Framework Convention on Climate Change

SCF/2019/20/5

Standing Committee on Finance

06 March 2019

Twentieth meeting of the Standing Committee on Finance
Bonn, Germany, 20–22 March 2019

Background paper on the first report of the Standing Committee on Finance on the determination of the needs of developing country Parties related to implementing the Convention and the Paris Agreement

Expected actions by the Standing Committee on Finance

The Standing Committee on Finance (SCF) will be invited to initiate work for the preparation of the first report of the Standing Committee on Finance on the determination of the needs of developing country Parties related to implementing the Convention and the Paris Agreement, including:

a) To deliberate on the objectives and scope, possible activities, output(s), structure, and format;

b) To discuss and reach an agreement on the overall approach for organizing and implementing the work; and

c) To elect co-facilitators to guide the work on this matter.

I. Possible actions for consideration by the Standing Committee on Finance

1. In discussing the objective(s), scope, output(s) and possible activities, the SCF may wish to consider the following aspects to initiate and guide preparatory work on this matter:

Objectives

(a) In its deliberations on the objective(s) of work on this matter, the Committee may wish to consider, *inter alia*, milestones specified in the Convention and the Paris Agreement:

(i) The objective of the Convention;

(ii) Article 2, of the Paris Agreement;

(iii) Decision 1/CP.21, and the outcomes of COP24 and CMA1.3, including, Article 9, paragraph 3 and 4;

(iv) Communication of new nationally determined contributions (NDCs) by 2020[1];

(v) First global stocktake (2023); and

(vi) The arrangements for provision of information on financial, technology development and transfer, and capacity-building support needed by developing countries as contained in modalities, procedures and guidelines of the transparency framework.[2]

[1] Decision 1/CP.21, paragraph 24

[2] Decision 18/CMA.1, Chapter VI, Sections C, E, and G.

Scope

(b) The Committee may also wish to discuss the scope and the context, with a view to providing guidance on the preparatory work. Given this is the first time it will undertake work in this area as well as the nature of the work, the Committee may wish to consider the following:

(i) Methodological approach to be taken in preparing the report;

(ii) Methodologies and approaches used by developing country Parties in preparing and communicating information on needs through NDCs and national reports to UNFCCC, as well as issues relating to methodologies used in producing information on the assessment and determination of aggregate-level global and regional climate related needs;

(iii) Types of information on needs (e.g. whether to focus on mitigation and adaptation finance needs or also include specific information on financial needs for technology development and transfer, capacity-building, sectors, geographical regions, etc.). If the Committee decides to focus more on mitigation and adaptation finance needs, then it may also wish to clarify whether it should address the issue of full cost finance needs and/or the incremental costs finance

(iv) The level of granularity of information to be included in the report (i.e. high-level report versus more granular level report that includes country-level information and, where available, information on needs by theme and/or sectors); and

(v) The context of the report in relation to, *inter alia*, the biennial assessment and overview of climate finance flows, including the available information relevant to Article 2, paragraph 1, of the Paris Agreement.

Output(s) and format

(c) Whether it wishes the secretariat, under the guidance of the co-facilitators of the SCF working group[3], to prepare intersessionally a *technical paper* on available sources and types of information on the needs of developing countries within or outside of the Convention and the Paris Agreement to inform the development of the outline for inclusion in the annual report \ of the Committee \ to COP25;

(d) How it wishes to report the outcomes of the work to the COP and the CMA. In its deliberations on this matter, the Committee may wish would consider the following options:

(i) Outcomes of the technical work captured in a stand-alone *report* published on the website of the SCF, with a *summary and/or recommendation* by the SCF included in the annual report of the SCF to COP26 and CMA3. This option is similar to the outputs and format used for the biennial assessment and overview of climate finance flows;

(ii) Outcomes of the technical work captured in a *report,* which also includes summary and/or recommendations. The report is submitted the COP and CMA in conjunction with the annual report of the SCF to the COP and the CMA;

(iii) Outcomes of the technical work captured in a stand-alone report published on the website of the SCF; and

(iv) Other options.

(e) *Other by-products* which the Committee may deem appropriate during the preparation of the report.

Possible activities

(f) Further, the Committee may wish to consider identifying activities to carry out the preparatory work. Examples for consideration include:

(i) *Mapping out available sources and types of information on the needs of developing countries relating to implementing the Convention and the Paris Agreement, as well as gathering information on methodological issues*. A preliminary and non-exhaustive list of sources of information and their content is included in the annex. This work could build on

[3] As is practice, the working group would be open-ended for any of the SCF members to partake.

this work intersessionally, and reflected in a technical paper to be made available prior the 21st meeting of the Committee;

(ii) *Technical experts workshop to explore topics relating to top-down and bottom-up methodologies and approaches used in preparing and communicating needs of developing countries*. Such meeting could either be organized as stand-alone event and/or as part of the ongoing work of the secretariat on needs that it is undertaking in the context of decision 6/CP.23, paragraph 10 in the second half of 2019;

(iii) *Technical meetings/ workshops in 2020*, which could be organized on specific topics. Such meetings could be organized either as stand-alone events and/or in conjunction with the meetings of the Committee; and

(iv) *Other outreach activities*, particularly with organizations and stakeholders that have undertaken work on the assessment and determination of climate related needs of developing countries.

2. The Committee may wish to further discuss and reach an agreement on the overall approach for organizing and implementing the work. In this regard, the Committee may wish to consider following an approach similar to the biennial assessment and overview of climate finance preparation process, whereby the work is organized in two tiers:

(a) *First tier involves technical work at the SCF working group level*. In this tier, the work focuses on information gathering and processing and is carried out intersessionally by a dedicated team with the support of internal and external expertise that operates under the guidance of the co-facilitators; and

(b) *Second tier involves work at the Committee level*. In this tier, the Committee considers at its meetings the work undertaken intersessionally and provides overall guidance.

3. Given the volume and the nature of the work, the Committee may wish to elect two co-facilitators at its 20th meeting, one from a developed and one from a developing country. The Committee may further wish to request the co-facilitators, with the support of the secretariat, to initiate the preparatory work early on.

4. In this regard, the Committee may also wish to request the co-facilitators, with the support of the secretariat, to prepare the following preparatory activities prior the 21st meeting of the Committee;

(a) A workplan that outlines activities, outputs, timelines, as well as international and external collaboration opportunities in 2019–2020:

(b) Draft outline which includes suggested objectives and scope of the report, for distribution at least two weeks before the 21st meeting. In this regard, the Committee may also wish to consider requesting the secretariat to prepare a technical paper that maps out available sources and types of information on the needs of developing countries relating to implementing the Convention and the Paris Agreement to be annexed to the draft outline. A preliminary and non-exhaustive list of sources of information, types of needs, coverage, purpose and methodologies used in producing information climate-related needs of developing countries is contained in the annex; and

(c) Reach out to organizations and stockholders that have undertaken work on methodological issues relating to assessment and determination of climate related needs of developing countries. In this regard, the Committee may wish to consider using as platform to further its work on this matter the workshop on methodologies and processes for determining and assessing the needs of developing countries scheduled at the Headquarters of the Asian Development Bank in Mandaluyong City, Philippines, from 11–12 July 2019, which the secretariat is organising in the context of decision 6/CP.23, paragraph 10.

II. Background

5. The Convention, in Article 2, states that the ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the

atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

6. The Paris Agreement, in Article 2, states that the Paris Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of Climate change, in the context of sustainable development and efforts to eradicate Poverty, including by:

(a) Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature Increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;

(b) 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; and

(c) Making finance flows consistent with a pathway towards low Greenhouse gas emissions and climate-resilient development.

7. The COP, by decision 4/CP.24, paragraph 13, requested the SCF to prepare, every four years, a report on the determination of the needs of developing country Parties related to implementing the Convention and the Paris Agreement, for consideration by the Conference of Parties, starting at its twenty-sixth session (November 2020), and the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement, starting at its third session (November 2020).

8. In preparing the report referred to in paragraph 13 in the same decision, the COP also requested the SCF to collaborate, as appropriate, with the operating entities of the Financial Mechanism, the subsidiary and constituted bodies, multilateral and bilateral channels, and observer organizations[4].

9. The COP, at its 23rd session, requested the secretariat, in collaboration with the operating entities of the Financial Mechanism, United Nations agencies and bilateral, regional and other multilateral channels, to explore ways and means to assist developing country Parties in assessing their needs and priorities, in a country-driven manner, including technological and capacity-building needs, and in translating climate finance needs into action[5].

10. The Subsidiary Body for Implementation, at its 28th session in 2008, in its consideration of the fourth review of the financial mechanism requested the secretariat to provide, upon request, information to non-Annex I Parties on the assessment of financing needs to implement mitigation and adaptation measures. In fulfilling the mandate, the secretariat designed and implemented the National Economic, Environment and Development Study (NEEDS) for Climate Change Project. The project delivered eleven country study reports, an initial summary report, as well as a synthesis report[6].

[4] 4/CP.24, paragraph 14.

[5] 6/CP.23, paragraph 10.

[6] Information available at <https://unfccc.int/national-economic-environment-and-development-study-needs-for-climate-change-project>.

Annex

Preliminary and non-exhaustive list of sources of information, types of needs, coverage, purpose and methodologies used in producing information climate-related needs of developing countries.

Country-level reports and studies

Sources	*Type of need*	*Country*	*Purpose of the report*	*Methodology*
Nationally Determined Contributions (NDCs)	Mitigation and Adaptation. Most developing country Party NDCs outline, in varying levels of detail, the estimated financial costs of the emission reduction and climate adaptation scenarios they describe for the period 2015–2030. COP21 requested Parties whose NDCs contributions contain a time frame up to 2025 to communicate by 2020 a new NDC by 2020.	All Parties are requested to submit the next round of NDCs (new NDCs or updated NDCs) by 2020 and every five years thereafter (e.g. by 2020, 2025, 2030), regardless of their respective implementation time frames.	The Paris Agreement requests each country to outline and communicate their post-2020 climate actions.	Approaches in describing financial needs in the NDCs differ. In many cases, cost values listed were lower bound estimates of potential costs. The amount of detail on methodologies for estimating costs presented in NDCs also varies greatly across submissions, making these values difficult to compare.
Biannual Update Reports and National communications	Mitigation and Adaptation. Some BURs identify needs per economic sector, while others focus on financing needs related to capacity and technology. A few countries include detailed analysis of financial needs per activity, with information on preferred financial instrument and priority- level. In general, there are more details on financing needs for mitigation activities than for adaptation activities	Less than 1/3 of 44 BURs include quantitative information on financial needs	Countries voluntarily communicate information in their Biannual Update Reports in accordance with relevant provisions in the reporting guidelines contained in Annex III of decision 2/CP.17. However, there is no common reporting format or specific guidance for reporting needs in the current MRV arrangements.	The BURs do not usually provide detailed information on the methodologies used to estimate financial needs or whether a country needs assessment had recently been conducted. Furthermore, BURs do not typically include sufficient information on how “needs” are defined. Some countries list the overall cost of implementing proposed activities, while others list the gap between current financing and expected programme costs, with specific estimates for international climate finance needs. Countries reporting financial needs either include quantitative values for a set period or on an annual basis. The

Sources	*Type of need*	*Country*	*Purpose of the report*	*Methodology*
				time frames for activities and financial needs vary significantly and were often unclear.
National Adaptation Plans (NAPs)	Adaptation. The objectives of the NAP process are: (a) To reduce vulnerability to the impacts of climate change, by building adaptive capacity and resilience; (b) To facilitate the integration of climate change adaptation, in a coherent manner, into relevant new and existing policies, programmes and activities, in particular development planning processes and strategies, within all relevant sectors and at different levels, as appropriate (decision 5/CP.17, paragraph 1).	NAPs submitted by 11 developing country Parties to date.	The NAP process was established under the Cancun Adaptation Framework (CAF). It enables Parties to formulate and implement NAPs as a means of identifying medium- and long-term adaptation needs and developing and implementing strategies and programmes to address those needs. It is a continuous, progressive and iterative process which follows a country-driven, gender-sensitive, participatory and fully transparent approach. The NAP process is an opportunity for countries to address their medium- and long-term adaptation needs,	The NAP process is not prescriptive. Guidelines for the process is to assist LDCs to undertake the steps and activities are outlined in decision 5/CP.17, paragraph 6. Countries decide from the following elements which steps are applicable for their country specific situation, and in what order they should be undertaken. There include: Lay the Ground work and Address Gaps; Preparatory Elements; Implementation Strategies; and Reporting Monitoring
Technology Needs Assessments (TNAs)	Mitigation and Adaptation. The TNAs include, inter alia, information on priority sectors/sub-sector for mitigation and adaptation. For mitigation, the TNAs include information on sectors and technologies in energy, industrial processes and product use, agriculture, forestry, and other land use, and waste, and other sectorial categories (these follow the 2016 IPCC guidelines on national GHG inventories). With respect to adaptation, TNAs may include information on possible sectors such as health and social systems, agriculture and fisheries, coastal	Over 85 countries have completed their TNAs organised in three phases	TNAs are undertaken by developing countries to determine their climate technology priorities. More broadly, the TNA process has three main objectives: (a) to identify and priorities mitigation/adaptation technologies for selected sectors /sub-sectors; (b) to identify, analyze and address barriers hindering the deployment and diffusion of the prioritized technologies including enabling the framework for the said technologies; and (c) to articulate, based on the inputs obtained from the two previous steps, a Technology Action Plan (TAP) with suggested	Guidance and methodologies have been developed for the processes underpinning the three objectives. The TNA preparation process involves, inter alia, understanding of a country's development priorities, discussing climate change implications, identifying priority sectors (and sub-sectors) for mitigation and adaptation and priority technologies within them, preparing strategy and action plan for prioritized technologies, and synthesizing technology needs assessment in a report. A reporting structure and outline is made

Sources	*Type of need*	*Country*	*Purpose of the report*	*Methodology*
	zones, water, and biodiversity and ecosystems.		measures/actions presented in terms of project ideas.	available to facilitate comparability among TNAs.

Global and regional-level reports and studies

Sources	*Types of needs*	*Organization*	*Purpose of the report*	*Methodology*
The World Energy Outlook 2018 – International Energy Agency (IEA)	Mitigation. WEO 2018 details global energy trends and what possible impact they will have on supply and demand, carbon emissions, air pollution, and energy access. Its scenario-based analysis outlines different possible futures for the energy system, contrasting the path taken by current and planned policies with those that can meet long-term climate goals under the Paris Agreement, reduce air pollution, and ensure universal energy access.	International Energy Agency (IEA)	The World Energy Outlook 2018 examines future patterns of a changing global energy system at a time of increasing uncertainties and finds that major transformations are underway for the global energy sector, from growing electrification to the expansion of renewables, upheavals in oil production and globalization of natural gas markets. Across all regions and fuels, policy choices made by governments will determine the shape of the energy system of the future.	The methodology consists of a two-tier system comprising the New Policies Scenario (NPS) and the Sustainable Development Scenario (SDS). New Policies Scenario (NPS): Incorporates existing energy policies as well as an assessment of the results likely to stem from the implementation of announced policy intentions. Sustainable Development Scenario (SDS): Outlines an integrated approach to achieving internationally agreed objectives on climate change, air quality and universal access to modern energy.
UNEP Adaptation Gap Report, 2016 and; 2018; Regional Adaptation Gap reports	Adaptation The report focuses on indicators of adaptive capacity, along with indicators of exposure and sensitivity, are central to assessing reduced vulnerability and enhanced resilience. Focusing on adaptive capacity, the report examines existing frameworks and indices of vulnerability and distilled common indicators of adaptive capacity	United Nations Environment Program (UNEP)	The focus of the 2018 report is dual: The first part examines the gaps that exist in a number of areas that are central to taking stock and assessing progress on adaptation, namely the enabling environment as expressed through laws and policies, key development aspects of adaptive capacity, and the costs of and finance needed for adaptation. The second part of the report focuses on the adaptation gap in one particular sector, namely health.	The methodology used in the report recognizes that the measures of progress in adaptive capacity have much in common with measures of progress in development more generally and are likely to yield benefits irrespective of future climate regimes while addressing aspects relevant to increased exposure to climate hazards. The emphasis has also been on selecting indicators relevant to health, as this

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	across them for which sufficient data are available.		Based on the available scientific evidence on climate impacts and health outcomes, the second part provides an overview of the global adaptation gap in health, followed by a specific focus on three key areas of climate-related health risks: heat and extreme events, climate-sensitive infectious diseases, and food and nutritional security.	is the focus of the second part of the report.
Fiscal Policy and Development: Spending needs for achieving selected SDGs	Mitigation and Adaptation related needs. This focuses primarily on the needs of countries in achieving: education, health care, and infrastructure (roads, electricity, and water and sanitation). The IMF has estimated the additional spending that is needed in health care, education and selected areas of infrastructure for reaching the Sustainable Development Goals (SDGs). Findings are based on a new methodology applied to 155 countries—including advanced (34), emerging markets (72) and low-income and developing countries (49). Five country studies (Rwanda, Benin, Guatemala, Indonesia and Vietnam) were conducted to deepen the analysis.	International Monetary Fund (IMF)	The purpose of the report is to answer the question: how much additional annual spending (?) is necessary to reach the SDGs in education, health care, and infrastructure (roads, electricity, and water and sanitation) by 2030? These investment-type sectors are key to improving social, human, and physical capital. Governments typically play a decisive role in these sectors: on average, about one-third of public budgets is devoted to these sectors. Furthermore, these sectors are synergetic across many SDGs, including with potential spillovers on poverty and inequality. In this sense, they are critical in generating inclusive and sustainable growth.	The IMF uses a three-step methodological approach: 1. Identify main cost drivers 2. Derive reference values for cost drivers consistent with high SDG sector performance 3. Estimate 2030 spending levels given reference values.
UNEP Emissions Gap Report 2018	Mitigation Assessment of current policies and needs of members to meet Cancun pledges for 2020 and NDC targets for 2030 – and to peak their emissions.	UNEP	Assesses the latest scientific studies on current and estimated future greenhouse gas emissions and compares these with the emission levels permissible for the world to progress on a least-cost pathway to achieve the goals of the Paris	The assessment adopts a new methodology, which groups pathways under three temperature scenarios based on their cumulative CO2 emissions. These updates result in target emission levels for 2030

Sources	*Types of needs*	*Organization*	*Purpose of the report*	*Methodology*
			Agreement. This difference between "where we are likely to be and where we need to be" is known as the 'emissions gap'. As in previous years, the report explores some of the most important options available for countries to bridge the gap. This year's report presents the newest assessment of the emissions gap in 2030 between emission levels under full implementation of the unconditional and conditional NDCs and those consistent with least-cost pathways to stay below 2°C and 1.5°C respectively.	that differ from the ranges assessed in the 2017 report. One limitation of this methodology is that it takes countries' commitments at face value by assuming they will be achieved by the target date, without considering whether targets will be underachieved or overachieved.
Financing Climate Futures – Rethinking Infrastructures: OECD, UN Environment, World Bank Group 2018	Adaptation related The initiative explores what public and private actors should do to trigger the radical transformation needed to align financial flows in infrastructure for a low-emission, resilient development.	OECD, UNEP, World Bank	This report lays out the agenda for a low-emission, resilient transformation that requires action across six key transformative areas, which should be articulated with respect to country contexts, and resource endowments and capacities: planning, budgeting, innovation, finance, development and cities. The Shifting the Lens report is a contribution to the Financing Climate Futures initiative and explores how foresight methodologies and scenario development can better inform infrastructure investment decisions today to align financial flows with a low-emission, resilient future.	The report uses a Foresight Methodology which provides a complementary perspective by constructing multiple plausible futures to inform decision-making under uncertainty. Shifting the Lens has used a simple analytic framework to identify a number of critical uncertainties that affect future infrastructure demand and supply. The report points to critical uncertainties that influence the selection, design, procurement, deployment and related financing decisions regarding low-emission, resilient infrastructure.

Sources	*Types of needs*	*Organization*	*Purpose of the report*	*Methodology*
				The report uses a four tier analytical framework that asses factors affecting infrastructure demand – which include assessing the potential socio-economic circumstances of the future and factors affecting infrastructure supply – which focuses on assessing what the future of infrastructure will look like, what the implications of this will be to future business models and what are the new financing approaches to meet these needs as well as addressing the potential impacts to the financial economy.
G20 Brown to Green Report: Transition to a low carbon economy 2018	Mitigation and Adaptation related needs This report assesses how far the G20 countries have progressed in their transition from a “brown” economy based on fossil fuels to a “green” low-carbon and climate-resilient economy.	Climate Analytics, Centro Clima, ERC, Energy Research Institute, FARN, German Watchm, Clima, Institute for Essential Services Reform, IGES, Clima, IDDRI, Humboldt Viadrina Climate Platform, New Climate Institute, ODI, TERI, Climate Works Foundation, World Bank Group, BMZ, Agora, Climate Action Tracker, CCPI, Enerdata.	The report attempts to present a comprehensive stocktake on G20 climate action by addressing the following four questions: The Gap: Are G20 countries on track to stay below the Paris Agreement temperature limit, Recent developments: What has happened in the G20 countries since the Paris Conference, Brown and Green Performers: Who are the leaders and laggards among the G20 countries, Fairness: What are the G20 countries doing to make the transition just?	The report used the ND-GAIN country index to determine adaptation needs. The ND-GAIN Country Index, a project of the University of Notre Dame Global Adaptation Initiative (ND-GAIN), summarize a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. The vulnerability index consists of six sectoral indicators which are again composed by six sub indicators, measuring exposure, sensitivity, and adaptive capacity to climate impacts. The Brown to Green Report only shows the exposure sub-indicators. These sub-indicators show the extent to which human society and its supporting sectors are stressed by the

Sources	*Types of needs*	*Organization*	*Purpose of the report*	*Methodology*
				future changing climate conditions based on an approximately 2°C scenario. Notre Dame Global Adaptation Index 2016. Retrieved from: https://gain.nd.edu/our-work/country-index
The New Climate Economy: The 2018 report of the global commission on the Economy and the Climate	Mitigation and Adaptation needs. To capture the net economic benefits of US$26 trillion through to 2030 and shift the world economy onto a more stable climate pathway, the Global Commission calls upon economic decision-makers in the public and private sectors to take decisive action so that the needs for this transition can effectively be met through harnessing the resources of the private sector, investing in sustainable infrastructure and adopting a people-centered approach to ensure equitable growth and a just transition – a central driver of the new growth approach.	New Climate Economy	This report is a roadmap for how to accelerate action to turn better growth and a better climate into reality. The report finds that taking ambitious climate action could generate over 65 million new low-carbon jobs in 2030, as well as avoid over 700,000 premature deaths from air pollution compared with business as-usual.	Given the limitations of modelling exercises, it is likely that the benefits of a climate-compatible transition are much greater than even these estimates suggest. Such modelling exercises generally cannot capture the magnitude and dynamism of the economic and financial opportunities of climate action, or to adequately reflect the risks of climate change in baseline growth scenarios.
GIZ: (1) Climate Finance Readiness Analysis[a], (2) Smart National Adaptation Planning Tool (SNAP)[b], (3) Support for technology needs assessments under the UNFCCC.[c]	Mitigation and Adaptation needs: (1) Uses and focuses on planning and policies of governments, input from expert institutions, access to and engagement with ministries, spending and implementation, private sector engagement. (2) Uses and focuses on quality of climate information, human resources and institutions, long term vision and mandate, implementation, mainstreaming, participation, monitoring and evaluation.	GIZ	(1) GIZ has been piloting scoping studies of climate finance related readiness needs in Asian countries including Indonesia, Vietnam, Laos and Mongolia, Philippines, as well as in Southern Africa (Namibia, Zambia, and Tanzania). (2) GIZ has developed a tool to provide a snapshot of capacities and goals for successful national adaptation planning within countries, and to monitor the planning process. The tool builds on UNFCCC technical guidelines as well as GIZ's	Each tool uses its own uniquely adapted methodology. GIZ has developed a methodology that considers both political and economic considerations in order to develop capacity development strategies tailored to the partner country context. The approach supports a systematic diagnostic of relative strengths, weaknesses, opportunities and threats in existing systems, complemented by prioritization and decision-making tools. The methodology has been

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	(3) Informed by TNA guidance from the UNFCCC. A TNA handbook was only published in 2010. Encompassed energy, transport, industry, forestry, agriculture, oceans, and waste		own work supporting adaptation planning, and draws on econometrics methods for analyzing multidimensional issues. SNAP allows for visualization of assessment results, to make key messages clear. (3) GIZ supported the government of Indonesia to conduct a comprehensive technology needs assessment to analyze diverse technology needs in various economic sectors in 2007. Conducted over two years, the process helped to draw attention to the various barriers to clean technology deployment in the economy.	applied in 22 cases in Africa, as well as in Myanmar, Jordan and Armenia. Capacity assessment methodology[d]: This includes and focuses on defining the objective, context analysis, identifying strengths, weaknesses and opportunities, developing and assessing strategic options and formulating a strategy.
IRENA, NREL, GIZ: Capacity needs assessments for renewable energy (CaDRE)[e]	Mitigation Includes and focuses on systematic guidance on how to structure processes for scoping, diagnosing key needs, and making recommendations.	IRENA, NREL, GIZ	(IRENA), the National Renewable Energy Laboratory (NREL) and IDAE elaborated the Capacity Needs Diagnostics for Renewable Energies (CaDRE) focus on wind and solar sectors. CaDRE describes the first phase of a process that engages individuals, organizations, networks, and systems to develop renewable energy. The gaps and needs that this analysis exposes will identify the areas which need to be addressed to support the further deployment of renewable energy.	A scientifically developed standard methodology was used. It included a toolbox of 25 templates and matrices, including a set of 25 key questions related to wind and solar energy development.
ODI: National Climate Finance Analysis	Mitigation and Adaptation needs The ODI undertook a national climate finance analyses for Ethiopia, Ghana, Uganda and the United Republic of Tanzania	ODI	The objective of the ODI report was to point out the distinction between high, medium and low relevance expenditures, which provide an insight into the funding needs of countries to implement climate	The gaps in this methodology identified by ODI include the risk of the analysis not taking into account climate change -relevant activities that may have been undertaken in

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	building on the same methodology it helped developed with the UNDP – the CPEIR. The ODI however used four year averages to avoid the misinterpretation of annual fluctuations and trends.		change actions. This split shows the recognition of climate change as a public spending priority within certain countries and its mainstreaming within cross sector public spending.	sectors not relevant to climate change (for e.g., defense). Additionally, the classification of relevance is subjective as there is no objectively "correct" percentage of spending that can be attributed to climate change expenditure. This approach is therefore still only a best estimate. Capturing international funds (either ex-ante in the budget appropriation or ex-post in reporting varies according to the type of aid received as well as the channel of funding – whether funds disbursed to governmental financial channels which are usually captured in the budget, funds disbursed to sector ministries which are usually captured in the budget of the sector ministries, or funds disbursed directly to projects and programs that operate outside the government structure, making it very difficult to capture.
The Group of 20 (G20) Green Finance Study Group and The IFC Climate Policy Team: **Green Finance: A bottom up approach**	Mitigation and Adaptation related finance needs The approach developed by the IFC consists of first defining green finance depending on the financed project. This is followed by an estimate of the green share of finance, wherever necessary. Subsequently an aggregation of the green share of all projects financed through a certain financial instrument per sector or per country is then compiled. This data is then used to conduct a comparative	IFC and G20	The report pointed out the following conclusions: The multiplicity of stakeholders in the private green finance landscape has allowed for a significant amount of analysis and has significantly incentivized the measuring of green finance needs. The definitions of green finance as well as the needs assessment of this is the most advanced in the bonds market. However, in the banking sector, existing tracking processes on green loans need to be improved and	The methodology used highlighted the following gaps: The classification of "green finance" as a "use of proceeds" in financial data sets can only be identified as "entirely green" in some cases, with disparities arising between project finance and clean energy indicators. This leads to missing information due to the lack of a clear and consistent definition. Moreover, industry classifications of "use of proceeds" vary across different data sets, resulting in a lack

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	analysis of the existing green finance supply across industry, sector and country and the amounts needed to reach policy targets.		institutional; investors need to develop clear approaches in their decision making in order to make the transition from awareness to implementation.	of consistency that further complicates the approach when combining data sets. The disparity of data across the borrower's location, the financier's location results in significant inaccuracies in the process of combining the data sets. The use of different identifiers across data sets and geographies results in a lack of consistency which complicates the linking of different sources, making it difficult to aggregate the data on different levels. The supply and demand estimates remain only rough estimates due to the challenges associated with the collection, categorization and interpretation of the data. The majority of IFC clients who provide climate/ green finance do not have the tools required to measure the impacts such as carbon emissions or energy savings; which makes it harder for them to track green investments.[f]
IAEA: Climate Change and Nuclear Power 2018 (??)	**Adaptation and Mitigation needs:** This publication summarizes the latest knowledge of anthropogenic climate change, its impacts and efforts to mitigate it. The role of the energy sector in climate change and the possible contribution of nuclear energy to reducing GHG emissions are discussed in detail. Selected issues pertaining to the challenges	IAEA	This report examines existing needs and challenges for nuclear energy such as radioactive waste, off-site effects and high capital costs, and how these are addressed by innovations by the nuclear industry. It demonstrates that developing accident tolerant fuel and reactors with passive and inherent safety characteristics will further improve	A standard scientific methodology was used. The major observation from the graph is that when a standardized methodology is used, GHG emissions from nuclear energy vary in a very limited range.

Sources	*Types of needs*	*Organization*	*Purpose of the report*	*Methodology*
	and development potential of nuclear energy are also presented.		the protection of NPPs from accident risks in the future. Costs and economic aspects are considered from three angles: comparing plant level generation costs and grid level system costs of various power generation technologies, macroeconomic effects of nuclear power investments and operation, and the emergence of new reactors implying new types of cost models. The report also assesses the impacts and adaptation options in NPPs to gradual climate change and shifting patterns of extreme weather events.	
UNEP– Integrated environmental assessment (IEA) (??)	**Mitigation and Adaptation needs:** The UN Environment methodology for integrated environmental assessments typically assesses five environmental themes: (1) atmosphere; (2) land; (3) water; (4) biodiversity; and (5) chemicals and waste	UNEP	IEA undertakes a critical, objective evaluation and analysis of data and information designed to support decision-making. It applies expert judgment to existing knowledge to provide scientifically credible answers to policy-relevant questions, indicating, where possible, the level of confidence. IEA provides a participatory, structured approach to linking knowledge and action. Over time, The Global Environment Outlook (GEO) process has developed an increasingly integrated approach to environmental assessment and reporting. Additionally, the socio-economic aspects of the environment, listed below, are all included within the scope of these integrated environmental assessments:	GEO-1, GEO-2000 and GEO-3, UNEP's IEA was carried out using the DPSIR (drivers, pressures, state, impacts, response) framework. GEO-4 considers four plausible futures looking out to the year 2050: Markets First, Policy First, Security First and Sustainability First. These scenarios explore how current social, economic and environmental trends may unfold and the implications for the environment and human well-being. The scenarios are defined by different policy approaches and societal choices. In Markets First, the private sector, with active government support, pursues maximum economic growth as the best path to improve the

Sources	*Types of needs*	*Organization*	*Purpose of the report*	*Methodology*
			• the relationship between the environment and human health; • the link between gender and the environment; • environmental governance and regulation; • the use of energy and mineral resources; • public perception of the environment and; • the impact of natural disasters on the human system. The scope of these assessments matches very closely with the environment-relevant statistical priorities set out in the core set of the Framework for the Development of Environment Statistics (FDES 2013)	environment and human well- being. Policy First assumes government, with active private and civic sector support, initiates and implements strong policies to improve the environment and human well-being, while still emphasizing economic development. In Security First, government and the private sector compete for control in efforts to improve, or at least maintain, human well-being for mainly the rich and powerful in society. Sustainability First presumes that government, civil society and the private sector work collaboratively to improve the environment and human well-being, with a strong emphasis on equity.
Framework for the Development of Environment Statistics (FDES 2013) (??)	**Mitigation and Adaptation needs:** The FDES 2013, including the Basic Set of Environment Statistics, was endorsed by UN Member States through the intergovernmental United Nations Statistical Commission in 2013 (United Nations 2013)	U.N Statistical Commission	The Basic Set includes three tiers and covers a broad spectrum of environmental issues that have been agreed to be fundamental for policy analysis and decision-making. The three tiers of the Basic Set are: • Tier 1 (aka. the Core Set of Environment Statistics): 100 statistics of high priority and relevance to most countries and that have a sound methodological foundation. • Tier 2: 200 environment statistics which are of priority and relevance to most countries but require greater	A standardized statistical methodology was used

Sources	*Types of needs*	*Organization*	*Purpose of the report*	*Methodology*
			investment of time, resources or methodological development. • Tier 3: 158 environment statistics which either are of lower priority or require significant methodological Development.	

[a] Available at <https://www.giz.de/fachexpertise/downloads/giz2013-en-climate-finance-readiness-needs-assessment.pdf2>.

[b] Available at <https://www.giz.de/fachexpertise/downloads/giz2013-en-climate-finance-readiness-needs-assessment.pdf>.

[c] Available at <https://www.giz.de/fachexpertise/downloads/giz2013-en-climate-finance-readiness-needs-assessment.pdf>.

[d] Available at <https://www.giz.de/fachexpertise/downloads/giz2013-en-climate-finance-readiness-needs-assessment.pdf>.

[e] Available at <https://www.giz.de/fachexpertise/downloads/giz2013-en-climate-finance-readiness-needs-assessment.pdf>.

[f] Available at <https://www.ifc.org/wps/wcm/connect/70725d70-b14a-4ffd-8360-cb020258d40a/Green+Finance_Bottom+up+approach_ConsultDraft.pdf?MOD=AJPERES>.