

MINUTES OF THE FIRST VIRTUAL MEETING OF THE WORKING GROUP ON WATER FOOD ENERGY NEXUS (WG-WFE-N)

Date: 03 June 2021; Time: 15:30 Hours (Indian Standard Time)

Item 1: Welcoming words by the Chairman

Dr Ragab, the Chairman (WG-WFE-N) and also the President of ICID has extended warm welcome to all the members present in the first virtual meeting of Working Group on Water Food Energy Nexus (WG-WFE-N). He wished all to be safe from COVID 19 epidemic.

Item 2: Introduction by each participant (2-3minutes each)

The members present in the meeting introduced about their background and professional experiences for the benefit of other participants. (1) President Dr. Ragab Ragab, Chairman (UK); (2) Secretary VPH Dr. K. Yella Reddy (India); (3) Vice President Dr. Marco Arcieri (Italy); (4) Dr. P. Soman, Member; (5) Dr. Chung-Feng, Ding (Chinese Taipei Committee); (6) Prof. Dr. Zeinab Hussien Behairy (Egypt); (7) Dr. Noppadon Kowsuvon (Thailand); (8) Mr. Chaisri Suksaroj (Thailand); (9) Prof. Cheh-Shy Ting (Chinese Taipei Committee); (10) Dr. Peng-Jui Wang (Chinese Taipei Committee); (11) Mr. Carl Walters (Australia); (12) Mr. John William O'Connor (Australia); and (13) Er. B.A. Chivate, Director (Technical), ICID CO Representative.

Item 3: Actions from the Previous WG Water & crops (Minutes attached)

The Chairman has briefed about the activities and contributions of erstwhile Working Group 'Water & Crop'. Members of WG on Water and Crops are requested to send reports on action on minutes of meeting so as to finalize output of actions and publish it. ICID Central Office shall also send reminders to those members with whom action reports are pending. The following reports are waited for bringing out a publication as an output of the Working Group:

- (a) Efficient Use of Water in Crop Production, Dr Marco Arcieri (Italy)
- (b) Water use for paddy cultivation in India, Dr K Yella Reddy (India)

Item 4: Introduction by the Chairman and discussing the Scoping Document (attached) in terms of the mandate of the WG activities and the work plan.

The Chairman has briefed about the importance of 'Water Food Energy Nexus' and informed that PCTA has approved the Scoping document developed. Hence, WG on Nexus has been established and focus has now changed from 'More Crop Per Drop' to 'More Crop Per Drop per kilowatt of Energy per unit area'. With the holistic approach of Water-Food-Energy Nexus, which is scale dependent at regional, national, trans-boundary levels, should be able to meet the global demand of 40% increase in Energy and 70% increase in Food by 2050. The aims of Working Group are:

- (a) to develop approaches by which we can advise on "how to produce more crop per drop per kilowatt energy and per unit area of land",
- (b) to promote the efficient use of water in crop production,
- (c) to provide models and input to test crop-water-energy models,
- (d) to develop techniques to balance water supply against water demand,
- (e) to promote the multifunctional use of water especially in paddy (rice) cultivation,
- (f) to investigate the adaptation of agriculture to climate change and to promote low input agriculture.
- (g) to contribute to effective implementation of the ICID vision 2030.

The following activities are important: interaction among different elements of nexus, improving irrigation water use efficiency and water productivity in line with development goals approaches meeting irrigation water requirement, improving current level of estimating water requirement, improving water harvesting methods, promoting non-conventional renewable energy resources for crops, mobile applications as tool for water management etc.

Item 5: Discussion

The following points have emerged during the discussion:

- (a) There shall be some common framework for energy calculations in nexus approach. In a recent workshop organized by FAO, where the WEAP ("Water Evaluation and Planning" system) developed at Stockholm's Institute, USA has been linked to energy model to simulate the NEXUS for Jordanian Site.

- (b) Nexus approach shall be the part of ICID vision for food safety. An effort has been made at ICRISAT, India to quantify the energy consumed as a part of nexus approach calculations based on number of pumping hours in farmers' fields. Further, efforts are being made to study with nexus approach for trans basin water transfer through pumping system in Andhra Pradesh.
- (c) Studies on the impact of climate change on use of non-conventional energy resources, total amount of water used, number of drought events, number of irrigations may be included.
- (d) When working with stakeholders at field level, non-technical documents shall be prepared and for technical personnel technical reports shall be prepared on nexus.
- (e) Energy used for desalination of brackish water due to sea water intrusion, reuse of waste water shall be included in the activity of WG.

Item 6: Actions and assigning activities to WG members based on the scoping document.

- (a) Members shall present their country's experience in water-food-energy nexus during next WG meeting.
- (b) Certain group members have been voluntarily agreed to present on certain topics viz., desalination experiences and micro irrigation is approved.
- (c) Members who have worked on nexus (research experiment/model), shall be provided with a slot for their presentation in next meeting.
- (d) State of art of model applications especially with nexus approach (WEAP/LEAP) models related to water-crop and other model on energy which are linked together has been used by FAO in Jordan, or similar work done at China, Australia, Taiwan and results can be presented which shall be the output of the working group.
- (e) Members carrying out projects related to water saving production technologies, improving water use efficiency, water productivity with relevance to energy nexus are requested to prepare a technical report which can be as an outcome of the group.
- (f) Members who have developed code of practice for nexus or methodology for computing interrelation among water-food-energy nexus may be released as technical bulletin for ICID
- (g) The members are requested to identify themselves with the activities of WG listed and communicate their preferred choices to the Chairman with a copy to Central Office for allocation for accomplishing the desired outputs.

Item 7: ICID upcoming events

The Chairman has briefed about the upcoming ICID events i.e. (i) 72nd IEC & 5th AfRC in Marrakesh, Morocco (November, 2021), 73rd IEC & 24th ICID Congress in Adelaide, South Australia (October 2022), 10th International Micro Irrigation Conference in Agadir, Morocco (September 2022), 74th IEC & 4th WIF in Beijing, China (April 2023), 75th IEC & 25th ICID Congress in Visakhapatnam, Andhra Pradesh, India (November 2023), 76th IEC & 9th ARC in Sydney, Australia (May 2024) & 77th IEC & 5th WIF in Kuala Lumpur, Malaysia (May 2025) and informed the members to take active participation and contribute for the WG activities.

Item 8: Date for next meeting

Next Virtual meeting is tentatively fixed for the first week of September 2021 and the Central Office will finalize the exact date and make communication

Item 9: Any other business

- (a) Members are kindly requested to select the area of interest as shown in the 3 years plan of the scoping document for their contribution within one week.
- (b) Scoping documents shall be sent to all the Members. They are requested to send their comments and suggestions for modification in scoping document.
- (c) The Chairman has appreciated the efforts of the Central Office for their effort in organizing the Virtual meeting and thanked all the participants for their time and active participation.

