will establish, and which will be composed of existing national, regional and international technology centres, networks, initiatives and organizations, would deliver most of the technical assistance to developing country Parties and would be a central actor in facilitating technology partnerships. Where there are gaps in existing capabilities and support for technology development and transfer, the Technology Mechanism could facilitate and support the creation of new technical assistance programmes and networks, which could be delivered by existing institutions. A core role of the CTC would be to match technology needs

with available support. The majority of the operational modalities of the CTC and Network would most likely be carried out by the Network of existing and enhanced national, regional and international technology centres, networks, initiatives and organizations. They would, however, need to be tailored to the needs and requests of developing country Parties.

Similarly, the TEC would achieve its objectives by cooperating and consulting with a wide range of international and regional organizations and with other institutions under the Convention. Through its membership, and the working groups and consultative groups it may establish, it could draw on the expertise of a wide range of institutional actors, including UN agencies, other intergovernmental and international organizations, business and industry organizations, academic and research communities, and non-governmental organizations. It could work closely with existing organizations to catalyse the development and implementation of international technology roadmaps and action plans and provide a high-level forum for the promotion of collaboration on the development and transfer of technology.

The Technology Mechanism could also seek to engage private sector actors at different levels. Private sector expertise could be drawn upon by the TEC through various organizational modalities, whilst at an operational level the private sector would be a key actor and partner for the CTC and Network in the delivery of technology development and deployment outcomes. Various forms of public-private partnerships would be needed, which the Technology Mechanism could facilitate.

The Technology Mechanism envisaged by Parties has no precedent in or outside the Convention, in scope, role or approach. In scope, it is expected to support the entire technology cycle in all sectors of the economy, from research and development to diffusion, in support of both mitigation and adaptation. Moreover, as a cross cutting Mechanism it will be required to support many other institutions and processes under the Convention. The Technology Mechanism is intended to have a role in supporting action on mitigation and adaptation across the cycle of the preparation, implementation and evaluation of proposals from developing country Parties (projects, programmes and policies), although its precise role will be determined by how Parties resolve the link the Technology Mechanism has with finance. The Mechanism also has a role that extends from providing global strategic policy on technologies for mitigation and adaptation through to the delivery of practical support and outcomes on the ground.

Although more clarity is needed on several levels, the work of exploring options for operational modalities for the TEC, and the CTC and Network, sheds light on what the Technology Mechanism could deliver and how. The paper focuses on the modalities that may be utilized to implement the functions, and in doing so, it has drawn on the body of knowledge of existing organizations with mandates and programmes supporting the development and transfer of technologies for mitigation and adaptation. Given the breadth of its scope, and role at different levels, the Technology Mechanism will have to be equipped with a range of operational modalities. Two types of modalities were considered in this paper: operational modalities, defined as the instruments for delivering support to countries; and organizational and governance modalities and procedures, which clarify how the work of the TEC and CTC and Network may be organized, and how the operational modalities would be implemented internally. They also include the governance and management arrangements to enable the bodies to perform their

duties. The modalities explored in this paper are well-known and typical means used by existing organizations, bodies and networks.

The focus on the modalities to operationalize the functions of the TEC and the CTC and Network, and on the overall oganizational and governance modalities and procedures provides the necessary detail to render their respective roles more apparent and clear. The paper has also tried to organize the different modalities in categories: three categories of operational modalities were identified, namely products, services and partnerships.

The products the Technology Mechanism could deliver comprise information products, analytical and planning tools, best practices, for which extensive experience exists in and outside the Convention, and overviews of global and regional needs, gaps and priorities. Equally the experience with delivery of services like technical assistance, training, advisory services is well-documented. Types of operational modalities for which there is less accessible or documented experience relates to the CTC's role of matching country needs with available support, and to the use of partnerships and networks as a delivery mechanism. Although technology networks and partnerships have proliferated in the past years, their performance, results and roles in technology development and transfer have not been widely studied or evaluated.

Sections D and E in the paper set out detailed options for the modalities for the TEC, and the CTC and Network, respectively. A menu based approach is used, so that choices can be made between different options. The options for the modalities for the TEC are quite detailed, and provide a comprehensive overview of what it could deliver and how. The governance and organizational modalities and procedures, including membership and composition, means for organizing the work of the TEC and participation of experts and stakeholders, are also explored in detail although a number of aspects require further elaboration.

The modalities of the CTC and Network were approached in a slightly different manner, due to the difficulty of providing specific operational modalities across the whole technology cycle for mitigation and adaptation technologies, and across the planning and implementation stages for each of the functions. The products, services and partnerships to support technology actions would differ across each stage of the innovation cycle and according to the stage in the technology planning and implementation process, and would need to be tailored to the needs of Parties.

Therefore, generic operational modalities are set out for each function of the CTC and Network to clarify the type of product, service or partnership that could be delivered or facilitated. The generic operational modalities are further enhanced and explained through descriptions of specific examples, and illustrated with real-world modalities of existing organizations. In addition, options for the governance and organizational modalities of the CTC and Network are examined.

The consideration of the different scenarios for the respective roles of the TEC and the CTC and Network, gives rise to a spectrum of options for modalities, as opposed to well-delineated and distinct sets of options. When the decision on the respective roles are made, the range of operational modalities will be narrowed.

Considering the three components, the TEC is the most straightforward and clear-cut body of the Technology Mechanism at this stage. Models of similar executive, policy-making, advisory bodies like the TEC are available. A number of aspects remain to be determined, including its authority in decision-making and its relationship with the CTC and Network, but the roles it may take on are well-understood.

However, there are no existing models for the CTC and Network. The CTC has been described as a facilitator, with the role of matching country requests for support with technical and assistance resources present in the Network. According to its functions, the CTC is also an adviser and provider of information and a number of services, such as training. Would it merely channel information on available support in the Network, or would it also assess its suitability and quality? What would be the added value of the CTC if its role would be limited to connecting developing country Parties with existing technical assistance and other support? In this role, how would the CTC be able to facilitate faster and better access to existing technical assistance and other support? To what extent would it be responsible for the quality and appropriateness of the support that is delivered to countries by the Network? How could the CTC's explicit and proactive role in stimulating and encouraging technology development and transfer through collaboration and cooperation, and in developing tools, policies and best practices be translated into deliverables and outcomes that respond to the need for accelerated technology development and deployment in support of mitigation and adaptation? The CTC occupies a unique position in the Technology Mechanism, as a focal point for requests for support, as a hub for the Network, and as an operational interface for the TEC's strategic directions. A discussion is needed on how the central position of the CTC could be translated into accelerated action on technology development and transfer on different fronts. As the paper highlights, there are several administrative, financial, organizational and legal questions that arise that will require specialised expertise and further consideration.

There is no model for the extensive Network that will be required to deliver the range of support that is expected. The Network as a mechanism to access technical resources and deploy technical assistance, and facilitate technology collaboration is a fairly new concept. Experience with networks in a variety of roles exists, but on a limited scale, and more analysis and learning is needed.

The paper also addresses the question of how the Technology Mechanism will work as a coherent system given that each component has a set of related and complementary functions. The concept of integrated delivery is explored and possible approaches are described. To ensure the coherence, efficiency and effectiveness of the Mechanism as a whole, an integrated and seamless delivery of strategic guidance and operational modalities of its different components will be important.

The integrated delivery of services and mandates will require the creation of an appropriate coordination, management and accountability system within the Technology Mechanism. The respective responsibilities and accountability of the different components of the Technology Mechanism will have to be clearly delineated and agreed, and functional firewalls created. Accountability could be established at different levels, based on a clear agreement of

responsibilities, on agreed strategic plans and work plans of the TEC, and of the CTC and Network, and on a system for monitoring and evaluation. The relationship between the components of the Technology Mechanism is therefore a key aspect that needs to be addressed.

The paper concludes by identifying possible priorities for the further elaboration of modalities and for the design of an efficient and effective Technology Mechanism that can have a significant impact in accelerating the development and transfer of technologies in all nations, but particularly in developing countries, in order to address the formidable challenges posed by climate change.

Acknowledgements

This paper has been prepared by the secretariat to the United Nations Framework Convention on Climate Change. During the course of preparing this document at the request of the EGTT Chair and Vice Chair, the secretariat consulted with intergovernmental and international organizations, including UNEP, UNDP, GEF, UNIDO, WIPO and the IEA. Comments on a draft document were provided by some of these organizations, and these have been addressed within the current draft. In addition, NREL and ECN provided technical inputs and examples for the operational modalities for the CTC and Network, which are reflected in the paper. In addition, the EGTT Chair and Vice Chair requested the secretariat to undertake informal consultations with Parties. On the sidelines of the 11th and 12th session of the AWG-LCA feedback was obtained on the approach being taken to the paper.

A. INTRODUCTION

1.0 Mandate

At the thirty-second session of the UNFCCC subsidiary bodies, the EGTT amended rolling programme of work for 2010-2011 was endorsed, including it proposal to undertake preliminary work to elaborate options for the operational modalities of the proposed Technology Executive Committee and Climate Technology Centre and Network.

Parties requested that results of the EGTT's work on options for operational modalities remain a working document of the EGTT.

2.0 Status of this paper

This document presents work in progress to explore options for operational modalities of the proposed Technology Mechanism. It is a living document that may be updated and progressed to reflect the views of the EGTT and as issues gain more clarity within the negotiations. In addition to providing written and oral feedback during and after the EGTT meeting, the EGTT may wish to consider, whether and if so how, its work to elaborate options for the modalities of the proposed Technology Executive Committee and Climate Technology Centre and Network could continue to evolve and whether it may wish to convey progress on this work to the Parties.

3.0 Objectives of this paper

The EGTT's work on operational modalities aims to advance the thinking on operational modalities so as to help inform subsequent work that the Parties may mandate once the Technology Mechanism has been established by the Conference of the Parties. It has been prepared as a starting point to initiate discussion among EGTT members.

4.0 Structure of this paper

The paper is divided into 7 sections from A through to G:

Section A - INTRODUCTION: This section outlines the mandate, status and structure of the paper.

Section B - AN OVERVIEW OF THE PROPOSED TECHNOLOGY MECHANISM: This section outlines the status of the negotiations in relation to the Technology Mechanism. In order to provide context and to highlight where clarity on issues that remain unresolved in the negotiations are likely to impact on the design of operational modalities, this section provides an overview of the discussion on potential linkages between the Technology Mechanism and other proposed institutional arrangements under the Convention, including different models that could emerge on relationships between the Technology Mechanism and the financial arrangements.

Section C - WHAT IS MEANT BY "MODALITIES": This section defines the different modalities of the Technology Mechanism considered in this paper, and organizes them in a

conceptual framework. The concept of integrated delivery of direction and support by the Technology Mechanism is introduced, highlighting the respective roles of the TEC and the CTC and Network. The importance of the link and cooperation with existing organizations is underlined, and the issue of engaging the private sector is discussed. It also provides definitions of the terminology used in the paper.

Section D - TECHNOLOGY EXECUTIVE COMMITTEE: This section presents the options for operational modalities of the Technology Executive Committee (TEC) for each of the functions of the TEC as mandated by the SBs. The tables with the operational modalities are contained in Annex 2. It outlines the broad features of the TEC, in particular the different scenarios for the role and decision-making authority of the TEC and puts forward options for the operational modalities and the organizational and governance modalities and procedures of the TEC.

Section E - CLIMATE TECHNOLOGY CENTRE AND NETWORK: This section presents options for the operational modalities of the Climate Technology Centre and Network. The tables with the operational modalities are contained in Annex 5. It outlines the broad features of the CTC and Network, and it explores options for organizational and governance modalities and procedures of the CTC and Network.

Section F - ACHIEVING AN INTEGRATED TECHNOLOGY MECHANISM: This section focuses on options for integrating the work of the TEC and the CTC and Network.

Section G - POSSIBLE PRIORITIES FOR FUTURE WORK: This section outlines the key outstanding issues that may require further work.

Throughout this document references to the negotiating text refer to the version released immediately after the 11th session of the AWG-LCA as contained in document FCCC/AWGLCA/2010/14.

B. AN OVERVIEW OF THE PROPOSED TECHNOLOGY MECHANISM

1.0 Background

The Bali Action Plan, agreed by the Conference of Parties (COP) in 2007, initiated a comprehensive process to enable the full, effective and sustained implementation of the Convention through long-term cooperative action, now, up to and beyond 2012. The Plan set out a detailed mandate for enhanced action in all key areas, including adaptation, mitigation, finance, technology and capacity-building. The Ad hoc Working Group on Long Term Cooperative Action under the Convention (AWG-LCA) was established as the forum through which negotiation would occur.

The need to enhance action on technology development and transfer to support action on mitigation and adaptation was recognised as one of the main building blocks of the negotiation process. In this regard, the BAP called for effective mechanisms and enhanced means for the removal of obstacles to, and provision of financial and other incentives for, scaling up of the development and transfer of technology to developing country Parties in order to promote access to affordable environmentally sound technologies. It also called for ways to accelerate deployment, diffusion and transfer of affordable environmentally sound technologies and for cooperation on research and development of current, new and innovative technology, including win-win solutions[1].

The intensive process of negotiation culminated in the Copenhagen Climate Change Conference in 2009.

Towards the end of 2009 Parties began to converge around the concept of defining a new Technology Mechanism under the Convention, that would become the centre piece of an agreed outcome on technology development and transfer. In Copenhagen, Parties negotiated all aspects of the text, and came close to completing the negotiating process that would have resulted in an agreement to establish the Technology Mechanism. However, several outstanding issues remained in the text[2].

The Copenhagen Accord reflects the agreement on the Technology Mechanism: "In order to enhance action on development and transfer of technology we decide to establish a Technology Mechanism to accelerate technology development and transfer in support of action on adaptation and mitigation that will be guided by a country-driven approach and be based on national circumstances and priorities."

Despite significant progress in many areas, it was however, not possible for Parties to agree on a balanced political package across all elements of the Bali Action Plan in Copenhagen. Rather, the mandate of the AWG-LCA was extended for one year and is set to be concluded at COP 16 in Cancun.

[1] See paragraph 1 (d) of Decision 1/CP.13 (Bali Action Plan)
[2] The issues that remain outstanding in the text are summarised in Annex 1

In June 2010, Parties returned to the negotiating table at the 10th session of the AWG-LCA and, for the first time since Copenhagen, Parties were able to convene to consider the text on technology development and transfer. At the June session the Parties confirmed that the text represents an accurate reflection of where the negotiations had got to in Copenhagen. Furthermore, Parties confirmed the high level of agreement on the establishment of the Technology Mechanism and its components (Technology Executive Committee and Climate Technology Centre and Network). The interventions from Parties also demonstrated that they are in general agreement regarding the functions of these bodies (shown in Box 1, below) and that they have a shared understanding of the issues that remain to be negotiated.

Box 1. Functions of the TEC and the CTC and Network[3]

Technology Executive Committee

7. *Decides* that the Technology Executive Committee is hereby defined and shall have the following functions:

(a) Provide a global overview of technological needs and analysis of policy and technical issues related to the development and transfer of technology for mitigation and adaptation to the Conference of the Parties and its subsidiary bodies;

(b) Consider and recommend, as appropriate, actions to promote technology development and transfer to accelerate action on mitigation and adaptation;

(c) Prepare guidance for adoption by the Conference of the Parties on policies, programme priorities and eligibility criteria related to technology development and transfer[,with special consideration given to least developed Parties];

(d) Promote collaboration on the development and transfer of technology for climate mitigation and adaptation between governments, industry, non-profit organizations, and academic and research communities;

(e) Provide periodic reports on the progress of its work to the Conference of the Parties [through the Subsidiary Body for Scientific and Technological Advice] and, upon request, advice to the subsidiary bodies established under the Convention on matters related to efforts to accelerate action on technology development and transfer;

(f) [Recommend and support necessary actions to address and remove the barriers to technology development and transfer [identified by developing country Parties], in order to enable enhanced action on mitigation and adaptation;]

(g) Provide guidance to the Climate Technology Centre and Network with a view to aligning the activities of the Climate Technology Centre and Network with country-driven actions;

(h) [Address issues related to intellectual property rights as they arise;]

(i) Catalyse the development and use of technology road maps or action plans at international, regional and national levels through cooperation between relevant stakeholders, particularly governments and relevant organizations or bodies, including the development of best practice and guidelines, as facilitative tools for action on mitigation and adaptation;

Note from the Chair: In relation to paragraph 7 (a) (b) (d) and (f), above, Parties may wish to consider the potential link between the proposed Technology Executive Committee and the proposed functions for the institutional arrangements for adaptation described in option 1, paragraph 7 (d) and (e) of Annex II.

In relation to paragraph 7 (a), above, Parties may wish to consider the potential link between the proposed Technology Executive Committee and the proposed mechanism to record nationally appropriate mitigation actions and facilitate provision and recording of support as described in paragraphs 31–33 and 49–50 of Annex V.

Climate Technology Centre and Network

[3] Functions that are highlighted are those that are addressed in this paper

11. *Decides* that the Climate Technology Centre, supported by its regional units and by the climate technology network, will:

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

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

(ii) Provide information, training and support for workforce development programmes to build or strengthen developing country capacity to identify technology options, make technology choices and operate, maintain and adapt technologies;

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

(b) Stimulate and encourage, 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) Develop and customize analytical tools, policies and best practices for country-driven planning to support the dissemination of environmentally sound technologies;

(d) Establish and facilitate a Climate Technology Network 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, on request by 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) Performing other such activities as may be necessary to carry out its functions;

(e)

[*Option 1:*

Provide periodic reports on the progress of its work to the Conference of the Parties through the [Subsidiary Body for Scientific and Technological Advice];

Option 2:

Provide periodic updates on the status and progress of its work, including that of the Climate Technology Network, to the Conference of the Parties through the [Subsidiary Body for Scientific and Technological Advice][Technology Executive Committee], with a view to determining any required action resulting from the updates;]

Note from the Chair: In relation to paragraph 11 above, Parties may wish to consider the potential link between the proposed Climate Technology Centre and Network and the proposed international, regional and national adaptation centres as described in paragraphs 9 and 10 of Annex II, and other potential links with proposed institutional arrangements, as appropriate.

During the 10th and 11th sessions of the AWG-LCA Parties also devoted time to discuss the overall coherence and the inter-relationships between the proposed institutional arrangements within the negotiating text. Parties have been elaborating potential inter-linkages between the Technology Mechanism and the institutional arrangements for adaptation, mitigation and finance. Figure 1 maps the references in the text that indicate these potential linkages.

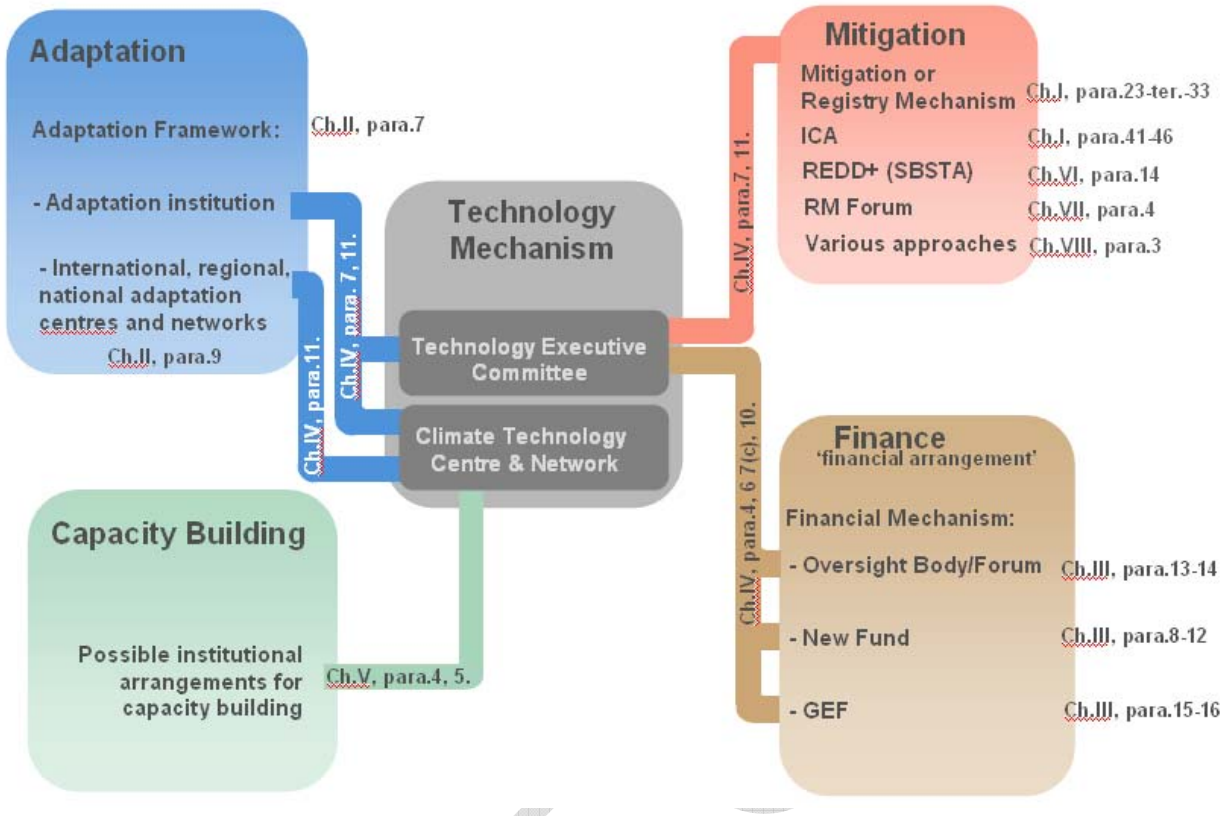

Figure 1. Possible linkages between the Technology Mechanism and other proposed institutional arrangements.

2.0 Objectives of the Technology Mechanism

The Parties have defined an objective and associated principles for technology development and transfer in the current negotiating text. In addition the Shared Vision within the negotiating text also contains two paragraphs proposed by the AWG-LCA Chair and which were considered and modified by Parties at AWG-LCA 12. These are shown in box 2, below.

Box 2. Elements of the text that may help define the objectives of the Technology Mechanism

Shared Vision (paragraphs 8 and 9 of Chapter I):
8. The full, effective and sustained implementation of the Convention requires long-term national and international cooperative efforts to accelerate research and development, demonstration, deployment, diffusion and transfer of environmentally sound technologies and know-how, in particular to developing country Parties.
9. In order to achieve the ultimate objective of the Convention, all Parties should cooperate, consistent with international obligations, through effective mechanisms, enhanced means, appropriate enabling environments and the removal of obstacles, and ensure the provision of technological support to developing country Parties to enable action on mitigation and adaptation.

Objective (paragraphs 1-3 of Chapter IV):
1. *Decides* that the objective of enhanced action on technology development and transfer is to support action on mitigation and adaptation in order to achieve the full implementation of the Convention;
2. *Also* decides that, in pursuit of this objective, the identification of technology needs must be nationally determined, based on national circumstances and priorities;
3. *Agrees* to accelerate action consistent with international obligations, at different stages of the technology cycle, including research and development, demonstration, deployment, diffusion and transfer of technology (hereinafter in this decision referred to as 'technology development and transfer') in support of action on mitigation and adaptation;

While these vision and objective statements will be important for determining the broad direction and overall approach for technology development and transfer and for the operational design and implementation of the Technology Mechanism, Parties may wish to consider whether it would be valuable to further operationalize these objectives.

In Part D, Section 3.0, and in Part E, Section 3.0 of this paper, it is suggested that the TEC and the CTC and Network could prepare multi-year strategic plans that could be used to guide their work, and to identify more specific objectives. In addition, the COP could provide annual guidance on the implementation of the Technology Mechanism. Parties have also highlighted the need for the Technology Mechanism to be action orientated and lead to measureable outcomes. In elaborating the options for the operational modalities of the CTC and Network in Part E, Section 2.0, possible technical outcomes have been described for each function. A similar approach could be taken for the TEC, and these technical outcomes could be used as part of a monitoring and evaluation system for tracking the performance of the implementation of the Technology Mechanism.

3.0 Key outstanding issues under negotiation and their potential impact on the design of operational modalities

As discussed briefly in Section 1.0 above, several important issues remain unresolved in the negotiations (see Annex 1). To some extent, resolution of these issues will have an important bearing on the selection and design of modalities of the Technology Mechanism.

One aspect that will have a major impact on the selection and design of modalities is the role of the Technology Mechanism in the cycle preparing and implementing enhanced actions on mitigation and adaptation, and in particular the arrangements for the provision of financial, technological and capacity building support. The different models under consideration, and their implications for the role of the Technology Mechanism are described below. Further consideration of these broad choices are also addressed in the specific context of the role of the TEC and the CTC and Network in Part D, Section 1.0 and in Part E, Section 1.0, respectively.

3.1 The role of the Technology Mechanism in supporting enhanced action by developing country Parties

During the negotiations all Parties have emphasized the importance of the proposed linkage between the Technology Mechanism and the financial mechanism. Figures 2, 3 and 4 presents different models that have been used by Parties to describe the nature of this relationship, and the possible inter-relationships between the Technology Mechanism and the key aspects of the overall institutional design for the future international climate change regime.

Broadly speaking, the differences between these three models relate to the extent of the relationship between the Technology Mechanism and the financial mechanism, and the extent to which the Technology Mechanism is involved in the lifecycle of designing, matching, implementing and evaluating proposals made by developing country Parties.

In all the models, the CTC and Network is available to support Parties, at their request, in the development of their proposals for support under the Convention. However, in model 1, this is the extent of the role of the Technology Mechanism throughout the lifecycle of a proposal. In model 2, the TEC also has a role in reviewing proposals for funding, and in model 3, the TEC may also provide advice to funding windows and would have a role in advising on the matching of actions with support and in the evaluation of the proposals once implemented. In this latter case, the respective roles of the TEC and the CTC and Network in matching of technological support with needs is unclear.

A more detailed description of the characteristics of each model is provided below each of the diagrams that follow.

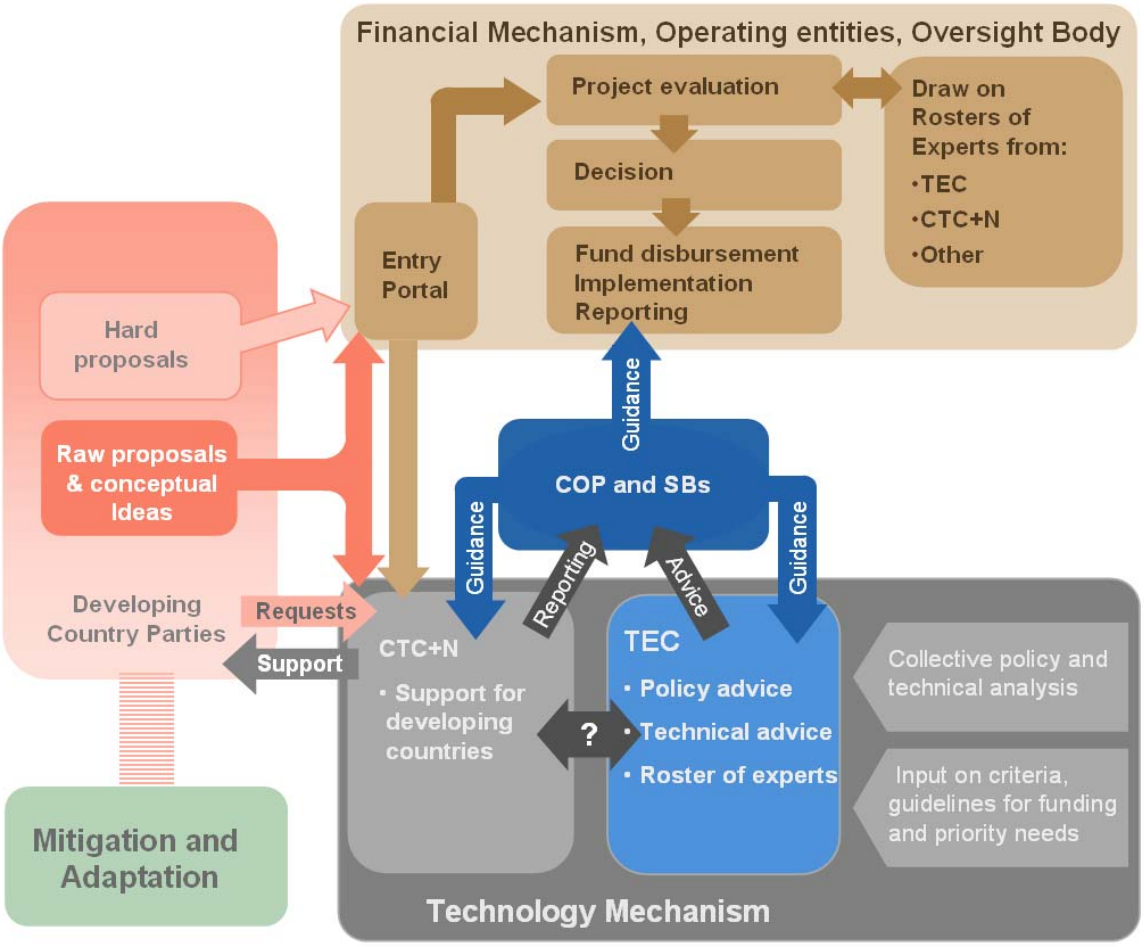

Figure 2. A possible model (1) of the interaction between the Technology Mechanism and the financial arrangements and other related institutions

In model 1 Parties would have the opportunity to seek support from the CTC and Network in the preparation of technology initiatives and proposals for financial support in order to help convert a conceptual idea into a high quality proposal that has the features that would be expected from a funding body. In seeking the support of the CTC and Network the aim would be to expedite its consideration for funding and ensure that the proposal is technically robust, and more likely to be successfully implemented and meet the objectives that the Party aims to achieve through the proposal.

The nature of the relationship between the TEC and the CTC and Network in this model is unspecified, but likely to be one based on information sharing rather than accountability. Both bodies report independently to the COP, through the Subsidiary Bodies (SBs).

Model 1 (figure 2) also creates a clear separation between the Technology Mechanism and the financial mechanism. The operating entities of the financial mechanism would undertake the technical reviews of Party proposals. The TEC may have a role in providing input to the financial mechanism through the preparation of advice for adoption by the COP, through the SBs, but that

would be the extent of its role. The COP could then take this advice into account when preparing guidance to the operating entities of the financial mechanism.

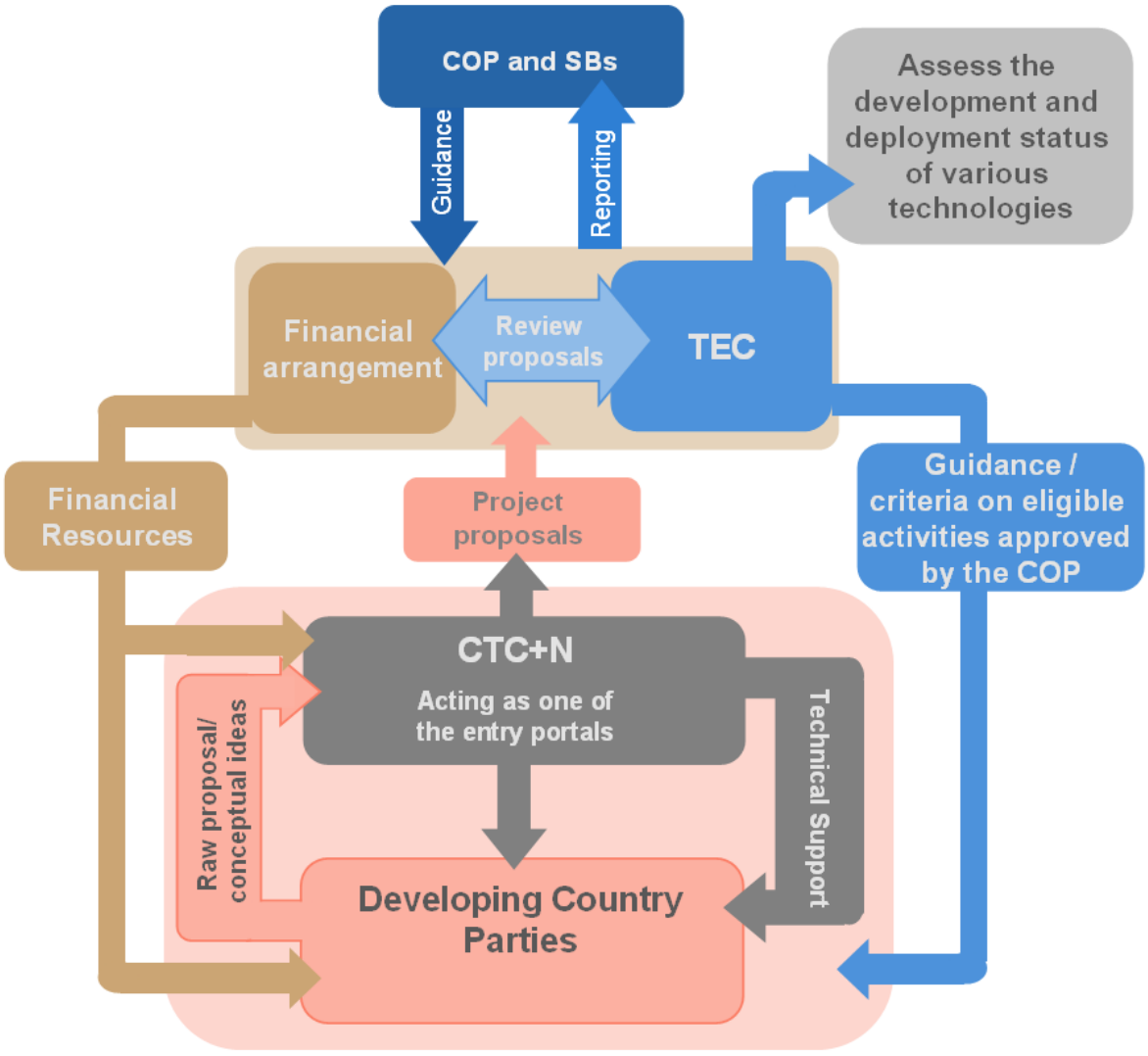

Figure 3. A possible model (2) of the interaction between the Technology Mechanism and the financial arrangements and other related institutions

In model 2 (figure 3) the TEC and the financial mechanism are closely connected, with the TEC involved in determining the activities that are eligible for support and in the review of proposals from Parties. The TEC would also have a role in assessing the status of technology development and transfer and would recommend actions that would accelerate the deployment and diffusion of technologies. In this model the CTC and Network would be accountable to the TEC, which would ensure that its activities are closely aligned with the needs of developing countries.

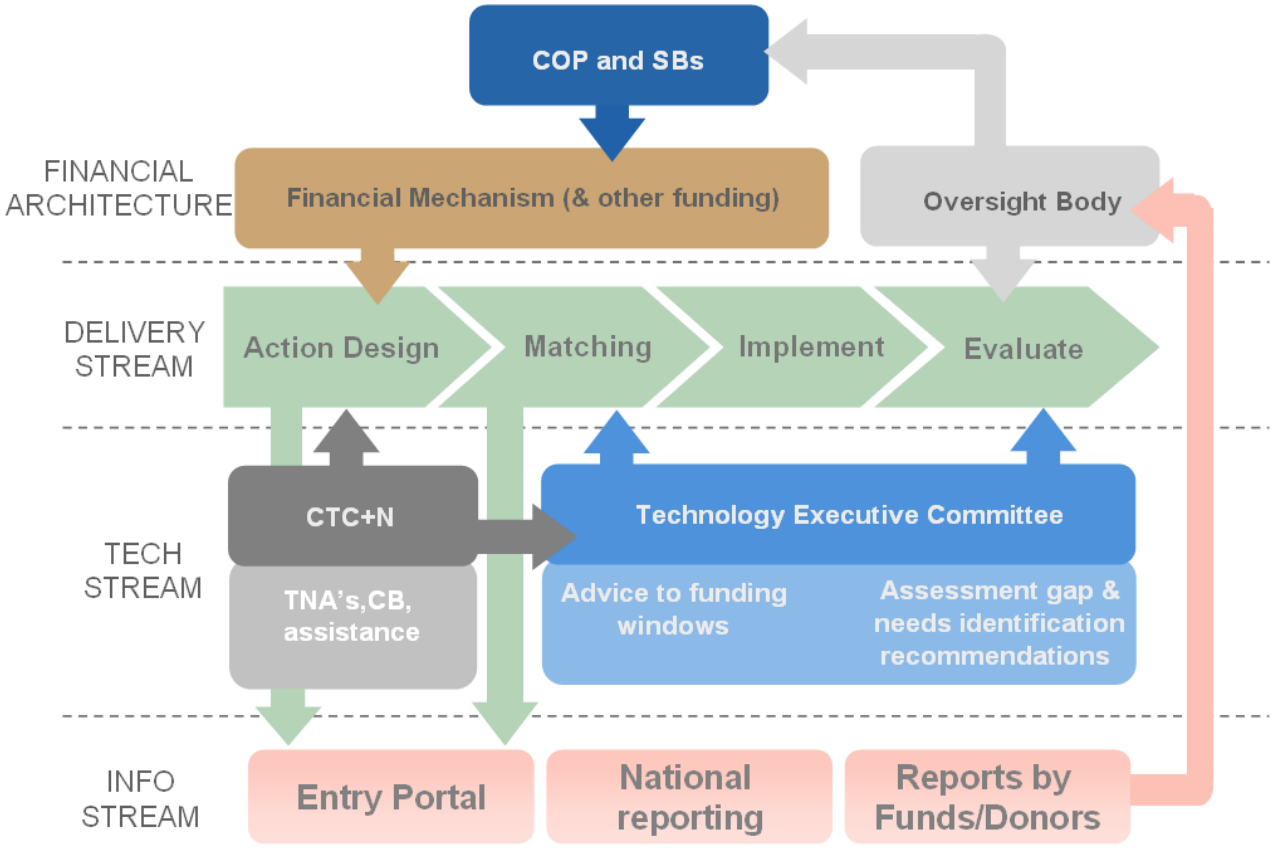

Figure 4. A possible model (3) of the interaction between the Technology Mechanism and the financial arrangements and other related institutions

In model 3 (figure 4), the role of the CTC and Network remains the same as for the previous two models. However, the CTC and Network would be accountable to the TEC, and the TEC would provide advice to a dedicated funding window for technology development and transfer. It would also assess gaps and identify needs and make recommendations to the financial mechanism through the COP. In this model, the TEC would also have a role in advising on the matching of technological support with the proposals of Parties, although the process of matching would primarily occur through the CTC and Network. The TEC would also have an important role to play in the evaluation of proposals once they have been implemented as part of the measurement, reporting and verification (MRV) arrangements established within the future regime. However, the TEC would not have a role in the review of individual proposals, which would be undertaken by the operating entities of the financial mechanism. The TEC may have a role in providing input to the financial mechanism through the provision of general recommendations to the COP. The COP could then consider adopting these recommendations in its guidance to the operating entities of the financial mechanism. A two-way information exchange could be established between the TEC, the operating entities of the financial mechanism and other relevant institutions under the Convention.

There are likely to be many other models that Parties will be considering and it is important to recognize that different approaches could emerge during the course of the negotiations. While it

is beyond the mandate of this paper to consider these different perspectives and alternatives, the paper does not preclude options that Parties may be considering for the modalities since broader choices regarding the overall role of the Technology Mechanism within the agreed outcome may have a significant impact on the choice and design of the modalities.

C. WHAT IS MEANT BY 'MODALITIES'?

1.0 Types of modalities considered within this paper

A broad range of modalities will be required to enable the Technology Mechanism to carry out its functions set out in paragraphs 7 and 11 of Chapter IV of FCCC/AWGLCA/2010/8. This section identifies and defines the modalities considered in this paper, and provides a conceptual framework for their organization. It also introduces the concept of integrated delivery of services and support by the Technology Mechanism, and explores modalities for cooperation with existing organizations and the private sector. This section does not go into detailed descriptions of the modalities—this is done in Sections D and E.

While mainly focused on structural issues, the paper prepared earlier in 2010 by UNEP et al, "*An exploration of options for operational modalities of climate technology centres and networks*", provides an insight into the range and types of modalities that may be necessary for the successful implementation of the different functions of the Climate Technology Centre and Network. The role of the TEC was not considered in the UNEP paper.

For the purposes of this paper, the modalities are the instruments or means to deliver or operationalize the functions of the Technology Mechanism, and comprise both operational modalities or 'delivery mechanisms', and governance and organizational modalities and procedures. The modalities explored in this paper are overall well-tested means used by existing executive and international technology policy bodies, organizations, technology centres and networks with international and national climate technology support programmes, and with functions that range from policy and technical advice, technical assistance, knowledge transfer, facilitation of technology demonstration, to market development, and information sharing.

A body of knowledge therefore exists on the types of modalities utilized by multilateral and national organizations to support technologies, which can be drawn upon when operationalizing the Technology Mechanism. A number of organizations, like IFAD, UNEP and UNIDO, for example, utilize partnerships as a key instrument to deliver their objectives; UNIDO works through networks to facilitate business and financing partnerships; others, like NREL, use advisory networks organized by topic; the GEF applies a wide range of tools to support the diffusion of technologies in the projects it finances, and most organizations have a range of information, databases, good practices and other products to support implementation of technology actions.

With regard to the TEC, with its role in providing strategic direction to the operations of the Technology Mechanism, lessons may be learnt from other similar bodies, such as the existing bodies under the Convention, and bodies such as the GEF's Scientific and Technical Advisory Panel (STAP), which provides strategic advice at the policy and project level, and analysis of technical and policy issues. The modalities for the Technology Mechanism would need to be tailored to the specific functions of its different components and to country driven needs and priorities.

In the section below a framework is proposed for organizing the different kinds of modalities for the Technology Mechanism.

1.1 Definitions and framework for modalities

Two different types of modalities (see Figure 5 below) will be required to carry out the functions of the TEC, and CTC and Network:

- **operational modalities**, defined as the instruments for delivering support to countries;
- **organizational and governance modalities and procedures**, which stipulate and clarify how the operational modalities will be implemented internally, and how the work of the TEC and CTC and Network may be organized. They also include the governance and management arrangements to enable the bodies to perform their duties.

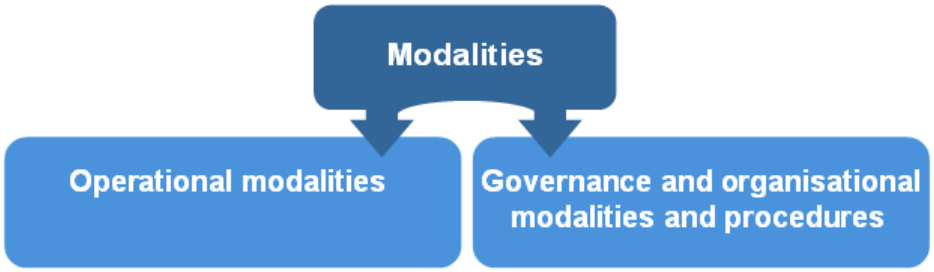

Figure 5: Two types of modalities that are explored in this paper.

Three distinct categories of operational modalities can be identified: products, services and partnerships, shown in Figure 6.

Products: generic examples of operational modalities that are products that would support the functions of the TEC and the CTC and Network include: analytical tools, best practices, information products (e.g. technology performance data, suppliers, financing sources, etc.), and other products and tools. The TEC and the CTC and Network would have to compile, develop and customize such tools to support the country-driven planning and implementation of environmentally sound technologies (ESTs). Specific examples of products are: the compilation of performance data and experiences with emerging technology and system demonstrations and the tools for techno-economic assessment. Existing examples of such products include the Global Bioenergy Partnership (GBEP) bio-energy analysis toolkit, the International Federation of Surveyors (FIG) document on best practices for coastal adaptation, the REEGLE search engine for renewable energy and energy efficiency data, and the OpenEI community web platform for sharing information on clean energy technologies and programmes.

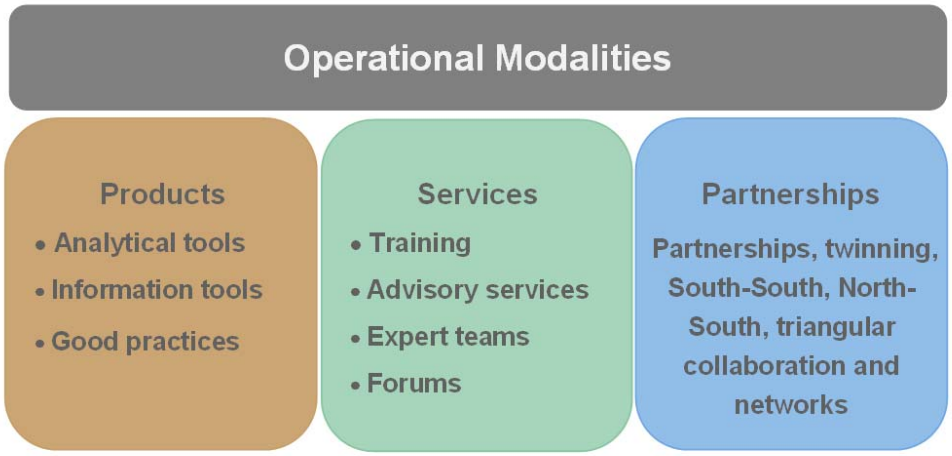

Figure 6: Three categories of operational modalities, with examples.

Services: the functions suggest a wide range of services from the Technology Mechanism, including technology training, advice, linking and matching needs with support, setting up and deploying expert teams, providing forums and platforms for exchange of experiences and partnership development, and technical assistance. Existing examples of such services include training that FAO provides on efficient irrigation technologies and practices, the project finance advisory services provided by the Private Financing Advisory Network of the Climate Technology Initiative, the regional training programme of the UNFCCC that assists Parties in preparing technology project proposals that will meet the standards of international financial providers, the expert technical assistance that the Inter-American Institute for Cooperation on Agriculture provides across countries on agricultural technologies and practices, and the UNEP convened Global Network on Energy for Sustainable Development (GNESD) to promote peer to peer learning across countries.

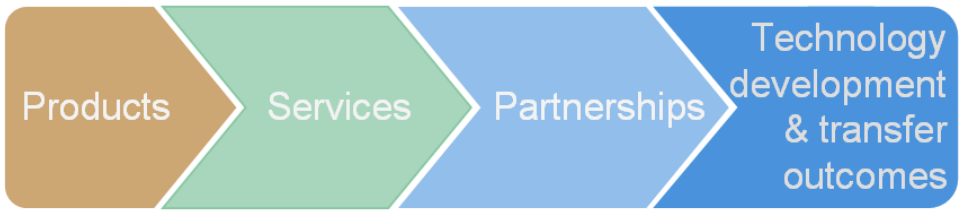

Figure 7: Products, services and partnerships working as a whole to deliver technology development and transfer outcomes

Partnerships: the functions indicate quite clearly that facilitating the establishment of partnerships involving various collaborative and twinning arrangements would be an important type of operational modality for the CTC and Network, and for the TEC where its catalytic functions are concerned. Partnerships could be a key instrument to advance technology innovation and adaptation, build technical capacity, access expertise, support the creation of business alliances, leverage resources, promote investment and generally implement technologies. The partnerships modality will, in turn, have to be supported by suitable processes,

products and services, shown in figure 7. Examples of existing technology oriented partnerships include the Consultative Group on International Agricultural Research (CGIAR) collaboration across research centres around the world to develop and disseminate improved agricultural technologies and practise; the International Energy Agency (IEA) technology implementing agreements that engage larger numbers of countries in development of technology standards and test procedures, sharing of roadmaps and performance data, and developing improved simulation models; the China-U.S. joint Clean Energy Research Centre on Building Efficiency that will foster collaboration across technical institutes and the private sector from both countries, and many other similar bilateral technology partnerships across countries; and the Clean Energy Ministerial partnerships to advance deployment of smart grid, efficient appliances, building efficiency and other technologies and use of clean energy policy best practices.

The products, services and partnerships to support technology actions will differ across each stage of the innovation cycle and according to the stage in the technology action planning and implementation process.

A distinction in operational modalities will also have to be made by component of the Technology Mechanism. The CTC and Network, which would provide direct operational support to Parties, facilitate technology cooperation and partnerships and develop tools and policies, is the operational arm of the Technology Mechanism. It would require a borad range of operational modalities to carry out its functions. The TEC's operational modalities on the other hand, would have to reflect its high-level policy-making and catalytic role.

The forums provided by the TEC to promote collaboration on the development and transfer of technology will be of a different form and play a different role than the CTC and the Network's forums and instruments to engage with the private sector, public institutions and research institutions to stimulate the development and transfer of technologies. The TEC's engagement with industry, research communities and governments will be at the policy level, and guide the CTC and Network, whilst the forums convened by the CTC and Network would be operational and service-oriented and take place at the regional, national and local levels.

A glossary of terms used in this paper related to operational and governance and organizational modalities and procedures, can be found in section 1.4.

1.2 Integrated delivery of strategic direction and support

The Technology Mechanism is composed of the TEC and the Network of national, regional, sectoral and international technology centres, networks, organizations, initiatives. Each has a set of related and complementary functions. To ensure the coherence, efficiency and effectiveness of the Mechanism as a whole, an integrated and seamless delivery of strategic guidance and operational modalities of its different components will be important. Both the CTC and Network, and the TEC have been assigned a role in promoting collaboration and international partnerships (paragraphs 7 (d) and 7 (i)), and both the CTC and the Network have functions related to technology cooperation and collaboration (paragraphs 11 (b) and 11 (d)(i), (ii) and (iv)). In designing the modalities, it will be important to ensure the complementarity of the respective

roles of the TEC and the CTC and Network, particularly when related functions are being implemented.

The integrated delivery of services and mandates will require the creation of an appropriate coordination, management and accountability system within the Technology Mechanism. The respective responsibilities and accountability of the different components of the Technology Mechanism will have to be clearly delineated and agreed, and functional firewalls created. Accountability will need to be established at different levels, based on a clear agreement of responsibilities, on agreed strategic plans and work plans of the TEC, and of the CTC and Network, and on a system for monitoring and evaluation.

The TEC, as a high-level body that sets policy and guides the CTC and Network, would be the policy arm that provides the broad framework, directions and strategy for technology development and transfer under the Convention, which would be underpinned by its role in providing a global overview of technology needs, and of its analysis of policy and technical issues. It also has a high-level role in promoting technology collaboration and a role in catalysing the development of technology road maps and actions plans at the national, regional and international level, which may involve operational modalities not dissimilar from those of the CTC and Network.

The CTC and Network is the operational arm of the Technology Mechanism that would translate the strategic directions developed by the TEC into a strategic plan and work plans to guide: the delivery of country driven services to developing countries, the development of tools and policies, and the support of technology cooperation and partnerships, in accordance with its functions.

Appropriate governance and organizational modalities and procedures will be required to enable the implementation of the operational modalities of the TEC, and CTC and Network and to clarify the processes that may be followed to plan and coordinate their delivery. As outlined in section 1.0, and shown in Figure 8, two distinct types of modalities are considered in this paper:

1. The governance and organizational modalities and procedures of the TEC and CTC and Network; and
2. The operational modalities of the TEC, CTC and Network, classified into three categories.

Figure 8. Modalities of the Technology Mechanism.

Sections D and E of this paper elaborate further on these modalities and procedures. Options to achieve an integrated delivery of modalities and procedures are explored in Section F.

1.3 Possible role of existing organizations and private sector engagement

It is clear from its functions that the Technology Mechanism would work closely and collaboratively with international and regional organizations and bodies, and harness the capabilities of technology centres, institutes and the private sector, rather than duplicating their programmes and initiatives. The Network that the CTC will establish, and which will be composed of existing national, regional and international technology centres and institutes, would deliver most of the technical assistance to developing country Parties and would be a central actor in facilitating technology partnerships. Only where there are gaps in existing capabilities and support for technology development and transfer, would the Technology Mechanism facilitate and support the creation of new technical assistance programmes and networks, which could be delivered by existing institutions. A core role of the CTC would be to match technology needs with available support. It would also provide information and advisory services to developing country Parties, develop tools and best practices, and stimulate technology cooperation.

The TEC would equally achieve its objectives by cooperating and consulting with international and regional organizations. Through its membership, and the working groups and consultative groups it may establish, it could draw on the expertise of a wide range of institutional actors and communities, including UN agencies, other intergovernmental and international organizations, business and industry organizations, academic and research communities, and non-governmental organizations (NGOs). It would work closely with existing organizations to catalyse the development of international technology roadmaps and provide a high-level forum for the promotion of collaboration on the development and transfer of technology. It could, for example, work in a complementary fashion with the proposed International Low-Carbon Energy Technology Platform of the IEA, IRENA, the Global CCS Institute and other technology specific centres, networks, and initiatives, which could form part of the Climate Technology Network. It would not operate in isolation from existing bodies and organizations.

The majority of the operational modalities of the CTC and Network could most likely be carried out by existing and enhanced organizations, technology centres and institutes. They would, however, need to be tailored to the needs and requests of developing country Parties.

The role of the private sector in technology development and transfer is widely recognized, and the Technology Mechanism would seek to engage private sector actors at different levels. Private sector expertise could be drawn upon by the TEC through various organizational modalities whilst at an operational level the private sector would be a key actor and partner for the CTC and Network in the delivery of technology development and deployment outcomes. Various forms of public-private partnerships will be needed, which the Technology Mechanism could facilitate. The Global Environment Facility (GEF), the CGIAR, and the Asia Pacific Partnership on Clean Development and Climate (APP), offer sources of extensive experience and possible models for engaging with the private sector. As a result of the GEF's review of past experience, for example, a number of instruments were identified to enhance the GEF's private sector collaboration, including the creation of a pilot public-private partnership project, the Earth Fund, which was endowed with a USD 50 million GEF grant. The APP on the other hand offers experience with using a sector-based approach to technology collaboration.

The consideration of the use of different modalities to achieve the objectives of the Technology Mechanism, including possible approaches for establishing a Network of existing national, regional and international institutes, would benefit from further analysis than has been carried out so far. In section G on possible priorities for further work, it is for example proposed that a capability assessment is carried out, in which the functions and options for operational modalities of the CTC and Network are assessed against the capabilities of existing organizations that may form part of the Network, with the view to identifying gaps and opportunities. An assessment of the cost of different implementation models for the CTC and Network would equally further inform the discussion on how the Technology Mechanism could operate.

1.4 Glossary of terms related to the modalities that are used in this paper

Throughout the paper a number of terms are used, for which definitions are provided below.

- **Functions:** the tasks and roles assigned to the TEC, CTC and Network by the Parties.
- **Modalities**: the instruments and organizational means of the TEC, and CTC and Network.
- **Operational modalities:** the operational instruments or means to deliver or operationalize the functions of the TEC, CTC and Network. The operational modalities consist of three categories: Products, Services and Partnerships.
- **Products**: one of three categories of operational modalities, including, for example, information products and tools, guidelines, and analytical and planning tools.
- **Services:** one of three categories of operational modalities, including, for example, delivery of training and expert assistance, the convening of forums, matching needs with support and advisory services.
- **Partnerships**: one of three categories of operational modalities, encompassesing different types of cooperative and collaborative arrangements, including North-South, South-South and triangular technology cooperation, public-private partnerships, twinning centre arrangements, cooperative research and development.
- **Governance and organizational modalities and procedures:** refer to the internal modalities of the TEC that establish effective governance and management arrangements including processes for the organization of work that ensure the bodies can perform their duties. They comprise the processes that may be followed to decide, design, and deliver the different operational modalities of the TEC, and the CTC and Network.
- **Working groups:** refer to time-bound issue-based expert working groups, which may be established by the TEC as and when the need arises, and are disbanded when work on the issue is brought to a conclusion. Working groups assist in the performance of the TEC's functions and comprise experts, invited by the TEC, with competence in the issues under consideration. The TEC determines the terms of reference of the working group, including the work plan and deadline for submission of its reports, and appoints a Chair and Vice Chair.
- **Panels:** refer to permanent, function-based expert panels the TEC may establish, to assist it in the performance of its functions. Similar modalities apply as under working groups above.
- **Sub-committees:** of the TEC, comprised of TEC members, that it may established to assist it in performing specific functions.
- **Consultative groups**: governance and organizational modality serving the purpose of providing a regular platform to exchange views and information, consult with and leverage expertise from other organizations and institutes with mandates and programmes in technology collaboration. They would comprise representatives of relevant organizations and institutes and independent experts invited by the TEC or CTC and Network to provide advice.

D. TECHNOLOGY EXECUTIVE COMMITTEE

1.0 Broad features of the TEC

The modalities of the TEC will to a large extent be determined and shaped by its authority in decision making and its role in relation to the operating entities of the financial mechanism. Parties have articulated differing views on these two features of the TEC.

In terms of its decision making authority, views range from:

1. A scenario where the TEC would provide policy advice and recommendations to the COP or SBs, which would retain full decision making authority, and would provide the guidance on the implementation of the TEC's mandate. Under this scenario, the TEC would not be in a position to decide upon its own work plan for operationalizing its functions. The TEC would be mainly responsive to mandates and requests from the COP or SBs and its programme of work would be negotiated by the Parties and would be approved by the COP or SBs. Neither would it implement actions under its own delegated authority. This is the model of the EGTT. In a slight variation of this model, the TEC would prepare a strategic plan with a 3-5 year horizon, which would identify key deliverables and outcomes, instead of a more detailed one or two year work programme.
2. A scenario where the TEC would decide on and organize its work within the scope of its mandate and agreed functions. This is the model of the Clean Development Mechanism Executive Board (CDM EB). The TEC would be provided with broader decision making authority reaching beyond its internal administrative and management issues to also enable it to determine policy and issue guidance and execute programmes and initiatives under the delegated authority of the COP. An example of the latter could be the implementation of collaborative research and development (R&D) partnership programmes or series of international technology action plans. Within this approach, different ways for organizing its work may be considered, for example, whether to develop a strategic plan with a longer time horizon, and work plans with shorter time horizons.

In terms of the TEC's possible role in relation to the operating entities of the financial mechanism, views range from the scenario where:

1. The TEC would prepare guidance on policies, programme priorities and eligibility criteria related to technology development and transfer for adoption by the COP. The guidance would be of a general nature, whilst the role of the operating entities of the financial mechanism would be to elaborate the guidance into more detailed policies, programme priorities and eligibility criteria. The TEC would have no role in reviewing proposals submitted by Parties for funding under the financial mechanism.
2. The TEC would prepare more detailed guidance on policies, programme priorities and eligibility criteria, including where this relates to access to financial support from the financial mechanism, and technological support through the Climate Technology

Centre and Network. The members of the TEC would have a role in the review of proposals submitted to the operating entities of the financial mechanism. Two kinds of roles could be envisaged: in the first, the TEC members would review the actual proposals and in the second, the TEC would have a more strategic role of overseeing and providing recommendations for the review process, rather than reviewing each proposal. With regard to the review, two aspects need to be considered, namely the assessment of the technical soundness or quality of the proposal, and the assessment whether the proposal meets the criteria adopted by the operating entities of the financial mechanism. Furthermore, the TEC would have a role in the regular programmatic evaluations of projects. The results of the evaluations would feed into the TEC's guidance to the CTC and Network, and into its guidance on programme priorities, policies and eligibility criteria to the COP.

3. The TEC would recommend directly, under the delegated authority of the COP, to the operating entities of the financial mechanism under the COP the policies, programme priorities, eligibility criteria for support and actions that are necessary to accelerate technology development and transfer. The TEC would also review Party proposals for funding, which would mean that proposals, when they enter the financial mechanism, would be referred to the TEC for advice on whether they meet the criteria adopted by the COP. In this model, there would most likely be a specific window under the fund for technology development and transfer, and the TEC would have a role in relation to decisions on the disbursement of these funds. In addition, as under the second scenario, the TEC would take part in the regular programmatic evaluations of projects.

The consideration of the different scenarios for the decision-making authority of the TEC, and for its role in making recommendations and providing technical and policy advice to the operating entities of the financial mechanism, gives rise to a spectrum of options for operational modalities. In keeping with the mandate, this paper explores the operational modalities for these different scenarios, but it should be noted that the eventual choice of operational modalities will be affected by these broader choices. The next section lists options for the operational modalities for each function of the TEC.

2.0 Functions and operational modalities of the TEC

Options for operational modalities and organizational and governance modalities and procedures have been elaborated for each function of the TEC. They are contained in a table in Annex 2. In addition to these function-specific modalities, there are organizational and governance modalities and procedures that would apply to the TEC as a whole, which include but are not limited to issues related to its membership and composition, its meeting arrangements, participation of stakeholders and experts, and means for organizing its work. These are described in detail in section 3.

The table in Annex 2 contains a menu of options for operational modalities for those functions that have an operational aspect, and organizational and governance modalities and procedures for each of the functions of the TEC. The latter provide a further explanation on how the functions may be implemented, and include specific guidance, planning and review modalities for the

policy-making functions of the TEC. The options cover the different scenarios described above. Where relevant, functions are unpacked and the modalities and procedures specific to each function component described.

Figure 9 shows the linkages between the different functions of the TEC, and shows that the functions can be grouped. Functions 7 (g), 7 (c) and 7 (b) are policy-making functions, related to providing guidance to the CTC and Network, preparing guidance to the COP on programme priorities and eligibility criteria for the funding of proposals, and the recommendations of actions. Functions 7 (i) and 7 (d) are external-oriented catalytic functions, which would facilitate a number of deliverables. Finally, function 7 (a) is a function that supports all other functions through its analytical, information and synthesis products and services. It also involves receiving information back from the facilitating functions, which are then taken into consideration and used in the analysis of technical and policy issues.

To stimulate the discussion with Parties and to help guide the work on this paper, guiding questions on the functions and modalities of the TEC were prepared for Parties to consider. These are contained in Annex 8.

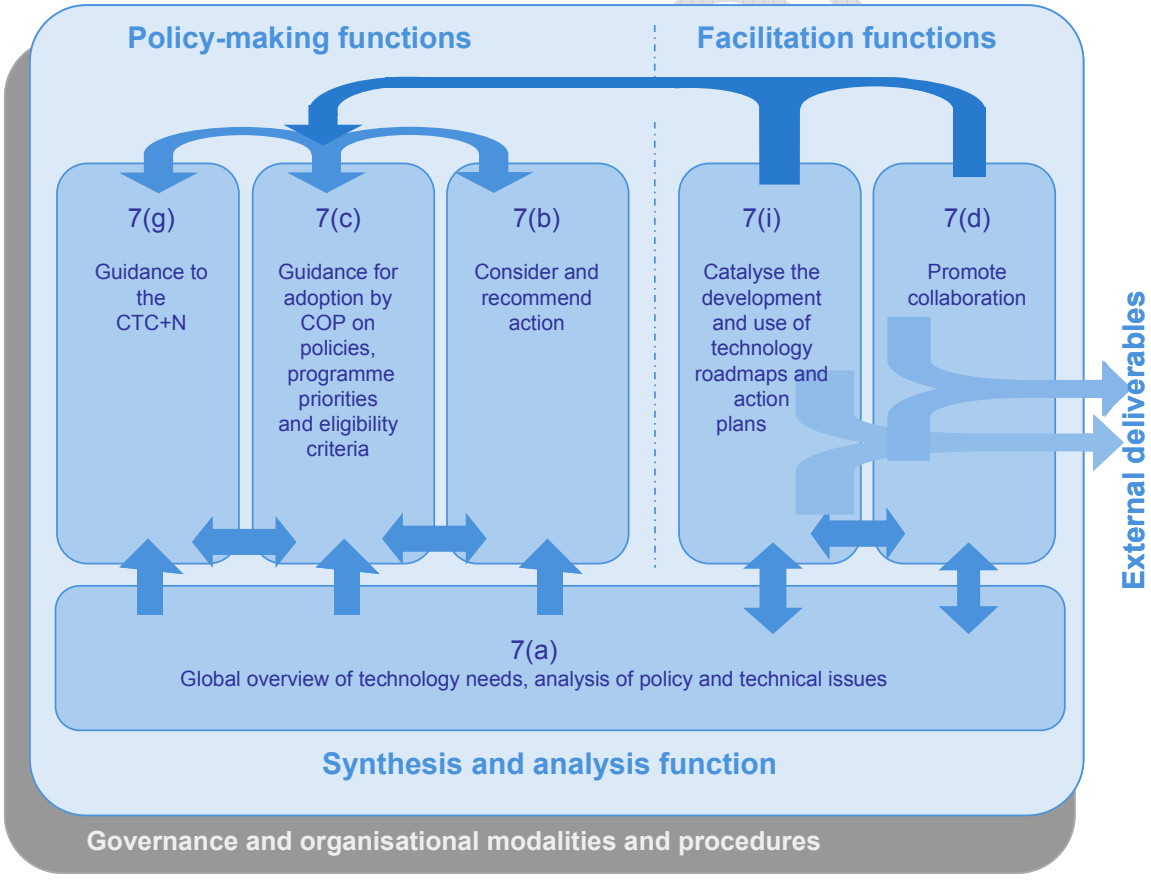

Figure 9: Linkages between the functions of the TEC.

3.0 Organizational and governance modalities and procedures

3.1 Introduction

An effective TEC will depend upon establishing well-defined roles for five different types of actors. In general the roles of each group of actors could be described as follows:

1. *Parties*
    - The Parties, through the COP and the subsidiary bodies, are the ultimate governors of the institution, and reporting and accountability arrangements will determine the relationship between the Parties and the TEC. Additionally, it is anticipated that the Parties would be directly engaged in the implementation of the functions of the TEC.
2. *Members of the TEC*
    - Members are responsible for the effective delivery of the functions and operational modalities of the TEC and for meeting basic and defined standards that would be expected of a constituted body of the Convention.
3. *Experts*
    - In order to effectively deliver its functions and operational modalities, the TEC will rely upon the advice of experts. This advice could be provided by the members and observers to meetings, and also through commissioned advice, the work of panels, working groups or sub-committees, and also by the secretariat to the TEC. Advisors could be drawn from relevant intergovernmental and international organizations, and from the private sector and civil society.
4. *Stakeholders*
    - Stakeholders that have an interest in the work of the TEC, and that have expertise and technical resources the TEC may wish to draw upon, could also be engaged through various means. These range from formal participation in the meetings of the TEC, through the use of advisory or consultative groups, or through targeted consultation on specific issues under consideration by the TEC.
5. *The secretariat to the TEC*
    - Through its deliberations and in the implementation of its operational modalities the TEC will require the support of a dedicated secretariat that has the capacity to prepare the material upon which the TEC can advance its work, and implement the decisions of the TEC. These professional service functions go hand-in-hand with the administrative functions of supporting members and organizing meetings and other events that enable the TEC to function.

Good governance practices that are well established within the UN System, and that have been established through the practices and various decisions of the COP, suggest a need to separate into two the organizational and governance arrangements to be decided:

1. Those aspects that should be decided by the supreme body that creates the new institution (in this case the COP) which are summarized in Box 4 drawing upon previous experience in establishing bodies under the Convention. In the case of the Technology

Mechanism, given the importance given by Parties to its relationship with finance, this may also be considered a core issue to be resolved by the COP in establishing the TEC.

2. Those aspects that would be further developed by the TEC during the phase of its establishment, which it may also keep under review and refine over time.

Box 4. Mandate and composition issues for which a decision of the COP may be required to establish a new body under the Convention.

Mandate

- Role
- Authority and guidance of the COP

Functions

- Specific functions of the body
- Activities for the body to be developed and/or send to COP for adoption or approval (e.g. rules of procedure)
- Activities that the COP delegates to new body to decide upon, e.g. workplans; establishing working groups to assist in its work
- Annual reporting requirement to the COP
- Other actions mandated by the COP

Composition

- Number and regional distribution of members
- Election based on nomination procedure
- Qualifications for membership
- Serving in personal capacity or as government representative
- Term of office (length of term, consecutive terms, staggering of membership, process for replacement if unable to complete office)

Chairmanship

- Body to elect its Chair and Vice Chair
- Annual rotation between Annex I and non-Annex I Party

Conflict of interest provision, if deemed relevant.

Meetings

- Frequency, venue, quorum, participation of observers

Transparency

Decision-making

COP Review of the work of the body

Secretariat

At the 12th session of the AWG-LCA Parties began elaborating the possible mandate and composition of the TEC, producing a draft text which is included in Annex 3. What follows is a description of the possible options for various organizational and governance modalities, including but not limited to those issues listed above.

3.2 Options for organizational and governance modalities and procedures

3.2.1 Possible membership and composition of the TEC

Existing bodies that have been created by the COP under the Convention have a range of membership profiles. All bodies have a membership that attempts to achieve a balance in geographical representation. Some involve only government experts, who are nominated in their personal capacity by Parties (such as the EGTT). Others involve government representation either in their personal capacity (such as the Compliance Committee) or as official representatives of their governments (such as the Adaptation Fund Board). Attempts have also been made in various institutions outside of the Convention to involve independent experts or representatives of stakeholders groups as members. A summary of the characteristics of membership of each existing body under the Convention is contained in Annex 4.

The type of membership and the composition of a body usually depends on the role of the body and its functions. The composition is also important for achieving geographical balance, and balance of gender and expertise. Parties have indicated that they envisage a membership comprising expert members, elected by the COP, serving in their personal capacity and nominated by either constituencies or Parties and groups of Parties, with the aim of achieving fair and balanced representation.

The TEC may require a balanced mixture of expertise, including finance, technical, policy and social development and other expertise. The types of expertise could be specified when the TEC is established and the desired qualities of membership could be taken into account by constituencies when making nominations[4].

Since Parties may be envisaging attracting high level experts to the TEC and expecting these members to undertake a significant workload, it may be necessary to accord them with support commensurate with their executive roles.

Number of members

When considering the size of the membership of the TEC, Parties may seek to balance three potentially competing objectives:

- A larger number of members would allow for greater regional representation and would result in a greater diversity of expertise, which may enhance the quality of its deliberations and outputs;
- A smaller number of members could enhance the efficiency of the TEC's deliberations and may be beneficial because the TEC would be more nimble, easier to coordinate and support;

[4] List the types of expertise that could be relevant

- The size of the TEC has direct implications for the costs involved in holding meetings and in supporting the members of the TEC in undertaking their duties.

As shown in Annex 4, the number of members (including alternates in some cases) ranges from 11, in the case of the Bureaux to 32 in the case of the Adaptation Fund Board.

The Chair and Vice Chair(s)

A Chair and Vice Chair(s) are usually be drawn from and appointed by the body, rather than being elected by the COP. Chair and Vice Chair arrangements also as a rule enable a balance in leadership within the body between non-Annex I and Annex I Parties, and the usual practice would be for the position of Chair and Vice Chair to alternate between non-Annex I and Annex I Parties. One form of rotation involves the Vice Chair graduating to the position of the Chair once the term of the Chair expires, as is the current practice with the EGTT. The term of a Chair and Vice Chair could be for one or two years, however, the general practice is to have a one year term.

In the event that the membership of the TEC was expert based, and should Parties have an expectation that the Chair and/or Vice Chair would have responsibilities and undertake functions that would extend beyond the meetings of the TEC and would require significant commitment in terms of time, it could be considered appropriate to provide a stipend to the Chair and/or Vice Chair as compensation for their time and expenses, as is the case with the CDM EB, and Adaptation Fund Board.

Participation by the CTC and Network

Parties may also wish to consider whether it would be beneficial to involve the CTC and Network in the meetings of the TEC. Depending on the governance model that is decided for the CTC and Network, a model with a cross over in membership could be useful to help achieve integration and coherence between the two components of the Technology Mechanism.

3.2.2 Possible processes for nomination and election of members

As can be observed by the summary of the characteristics of membership of each existing body under the Convention contained in Annex 4, there are essentially two models for the appointment of members. The first model, which is employed by expert bodies under the Convention (EGTT, Least Developed Countries Expert Group (LEG), Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE)) involves a process of nomination that is confirmed by the Subsidiary Bodies. The second model, which is employed by the more formally constituted bodies of the Convention (CDM EB, Joint Implementation Supervisory Committee (JISC), Compliance Committee and Adaptation Fund Board) involve nominations from the UNFCCC system of constituencies followed by elections by either the COP or the CMP. It is this latter model that is currently being considered by Parties for the TEC.

Maintaining continuity and institutional memory is a key issue for constituted bodies, and this can be achieved by staggering the terms of the members, so that at any one time a portion of the

membership remains constant while a portion is renewed. A possible model for achieving staggering is the EGTT, where half of the members are initially nominated to serve for a three year period, and the other half for a two year period, taking into account the need to maintain the overall balance of the group.

The COP should also determine the procedure for addressing changes in membership in the event that a member resigns or is otherwise unable to complete the assigned term of office or to perform the functions of that office. The TEC may then decide, bearing in mind the proximity of the next session of the COP, to appoint another member from the same constituency to replace the member for the remainder of that member's mandate, in which case the appointment would count as one term.

3.2.3 Possible participation of experts

The TEC could draw upon outside expertise from a number or sources to provide advice and as expert advisors at its meetings, including the UNFCCC roster of experts and the CTC Network. The TEC would also proactively engage intergovernmental and international organizations in its work, and could invite advisers drawn from relevant intergovernmental and international organizations to participate in meetings as expert advisers to advise on specific issues.

Roster of experts or institutions

Some Parties have suggested the concept of a roster of experts or institutions, or a similar organized approach for facilitating expert participation in the TEC, and that could also be used by the CTC for obtaining specialist expertise.

The notion of having a roster of experts or institutions could be beneficial in several respects:

- It could enable expedited and more efficient procedures for contracting expert advice and input, particularly in the case of individuals who work in institutions. The time required for selection and evaluation procedures and for preparing and negotiating contracts could be reduced;
- The approach could help improve the regional balance in the experts that are asked to provide advice. While significant efforts are already made to achieve balance in expert participation, there is further room for improvement and a roster of experts or institutions could be a useful and efficient approach;
- It may be a useful means for increasing the calibre and quality of the expertise available to the TEC, particularly if entry into the roster of experts or institutions was seen as a form of recognition;
- Based on the experience of the EGTT, the TEC may wish to undertake consultation processes with experts as it develops its products and advice or to support its decision making. Such consultation processes would not normally involve remuneration. It may be possible to also use the roster of experts or institutions as a tool for consultation.

On the other hand, the concept of a roster of experts or institutions has potential limitations, which would need to be taken into account when considering its design:

- The roster should not be used to limit the potential participation of experts;
- It should also not be designed in such a way that is inconsistent with established recruitment and procurement policies, and it should respect the need for competitive bidding as a tool for achieving value for money;
- There would need to be an active maintenance and facilitation of the roster, with regular recruitment and renewal procedures.

A separate possibility would be to establish a roster of experts that serves the needs of both the TEC and the CTC. Such a roster could be used as a complementary means for harnessing the Climate Technology Network.

The UNFCCC already has a roster of experts, which, when established by the COP in 1994, was intended to focus on expertise in technology transfer, and has since been predominantly used for expert reviews related to national communications and inventories.

By its decision 7/CP.2, paragraph 2 (d), the COP, at its second session, requested the SBSTA to compile a roster of experts on technology and technology transfer as discussed in FCCC/CP/1996/15/Add.1. At its fourth session, and as subsequently reconfirmed at its seventh session (FCCC/SBSTA/1997/14), the SBSTA agreed to expand the roster to include experts in the field of methodologies.

The SBSTA, at its eleventh session, noted that the rosters of experts should respond to the evolving needs of the Convention bodies. In this regard, it recognized that some areas of expertise are not included in the rosters, but should be, as the need arises. The SBSTA concluded that the rosters should be integrated into one UNFCCC roster of experts to serve the various needs of the Convention. The SBSTA requested the secretariat to design a unified UNFCCC roster, building upon the fields of expertise identified in document FCCC/SBSTA/1998/INF.4, annex I.

Task orientated and time bound participation (working groups)

It could be expected that for some functions it may be necessary to establish expert working groups of the TEC to undertake a particular activity, and upon concluding this activity such working groups would be wound up. In some instances expert working groups would be required to meet face to face, and in other cases they may be able to operate via electronic communications, facilitated by the secretariat of the TEC.

Permanent participation

Some functions or operational modalities may warrant the establishment of permanent panels or sub-committees in cases where the task they would perform is ongoing, and would benefit from continuity of the experts involved.

3.2.4 Possible participation of stakeholders

The TEC would benefit from the participation of institutional stakeholder groups with a role in technology development and transfer, in particular relevant intergovernmental and international

organizations, business and industry organizations, NGOs, and research organizations. Various modalities for their participation could be considered.

Consultation processes

The EGTT has undertaken consultations with stakeholder groups when preparing reports or in considering particular issues. Methods and approaches that have been used vary between issues or products. These methods have included:

- Expert meetings;
- Workshops;
- Informal consultation on draft documents;
- Formal submission processes initiated by the SBs or COP (for Parties and observer organizations);
- Questionnaires and surveys.

Stakeholder forums/advisory groups

Parties could consider the value of establishing either a permanent stakeholder consultative group, which the TEC could use to refer matters for consultation/advice, or a procedure of holding stakeholder forums where specific matters under consideration by the TEC could be discussed.

Consultative groups

Consultative groups composed of experts and representatives of organizations implementing or having a key role in major international technology collaboration programmes and initiatives could inform the discussions of the TEC and would foster cooperation with key organizations.

Interface with key stakeholder groups

The important role of the private sector in the area of technology development and transfer is generally recognized by Parties. Options for engaging with the private sector include through membership on the TEC, as an observer on the TEC, through forums, workshops and consultative groups, and through engaging with private sector experts on specific agenda items. In terms of representation, representative forms of engagement at the TEC level may be considered, while individual expert input may be more appropriate for specific subject areas.

Parties may also wish to consider whether other civil society stakeholders, such as the research community, regional and local governments, environmental NGOs, trade unions or indigenous peoples would participate in the work of the TEC, and if so, which aspects of its work and through what mechanisms.

The selection of observers and advisers should take place in a transparent and open process, with individual selection aided by specific terms of reference tailored to the particular needs. The consultative groups referred to in relation to functions 7 (d) on technology collaboration and 7 (i) on technology roadmaps and action plans, which the TEC may consider establishing,

may provide an appropriate interface for engaging stakeholders in specific aspects of the work of the TEC.

Observers at meetings

Parties could agree to make provisions for observers to attend meetings of the TEC. The current terms of reference for the EGTT are silent on the issue of observers, and whilst observers have been admitted at the discretion of the Chair and with the support of the EGTT membership, it has been generally accepted that observers are not eligible to attend the EGTT meetings.

3.2.5 Possible means for organizing the work of the TEC

Section 1.0 on the broad features of the TEC describes two scenarios for its decision-making authority, and consequently, for its organization of work. The two broad approaches to the organization of work for the TEC are:

1. Where the TEC must gain approval for its organization of work; or
2. Where the TEC is mandated to organize its work to meet its agreed functions.

The first approach is generally used for expert bodies where Parties are unwilling to allow the body to exclusively determine its organization of work. In this case, an explicit approval would be required by the COP or SBs for the TEC to act. Under this approach there are two variations. The first is the approach currently used for the EGTT, whereby a detailed programme of work is presented to the COP or SBs for consideration. An alternative model could require the TEC to prepare a strategic plan, perhaps with a 3-5 year horizon, that would identify key deliverables and outcomes, without prescribing how or in which order of priority it would meet these, which the TEC would address as part of its more detailed work plan.

The second approach, which is common for many constituted bodies under the Convention, is where the TEC's mandate would enable it to organize its work within the scope of its agreed functions. Within this mandate, the TEC could also consider different models for organizing its work. For example, it could simply develop a detailed work plan that would identify activities to be undertaken to deliver on its functions over a 1-2 year time frame. Alternatively, it might prefer to take a more strategic approach whereby its 1-2 year work plan is set within a broader context of a strategic plan that would identify key deliverables and outcomes over a longer time horizon.

In all cases, organizational modalities for the preparation, implementation and evaluation of the overall delivery of its work would be required.

3.2.6 Possible interactions with other institutions under the Convention

As discussed in Part B, there are several other institutions envisaged as part of an agreed outcome for the international climate change regime, which may need to interact with the TEC. For example, the TEC would have a central role to play in advancing technologies for adaptation and would need to articulate with any proposed institution on adaptation on this

important area of work. Other possible interactions anticipated with other proposed institutions within the negotiating text were identified in Figure 1.

Various modalities could be envisaged that would support interaction with other institutions under the Convention. These would need to be developed jointly by those institutions, and would need to be tailored to suit the shared responsibilities, interdependencies or information flows that exist in each case. Generally, options include:

- *Joint programme of work approach:* in this case the two bodies could collaborate to prepare a joint programme of work for substantive matters where there are share responsibilities. An example may be technologies for adaptation, if there were to be common functions of a new institution for adaptation and the TEC.
- *Information sharing:* there may be various means of sharing information between institutions, ranging from sharing of minutes of meetings, sharing of relevant advice and draft documents, preparation of written communiqués that could be provided from one body to the next, and invitations to provide oral reports from one body to next, which could be provided by a member of the TEC or by the secretariat.
- *Joint meetings or task orientated working groups:* could be more suited to time bound tasks pertaining to more than one body. An example may be the preparation of guidance to the COP, or 'one-off' policy or technical analysis that may result in a report or a recommendation. In the case of a joint working group of two bodies, the requirement of a jointly agreed report would have to be considered.
- *Referral arrangements:* could be used for matters being considered by the TEC where it would benefit from the views of another Convention body. Other bodies could also consider referring matters to the TEC for its consideration and advice.
- *Memoranda of understanding:* in some situations it could be desirable to establish a general agreement between two or more bodies in order to create a more systematic and integrated treatment of some issues or common functions. The Memoranda could specify the procedures that would be followed by each body and the means for interaction between them.

3.2.7 Possible meeting arrangements

Various options could be considered for the arrangements for meetings of the TEC, and any permanent or *ad hoc* panels or advisory groups it may use to fulfill its functions, including:

- *Quorum:* usually set as simple majority (half the members plus one), but quorum may also be set to occur when two thirds of the members are present. Quorums that may be difficult to achieve should be avoided.
- *Decision making:* rules for decision making can be established that can be based on consensus or can be based on voting. Deliberations of the TEC are likely to be resolvable through consensus decision making. A provision that could be considered is to enable decisions to be taken through electronic means, for example through teleconferences or email.

- *Number, length and timing of meetings:* the frequency of meetings should be based on the expected workload of the TEC, and take into account procedures for progressing matters out of session, and the expected use of panels, working groups and advisory groups. On average the EGTT has held three meetings per year (two regular and one special) of between two and three days in length in order to complete its mandated activities. It could be expected that the TEC would have a larger workload than the EGTT. However, electronic means could be used to progress some issues out of session. Parties may therefore consider a minimum requirement of 3 to 4 meetings, with special meetings and out of session meetings to be organized as required. The length of meetings may vary depending on the agenda of the TEC. Meeting length should balance on one hand the fact that members are travelling long distances to attend meetings and that longer meetings can be more cost-effective and on the other hand that members may find it difficult to commit to longer meetings. On average, three day meetings may be an optimal balance. Meetings need to be scheduled so as to ensure the timely provision of advice to the COP and SBs.
- *Management of the agenda, minutes, decisions and tasks arising:* drawing upon the experience of the EGTT and other Convention bodies, the process for the preparation of agendas and minutes could be enhanced, and a system established for documenting decisions and tracking tasks that arise from meetings.
- *Process for preparing advice/documents:* it could be of value to members to have an established process for the preparation of advice and draft documents to ensure consistency, quality, timeliness and to help clarify the respective roles of the TEC members, the secretariat, and other providers of advice.
- *Potential for virtual meetings; use of electronic media:* while face to face meetings are considered to be essential where close interaction between members is needed to reach consensus, it may also be beneficial from a time and cost saving perspective to use video, telephone and web-based forums in some instances. For example, a virtual TEC forum could be created on a secure web site to facilitate more regular interaction between members out of session. Careful consideration would need to be given to ensuring full participation of members, particularly those without regular internet access.

3.2.8 Issues concerning transparency of TEC meetings and deliberations

Transparency is generally considered to be an important principle that should be applied to the functioning of bodies established under the Convention. While transparency is to some extent in the hands of the members who bear some responsibility in facilitating the sharing of information within their constituencies, greater transparency can be achieved through several means:

- *Web casting:* used by several bodies under the Convention including the CDM EB, JISC and the Compliance Committee. Webcasts can be relatively cost-effective and can significantly increase the potential for participation by national governments, experts, and stakeholders. Meetings can be structured to enable informal discussions to be held 'in camera' on some agenda items to address the concern that web casting constrains the discussion of the body and restricts healthy debate.

- *Availability of minutes and decisions:* minutes and decisions can be made available on the internet, and decisions can be published in accordance with the UNFCCC procedures for documentation. Consideration should be given to the working language of the TEC, and to whether some documents should be translated into other UN languages, taking into account the costs of doing so.
- *Open meetings:* meetings could be considered open to observers from Parties and from non-Parties. As in the case of web casting, some parts of the TEC's deliberations could be held in a closed setting without the presence of observers, if that was considered desirable to ensure a frank and free exchange of views from members.

3.2.9 Secretariat support to the TEC

The TEC will require ongoing support from a secretariat. The secretariat could provide services ranging from logistics for meetings through to professional technical and policy advice and the preparation of draft reports and decisions. Secretariat services are important for the effective management and delivery of operational modalities since members are often unable to dedicate significant amounts of time outside of meetings and official events.

Staffing requirements for the secretariat could be estimated based upon the type and extent of the services it is expected to provide. In order to meet the most basic services it is suggested that the secretariat contain a core team, which could be enhanced if other specialized or intensive services are required. The core team could include:

- The potential role of the Executive Secretary in the functioning of the TEC;
- *TEC Secretary or Executive Officer* who would be responsible representing and acting on behalf of the TEC in its policy and executive activities and who would be responsible for the overall management of support to the TEC;
- *TEC Liaison Officer* who would be the main contact person within the secretariat and would have responsibility for maintaining day to day communications between the secretariat and the TEC, and would also be responsible for facilitating communication between TEC members. The TEC Liaison Officer would be responsible for preparing the draft agenda and minutes, tracking actions arising, and drafting advice and other documents as required, under the guidance of the Chair of the TEC.
- *TEC Logistics Focal Point* who would lead a team that is responsible for providing administrative support to the members and the TEC Liaison Officer, and would be responsible for organizing meetings, and other out of session communications as required.
- *Policy and technical advice:* staff to prepare advice, service working groups, facilitate collaboration, prepare guidance and reports, and develop tools.
- *CTC and Network Liaison:* to ensure effective integration with the CTC and Network.

3.2.10 Provisions for the review of the TEC

Should it be decided that provisions for the review of the TEC would be beneficial, then the COP decision that establishes the TEC should state how and when this review (and any subsequent reviews if they are to be periodical) should be conducted. The scope of the review and procedures for preparing documentation to support the review may also be required, although these arrangements could be decided subsequently by the SBs or the COP.

E. CLIMATE TECHNOLOGY CENTRE AND NETWORK

1.0 Broad features of the CTC and Network

The CTC and Network would be comprised of: (i) a Climate Technology Centre; (ii) Regional Centres, which would either act as regional branches of the Climate Technology Centre or which would be separate regional centres that would play a key role within the Network; and (iii) a Network of national, regional, and international technology centres, organizations, initiatives and networks.

The different options considered by Parties for hosting and selecting the secretariat of the CTC are: (i) a secretariat that is based within the UNFCCC secretariat; (ii) a CTC that has its own secretariat outside the UNFCCC; and (iii) a secretariat that is selected based on a call for proposals.

The selection of operational modalities for the CTC and Network will be influenced by broader choices concerning the respective roles of the TEC, the CTC, its regional centres and the Network. As outlined in section 1.0 of part D, Parties have described different models for the TEC ranging from where it has only an advisory and strategic role through to models where it also has delegated decision making authority and a more operational role.

Since the functions of the TEC and the CTC are related in many ways, choices concerning the operational modalities of the TEC will affect the selection of operational modalities for the CTC, and vice versa. For example, both the TEC and the CTC have functions related to the development of analytical tools, policies, guidelines and best practices for the development and use of technology roadmaps and actions plans (paragraphs 7 (i) and 11 (c)). Also, the TEC, the CTC and the Network are responsible for promoting and facilitating international collaboration and partnerships among public and private stakeholders (paragraphs 7 (d), 7 (i), 11 (b), 11 (d) (ii) and 11 (iv)).

Another important area where broader choices will influence operational modalities is in the nature of the technical and operational role of the CTC, and the division of responsibilities between the CTC and the Network. Two main scenarios are being considered by Parties:

1. A scenario where the CTC and its regional centres are only facilitators of the Network and would have limited technical expertise. In this scenario the CTC and the regional centres would focus on liaison with the TEC, Parties requesting support and experts and participants in the Network. The staffing requirements would be almost entirely managerial and administrative, supplemented with sufficient technical expertise to effectively administer the CTC and Network. In this scenario all technical tasks would be outsourced to the Network.
2. A scenario where the CTC and its regional centres would not only act as an interface between developing country Parties and the Network and a passive provider of information, but would also have a pro-active role of stimulating collaborative technology development and transfer, and enhancing technology cooperation, thereby adding value to the Network. In this role, the CTC and the regional centres

would also provide inputs for and aid in the operationalization of TEC programmes and guidance related to technology roadmaps and action plans, and international technology collaboration. It would engage with private sector actors, in particular technology providers, to bring to bear their technical expertise and knowledge on its activities. Rather than a passive provider of information, the CTC would serve as a knowledge centre and clearing-house for tools, policies and best practices for the planning and implementation of country-driven technology actions, supporting the work of the TEC, and enhancing its services to developing country Parties. The CTC and its regional centres would have in-house technical expertise sufficient to implement the full range of functions assigned to it, as well as tasks that result from guidance and request for inputs from the TEC. In this scenario the CTC would develop tools and policies for country-driven planning to support climate technologies, including technology roadmaps, and provide training for instance. Technical experts could also be seconded from the Network for specific tasks.

Moreover, the role of the CTC and regional centres in supporting developing countries, upon their request, in transforming raw proposals and ideas of developing country Parties into fully fledged proposals that meet the criteria of the operating entities of the financial mechanism, needs to be better articulated, in terms of the nature of the services and financing modalities that may be required.

Figure 10 shows how the functions of the CTC and Network are mutually supportive, and could work as a coherent system in the delivery of a range of services, products and partnerships.

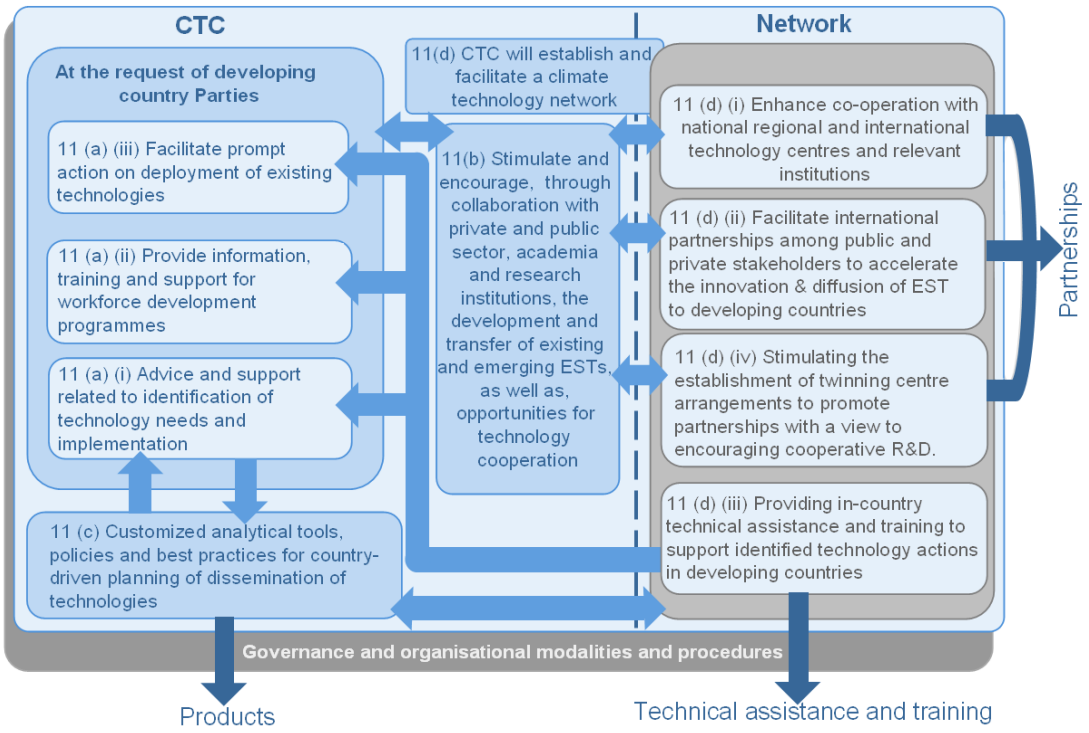

Figure 10. Interlinkages between the CTC and Network functions.

The extent to which the CTC will undertake technical tasks will influence the operational modalities it would be capable and responsible for delivering, and the ways in which it would interact with Parties and with the Network. In both scenarios, however, a key role of the CTC would be to facilitate and ensure the delivery of support to developing country Parties, in response to requests for services. Equally, regardless of the scenario, the main purpose of the Network is to provide in-country technical assistance and training, to facilitate the establishment of partnerships to accelerate the innovation and diffusion of ESTs, and to stimulate cooperative research and development.

The options for the composition and structure of the Network are not being explored in detail in this paper. Instead, the focus is on elaborating and illustrating the type of operational modalities the Network would have to deliver in order to implement its mandated functions. However, the establishment of the Network could be guided by two broad considerations: firstly, the need to cover the different stages of the technology cycle for a wide range of emerging and existing technologies and the mandate to support each stage in the planning and implementation process of the development and transfer of technologies; and secondly, the capabilities of existing national, regional and international technology centres, organizations, initiatives and networks, to what extent they meet expected needs, and where there are gaps in available support. The latter would require an assessment and analysis that is beyond the scope of this paper. In section G on possible priorities for further work, it is therefore proposed to do further work related to the possible structure and composition of the Network, and on gaps, opportunities and modalities for leveraging technical resources of existing entities.

2.0 Functions and operational modalities of the CTC and Network

A range of options for operational modalities for each CTC function, and potential technical outcomes, is provided in a table in Annex 5. Since the Network functions are designed to support the CTC, including the regional centres, the possible role of the Network in implementing the CTC functions is presented in the same table by providing operational modalities the Network may use to achieve common outcomes. The table also indicates which of the functions of the Network (11 (d) (i) to (iv)) directly complement and support the CTC Functions. A separate table presenting options for the operational modalities for the Network functions illustrate that they intersect with those supporting the functions of the CTC.

The options for operational modalities described in the tables cover both scenarios for the role of the CTC, of being purely a facilitator of the Network, and of being a centre with the necessary expertise to deliver a set of operational outcomes directly, drawing on internal and external expertise. As a result, some of the operational modalities appear in both the CTC and the Network column. In a scenario where the role of the CTC is limited to that of a facilitator, its operational modalities would primarily be to match needs with support, and in facilitating and coordinating, whilst in a scenario where the CTC has a more proactive role and acts as an adviser and knowledge centre, it would also have to be equipped with a wider range of operational modalities. In the former scenario, all of the CTC's services except the most basic ones, would be outsourced to the Network, whilst in the latter scenario, the CTC would deliver

a set of core services, drawing on the Network as a source of expertise, thereby increasing the added value of the CTC.

Based on the analysis of the functions and operational modalities of the CTC contained within this paper, 7 possible roles emerge:

1. The CTC as a Network hub and facilitator: role involving the establishment of a Network that is expected to evolve, and entering into MoUs and other cooperation agreements with organizations, centres and networks. The CTC could interact with the Network, exchange information, and compile and analyse information on existing programmes and initiatives. It could assess available support and capabilities with the view to identifying gaps and opportunities for expanding and enhancing existing technical assistance and training services and developing new and additional activities and programmes, which meet the needs of developing countries. It could act as a facilitator and coordinator in the development of enhanced programmes by Network members.

2. The CTC as a broker and technology accelerator: with its proactive role of stimulating technology development and transfer through collaboration with the private sector, public institutions and the research community by encouraging opportunities for technology cooperation, and by facilitating action on the deployment of existing technologies, the CTC would help accelerate the process of technology development and transfer. With the guidance provided by the TEC, and in collaboration with Network members, the CTC could have a proactive role in brokering and supporting partnerships to develop and implement international and regional technology action plans and initiatives. The CTC could engage with the private and public sectors with the view to identifying needs and opportunities for technology cooperation in support of the development and deployment of existing and emerging technologies. It could engage with potential project partners in the Network and with the private sector and act as a broker between action-requesting developing country Parties and potential project partners in the Network, including technology providers.

3. The CTC as an adviser and information provider: the CTC would provide advice, on request, to developing country parties related to: the identification of technology needs and implementation, workforce development programmes, the deployment of existing technologies, existing relevant policies, tools and best practices, and partnership and technology cooperation opportunities. It would also provide advice, on request, on the development and design of proposals that meet the criteria of the operating entities of the financial mechanism. Furthermore, it could provide advice once a proposal has obtained funding in support of effective technology implementation and in optimising technology installations once they become operational. In doing so it could leverage its own expertise by harnessing the Network and by bringing to bear expertise available in the Network.

4. The CTC as "matchmaker": in this role it would match technical assistance and training support available in the Network with request for support from developing country Parties. The CTC could enter into contractual agreements with Network members to deliver specific services and products.

5. The CTC as a catalyst and driver in the development of new and expanded programmes: Requested technical assistance, workforce development programmes and other training may not always be available in the Network, or may not quite meet the needs of

developing countries. The CTC could assess existing technical assistance and training programmes with the view to identify gaps and opportunities for expanding and enhancing existing technical assistance and workforce development programmes, and developing new and additional activities and programmes which meet the needs of developing countries. It could act as a catalyst and facilitator in the development of new and enhanced technical assistance and workforce development programmes by the Network. It could do the same for tools and policies that may be required in support of country-driven technology actions. The CTC could also have the capability to design programmes, in collaboration with other international organizations and the Network.

6. The CTC as a knowledge centre: the CTC functions as proactive knowledge and expert centre and clearing house for information related to programmes, initiatives, networks and partnerships supporting the development and transfer of ESTs. The CTC is capable of responding to requests from the TEC for inputs in analyses of policy and technical issues, in catalysing the development and use of technology roadmaps and action plans, and in the development of tools and best practices. It taps into the Networks' specialised expertise, and leverages its own technical resources. It has the capability to initiate, coordinate and oversee the development of new tools by the Network that meet the needs of Parties.

7. The CTC as an incubator for proposals: in addition to the possible CTC role as an advisor and information provider (role 3) and as a "matchmaker", it could have a more comprehensive and intensive role as an incubator of proposals. The CTC is envisaged to have a role in the country-driven process of designing proposals that meet the criteria adopted by operating entities of the financial mechanism. The services of the CTC in this regard may comprise advice, the provision of technical input, assistance with identifying potential partners, complementary capacity building initiatives that enabling environment support, liaising with the Network and the provision of operational support. Appropriate financing modalities would have to be considered to allow for the provision of this service which would need careful coordination with existing implementing agencies.

The presented options for operational modalities of the CTC and Network in Annex 5 are of a generic nature, and require more detailed descriptions to turn them into concrete deliverables that are specific to the stage in the technology cycle and to the stage in the planning and implementation process. To illustrate how the CTC and Network would deliver support in response to specific requests of developing country Parties, hypothetical examples have been prepared. They are contained in Annex 7. In addition, the nature of the operational modalities presented in the tables is elaborated in more detail in the next section, which also provides real world examples of operational modalities utilised by existing organizations and networks.

Furthermore, options for the organizational and governance modalities and procedures of the CTC and Network are examined in section 3.0.

There are of course many unresolved questions regarding how to operationalize the functions of the CTC and Network. Guiding questions on the functions and modalities of the CTC and Network to stimulate further discussion among Parties are contained in Annex 8.

2.1 Analysis and examples of possible operational modalities for the CTC and Network

In this section, the generic operational modalities listed in the tables in Annex 5, are described in more detail, and illustrated using examples of existing centres and networks using equivalent delivery mechanisms.

2.1.1 Products

Products are tangible technical resources that can be provided to countries to help support their technology development and transfer programmes. They can include inventories to better understand and match needs of countries with existing technical and financial resources and international programmes; analytical tools such as models, assessment methods and data sets; and information tools such as technology roadmaps, case studies, and best practice documents. The CTC could compile and present products and tools in a user-friendly online portal and could organize on-line and in person training on these tools (especially through the regional centres). The CTC also could conduct various programmes to promote outreach and awareness of these tools and to link countries with experts through the Network to assist with use of the tools.

The CTC and the regional centres also have an important role to play in identifying needs for new or improved tools based on feedback from countries and consistent with strategic guidance from TEC. The CTC could engage members of the Network in development of new tools, customization for developing country needs, and improvements to existing tools. The Network would also deliver technical assistance and training on use of the tools. Ongoing work by the Network, with guidance from the CTC, is needed to ensure that the tools are effectively adapted and maintained for use in specific countries and that countries have the capacity and assistance needed to apply the technical resources. It is also important to note that the tools should be living technical resources that are continually improved and maintained.

Types of products that could result from the operational modalities of the CTC and Network are outlined below.

Inventories of Resources, Activities, and Needs

Inventories of resources, activities, and needs provide a starting point for the Centre to identify opportunities to deliver technical support and foster partnerships that will meet developing country needs. These inventories also help the Centre and the regional centres understand the capabilities of Network to deliver support in specific areas. They are used to track the current scope and future plans for mitigation and adaptation technology programmes and resources. One example is the CLEAN[5] inventory of low emission development planning activities which tracks the support that international technical organizations are providing to developing countries on Technology Needs Assessments

[5] CLEAN is the Coordinated Low Emissions Assistance Network established in November 2009, with the aim to improve communication and coordination of national and international organizations that are assisting developing countries with preparation and implementation of comprehensive low GHG emission development plans and strategies.

(TNAs), technology action plans and roadmaps, low greenhouse gas emission strategies, and nationally appropriate mitigation actions (NAMAs). The inventory also tracks related analytical tools and training programmes and fosters collaboration among the partner organizations in delivery of support to countries and strengthening tools and training.

Analytical and Information Tools

Analytical and information tools represent a broad suite of technical resources that can assist countries in evaluating adaptation and mitigation technology needs and opportunities, preparing and implementing technology plans and roadmaps, buiding endogenous technological capacity and designing and implementing technology development and deployment programmes. They may include data on technology performance and costs, models and methods for assessing the technical and economic potential of alternative technologies, tools for evaluating the economic and environmental impacts of alternative deployment programmes, resources to support priority setting and planning for technology innovation programmes, information on benefits and risks of broad application of technologies, information on manufactures, and tools to assist with project design and financing.

Based on identified needs from developing countries, the CTC could engage experts from the Network in strengthening existing tools and building new tools. The CTC and the regional centres could compile these tools in user friendly portals and can work with the Network on outreach to build awareness of these technical resources. For example, RETScreen and LEAP are software models that countries around the world use to evaluate clean energy technology and policy options.

Good Practices

Good practice documents and resources present lessons learned and case studies of mitigation and adaptation technology development and deployment programmes. Such documents and associated outreach, training, and forums can help ensure that countries learn from each other about effective technology planning and implementation approaches. Centres could compile existing good practice materials from across existing institutions and could engage the Network in developing additional good practice materials and conducting studies to further identify and document lessons and effective approaches.

An example of a good practice resource is a document developed by the International Federation of Surveyors (FIG) on best practices for coastal adaptation. The report draws from 15 case studies from coastal regions around the world to propose best practices to plan for coastal adaptation from a surveyor's perspective.[6]

2.1.2 Services

Services encompass activities where the CTC and Network would deliver direct technical support to countries. Four types of services are described in detail below: training and capacity building; advisory services and matching needs with support; expert assistance teams; and knowledge exchange forums.

[6] The Best Practice for Coastal Adaptation Planning: A Surveyor's Perspective, International Federation of Surveyors, 2010

Types of services that could result from the operational modalities of the CTC and Network are outlined below.

Training and capacity building

Training and capacity building are essential elements to enhance technical skills and knowledge in the public and private sectors in developing countries that will enable broad diffusion of adaptation and mitigation technologies. Training and capacity building would be geared toward building endogenous technological capacity and know-how. Based on needs identified by countries, the CTC could engage the Network in design of training programmes. The CTC and the regional centres could then coordinate engagement of the Network in delivery of training or other forms of capacity building. Capacity building programmes should be designed to achieve sustained and broad replication, including a focus on training of in-country trainers. When feasible, training could be conducted through on-line delivery for maximum efficiency and reach and supplemented with global, regional, and in-country events. Training materials will need to be adapted to the needs of developing countries.

In addition to training programmes, there are several other important capacity building services that the CTC and Network could delivery. This includes assistance to countries for long-term workforce development and educational and academic programmes to build technical capacity in private and public sectors to support technology development and deployment. In addition, the CTC and Network could also support efforts to build expertise of existing centres of excellence in developing countries.

One example of a collaborative training programme is a new programme of the International Partnership for Energy Efficiency Collaboration (IPEEC). This programme, Worldwide Energy Efficiency Action Through Capacity Building and Training (WEACT), provides 3-day energy efficiency policy training to mid-level policy managers, with the aim to help them create an energy efficiency action plan for each country. The WEACT trainers, representing seven participating organizations from Italy, Japan, US, France, IEA, and CLASP, will provide follow-up assistance through a virtual policy assistance centre.

Advisory services and matching needs with available support

The CTC and Network could provide advisory and matching needs with available support type of services to identify and engage relevant experts or institutions to address an identified developing country need. Advisory services would cover the full range of topics from design of technology R&D programmes to project design, financing and implementation. The CTC's role may be to define the types of advisory and matching needs with available support services that are required, engage existing networks in delivery of these services, and work with networks to develop new services where needed. The CTC could draw from inventories of resources and activities as an initial analysis, but ultimately relevant networks may provide final guidance in making an appropriate match.

One example of a network providing advisory services is the Climate Technology Initiative (CTI) Private Financing Advisory Network (PFAN). This multilateral public-private partnership works to match clean energy projects with finance and investment vehicles. They have established regional networks and networks in a number of countries and held

forums on investment and project development as well as matchmaking events, leading to the successful matching of a number of projects with financing.[7]

Expert assistance teams

In many cases, developing countries could benefit from receiving assistance from international experts (from both developed and developing countries) to support the design and implementation of technology programmes. Expert assistance would be country-driven, responding to country requests, and would be well coordinated with existing in-country activities and programmes, e.g. technical assistance by development partners. The duration of expert assistance would depend on the circumstances, and should ideally be sustained over a long enough period to have significant value. Expert assistance teams may be organized by sector and cross-cutting topics and could operate at regional or global levels. These teams could also be structured to facilitate sharing of experiences and lessons across countries and should be adaptable to learn from these experiences. Expert assistance teams should operate in close concert with training programmes and make full use of technical tools, providing feedback on needs for enhanced training or tools.

An example of an institution that provides expert assistance services is the Inter-American Institute for Cooperation on Agriculture. This institution has Technical Cooperation Agendas at the national, regional and hemispheric level to provide technical assistance to support agricultural development for rural populations in the Americas. Agendas for technical assistance are prepared in cooperation with the public and private sector and include projects on technology and innovation, trade and agribusiness and biotechnology and safety. The institution also includes a Center for Leadership in Agriculture and a Distance Education Center.[8]

Knowledge exchange forums

Knowledge exchange forums could be used to ensure that countries learn from each other's experiences and to foster development of long-term partnerships. Facilitating interactions among public and private sectors, technical institutions, and countries with similar needs can be an effective mechanism for learning and promoting use of good practices. These forums could operate both through virtual means and through in-person events. The CTC and the regional centres could identify needs for such forums, organize forums, and assist countries in engaging in existing forums in cooperation with the Network, and engage the Network in developing new or expanded forums. One example is the Energy Sector Management Assistance Programme (ESMAP) peer-to-peer learning forums for countries involved in the Low Carbon Growth Country Studies Programme. Countries share information about their experiences in developing low greenhouse gas emission strategies in order to assist each other in this relatively new field of planning.[9]

[7] CTI-PFAN website – About Us, http://www.cti-pfan.net/aboutus.php?id=12
[8] Inter-American Institute for Cooperation on Agriculture, http://www.iica.int/Eng/infoinstitucional/Pages/default.aspx
[9] Project Catalyst, Low Carbon Growth Plan – Advancing Good Practice (August 2009) pg. 24

National Climate Technology Innovation Centres

Innovation capabilities are essential for developing countries to adapt and improve on existing adaptation and low-carbon technologies, and develop new technologies suited to specific developing country needs. There is a need for specific support for new institutions to maximise the chances of successful technology transfer of mitigation and adaptation technologies. infoDev's Climate Technology Program (<www.infodev.org/climate>), is an example of a programme exploring the role of National Climate Innovation Centers through activities in India, Kenya, and in several other countries. This work builds on infoDev.s experience of supporting a network of over 300 locally owned and operated business incubation centers in over 80 developing countries which, to date, has created 20,000 SMEs and generated over 220,000 jobs. infoDev is finalizing funding for the Kenyan and Indian innovation centres. The goal for the programme is to establish 10 new centres and enhance 20 others to create a network of 30 centres that would form part of the Technology Mechanism. Innovation centres are designed based on needs identified by local stakeholders. Innovation centres are designed to bring together into one place all the key tools that are needed to accelerate technology development and transfer along with innovative financing and dedicated funds to acclerate the process of innovation and increase access to private sector capital. Climate innovation centres could provide a range of services and could have varying functions according to countries' circumstances. Typical services include business incubation services, capacity building, technology assessments, funding of technology start-ups, technology acceleration programmes and training, providing access to existing technical facilities and training, coordination of R&D activities.

2.1.3 Partnerships

International partnerships are essential to facilitate meaningful and sustained technology cooperation. This can include collaboration across technical institutes, private sector companies and investors, and governmental and multi-lateral bodies. These partnerships can be as simple as twinning arrangements between centres of excellence across two countries or can involve multiple institutions. They can also engage a large number of institutions across several countries and can facilitate collaboration across the public and private sectors. The CTC and the regional centres could identify needs and opportunities for enhanced or new partnerships and engage networks in expanding partnerships or launching new partnership programmes. The CTC and Network could also work together to assist countries in participating in partnership initiatives. Key partnership actors include:

Public Sector

- Government agencies from developed and developing countries (national, state, and local levels);
- Multilateral development agencies and international organizations;
- Public investment agencies and funds, and related investment entities;

Private Sector

- Private sector technology developers and vendors;
- Private investors;

- Banks and other financial institutions;

Technical Institutions

- Technology laboratories and centres of excellence;
- Universities and colleges;
- Technical and social society NGOs.

Partnerships that could result from the operational modalities of the CTC and Network are outlined below.

Technical Institute Collaboration

Technical institute collaborations occur between research labs, universities, analytic institutes or other types of centres of excellence. They can engage large groups of organizations to share knowledge on broader topics or can be more focused on collaborations to address specific technical topics. These partnerships can entail professional exchange programmes, joint analysis and research programmes, sharing of good practices with deployment and commercialization, and other similar topics.

One example of technical institute collaboration is the CGIAR. CGIAR is a publicly funded network of donors, governments, civil society institutions and private companies working to address international agricultural issues. The network's Challenge Programme brings together research institutions to apply knowledge and technologies to address issues relating to agriculture such climate change and water scarcity.

Public-Private Partnerships

Public-private partnerships provide an opportunity for these two sectors to interact and harness their collective resources to advance technology development and deployment. Such public-private partnerships can have tremendous value in ensuring that both sectors work in harmony to advance technology development and deployment. They can help lead to sustained investment in adaptation and mitigation technologies.

Examples of effective public-private partnerships are the US Energy Utility Partnership Programme (EUPP) and the Enhancing Sustainable Utility Regulation (ENSURE) programme. These two USAID programmes work to connect energy, water and telecommunication companies and utilities with regulators in developing countries to explore options for integration of renewable energy technologies and associated best practices and to improve market conditions and institutional frameworks for inclusion of the private sector in energy provision.[10]

Government/Multilateral led Technology Collaboration Programmes

Government/multilateral led technology collaboration programmes are designed to advance technology research, development and/or deployment through collaborative efforts across countries. These collaborative can engage government and non-profit research agencies in sharing R&D roadmaps and data, conducting joint tests and analysis of innovative technologies, implementing common technology demonstrations and deployment

[10] USAID Overview fact sheets for EUPP and ENSURE

programmes, leveraging resources on analytic tools and studies, and learning from each other's experiences,

Examples of multilateral-led technology collaboration programmes are the International Energy Agency (IEA) Technology Agreements. These agreements are legal contracts between governments to pool resources in relation to research, development and/or deployment of an energy technology. They have been instrumental in advancing development and deployment of a number of clean energy technologies.[11]

3.0 Options for organizational and governance modalities and procedures

The CTC and Network is a unique body for which there is no precedence under the Convention to draw upon. Consequently, the issues associated with its organizational and governance modalities will require careful attention, and it is likely that new issues will arise during the course of its establishment. During the 12th session of the AWG-LCA Parties discussed the mandate and composition of the CTC and Network and the co-facilitator issued a note representing his assessment of the views expressed by Parties (see Annex 9). It should be noted the organisational and governance issues associated with the CTC and Network is an area of significant divergence among Parties.

The CTC and Network consists of three key entities which may have different features where the organizational and governance modalities are concerned:

1. the CTC;
2. the regional centres;
3. the Network.

This chapter will elaborate the organizational and governance modalities associated with these entities, including how they could interrelate. The assessment is preliminary and a much more detailed examination of the organizational issues associated with the CTC and Network will be required in due course. The UNEP paper "An exploration of options for operational modalities of climate technology centres and networks" present five broad options for structuring the Climate Technology Centre and Network, which while not necessarily consistent with the negotiating text or the views of Parties, could help inform the discussion on organizational and governance modalities.

As described in section 4.1 of Part D of this paper related to the organizational and governance modalities and procedures for the TEC, the same basic principles apply to the CTC and Network in terms of separating those aspects that may be required by a decision of the COP to establish the body from those aspects that could be relegated to the CTC and Network or to some other body under the Convention, such as the TEC.

Furthermore, Parties are giving consideration as to whether the modalities and procedures of the CTC and Network should be prepared by the CTC and Network under the guidance of the COP, or alternatively prepared by the TEC based on terms of reference agreed by the COP.

[11] IEA Multilateral Technology Initiatives - http://www.iea.org/techno/index.asp

3.1 Governing body of the Climate Technology Centre and Network

The governing body of the CTC and Network would be responsible for determining its strategic direction, supporting and evaluating the Director of the CTC, ensuring effective planning, approving budgets, operating plans and reports, ensuring fiduciary standards and legal and ethical integrity, enhancing the CTC's performance and ensuring its responsiveness to Parties and its adherence with any guidance provided by the TEC or the COP.

Membership of the governing body could be approved or elected by the COP or its delegated bodies. Options that could be explored include:

1. Members nominated by Parties;
2. Independent members selected from the Network;
3. The TEC Chair is a member of the governing body; or
4. The TEC performs the function of the governing body of the CTC.

The head of the CTC will have an important role in ensuring effective implementation of operational modalities, including timely and high quality delivery of services to Parties. Parties may also wish to consider how the Director of the CTC should be appointed. Options include where the Director of the CTC would be:

1. Appointed by the COP, perhaps upon recommendation from the governing body of the CTC and/or the TEC;
2. Appointed by the TEC, possibly upon recommendation from the governing body of the CTC, or drawing upon advice from a selection panel established by the TEC; or
3. Selected using the selection process of an existing organization, such as a body of the United Nations, with Parties being notified of the outcome.

It is assumed that the process for selecting and appointing other staff of the CTC and the regional centres would occur under the responsibility of the Director of the CTC, and that the procedures that would be used would be those of the host organization for the CTC and the regional centres. The same assumption applies to all other basic administrative procedures.

3.2 Organization of work

The CTC and Network would need to institute a process for both long term and short term strategic and operational planning to ensure the efficient and effective delivery of its operational modalities. A strategic plan could serve as long-term planning tool and be reviewed every 3 to 5 years, whilst annual work plans could be developed to plan and guide the operational work. Annual implementation reviews would have to be conducted, and annual reports prepared. As is the case for all organizations, it would have resources with which to undertake its functions, and it would therefore need to prioritize and organize its work accordingly.

During the initial phases of the CTC and Network significant effort would be required to:

- Recruit staff and physically set up the office environment and resources;

- Establish basic operating procedures and organizational policies;
- Prepare tools and resources that could be used to handle routine enquiries and efficiently facilitate the provision of support to Parties;
- Establish the Network and develop key partnerships.

During the establishment phase prioritization of tasks would be crucial and effort should be made to focus on completing essential 'one off' tasks that will allow resources to be used more efficiently, so that in future years resources can then be allocated to operational modalities that are more specialised or services that need to be tailor-made to specific circumstances and Party needs. It is also vital that the CTC focus during the establishment phase on accessing, leveraging and pooling existing resources and tools to ensure that it is not 'reinventing the wheel'.

Since the CTC is likely to develop in phases over a longer period of time it would be useful for the CTC to establish a long term strategy for its operations, based upon which shorter term strategies and then annual operating plans can be developed. This may include a strategy for the long term expansion of the Network, building around a core of existing international and national organizations and experts, and for a phased approach to the establishment of the regional centres.

3.3 Selecting the location of the CTC and the regional centres

As suggested above, it is advisable that a stepwise approach be taken to the establishment and further development of the CTC, the regional centres and the Network. This would suggest that in the first phase the CTC would be established, followed by the Network and then the regional centres and that a transparent and robust procedure is used for selecting the hosts and locations of regional centres. However, the same principle could also apply to the selection of the host and location for the CTC. A criteria based selection process may consider, among others, the following factors:

- Suitability of the organization to host the CTC;
- The quality of the proposal to host the CTC provided by the organization;
- The track record of the organization in delivering the type of functions and operational modalities assigned to the CTC and Network;
- The extent to which the organization can demonstrate that it has the support of other organizations and can bring to bear external resources to enhance the CTC;
- The extent to which the organization can contribute its own resources to the operations of the CTC;
- Consideration of any legal or governance issues that may limit the accountability of the CTC to the Parties.

In terms of the process for selection, several options could be considered. These options also depend upon the timeframe Parties may wish to adhere to for the establishment of the CTC:

1. The TEC, if established first, could be mandated to elaborate the operational modalities of the CTC and to prepare and undertake a tender and selection process for the CTC. The tender process could be structured to achieve particular strategic objectives, for example, by requiring collaboration between potential hosts. The tender process could be open or it could be by invitation only. The selection process could also involve experts and could involve consultation processes with Parties. Furthermore the final decision could be that of the COP or it could be delegated to the TEC.
2. An alternative approach would be to establish a separate and independent process for the selection of a host and location for the CTC. The COP or the TEC, if delegated to do so, could establish an independent panel, or could request that a separate entity (such as the Executive Secretary of the UNFCCC) take responsibility for the selection process. Again, the decision could be that of the COP or it could be delegated.
3. Should Parties wish to take a direct role in the selection process it could also be undertaken through a process of negotiation, perhaps linked to a process of negotiating the operational modalities for the Technology Mechanism.

3.4 Organizational structure to support interaction with Parties and the Network

Based on the functions and the options for operational modalities elaborated within this paper, there may be three areas of focus for the CTC that may define its organizational structure. These include its role in:

- Providing and facilitating direct support to Parties;
- Developing products that could be used by Parties, such as tools and best practices;
- Establishing and maintaining partnerships and the ongoing support needed for maintaining the Network.

Sufficient high quality resources within the CTC would be needed to provide a high quality service to Parties. It would be useful if the organizational design of the CTC was based on the likely demand for the services it would provide and facilitate to Parties. The organizational model should be stress tested to ensure that it will be capable of meeting this demand. A possible model for the organizational structure of the CTC is presented in figure 11 as a starting point for further consideration and development.

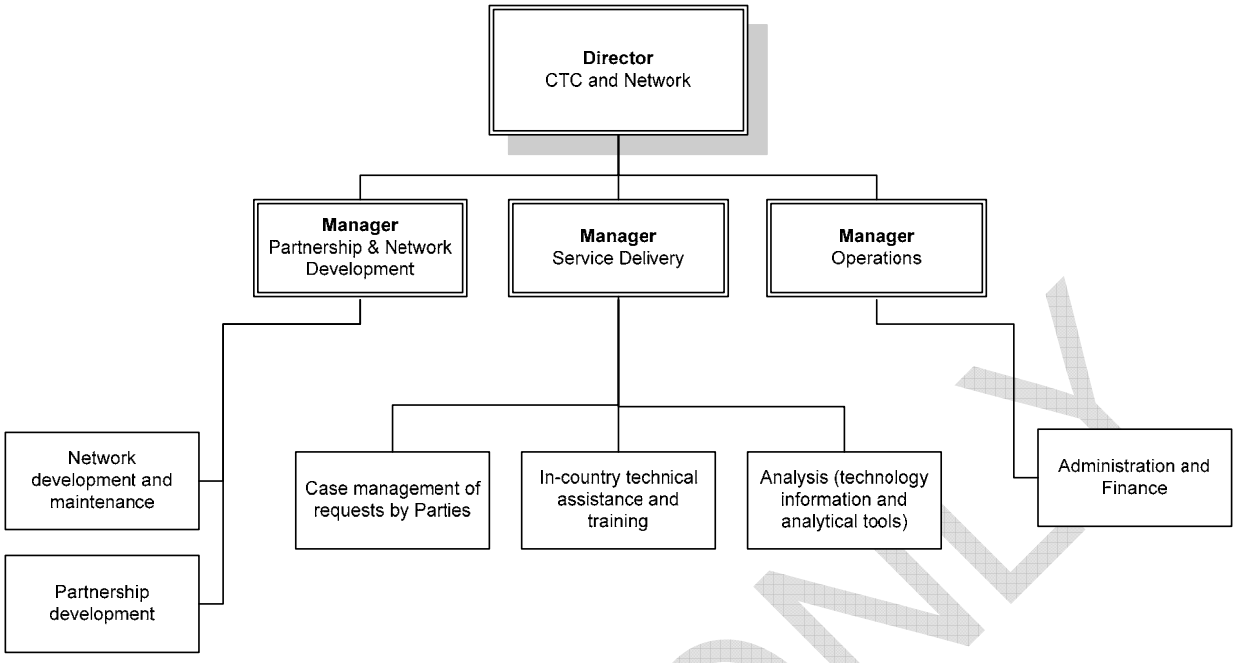

Figure 11. Possible organizational structure of the CTC based on three central functional areas

3.5 Administrative and budget support

Paragraph 6 of the negotiating text on technology development and transfer states that the:

> "implementation of the Technology Mechanism…shall be funded by the financial arrangement, including the provision of new and additional financial resources to meet the agreed full incremental costs, in accordance with Article 4, paragraph 3, of the Convention;"

The 'financial arrangement' is understood to mean the agreed outcome on finance under the AWG-LCA, which based on the negotiating text (paragraph 8, Chapter III) may involve the existing operating entity of the financial mechanism of the Convention (the GEF), as well as a new fund that would also be an operating entity or would operate the financial mechanism. Additionally, it may refer to bilateral, regional and multilateral sources of finance as provided for under Article 11, paragraph 5 of the Convention.

Funding for the CTC and Network may be required for:

- The cost of its staff, including salaries and other staff related expenses, as well as the cost of consultants;
- The cost of its premises, operational infrastructure, and other overheads;
- Costs associated with the governance arrangements for the CTC and Network, and the implementation of other organizational and governance modalities and procedures;

- The cost of delivering its operational modalities.

A key issue that needs to be considered is whether, or to what extent, the cost of providing services to requesting Parties would be part of the budget of the CTC and Network, or alternatively if the funds required to provide services would be allocated directly to Parties by the 'financial arrangement' as defined above. This question is also pertinent to, and may differ depending upon, the operational modalities and the stage within the cycle of the provision of support.

According to its functions, the CTC and Network may be called on by developing country Parties to provide support in both the planning and implementation stages of technology actions. Where funding is not provided to Parties through the GEF or the new fund for the planning and preparation stages, the option of the CTC budget covering associated services could be considered.

During the early stages of the support cycle, both prior to and during the preparation of actions, Parties may not have received direct support, unless this had been explicitly provided for either by the GEF or the new fund. However, during the implementation phases, Parties may have obtained direct funding, and this funding may have been provided in part to enable the Party to obtain technological support from the Technology Mechanism. Clearly, these factors would need to be taken into account in the funding model of the CTC and Network.

Another issue that could arise in relation to funding is whether participants in the Network may contribute in-kind or financially to the implementation of the CTC and Network and the delivery of the operational modalities. Indeed, a possible model for the Network could require some Network participants, as a commitment of membership, to make contributions to the operations of the Network.

The financial models of the CTC would also be affected by the adoption of the selection criteria requiring the host to contribute towards the operations of the CTC and Network. Furthermore, the country in which the CTC is hosted may also consider providing a host country contribution toward the operations of the CTC and Network.

Finally, there is the question of whether private sector or non-government resources (either in-kind or direct) could be harnessed by the CTC and Network and under what circumstances, if any, this could occur.

While the broad funding arrangements for the Technology Mechanism may be agreed by the COP upon its establishment, a more detailed funding model for the CTC and Network would need to be considered during its design phase. A key issue for consideration will be whether it is possible over time to establish a sustainable model of funding for the CTC and Network and for the operations of the Technology Mechanism.

3.6 Legal character and other legal issues

For the purposes of this paper it is assumed that the legal character of the CTC would be that of its host organization and that any legal issues that may arise concerning the management or provision of funding and any issues that may arise regarding the entering into of legal agreements, such as Memorandum of Understanding that may be required to establish partnerships, or contracts that may need to be entered into from time to time, would therefore be issues for the host, and do not need to be further elaborated here.

Another important issue that should be addressed relates to the confidentiality of the CTC's work, particularly where it is responding to requests from Parties. It is envisaged that the CTC would be requested by Parties to assist them in the development of sensitive proposals related to their mitigation and adaptation actions. Parties would need to guarenteed that they could trust in the confidentiality of the treatment of these proposals. Such considerations may affect the legal status of the CTC including its accountability to the Convention.

In the event that the CTC was located in an institution that was outside of the Convention it would most likely come under the jurisdiction of that institutions governing body, which raises questions as to how it would relate legally to the Convention.

There is a need for specialised expertise to provide advice on the legal issues that need to be addressed in the design and establishment of the CTC and Network.

3.7 Composition and structure of the Network

The Network is likely to be extensive, comprising national, regional, sectoral and international technology centres, networks, organizations, initiatives relevant to both mitigation and adaptation across all sectors of the economy. A broad Network may benefit from a composition and structure that would allow for an easy identification of technical resources, services and partnerships and a straightforward matching of support with needs.

There is currently no inventory of existing centres, networks, organizations and initiatives that could be candidates for participation in the Network. Clearly a database of Network participants would need to be established and maintained by the CTC. Issues that should be considered are:

- How would existing networks be reflected within the Network?
- Would there be a process for membership, and if so, would there be different types of membership possibly reflecting the extent to which the member is an active participant in delivering the functions of the Technology Mechanism?
- The need for membership criteria and for quality controls and standards that would apply to participation and would give assurance that advice provided was of a high standard and could be relied upon.
- Would it be useful to regionalise the Network and to use the regional centres as hubs for engaging members of the Network in supporting developing country Parties?
- What would be the incentive for participation in the Network?

- Would private sector organizations be part of the Network?
- Could sub-national entities become members of the Network?

There is an extensive body of experience within large organizations and existing networks, as well as a body of knowledge developed within organizational theory and practice that could be drawn upon when designing and establishing the Network.

3.8 Interactions with the TEC and other bodies under the Convention

As is the case for the TEC, the CTC and Network is likely to have extensive interactions with other bodies or processes under the Convention. For example, the CTC and Network would most likely interact with international and regional centres that are dedicated to supporting developing countries in adapting to the impacts of climate change. Various modalities could be envisaged that would support interaction with other institutions under the Convention. These would need to be developed jointly with those institutions, and would need to be tailored to suit the shared responsibilities, interdependencies or information flows that exist or are required in each case.

3.9 Provisions for the review of the CTC and Network

Should it be decided that provisions for the review of the CTC and Network would be beneficial, then the COP decision that establishes the CTC should state how and when this review (and any subsequent reviews if they are to be periodical) should be conducted. This should include who the review would be conducted by, options being the COP, SBs, TEC, an independent process or a combination thereof. The scope of the review would also need to be defined and the procedures for preparing documentation to support the review would also be required, although these arrangements could be decided subsequently by the SBs or the COP.

F. ACHIEVING AN INTEGRATED TECHNOLOGY MECHANISM

1.0 Options for the integration between the work of the TEC and CTC and Network

Although the issue of the link between the operational modalities for the TEC and for the CTC and Network has been raised in the preceding sections, the options for operational modalities of the CTC and Network, and those of TEC have thus far been presented independently from each other. As indicated earlier in the text, the choice of operational modalities will be affected by the broader choice concerning the respective roles of the TEC and CTC and Network. As a consequence, a spectrum of options for operational modalities was presented for the TEC and for the CTC and Network, resulting in an apparent overlap between their operational modalities. It is clear that when the broader choices concerning the role of the TEC are made, some operational modalities may fall away.

The intersection and integration of the operational modalities for the CTC and Network on the other hand, has been addressed in Section E by showing how the Network could support the different functions of the CTC. The operational modalities for the Network functions mesh with those supporting the CTC functions to achieve the common goals of the CTC and Network as a whole. It is therefore assumed, when describing the options for integration of the work of the TEC and CTC and Network in this section, that the CTC and Network operates as one system with interlocking and mutually supportive modalities.

The integration between the work of the TEC and that of the CTC and Network would have to be considered at two levels: at an operational modalities level for the analysis, and the external-oriented facilitating functions 7 (a), (d) and (i) where there is potential for overlap; and at a planning and review level for function 7 (g). Figure 12 illustrates the interlinkages between the TEC and the CTC and Network from a TEC perspective, and covers the scenario whereby the TEC would have an operational role in the promotion of technology collaboration and in catalyzing the development and use of technology roadmaps and action plans. A more detailed table version of this figure, presenting the relevant CTC operational modalities that would support TEC functions and operational modalities is contained in Annex 6.

Delivering the operational modalities for functions 7 (a), (d) and (i) in a coherent and effective manner, would require a clear delineation of roles and responsibilities, as well as coordination between the work of the TEC and the CTC, which would in turn require mutually supportive modalities that dovetail. The respective roles and responsibilities of the TEC and the CTC and Network would be reflected in their strategic plans and annual work plans.

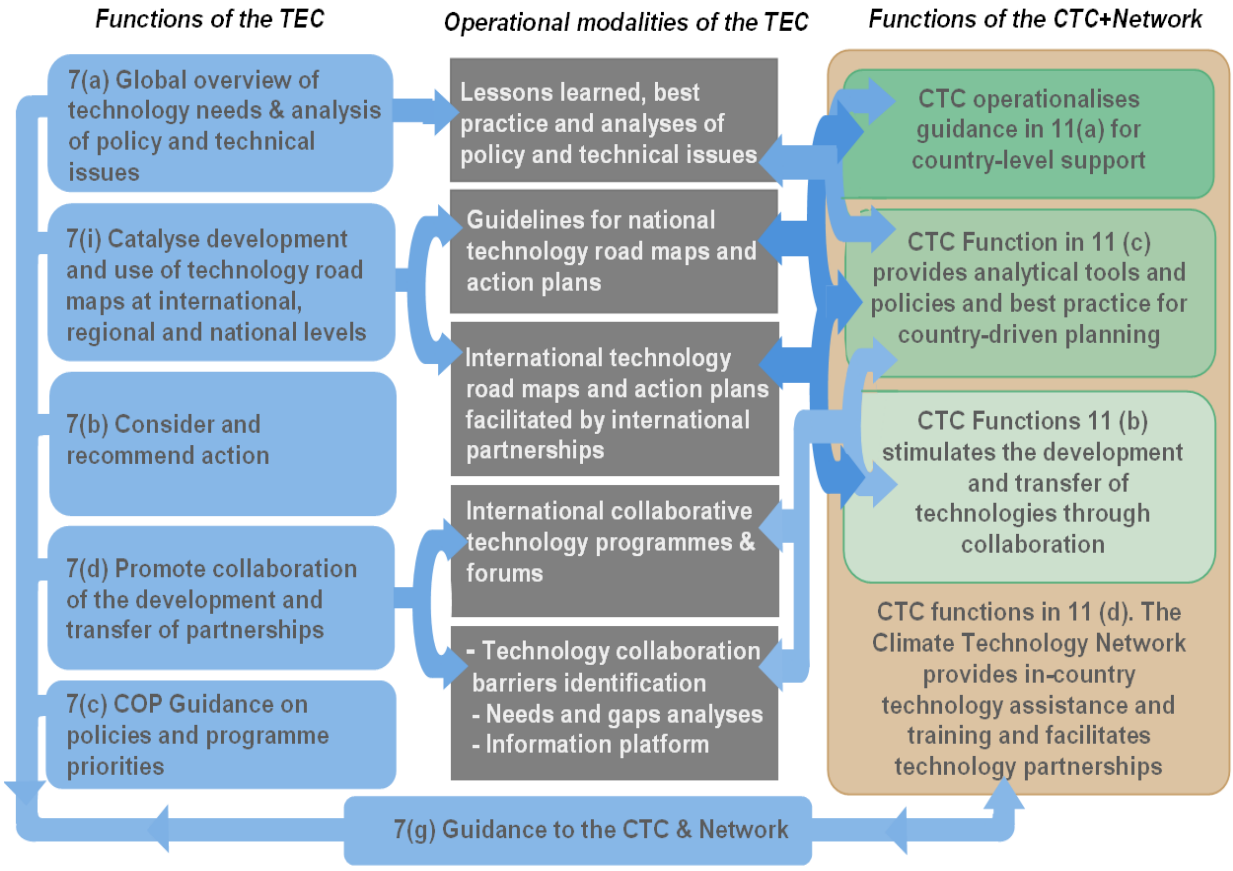

Figure 12. Linkages between the functions of the TEC and the CTC and Network from a TEC perspective

To aid the organization of work of the CTC and Network and enhance the effectiveness and consistency of the delivery of its operational modalities, a programmatic approach towards the CTC's work could be considered. Operational programmes could be organized along the line of the five functions of the CTC, since they form the core of the operational work of the Technology Mechanism, and are already structured in distinct operational areas. Figure 13 shows possible function-based operational programmes of the CTC, outlining the respective roles of the TEC and the Network for each of the programmes.

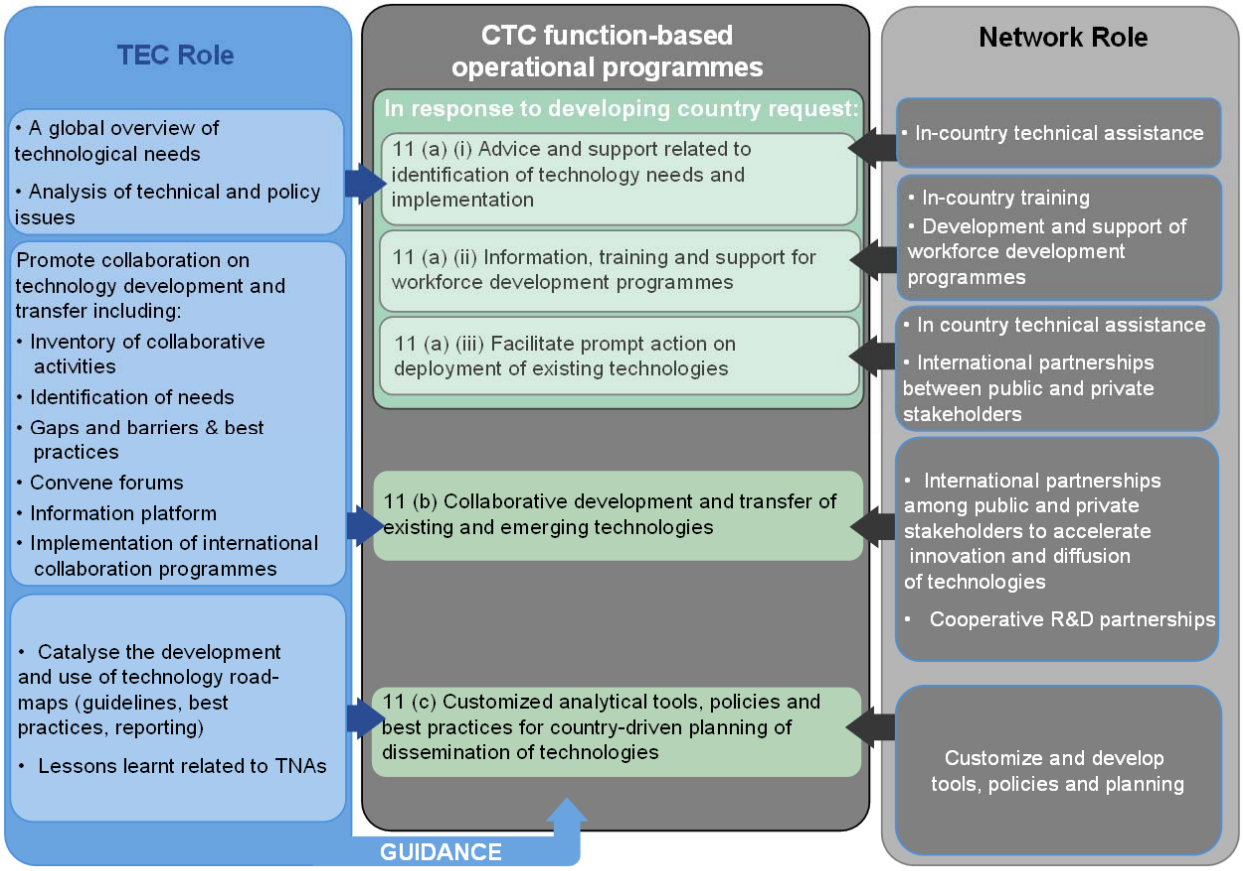

Figure 13. Possible integrated programmatic approach for the CTC

The following diagram (Figure 14) provides a general depiction of the possible interaction between the CTC and Network, and TEC to fulfil a request from a developing country Party.

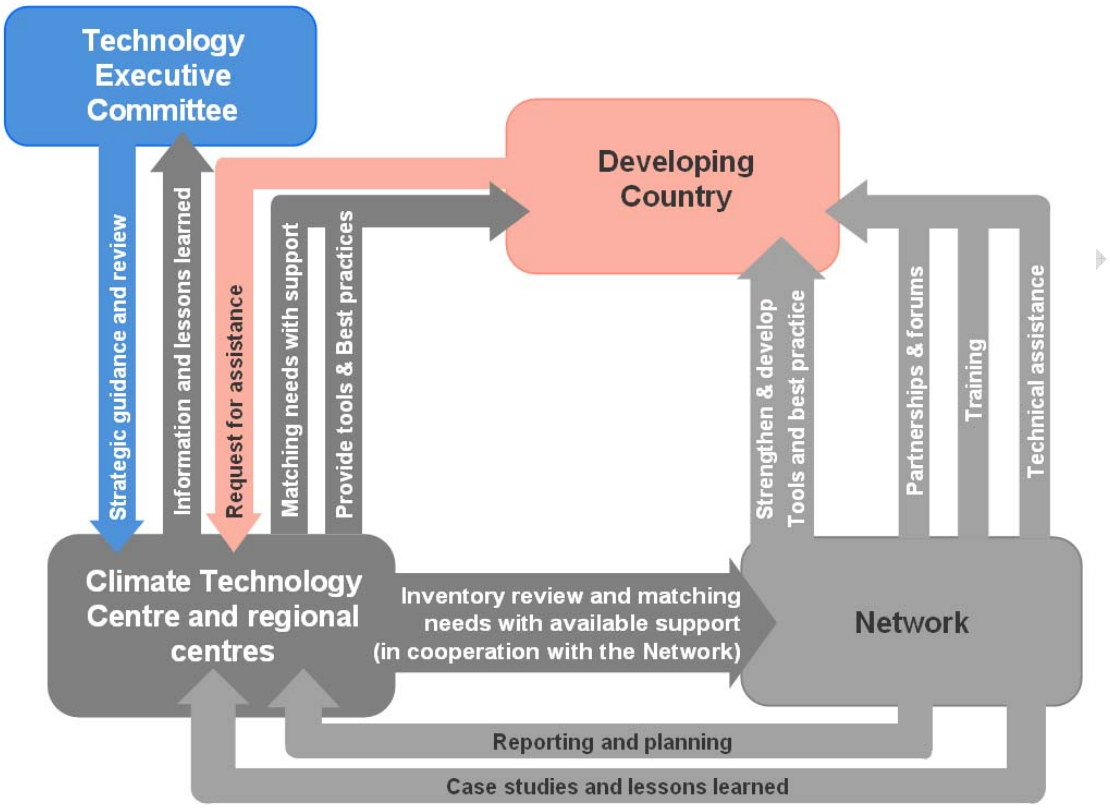

Figure 14. Possible interaction and roles of the CTC and Network, and the TEC in response to a request from a developing country Party.

A further illustration of the operational steps from a request through to fulfilment of a concrete activity is provided through hypothetical examples of specific requests contained in Annex 7. The five hypothetical examples in Annex 7, provided by UNEP, NREL and ECN concern the following requests and technologies: a request for assistance with the preparation and implementation of a technology needs assessment; water-efficient irrigation technologies; drought tolerant corn species; concentrating solar power (CSP); and the development of an energy efficiency policy database and best practice guide. Examples of existing networks operating in each of these areas are presented in a text box at the end of each hypothetical example.

G. POSSIBLE PRIORITIES FOR FURTHER WORK

Ultimately, the design of operational modalities for TEC and the CTC and Network should aim to ensure that a high performance and sustainable Technology Mechanism is realised under the Convention. This will require careful and systematic attention to how the components of the Technology Mechanism interact and complement each other. Further work is required to build a self-sustaining Mechanism, which may require the development of unique modalities that go beyond the mandate of this working paper. The design process needs to stay focused on ensuring that ambition outcomes can be achieved by the Technology Mechanism. Perhaps the ultimate test of the design process may be the extent to which it can provide clear answers to questions such as 'What difference will the Technology Mechanism make?' and 'How will it facilitate the revolution in technology development and transfer needed to enable countries to meet ambitious emission reduction goals and adapt to the impacts of climate change?'

The consideration of the use of different modalities to achieve the objectives of the Technology Mechanism, including possible approaches for establishing a Network of existing national, regional and international technology institutions and initiatives, would benefit from further analysis than has been possible in the time available for preparing this paper. The main purpose of the CTC and Network would be to provide in-country technical assistance and training, to develop customized tools and policies, to facilitate the establishment of partnerships to accelerate the innovation and diffusion of ESTs, and to stimulate cooperative research and development. The issue of the composition and structure of the Network of the CTC is a key question, which should be explored taking into account the need to cover a wide range of emerging and existing technologies, the different stages of the technology cycle, and the different stages in the planning and implementation process of technology actions.

It would require an assessment of capabilities of existing national, regional and international technology centres, organizations, initiatives and networks, and an analysis of opportunities and modalities for drawing on and building on these existing entities and initiatives, as well as of the gaps that exist. The functions and options for operational modalities of the CTC and Network should be assessed against the capabilities of these existing entities and initiatives that may form part of the Network. Indeed, there are several operational design issues related to the CTC and Network that will require further attention, particularly in relation to its modalities for the provision of support, legal and financial issues forshadowed in this paper, means of accountability that also balance the need for flexibility and responsiveness, and the relationship of the CTC and Network to the future international climate change regime as a whole.

An extensive body of experience exists within large organizations and existing networks, as well as a body of knowledge developed within organizational theory and practice that could be drawn upon when designing and establishing the Network. The question of the Network structure would benefit from a review of the experience and performance of existing organizations and networks. Different types of networks and partnerships would be required depending on the type of support to be delivered: networks to facilitate international R&D partnerships would take a different form from technology deployment support networks. An analysis of network structure, current practices and network functioning by stage in the technology cycle would inform the question of options for the Network.

There is currently no inventory of existing centres, networks, organizations and initiatives that could be candidates for participation in the Network. Clearly a database of Network participants would need to be established and maintained by the CTC.

An assessment of the cost of different implementation models for the CTC, the regional centres, and Network would equally further inform the discussion on how the Technology Mechanism could operate. It may be useful to stress test the Technology Mechanism by simulating the types and number of requests and demands that it could be expected to respond to simultaneously, in order to model and estimate the type and amount of financial and human resources it would require to be effective. Similarly, greater attention to testing the modalities using, for example, real world examples of possible requests from developing country Parties, or known opportunities for catalysing international parternships with the private sector, would also be useful further work that could be undertaken.

Finally, as highlighted throughout this paper there are a range of administrative, financial, organizational and legal questions that arise that will require specialised expertise and further consideration.

Annex 1. Pending issues contained within the negotiating text as of August 2010.

Pending issues	How the issue is currently reflected in the text
Activities eligible for support (para 4 (f))	Text is bracketed for deletion
Legal nature of the Technology Mechanism (para 5)	Options are bracketed - note from the Chair indicates that the legal nature would be revised once the legal nature of the outcome is determined
Special consideration to least developed Parties (para 7 (c))	Text is bracketed for deletion
Whether the Technology Executive Committee should report directly to the COP or via the SBSTA (para 7(e))	Reference to the SBSTA is bracketed for deletion
Whether the Technology Executive Committee should recommend actions to address and remove barriers to technology development and transfer (para 7 (f))	Subparagraph is bracketed for deletion
Whether the Technology Executive Committee should address issues related to intellectual property rights as they arise (para 7 (h))	Subparagraph is bracketed for deletion
Potential links between the Technology Executive Committee and proposed institutions for adaptation (bottom para 7)	Note from the Chair for consideration by Parties
Potential links between the Technology Executive Committee and proposed institutions for mitigation (bottom para 7)	Note from the Chair for consideration by Parties
Mandate and composition of the Technology Executive Committee (para 8)	Placeholder to be elaborated by Parties
Link between the Technology Mechanism and the 'financial arrangements'	Note by the Chair on the interdependency with negotiations on finance. Parties have noted the links between paragraph 10 and paragraphs 4 and 7 (c)
Whether the Climate Technology Centre should report to the COP via the SBSTA (para 10(e)) and/or via the Technology Executive Committee	Two options are presented in the text.
Potential linkages between the Climate Technology Centre and the proposed international, regional and national centres for adaptation (bottom of para 11)	Note from the Chair for consideration by Parties
Mandate and composition of the Climate Technology Centre (para 12)	Placeholder to be elaborated by Parties
Text on intellectual property rights (para 13)	Two options one for complete deletion and the other for a range of different options.
The level of ambition for research and development (para 14 (e))	Several brackets to resolve regarding the scope, scale and timing of increased research and development activity
Modalities for the Technology Executive Committee and Climate Technology Centre and Network (para 16)	Resolution is dependent upon the establishment of the Technology Mechanism
Other issues that require further consideration (para 17)	Scope is not agreed.

Annex 2. Options for the modalities and procedures of the TEC

Function	Components	Options for operational modalities	Options for the organizational and governance modalities and procedures of the TEC	Links with other functions
Technology Executive Committee				
7 (a)	Provide a **global overview of technological needs**…related to the development and transfer of technology for mitigation and adaptation to the COP and SBs	**Products** • Synthesis reports for: (i) TNAs; (ii) Technology roadmaps and action plans • Lessons learnt and good practices in the development and implementations of TNAs, and identification of ways to enhance the implementation of TNAs. • Assessment and analysis of general technology needs (e.g. per sector, per region, and per cycle stage). • Listing of existing and upcoming ESTs with substantial potential for mitigation and adaptation. • Listing of existing and upcoming initiatives, programmes and projects related to mitigation and adaptation ESTs, including activities of the CTC and Network. **Services** • Information system on technological needs (enhanced TT:CLEAR)	• Inputs are sought from the CTC in the preparation of lessons learnt, good practices in the development and implementation of TNAs, and in the identification of ways to enhance TNA implementation. • External expertise, *inter alia,* through the CTC and Network, is drawn on in the preparation of the lessons learnt and good practices, and the identification of ways to enhance the implementation of TNAs. • Roster of experts or institutions to facilitate expert participation in the TEC, and which could also be drawn from the Network and used by the CTC for specialist expertise. • Secretariat services: (i) preparation of reports to the COP and SBs; (ii) preparation of synthesis reports; (iii) commissioning of lessons learnt and good practices; and identification of ways to enhance the implementation of TNAs; (iv) information system on technological needs is established and managed by the secretariat; (v) the roster of experts is established and managed by the secretariat. • The TEC would draw upon the following sources of information to maintain technology needs overview: (i) international and regional organizations and initiatives, e.g. IEA, REEEP, IRENA, MEF; (ii) National Communications, TNAs, technology action plans; (iii) reports from the CTC and Network; (iv) the institutional arrangements for mitigation and adaptation **COP** • Annual report to the COP	7 (i), 11 (a) (i)

Function	Components	Options for operational modalities	Options for the organizational and governance modalities and procedures of the TEC	Links with other functions
			• Specific reports to the COP could also be envisaged. **SBs**: • Annual report to the SBs • Specific reports to the SBs • In session or out of session workshops/forums on key issues	
	Provide… analysis of **policy and technical issues** related to the development and transfer of technology for mitigation and adaptation to the COP and SBs.	**Products** • Technical papers analyzing policy issues. • Technical papers analyzing technical issues. • Some technical papers could be published for a wider audience. • Technical indicators for tracking technology development and transfer outcomes (e.g., incremental costs of technologies; patenting rates; trends in technology installations; investment trends). **Services** • Convene a Dialogue modelled on the existing SB Research Dialogue for identified technical issues.	• Inputs are sought from the CTC in the preparation of technical papers. • External expertise, including through the CTC and Network, is drawn on in the preparation of technical papers. • Time bound working groups are used to undertake analysis and provide advice. • Secretariat services: commissioning of technical papers drawing on external expertise. • Policy and technical issues are identified: (i) from the synthesis of TNAs and technology road maps/action plans; (ii) through the TEC's work plan; (iii) based on information provided by the CTC and Network; (iv) through the Dialogues; (v) through the consultative groups on technology collaboration and technology roadmaps. • TEC responds to requests for advice from the COP, SBs or other Convention bodies. • The identified policy and technical issues could be organized in a work programme structured into work areas, and the CTC Network could be harnessed to contribute to the analyses.	7 (b) (c) (f), 11 (c) 7 (g) 11 (e)
7 (b)	**Consider** actions to promote technology development and transfer to accelerate action on mitigation and		• Consideration of actions informed by: (i) the development, use and implementation of technology roadmaps and action plans; (ii) the identification of technology needs and gaps; (iii) the facilitation of international partnerships; (iv) analysis of policy	7 (a) 7 (i)

Function	Components	Options for operational modalities	Options for the organizational and governance modalities and procedures of the TEC	Links with other functions
	adaptation		issues related to the development and transfer of technology for mitigation and adaptation; (v) CTC Annual report. • Consideration of action based on guidance from the COP. • Consideration of requests for actions from Parties and non-Parties.	
	Recommend actions to promote technology development and transfer		• Recommendations for actions made in the context of *inter alia:* (i) the development, use and implementation of technology roadmaps and action plans; (ii) the identification of technology needs and gaps; (iii) the facilitation of international partnerships; (iv) policy issues related to the development and transfer of technology for mitigation and adaptation. • The TEC could also recommend actions for consideration by other institutions under the Convention or outside of the Convention. • Recommendations may be translated into guidance under Function 7 (c) and 7 (g) • Recommendations are part of the TEC annual report to the COP/SBs, or are contained in stand alone reports to the COP and SBs (Function 7 (e)).	7 (c) (e) (g) (i)
7 (c)	Prepare guidance for adoption by the COP on policies, programme priorities and eligibility criteria related to technology development and transfer		• Annual guidance for adoption by the COP on policies, programme priorities and eligibility criteria related to technology development and transfer. • The guidance is informed by the analyses and synthesis work under Function 7(a), as well as by Function 7 (b), by the TEC's role of promoting collaboration, and catalysing the development and use of technology roadmaps and action plans and by the CTC annual report The TEC participates in the regular programmatic evaluations of projects and programmes, to evaluate whether the support	7 (a) (b)

Function	Components	Options for operational modalities	Options for the organizational and governance modalities and procedures of the TEC	Links with other functions
			provided is matching the needs. The evaluation feeds into the guidance. • Secretariat services: (i) preparation of the proposals for the cyclical preparation of the guidance, including consultation with stakeholders; (ii) supporting the evaluation work of the TEC, including the preparation of terms of reference, and consultation with stakeholders.	
7 (d)	**Promote collaboration** on the development and transfer of technology for climate mitigation and adaptation between governments, industry, non-profit organizations, academic and research communities	**Products** • Inventory of collaborative activities between institutions related to technology development and transfer (which could in part be derived from national communications). • Identification of needs and gaps for enhanced collaboration, which could occur within international technology action plans or as a result of the analysis undertaken in support of Function 7 (a) or could arise from work undertaken in support of Function 7 (b). • Review of best practices and success stories in technology collaboration. • Identification of common barriers to collaboration and of solutions for overcoming them. **Services** • High-level forums for dialogue and exchange of views and experiences in technology collaboration with governments, industry, non-profit organizations, and academic and	• Time-bound working group(s) on technology collaboration • Consultative group composed of experts and representatives of organizations implementing or having a key role in major international technology collaboration programmes and initiatives to: generate knowledge, leverage resources, provide input and inform the discussions of the TEC, inform the analysis of common barriers to collaboration and ways to address them, and to advise on the support and implementation of international collaborative technology programmes and initiatives. • The TEC Chair/Vice Chair engage with international technology collaboration platforms and initiatives by participating in their meetings. • Secretariat services: (i) establishment and management of the information platform; (ii) implementation of international technology collaboration programmes in partnership with international organizations and institutes, under the oversight of the TEC. • The CTC and Network: participates in the working groups, consultative group and forums; supports the TEC through implementation of international technology partnerships; provides advice and input on the identification of needs, gaps and barriers in	7 (a) (b)

Function	Components	Options for operational modalities	Options for the organizational and governance modalities and procedures of the TEC	Links with other functions
		research communities. • Information platform for collaborative programmes and initiatives. • Supporting existing collaborative technology programmes and initiatives. • Implementation of international technology collaboration programmes, where appropriate. **Partnerships** • Partnerships to implement international technology collaboration programmes and initiatives.	technology collaboration, and the review of best practices and success stories. • The needs and gaps in technology collaboration could be organized in a work programme, and the CTC and Network could be invited to respond to these needs and gaps by proposing new collaborative initiatives.	
7 (g)	**Provide guidance** to the Climate Technology Centre and Network		• General guidance to the CTC in relation to its establishment and its operational modalities. • General guidance to the CTC and the regional centres in regard to the subsequent establishment of the Network. • Guidance on the development of a strategic plan , operational programmes and annual work plans for the CTC and Network. • Eligibility criteria for the members of the Network i.e. minimum requirements that organizations should meet to be part of the network. • Guidance to the CTC and Network on an annual basis to inform the development of its annual work plans. This guidance could be prepared in response to an annual report of the CTC and Network. • Guidance on a monitoring and evaluation strategy of the CTC and Network. • Organizational modality for the monitoring and evaluation of the CTC and Network. • The process of providing guidance could involve a dialogue between the TEC and CTC and Network in	11 (e)

Function	Components	Options for operational modalities	Options for the organizational and governance modalities and procedures of the TEC	Links with other functions
			order to enhance a shared understanding of how to interpret the guidance provided. • Organizational modality for information sharing and dialogue with the CTC and Network. • As issues arise the CTC and Network may wish to seek the guidance of the TEC, which could occur through the regular meetings of the TEC or through procedures for handling out of session issues within the TEC. • Inputs that could be used as a basis for the guidance: COP guidance; CTC and Network reports; TEC global overview and analysis work, and TEC catalytic, analysis and policy work under 7(c) and 7(i).	
7 (i)	Catalyse the **development and use** of technology road maps or action plans **at the national level** through cooperation between relevant stakeholders, particularly governments and relevant organizations or bodies, including the development of best practice and guidelines as facilitative tools for action on mitigation and adaptation	**Products** • Guidance for TNAs could elaborate upon the concept of national technology road maps and technology action plans (TAPs). • Guidelines on the development of national technology roadmaps and TAPs. • Review of the experiences from the Poznan Strategic Programme with recommendations for its long term implementation. • An online tool box bringing together existing resources and additional fit-for-purpose tools, which can be used to guide Parties in the development of national technology roadmaps and action plans. • Compilation of best practices in the development, use and implementation	• Time-bound working groups on the development and implementation of technology roadmaps and action plans for technologies for (i) mitigation and (ii) adaptation. • Consultative groups composed of experts and representatives of organizations with a key role in the development and implementation of technology roadmaps and action plans for mitigation and adaptation (separate groups for mitigation and adaptation) • External expertise, including through the CTC Network, is drawn upon when appropriate. • Secretariat services: (i) commissioning of guidelines; (ii) preparation of, drawing on expertise when required: reviews, compilation of best practices, reports on the development and use of technology roadmaps and action plans, including barriers and ways to address them; recommendations regarding the support for the use and implementation of technology roadmaps and action plans; (iii)	7 (a) 7 (g) 7 (c) 7 (b) 7 (d)

Function	Components	Options for operational modalities	Options for the organizational and governance modalities and procedures of the TEC	Links with other functions
		of national technology roadmaps and actions plans. • Reports on the development of national technology roadmaps and action plans. • Reports on the use of and experience with implementation of technology roadmaps and action plans, including the identification of common barriers to their use and implementation and ways to address these barriers, based on inputs from countries. • Recommendations regarding the support required to enhance the use and implementation of technology roadmaps and action plans, in particular capacity building programmes that may be appropriate. **Services** • Tracking the development, use and implementation of national technology roadmaps and actions plans.	development and management of the on-line tool box, drawing on external expertise. • The CTC and Network: provide input and advice on the development of guidelines, the toolbox, reports on the development, use and implementation of national technology roadmaps, and on the support required for implementation of technology roadmaps and action plans. • Workshops tracking the progress in the development, use and implementation of national technology roadmaps and action plans and to exchange experience and lessons learnt. The workshops would provide a tool to report on implementation, and the report would provide a synthesis of the status of use and implementation of technology roadmaps.	
	Catalyse the **development** and use of technology road maps or action plans **at the regional/international level** through cooperation between relevant stakeholders, particularly governments and relevant organizations or bodies, including the development of best practice and guidelines as facilitative	**Products** • Recommendations on an international process for implementation of technology roadmaps and action plans. • Reports on the development, use and implementation of regional/international technology road maps and action plans, including recommendations to fill gaps, as appropriate. • Reports on the rates of deployment and other variables (e.g. cost) for	• Time-bound working group on the development, use and implementation of technology roadmaps and action plans for (i) mitigation and (ii) adaptation. • Consultative groups composed of experts and representatives of organizations with a key role in the development and implementation of technology roadmaps and action plans for mitigation and adaptation, on the development, use and implementation of technology roadmaps and action plans for mitigation and adaptation (separate groups for mitigation and adaptation). • Organizational modality for monitoring the	7 (a) 7(c) 7 (b) 7(g) 7 (d)

Function	Components	Options for operational modalities	Options for the organizational and governance modalities and procedures of the TEC	Links with other functions
	tools for action on mitigation and adaptation.	technologies that have action plans or road maps. • Identification and compilation of best practices and guidelines for the use and implementation of international technology roadmaps and action plans. **Services** • Respond to requests of the COP to develop international and regional technology roadmaps or action plans. • Convene high level forums to identify, in consultation with governments, regional and international organizations, industry, non-profit organizations and academic and research communities, technologies for which the development of a regional/ international technology road map and action plan is appropriate. • Convene high-level regional/international forum(s) on the development, use and implementation of international technology roadmaps and action plans. • Tracking of the development, use and implementation of regional/international technology road maps and action plans. • Monitoring the rates of deployment and other variables (e.g. cost) for technologies that have action plans or road maps. • Support and develop, where appropriate, and in collaboration with	implementation of international technology action plans and road maps. • The CTC and Network: participate in the regional and international forums; provide input, advice and support for the development and implementation of regional and international technology roadmaps and action plans. • Secretariat services: (i) development, in collaboration with other bodies under the Convention (and drawing on the consultative group?), and with regional and international organizations, of regional/international technology roadmaps and action plans under the oversight of the TEC; (ii) supports, in collaboration with other bodies under the Convention, and with international and regional organizations, the use and implementation of regional/international technology roadmaps and action plans under the oversight of the TEC; (iii) compilation and maintenance of a database and information system, in collaboration with regional and international organizations, on regional/international technology road maps and action plans.	

Function	Components	Options for operational modalities	Options for the organizational and governance modalities and procedures of the TEC	Links with other functions
		other bodies under the Convention, and regional and international organizations, a series of regional/international technology roadmaps and action plans, and support their use and implementation where appropriate.		

Annex 3. Draft text - composition and mandate of the TEC (AWG-LCA 12)

version of 9 October 2010 @ 10:30

Development and transfer of technologies

Revision of FCCC/AWGLCA/2010/14, Chapter IV, Paragraph 8

Mandate

1. [*Decides* that the Technology Executive Committee shall [operate] the Technology Mechanism under the authority and guidance of the Conference of the Parties and consistent with the objectives contained in paragraphs 1–3 above;[12]]

1.bis [*Decides* that the Technology Executive Committee shall further implement the framework for meaningful and effective actions to enhance the implementation of Article 4, paragraph 5, (technology transfer framework) adopted by decision 4/CP.7 and enhanced by decision 3/CP.13;]

2. *Decides* that the functions[13] of the Technology Executive Committee shall be to:

(a) Provide [a global overview of technological needs and] analysis of policy and technical issues related to the development and transfer of technology for mitigation and adaptation to the Conference of the Parties and its subsidiary bodies;

(b) Consider and recommend[, as appropriate,] actions to promote technology development and transfer to accelerate action on mitigation and adaptation;

(c) Prepare guidance for adoption by the Conference of the Parties on policies, programme priorities and eligibility criteria related to technology development and transfer[,with special consideration given to least developed Parties];

(d) Promote [and facilitate] collaboration on the development and transfer of technology for climate mitigation and adaptation between governments, industry [and the private sector], non-profit organizations, and academic and research communities;

(e) Provide periodic reports on the progress of its work to the Conference of the Parties [through the Subsidiary Body for Scientific and Technological Advice] and, upon request, advice to the subsidiary bodies established under the Convention on matters related to efforts to accelerate action on technology development and transfer;

(f) [[Recommend and] [support][Identify] necessary actions to address [and remove] the barriers to technology development and transfer [identified by developing country Parties], in order to enable enhanced action on mitigation and adaptation;]

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[12] FCCC/AWGLCA/2010/14, chapter IV, paragraphs 1–3.

[13] Subparagraphs (a–i) are taken from document FCCC/AWGLCA/2010/14, chapter IV, paragraph 7 (a–i).

(g) [Provide guidance to the [Climate Technology Centre and Network] with a view to aligning the activities of the [Climate Technology Centre and Network] with country-driven actions;]

(h) [Address issues related to intellectual property rights as they arise;]

(i) [Catalyse the development and use of technology road maps or action plans at international, regional and national levels through cooperation between relevant stakeholders, particularly governments and relevant organizations or bodies, including the development of best practice and guidelines, as facilitative tools for action on mitigation and adaptation;]

2.bis. [*Decides* that the Technology Executive Committee shall provide technical and policy advice [and make recommendations] to the [financial [arrangement][mechanism]][Conference of the Parties] on matters related to activities and/or outcomes of activities eligible for support, as referred to in paragraph 4[14] above;]

3. *[Decides* that the Technology Executive Committee shall elaborate its own modalities and procedures [and those of the [Climate Technology Centre and Network] based on the functions contained in paragraph 11[15]], for consideration by the Conference of the Parties at its seventeenth session;

3.bis *Decides* that the Technology Executive Committee shall, in elaborating its modalities and procedures, as appropriate, define linkages with other relevant institutional arrangements under and outside the Convention;]

Composition

4. *Decides* that the Technology Executive Committee shall comprise [5][X][20] [high-level] expert members, elected by the Conference of the Parties, serving in their personal capacity and nominated by [constituencies][Parties and groups of Parties] with the aim of achieving fair and balanced representation, as follows[, taking into account the need to achieve gender balance in accordance with decision 36/CP.7]: [

(a) [Four members from each of the regions of the Parties not included in Annex I, namely Africa, Asia and the Pacific, and Latin America and the Caribbean;]

(b) [5][X] members from Parties not included in Annex I to the Convention;

(c) [5][X] members from Parties included in Annex I to the Convention;

(d) [one member from the small island developing States;

(e) one member from the least developed country Parties;

(f) one member from other non Annex I country Parties;]

(g) [X members from the private sector;

[14] FCCC/AWGLCA/2010/14, chapter IV, paragraph 4.
[15] FCCC/AWGLCA/2010/14, chapter IV, paragraph 11.

(h) X members from the research community;]]

5. *[Encourages][Requests]* [that [constituencies][Parties and groups of Parties] nominate [high-level] experts[, based on an agreed set of criteria,] with a view to achieving, within the membership of the Technology Executive Committee, an appropriate balance of technical, legal, policy[, social development] and financial expertise relevant to the development and transfer of technologies for adaptation and mitigation[, taking into account the need to achieve gender balance in accordance with decision 36/CP.7]][to nominate high level experts with appropriate technical, legal, policy and financial expertise relevant to the development and transfer technologies for adaptation and mitigation];

6. *Decides* that members shall serve for a term of [two][X] years and shall be eligible to serve a maximum of two consecutive terms of office and that:

(a) Half of the members shall be elected initially for a term of [three][X] years and half of the members shall be elected for a term of [two][X] years;

(b) Thereafter, the Conference of the Parties shall elect every year a member for a term of [two][X] years;

(c) The members shall remain in office until their successors are elected;

7. *Decides* that the Technology Executive Committee shall annually elect a chair and a vice-chair from among its members [that are in the category of 4 (a)-(e), above] for a term of one year each, with one being a member from a Party included in Annex I to the Convention and the other being a member from a Party not included in Annex I to the Convention, and that the positions of chair and vice-chair shall alternate annually between a member from a Party included in Annex I to the Convention and a member from a Party not included in Annex I to the Convention;

8. *Decides* that if the chair is temporarily unable to fulfil the obligations of the office, the vice-chair shall serve as chair. In the absence of the chair and the vice-chair at a particular meeting, any other member designated by the Technology Executive Committee shall temporarily serve as the chair of that meeting;

9. *Decides* that if the chair or vice-chair is unable to complete the term of office, the Committee shall elect a replacement to complete the term of office, taking into account paragraph 8 above;

10. *Decides* that if a member of the Technology Executive Committee resigns or is otherwise unable to complete the assigned term of office or to perform the functions of that office, the Technology Executive Committee may decide, bearing in mind the proximity of the next session of the Conference of the Parties, to appoint another member from the same constituency to replace the said member for the remainder of that member's mandate, in which case the appointment shall count as one term;

Expert advice

11. *Decides* that the Technology Executive Committee, in performing its functions, may draw upon outside expertise, including the UNFCCC roster of experts and the Climate Technology Network, to provide advice, including as expert advisors at its meetings;

12. *Decides* that the Technology Executive Committee [will][may] proactively engage intergovernmental and international organizations [as well as the private sector and civil society] in undertaking its work and may invite advisors drawn from relevant intergovernmental and international organizations [as well as the private sector and civil society] to participate as expert advisors to advise on specific issues as they arise;

[Decision-making and organizational matters

13. *Decides* that decisions of the Technology Executive Committee shall be taken by consensus; [however, if all efforts at reaching a consensus have been exhausted and no agreement has been reached, decisions shall be taken by a two-thirds majority of the members present at the meeting on the basis of one member, one vote;]

14. *Decides* that a record of the meetings of the Technology Executive Committee shall be made available on the UNFCCC website as soon as practicable at the conclusion of each meeting;

15. *Decides* that decisions of the Technology Executive Committee may occur through electronic means;

16. *Decides* that the Technology Executive Committee shall meet at least three times each year;

17. *Decides* that the Technology Executive Committee shall liaise with and may provide advice to, and request advice from, other bodies under the Convention in executing its functions;

18. *Decides* that a [simple] majority of the members of the Technology Executive Committee must be present at the meeting to constitute a quorum;

19. *Decides* that the meetings of the Technology Executive Committee shall be open to attendance of UNFCCC accredited observers, except where otherwise decided by the Technology Executive Committee;

20. *Decides* that the Technology Executive Committee shall prepare a work plan every two years that will be designed to fulfil its mandate;

21. *Decides* that the secretariat shall support and facilitate the organization of meetings of the Technology Executive Committee and its activities, including in assisting the Technology Executive Committee in preparing its periodic reports to the Conference of the Parties;]

Annex 4. Summary of the membership arrangements established for existing bodies under the Convention

Body	Membership	Decisions	Term of Office	
CGE	**24 Members** - 5 each from Africa, Asia and GRULAC - 6 from Annex I Parties	3/CP.8 5/CP.15	• Term of office: 2 years • Max. of terms in office: 2 terms • Mandate ends at COP18 (2012)	Members nominated by their constituency Members confirmed by SBI Intersessional replacement by constituency
LEG	**12 Members** - 5 Africa LDCs - 2 Asia LDCs - 3 Annex II Parties - 2 SIDs	29/CP.7 7/CP.9 4/CP.11 8/CP.13	• Term of office: 2 years • Max. of terms in office: 2 terms • Mandate ends at COP16 (2010)	Members nominated by their constituency Intersessional replacement by constituency
EGTT	**19 members** - 3 each from Africa, Asia and GRULAC - 1 from SIDs - 8 from Annex I Parties - 1 from "Other Non-Annex I Parties"	4/CP.7 5/CP.12 3/CP.13	• Term of office: 2 years • Max. of terms in office: 2 consecutive terms • Mandate ends at COP17 (2011)	Members nominated by their constituency Intersessional replacement by constituency Members confirmed by SBI
CDM EB	**10 members/10 alternates** - 1 member/alternate from each UN Regional Group - 1 member/alternate from SIDs - 2 members/2 alternates from Annex I Parties - 2 members/2 members from Non Annex I Parties	3/CMP.1	• Term of office: 2 years • Max. of terms in office: 2 consecutive terms of 2 years • Member can switch to serve as alternate,& alternate to member • Membership staggered since COP7	Elected by CMP Members nominated by their constituency Intersessional replacement agreed by CDM EB
JISC	**10 members/alternates** - 3 members/alternates from Annex I Parties - 3 members/alternates from Annex I EIT Parties - 3 members/alternates from Non Annex I Parties - 1 member/alternate from SIDs	9/CMP.1	• Term of office: 2 years • Max. of terms in office: 2 consecutive terms of 2 years • Member can switch to serve as alternate,& alternate to member • Membership staggered since CMP1	Elected by CMP Members nominated by their constituency Intersessional replacement agreed by JISC Ref: Decision
Compliance Committee	**10 members/alternates for each Branch (EB and FB)** - 1 member/alternate from each UN Regional Group - 1 member/alternate from SIDs - 2 members/alternates	27/CMP.1 4/CMP.4	• Term of office: 4 years • Max. of terms in office: 2 consecutive terms of 4 years • Member can switch to serve as alternate & alternate to member • Membership staggered	Elected by CMP Members nominated by their constituency No intersessional replacement possible

Body	Membership	Decisions	Term of Office	
	from Annex I Parties - 2 members/alternates from Non Annex I Parties		since CMP1	
Adaptation Fund Board	**16 members/alternates** - 2 member/alternate from each UN Regional Group - 1 member/alternate from SIDs - 1member/alternate from LDCs - 2 member/alternate from Annex I Parties - 2 member/alternate from Non-Annex I Parties	1/CMP.3 1/CMP.4 5/CMP.5	• Term of office: 2 years • Max. of terms in office: 2 consecutive terms of 2 years • Member can switch to serve as alternate, & alternate to member • Membership to be staggered from CMP7	Elected by CMP Members nominated by their constituency Intersessional replacement agreed by AFB
Bureaux - COP/CMP - SBs - AWGs	**COP/CMP Bureau - 11 Officers** - 2 from each UN Regional Group, 1 from SIDs **SBI/SBSTA/AWGs Officers/Bureaux** - 3 Officers for each body - 1 each UN Regional Group/SIDs	COP Draft Rules of Procedure 1/CMP.1 1/CP.13	• Term of office: 1 year • Max. of terms in office: 2 consecutive terms or 1 year • AWGLCA Chair/Vice-Chair rotates annually between a rep. from Annex I/Non-Annex I	Elected by COP, CMP, SBs or AWGs Intersessional replacement according to RoP

Annex 5. Operational modalities for the CTC and Network

Possible operational modalities for the CTC including possible role of the Network

<table>
<tr><td colspan="2">CTC Function – 11 (a)(i) Provide advice and support related to the identification of technology needs and the implementation of environmentally sound technologies, practices and processes.</td></tr>
<tr><td>Possible CTC role</td><td>Possible Network role</td></tr>
<tr><td>Services:
Provide technical support and advice for the development of TNAs
Provide technical support and advice for the development of national technology roadmaps and actions plans
Provide technical support and advice on other tools for the identification, planning and implementation of technologies.
Liaise with the Network and coordinate the deployment of expert technology planning and implementation assistance teams draw from the Network
Provide advice on policies and measures in support of implementation of technologies
Match country implementation needs with available support through the Network
Assess available support with the view to identifying gaps and opportunities for expanding and enhancing available support
Catalyse and develop programmes to strengthen institutions and centres in developing countries to conduct, develop and implement TNAs, technology roadmaps and other low greenhouse gas emission planning and implementation programmes
Catalyse and develop programmes to strengthen and establish national climate innovation centres
Catalyse forums to promote public-private partnerships to support the implementation of identified priority technologies
Catalyse forums to promote public and private investment (domestic and international) in adaptation and mitigation technologies</td><td>Services:
Deploy expert assistance teams to support the identification of technology needs, and the planning and implementation of technologies, including the development and implementation of technology roadmaps and actions plans for identified mitigation and adaptation technologies
Provide other forms of technical support for the planning and implementation of technologies
Provide advice on policies and measures in support of implementation of technologies
Implement programmes to strengthen institutions and centres in developing countries to conduct, develop and implement TNAs, technology roadmaps and other low greenhouse gas emission planning and implementation programmes
Implement programmes to strengthen and establish national climate innovation centres
Implement professional exchange programmes in support of implementation of technologies
Establish and organise forums to promote partnership development and track results of partnerships
Establish and organise forums to promote public and private investment (domestic and international) in development and deployment of technologies</td></tr>
<tr><td>Partnerships:
Broker and coordinate the implementation of collaborative technology implementation assistance programmes (with e.g., technology centres, technical institutions, the private sector, the government and multilateral partnerships identified by the Network)</td><td>Partnerships:
Advice and support for the planning and implementation of mitigation and adaptation technologies, practices and processes provided through partnerships.</td></tr>
<tr><td colspan="2">Complementary Network Functions 11 (d) (i), (ii) and (iii)</td></tr>
<tr><td colspan="2">Potential Technical Outcomes:
Technology needs assessments, roadmaps, and nationally appropriate mitigation and adaptation plans, strategies and actions;
Enhanced technical capacity to implement priority technologies and practices built through training</td></tr>
</table>

<table>
<tr><td colspan="2">and other capacity building programmes;
• Enhanced implementation of deployment programmes for priority technologies for adaptation and mitigation;
• Increased public and private investment (from domestic and international sources) in adaptation and mitigation technologies.</td></tr>
<tr><td colspan="2">CTC Function 11 (a)(ii) - Provide information, training and support for workforce development programmes to build or strengthen developing country capacity to identify technology options, make technology choices and operate, maintain and adapt technologies.</td></tr>
<tr><td>Possible CTC role</td><td>Possible Network role</td></tr>
<tr><td>Services:
• Provide information on existing workforce development programmes
• Assess existing workforce development programmes with the view to identifying gaps and opportunities for expanding and enhancing existing programmes
• Catalyse forums to exchange information and develop proposals for workforce development programmes
• Match capacity building and training requests with available support and track results and lessons
• Catalyse and develop programmes to strengthen centres and networks in developing countries to provide training (train the trainer approach)
• Catalyse and develop new programmes for workforce development programmes where existing programmes do not meet needs
• Provide training for workforce development programmes
• Catalyse and facilitate professional exchange programmes
• Facilitate and coordinate the engagement of the Network in training and workforce development programmes</td><td>Service:
• Implement technical support from international and regional centres to national centres to respond to priority country needs through expert teams, exchanges, training, and other forms of assistance
• Establish and organise forums to exchange and develop ideas on workforce development and partnership and track results of partnerships
• Develop and implement programmes providing expert assistance, training, and ongoing exchange to strengthen centres and networks in workforce development
• Provide training for workforce development
• Develop and implement professional exchange programmes
• Implement programmes to support the establishment of long-term educational and workforce development programmes to build knowledge and capacity on adaptation and mitigation technologies at each stage of the supply chain</td></tr>
<tr><td>Products:
• Tools and best practices for workforce development
• Inventories of country needs for workforce development programmes and of existing workforce development programmes
• Model workforce development curriculum and academic programmes
• Online workforce development training resources</td><td>Products:
• Workforce development tools and best practice information adapted to different country circumstances</td></tr>
<tr><td>Partnerships:
• Catalyse and facilitate the implementation of workforce development assistance programmes through parternerships</td><td>Partnerships:
• Implementation of range of workforce development programmes through partnerships</td></tr>
<tr><td colspan="2">Complementary Network Function 11 (d) (i), (ii) and (iii)</td></tr>
<tr><td colspan="2">Potential Technical Outcomes:
• Enhanced capacity and skilled workforces in the private sector on the development and implementation of mitigation and adaptation technologies for each stage of the supply chain.</td></tr>
</table>

- Enhanced awareness and technical capacity in the public sector on
  - the potential of climate mitigation and adaptation technologies, costs, and practical implications related to the application of mitigation and adaptation technologies
  - the creation of an effective enabling environment
  - how to access support for technology transfer, including making use of UNFCCC mechanisms such as NAMAs and NAPAs
- Enhanced capacity in academia, research institutes, technology and innovation centres including:
  - Capacity of research organizations to develop and adapt technologies to local circumstances
  - Strengthened educational and academic programmes on adaptation and mitigation technologies and systems
  - Enhanced capacity to conduct technology, market, and policy assessments related to adaptation and mitigation technologies

CTC Function 11 (a)(iii) - Facilitate prompt action on the deployment of existing technologies in developing country Parties based on the identified needs.

Possible CTC role	**Possible Network role**
Services: • Provide information on partnership and twinning opportunities • Match deployment and implementation needs with available support and track results and lessons learnt • Liaise with the network and facilitate the deployment of expert assistance teams to support deployment of existing technologies • Catalyse and facilitate forums to promote public and private investment and leverage resources for public-private technology deployment partnerships, including exchange of experiences • Identify needs and opportunities for technology cooperation • Engage with private sector actors, and public sector with the view to broker support of specific technology actions • Regional training programmes on project financing • On-line training tool on project financing	**Services:** • Technical assistance in the deployment of technologies • Implement deployment programmes including market transformation programmes for mitigation technologies • Deploy expert assistance teams to support technology deployment actions • Establish and organize forums to promote public and private investment and leverage resources for public-private technology deployment partnerships, including exchange of experiences
Products: • Tools, case studies and best practices for technology deployment	**Products:** • Customized tools and best practices
Partnerships: • Broker and coordinate partnerships in support of the deployment of existing technologies	**Partnerships**: • Participate in technology development partnerships • Implement and manage technology deployment partnerships
Complementary Network Functions 11 (d) (i), (ii) and (iii)	
Potential Technical Outcomes: • Implementation of deployment programmes for priority adaptation and mitigation technologies with advice and support from the CTC and Network and through international partnerships fostered by the Network	

• Long-term international public and private partnerships to advance development and deployment of priority technologies • Increased public and private investment (from domestic and international sources) in adaptation and mitigation technologies

CTC Function 11 (b) – Stimulate and encourage, 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.	
Possible CTC role	**Possible Network role**
Services: • Provide information on needs and opportunities for collaborative research, development and demonstration (RD&D) • Match technology RD&D needs with partnership opportunities and shared strategies for international collaboration and track results lessons and unmet needs • Catalyse and develop programmes to strengthen collaborative technology development and transfer programmes • Catalyse and develop capacity building programmes targeted at developing technology cooperation and partnership forming capabilities of technology centres and institutes in developing countries • Broker collaborative technology development and transfer acctions • Catalyse professional exchange programmes • Catalyse and support forums conducted by the Network to promote public-private partnerships and partnerships between centres of excellence to advance technology RD&D • Catalyse forums to leverage resources from relevant agencies and centres and promote public and private investment (domestic and international) in the development and deployment of technologies • Catalyse and develop programmes for the development of innovation planning tools	**Services:** • Provide information on needs and opportunities for collaborative RD&D • Establish and organise forums to stimulate technology development and transfer across key actors including companies, innovation centres, technology centres, government agencies, multilateral development agencies and international organizations • Implement programmes to strengthen centres and networks in developing countries to enable them to establish and expand public-private and twinning partnerships • Professional exchange programmes • Establish partnerships and enter into twinning arrangements to develop and transfer of technologies
Products: • Inventories of country RD&D needs • Innovation planning tools • Best practices and success stories in collaborative technology development and transfer	**Products:** • Tools and best practices on technology collaboration • Innovation planning tools
Partnerships: • Broker and coordinate the implementation of public-private partnerships and twinning arrangements to support RD&D	**Partnerships:** • Partner in technology RD&D partnerships • Implement and manage technology RD&D partnerships

Complementary Network Functions 11 (d) (i), (ii) and (iv)	

Potential Technical Outcomes:
• Accelerated development of innovative adaptation and mitigation technologies, improvements to existing technologies, and adaptation, commercialization, and diffusion of technologies throughout the world, especially in developing countries through collaborative global and regional programmes on various topics, including:
  o Fundamental research on new technologies and systems
  o Improvements in performance of emerging technologies
  o Demonstration of near-commercial technologies
  o Adaptation of technologies for developing country markets and conditions
  o Commercialization of technologies in developing countries
• Long-term partnerships between centres of excellence at global and regional levels to advance technology development, demonstration, and deployment
• Enhanced technical capacity of centres of excellence in developing countries
• Expanded partnerships and joint investment between businesses across countries to support development and deployment of technologies
• Public-private partnerships supporting the development and deployment of technologies	

CTC Function 11 (c) – Develop and customize tools, policies, and best practices for country-driven planning to support the dissemination of environmentally sound technologies	
Possible CTC role	**Possible Network role**
Services: • Track and match-make tool development needs with available support • Catalyse and develop programmes for the development of tools, policies and best practices for country-driven planning to support the dissemination of climate technologies • Develop and document tools and best practices • Establish and organize forums for sharing tools and best practices and to explore development of new tools • Facilitate training on tools and best practices • Organize expert assistance with application of tools and best practices	**Services:** • Provide information on tools and best practice information • Provide information on tool development and customization needs • Assist countries in customizing tools and policies • Customize new tools including roadmap and strategy development • Share information on technology roadmaps and action plans, methods, results, best practices, analysis and planning tools,
Products: • Information on tools and policies for country-driven planning to support the dissemination of technologies resources and activities • Tools and policies for country-driven planning to support the dissemination of technologies resources and activities, including technology roadmaps and action plans • Online suites of tools (data sets, models, technology roadmaps and strategies and	**Products:** • Inventories of resources and activities, • Analytical and information tools and best practices supporting the different functions of the CTC • Tools and policies for country-driven planning to support the dissemination of technologies resources and activities, including technology roadmaps and action plans • Policy guidance tools and resources

other analytical tools) • Best practice documents and online resources for technology planning and deployment • Policy guidance tools and resources	
Partnerships: • Identify and coordinate partnerships to adapt and develop new tools	**Partnerships**: • Manage partnerships to develop and customize tools, policies and best practices • Partner in the development and customization of tools, policies and best practices
Complementary Network Functions 11 (d) (i)	
Potential Technical Outcomes: • Public and private sector organizations across the world use state-of-the-art, customized tools and practices in developing technology plans and implementing technology diffusion programmes. • Enhanced knowledge and awareness of good practices in technology planning and deployment programmes across all adaptation and mitigation sectors in developing countries.	

Network Functions and Options for Operational Modalities

Network Functions	Options for operational modalities
11 (d)(i) Enhancing cooperation with national, regional, and international centres and national institutions	• Establish and organise forums to identify cooperation opportunities and promote cooperation between national, regional and international technology centres and relevant national institutions • Implement programmes facilitating and supporting ongoing professional exchanges between national, regional and international technology centres and relevant national institutions
11 (d)(ii) Facilitating international partnerships among public and private stakeholders to advance technology innovation and diffusion	• Establish and organise forums to promote international public-private partnership to advance technology RD&D priorities • Implement programmes facilitating and supporting international professional exchange programmes • Coordinate the implementation of international collaborative public-private RD&D and deployment programmes • Establish and organise forums to promote public and private investment partnerships to advance diffusion of technologies • Implement international partnerships facilitating and supporting the diffusion of technologies
11 (d)(iii) Providing, on request by a developing country Party, in country technical assistance and training to support identified technology actions in developing country Parties	• Implement programmes to strengthen technology centres and relevant national institutions in developing countries • Establish and implement training programmes • Provide technical assistance in the development of training programmes • Deploy expert assistance teams to support identified technology actions across the technology development and diffusion continuum, including planning and implementation
11 (d)(iv) Stimulating the establishment of twinning arrangements to promote North-South, South-South, and triangular partnerships with a view to encourage cooperative research and development	• Establish and organize forums to stimulate twinning arrangements between technology centres and relevant institutions in developed and developing countries • Implement programmes to strengthen centres and networks in developing and developed countries to enable them to expand twinning partnerships • Facilitate twinning arrangements • Partner in twinning arrangements

Annex 6. Integrated delivery of the operational modalities of the TEC

The table below shows the relevant CTC operational modalities that would support TEC functions (a), (d) and (i), and associated operational modalities, which were presented in Section D on the TEC. It illustrates the need for coordination and delineation of responsabilities between the TEC and the CTC and Network.

TEC Function	TEC Operational Modalities	Related CTC Operational Modalities
7 (a) Provide a global overview of technological needs, and analysis of policy and technical issues related to the development and transfer of technology for mitigation and adaptation to the COP and SBs	**Products** • Synthesis reports for: (i) TNAs; (ii) Technology roadmaps and action plans • Lessons learnt and good practices in the development and implementations of TNAs, and identification of ways to enhance the implementation of TNAs. • Technical papers analyzing policy issues • Technical papers analyzing technical issues • Selected technical papers could be published for a wider audiences **Services** • Information system on technological needs (enhanced TT:CLEAR) • Convene a Dialogue modelled on the existing SB Research Dialogue for selected technical issues	**Under 11 (a) (i)** **Services:** • Provide technical support and advice for the development of TNAs • Provide technical support and advice on other tools for the identification, planning and implementation of technologies.
7 (d) Promote collaboration on the development and transfer of technology for climate mitigation and adaptation between governments, industry, non-profit organizations, academic and research communities	**Products** • Inventory of collaborative activities between institutions related to technology development and transfer (which could be linked to national communications). • Identification of needs and gaps for enhanced collaboration, which could occur within international technology action plans or as a result of the analysis undertaken in support of Function 7 (a) or could arise from work undertaken in support of Function 7 (b). • Review of best practices and success stories in technology collaboration. • Identification of common barriers to collaboration and of solutions for overcoming them. **Services** • Convening partnership forums or workshops focused on addressing needs and gaps. • Information platform for collaborative	**Under 11 (b)** **Products:** • Inventories of country RD&D needs • Best practices and success stories in collaborative technology development and transfer **Services** • Provide information on needs and opportunities for collaborative RD&D • Match technology RD&D needs with partnership opportunities and shared strategies for international collaboration and track results lessons and unmet needs • Plan and support forums conducted by the Network to promote public-private partnerships and partnerships between centres of excellence to advance technology RD&D

TEC Function	TEC Operational Modalities	Related CTC Operational Modalities
	programmes and initiatives. • Supporting existing collaborative technology programmes and initiatives. • Implementation of international technology collaboration programmes where appropriate. **Partnerships** • Partnerships to implement international technology collaboration programmes and initiatives	• Plan forums to leverage resources from relevant agencies and centres and promote public and private investment (domestic and international) in the development and deployment of technologies **Partnerships:** • Coordinate implementation of public-private partnerships and twinning arrangements to support RD&D
7 (i) Catalyse the development and use of technology road maps or action plans **at the national level** through cooperation between relevant stakeholders, particularly governments and relevant organizations or bodies, including the development of best practice and guidelines as facilitative tools for action on mitigation and adaptation	**Products** • Guidance for TNAs could elaborate upon the concept of national technology road maps and TAPs. • Guidelines on the development of national technology roadmaps and TAPs. • Review of the experiences from the Poznan Strategic Programme with recommendations for its long term implementation. • An online tool box bringing together existing resources that are available and additional fit for purpose tools, which can be used to guide Parties in the development of national technology roadmaps and action plans. • Compilation of best practices in the development, use and implementation of national technology roadmaps and actions plans. • Reports on the development of national technology roadmaps and action plans. • Reports on the use of and experience with implementation of technology roadmaps and action plans, including the identification of common barriers to their use and implementation and ways to address these barriers, based on inputs from countries (part of national communications?). • Recommendations regarding the support for the use and implementation of technology roadmaps and action plans, in particular capacity building programmes that may be appropriate. **Services**	**From 11 (c)** **Products:** • Technology roadmaps and action plans • Best practice documents and online resources for technology planning **Services** **From 11(a) (i)** • Provide technical support and advice in the development of national technology roadmaps and actions plans **From 11 (c)** • Track and match-make tool development needs with available support • Design programmes for the development of tools, policies and best practices for country-driven planning to support the dissemination of climate technologies • Develop and document tools and best practices • Organize forums for sharing tools and best practices and to explore development of new tools

TEC Function	TEC Operational Modalities	Related CTC Operational Modalities
	• Tracking the development, use and implementation of national technology roadmaps and actions plans. • Recommend enhanced means for providing capacity building and technical support for preparing technology road maps and action plans (Function 7 (a) (b) (c)) •	
7 (i) Catalyse the development and use of technology road maps or action plans **at the regional/international level** through cooperation between relevant stakeholders, particularly governments and relevant organizations or bodies, including the development of best practice and guidelines as facilitative tools for action on mitigation and adaptation.	**Products** • Reports on the development, use and implementation of regional/international technology road maps and action plans. • Reports on the rates of deployment and other variables (e.g. cost) for technologies that have action plans or road maps. • Identification and compilation of best practices and guidelines for the use and implementation of international technology roadmaps and action plans. **Services** • Respond to requests of the COP to develop international and regional technology roadmaps or action plans. • Convene high level forums to identify, in consultation with governments, regional and international organizations, industry, non-profit organizations and academic and research communities, technologies for which the development of a regional/ international technology road map and action plan is appropriate. • Convene high-level regional/international forum(s) on the development, use and implementation of international technology roadmaps and action plans. • Tracking of the development, use and implementation of regional/international technology road maps and action plans. • Monitoring the rates of deployment and other variables (e.g. cost) for technologies that have action plans or road maps. • Support and develop, where appropriate, and in collaboration with other bodies under the Convention, and regional and international organizations, a series of regional/international technology roadmaps and action plans.	**From 11 (c)** **Products:** • Technology roadmaps and action plans • Best practice documents and online resources for technology planning **From 11 (c)** • Track and match-make tool development needs with available support • Design programmes for the development of tools, policies and best practices for country-driven planning to support the dissemination of climate technologies • Develop and document tools and best practices • Organize forums for sharing tools and best practices and to explore development of new tools

TEC Function	TEC Operational Modalities	Related CTC Operational Modalities
	• Support the use and implementation of, where appropriate, and in collaboration with other bodies under the Convention, and regional and international organizations, a series of regional/international technology roadmaps and action plans.	

Annex 7. Hypothetical examples of country request for support for each function-based operational programme of the CTC.

The examples were provided by UNEP, NREL and ECN.

<u>Operational Programme 1</u>: Provide advice and support related to the identification of technology and implementation

<u>Hypothetical Example A</u>

Request: A country has requested assistance with preparation and implementation of a technology needs assessment

1. Country submits request for support to the CTC or to a regional centre with as much specificity as possible on their needs for assistance and the proposed scope of their work. Refining of the request would occur through interaction between the CTC or the regional centre and the country.
2. Review of Current Activities and Resources: CTC, with assistance from the Network, reviews inventory of current data, tools, and international programmes available to assist country with priority topics (e.g. UNDP and UNEP TNA handbook, Climate TechWiki data base, UNEP TNA support team, etc.). One option for this would be for the CTC to keep a roster of experts and institutions that would be suitable to provide the requested services and are part of the Network. Much of the information on current data, tools, programmes and experts is also available online, however the CTC adds value by identifying a suitable support package. Another option would be for the CTC to solicit information from the Network on capabilities and resources in relation to specific needs. Because this information is rapidly changing it may be difficult to keep an updated roster of this information and instead more efficient to reach out to the Network on a case-by-case basis.
3. Match needs with support: Based on identified needs and information from the Network, CTC matches relevant in-country institutions with service providers from the Network to assist with all phases of the technology needs assessment.
    a. Expert assistance teams: CTC regional unit clarifies country needs for assistance and engages one or more expert teams from the Network (e.g. tapping into existing UNEP TNA expert team) to deliver assistance to the country, including provision of relevant technology data and tools.
    b. Capacity building and training teams: CTC clarifies training needs and arranges for training by experts from the Network on priority country topics (e.g. training from the IEA on technology roadmapping or from the World Bank on low greenhouse gas emission development plans, etc.).
4. Country-Driven Implementation of Services in response to requests from National TNA teams
    a. Experts from Network provide advice and assistance to countries
    b. Expert from Network provide capacity building and training on TNAs and technology programme design

c. Network conducts expert forums and supports partnership development to meet country needs

5. Lessons-learned and development of refined tools and best practices to support the development of a TNA

   a. Lesson learned from the process are fed back to the CTC by the country and the implementation Network partners.

   b. Development of new tools and best practice information to support the process
      i. Network experts inform CTC of needs for new tools and CTC engages Network where appropriate to develop enhanced tools
      ii. Developing countries or networks inform CTC of new needs and opportunities and CTC works with the Network to adjust programmes
      iii. CTC compiles this information and prepares materials on lessons learned and best practices.
      iv. CTC adds TNA information, customized tools and lessons learned for the country to the online TNA tool and information platform.

Examples of existing networks and institutions that support preparation of a TNA:

- UNEP, UNEP-Risoe Centre, UNDP, and the Joint Implementation Network are working together to assist many countries with TNA preparation through funding by GEF. Examples of tools and services they could provide include information on relevant experts, capacity building and training materials and services, the TNA Preparation Handbook and a technology database called ClimateTechWiki.
- The IEA that has conducted technology-specific roadmap exercises that identify priority actions for governments, industry, financial partners, and civil society. IEA could provide information and data on techno-economic characteristics of technologies and market assessments relating to road mapping activities.
- CLEAN is a network helping to track and communicate low emission planning related activities and which seeks to harmonize the practices of providing technical assistance. CLEAN provides an inventory of international climate technology programmes, training resources and known service providers.

<u>Operational Programme 2:</u> Provide information, training, and support for workforce development programmes to strengthen developing country capacity for technology assessment, adaptation, and deployment.

<u>Hypothetical Example B</u>

Request: A country has requested assistance for workforce development on use of water efficient irrigation technologies in rural villages to improve resiliency to potential droughts.

1. Country submits request for support to CTC or the regional centre with as much specificity as possible on their needs for assistance and the proposed scope of their work
2. Review of Current Activities and Resources: CTC, with assistance from the Network, reviews inventory of current data, tools, and international programmes available to assist country with training and workforce development on efficient irrigation systems
    a. CTC – coordinates this work and contacts agricultural and water use related networks operating at a regional or global level for information on services and tools they provide.
    b. Agricultural and water networks provide information on relevant services providers and technical institutions (e.g. International Water Management Institute (IWMI) and related CGIAR centres along with FAO or IFDC programmes on irrigation efficiency), and available information and training materials to provide support.
3. Matching needs with support: Based on identified needs and information from the Network, CTC matches relevant in-country institutions with trainers to support workforce development on use of the irrigation technologies and to provide capacity building to the in-country centre on relevant training (train the trainers).
    a. Capacity building and training teams: The selected agricultural and water networks establish the team of international irrigation efficiency experts and trainers (e.g. could draw on irrigation efficiency experts from IWMI regional centres supplemented with FAO or IFDC) and monitors work of this team in designing a programme of support for the country.
    b. Host country identifies team of country experts and managers to guide the work in the country and to establish a joint network and host country team.
4. Country-Driven Implementation of Services
    a. Joint network and host country team design training and workforce development programme.
    b. Joint team delivers irrigation efficiency training.
    c. Joint team assists country in developing long-term educational curriculum on water efficient irrigation.
    d. Joint team conducts expert forums to match country institutions with international irrigation organizations and promote long-term partnerships.
    e. Network reviews and guides work of experts drawn from the network.

5. Application of tools and best practices to support irrigation technology capacity building

    a. Network identifies needs for improved documentation of best practices and enhanced irrigation efficiency training curriculum for review by CTC. CTC engages Network in developing improved best practice and educational materials.

Examples of existing networks that could support workforce development programmes on the use of water efficient irrigation technologies in rural villages to address adaptation needs:

- The Consultative Group on International Agricultural Research (CGIAR) has established the International Water Management Institute (IWMI)with a staff of 265 in 12 countries across Asia and Africa working on irrigation efficiency and related topics.
- The Food and Agricultural Organization (FAO) is an institution supporting sustainable land-use practices relating to agriculture to ensure the security of food products and other natural resources. This institution could provide a number of resources, including case studies and best practices, links to experts on this issue and a database of related projects.
- IFDC is an organization that provides international training programmes and information on sustainable development. In particular IFDC provides training to support improved agricultural productivity and returns to farmers with small holdings through using water and nutrients efficiently.[1]
- UN-Water is branch of the United Nations focusing on water issues. This network could provide links to experts in the field and other relevant resources such as case studies and best practices.

<u>Operational Programme 3</u>: Facilitate prompt action on deployment of existing technologies based on identified developing country needs

<u>Hypothetical Example C</u>

Request: Based on the results of a technology needs assessment, a country has requested assistance on deployment of concentrating solar power (CSP) technologies, including design of CSP solicitations and tools for assisting with CSP project design and financing.

1. Country submits request for support to CTC regional centre with as much specificity as possible on their needs for assistance and the proposed scope of their work.
2. Review of Current Activities and Resources: CTC, with assistance from the Network reviews inventory of current data, tools (e.g. Solar Advisor Model, OpenEI training video on CSP), and international programmes (e.g. IEA Solar Paces Implementing Agreement, International Solar Energy Society, etc.) available to assist country with priority topics. Networks provide information on relevant domestic and international services providers and technical institutions, and available information and training materials to provide support.

3. Matching needs with support: CTC requests that the Network establish an expert team to work with the country to provide the requested support. The solar network identifies and engages CSP experts in consultation with key international programmes and CSP centres of excellence (e.g. IEA, ISES, NREL, DLR, etc.) and any existing rosters of experts. These experts are matched with in-country institutions to develop a plan for technical cooperation to support the CSP solicitation and to provide training on CSP project design and financing tools.
4. Country-Driven Implementation of Services
    a. Expert team draws from existing materials to prepare tailored report for the country on best practices with CSP solicitations
    b. Joint international expert and in-country team adapt existing CSP project analysis tools (e.g. Solar Advisor Model, etc.) for use in the country.
    c. Joint team plans and conducts training for project developers and others on CSP design and financing tools and resources.
    d. Joint team convenes forum to promote business partnerships on CSP in the country
5. Improvement of tools for future use
    a. Based on work with the country, international expert team shares improvements to Solar Advisor Model data sets and report on CSP solicitation best practices with the Solar Network and the CTC to be shared through the CTC web portal
    b. Joint country and international expert team present their lessons and experiences during a CTC webinar on solar project development

Examples of existing networks that could support deployment of CSP technologies:

- Solar PACES is an international cooperative program of the IEA working toward development and commercialization of CSP technologies. This network provides a number of information resources on deployment of CSP technologies.
- The International Solar Energy Society (ISES) is a society of international solar energy companies, researchers, and government representatives covering the spectrum of solar applications.
- The OpenEI web portal was developed to provide tools to these countries on a number of topics including CSP deployment, e.g. CSP training materials and the Solar Advisor Model software can be downloaded for free from the site.
- Solar Energy International is a network of institutions working together to provide education and training on solar energy. SEI provides a number of free training resources on solar energy technologies.

<u>Operational Programme 4</u>: Collaborative development and transfer of existing and emerging technologies

<u>Hypothetical Example D</u>

TEC identified opportunity: Facilitate cooperative opportunities for development of drought tolerant corn species

1. TEC identifies opportunity to facilitate cooperative development of drought tolerant corn cultivars
2. Review of Current Activities and Resources: CTC, with assistance from the Network, reviews inventory of current institutional cooperation on development of drought tolerant corn cultivars and roles and capabilities of institutions around the world in this area.
3. CTC with data input from Networks (e.g. Agriculture network) and regional centres, identifies needs for enhanced cooperation, especially for developing countries, and gaps relative to current programmes on drought tolerant corn cultivars and develops a proposed cooperative research programme.
4. CTC circulates this cooperative research programme to broad group of international experts for review, with CTC and the regional centres seeking comments and feedback from countries in each region.
5. Revised plan shared with TEC for review. TEC adopts plan and assists in mobilizing resources and partnerships with existing international programmes.
6. Implementation of collaborative activities defined in the strategy at global and regional levels and through both bilateral and multi-lateral means
    a. CTC selects a network to lead the project (e.g. Agricultural network) and asks this network to form a project team and partnerships with existing international organizations (e.g. CGIAR, etc.) to implement this programme.
    b. The selected project team implements the programme, including various collaboration forums and partnerships to support development of the corn species and outreach to share results.

Example of existing network that could facilitate cooperative opportunities for developing drought resistance crops

- The Consultative Group for International Agricultural Research supports collaborative programs on agricultural research and development in 15 centres around the world with a budget over $500 million in 2009. In addition to its research programs, CGIAR also supports capacity building, education and awareness, and policy development in developing countries.
- International Service for the Acquisition of Agri-Biotech Applications (ISAAA) is a global knowledge sharing network partnering with public and private institutions to share information on crop biotechnology especially as it relates to rural farmers in developing countries. The network also support transfer of biotechnologies and provides technical services and capacity building for policy making, research, regulation and impact assessment.

<u>Operational Programme 5</u>: Develop and customize analytic tools, policies, and best practices for country driven planning to support the dissemination of environmentally sound technologies

<u>Hypothetical Example E</u>

TEC identified opportunity: Develop an energy efficiency policy database and best practice guide

1. TEC identifies opportunity to develop an energy efficiency policy database and best practice guide
2. Clarification of country needs. CTC together with the Networks (e.g. energy efficiency network) and working through the regional centre compiles information on country needs for energy efficiency policy information and tools.
3. Review of Current Activities and Resources: CTC, with assistance from Networks (e.g. energy efficiency network), reviews inventory of current energy efficiency policy data bases and best practices document and on activities to develop these types of resources by other institutions (e.g. IPEEC, IEA, CEM initiatives, etc.).
4. Development of a work plan and project team for development and maintenance of the database
    a. CTC selects network to lead this work (e.g. energy effiency network) in partnership with existing institutions (e.g. IPEEC, etc.).
    b. Network establishes project team and partnerships and develops workplan
    c. Workplan reviewed by CTC and by countries through regional centres.
    d. Stakeholder review forum facilitated by network with guidance from the CTC
5. Development of data base and best practice resource drawing from current resources and data bases available
    a. Project team develops online data base and energy efficiency best practice document with guidance and input from Network
    b. Network implements workshops and forums to facilitate development of the tools and plan for continued addition of information to the data base

Examples of existing networks and related tools that could support development of a database and decision guide for energy efficiency policy best practices

- The International Partnership for Energy Efficiency Collaboration (IPEEC) could provide a number of energy efficiency policy best practice resources.
- IEA Energy Efficiency Policy database
- REEEP Energy Policy database
- CLEAN inventory of EE policy best practice resources

Annex 8. Guiding questions on the operational modalities of the Technology Mechanism

Technology Executive Committee

Function 7 (a)

- What aspect of global technological needs should the TEC maintain an overview of?
- What sources of information would the TEC draw upon in maintaining this overview (e.g. TNAs, technology road maps and action plans, NAMAs and NAPs, others)?
- How would this global overview be shared with Parties? In what form?
- How would the TEC organize the analysis of technical and policy issues? Would it undertake analysis as issues arise (ie on an ad hoc basis) or would it identify and programme work on specific technical and policy issues?
- How would the TEC organize support from experts in undertaking its analysis of technical and policy issues?

Function 7 (b)

- Who would identify the actions for consideration and recommendations? Would they be referred to the TEC for consideration, or would they be identified by the TEC itself?
- Who would receive the recommendations from the TEC on actions to promote technology development and transfer?

Function 7 (c)

- What is understood to be covered by the terms "policies, programme priorities and eligibility criteria"?
- How frequently would the guidance be prepared?

Function 7 (d)

- What methods and tools would the TEC use to promote collaboration?
- How would the work of the TEC in this regard relate to the CTC and Network in its work in enhancing cooperation (11 (d) (i)), in facilitating international partnerships (11 (d) (ii)) and in stimulating twinning centre arrangements (11 (iv))?

Function 7 (g)

- In what form and to what level of detail and on which issues would the TEC provide guidance to the CTC and Network? What inputs would the TEC use in preparing its guidance?

Function 7 (i)

- In addition to producing best practices and guidelines, how would the TEC catalyse the development and use of technology action plans and road maps?
- What role would the TEC have in catalysing the implementation of international technology action plans and road maps?

Climate Technology Centre and Network

Function 11 (a)

- What type of services and support would Parties who had made such requests expect from the CTC and Network in relation to:
- Identification of technology needs

- Implementation
- Workforce development programmes
- Deployment of ESTs

Function 11 (b)

- What methods would the CTC and Network use to stimulate and encourage collaboration?
- How would the work of the CTC and Network in this regard relate to the role of the TEC in promoting collaboration?

Function 11 (c)

- What types of analytical tools, policies and best practices would be needed to support country-driven planning?
- How should such products be disseminated?

Function 11 (d)

- What will be the division of labour in the delivery of operational modalities by the CTC on one hand and the Network on the other?
- What entities will form part of the Network? How would the Network be organized
- What would be the incentive for participation?
- What approach should the Network take to /How should the provision of in-country technical assistance be organized?

Annex 9. Considerations on the composition and mandate of the Climate Technology Centre and Network

9/10/2010 @ 15:00

Note by the co-facilitator

This note was prepare by the co-facilitator under his own authority and initiative, drawing from views and the discussion among Parties during the 12th session of the AWG-LCA. These discussions were without prejudice to any final conclusions or outcome, or any Party's position. The note contains an indicative list of issues and questions raised by Parties to enhance their understanding on the concept of the Climate Technology Centre and Network. Parties have expressed a desire to further explore different options and approaches and present additional issues in relation to the concept and modalities of the Climate Technology Centre and Network.

Mandate

22. Mandate is defined by the functions contained in paragraph 11;[16]

23. Mandate clarifies the division of labour between the CTC and the TEC;

24. Modalities and procedures for the CTC and Network:

(a) *Approach 1*: Prepared by CTC and Network under guidance from the COP;

(b) *Approach 2*: Prepared by the TEC based on terms of reference agreed by the COP;

25. Relationship between the CTC and the TEC:

(a) *Approach 1:* Two parallel entities; cooperation but no hierarchy with the CTC taking fully into account the policy and techical advice of the TEC;

(b) *Approach 2:* CTC under the authority and guidance of the TEC;

(c) Approach 3: CTC operates independently within a mandate approved by the COP, guided by the TEC;

Relationship with UNFCCC

26. CTC established by the Conference of the Parties;

27. CTC and Network reports [to the COP through the SBSTA][to the SBSTA][through the TEC to the COP];

28. Accountability;

Composition

29. Comprised of:

(a) Climate Technology Centre;

[16] FCCC/AWGLCA/2010/14, chapter IV, paragraphs 11.

(b) Regional Centres (existing):

(i) *Approach 1:* [X] Regional Centres that act as the regional branches of the Climate Technology Centre;

(ii) *Approach 2:* [X] Regional Centres that form part of the Network;

(c) Network of national, regional, sectoral and international technology centres, networks, organizations, initiatives;

30. Governance and management:

Approach 1:

(a) [Board][Committee] with Chair and [X] appointed members, and

(b) Chair of the TEC, q.q.

(c) Director of the CTC;

Approach 2:

(d) TEC performs function of the governing body of the CTC;

(e) Director of the CTC.

Staffing/secretariat arrangements

31. Approximately [20] admistrative and professional staff with expertise in technology development and transfer, finance, legal, programme/project management, capacity building;

32. Roster of experts and/or institutions;

33. Staffing arrangements to be determined;

34. Secretariat:

(a) *Approach 1:* Within the UNFCCC secretariat;

(b) *Approach 2:* Its own secretariat;

(c) *Approach 3:* Selected based on a call for proposals;

Finance/resources

35. Relationship with finance;

36. Resources.