Adaptation **C**ommittee
Least **D**eveloped **C**ountries **E**xpert **G**roup

5 October 2016*

An input to the discussions by the Adaptation Committee and the Least Developed Countries Expert Group at their meetings on their work in addressing the mandates contained in decision 1/CP.21, paragraphs 41 and 45

Desk review by the secretariat

Recommended action by the Adaptation Committee and the Least Developed Countries Expert Group

The AC and the LEG may wish to consider the information contained in the annexes to this background note and may wish to agree on possible next steps as suggested in section 4 of this document.

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* Title changed. Original title: *Update on the work of the Adaptation Committee and the Least Developed Countries Expert Group in addressing the mandates contained in decision 1/CP.21, paragraphs 41 and 45. Background note.*

1. Introduction

1.1. Mandate

1. As part of the Paris outcomes on adaptation, the Conference of the Parties (COP), by its decision 1/CP.21:

a) Requests the Adaptation Committee (AC) and the Least Developed Countries Expert Group (LEG) to jointly develop modalities to recognize the adaptation efforts of developing country Parties, as referred to in Article 7, paragraph 3, of the Agreement, and make recommendations for consideration and adoption by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its first session (CMA 1);

b) Requests the AC and the LEG, in collaboration with the Standing Committee on Finance (SCF) and other relevant institutions, to develop methodologies, and make recommendations for consideration and adoption by CMA 1 on:

i) Taking the necessary steps to facilitate the mobilization of support for adaptation in developing countries in the context of the limit to global average temperature increase referred to in Article 2 of the Agreement;

ii) Reviewing the adequacy and effectiveness of adaptation and support referred to in Article 7, paragraph 14(c), of the Agreement.[1]

1.2. Scope of the note

2. This background note provides an overview of activities undertaken so far by the AC and the LEG in responding to the above mandates (section 2). In particular it presents the results of a technical desk review of existing modalities and methodologies relevant to the mandates (annexes 1 to 3). The note concludes with possible considerations and next steps for taking the mandates forward (section 3).

2. Activities in support of addressing the mandates

3. The AC, at its 9th meeting held from 1 to 3 March 2016, and the LEG, at its 29th meeting held from 15 to 19 March 2016, each considered the above mandates and agreed to hold a joint meeting on 27 May 2016 in Bonn.

4. The joint meeting addressed initial reflections on the mandates by the AC and the LEG, collaboration and inputs from Parties and all relevant stakeholders, a workplan to guide the work and preliminary ideas on reporting to COP 22 on the progress made in these areas.[2] The meeting also considered a background paper prepared by the secretariat with information on addressing the mandates. The two bodies agreed to update this information regularly and make it publicly available in due course, as a way to keep Parties and relevant stakeholders informed about their ongoing progress.

5. The AC and LEG decided to take a three-step approach for organizing their work:

a) Step 1 (Q2-Q3 2016): gathering and synthesizing information relevant to the mandates;

b) Step 2 (Q3 2016 to Q1 2017): identifying a suite of possible methodologies and modalities ("options") and validating them through outreach to Parties and relevant stakeholders;

c) Step 3 (Q2-Q4 2017): selection of options to include in recommendations for CMA 1.

6. As part of step 1, the AC and LEG requested that the secretariat undertake a desk review of existing modalities and methodologies relevant to the three mandates. This review is included in annex 1 – 3.

[1] Decision 1/CP.21, paragraphs 41 and 45

[2] The report of the meeting is available at <unfccc.int/9785>.

7. In addition, the AC and the LEG launched a call for submissions from Parties and other stakeholders by 30 September, based practical experience where possible, to help them in fulfilling their Paris mandates. Parties and other stakeholders were encouraged to consider a set of guiding questions when preparing their submissions.[3]

8. Members of the AC and LEG met again at the margins of the NAP Expo in July 2016 to reflect on the mandates and consider steps forward.

9. In line with the timelines set for step 1, the SCF nominated a focal point to bring in the SCF's perspective in responding to the mandates.

10. Finally, the AC and the LEG are organizing a side event at COP 22 in Marrakesh (10 November 2016 from 1315–1445hrs) to share progress and interim results with the Parties.

3. Possible considerations

11. Based on the information contained in the desk review annexed to this paper, and in conjunction with the submissions to be received from Parties and non-Party stakeholders, the AC and the LEG may wish to consider issues as follows below.

12. Regarding the mandate and goals of the Paris Agreement, the AC and LEG may wish to consider identifying a number of high-level principles for recommending modalities and methodologies. The AC and LEG may wish to recommend modalities and methodologies taking into account the requirement for them to be practical, effective, comprehensive, flexible and dynamic.

13. Considerations specific for developing modalities **to recognize the adaptation efforts of developing country Parties** may include:

a) Are the modalities listed sufficiently comprehensive, and if so, can a shortlist be prepared, and if not, how can existing modalities be further developed or new modalities be identified or developed?

b) Is there value in looking into a case study or worked example to test the modalities and approaches suggested?

c) …

14. Considerations specific for developing methodologies on **taking the necessary steps to facilitate the mobilization of support for adaptation in developing countries in the context of the limit to global average temperature increase referred to in Article 2 of the Agreement** may include:

a) Are there methodologies presented in the paper that are sufficiently well developed that could be considered for a short list, and if not, are there additional methodologies that could be identified or further developed?

b) How can the support for adaptation be framed/articulated in the context of the global temperature limit of <2°C in order to help in answering this mandate?

c) How could existing methodologies be adjusted to reflect the temperature goal and if not how could new ones be developed and by whom?

d) …

15. Considerations specific for developing methodologies for **reviewing the adequacy and effectiveness of adaptation and suppor**t may include:

a) What could be considered adequate adaptation at different levels (local, sectoral, national and global level)? Similarly for effectiveness.

b) What could be considered adequate and effective support for adaptation?

[3] The call for submissions and guiding questions can be found at <unfccc.int/9761>.

c) What M&E methodologies presented in the paper are suitable in addressing the answers to (a) and (b) above?

d) Are any new tools and frameworks needed to be developed to measure adequacy/effectiveness of adaptation and support at national or global levels? If so, which and how could they be developed and by whom?

e) What would be the role of other constituted bodies in selecting/developing these methodologies? What linkages or approaches could be effective in collaborating with the SCF, the Technology Executive Committee (TEC), the Climate Technology Centre and Network (CTCN) and the Paris Committee on Capacity Building (PCCB), particularly related to adequacy and effectiveness of support?

f) How will the selected methodologies help in providing information to the global stocktake and assisting in reviewing the overall progress made in achieving the global goal on adaptation?

g) …

4. Possible next steps

16. In their individual deliberations, the AC and the LEG may wish to consider possible next steps to bring to a joint discussion of the two bodies, both of a substantive and procedural nature, such as on the following:

a) Consider the information contained in the desk reviews (annexes 1 to 3) and the considerations for developing the modalities and methodologies and offer reactions and comments for revision and further work as necessary;

b) Request the secretariat to synthesize the information contained in the upcoming submissions and taking into account the desk review, as an input to the joint side event at COP 22 and as a basis for further work;

17. The AC and LEG may also wish to:

a) Consider how to present progress to COP 22, including through the AC and LEG reports;

b) Propose content of the joint AC-LEG side event at COP 22 and ways of engaging the SCF.

18. Upon conclusions of both the LEG and AC meetings, the AC and LEG may wish to exchange the results of their respective considerations, possibly through a meeting of representatives of each body and the SCF focal point, either prior to, or at the margins of, COP 22, to jointly agree on next steps, including identifying a suite of options of possible modalities and methodologies, and considering ways of engaging other relevant institutions in taking the mandates forward.

5. Desk review of existing modalities and methodologies relevant to the mandates contained in decision 1/CP.21, paragraphs 41 and 45

19. The objective of the desk reviews is to present relevant technical information, activities and existing modalities and methodologies that can be taken into consideration alongside the submissions from Parties and stakeholders and future discussions at meetings of the AC, LEG and their related events.

20. The desk reviews are intended to facilitate discussion in place of presenting a comprehensive overview of all available information. The literature used for the reviews includes related initiatives and/or resources that exist within and outside the Convention, and build upon the initial examples referred to at the informal joint meeting of the AC and the LEG.

21. Each review (annexes 1 to 3) starts with an introductory section and then continues to mapping existing modalities or methodologies, including best practices and lessons learned, as appropriate.

Annex 1: Modalities to recognize the adaptation efforts of developing countries

1. Introduction

1. According to Article 7, paragraph 3 of the Paris Agreement, the adaptation efforts of developing country Parties shall be recognized, in accordance with the modalities to be adopted by CMA 1. COP 21 requested the AC and the LEG to jointly develop modalities to recognize the adaptation efforts of developing country Parties, as referred to in Article 7, paragraph 3, of the Agreement, and make recommendations for consideration and adoption by CMA 1 (decision 1/CP21, paragraph 41).

2. The main component of this mandate is about the modalities for the Convention (the appropriate body of the Convention to be determined) to recognize the adaptation efforts. This would address how to capture or receive the information on adaptation efforts from developing country Parties and to manage the information to facilitate subsequent use. In order to address these issues, it may be important to discuss the type of information that countries would assemble and communicate on their adaptation efforts, and how the information may be used by the COP (the appropriate body of the Convention to be determined).

3. This review therefore presents information on a range of adaptation efforts, ways that may be used to capture and communicate adaptation efforts, possible ways to recognize adaptation efforts and possible gaps and challenges. It explores possible linkages with the NDCs, Adaptation Communications and other reporting channels, as well as other elements of the Paris Agreement.

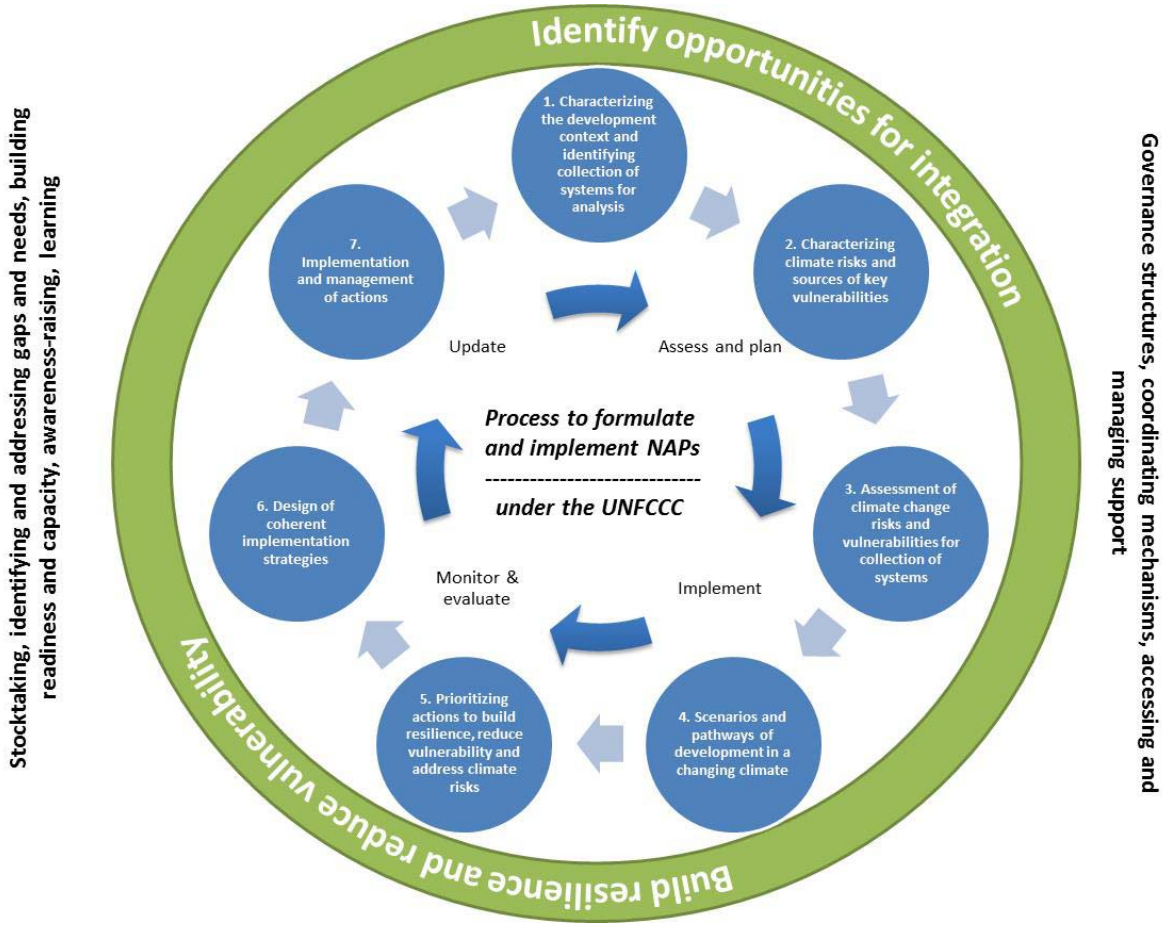
1.1. Range of adaptation efforts

1. Adaptation entails adjustments in systems (ecological, social, or economic) and management of climate change risks and vulnerabilities through a process of identifying, planning and implementing activities (policies, projects and programmes) that enhance adaptive capacity, strengthen resilience and reduce vulnerability to climate change. It is an iterative process that includes four elements as framed under the process to formulate and implement national adaptation plans (NAPs), which are: laying the groundwork and addressing gaps; preparatory elements; implementation strategies; reporting, monitoring and review.[1]

2. Adaptation cuts across multiple sectors and issues at multiple scales (including subnational, national and trans-boundary levels). Effectively planning for, and implementing measures to address climate change, therefore, involves applying a systems approaches framework to capture relationships between drivers and processes at multiple scales, and to organize and order work to support development efforts. This can be envisioned as presented in figure 1.

[1] Decision 5/CP.17, annex.

Figure 1. Development-centred assessment of adaptation for national adaptation plans – as developed by the Least Developed Countries Expert Group (FCCC/SBI/2015/INF.14)



3. Adaptation solutions vary in type and scale and can range from coping and ad hoc responses, urgent and immediate actions, medium- and long-term actions, as well as contingency planning for threats that go beyond feasible adaptation at the time. These solutions can overlap or feed into each other.

4. A summary of available approaches for managing the risks of climate change is presented in figure 2 below, as copied from the fifth assessment report of the Intergovernmental Panel on Climate Change

Figure 2. Types of adaptation solutions

Overlapping Approaches	Category	Examples	Chapter Reference(s)
Vulnerability & Exposure Reduction through development, planning, & practices including many low-regrets measures; Adaptation including incremental & transformational adjustments; Transformation	Human development	Improved access to education, nutrition, health facilities, energy, safe housing & settlement structures, & social support structures; Reduced gender inequality & marginalization in other forms.	8.3, 9.3, 13.1-3, 14.2-3, 22.4
	Poverty alleviation	Improved access to & control of local resources; Land tenure; Disaster risk reduction; Social safety nets & social protection; Insurance schemes.	8.3-4, 9.3, 13.1-3
	Livelihood security	Income, asset, & livelihood diversification; Improved infrastructure; Access to technology & decision-making fora; Increased decision-making power; Changed cropping, livestock, & aquaculture practices; Reliance on social networks.	7.5, 9.4, 13.1-3, 22.3-4, 23.4, 26.5, 27.3, 29.6, Table SM24-7
	Disaster risk management	Early warning systems; Hazard & vulnerability mapping; Diversifying water resources; Improved drainage; Flood & cyclone shelters; Building codes & practices; Storm & wastewater management; Transport & road infrastructure improvements.	8.2-4, 11.7, 14.3, 15.4, 22.4, 24.4, 26.6, 28.4, Box 25-1, Table 3-3
	Ecosystem management	Maintaining wetlands & urban green spaces; Coastal afforestation; Watershed & reservoir management; Reduction of other stressors on ecosystems & of habitat fragmentation; Maintenance of genetic diversity; Manipulation of disturbance regimes; Community-based natural resource management.	4.3-4, 8.3, 22.4, Table 3-3, Boxes 4-3, 8-2, 15-1, 25-8, 25-9, & CC-EA
	Spatial or land-use planning	Provisioning of adequate housing, infrastructure, & services; Managing development in flood prone & other high risk areas; Urban planning & upgrading programs; Land zoning laws; Easements; Protected areas.	4.4, 8.1-4, 22.4, 23.7-8, 27.3, Box 25-8
	Structural/physical	***Engineered & built-environment options***: Sea walls & coastal protection structures; Flood levees; Water storage; Improved drainage; Flood & cyclone shelters; Building codes & practices; Storm & wastewater management; Transport & road infrastructure improvements; Floating houses; Power plant & electricity grid adjustments.	3.5-6, 5.5, 8.2-3, 10.2, 11.7, 23.3, 24.4, 25.7, 26.3, 26.8, Boxes 15-1, 25-1, 25-2, & 25-8
		Technological options: New crop & animal varieties; Indigenous, traditional, & local knowledge, technologies, & methods; Efficient irrigation; Water-saving technologies; Desalinization; Conservation agriculture; Food storage & preservation facilities; Hazard & vulnerability mapping & monitoring; Early warning systems; Building insulation; Mechanical & passive cooling; Technology development, transfer, & diffusion.	7.5, 8.3, 9.4, 10.3, 15.4, 22.4, 24.4, 26.3, 26.5, 27.3, 28.2, 28.4, 29.6-7, Boxes 20-5 & 25-2, Tables 3-3 & 15-1
		Ecosystem-based options: Ecological restoration; Soil conservation; Afforestation & reforestation; Mangrove conservation & replanting; Green infrastructure (e.g., shade trees, green roofs); Controlling overfishing; Fisheries co-management; Assisted species migration & dispersal; Ecological corridors; Seed banks, gene banks, & other *ex situ* conservation; Community-based natural resource management.	4.4, 5.5, 6.4, 8.3, 9.4, 11.7, 15.4, 22.4, 23.6-7, 24.4, 25.6, 27.3, 28.2, 29.7, 30.6, Boxes 15-1, 22-2, 25-9, 26-2, & CC-EA
		Services: Social safety nets & social protection; Food banks & distribution of food surplus; Municipal services including water & sanitation; Vaccination programs; Essential public health services; Enhanced emergency medical services.	3.5-6, 8.3, 9.3, 11.7, 11.9, 22.4, 29.6, Box 13-2
	Institutional	***Economic options***: Financial incentives; Insurance; Catastrophe bonds; Payments for ecosystem services; Pricing water to encourage universal provision and careful use; Microfinance; Disaster contingency funds; Cash transfers; Public-private partnerships.	8.3-4, 9.4, 10.7, 11.7, 13.3, 15.4, 17.5, 22.4, 26.7, 27.6, 29.6, Box 25-7
		Laws & regulations: Land zoning laws; Building standards & practices; Easements; Water regulations & agreements; Laws to support disaster risk reduction; Laws to encourage insurance purchasing; Defined property rights & land tenure security; Protected areas; Fishing quotas; Patent pools & technology transfer.	4.4, 8.3, 9.3, 10.5, 10.7, 15.2, 15.4, 17.5, 22.4, 23.4, 23.7, 24.4, 25.4, 26.3, 27.3, 30.6, Table 25-2, Box CC-CR
		National & government policies & programs: National & regional adaptation plans including mainstreaming; Sub-national & local adaptation plans; Economic diversification; Urban upgrading programs; Municipal water management programs; Disaster planning & preparedness; Integrated water resource management; Integrated coastal zone management; Ecosystem-based management; Community-based adaptation.	2.4, 3.6, 4.4, 5.5, 6.4, 7.5, 8.3, 11.7, 15.2-5, 22.4, 23.7, 25.4, 25.8, 26.8-9, 27.3-4, 29.6, Boxes 25-1, 25-2, & 25-9, Tables 9-2 & 17-1
	Social	***Educational options***: Awareness raising & integrating into education; Gender equity in education; Extension services; Sharing indigenous, traditional, & local knowledge; Participatory action research & social learning; Knowledge-sharing & learning platforms.	8.3-4, 9.4, 11.7, 12.3, 15.2-4, 22.4, 25.4, 28.4, 29.6, Tables 15-1 & 25-2
		Informational options: Hazard & vulnerability mapping; Early warning & response systems; Systematic monitoring & remote sensing; Climate services; Use of indigenous climate observations; Participatory scenario development; Integrated assessments.	2.4, 5.5, 8.3-4, 9.4, 11.7, 15.2-4, 22.4, 23.5, 24.4, 25.8, 26.6, 26.8, 27.3, 28.2, 28.5, 30.6, Table 25-2, Box 26-3
		Behavioral options: Household preparation & evacuation planning; Migration; Soil & water conservation; Storm drain clearance; Livelihood diversification; Changed cropping, livestock, & aquaculture practices; Reliance on social networks.	5.5, 7.5, 9.4, 12.4, 22.3-4, 23.4, 23.7, 25.7, 26.5, 27.3, 29.6, Table SM24-7, Box 25-5
	Spheres of change	***Practical***: Social & technical innovations, behavioral shifts, or institutional & managerial changes that produce substantial shifts in outcomes.	8.3, 17.3, 20.5, Box 25-5
		Political: Political, social, cultural, & ecological decisions & actions consistent with reducing vulnerability & risk & supporting adaptation, mitigation, & sustainable development.	14.2-3, 20.5, 25.4, 30.7, Table 14-1
		Personal: Individual & collective assumptions, beliefs, values, & worldviews influencing climate-change responses.	14.2-3, 20.5, 25.4, Table 14-1

5. Different types of systems and resources (**the efforts**) need to be put in place in order to realize the adaptation approaches/solutions. At the national level of developing countries, these efforts would cover:

a) Established systems (i.e. essential functions) to support effective adaptation planning and implementation at national level (see paragraph 6 below);

b) Concrete adaptation actions for enhancing adaptive capacity, strengthening resilience and reducing vulnerability;

c) Accrued benefits (outputs and outcomes) from the implementation adaptation actions, including experiences, best practices and lessons learned;

d) Finance, technology and capacity-building support used to realize the efforts.

6. Below is a list of the essential functions for the process to formulate and implement NAPs:

a) Helping governments to provide national **leadership and coordination** of adaptation efforts at all levels and to act as the main interface with regional and international mechanisms;

b) The collection, compilation, processing and dissemination of **data, information and knowledge** on climate change and relevant development aspects in support of adaptation planning and implementation;

c) Identifying and addressing **gaps and needs** related to capacity for the successful design and implementation of adaptation;

d) Assessing **climate development linkages** and needs and supporting the integration of climate change adaptation into national and subnational development and sectoral planning (through policies, projects and programmes);

e) **Analysing climate data and assessing vulnerabilities** to climate change and identifying adaptation options at the sector, subnational, national and other appropriate levels;

f) **Appraising adaptation options** to support decision-making on adaptation investment plans and development planning;

g) Promoting and facilitating the **prioritization** of climate change adaptation in national planning;

h) Facilitating the **implementation of adaptation** at all levels through appropriate policies, projects and programmes, taking into account opportunities for synergy;

i) Facilitating **the monitoring, review and updating** of adaptation plans over time, to ensure progress and the effectiveness of adaptation efforts and to demonstrate how gaps are being addressed;

j) Coordinating **reporting and outreach** on the NAP process to stakeholders nationally and internationally on progress to the Convention.

7. The above functions could, in the context of this mandate, help in identifying adaptation efforts.

1.2. Ways to capture adaptation efforts

8. Modalities under the Convention to capture adaptation efforts of developing countries range from ad-hoc submissions, to formal reports and communications. These can either be submitted as written reports via email/post, online means (e.g. the submission portal), or through a survey/questionnaire designed to facilitate flexible capture and entry of information into a database.

9. These modalities are not mutually exclusive, and the Parties may need to agree on how to capture and store the information. Existing tools can be used or expanded to accommodate the new information. These include NAP Central, the Adaptation Registry (upcoming), and possibly the NDC Registry to the extent to which the NDCs also include information on adaptation.

10. Current opportunities for Parties to communicate information on their adaptation efforts to the Convention are summarized in table 2 below. In the future, adaptation communications as established by Article 7.10 will play an important role in this context (see section 1.4 below).

Table 1. Current opportunities for Parties to share information on their adaptation efforts and how information is captured under Convention processes

Means for sharing information on adaptation actions	Information captured
Reports and documents prepared by the Parties, constituted bodies under the Convention and its Secretariat	• Adaptation plans including NAPAs, NAPs and related outputs and outcomes submitted by Parties through NAP Central • Documents prepared annually by the secretariat and the LEG on progress on NAPs under the SBI • Adaptation sections of national communications • Adaptation sections of Nationally Determined Contributions • Reports of the LEG to the SBI reflecting information shared by Parties • Reports of the AC reflecting information shared by Parties
Submissions from Parties and Non-Party stakeholders to the Convention, and related reports	• Compilations of submissions by Parties (e.g. FCCC/SBI/2014/MISC.1, FCCC/SBI/2013/MISC.2 and Add.1) and subsequent synthesis reports when applicable, e.g. FCCC/SBI/2013/9)
Information shared by Parties, or summarizing support by country, through online platforms, registries and databases	• NAP Central <unfccc.int/NAP> • Best practices and lessons learned platform <unfccc.int/6491> • NWP Adaptation Knowledge Portal <www4.unfccc.int/sites/NWP> • Public registry referred to in Article 7, paragraph 12 of the Paris Agreement • GEF database of projects funded through the LDCF and SCCF <www.thegef.org/gef/project_list> • Adaptation Fund database <www.adaptation-fund.org/projects-programmes> • GCF databases (to be developed)
Information shared by Parties at UNFCCC events	• Country presentations at: o NAP Expos o NAP workshops o UNFCCC adaptation workshops and expert meetings o Adaptation Forums o Technical Expert Meetings on Adaptation

11. The following points are worth considering regarding the information presented in tables 2 above:

    a) Information on project-based activities – especially externally funded activities as reported in the funding agency databases (e.g. the GEF plus the LDCF/SCCF; AF, GCF, bilateral and other adaptation programmes, etc.) is usually the most easily available, although it does not directly reflect the full breadth of adaptation action in countries;

    b) Activities that are part of government-funded development programmes that contribute towards adaptation efforts are not usually adequately captured or documented, and are rarely reported in readily available reports. The NAPs will likely address this issue by making available all the information on adaptation efforts in a country, such as through reports on stocktaking;

c) There is ambiguity for projects/programmes that are funded through loans to developing countries – who should the source of such investment be listed as, is it the government since tax-payers will pay back the loans, or the lender?

1.3. Recognition of adaptation efforts

12. Once the information on the adaptation efforts of developing countries has been captured under the Convention through the different means elaborated in chapter 1.3 above, it is then available for different applications or use that may include:

a) **Enhancing visibility of actions**. Modalities in this regard include showcasing the information through side events and special events organized during the sessions, display of information on relevant registries and databases, acknowledging the efforts through SBI and COP outcomes;

b) **Synthesizing and promoting information on progress made**, as in the case of the process to formulate and implement NAPs. This is often done through reports prepared for the SBI and COP sessions for taking further action;

c) **Capturing and sharing experiences, best practices and lessons learned in addressing adaptation** based on the information shared. This is often undertaken by constituted bodies and programmes (AC, LEG and NWP) through specific mandates from the SBI and the COP, for being made available to the wider community of Party and No-Party Stakeholders;

d) **Capturing and sharing success stories, as well as failures**, in addressing adaptation. Similar to the bullet above, this is often undertaken by constituted bodies and programmes (AC, LEG and NWP) through specific mandates from the SBI and the COP, for being made available to the wider community of Party and No-Party Stakeholders;

e) **Capturing and sharing information on support** (finance, technology and capacity-building) provided to and received by developing countries. This does not necessarily cover the support that developing countries themselves contributed towards the adaptation efforts through their national systems/budgets;

f) **Enabling/facilitating access to funding** as in the case for national adaptation programmes of action. Modalities in this regard include formal submission of relevant documents through the secretariat and uploading on relevant platforms. After that a Party may then submit funding proposals to appropriate operating entities of the financial mechanism.

13. The information submitted by the Parties as well as from the different applications and uses above is also used by the SBI and the COP for taking relevant decisions, as appropriate. Availing this information through the appropriate channels is therefore one step towards the recognition of the adaptation efforts. However, as stated in the bullet (e) above, information on how developing countries support the adaptation actions at their national levels is not adequately captured through the existing systems.

1.4. Linkages with the global goal and other elements of the Paris outcomes

14. According to Article 7, paragraph 14 (a) of the Paris Agreement, the global stocktake referred to in Article 14 shall recognize the adaptation efforts of developing countries. The modalities developed under this work will therefore contribute towards the global stocktake in this regard.

15. COP 21 requested the APA to identify the sources of input for the global stocktake, including information on the state of adaptation efforts, support, experiences and priorities from the communications referred to in Article 7, paragraphs 10 and 11, and reports referred to in Article 13, paragraph 8, of the Agreement, and to report to the COP, with a view to the COP making a recommendation for consideration and adoption by CMA 1.

16. SBI 48 has been mandated to assess progress made in the process to formulate and implement NAPs. This could present an opportunity for testing the modalities.

Annex 2: Methodologies on taking the necessary steps to facilitate the mobilization of support for adaptation in developing countries in the context of the limit to global average temperature increase referred to in Article 2 of the Agreement

1. Introduction

1. Growing impacts of climate change have required increasing adaptation action in developing countries over the past years. These efforts have been driven and supported both domestically and at the international level. The provisions of the Convention with regard to adaptation action and support[1] as well as subsequent decisions in the context of the Marrakesh Accords[2] and the Cancun Adaptation Framework[3] have provided an important policy context for the mobilization of support for adaptation in the form of finance, technology transfer and capacity-building.

2. With the recent commitment of developed country Parties to a goal of mobilizing jointly USD 100 billion per year by 2020 to address the needs of developing countries in addressing mitigation and adaptation,[4] the term "mobilizing" has gained particular attention. In a "Joint Statement on Tracking Progress Towards the USD 100 billion goal" prepared by 2020[5] 19 bilateral climate finance providers explained their common understanding of mobilized climate finance to include:

a) Public finance provided by their governments through a variety of institutions (including through the operating entities of the financial mechanism of the Convention, bilateral aid agencies, development finance institutions, export credit agencies (ECAs) and multilateral entities) and instruments (concessional and non-concessional, including grants, loans, equity, and de-risking instruments), where such finance is identified as climate-relevant using criteria in line with those agreed within relevant international organizations such as the OECD, IPCC, and MDBs;

b) Private finance for climate-relevant activities that has been mobilized by public finance or by a public policy intervention, including technical assistance to enable policy and regulatory reform.[6]

3. While discussions are ongoing as to what exactly counts as "mobilized" towards the USD 100 billion,[7] this desk review uses the term to describe the provision of support for adaptation for developing countries via the use of two sets of methodologies (a) interventions such as policies and measures as well as (b) financial instruments, both domestically and at the international level (from developed to developing countries).[8] Thereby, light is shed on the mobilization of support stemming from both, public (budgets) and private (private capital) sources. Particular attention is given to the mobilization of financial resources, as these are required even if support is provided in the form of technology transfer or capacity-building.

[1] Articles 4.1, 4.3, 4.4, 4.5 and 4.9 of the Convention.
[2] Decisions 5/CP.7 and 7/CP.7.
[3] Decisions 1/CP.16, paragraphs 18, 95 and 97-99; 5/CP.17, paragraph 21.
[4] Decision 1/CP.16, paragraphs 98-99.
[5] <www.state.gov/documents/organization/246878.pdf>.
[6] Joint Statement on Tracking Progress Towards the $100 billion Goal by Australia, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Poland, Sweden, Switzerland, United Kingdom, United States, and the European Commission (Group of 19 bilateral climate finance providers, 2015).
[7] Such discussions include (i) the challenge of attributing support, particularly financial support, to a particular intervention and/or provider, (ii) the question whether "mobilized" shall only refer to private support mobilized by public interventions, or (iii) whether e.g. financial support only includes the flow of money or also other financial instruments such as insurance and guarantees. An insight into such discussions provides, for example, the work of the OECD Climate Change Expert Group (e.g. paper no. 2013 (2) Comparing Definitions and Methods to Estimate Mobilised Climate Finance).
[8] A similar definition has been applied by OECD (2013) Comparing Definitions and Methods to Estimate Mobilised Climate Finance.

4. The methodologies reviewed have so far only focused on the goal of USD 100 billion but have not been designed in the context of the limit to global average temperature increase referred to in Article 2 of the Paris Agreement. Methodologies for reviewing the adequacy of support (see annex 3), may be helpful in this regard.

1.1. Mapping of existing methodologies

1.1.1. Policies and measures

5. Policies and measures to facilitate the mobilization of support for adaptation are implemented by the public sector and are aimed at mobilizing support from public or private sources. Such policies and measures can be initiated at the international or national levels, either in direct response to adaptation-related provisions and decisions of the Convention or outside the Convention.

1.1.1.1. Policies and measures to mobilize public support[9]

6. Policies and measures in the international context are predominantly directed at encouraging the holders of financial and technological resources to direct them towards adaptation action –they therefore "push" the provision of support. These policies and measures include:

a) The establishment of dedicated adaptation funds or allocations within larger funds in the context of the financial mechanism of the Convention (the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF) managed by the Global Environment Facility (GEF), allocations for the process to formulate and implement national adaptation plans (NAPs) under the Green Climate Fund (GCF)) or under the Kyoto Protocol (Adaptation Fund (AF)). The financial instruments used to mobilize the contributions to these funds are described below. The required co-financing of projects and programmes mobilizes additional resources;

b) Setting up of dedicated bank-owned or multi-donor climate funds by Multilateral Development Banks (MDBs) of which adaptation finance is one of the priorities (e.g. the Pilot Programme for Climate Resilience (PPCR) as part of the Climate Investment Funds, the Sustainable Energy and Climate Change Initiative (SECCI) Fund and SECCI Multi-donor fund of the Inter-American Development Bank[10]) As with other funds, the required co-financing of funded projects and programmes mobilizes additional resources;

c) Regional initiatives such as insurance funds (e.g. African Risk Capacity, Caribbean Catastrophe Risk Insurance Facility) that attract both, public and private financial resources

d) The establishment of the Technology Mechanism under the Convention, including its Climate Technology Centre and Network (CTCN) to stimulate technology cooperation, to enhance the development and transfer of technologies and to assist developing countries at their request, including the provision of capacity-building

e) The setting up of specific capacity-building programmes as part of adaptation funds or processes (e.g. GCF readiness programme, GEF-Country Support Programme or UNDP/UNEP Global Support Programme for the NAP process) in order to support countries in establishing enabling environments for the effective deployment of adaptation finance and technology.

[9] While the focus is on mobilizing public support, the described policies and measures may also lead to the mobilization of private support. In addition, the support mobilized may itself lead to the mobilization of further public or private support which is not part of this analysis.

[10] <www.iadb.org/en/topics/climate-change/secci-funds,1483.html>.

f) Setting up of dedicated bilateral support programmes such as the NAP Global Network or the European Union's Global Climate Change Alliance among others or in the context of South-South cooperation, China's establishment of an independent South-South cooperation fund of USD 3.1 billion.[11]

7. Policies and measures in the national context of developing countries are predominantly directed at establishing an enabling environment for the receipt and effective deployment of international support – they therefore assist to "pull" support provided by developed to developing countries. In addition, such policies and measures can mobilize domestic forms of support as well as private investment. Bilateral or multilateral technical assistance can support their development. These policies and measures include:

a) Provision of national data and information required to conduct and support effective adaptation activities;

b) Development of coherent national adaptation policies, strategies and plans (e.g. NAPs), based on thorough needs assessments (for finance, technology (e.g. through technology needs assessments – TNAs) and capacity-building), and respective financial, technological (e.g. technology road maps) and capacity-building strategies/plans. These strategies and plans should be linked to, and coordinated with, other national policies, strategies and plans to demonstrate the effective use of resources. Highest political support and engagement in such strategies/plans provides an important signal to donors and investors regarding the relevance of adaptation in the respective country;

c) Subsequent development of sound programmes and projects to implement the strategies and plans. More comprehensive and longer-term programmes rather than single projects benefit the provision and deployment of larger scales of adaptation support. The design of programmes and projects with co-benefits in other areas, such as mitigation, can increase the likelihood of mobilizing support;[12]

d) Establishment of predictable legal and regulatory frameworks (e.g. incorporation of adaptation considerations into building standards and codes, zoning rules, critical infrastructure development);[13]

e) Entrusting appropriate institutions with the coordination of adaptation activities and development of institutional and human (technical and administrative) capacity across different levels of governance, including on meeting high social and environmental standards and safeguards;

f) Demonstration of the effectiveness of the provided support through thorough monitoring and reporting as part of overall transparency;

g) Establishment of national adaptation funds or budget allocations for adaptation activities as well as mainstreaming adaptation considerations into other sectoral work and budgets (see also under financial instruments).

1.1.1.2. Policies and measures to mobilize private support

8. Policies and measures to mobilize private support are public interventions that result in private investment in adaptation, including investment in adaptation technologies. Following the inherent drivers of private investment, such policies and measures must be directed at (i) keeping costs low by reducing investment risks (e.g. avoiding losses and business interruption, keeping capital and operational expenditures low), (ii) increasing or maintaining value (e.g. rate of return, credit, reputation) and creating market opportunities, including through conducive policies and regulation.[14]

9. In addition to those listed in the previous section on mobilizing public support, these include:

[11] <www.china.org.cn/environment/2015-12/14/content_37308080.htm>.
[12] Haites, E. (ed.) (2013) International Climate Finance. New York.
[13] OECD (2015) Toolkit to enhance access to adaptation finance.
[14] IFC (2012) Enabling Environment for Private Sector Adaptation. An Index Assessment Framework.

a) Creation of market rules and instruments, both at the national as well as the international levels;

b) Commissioning the development and building of climate-resilient infrastructure;

c) Provision of economic incentives, e.g. through the financial instruments described below;

d) Creation of acceptable business environments including access to information and communication technologies (e.g. internet);

e) Provision of public-private partnership opportunities, e.g. in the area of research and development, risk assessments and feasibility studies, development of specific capacities and other activities that require considerable upfront expenditures while promising medium – to long-term benefits;

f) Raising awareness on the need for adaptation and climate finance flows;

g) Promoting the utilization of e.g. green labels to increase the value of the company products.

1.1.2. Financial instruments

1.1.2.1. Financial instruments to mobilize public support

10. Different financial instruments/ sources of funding are available to mobilize public support for adaptation, either at the international or national levels.

11. Financial instruments/ sources of funding that developed countries are using to unlock public adaptation finance from their own resources include:

a) National budget allocations (direct budget contributions) to support adaptation or adaptation-relevant development in developing countries (original source being tax, levies, charges or other government revenues, including from capital markets) either through bilateral or multilateral channels (e.g. shareholder capitalization and regular replenishment of multilateral adaptation funds such as the SCCF and the LDCF);

b) Revenues from carbon markets;

c) Leverage from other principal finance flows like the share of proceeds from certified project activities under the Kyoto Protocol (Adaptation Fund which also receives voluntary contributions).

12. The following financial instruments are used to mobilize public adaptation finance in developing countries:

a) Grants from developed countries that require a certain percentage of co-financing by the recipient country (provided in the form of direct cash or in-kind contributions such as technical assistance);

b) Policy-based or other concessional or non-concessional loans;

c) Domestic budget allocations by the developing country governments (original source being tax revenues or budget support from developed countries);

d) Blending grants with loans or others to attract additional financing for investments.

1.1.2.2. Financial instruments to mobilize private support

13. Financial instruments by the public sector that mobilize private support include those that help to reduce the financial risks associated with private sector investments in adaptation and provide an economic incentive by increasing the rate of return or the reputation. These include:

a) Grant instruments e.g. direct cash, subsidies and in-kind contributions such as legislative or regulatory guidance, technical assistance, capacity building, advisory services, feasibility studies,

etc. that are used to reduce risk, prove the viability of technology and markets, generate environmental data crucial for assessing project feasibility and support the development of policy mechanisms;[15]

b) Capital from public shareholders (governments) of Development Finance Institutions or Multilateral Development Banks that is used to leverage resources from international capital markets;

c) De-risking instruments e.g. insurance, guarantees and derivative-based products which can directly improve the risk-return profile in favour of the adaptation intervention (e.g. partial credit guarantees, political risk insurance, expropriation insurance, foreign exchange insurance, subordinated debt, multi-tranche financing);

d) Debt instruments e.g. senior/A tranche and mezzanine/B tranche debt and credit lines are instruments mostly used by multilateral development banks to mobilize further adaptation support;

a) Equity instruments e.g. mezzanine, venture capital and/or quasi-equity (C tranche debt) make up only a very small portion of mobilization instruments for adaptation finance.

14. Financial instruments can be categorized into those that directly mobilize private support and those that indirectly mobilize private support. Through the former, support by the private sector is provided alongside and as a direct result of public finance into the same project, program or fund, sometimes intermediated through a fund or an account. Through the latter, public finance enables an output that incentivizes private finance, e.g. budget support for program or policy development.[16]

1.2. Challenges, lessons learned and good practices

15. The following **general challenges** constrain the mobilization of support:

a) Competing national priorities in both, developed and developing countries, in times of fiscal and budgetary constraints;

b) Lack of enabling environments in developing countries which hampers both the provision of financial as well as technological support from both, public and private sources;

c) High transaction costs for small-scale projects;

d) Difficulties in meeting co-financing requirements.

16. A number of **general lessons** have been identified, including:

a) No single methodology is able to mobilize adaptation support at the scale that is required to meet developing countries' adaptation needs. A combination of traditional and innovative methodologies to mobilize support from various sources, including public and private, bilateral and multilateral, including alternative sources, is needed;

b) Enabling environments in developing countries provide the key to mobilizing adaptation support from both, the public and the private sectors;[17]

c) If a conducive enabling environment exists and climate risks are better understood, the private sector is likely to invest in adaptation because climate impacts affect business operations through, for example, damage to physical assets, reduced asset operating life, deteriorating health and safety and productivity of the workforce, contraction of some markets, weakened supply chains and increased land, water and energy scarcity leading to the loss of company's social mandate to

[15] OECD CCXG (2013) Comparing definitions and methods to estimate mobilised climate finance.
[16] CPI & OECD (2015) Estimating mobilized private finance for adaptation: exploring data and methods.
[17] CICERO & CPI (2015) Background Report on Long-term Climate Finance – prepared for the German G7 Presidency 2015; CPI (2013) The Global Landscape of Climate Finance 2013; AGF work stream 7 (2010) Public interventions to stimulate private investment in adaptation and mitigation.

operate in a community.[18] However, there has so far been limited empirical evidence of private adaptation support mobilized by public interventions in and to developing countries due to several methodological difficulties in tracking such support;[19]

d) Transparency of both, the provision and the effective deployment of adaptation support, enhance mutual trust of donor and recipient countries, thus contributing to further mobilization;

e) Integrated approaches to technology and climate finance-related plans and programmes, including related capacity-building, increase efficiency and effectiveness of mobilizing and deploying support, including transparency and predictability for private investors;[20]

f) Integrating adaptation objectives into business plans can be an effective way of leveraging adaptation finance from the private sector;

g) Capacity-building is needed to assist developing countries to build their enabling environments in order to attract investments from a range of sources and build investor confidence.

17. In terms of **general good practice**, considering the undisputed importance of enabling environments to attract and effectively deploy adaptation support in developing countries, bilateral and multilateral technical assistance programmes that are directed at assisting developing countries in establishing such environments, can be regarded as good practices in directly and indirectly mobilizing additional adaptation support. They can directly mobilize adaptation finance by attracting co-financing from other donors, developing country governments or the private sector (see also the section on financial instruments above).

18. Indirect mobilization of adaptation support may happen as a result of supporting the creation of enabling environments and markets that are conducive to climate-resilient investment.[21] This can have a particularly high leverage factor in the case of first mover technologies, with an enabled policy environment able to catalyse private sector activity across entire industrial sectors and leading to replication and scale - up.[22]

19. **Specific challenges in terms of methodologies to facilitate the mobilization of financial support** include:

a) Identifying how much "new and additional" adaptation finance needs to be mobilized vis-à-vis the temperature goals, due to the challenge of determining adaptation finance needs as separate from other development finance requirements;[23]

b) In the case of leveraging adaptation finance from other financial flows, decrease of resources if principal finance flow ceases (as in the case of diminishing Adaptation Fund resources due to decreasing carbon prices);

c) Properly internalizing the external value of climate benefits and other public goods by the public sector to offer private investors returns that are commensurate with their (perceived) risk profile of the investments;[24]

[18] AGF work stream 7 (2010) Public interventions to stimulate private investment in adaptation and mitigation.
[19] CPI & OECD (2015) Estimating mobilized private finance for adaptation: exploring data and methods.
[20] Presentation by E3G at the TEC dialogue on technology financing (2014); The recent decision on Linkages between the Technology Mechanism and the Financial Mechanism of the Convention (13/CP.21) provide a noticeable development in response to this lesson.
[21] CPI (2015) The Role of Technical Assistance in Mobilizing Climate Finance – Insights From GIZ Programs.
[22] AGF work stream 7 (2010) Public interventions to stimulate private investment in adaptation and mitigation.
[23] Note that in the reporting guidelines developed country Parties are required to provide information on how they determine funds being "new and additional".
[24] AGF work stream 7 (2010) Public interventions to stimulate private investment in adaptation and mitigation.

d) Convincing private investors to invest in climate- vulnerable countries, where they face higher costs in order to make their investments climate-resilient, rather than investing in less vulnerable countries.[25]

20. **Specific lessons identified regarding methodologies to mobilize financial support** include:

a) Public budgets have so far been a reliable, transparent and growing source of international climate (including adaptation) finance, despite financial and political pressures;[26]

b) Public institutions such as bilateral agencies, bilateral development financial institutions (DFIs) and MDBs play an indispensable role in channelling and mobilizing financial resources (DFIs and MDBs, in 2013, have provided 88% of adaptation finance[27])and are particularly well suited to leverage capital from markets.[28] In addition, they are making efforts to capture partial information about private co-finance at the fund – and project-level which plays an important role in improving methods to track mobilized private climate finance, including for adaptation;[29]

c) Still there is need to diversify methodologies to mobilize increasingly required adaptation finance as public budgets might face increasing budgetary and fiscal constraints and revenues from carbon markets might not be sustainable if carbon prices further decrease.

21. An analysis of the Climate Policy Initiative (CPI) of GIZ programmes has identified five types of technical assistance that have mobilized climate finance, including adaptation finance: (1) policy advice to improve policies as well as legal and regulatory environments, (2) support for project development and for funding applications, (3) provision of data and information, (4) programme coordination, and (5) institutional capacity-building.[30] The same analysis suggests that technical assistance programmes could also target the mobilization of private support more directly, including through support to private project developers to advance project concepts, to start-up businesses, and to 'aggregator' organizations that work directly with multiple businesses such as traders, cooperatives or lenders. As such, technical assistance is a key complement, and precondition, to international support in the form of financial instruments to directly address issues of risk and return.[31]

22. In terms of **good practices regarding methodologies to mobilize financial support**, a notable example for an "innovative" methodology to mobilize climate finance (in this case for both mitigation and adaptation) is Germany's approach to raise funding from auction revenues from the EU Emission Trading Scheme (ETS) in addition to traditional government revenue in the context of its fast-start finance contribution.[32] The mobilized resources were primarily channelled through Germany's International Climate Initiative.

23. Another financing approach that has been used in several climate relevant sectors such as health, transportation, sanitation, and energy and which could hold a significant potential for mobilizing public and private investment in adaptation activities, is results-based finance (RBF). RBF is used to describe a number of different financing mechanisms that seek to tie the provision of financial resources to specific and measurable results. The difference to more traditional instruments for mobilizing adaptation finance is that RBF approaches disburse financial resources only after independently verified results have been demonstrated, thereby transferring risk from donors to service providers which incentivizes the delivery of goods and services in the most efficient manner.[33] Different models of RBF exist which are discussed in more detail in reports by the OECD Climate Change Expert Group (2013)[34] and by the Global Partnership on

[25] AGF work stream 7 (2010) Public interventions to stimulate private investment in adaptation and mitigation.
[26] AGF (2010) Report of the Secretary-General's High-level Advisory Group on Climate Change Financing.
[27] CPI (2014) A closer look at public adaptation finance.
[28] CICERO & CPI (2015) Background Report on Long-term Climate Finance – prepared for the German G7 Presidency 2015.
[29] CPI & OECD (2015) Estimating mobilized private finance for adaptation: exploring data and methods.
[30] CPI (2015) The Role of Technical Assistance in Mobilizing Climate Finance – Insights From GIZ Programs.
[31] AGF work stream 7 (2010) Public interventions to stimulate private investment in adaptation and mitigation.
[32] ODI, WRI, IGES (2013). Mobilising International Climate Finance: Lessons from the Fast-Start Finance Period.
[33] OECD CCXG (2013) Comparing definitions and methods to estimate mobilised climate finance.
[34] Ibid.

Output-Based Aid (GPOBA) (2012)[35]. Discrete adaptation measures or projects, particularly those involving the application of adaptation technologies, as identified in NAPAs or NAPs may lend themselves to RBF approaches.[36]

24. Micro-finance is crucial particularly at the community level where livelihood diversification could be further enabled, to lead to co-investments and increased resilience. This is in-line with the local nature that adaptation can take, and also assists women, who are often those most in need of micro-insurance for adaptation and economic diversification.

25. Regarding private finance, green bonds are important fund-raising instruments to attract private investments in developing countries where there is high-risk, especially where investors and households are risk-averse. In addition, public funding can be an effective way to leverage finance from the private sector to support adaptation, including through tax incentives. Policy-based loans can introduce innovative mechanisms, such as hybrid loans that encompass an investment component. They are usually disbursed quickly, and facilitate coordination among development partners, while involving ministries of finance in climate change and improving institutional capacity.

26. **Specific challenges in terms of methodologies to facilitate the mobilization of technological support** include:

a) Technology-specific aspects of insufficient enabling environments in developing countries, particularly for the private sector, which include:

i) Lack of legal and regulatory frameworks and institutional capacity; [37]

ii) Scarce availability of capital for investment;

iii) Poor credit-worthiness and lack of guarantees;

iv) Lack of access to appropriate forms of credit;[38]

v) Absence of technology road maps for adaptation technologies.

b) Financial and economic barriers, e.g. technology cost gaps; [39]

c) Uncertainty of uptake of newly developed climate-resilient technologies that require long R&D lead times, such as crops or water management systems, due to uncertainty of the nature and extent of climate change impacts in the longer-term;[40]

d) Provision of the appropriate combination of public and private finance to lift adaptation technologies from pre-commercial to commercially viable stages (thus overcoming the so-called valley of death between public and private financing);[41]

e) Absence of sufficient information and awareness of both, technology needs as well as the availability of adaptation technologies.

27. **Specific lessons identified regarding methodologies to mobilize technology support** include:

a) As financial and economic barriers are critical in the mobilization of technology support, sound planning practices in the form of TNAs which encourage the early engagement of the national and

35 GPOBA (2012) Output-Based Aid in the Results-Based Financing Universe.
36 OECD CCXG (2013) Comparing definitions and methods to estimate mobilised climate finance.
37 UNFCCC (2013) Third synthesis report on technology needs identified by Parties not included in Annex I to the Convention.
38 Presentation by E3G at the TEC dialogue on technology financing (2014).
39 TEC (2014) Presentation at the Second Forum of the Standing Committee on Finance; Chair's Summary (2013) Ministerial Meeting on Mobilizing Climate Finance. Washington D.C.
40 AGF work stream 7 (2010) Public interventions to stimulate private investment in adaptation and mitigation.
41 Presentation by E3G at the TEC dialogue on technology financing (2014).

international financial and business communities are essential to ensuring project compatibility with funding criteria and availability;

b) Parties, when identifying and preparing mitigation and adaptation actions such as NAMAs and NAPs, could ensure coherence with the methodology and results of their TNA processes;[42]

c) Measures to provide/expand financial incentives or increase financial resources for adaptation technologies are an important enabler to address the financial and economic barriers to technology transfer, whereby public resources should be designed to ensure the most appropriate allocation of risk between actors;[43]

d) More work is needed to attract, mobilise and scale-up private investment.[44]

28. Finally with regard to **good practices in terms of methodologies to mobilize technology support**, integrating TNAs and the process to formulate and implement NAPs can be referred to as a good practice since it can help to exchange data and knowledge, ensure high-level attention and recognition to both processes and attract financing for the implementation of TNA results for adaptation technologies. A non-integration could result in the duplication of planning efforts and a patchwork of potentially conflicting messages to policymakers, financial entities, providers of capacity-building and other stakeholders.[45]

[42] Note that TEC is working on aligning TNAs with NAPs.
[43] Presentation by E3G at the TEC dialogue on technology financing (2014).
[44] TEC (2014) Presentation at the Second Forum of the Standing Committee on Finance.
[45] UNFCCC Technology Executive Committee (2013) Possible integration of the TNA process with NAMA and NAP processes. TEC Brief.

Annex 3: Methodologies on reviewing the adequacy and effectiveness of adaptation and support referred to in Article 7, paragraph 14(c), of the Agreement

1. Introduction

1. Developing methodologies on reviewing the adequacy and effectiveness of adaptation and support has direct and indirect implications for other aspects of adaptation in the Paris Agreement (PA), including, inter alia:

a) Article 7.14 (c) – the global stocktake referred to in Article 14 shall, inter alia, review the adequacy and effectiveness of adaptation and support provided for adaptation. Article 14.1 and 14.3 state that the global stocktake will assess the collective progress towards achieving the purpose of the Agreement and its long-term goals. The global stocktake outcome shall inform Parties in updating and enhancing, in a nationally determined manner, their actions and support, as well as enhancing international cooperation for climate action.[1]

b) Article 7.1 – Parties hereby establish the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal referred to in Article 2;

c) Article 7.9 (d) – Each Party shall, as appropriate, engage in adaptation planning processes and the implementation of actions, including the development or enhancement of relevant plans, policies and/or contributions, which may include monitoring and evaluating and learning from adaptation plans, policies, programmes and actions;

d) Article 7.10 – Each Party should, as appropriate, submit and update periodically an adaptation communication, which may include its priorities, implementation and support needs, plans and actions, without creating any additional burden for developing country Parties;

e) Article 7.12 – The adaptation communications referred to in Article 7.10 shall be recorded in a public registry maintained by the secretariat.

2. The following review explores and analyses existing methodologies to review adequacy and effectiveness of adaptation and support. It provides an overview of existing examples and is structured keeping in mind the submissions from Parties and relevant stakeholders as requested by the AC and the LEG.[2]

1.1. Mapping of existing methodologies

3. Following the informal joint meeting of the AC and the LEG, where this mandate was interpreted as relating to all Parties, it was agreed to initiate work with the following aspects:

a) An understanding of adequacy and effectiveness for both adaptation and support;

[1] Based on the linkage of the new mandate to the global stocktake, the development of methodologies should seek to ensure that specific elements are in place to fulfill the mandates from the Paris Agreement and enable the review to serve its expected outcome. For example, methodologies could facilitate aggregation and international-level comparison from national-level review results, keeping in mind diverse national circumstances (technical capacity, data quality and availability, etc).

[2] Linkages to existing processes such as sustainable development goals, development cooperation, bilateral and south-south cooperation should also be considered. The overlap with approaches for example in mitigation activities, disaster risk management, poverty alleviation and development, ecosystem health, and sustainability can be noted and are not considered in the scope of this review.

b) The scale (e.g. global versus national) at which both adequacy and effectiveness need to be considered with linkages to the global goal on adaptation;

c) Ways to measure the adequacy and effectiveness of both adaptation and support.

Figure 3. Overview of existing methods, information /data/metrics, lessons learned/challenges

Table 1: Overview of Existing Methods, Information / Data / Metrics, Lessons Learned/Challenges

Adequacy of adaptation				Effectiveness of adaptation			
Methods • Growing recognition of the inadequacy of adaptation, limited methods indicate what would be required for adequate adaptation • Further methods required to assess adequacy of adaptation, particularly at global level to address global adaptation goal, global stocktake and temperature goal				**Methods** • Range of conceptual and implementation methods to monitor and evaluate adaptation, mostly at the project level, linked to national levels • Further methods required at global level to address global adaptation goal, global stocktake and temperature goal			
Information/Data/Metrics • Metrics at the global level to be developed				**Information/Data/Metrics** • Combination of existing quantitative and qualitative indicators, develop new metrics particularly at global level			
Lessons learned/good practices/challenges/barriers • Future development in areas such as: establishing definitions, metrics, timeframes, indicators, baseline data, attribution to adaptation, consistent available data and resources. These will enhance efficient and dynamic learning and accountability.							
Adequacy of support				**Effectiveness of support**			
	Finance	**Technology**	**Capacity-building**		**Finance**	**Technology**	**Capacity-building**
Methods	Various methods recognize levels of support (SCF, UNEP)	Under consideration in the TEC/CTCN	Under consideration in the PCCB	**Methods**	Various methods assess effectiveness of climate funds (GEF, CFI, AF, GCF)	Under consideration in the TEC/CTCN	Under consideration in the PCCB
Information/Data/Metrics	Public and private adaptation-related funding amounts	Under consideration	Under consideration	**Information/ Data/Metrics**	Harmonized metrics required	Under consideration	Under consideration
Lessons learned/good practices/challenges/barriers	Future development of consistent methods, ensuring comparability and development funding	To be developed	To be developed	**Lessons learned/good practices/challenges/barriers**	Further development of consistent methods	To be developed	To be developed

1.1.1. Adequacy and effectiveness of adaptation

1.1.1.1. Adequacy of adaptation

4. Under the Paris Agreement (PA), there are several objectives or goals that provide overarching direction in order to assess the adequacy of adaptation. The first clearly outlined objective, or goal, relates to adequacy of adaptation in the context of the global stocktake, to assess the collective progress towards achieving the purpose of the PA and its long term goals. The second related objective as outlined in Article 2 of the PA, includes holding the global average temperature increase below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels.[3] Thirdly, a newly established global goal on adaptation (Article 7.1) targets enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal referred to in Article 2.

5. While the objectives/goals expressed by the PA may not prescribe an operational way forward to assess adequacy, agreement by Parties underscores the recognition of the role of adaptation in the context of the temperature goal. In working terms, adequacy or the need for sufficient adaptation to reach these goals will require certain measurement or assessment, for example at the national scale to then be aggregated to assess global collective progress.

[3] As well as increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production.

1.1.1.2. Effectiveness of adaptation

6. The effectiveness of adaptation in the PA, linked to the concept of adequacy, is referenced in the context of strengthening Party cooperation and as contributing to the global stocktake.[4] Similar to adequacy of adaptation, the effectiveness of adaptation will also require measurement or assessment, for example at the national scale to be aggregated to assess collective progress.

7. The AC has previously considered evaluation as a process for systematically and objectively determining the effectiveness of an adaptation action. Through this consideration, the AC outlined two questions to assess effectiveness: first, have the objectives and targets been achieved, and second, can this achievement be attributed to the adaptation measure taken?[5] The LEG has also developed a tool monitoring and evaluation of progress, effectiveness and gaps in the formulation and implementation of National Adaptation Plans (PEG M&E tool).[6]

1.1.1.3. Overview of methods and metrics

8. In light of the assessment required to review both adequacy and effectiveness of adaptation, it may be helpful to consider the existing array of monitoring and evaluation (M&E) tools currently being developed and used for measurement and assessment.

9. Although adaptation practitioners, funders and researchers have been designing, analyzing and testing M&E frameworks now for several years, understanding what is effective adaptation and how to achieve it is still a relatively new field of emerging approaches and concepts.[7] This growing field of interest has generated a clear progression of ideas and concepts, with numerous methods moving from concepts and theories towards more recent frameworks that are more practical and field-friendly and still note certain gaps and problems.[8]

10. Most guidelines for evaluating adaptation policy have been focused on project-level or single-country evaluation of adaptation, rather than systematic assessment of adaptation progress across countries, sectors and scales.[9],[10] However, M&E also exists in developed and developing countries as a reflection of the domestic circumstances, including institutional arrangements, policy approaches and funding mechanisms.[11] Methods range from overall M&E, to formal social science methods, use of econometrics, statistics or experiments, participatory and iterative methods.[12] Some efforts have been made to categorize the typology of approaches to monitor and evaluate national-level adaptation.[13] The Nairobi work

[4] Article 7.7 (e) – Parties should strengthen their cooperation including, inter alia, with regard to improving the effectiveness and durability of adaptation actions.
[5] AC/2014/4, page 2.
[6] FCCC/SBI/2016/7, para 47.
[7] Arnott et. al. (2016), Bours et. al. 2015, page 2, PROVIA, page 133.
[8] Bours, D., McGinn, C. and Pringle, P. (2014) Monitoring & evaluation for climate change adaptation and resilience: A synthesis of tools, frameworks and approaches, 2nd edition. [page 79], OECD (2014).
[9] Lesnikowski A. et. al. (2015), Dinshaw, A. et. al. (2015) and INTOSAI (2015).
[10] One example of a regional M&E framework exists in the Pacific Islands (SPREP, 2011), where a program logic and framework includes indicators (for adaptation and mitigation) as well as evaluative questions in a simple, useable tool at national and regional levels.
[11] One example of an integrated M&E system exists in Moldova, where they have instituted a multi-level M&E framework of adaptation, with objective, outcome, driver and output indicators at the macro, meso and micro levels. These indicators which cover various sectors, themes, vulnerabilities and activities are assessed using various means of verification every year or every four years as appropriate. Available at <http://unfccc.int/files/focus/adaptation/technical_expert_meeting/application/pdf/20160525_druta_moldova.pdf>.
[12] OECD (2014).
[13] For example, M&E categories include: 1) outcome-based evaluations that focus on reducing negative climate change impacts; or 2) preparedness-process, policy-based or systematic measures that monitor the status of adaptation interventions – for example adaptation readiness, process-based approaches, analyzing policies and programme approaches, examining measure of changing vulnerability (Ford et. al 2013).

programme on impacts, vulnerability and adaptation to climate change also continues to support the categorization of M&E approaches in collaboration with the AC as part of the AC ongoing M&E work.[14]

11. Through the UNFCCC process, countries have included aspects of M&E in their risk and vulnerability assessments in their National Adaptation Progammes of Actions (NAPAs), National Adaptation Plans (NAPs) and national communications (NCs).[15],[16] More recently, countries have indicated in their INDCs that integrated monitoring, reporting and verifying systems are in the process of or have been developed, including specifics for adaptation monitoring.[17] Parties have reported their M&E activities in order to:[18]

a) Track progress in implementation to inform the adaptation process by sharing lessons learned and to update adaptation plans;

b) Determine the degree to which the adaptive capacity of individuals, communities and systems has been raised and vulnerability has decreased;

c) Improve transparency, performance evaluation and accountability;

d) Ensure that resources are well utilized to increase resilience and produce real benefits;

e) Track climate finance as well as technology transfer and capacity-building.

Table 2. Examples of existing methodology frameworks for monitoring and evaluation

M&E Framework	Scale/Sector Applicability	Typology/Approach	Practical applications
LEG PEG M&E Tool	National		To monitor and evaluate progress, effectiveness and gaps in the formulation and implementation of National Adaptation Plans
Adaptation made to measure (2013) and Developing national adaptation monitoring and evaluation systems – a guidebook (2016) (GIZ) 2016 [(a)]	Project/National	Results-based framework Quantitative and qualitative indicators	Specific GIZ case study examples from India in both rural and urban settings
Tracking adaptation and measuring development (TAMD/IIED) (2013)[(b)]	Project/National	"Twin-track" framework Quantitative and qualitative indicators	Evaluated UK international climate fund, piloted use in Ghana, Kenya, Mozambique, Nepal and Pakistan

[14] FCCC/SBSTA/2016/INF.4, paragraph 33 (d).
[15] In part based on the guidance from the LEG Progress Effectiveness and Gaps (PEG) M&E Tool.
[16] A study by Lesnikowski, A. et. al. (2016) has assessed progress in the implementation of adaptation among 41 Annex I Parties as documented in recently published Sixth National Communication (NC 6).
[17] FCCC/CP/2016/2, paragraph 74. A few Parties have also expressed their intention to integrate the review of adaptation into existing monitoring and evaluation systems and processes for national development, for example in annual sector-based progress reports, results-based management systems, or reporting supervised by a designated national authority (for example in regular development reports).(FCCC/CP/2016/2, paragraph 323).
[18] FCCC/CP/2016/2, paragraph 324.

Climate change adaptation monitoring and assessment tool (AMAT/GEF) (2014) [c]	Project	Results based framework 14 indicators, more quantitative	Has been used to evaluate more than 70 LDCF and SCCF projects
Pilot Program for Climate Resilience (CIF/WB) [d]	National	Mixed methods, logical framework;	Standardized application to portfolio projects
Participatory monitoring, evaluation, reflection and learning (PMERL/CARE) (2012) [e]	Project	Mixed methods	Tailored to community-based practioners
Progamme of research on vulnerability, impacts and adaptation (PROVIA/UNEP) [f]	Project/National	Risk / vulnerability assessment; Mixed methods/Logical Framework	Comprehensive manual
Community-based resilience assessment (CoBRA) conceptual framework and methodology (UNDP) (2013) [g]	Project	Qualitative; Mixed Methods; Logical Framework	Developed in the context reducing drought/disaster risks and improving livelihood
Auditing the Government Response to Climate Change (INTOSAI) (2010) [h]	National	Quantitative/Qualitative	Developed to lead auditors through climate change audits

[a] <https://gc21.giz.de/ibt/var/app/wp342deP/1443/wp-content/uploads/filebase/me/me-guides-manuals-reports/GIZ-2013_Adaptation_made_to_measure_second_edition.pdf>.

[b] <www.iied.org/tracking-adaptation-measuring-development-tamd-framework>.

[c] <www.iied.org/tracking-adaptation-measuring-development-tamd-framework>.

[d] <www-cif.climateinvestmentfunds.org/sites/default/files/knowledge-documents/ppcr_monitoring_and_reporting_toolkit_march_2016_revised.pdf>.

[e] <http://careclimatechange.org/wp-content/uploads/2014/09/CARE_PMERL_Manual_2012.pdf>.

[f] <http://r.duckduckgo.com/l/?kh=-1&uddg=http%3A%2F%2Fwww.unep.org%2Fprovia%2FPortals%2F24128%2FPROVIAResearchPriorities.pdf>.

[g] <http://www.co.undp.org/content/dam/undp/library/Environment%20and%20Energy/sustainable%20land%20management/CoBRA/CoBRRA_Conceptual_Framework.pdf>.

[h] <http://environmental-auditing.org/LinkClick.aspx?fileticket=c0u4iUMLYvU%3d&tabid=128&mid=568>.

12. Comprehensive reports, for example published by PROVIA and UKCIP, provide more detailed syntheses of existing M&E methods at the project level, scaled to national level and linked to the international level. Examples of such existing M&E methodologies can be found in Table 2 above. Thus, developed M&E expertise and experience in evaluating adaptation and development activities can provide a good basis to move forward in reviewing methods and metrics of adequacy and effectiveness for measurement of national and global level climate change adaptation.

13. In terms of specific data and metrics, a diverse set of environmental and socio-economic data has been collected at project and to some extent national levels, commonly in the form of quantitative or qualitative

indicators which inform M&E of adaptation.[19] In developing methods and metrics at the global level, the absence of comprehensive and coherent data on adaptation that covers all countries, levels of government, and is inclusive of the private and non-governmental sectors has been noted as an important limitation.[20] Bearing in mind that M&E of adaptation will continue to grow in significance, the collection of future information should keep in mind the need for consistency, comparability, comprehensiveness, coherence.[21] The design of targets will be influenced by the overarching questions, which can be guided for example by a theory of change, action logic frame or model. It is further interesting to note that M&E literature has conceded that there are distinct advantages to addressing evaluation questions through a variety of complementary, independent and interactive practices.[22]

14. In their INDCs, some Parties highlighted that they have or will establish quantitative and qualitative indicators for adaptation and vulnerability to measure progress.[23] Overall, the adaptation components of the INDCs constitute a representative overview of how Parties, building on progress made so far, intend to address adaptation, losses and damages due to climate impacts at the national level in the coming decades. Through the wide range of efforts communicated to enhance adaptation; it is clear that Parties are interested in reflecting the relevance of adaptation to all socioeconomic areas. [24]

1.1.1.4. Challenges, lessons learned and good practices

15. Given the relatively recent focus on adaptation monitoring and evaluation, the range of existing challenges that are frequently acknowledged include:

a) Diverse definitions, terminology, metrics, indicators[25] and targets;[26]

b) Metrics to measure vulnerability or success of adaptation interventions – the Adaptation Committee has reported[27] that there is no agreed metric to measure vulnerability increases or decreases;

c) Scaling existing metrics / tools / frameworks to the global level – will it be possible to aggregate existing information to the global level?;

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19 For example, the fifth assessment report of the IPCC categorizes adaptation options in terms of structural/physical (for example built environment, ecosystem-based), social (for example educational, informational), institutional (for example economic, laws/regulations). Possibly the largest domain of M&E efforts are those from NGOs, higher-level government agencies, foundations, consultancies or international institutions (Arnott J. C. et. al., 2016). Efforts in this domain have been commonly "top down", with the intention of broad applicability for assist in comparison, synthesis and summary analysis. Although "bottom up" implementer-driven indicators tend to be more pragmatic, they may also suffer from the self-service challenge of sponsor-driven assessments. As adaptation involves a diverse set of interests, complexities, uncertainties and trade-offs (including societal values), overall indicators are challenged by the risk of providing an incomplete analysis of adaptation progress or lack-there-of, as well as potential pitfalls of maladaptation or a false sense of progress.

20 Lesnikowski et. al. (2016). The authors argue that the NCs are at present the best available proxy for comparing adaptation across countries and over time, albeit also critical of the lack of coherence in the UNFCCC reporting guidelines about what constitutes 'adaptation'. They also call for expanded efforts to include systematic tracking across countries atht the policy or project-level on the use of indicator-based frameworks for adaptation analysis.

21 Berrang-Ford, L. (2016).

22 Arnott, J.C. et. al. (2016).

23 FCCC/CP/2016/2, paragraph 73.

24 FCCC/CP/2016/2, paragraph 74. Some Parties highlighted that they have established or will establish adaptation and vulnerability indicators and baselines to monitor and measure progress. Parties reported both quantitative (e.g. number of people benefiting from adaptation activities, number of hectares with drought-resistant crops under cultivation, and forest coverage increases to 45 per cent) and qualitative (e.g. degree of integration of adaptation into sectoral policies and plans and level of awareness) indicators. (FCCC/CP/2016/2, paragraph 325).

25 See AC 2010 scoping paper on the complexities and considerations of the indicator selection process. For example, would focusing indicators on inputs and outputs rather than process result in deterministic planning? Indicators in general tend to be static rather than dynamic in nature. Will indicators measure the achievement of results, possibly in economic terms, at the expense of learning and assessing what activities are really achieving?

26 In an ODI study (2015) that examined 17 sets of resilience indicators found in internationally recognized frameworks, it was found that each framework is strongly influenced by its conceptual entry point, making comparisons only partially possible and justifying the development of further frameworks.

27 AC/2014/4, page 3.

d) Establishing baseline data – challenges persist to establish baseline measurements, including due to changing contexts. In addition, can "non-events" be measured?;

e) Data availability and consistency – there is a lack of coordinated reliable information over time, across producers, users, activities and reviews;

f) Challenges with attribution – due to the characteristics of adaptation to climate change, cause and effect is difficult to pinpoint at any given location in time[28] Additionally, projects with a broader focus on development cooperation, infrastructure planning, sustainable development goals may overlap with adaptation related effects;

g) Climate change adaptation occurs over long time frames, however many initiatives are assessed within short and medium term evaluation cycles;[29]

h) Many countries operate within certain capacity and resource constraints that can be dedicated to M&E activities.

16. The challenges associated with identifying good practices in M&E of adaptation, have also resulted in some commonly referenced early lessons/enabling factors:

a) Metrics/indicators should address learning and accountability

b) Comprehensive and dynamic data sets are needed.[30] Data measurement should include the collection of existing environmental and socio-economic data – especially under resource constraints. For example, development cooperation providers, project/programme evaluations, national audits/reviews, peer reviews are all relevant sources of information;

c) Risk, vulnerability and resilience assessments can contribute to establishing baseline data;

d) A mixed method approach including quantitative and qualitative indicators can strengthen adaptation M&E;

e) Adaptation should be designed as a continuous and flexible process[31] that can adjust based on iterative learning processes;

f) Interaction and inclusive deliberation between knowledge producers and users is important;[32]

g) Governments can change incentive structures to enhance human and technical capacity for M&E of adaptation;

h) Coordination mechanisms can link data producers and users.

17. Lastly, further to the purpose of M&E previously considered by the AC and the LEG,[33] future goals and methods should clearly indicate the scope (what has to be monitored and evaluated) and responsibilities (Who has to monitor and evaluate it).[34] In this way, M&E can contribute to country level understanding in both adaptation learning and accountability.[35]

28 AC/2014/4, page 3.
29 Lamhauge, N. Lanzi, E. and S. Agrawala (2012).
30 Lesnikowski A. et. al. (2016).
31 FCCC/SBSTA/2010/5, paragraph 7.
32 Arnott J.C. et. al. (2016) and others.
33 AC/2014/4, pages 2-3, PEG M&E tool, page 1.
34 AC/2014/4, page 3.
35 OECD (2015). Learning contributes to enhancing understanding of climate change risks and vulnerabilities, and helps to identify effective approaches to reduce risks, whereas accountability relates to ensuring that resources are effectively allocated to reach set objectives.

1.1.2. Adequacy and effectiveness of support

18. Adequacy and effectiveness of support can be considered across the three dimensions of finance, technology and capacity-building, as acknowledged at the joint AC/LEG informal meeting.[36] Support also includes perspectives from both the provision and receipt of support.[37] Similar to the section on adequacy and effectiveness of adaptation, this section continues with adequacy and effectiveness of support as two separate components.

19. While the PA highlights the need for adequate support for adaptation across finance, technology and capacity-building, it should be recognized that existing circumstances for each area of support, for example as evidenced by workstreams under the constituted bodies,[38] vary and hence in working terms, the methods and metrics in each area of support may require separate consideration and aggregation at national and global scales in order to assess progress under the PA.

20. The Paris Agreement also calls for improved reporting as part of its framework for transparency of support, including finance, technology and capacity-building, to provide clarity on support provided and received by relevant individual Parties. Such improved reporting can enhance the consistency and comparability of data and facilitate assessments of the adequacy of support.

1.1.2.1. Adequacy of support

21. Recalling the PA mandates set out in its Articles 2 and 7 related to the purpose/objective, global adaptation goal and the global stocktake, adequacy of support can be considered in relation to the purpose, objective and goals in the Paris Agreement in a similar context as the adequacy of adaptation (such as limiting temperature increase, increasing ability to adapt to adverse impacts of climate change, enhancing adaptive capacity etc).

22. Adequacy of support is also captured in decision 1/CP.21, which resolves to enhance the provision of urgent and adequate finance, technology and capacity building support by developed country Parties in order to enhance the level of ambition of pre-2020 action by Parties (paragraph 114).[39]

1.1.2.1.1. Finance

23. The Paris Agreement references the adequacy of financial support as part of its purpose/objective and also in operational mandates related to adaptation:

a) Making financial flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development (Article 2 (d));

b) Recognizing the importance of adequate and predictable financial resources, including, inter alia, joint mitigation and adaptation approaches for sustainable forest management (Decision 1/CP.21, paragraph 54).

24. The adequacy of financial support has been considered at the global level for example as part of the UNFCCC process (Review of the financial mechanism, the SCF's biennial assessment and overview of finance

[36] See footnote 2 above.

[37] Under Decision 1/CP.21, the technical examination process resolved to strengthen the existing technical examination process on mitigation including by encouraging Parties to make effective use of the Climate Technology Centre and Network to obtain assistance to develop project proposals (paragraph 109 (d)). The 2017 TEP assessment for both mitigation and adaptation will also examine how to improve its effectiveness (paragraphs 113 and 131)].

[38] For example under the SCF, TEC/CTCN and PCCB.

[39] In this regard, the COP strongly urged developed country Parties to scale up their level of financial support, with a concrete road map to achieve the goal of jointly providing USD 100 billion annually by 2020 for mitigation and adaptation while significantly increasing adaptation finance from current levels and to further provide appropriate technology and capacity-building support.

flows), by UNEP, the OECD and to a limited extent the IPCC[40]. While these reviews have taken place, other M&E studies have at times included adequacy with assessments of programme/project effectiveness.

25. In relation to financial support through mechanisms under the UNFCCC process, the SCF report to COP 20 (2014), recognized the need to strengthen GEF project monitoring systems to be able to provide better information on the level of disbursement of approved funds.[41] Standard definitions, timeframes, reliability of data, and setting performance targets were all cited as areas for further development. Adequacy of financial support can also be assessed based on previous goals set in the intergovernmental process, for example the goal set out by decision 1/CP.16 of joint mobilization of USD 100 billion annually by 2020 by developed countries.[42] Furthermore, the fifth review of the financial mechanism found it challenging to assess the adequacy of the financing provided to the GEF Trust Fund.[43] A lack of adequate information on domestic public spending on adaptation in developing and developed countries made it difficult to assess current estimates of global climate finance, and the main obstacle to adaptation programming under the SCCF remained the lack of adequate and predictable resources.[44]

26. The UNEP 2016 adaptation finance gap has also reported on the adequacy of financial support, for both the costs of adaptation and sources of adaptation finance. Conclusions indicating the level of the financial gap between providers of and requirements for adaptation finance were also reported in US dollars.[45] The OECD Development Assistance Committee (DAC) also collects and monitors aid and other resources provided to developing countries from a range of providers,[46] including climate-related commitments.

1.1.2.1.2. Technology

27. Assessment of technological support to date at the global level has been linked to monitoring and evaluation assessments (see section below on effectiveness of technology support). However, the recent Paris Agreement also included a reference to adequacy related to technology, and as such the AC and the LEG may wish to keep in consideration future discussions under the Subsidiary Body for Implementation on the periodic assessment of the adequacy of the support provided to the Technology Mechanism.[47] Technological needs of developing countries may be assessed using the technology needs assessment (TNA) process, during which countries identify, evaluate and prioritize climate technologies, including for adaptation, leading to the formulation of technology action plans (TAPs).[48]

1.1.2.1.3. Capacity-building

28. Assessment of capacity-building support to date at the global level has been linked to monitoring and evaluation assessments (see section below on effectiveness of capacity-building support). In relation to the adequacy of capacity-building, further references in the PA include: Parties to ensure that education, training and public awareness are adequately considered in their contribution to capacity building (Decision 1/CP.21, paragraph 82

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40 The fifth assessment report of the IPCC recognizes the deliberations under the UNFCCC policy agenda over how adaptation finance needs will be met, and that resources for adaptation have been slower to become available than for mitigation in both developed and developing countries (IPCC (2014) [page 844].

41 FCCC/CP/2014/5, paragraph 61.

42 Decision 1/CP.16.

43 FCCC/CP/2014/5, paragraph 43.

44 FCCC/CP/2014/5, paragraph 46.

45 UNEP Adaptation finance gap report (2016).

46 http://www.oecd.org/dac/stats/dacdatasubmitters.htm

47 Decision 1/CP.21, paragraph 69 of the Paris Agreement decides to undertake a periodic assessment of the effectiveness and adequacy of the support provided to the Technology Mechanism in supporting the implementation of the Agreement on matters relating to technology development and transfer. At SBI 44 (May 2016), Parties concluded that in relation to this mandate, adequacy and effectiveness will be considered as separate issues. See FCCC/SBI/2016/8, paragraph 94 for further details <http://unfccc.int/resource/docs/2016/sbi/eng/08.pdf>

48 More information on the TNAs is available at <unfccc.int/ttclear/templates/render_cms_page?TNA_gateway>.

1.1.2.2. Effectiveness of support

29. Similarly to the effectiveness of adaptation, methods, metrics and experiences related to the effectiveness of support has been developing in the field of monitoring and evaluation, and may provide further support towards addressing the Paris Agreement goals (limiting temperature increase, global goal on adaptation and the global stocktake, etc.). Monitoring and evaluation of adaptation programmes and projects may still be more advanced than adaptation policies and strategies particularly regarding cost-effectiveness.[49]

30. In measuring effectiveness of support, some national level reporting has taken place through the INDC process, where Parties have reported their M&E activities for support provided and received.[50]

31. Similarly to previous sections, the effectiveness of support would require further broad assessment at the national scale with further aggregation at the global level to address in particular the global stocktake. The methods and metrics developed for both donor and recipient countries should be considered in the context of the goal to limit global average temperature increase, and promote an enabling environment keeping mind work being taken under related constituted bodies such as the SCF, TEC, CTCN and PCCB.

1.1.2.2.1. Finance

32. Monitoring and evaluation frameworks for adaptation funding mechanisms have developed various methods, metrics and insights to contribute to lessons learned / good practices. M&E frameworks for example for the pilot program for climate resilience (PPCR), LDCF[51]/SCCF (GEF) and adaptation fund (AF) are summarized in the 2014 SCF biennial assessment and overview of climate finance flows.[52]

33. In terms of support and in particular finance, a few Parties indicated in their INDCs that they are putting in place climate finance systems for determining, disbursing and monitoring climate expenditure and for enhancing the visibility of adaptation measures within national budgets.[53] Overall, the adaptation components of the INDCs constitute a representative overview of how Parties, building on progress made so far, intend to address costs due to climate impacts at the national level in the coming decades.[54]

34. At the international level,[55] climate-funds at the World Bank have also undergone a recent independent evaluation to assess development and organizational effectiveness, documenting experiences and lessons for the benefit of the green climate fund. In the case of the PPCR, where three-quarters of its strategic program focusses on integrating climate vulnerability and adaptation knowledge into national development and poverty reduction policies and strategies, mixed results were reported. Fieldwork countries that were positive features of programming found some loss in transition to implementation due to lack of strategy or

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49 FCCC/SBSTA/2010/5, paragraph 37.

50 This reporting has taken place with the objective that Parties could:
(a) Track progress in implementation to inform the adaptation process by sharing lessons learned and to update adaptation plans;
(b) Determine the degree to which the adaptive capacity of individuals, communities and systems has been raised and vulnerability has decreased;
(c) Improve transparency, performance evaluation and accountability;
(d) Ensure that resources are well utilized to increase resilience and produce real benefits;
(e) Track climate finance as well as technology transfer and capacity-building.
Further details can be found at: FCCC/CP/2016/2, paragraph 324.

51 In a recent LDCF review that addressed effectiveness and efficiency in reaching GEF objectives on programming strategy on adaptation, it was found that reports aligned to a large extent with GEF strategic objectives, both quantitative and qualitative (Independent Evaluation Office of the GEF, 2016).

52 <unfccc.int/files/cooperation_and_support/financial_mechanism/standing_committee/application /pdf/2014_biennial_assessment_and_overview_of_climate_finance_flows_report_web.pdf> Table III-6

53 FCCC/CP/2016/2, paragraph 73.

54 FCCC/CP/2016/2, paragraph 74.

55 At the international level, an independent report commissioned by the African Development Bank (2011) found that there is increasing focus on involving civil society organizations in M&E through participatory processes, although this may not be demonstrated through formal structures.

commitment, and early designs did not ensure that the needs of vulnerable communities and households would be met.[56]

35. This year, the GEF has also undertaken a technical review of the program priorities of the LDCF, reaching the conclusion that the LDCF showed clear potential in reaching the GEF's three adaptation strategy objectives. As part of the methodology for this evaluation, a theory of change was developed, which combined GEF's strategic objectives for adaptation with the objectives, outcomes and overarching goal identified in the results framework of the GEF adaptation program.[57] The theory of change informed the development of evaluative questions, further guided the development of related methods protocols, and was used to analyse the broader progress to impact through the aggregation of available evidence on broader scale and longer term results. The evaluation assessed the performance and progress of the LDCF looking at aggregated data for relevance, effectiveness and efficiency and results and sustainability.

36. In addition, a recent independent evaluation of the Adaptation Fund was completed in 2015, assessing the Fund using OECD DAC criteria of relevance, effectiveness, efficiency and sustainability to identify good practices, opportunities for improvement and practical recommendations. Value for Money was a key theme to the overall process covered under the efficiency criteria (to assess whether the resources invested in the Adaptation Fund's operations were "reasonable"). Under effectiveness, improvements were suggested to its allocation of resources to knowledge management and the inadequate resources to meet its strategic responsibilities.[58] .

1.1.2.2.2. Technology

37. Monitoring and evaluation related to technology support has also been developing in more recent years. For example, as reported jointly by the joint TEC and the CTCN at the Paris Conference, the CTCN is continuing to develop a M&E system to facilitate clear, efficient and timely reporting to the COP/Parties, the TEC, the CTCN Advisory Board, UNEP and UNIDO. Some of the outputs of the M&E system are already available on an online monitoring system related to technical assistance.[59]

38. Linked to the AC/LEG mandates on reviewing adequacy and effectiveness of support, the Paris Agreement also refers directly to effectiveness related to technology. The AC and the LEG review may thus wish to keep in consideration future discussions under the SBI on the periodic assessment of the effectiveness of the support provided to the Technology Mechanism.[60]

1.1.2.2.3. Capacity-building

39. Monitoring and evaluation has also been discussed in relation to capacity-building support through the UNFCCC process. Progress on and implementation of a monitoring and evaluation system as well as the development of indicators have been considered by the Subsidiary Body for Implementation,[61] and may provide a basis for future work mandated by the Paris Agreement.

40. In relation to the effectiveness of capacity-building, the Paris Agreement through decision 1/CP.21 has also requested for future consideration that:

[56] Climate Investment Funds (2014).
[57] Report of the Global Environment Facility to the Twenty-second session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (2016) (in progress).
[58] TANGO / ODI (2015).
[59] FCCC/SB/2015/1, paragraph 96.
[60] Decision 1/CP.21, paragraph 69 of the Paris Agreement decides to undertake a periodic assessment of the effectiveness and adequacy of the support provided to the Technology Mechanism in supporting the implementation of the Agreement on matters relating to technology development and transfer. At SBI 44 (May 2016), Parties concluded that in relation to this mandate, adequacy and effectiveness will be considered as separate issues. See FCCC/SBI/2016/8, paragraph 94 for further details.
[61] For a timeline of activities, and performance indicators at the national and global levels see section X of document FCCC/SBI/2009/4 and document FCCC/SBI/2009/5.

a) The Paris Committee on Capacity-building will annually focus on an area or theme related to enhanced technical exchange on capacity-building, with the purpose of maintaining up-to-date knowledge on the successes and challenges in building capacity effectively in a particular area (paragraph 74); and that

b) COP 25 will review the progress, need for extension, the effectiveness and enhancement of the Paris Committee on Capacity-building and to take any action it considers appropriate, with a view to making recommendations to CMA 1 on enhancing institutional arrangements (paragraph 81). At SBI 44 (May 2016), Parties recalled this decision, that will be taken up at future sessions.[62]

1.1.2.3. Challenges, lessons learned and good practices

41. Due to the incipient nature of adequacy and effectiveness of support in relation to technology and capacity building, many of the early known overall challenges and early lessons / good practices relate to financial support. Overall challenges may be similar to those relating to adequacy and effectiveness of adaptation, and include:

a) The need for consistent methodologies, metrics, baselines, targets around adaptation cost and support to enhance comparability.[63] This was particularly evident in looking at the NDCs and echoed in the Paris Agreement, which called for improved reporting on support provided, needed and received;

b) The need for clear comprehensive frameworks to guide national assessments and underpin the global stocktake;

c) The need for methodologies to evaluate the effect of development interventions that may have adaptation co-benefits;

d) Inadequate financing to build data sets for effective development and use of methodologies.

42. **Overall lessons learned and good practices** identified, include:

a) The need for methodologies to be developed keeping in mind that inter-institutional coordination can make a significant contribution to reducing competition over limited financial resources and create cost-saving synergies (for example harmonization of the Adaptation Fund, the LDCF, the SCCF and the GCF);[64]

b) Clear guidelines and practical suggestions should factor into the development of methods and metrics to effectively address in particular the needs of those most vulnerable to climate change impacts;

c) Methodologies can build on the innovative approaches that have been used in projects to overcome the lack of data on emerging adaptation issues.[65]

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[62] See FCCC/SBI/2016/L.24/Add.1, paragraph 3 for more details.
[63] UNEP Adaptation Finance GAP report (2016).
[64] TANGO / ODI (2015).
[65] GEF Evaluation Office (2011).