



SIDE EVENT



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Office for South-South Cooperation



APCTT
Asian and Pacific Centre
for Transfer of Technology

Digital Innovations for Enhancing Sustainable Local Livelihoods in the Mekong Subregion based on the Water-Energy-Food (WEF) Nexus approach

Wednesday, 24 April 2024

14:45-16:00 hours

Conference Room 4 (Level 1), UN Conference Centre, Bangkok, Thailand

1. Background and Context

The “Water-Energy-Food (WEF) Nexus” concept has emerged as an integrated approach to respond to climate and socio-economic changes in recognition of interdependent natural environment and human livelihoods. First introduced at the World Economic Forum (WEF) in 2011, the approach describes the interlinkages between the three sectors (water, energy and food), with the ultimate goal to identify potential synergies and minimise trade-offs between the three sectors.¹ The modality is intended to facilitate a more balanced process entailing cost effective policymaking, planning, implementation, as well as monitoring and evaluation related to the cross-cutting WEF Nexus, while promoting active multi-stakeholder dialogue and engagement.

Taking note of the adverse impacts of climate change and increasing socio-economic inequalities, investigating the interlinkages of the WEF nexus is vital to identify practical applications for sustainable climate strategies and solutions. The WEF Nexus approach integrates aspects of the hydrological, biological, social and technological spheres to understand the complex interactions between water, energy, and food production, distribution and consumption.²

The UN Secretary-General has underscored the vital role of technology in closing the digital divide and called for concerted actions based on “science, solidarity and smart policies to fight a once-in-a-lifetime pandemic”³ and driven by “science, technology and innovation critical to food security, economic growth and the environment”⁴ to tackle the devastating social, economic and environmental emergencies. The Science, Technology and Innovation (STI) can be harnessed to combat pressing environmental and

¹ Hoff, H., 2011. Background paper for the Bonn 2011 Nexus Conference: The Water, Energy and Food Security Nexus. Stockholm Environment Institute, Stock.

² Climate Technology Centre & Network (CTCN)/UN Environment Programme (UNEP). 2023. [“Water-Energy-Food Nexus: Securing Resources for Sustainable Livelihoods”, Innovation and technology for Systems Transformation.](#)

³ Guterres, António. 2020. [All Hands on Deck to Fight a Once-in-a-Lifetime Pandemic](#). New York: UN, 2020. COVID-19 Response..

⁴ United Nations Department of Economic and Social Affairs (UNDESA). 2022. [UN Ocean Conference opens with call for urgent action to tackle ocean emergency.](#)

development challenges and reduce socio-economic discrepancies. There is also growing research and development (R&D) on practical application of digital innovations in the context of the WEF nexus modality for a holistic approach to achieve the *2030 Agenda for Sustainable Development*. Already many existing and emerging technologies in early warning, irrigation, agro-processing, artificial intelligence (AI), renewable energy and climate-smart solutions have proven to contribute to improving people's livelihood.

In the context of the WEF Nexus, STI and digital innovation serve as catalysts in bringing together multi-stakeholders to collaborate and create synergies in the management of water, energy and food in an efficient and effective manner. The STI component is usually embedded in many WEF Nexus projects at the global, regional and national levels. Some examples are, [SIM4NEXUS](#), [Urban Nexus](#), [Water and Energy for Food \(WE4F\)](#) and [P-LINK](#).

In September 2021, the United Nations Office for South-South Cooperation (UNOSSC), the Republic of Korea (RoK)'s Ministry of Science and ICT (MSIT), and the Mekong River Commission (MRC) launched a project entitled, "Triangular Cooperation on Sustainable Development in the Lower Mekong Basin based on the Water-Energy-Food (WEF) Nexus". The project, also known the "RoK-UNOSSC Facility Phase 3" and P-LINK, is intended to strengthen access to water, food and energy for vulnerable communities living in the Lower Mekong Basin (Cambodia, Lao PDR, Thailand, and Viet Nam) through strengthening development approaches and management in these sectors. It takes integrative and multi-sectoral approaches in the application of highly demanded technologies on water, energy and food to improve the livelihoods of the people based on South-South and triangular cooperation (SS & TrC) modalities.

In this respect, it is timely and important to identify the role of digital innovations in the context of WEF Nexus. Thus, on the sidelines of the eightieth session of the Economic and Social Commission for Asia and the Pacific (ESCAP), the Embassy of the Republic of Korea (ROK) in Thailand, the Science and Technology Policy Institute (STEPI), the United States Agency for International Development (USAID), and the Asian and Pacific Centre for Transfer of Technology (ESCAP/APCTT), and the UN Office for South-South Cooperation (UNOSSC) will co-organise a side event on the "Digital Innovations for Enhancing Sustainable Local Livelihoods in the Mekong Subregion based on the Water-Energy-Food (WEF) Nexus approach". The organisers and partners that have implemented WEF Nexus projects focused on introducing innovative technologies will share knowledge on their experiences.

2. Objectives

The objectives of the event are as follows:

- Facilitate sharing of innovative digital solutions for better access to and management of water, energy and food for vulnerable communities;
- Discuss the critical role of digital innovations as an effective means in the WEF Nexus application in line with the *2030 Agenda for Sustainable Development*;
- Exchange ideas, experiences, good practices and lessons learnt as well as to showcase successes, address challenges, and
- Highlight the value added of South-South and triangular cooperation in knowledge sharing and technical transfer by showing evidence from concrete partnerships and their results.

3. Expected Outcomes

- Networking of like-minded stakeholders to share their work and learn from each other; and
- Increased awareness on the role of digital innovations for sustainable and climate resilient livelihoods.

4. Provisional Agenda

TIME	ITEMS
14:45 – 14:50	<p>Opening Session</p> <p><i>Master of Ceremonies: Ms. Sohyun Kwon, Senior Researcher, Division of Global Innovation Strategy Research, Science and Technology Policy Institute (STEPI)</i></p> <ul style="list-style-type: none"> • Opening Remarks <ul style="list-style-type: none"> - Mr. Hahm Jeong-han, ROK Permanent Representative to ESCAP • Congratulatory Remarks <ul style="list-style-type: none"> - Dr. Steve Olive, Mission Director for USAID/Regional Development Mission for Asia (RDMA)
14:50 – 15:25	<p>Presentations</p> <ul style="list-style-type: none"> • Multilateral Stakeholder Engagement platform for the WEF Nexus <ul style="list-style-type: none"> - Mr. Suriyan Vichitlekarn, Executive Director, Mekong Institute (MI) • WEF Nexus Applications in the Mekong Subregion: Cases of Thailand and Lao PDR <ul style="list-style-type: none"> - Dr. Dong Un Park, Research Fellow, Office of Sustainable Innovation Policy Research, STEPI • WEF Nexus Technology and Innovation Cases from the Water Energy for Food (WE4F) <ul style="list-style-type: none"> - Mr. Rattasiri Wachirapunyanont, South and Southeast Asia, Regional Innovation Hub Manager
15:25 – 15:55	<p>Panel Discussion</p> <p><i>Moderator:</i></p> <ul style="list-style-type: none"> - Dr. Hwanil Park, Chief Director, Division of Global Innovation Strategy Research, STEPI <ul style="list-style-type: none"> • Dr. Bunyod Holmatov, Research Group Leader for Water-Food-Energy NEXUS, International Water Management Institute (IWMI) • Mr. Aaron Brownell, Director, Regional Environmental Office, USAID RDMA • Ms. Yejin Kim, RoK-UNOSSC Facility Phase 3/P-LINK Project Manager, UN Office for South-South Cooperation (UNOSSC) <p>Discussion Topics</p> <ul style="list-style-type: none"> - Role of digital innovations for sustainable development - Success stories and obstacles to overcome in enhancing the application of digital innovations, particularly in Asia-Pacific - Ways to increase collaboration among relevant stakeholders
15:55 – 16:00	<p>Closing Remarks</p> <ul style="list-style-type: none"> • Dr. Hwanil Park, Chief Director, Division of Global Innovation Strategy Research, STEPI