

**MINUTES OF THE 1<sup>ST</sup> VIRTUAL MEETING OF THE  
WORKING GROUP ON WATER FOOD ENERGY NEXUS (WG-WFE\_N)  
26 April 2023, 12:30 Hours (Indian Standard Time)**

**Strategy Theme: Basin  
Presented by the Chairman**

**Year of Establishment: 2021**

**Completion of the Mandate: 2027**

**New mandate of the WG:**

- (a) to exchange information, knowledge, and experience, as well as networking on the Water-Food-Energy Nexus topic in order to be up to date with new developments, methods and approaches. This can be the basis for a possible position paper on key issues on the nexus.
- (b) to prepare an overview document on the state of the art on improving water use efficiency and productivity within the nexus.
- (c) to produce a document of impact of climate change and possible use of non-conventional less water consuming crops
- (d) to prepare an overview document on the state of the art on model applications as useful management tools for water, crops, field and energy management within the nexus
- (e) to prepare and present reports on case studies on recent developments in the countries that are represented in the WG; and from presented cases of the workshops
- (f) to organize international workshops, seminars or symposia on the Nexus topic.
- (g) to implement ICID 2030 vision

**Members Present :** (1) Dr. Ragab Ragab (UK), President, ICID & Chairman; (2) VPH Dr. K. Yella Reddy (India), Vice-Chairman; (3) Dr. Mahdi Sarai Tabrizi (Iran), Secretary; (4) VPH Dr. Marco Arcieri (Italy); (5) Dr. Chung-Feng, Ding (Chinese Taipei Committee); (6) Prof. Dr. Zeinab Hussien Behairy (Egypt); (7) Mr. Chaisri Suksaroj (Thailand); (8) Dr. Peng-Jui Wang (Chinese Taipei Committee); (9) Mr. John William O'Connor (Australia); (10) Dr. Vishnu Prasad Pandey (Nepal); (11) Dr. Deepak Khare (India); (12) Mrs. Narges Zorhabi (Iran) represented by Dr. Behzad Navidi Nassai, Executive Secretary of IRPID-IRN; (13) Mr. Lu Hui (China); (14) Mr. Yukiya Saika (Japan); (15) Mr. LIU Dongzhe (China); (16) Prof. Dr. S. Vishnu Vardhan (India); (17) Engr. Muhammed Imran Kulat (Turkey); (18) Dr. Mesut Kocak (Turkey); and (19) Er. B.A. Chivate, Director (Technical), ICID Central Office.

**Web-page:** [https://icid-ciid.org/inner\\_page/147](https://icid-ciid.org/inner_page/147)

**WG-WFE-N Minutes Item 1: Action Taken Report by Chair**

1. A brief introduction was given by Dr. Ragab Ragab, President, ICID and Chairman of the WG, and he expressed his excitement about the upcoming meeting of the colleagues at the India conference in a few months. In the following, the approvals and decisions of the meeting have been provided.

**WG-WFE-N Minutes Item 2: Review of the membership of the WG-WFE\_N**

1. Next, all three candidates submitted by the Turkish National Committee of ICID (TUCID) were reviewed. The first person is Dr. Mesut Kocak, who briefly discussed his qualifications, and the group approved him as a provisional member subject to his presence otherwise. The other two persons Engr. Mustafa Demir and Muhammed Imran Kulat who were not available online, their resumes were reviewed in the meeting, and provisionally accepted. The third person somehow had a very relevant resume and was very close to the working group's plans and goals from the president's point of view. It should be noted that their acceptance will be discussed during the 74<sup>th</sup> IEC meeting to be held in November 2023 at Vishakhapatnam, Andhra Pradesh, India. The updated membership of the WG is given as **Annex 1**.

**WG-WFE-N Minutes Item 3: Three-year rolling plan based on the scoping document for a new WG-WFE\_N**

2. Previously, the Working Group requested members to select an area of interest as outlined in the 3-year rolling plan based on the Scoping Document for a new Nexus Working Group. As result, a brief overview of the WG's activities was presented by the chair, along with details regarding the preparation of a three-year rolling plan for 2021-2023, as well as thanking members for volunteering to participate in various activities. The updated activity table on 3-year rolling plan of the WG is given as **Annex 2**. ICID Central Office has requested the members who have not shared their name for taking the responsibility of 3-year rolling plan of the WG as contribution.

**WG-WEF-N Minutes Item 4: Road Map to ICID Vision 2030: Activities on Water-Food-Energy-Nexus**

3. The working group will review the activities such as Goals/Strategies, Actions, Outcomes/Outputs, Milestones and assigning Lead Persons as part of Road Map to ICID Vision 2030 and update it. The updated status of the progress on Road Map to ICID Vision 2030 of the WG was presented by the Chair as **Annex-3**.

**WG-WEF-N Minutes Item 5: Multi-functionality of water use in paddy (Rice) cultivation**

4. WG decided to bring out a 'Technical Report' based on papers contributed by its members in areas such as – (i) efficient use of water in crop production; (ii) crop water models; (iii) multifunctional water use in paddy; and (iv) rain water harvesting and energy crops. Further, it was noted that the report would be a consolidation of contributions and collection of information from members on these topics under the mandate of the group. NCs of China, Indonesia, Philippines and Italy have already made their papers for the 'Technical Report' of the group. While Prof. Zeinab Hussein Behairy (Egypt); Dr. P. Soman (India), and Ir. Felipe Dantas (Australia) members of the WG have also shared their papers titled 'Rice Story in Egypt', 'Drip irrigation and fertigation technology for rice production leading to higher water productivity' and 'Australian Rice Market' as contribution based on the experience as 'multi-functionality of water use in paddy rice cultivation' for inclusion in the Technical Report of the WG.

5. In addition, VPH Dr. Reddy, Vice-Chair of the WG has already shared the draft report on 'Water Use in Paddy Rice Cultivation in India' to the Chair and a copy to ICID Central Office. In addition, VPH Dr. Marco Arcieri has been informed that his report is nearing completion and will be submitted by the end of May 2023 (submitted recently).

6. Chair informed that he will forward all the reports after proper editing to the Central Office for bring out a comprehensive report, useful to the member countries.

**WG-WEF-N Minutes Item 6: Updating Multilingual Technical Dictionary (MTD)**

7. During the Adelaide meeting, Chair informed the importance of the Multilingual Technical Dictionary (MTD) and efforts were made. The new terminology like Nexus and related terms shall be included in the MTD for the members benefit for better understanding the concepts. It was noted that Mrs. Narges Zohrabi (Iran) member of the WG, took the responsibility as Coordinator of the MTD of the WG and agreed to coordinate with all members and update MTD with new addition. Regarding the multilingual dictionary, since Mrs. Narges Zohrabi did not have the title of coordinator and person in charge, the president himself provided explanations. In the following, it was decided that if possible, one of Mrs. Zohrabi's colleagues (Dr. Behzad Navidi Nassai) who attended the virtual meeting would talk about the progress of the work, although it seems that the follow-up and mechanism of compilation of this collection has been started by Mrs. Zohrabi.

**WG-WEF-N Minutes Item 7: International Workshop on 'The Water-Energy-Food-Nexus: Implementation and Examples of Application'**

8. In response, 23 abstracts have been received from the authors for the WG workshop by the end of May 30, 2023. The Chair reported that the evaluation process will select the relevant submissions and authors will be invited to write full papers by July 30. The workshop will take place in the next ICID Vizag, India in November 2023.

**WG-WEF-N Minutes Item 8: Publications of the Working Group**

9. Considering the publication of the WG, the Chair discussed the Adelaide meeting's 3-year rolling plan activity-wise for the group. It was noted that the type of output (Document/Report) possible, contributors, and completion dates. Accordingly, the Chair has requested that all contributors work systematically to reach the milestones as per the approved plan.

10. Further, Chair also informed that the papers presented in the last year international workshops were reviewed by him thoroughly and are 'Oven Ready' for submitting to any journal for publication.

**WG-WEF-N Minutes Item 9: Exchange of information, knowledge & networking –website**

**WG-WEF-N Minutes Item 9.1: Website of the group**

11. Members were encouraged to participate actively in the group's activities and to exchange information, knowledge, and experience, as well as to network to stay abreast of new developments. Members are also asked to submit papers and presentations related to the WG's scope of work to the ICID Central Office for uploading to the WG's website.

12. To ensure the regular contribution of the members, WG is encouraged to make full use of Zoom platform for virtual meetings in between face to face meeting during IEC.

**WG-WFE-N Minutes Item 9.2: Webinar / Web-based Seminar**

13. WG supported the suggestions of organizing webinars to promote sharing of vast experience available with ICID fraternity. The ICID CO requested members to provide their suggestions on the topics, based on the mandate of the WG, on which webinar can be considered along with name of the relevant experts who could be contacted to develop webinars.

14. The technical working groups of ICID have organized several webinars based on the mandate of the group which are available at [https://icid-ciid.org/inner\\_page/66](https://icid-ciid.org/inner_page/66). The group may discuss and suggest suitable topics along with names of expert for organizing webinars.

15. As per the mandate of the WG, it was decided to organize one Webinar on 'Application of Models in WEF-Nexus', preferably in the month of August 2023. The experts from IIT, Kharagpur, India and South Africa and Australia would be involved in the Webinar.

**WG-WFE-N Minutes Item 10: Any other business**

16. ICID Members' Profile Section:

17. **ICID Members' Profile Section:** ICID has launched a new website (<https://icid-ciid.org>) as part of its 70th Anniversary Celebration. As a result, the newly added web features provides WG members access to their profile section using their dedicated account. ICID CO vide email dated 9 July 2021 <<https://icid.bmeurl.co/C7D4D2E>> informed all members on how to access their account and change their password to maintain accuracy. To maintain accurate information, members are requested to review and update their information using their credentials.

18. Members were invited to update their profile information in the ICID Members' Profile Section.

19. **Register on World Irrigation Projects (WIP):** ICID was taken an initiative to document the development of irrigation projects in the world by establishing an online Register on "World Irrigation Projects (WIP)". WIP will fulfill the need for a much-awaited global repository of information in systematic irrigation and agricultural water management. Irrigation projects having 5000 Hectares and above of Gross Command Area can submit their information for inclusion in the register. The irrigation projects approved by National Committee/ ICID Central Office for inclusion are entitled to Certification. Members are also requested to encourage all irrigation project owners, managers, and researchers across the world and especially in our member countries for contributing to the register. This facility is also extended to non-member countries if the information is received from an authorized agency. The review process and other details are outlined on the portal < <https://wip.icidevents.org/> > in detail.

20. During the Adelaide meeting, the WG members are encouraged to share appropriate data in the context of 'Register on World Irrigation and Drainage Schemes (WI&DS).



No.	Members	Country	Member from (Year)	Remarks
1.	President Dr. Ragab Ragab,	UK	2007	<b>Chairman</b>
2.	VPH Dr. K. Yella Reddy	India	2009	<b>Vice Chairman</b>
3.	Dr. Mahdi Sarai Tabrizi	<u>Iran</u>	2021	<b>Secretary</b>
4.	VPH Dr. Marco Arcieri	Italy	2014	Secretary
5.	Ir. Adang Saf Ahmad	Indonesia	2015	Member
6.	Dr. P. Soman (Direct Member), JISL	<u>India</u>	2015	Member
7.	Prof. Won-Ho-Nam	<u>Korea</u>	2017	Member
8.	Prof. Dr. Zeinab Hussien Behairy	<u>Egypt</u>	2018	Member
9.	Mr. Felipe Dantas	<u>Australia</u>	2019	Member
10.	Dr. Noppadon Kowsuvon	<u>Thailand</u>	2021	Member
11.	Mr. Watchara Suiadee	<u>Thailand</u>	2021	Member
12.	Mr. Lu Hui	<u>China</u>	2021	Member
13.	Mr. Yukiya Saika	<u>Japan</u>	2021	Member
14.	Dr. Chung-Feng, Ding	<u>Chinese Taipei Committee</u>	2018	Provisional Member
15.	Prof. Dr. Zeinab Hussien Behairy	<u>Egypt</u>	2018	Provisional Member
16.	Eng. Karshiyev Rustum Jurayevih	<u>Uzbekistan</u>	2019	Provisional Member
17.	Mr. Chaisri Suksaroj	Thailand	2021	Provisional Member
18.	Prof. Cheh-Shy Ting	Chinese Taipei Committee	2021	Provisional Member
19.	Dr. Peng-Jui Wang	<u>Chinese Taipei Committee</u>	2021	Provisional Member
20.	Mr. Carl Walters	<u>Australia</u>	2021	Provisional Member
21.	Mr. John William O'Connor	<u>Australia</u>	2021	Provisional Member
22.	Dr. Vishnu Prasad Pandey	<u>Nepal</u>	2021	Provisional Member
23.	Dr. Deepak Khare	<u>India</u>	2021	Provisional Member
24.	Dr. Man Singh	<u>India</u>	2021	Provisional Member
25.	Mrs. Narges Zohari	Iran	2021	Provisional Member
26.	Dr. Junzeng Xu	<u>China</u>	2021	Provisional Member
27.	Mr. Liangsheng Shi (YP)	<u>China</u>	2021	Provisional Member
28.	Prof. Dr. Piyatida Ruangrassamee	<u>Thailand</u>	2021	Provisional Member
29.	Prof. Dr. S. Vishnuvardhan	<u>India</u>	2021	Provisional Member
30.	Ir. LIU Dongzhe	<u>China</u>	2022	Provisional Member
31.	Dr. Amani Alfarrar	<u>Canada</u>	2022	Provisional Member
32.	Mr. Abbas Fadhel	<u>Iraq</u>	2022	Provisional Member
33.	Mr. Basim Tuama	<u>Iraq</u>	2022	Provisional Member
<b>New nominations received from NC</b>				
34.	Engr. Mustafa Demir	<u>Turkey</u>	2023	Recommended as member, subject to his/her presence else provisional member
35.	Engr. MUHAMMED İMRAN KULAT	<u>Turkey</u>	2023	Recommended as member, subject to his/her presence else provisional member
36.	Dr. Mesut Kocak	<u>Turkey</u>	2023	Recommended as member, subject to his/her presence else provisional member

## THREE YEAR ROLLING PLAN OF THE WG

No.	Activity	Contributors	Output type	Completion date (approx.) mm / yyyy	Remarks
01.	To prepare an overview document on the state of the art on improving water use efficiency and productivity within the nexus	Zeinab Behairy John O'Connor Ragab Man Singh Mahdi Sarai Tabrizi	Document / Report	09/2023	Dr. Vishnu can help with some of the review work together with other colleagues who will be associated with this activity
02.	To produce a document of impact of climate change and possible use of non-conventional less water consuming crops	Ragab Hui LU Marco Arcieri	Document / Report	11/2023	Dr. Ragab
03.	To prepare an overview document on the state of the art on model applications as useful management tools for water, crops, field and energy management within the nexus	John O'Connor Ragab Man Singh Liangsheng Shi Mahdi Sarai Tabrizi Marco Arcieri	Document / Report	10/2023	To prepare an overview document on the state of the art on agricultural intelligence and mobile APP for water, crops and field
04.	To prepare and present reports on case studies on recent developments in the countries that are represented in the WG; and from presented cases of the workshops	Yella Reddy Chung-Feng Ding Peng-Jui Wang Zeinab Behairy Carl Walters (and colleagues) Won-Ho Nam Peng-Jui Wang Mahdi Sarai Tabrizi India: Yella Reddy, Man Singh S. Africa: Sylvester, Sue Walker	Document / Report	10/2023	Carl - Will be pursuing the App Development to support energy, water use decisions and look forward to arranging the presentation and reporting on this at the Workshop with my colleagues
05.	To organize international workshops, seminars or symposia on the Nexus topic. Adelaide, Australia	Ragab & All Carl Walters	Proceedings	October 2022	Carl - Happy to arrange and ensure we have a workshop on this topic in Adelaide, I will be on organizing committee for the Congress.  Dr. Vishnu can help to design the program in consultation with the team
06.	Internal Presentations: WG meeting, Marrakesh, Morocco  CWR assessment in southern Italy	Chung-Feng Ding Peng-Jui Wang Man Singh P. Soman	PPT presentations	November 2021	Part of the workshop 2023  Vizag 2023
07.	International Workshop Presentation Adelaide, Australia	Chung-Feng Ding Peng-Jui Wang Man Singh Won-Ho Nam Peng-Jui Wang P. Soman Hui LU	PPT & Proceedings	October 2022	Completed
08.	WG output publication close to the end of its mandate. Compilation of the different outputs presented in the above activities.	Ragab & ALL	ICID Book	Continuous until December 2026	Draft at earlier date



## ROAD MAP TO ICID VISION 2030 – ACTIVITIES OF NEW WG-WEF-N

Goals/ Strategies	Activities	Outcomes/ Outputs	Milestone for Year 2018	Milestone for Year 2019	Milestone for Year 2020	Milestone for Year 2021	Milestone for Year 2022	Milestone for Year 2023	Resolution Lead Person
<b>Strategy 5:</b> Supporting water productivity enhancement	5.3 Develop guidelines on efficient use of water in crop production	Guidelines	Outline of guidelines – introduction	Release the first draft guidelines	Finalise the draft guidelines and publish	Tbc next meeting	Tbc next meeting	Tbc next meeting	Merge Item 5 and B1. Dr Marco Arcieri (Italy)+Grazia no
<b>Strategy B1:</b> Supporting Development of Appropriate Policies	1.13 Technical Report on Efficient Use of Water in Crop Production	Report	Prepare the first draft report for discussion	Release the second draft report	Finalise the draft report and publish	Tbc next meeting	Tbc next meeting	Tbc next meeting	Dr Marco Arcieri (Italy) +Graziano
<b>Strategy C3:</b> Promoting Regional Cooperation	3.2 International Workshop/se minar on 'Improving Water Productivity in the frame work of Water Energy Food Nexus'	Workshop proceedings	Announcement of workshop	Orgnaising Workshop in Canada	Publication of papers in the Special Issue of the Journal	Tbc next meeting	Tbc next meeting	Tbc next meeting	VPH Laurie C Tollefson (Canada)+RR
<b>Strategy D2:</b> Developing Technical Documents in Non-technical Language	2.2 Crop – Water-Energy Nexus	Technical Report		Workshop	Workshop	Tbc next meeting	Tbc next meeting	Tbc next meeting	Dr K Y Reddy (India)
<b>Strategy E2:</b> Strengthening Extension Services with AWM information						Tbc next meeting	Tbc next meeting	Tbc next meeting	Dr Nader Heydari (Iran) (It was decided to talk to Dr. Nader Heydari.)
<b>Strategy E3:</b> Developing and Promoting Tools of AWM	3.1 Support research and development of modelling tools	Development of suitable Models, Sensors, Tools for field use	Prepare action plan	Draft report on various developments	Consolidation and final report	Tbc next meeting	Tbc next meeting	Tbc next meeting	Dr Ragab Ragab+ Yella Reddy
<b>Strategy F3:</b> Technical Training of Young Professionals from Member countries	3.9 Training on Crop Water Models CROPWAT	Conduct Training workshops		Training workshops		Tbc next meeting	Tbc next meeting	11/2023 Vizag	VPH Marco

\* Papers presented for international workshop on Water- Food -Energy-nexus: implementations and Examples of Application 24<sup>th</sup> International Congress on Irrigation and Drainage 3-10 October 2022, Adelaide, Australia, The International Commission on Irrigation and Drainage (ICID).

[https://icid-icid.org/icid\\_data\\_web/workshop\\_WFEN2020.pdf](https://icid-icid.org/icid_data_web/workshop_WFEN2020.pdf)

\*\* Ragab. R. 2020. A special issue combines 17 research papers on SALTMED Model.

"SALTMED Publications in irrigation and Drainage. Virtual Issues First published: 20

May 2020 Last updated: 20 May 2020. Willey on line Library."

[https://onlinelibrary.wiley.com/doi/toc/10.1002/\(ISSN\)/1531-0361.saltmed-publications](https://onlinelibrary.wiley.com/doi/toc/10.1002/(ISSN)/1531-0361.saltmed-publications)



**INTERNATIONAL COMMISSION ON IRRIGATION AND DRAINAGE**  
**Summary of Abstracts received for**  
**INTERNATIONAL WORKSHOP ON**  
**‘THE WATER-ENERGY-FOOD-NEXUS: IMPLEMENTATION AND EXAMPLES OF APPLICATION’**

**03 November 2023: 09:30-11:00 and 11:30 to 13:00 hours**  
**at Vishakhapatnam (Vizag.), Andhra Pradesh, India**

Sl. No.	Title of the Abstracts	Author	Country	Accepted / Rejected
1.	Coupling and Coordination Assessment of Water, Energy, and Food Nexus in India – a Spatial Scale Analysis	Krishna Mondal et al	India	?
2.	Water, Energy and Co2 emission nexus for Food Crops under different well irrigation systems in Peninsular India	Konda Sreenivas Reddy et al	India	?
3.	Improving the water energy food nexus through a combination of solar - powered micro - irrigation and innovative soil moisture monitoring	Isaac R. Fandika et al	Malawi (Full paper received)	?
4.	Enhancing Climate Change Resilience and Adaptation Through Integrated Nexus Approaches	Luxon Nhamo et al	South Africa	?
5.	Transitional pathways towards sustainable food systems through nexus planning	Luxon Nhamo et al	South Africa	?
6.	Food Security Status and Income Generation: A Case Study of the Agri-silviculture Community Growers in the Mopani District, Limpopo Province in South Africa	Maponya P. Nkuna T et al	South Africa	?
7.	Improving Model Accuracy	John O' Connor and Carl Waters	Australia	?
8.	Development and Application of Sustainable Resources Management Platform using Water-Energy-Food Nexus in South Korea	Pu Reun, Yoon et al	Korea	?
9.	Energy optimization in a solar still using artificial intelligence: monitoring of internal and external parameters	Souad Nasrdine	???	?
10.	Estimation of Sorghum yield using Biomass Productivity and Water Uses by using ICT in Gash spate Irrigated Agriculture - Sudan	Nagla Barakat Abdallah Mohammed	Sudan (Full paper received)	?
11.	On-farm Water-Energy-Food-Ecology Index for Quantitative Assessment of Integrated Resources Management for Wheat farming in Egypt	Mohie El Din Omar and Vinay Nangia	Egypt	?
12.	Assessment of Solar Powered Irrigation Systems in the West Bank-Palestine	Ibtesam Abu Alhaja	Palestine	?
13.	Wabi-Shebele River Basin and its Agricultural Water Demand at Ethiopia and Somalia	Engr. Tegomejch Daniel	Ethiopia	?
14.	Status of implementation of the water-energy-food (WEF) nexus approach in Southern Africa: using a case study approach in South Africa and Zimbabwe	Cuthbert Taguta et al	Zimbabwe	?
15.	Exploring the governance of the Nexus Water-Energy-Food : a case study from Morocco	Domitille Valle	FAORNE	?
16.	Water-Energy-Food Nexus approach for sustainable water resources management in India	Chaitanya K S et al	Pune, India	?
17.	Importance of Reuse of Treated Wastewater (TWW) in Water-Energy-Food Nexus in India	Avinash Mishra and Arunlal K	India	?
18.	Climate Change, Water and Food Security and Environment Pollution Research	Ramesh Kanwar	India	?
19.	The Impact of Agricultural Extension Parameters on Irrigation Networks Management and Utility Using Nexus Approach (Case study: Qazvin Irrigation Network)"	Mohammad Javad Monem et al	Iran	?
20.	What are the key challenges of irrigation management in Nepal?	Santosh Nepal et al	Nepal	?

