TEP-M

UNITED NATIONS FRAMEWORK
CONVENTION ON CLIMATE CHANGE

Concept Note

(as of 11 June 2019)

Technical Expert Meetings on Mitigation (TEMs-M) 2019

Off-grid and decentralized energy solutions for smart energy and water use in the agri-food chain

20-21 June 2019

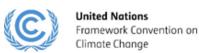World Conference Centre Bonn, Germany

Organized by

Food and Agriculture Organization of the United Nations (FAO), Gesellschaft für Internationale Zusammenarbeit (GIZ), International Renewable Energy Agency (IRENA), Stockholm International Water Institute (SIWI), and UNFCCC secretariat

Background

The technical examination process on mitigation (TEP-M) is a formal process under the United Nations Framework Convention on Climate Change (UNFCCC), which was initiated in 2014 and will run up to 2020.[1] The TEP-M provides a forum for Parties and non-Party stakeholders to explore 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 TEP-M consists of:

- Organizing regular in-session thematic technical expert meetings on mitigation (TEMs-M);
- Updating, on annual basis, a technical paper on the mitigation benefits and co-benefits of policies, practices and actions representing best practice and with the potential to be scalable and replicable;
- Preparing, in consultation with the high-level champions, a summary for policymakers, with information on specific policy options and ways to support their implementation;
- Following up the work on the identified policy options and opportunities.

In 2015 Parties resolved to further strengthen this process through enhanced engagement of Parties, non-Party stakeholders, constituted bodies under the Convention and expert organizations to follow up and implement the scalable and replicable best practices, policies and technologies explored during the process.[2] Furthermore, in 2017 Parties concluded the assessment of the technical examination processes (TEPs), suggesting key ways to improve their effectiveness. They strongly urged to focus on specific policy options and opportunities for enhancing mitigation that are actionable in the short term, including those with sustainable development co-benefits.[3] The high-level champions identified the topics/themes for TEP-M for the period until 2020 within the broader thematic areas of the Marrakech Partnership for Global Climate Action.

Topic for the TEP-M 2019

In line with the proposals by the high-level champions, the topic for the TEP-M 2019 is **"Off-grid and decentralized energy solutions for smart energy and water use in the agri-food chain"**.

The agri-food chain in the 21st century faces multiple challenges. The current world population of 7.6 billion is expected to reach 9.8 billion in 2050.[4] As the global population continues to grow, demand for food is increasing and placing additional pressure on natural resources. Energy and water, among other things, are important inputs to the food production and supply. To date, the various stages of the agri-food chain have been heavily dependent upon fossil fuels, from primary production through to food distribution, processing, and cooking.[5] However, the high financial cost and volatility of fossil

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[1] Decision 1/CP.19, paragraph 5(a) and decision 1/CP.20, paragraph 19.

[2] Decision 1/CP.21, paragraphs 109–113. Available at http://unfccc.int/resource/docs/2015/cop21/eng/10a01.pdf#page=2.

[3] Decision 13/CP.23. Available at http://unfccc.int/resource/docs/2017/cop23/eng/11a02.pdf.

[4] The *World Population Prospects: The 2017 Revision*, published by the UN Department of Economic and Social Affairs

[5] FAO. 2015. Opportunities for Agri-food Chains to Become Energy-smart.

fuels raises concerns about energy security and its potential impact on the sustainability of the agri-food chain in relation to production costs, competitiveness, and food prices for consumers.[6]

Given that food systems are largely reliant upon conventional energy sources and together consume approximately 30% of the world's energy supply, the agriculture sector and its corresponding post-harvest processes also generate 22% of annual global greenhouse gas emissions, contributing to anthropogenic climate change.[5,7] The increasing use of fossil fuel in the agri-food chain leads to increasing greenhouse gas emissions.

At the same time, the agri-food chain is particularly vulnerable to the predicted impacts of climate change. The climate change poses a threat to the health and productivity of crops, livestock, fish and forests, and dependent rural livelihoods. Such threat will be uneven across regions and countries. In low-latitude regions, where most developing and least developed countries are located, agriculture is already being adversely affected by climate change, specifically, by a higher frequency of droughts and floods. For developing countries, climate change could exacerbate the food security challenges they already experience.[8]

Hence, it is expected that energy and water use will also need to increase in coming decades to avert these climate-related challenges whilst simultaneously attempting to increase productivity.[4] This highlights the need to decarbonize energy sources in the agri-food chain and the necessity to transition across to clean, renewable, and energy efficient solutions using a combined water-energy-food nexus approach.[9] This transition makes a valuable contribution towards the UN Sustainable Development Goals, in particularly SDG2 (zero hunger), SDG 7 (affordable and clean energy), SDG 12 (responsible production and consumption), and SDG 13 (climate action).

Objectives of the TEMs-M 2019

- Identify and explore innovative solutions for securing clean energy and water access for the agrifood chain, including related off-grid renewable power systems, storage technology and energy-efficient solutions;

- Explore ways forward and necessary actions to be taken by Parties and non-Party stakeholders to replicate and upscale identified innovative solutions.

Expected outcome

- The ways forward and necessary actions to be taken by Parties and non-Party stakeholders for the successful implementation, replication and upscaling of identified innovative solutions for

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[6] OECD. 2017. Improving Energy Efficiency in the Agro-Food Chain.

[7] FAO & Ciheam. 2016. Chapter 7: Energy and Agri-Food Systems: Production and Consumption.

[8] FAO. 2018. The State of Agricultural Commodity Markets 2018. Agricultural trade, climate change and food security. Rome

[9] IRENA. 2016. Renewable Energy Benefits: Decentralised Solutions in the Agri-Food Chain.

securing clean energy and water access for the agri-food chain are proposed for inclusion in the technical paper and subsequent summary for policy makers.

Target audience

National, state and city-level authorities, the private sector, support agencies, think tanks and civil society organizations as well as experts who are active in the identified topic of the TEMs-M 2019.

Approach

- As decided by Parties, the TEMs-M will be organized as an in-session event during the Bonn Climate Change Conference-June 2019. The setting limits in-person participation for some of the target audience who are not Party or non-Party delegates and not otherwise traveling to attend the Bonn Climate Change Conference. Therefore, the organizers will encourage participation of experts who are not Bonn Climate Change Conference delegates and could dedicate their expertise entirely to the TEMs-M. At the same time, the TEMs-M will adopt web-based solutions (e.g., skype and webcast broadcasting of sessions) to ensure virtual participation and engagement of the relevant audience in the discussion.
- TEMs-M will be organized as a series of thematic sessions spread across two days (20 and 21 June 2019). This will allow participants to schedule the relevant sessions of the TEMs-M into their personal calendars, while still allowing participants to follow the negotiations or participate in other events.
- The individual thematic sessions will adopt a round-table format, following some features of the Talanoa Dialogue, to enhance interaction and engagement. There will be no power point presentations by the experts during the meeting. Rather the TEMs-M session will be structured/designed around some probing questions and focus on "hot" issues and practical ways to address them. However, the experts can prepare and submit their presentation as background information to the organizers for the purpose of uploading on the UNFCCC website.
- Interventions from experts will be balanced in the perspective of developed/emerging/developing economies as well as regional coverage, high-tech/low tech examples and gender.
- The organizers will make relevant information (concept note, agenda, background information including presentations) available on the UNFCCC website well in advance so that participants can come prepared to the TEMs-M.

Lead expert organizations

By decision 13/CP.23, paragraph 7,[10] the COP invited expert organizations to volunteer, through the secretariat, to lead the organization of the TEMs-M. The following expert organizations expressed their interest and have been selected to support the secretariat in designing and executing the TEMs-M:

- Food and Agriculture Organization of the United Nations (FAO)
- Gesellschaft für Internationale Zusammenarbeit (GIZ)

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[10] See footnote 3 above.

- International Renewable Energy Agency (IRENA)
- Stockholm International Water Institute (SIWI)

The lead expert organizations and the secretariat will also engage other expert organizations, who expressed their interest to contribute for the meetings.

The UNFCCC constituted bodies (such as the Technology Executive Committee and the Climate Technology Centre and Network), the operating entities of the Financial Mechanism of the convention(such as Global Environment Facility and Green Climate Fund) and internal organizations will engage in the technical expert meetings and inform participants of their contributions to facilitating progress in the implementation of policies, practices and actions identified during the technical examination process.