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Input of the Subsidiary Body for Scientific and Technological Advice to the COP 25 stock take on pre-2020 implementation and ambition

SBSTA

The SBSTA will continue to play a central role in supporting strengthened implementation of action and support and ambition, in particular through two broad sets of tasks:

(a) Being the interface with the scientific community to help us improve our understanding and knowledge of climate change in the broadest sense – the causes, the impacts, but also our responses to climate change. This task will continue to be vital, helping us to strengthen our ability to understand, unpack and use best available science to strengthen implementation of action and support and to raise ambition. And we should continue to broaden our notion of knowledge as we have by recognising the importance of traditional knowledge in our work with local communities and indigenous peoples;

(b) Providing a forum to develop, to review and to improve the methods and tools available to Parties to help them improve their implementation of mitigation and adaptation actions, dealing with loss and damage, mobilising support and means of implementation, and raising ambition to meet the long-term goals of the Convention and the Paris Agreement. Over time, SBSTA will deliver on existing mandates, as it did by completing many items in Katowice, but SBSTA will also begin to support future processes, including the global stocktake under the Paris Agreement and the review of the long-term global goal under the Convention.

Science

SBSTA is the science-policy interface of the UNFCCC and as such facilitates the injection of latest scientific findings into the process, in close cooperation with the Intergovernmental Panel on Climate Change (IPCC), World Meteorological Organization, Global Climate Observing System, Committee on Earth Observation Satellites and Coordinated Group on Meteorological Satellites Joint Working Group on Climate and other relevant international organizations, to ensure informed decision making, based on the best available scientific knowledge, and provides information and needs from Parties to the scientific community.

Regarding the IPCC, there will be two joint SBSTA-IPCC special events during SBSTA 51 on the Special Report on climate change and land (SRCCL) and on the Special report on ocean and cryosphere in a changing climate (SROCC), published in August and September 2019, respectively.[1]

[1] See SBSTA-IPCC Special event on the IPCC Special Report on Climate Change and Land, 4 Dec 2019, 15:00-18:00 and SBSTA-IPCC Special event on the IPCC Special Report on the Ocean and Cryosphere in a Changing Climate, 5 Dec 2019, 15:00-18:00

Regarding research and systematic observation – the Convention calls on Parties to promote, support, cooperate and strengthen research, systematic observation and the development of data archives, taking into account the needs of developing countries.

At the eleventh meeting of the research dialogue in June 2019,[2] presentations, posters and discussions explored science for transformation: to respond to the urgent need for rapid emission reduction and building resilience through adaptation, finding new ways of working in complex systems, bringing together a range of knowledge, treating scientific and traditional knowledge as equally important, and research support and needs for managing the transition to a sustainable, equitable future.

The first mandated Earth Information Day,[3] will take place during SBSTA 51 and consist of a plenary and poster session.[4] The Earth Information Day will provide updates on 1) the state of the global climate and 2) the state of implementation of Earth observation for region and country support, and needs. It will also discuss 3) Earth observation for science, policy and practice: retooling global cooperation to respond to future climate risk. The SBSTA will consider the discussions at the Earth Information Day as inputs into their negotiations on systematic observation at this session.

Adaptation

The Nairobi work programme (NWP) was established at COP11 (2005) through decision 2/CP.11 to facilitate and catalyze the development, dissemination, and use of knowledge that would inform and support adaptation policies and practices. The NWP strives to assist all Parties, in particular developing countries, including the least developed countries and small island developing states, to improve their understanding and assessment of impacts, vulnerability and adaptation, and to make informed decisions on practical adaptation actions and measures to respond to climate change on a sound, scientific, technical and socioeconomic basis, taking into account current and future climate change and variability. As the UNFCCC's first inclusive stakeholder engagement mechanism, the NWP responds to knowledge needs identified by Parties and those arising from the implementation of the Cancun adaptation framework as well as other relevant workstreams and bodies under the Convention by engaging a growing network of non-Party stakeholders.

The NWP, the UNFCCC's authoritative Knowledge-To-Action Hub for adaptation and resilience, synthesizes the best available information on all aspects of vulnerability and adaptation, disseminates its findings widely and cultivates high-impact partnerships to close critical knowledge gaps and accelerate action around the world. The NWP also provides technical assistance to constituted bodies under the Convention, including the Adaptation Committee (AC) and the Least Developed Countries Expert Group (LEG).

The NWP covers a wide range of working areas and themes, responding to both general and specific knowledge requests from the Parties and constituted bodies under the convention. Knowledge is collected through calls for submissions and focused exchanges with technical experts. Information is refined and disseminated through synthesis reports, technical papers, events such as the annual Focal Point Forum, the online Adaptation knowledge portal, and other digital and in-person platforms. The

[2] https://unfccc.int/topics/science/workstreams/research/research-dialogue/eleventh-meeting-of-the-research-dialogue-science-for-transformation.
[3] FCCC/SBSTA/2019/2, paragraph 58.
[4] https://unfccc.int/topics/science/events-meetings/systematic-observation/earth-information-day-2019.

NWP also collaborates with partners to close knowledge gaps at the national and subregional levels through activities such as the Lima Adaptation Knowledge Initiative.

The technical examination process on adaptation (TEP-A), conducted by the Adaptation Committee and convened jointly by the SBSTA and SBI in line with decision 1/CP.21, supports and strengthens related action on the ground and seeks to identify concrete opportunities for strengthening resilience, reducing vulnerabilities, and increasing the understanding and implementation of adaptation actions. This includes regular in-session thematic technical expert meetings held under the guidance of the SBSTA and SBI Chairs. The TEP-A so far covered the following themes: Opportunities and options for enhancing adaptation actions and supporting their implementation: reducing vulnerability and mainstreaming adaptation (2016); Integrating climate change adaptation with the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction 2015–2030 (2017); Adaptation planning for vulnerable ecosystems, communities and groups (2018); and opportunities and options for adaptation finance, including in relation to the private sector (2019). The SBSTA and SBI are engaged in showcasing climate action by Parties and non-Party stakeholders in this context.

The TEP-A is conducted by the Adaptation Committee, the Convention's principal advisory on adaptation. Besides its work on the TEP-A, the AC has undertaken work in several areas aimed at supporting Parties in planning and implementing adaptation, including work on the monitoring and evaluation of adaptation, including adaptation indicators; on enhancing access to GCF resources for adaptation; on livelihood and economic diversification and on fostering the engagement of the private sector in adaptation. For more details see the AC's separate submission to the pre-2020 stocktake.

Mitigation

Part IV of decision 1/CP.21 resolved to strengthen the technical examination process on mitigation for the period 2016 to 2020 and that it should be organised jointly by SBSTA and SBI. The technical examination process (TEP) explores high-potential policies, practices and technologies that can increase the mitigation ambition of pre-2020 climate action. The SBSTA and the SBI are engaged in showcasing climate action by Parties and non-Party stakeholders in this context, which explores high-potential mitigation policies, practices and technologies with significant sustainable development co-benefits that could increase the mitigation ambition of pre-2020 climate action. The technical examination process includes regular in-session thematic technical expert meetings on mitigation (TEM-Ms) held under the guidance of the SBSTA and SBI Chairs, as well as regional TEM-Ms on complimentary topics that, since 2018, are co-organized by the TEC and the CTCN with the support of the UNFCCC secretariat. For TEP-M, meetings covered diverse topics, listed below by year:

2016:

- The Social and Economic Value of Carbon: Concrete tools based on a reference value of carbon to inform investment decisions, re-evaluate risks and incentivize early action.
- Shifting to More Efficient Public Transport and Increasing Energy Efficiency of Vehicles
- Renewable Energy Supply
- Energy Efficiency in urban environments

2017:

- Cross-cutting issues in Urban Environment and Land Use
- *Regional TEM:* Cross-cutting issues in Urban Environment

2018:

- Implementation of circular economies and industrial waste reuse and prevention solutions
- *Regional TEM:* Energy Efficiency in Industry
- *Regional TEM:* Enabling waste-to-energy, industrial waste reuse and prevention solutions to achieve circular economy and boost climate action
- *Regional TEM:* Enabling waste-to-energy, and circular economy solutions to boost climate action

2019

- Off-grid and decentralized energy solutions for smart energy and water use in the agri-food chain
- *Regional TEM*: Circular economy solutions and innovations in water and energy management for the agri-food chain
- *Regional TEM:* Decentralized solutions for smart energy and water use in the agri-food chain

The meetings respond to the need for Parties and other stakeholders to identify best practice policies and actions, that can allow them to act fast and with a sense of urgency to maintain greater changes to attain to the objective of the Paris Agreement. Following the TEMs, technical papers are published, summarizing information on best practice mitigation policies, practices and technologies that are widely used around the world in the examined thematic areas. The papers reflect proposals from Parties and observers, discussions at the technical expert meetings, and the latest findings published by leading international organizations and partnerships that collaborate with the UNFCCC. These technical papers served as input to the summary for policymakers, prepared in consultation with the High-level Climate Champions, that aimed to provide information on specific policies, practices and best practices. In addition to these papers, the TEMs create awareness of options and opportunities for further action and how such action could be supported.

Enhancing the provision of support

The provision by the global community of financial, technological and capacity building support to developing countries to enable them to accelerate and enhance their national action to adapt to the adverse effects of climate change and reduce greenhouse gases is an important part of strengthening the implementation of the Convention. The SBSTA undertakes work in several areas relevant to the provision of support, such as on transparency of support. By decision 18/CMA.1, the CMA adopted the modalities, procedures and guidelines for the transparency framework for action and support (MPGs). Moreover, by decision 18/CMA.1, paragraph 12(a), the SBSTA was requested to develop common tabular formats for the electronic reporting of the information referred to in chapters V and VI, of the annex,[5] pursuant to MPGs for consideration and adoption by CMA 3.

In several areas, guidance has been developed to assist stronger action on the ground in the context of related agenda items on the SBSTA agenda while making best use of the increasing role of specialized bodies and institutions that have been created in Cancun and Durban and operationalized in

[5] Chapter V of the annex: Information on financial, technology development and transfer and capacity-building support provided and mobilized under Article 9-11 of the Paris Agreement. Chapter VI of the annex: Information on financial, technology development and transfer and capacity-building support needed and received under Article 9-11 of the Paris Agreement

Doha to deal with relevant issues. While the constituted bodies may undertake much of the technical discussions, the SBSTA (in conjunction with the SBI for some issues) continues to contribute to maintaining political momentum and ensuring transparency of decision-making.

Regarding finance – the SBSTA serves as the link between the scientific, technical and technological assessments and the information provided by competent international bodies, and the policy oriented needs of the COP (decision 6/CP.1). COP 17 requested the SBSTA to develop methodologies for reporting financial information which were finalized in 2015.

Regarding technology – development and transfer of technologies to support national action on climate change has been an essential element from the beginning of the UNFCCC process. In 1992, when countries established the Convention, they included specific provisions on technology with the aim of achieving the ultimate objective of the Convention. The Convention notes that all Parties shall promote and cooperate in the development and transfer of technologies that reduce emissions of GHGs. It also urges developed country Parties to take all practicable steps to promote, facilitate and finance the transfer of, or access to, climate technologies to other Parties, particularly to developing countries. Furthermore, the Convention states that the extent to which developing country Parties will effectively implement their commitments will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology.

In 2010, the COP established the Technology Mechanism which aims to enhance the development and transfer of climate technologies to developing countries to support their mitigation and adaptation action. The mechanism comprises two bodies: the Technology Executive Committee, which is the policy arm, and the Climate Technology Centre and Network, which is the implementation arm (see also separate input from the TEC and the CTCN). Understanding our climate technology needs is the starting point for effective action on climate change. By understanding these needs we can determine how to reduce greenhouse gas emissions and adapt to the adverse impacts of climate change. To determine their climate technology priorities, countries undertake technology needs assessments (TNAs). A TNA supports national sustainable development, builds national capacity and facilitates the implementation of prioritized climate technologies. Since 2001, more than 80 developing countries have conducted TNAs to address climate change. More recently, many countries have identified climate technology needs in their nationally determined contributions (NDCs). SBSTA is taking this work forward with the development of a technology framework under the Paris Agreement in line with decision 1/CP.21. For more details on the relevant work of the TEC and CTCN to pre-2020 implementation and ambition, see separate submissions to the pre-2020 stocktake.

Impact of the implementation of response measures

The Convention recognized the need to consider the impact of the implementation of response measures and established a forum on the impact of the implementation of response measures in 2010. In line with decision 8/CP.17, the forum is convened under a joint agenda item by SBSTA and SBI. Eight priority areas were identified for enhancing the knowledge related to response measures. After organising eight workshops along with eight priority areas over the two years period, the Subsidiary Bodies reviewed the work of the forum and established an improved forum on the impact of the implementation of response measures in 2015.

In 2018, The COP, the CMP and the CMA each adopted a decision, 7/COP24, 3/CMP.14 and 7/CMA respectively, that there is a single forum that covers the work of the COP, the CMP and the CMA on all matters related to the impact of the implementation of response measures and which shall report to each of the governing bodies on issues related to its responsibilities. The decisions also established Katowice Committee of Experts on the Impacts of Implementation (KCI) of Response Measures to support the forum in implementation of its work programme.

Under its work programme, since 2015, SBSTA and SBI have delivered:

- A guidance document to assist developing country Parties to assess the impact of the implementation of response measures, including guidance on modelling tools (2016)
- A technical paper to assist developing country Parties in their economic diversification initiatives (2016)
- A technical paper on just transition of the work force and the creation of decent work and quality jobs (2016)
- Workshop on views and experiences including on case studies (2016)
- A report for the ad-hoc technical expert meeting to elaborate on the technical work on the areas of the work programme in the context of sustainable development. (2017)
- A workshop on use of economic modelling tools related to the work programme of the improved forum on the impact of the implementation of response measures (2018)
- A synthesis report on the work of the improved forum on the impact of the implementation of response measures (2018)
- First meeting of the Katowice Committee of Experts on the Impacts of Implementation of Response Measures (2019)
- Draft rules of Procedures for Katowice Committee of Experts on the Impacts of Implementation of Response Measures (2019)

In addition, five workshops were organised in collaboration with other organisations to raise awareness with a view to enhancing capacity building programmes or activities for Parties in order to maximize the positive and minimize the negative impact of response measures (2018-2019).

Relevant information, the submissions by Parties, published technical papers and reports have been made available on the UNFCCC website.

Agriculture

SBSTA has been working for several years on issues related to agriculture, including holding a series of five workshops:

- November 2013: In-session workshop on the current state of scientific knowledge on how to enhance the adaptation of agriculture to climate change impacts while promoting rural development, sustainable development and productivity of agricultural systems and food security in all countries, particularly in developing countries, taking into account the diversity of the agricultural systems and the differences in scale as well as possible adaptation co-benefits;
- June 2015: In-session workshop on the development of early warning systems and contingency plans in relation to extreme weather events and its effects such as desertification, drought, floods, landslides, storm surge, soil erosion, and saline water intrusion;

- June 2015: In-session workshop on the assessment of risk and vulnerability of agricultural systems to different climate change scenarios at regional, national and local levels, including but not limited to pests and diseases;
- May 2016: In-session workshop on the identification of adaptation measures, taking into account the diversity of the agricultural systems, indigenous knowledge systems and the differences in scale as well as possible co-benefits and sharing experiences in research and development and on the ground activities, including socioeconomic, environmental and gender aspects;
- May 2016: In-session workshop on the identification and assessment of agricultural practices and technologies to enhance productivity in a sustainable manner, food security and resilience, considering the differences in agro-ecological zones and farming systems, such as different grassland and cropland practices and systems.

The adoption of the Koronivia joint work on agriculture by decision 4/CP.23 marks a major step forward, requesting the SBSTA and the SBI to jointly address issues related to agriculture, including through workshops and expert meetings, working with constituted bodies under the Convention and taking into consideration the vulnerabilities of agriculture to climate change and approaches to addressing food security. The Koronivia road map was agreed by SBSTA 48 and SBI 48 and provides for a series of six workshops to be held up to November 2020 with a report to COP26 on progress and outcomes of the work, including on potential future topics. So far, the following three workshops have been organized:

- December 2018: Modalities for implementation of the outcomes of the five in-session workshops on issues related to agriculture and other future topics that may arise from this work;
- June 2019: Methods and approaches for assessing adaptation, adaptation co-benefits and resilience;
- June 2019: Improved soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management.

REDD-plus

SBSTA 24 initiated work on developing methodological and policy guidance for the implementation of REDD-plus and completed consideration of these issues at SBSTA 42.

Several milestones have been achieved during this period of negotiations and captured in relevant COP decisions, including setting the framework for REDD-plus implementation (in the Cancun Agreements, COP 16), the Warsaw Framework for REDD-plus (COP 19) providing the set of methodological and financing guidance and methodological guidance for alternative policy approaches, non-carbon benefits and safeguard reporting (COP 21).

With the conclusion of negotiations, developing countries are demonstrating their commitment in implementation of REDD-plus, in accordance with the guidance in the Warsaw Framework. Since 2014, 40 developing countries have submitted their proposed forest reference emission levels/forest reference levels for technical assessments (with several countries submitting more than once), coordinated by the secretariat and undertaken by LULUCF experts nominated to the UNFCCC Roster of Experts. Thus far, 38 technical assessment reports have been published and 7 more are in the process for 2019. 7 of these developing countries have reported their REDD-plus results in a technical

annex to their BURs, with the aim of seeking and obtaining results-based payments. In addition, developing countries are also developing other elements, such as a national strategy, national forest monitoring system, safeguard information system and addressing the drivers of deforestation, as part of their efforts in implementing REDD-plus.

Relevant information, the submissions by Parties and published reports have been made available on the REDD+ web platform, including the Lima Information Hub.

Loss and damage

The Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts, established in 2013, is the main vehicle under the UNFCCC process to address loss and damage associated with impacts of climate change, including extreme weather events and slow onset events, in developing countries that are particularly vulnerable to the adverse effects of climate change. it's the Executive Committee of the mechanism reports annually to Parties through the SBSTA and the SBI. Subsequently, COP 21 adopted the Paris Agreement firmly anchoring the Warsaw International Mechanism in the UNFCCC process.

The functions of the Warsaw International Mechanism are: i) enhancing knowledge and understanding of comprehensive risk management approaches; ii) strengthening dialogue, coordination, coherence and synergies among relevant stakeholders; and iii) enhancing action and support, including finance technology and capacity-building, to address loss and damage associated with the adverse effects of climate change. The implementation of these functions is guided by a workplan of its Executive Committee, which aims for enhanced cooperation and facilitation on: slow onset events, non-economic losses, comprehensive risk management approaches, human mobility, and action and support. Examples of activities undertaken to date range from awareness raising and synthesizing relevant information, e.g. an online database of organizations working on slow onset events, a compendium on comprehensive risk management approaches, and an information paper on best practices, challenges and lessons learned from existing financial instruments at all levels that address the risk of loss and damage associated with the adverse effects of climate change, to the establishment of the Fiji Clearing House for Risk Transfer which, by using artificial intelligence technology, provides tailor-made query responses that aim to foster the efforts of Parties to manage climate risks in a comprehensive manner.

The Task Force on Displacement of the Executive Committee produced in its first phase of work seven technical reports which informed the development of recommendations, last year, for integrated approaches to avert, minimize and address displacement related to the adverse impacts of climate change. The Task Force launched the second phase of its work this fall. The Executive Committee successfully also launched the Technical Expert Group of Comprehensive Risk Management this year, thereby setting the stage for advancing the practical work to support developing countries in averting, minimizing and addressing loss and damage associated with climate change impacts**.**

For more details see the Executive Committee's separate submission to the pre-2020 stocktake.

Local communities and indigenous peoples

The COP recognized the need to strengthen knowledge, technologies, practices and efforts of local communities and indigenous peoples related to addressing and responding to climate change. In this context, the Local Communities and Indigenous Peoples Platform (LCIPP) was established by decision 1/CP.21. COP 23 decided that the LCIPP will perform three functions: knowledge, capacity for engagement, and climate change policies and actions.

COP 24 established the Facilitative Working Group (FWG) of the LCIPP to facilitate the implementation of the functions of the LCIPP. FWG convened its first meeting in June 2019 and proposed a draft initial two-year workplan for implementing the functions of the LCIPP. The draft workplan will be considered by SBSTA51 in Madrid, Spain.

The LCIPP has the potential to become an open and inclusive space for more holistic and ambitious climate action that leaves no one behind. For more details see the LCIPP's separate submission to the pre-2020 stocktake.

Implementation of the Kyoto Protocol

SBSTA developed the detailed guidelines of the application of Articles 5, 7 and 8 under the second commitment period of the Kyoto Protocol which were adopted at COP21. It continues to undertake methodological work on the implementation of the Kyoto Protocol including the examination of the annual report on the technical review of greenhouse gas inventories and other information reported by Parties included in Annex I, as defined in Article 1, paragraph 7, of the Kyoto Protocol.