



Technology Executive Committee

05 September 2023

Twenty-seventh meeting

19-21 September and 22 September 2023 (TEC-CTCN Joint session)

Progress of work on the Water-Energy-Food Systems: Report of the Thematic Dialogue and initial outline of the related knowledge product

I. Introduction

1. This note provides information on the progress made since the twenty-sixth meeting of Technology Executive Committee (TEC26), on activity C.1.1., Water-Energy-Food Systems, of the TEC rolling workplan for 2023-2027.

A. Background

2. As per activity C.1.1 of the TEC rolling workplan for 2023–2027, the TEC is to organize a thematic dialogue on the water-energy-food nexus in 2023, followed by a related knowledge product and event, to be delivered in 2024.

3. Since the launch of its rolling workplan for 2023–2027, the TEC with support from the secretariat has engaged with FAO, including at COP27, with a view to advancing work under this activity.

4. At TEC26, the TEC agreed to hold the thematic dialogue in collaboration with FAO at the Bonn Climate Conference (SB58) and requested FAO, in collaboration with the activity group, to organize it. Following endorsement of the draft concept note on the joint thematic dialogue at TEC26, FAO and TEC organized the dialogue at SB58.

B. Scope of the note

5. This note includes an event outcome report on the thematic dialogue “Accelerating climate innovation and technology in the water-energy-food systems for inclusive NDC and NAP implementation” held at SB58 and the preliminary outline of the related knowledge product, to be delivered in 2024, as presented in the annexes to this report.

C. Concept and design of the knowledge product

6. The knowledge product will discuss the role of innovation and technologies in Water-Energy-Food (WEF) systems in moving towards the long-term goals of the Paris Agreement, provide information on innovation options that could optimize implementation process of NDCs and NAPs and highlight examples on the sustainable approach to agrifood systems and climate change, understanding the WEF nexus. These examples will include technologies to achieve WEF nexus within the agrifood systems in terms of adaptation and potential for mitigation.

7. The case studies will build on the TEC’s previous work on climate-smart agriculture, analyze knowledge gaps on the WEF nexus and identify how relevant adaptation technologies, including indigenous, innovative and digital technologies (e.g., early warning systems), could strengthen adaptation planning (NAPs) and NDC ambitions in the agriculture sector. The case studies will be included from different regions and across different stakeholders.

D. Possible actions by the Technology Executive Committee

8. The TEC will be invited to consider the outline and provide guidance on further work on this matter to the activity group. Upon feedback and further consultation, an annotated outline with potential case studies will be presented to the TEC activity group for its consideration and endorsement at TEC28.

9. Draft key messages of the knowledge product and a concept note for COP29 event on the findings of the knowledge product will be presented at TEC 29 in 2024, prior to the finalization of the product.

Annex I

Summary of the Thematic Dialogue

1. The thematic dialogue “Accelerating climate innovation and technology in the water-energy-food systems for inclusive NDC and NAP implementation” was organized by the UNFCCC Technology Executive Committee (TEC), in collaboration with Food and Agriculture Organization of the United Nations (FAO), and with contribution from United Nations Industrial Development Organization (UNIDO) on 9 June 2023, at the Bonn Climate Conference (SB58).¹
2. The dialogue was conducted in English, with a live webcast through UNFCCC YouTube channel, with more than 100 participants both in-site and online.
3. Mr. Daniele Violette, Senior Director, UNFCCC, Mr. Stig Svenningsen, TEC Chair, and Mr. Zitouni Ould-Dada, Deputy Director of the Office of Climate Change, Biodiversity and Environment at FAO opened the dialogue. The speakers (7 female, 2 male) in the panel discussions represented a diverse range of perspectives from relevant stakeholders, including youth (YPARD), indigenous peoples (Facilitative Working Group (FWG) of the Local Communities and Indigenous Peoples Platform (LCIPP), farmers, research institutes (GIZ, CGIAR, Delft University of Technology), UN agency (World Food Programme (WFP) Innovation Accelerator), financial institution (Adaptation Fund), and the GEO Global Agriculture Monitoring Initiative.
4. A post event article was made available on the UNFCCC Newsroom.

1. Objectives

5. The event brought relevant stakeholders together to discuss innovative technology practices and solutions related to water-energy-food systems. In particular, the dialogue aimed to:
 - (a) Shed light on relevant adaptation technologies (i.e., indigenous, innovative and digital technologies), with a view to strengthen adaptation planning and NDC ambitions in agrifood systems;
 - (b) Inform the future work of the TEC on the topic, including with regard to scoping possible thematic focus in the development of a knowledge product in 2024.

2. Highlights and key takeaways

6. The opening remarks urged a compelling need for action at a larger scale and at a faster pace to fully embrace the implementation era of the Paris Agreement.
7. A paramount importance of the water-energy-food system in achieving the goals of the Paris Agreement and as well the SDGs was highlighted, noting that innovation and technology-based solutions and in the context of the climate change action and specifically in the implementation of NDCs are crucial.
8. The dialogue also featured insightful interventions from diverse perspectives, with both youth and indigenous leaders making compelling cases for inclusive transformative change. Ms. Glindys Virginia Luciano, Network Engagement Manager at Young Professionals for Agricultural Development (YPARD), and Ms. Grace Balawag, Facilitative Working Group (FWG) of the Local Communities and Indigenous Peoples Platform (LCIPP), UNFCCC highlighted ensuring the inclusion of voices from Youth and Indigenous Peoples.
9. Two panel discussions also provided rich insights from experts. Panellists represented a wide range of stakeholders from academic institutions, international organizations, financial institutions, including L’Institut de la Francophonie pour le développement durable, CGIAR, the GEO Global Agriculture Monitoring Initiative, the WFP Innovation Accelerator, the Adaptation Fund, and the Delft University of Technology.

¹ https://unfccc.int/ttclear/events/2023/2023_event02.

10. The dialogue concluded with an interactive discussion among participants using an online survey tool. Participants exchanged best practices, lessons learned, and technological, social and institutional innovative ideas.

11. The dialogue provided the platform that fostered involvement of policymakers, researchers, and practitioners, which is crucial for accelerating progress in implementing climate-friendly technologies and ramping up climate action.

Annex II

Initial outline of the knowledge product

‘Climate action and agrifood systems: Climate technologies for NDCs and NAPs implementation’

1. Executive summary
 2. Introduction
 3. Sustainable agrifood systems and value chains and technologies
 - (a) Definitions of climate action technologies and innovative solutions including traditional knowledge and low tech
 - (b) Definition of the concept of technology in agrifood systems and value chains
 - (c) Mapping of agrifood value chains and technologies, assessment of needs at farmer level
 - (d) Synergies and trade-offs between resource systems/value chains of food, and water and energy
 4. Technologies and the Water-Energy-Food nexus
 - (a) Technologies to achieve Water-Energy-Food nexus within the agrifood systems in terms of adaptation and mitigation potential
 - (b) Technology sets at agrifood value chain level (production, processing, distribution, and consumption)
 - (c) Capacity needs for technology implementation, including a focus on decent livelihoods for smallholders
 - (d) Institutional needs for technology implementation
 5. Select case studies
 6. Policy gaps and opportunities
 7. Conclusions and key messages
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