

APPENDIX XXV [PCTA Item 10, Para 38]

**AGENDA FOR THE INFORMAL MEETING OF THE
WORKING GROUP ON USE OF NON-CONVENTIONAL WATER
RESOURCES FOR IRRIGATION (WG-NCWRI)**

14 August 2018, 13.30-15.00 hours
Saskatoon, Saskatchewan, Canada

Strategy Theme: On-Farm

Presented by the Chair

Mandate (New): Please see under Item 1 below.

WG-NCWRI Agenda Item 1: Introduction of the new Working Group by the Chair¹

1. During 37th meeting of Permanent Committee for Technical Activities (PCTA) held at Mexico City in October 2017, the Committee noted that the Working Group on Use of Poor Quality Water for Irrigation (WG-PQW) has completed its mandate thereby concluding its activities. VPH Dr. Ragab (UK), in absence of regular Chair, presented the Scoping Document for the new Working Group on “Use of Non-Conventional Water Resources for Irrigation”, erstwhile WG-PQW. PCTA in its meeting recommended that a new WG can be approved subject to interest of at least 10 NCs to participate in the activities of the new WG and WG Chair may present the scoping document (**Annex 1**) with the revised mandate of the WG and interest of NCs, for PCTA/IEC approval during Canada meeting. The mandate of the new working group as included in the Scoping Document of the WG is as follows:

New mandate of the WG:

- (a) Exchanging knowledge, experience and data as well as networking on the topic in order to be up- to- date with new developments, methods and approaches.
- (b) Preparing comprehensive reviews and prospects with respect to different aspects of NCWR.
- (c) Producing technical manuals, guidelines or standards with respect to all NCWR including waste water, drainage water and saline/brackish water.
- (d) Organizing international workshops, seminars and meetings on the NCWR topic.
- (e) Producing documents on successful case studies with the new developments with respect to NCWR presented by the members from different countries.
- (f) Enlarging the membership of the WG by encouraging more member countries where the use of non-conventional waters is a common practice for irrigation management.
- (g) Finalizing the publication of a Technical Paper pending from the activities of the WG-PQW.

2. The Scoping Document for the new Working Group on Use of Non-Conventional Water Resources for Irrigation (WG-NCWRI) has been circulated to all the National Committees in January and May 2018 for their comments/ observations and inviting nominations for the new Working Group. In response, nominations of Dr. Muhammad Munir Ahmad (Pakistan), Dr. Mohamed Shaban M. Abu Salama (Egypt), Dr. Hussein Abdel Halim El Gammal (Egypt) have been received from the National Committees for the membership of the new WG-NCWRI. Also received nominations of Prof. Nicholas Dercas (Greece), Dr. Bourazanis Giorgos (Greece) from the Greece National Committee (Associate Member of ICID) for the membership of the new WG. The ICID Central Office has suggested the Greece National Committee (GRCID) to either to reactivate the membership or else join the ICID as Direct Member. However, response is awaited.

3. In addition, the ICID CO has contacted the existing members of the erstwhile Working Group on Use of Poor Quality Water for Irrigation (WG-PQW) and requested them to confirm their interest through their NC for continuation of their membership of new WG-NCWRI. In response, ICID CO has received consent to continue the membership for the new WG from Dr. Seung Heon Lee (Korea, Rep. of), Dr. Takanori Nagano (Japan), VPH Dr. Ragab (UK), Dr. Tapas Biswas (Australia), VPH Dr. Karim Shiati (Iran). The status of membership of the WG is given as **Annex 2**.

4. Since the group had elected Dr. (Ms.) Anna Tedeschi (Italy) as Chair while Dr. Wenyong Wu (China) as Secretary of the WG, the experts/ professionals attending this informal meeting will choose a Vice Chair for the group and refine the scope of the WG, if necessary. The finalized mandate of the WG would then be presented by the Chair of the group to PCTA in its meeting on 16 August 2018 for approval by the PCTA/IEC.

¹ This will also include details of membership of WG as **Annex**

WG-NCWRI Agenda Item 2: Road Map to ICID Vision 2030 – Activities on non-conventional water resources for irrigation

5. During Mexico meeting, the WG finalised the Action Plan 2030 (Road Map to ICID Vision 2030) of the WG-NCWRI based on the new mandate by updating the activities on flood management issues (refer **Annex 3**). During the Mexico meeting, the 68th International Executive Council (IEC) encouraged WGs to monitor the progress of 'Activities identified under Various Strategies for Action Plan 2017-21' appended to 'A Road Map to ICID Vision 2030' and report to their respective Permanent Committees.

6. Accordingly, in January 2018, the ICID CO requested the Chairs of the Work bodies to monitor the progress of achieving milestones as indicated in the Action Plan and report status to the concerned Permanent Committee to enable the Theme Leaders to take stock of the progress of the Work body in achieving the Action Plan in their synthesis report. WG Chair will discuss mechanisms to monitor the progress of identified activities under action plan.

7. Chair Dr. Anna Tedeschi (Italy) has informed that presentations of Dr. Takanori Nagaro (Japan) on "Measurement of soil salinity by hyperspectral reflectance of cotton leaves" and Dr. Wenyong (China) on "Pollution risk of organic pollutants for vegetable in reclaimed water irrigation" will be made during the Canada meeting.

WG-NCWRI Agenda Item 3: Report of Special Session on Wastewater, October 2017, Mexico

8. During Mexico meeting, VPH Dr. Ragab provided a brief report of the Special Session on "*Irrigation techniques for reuse of wastewater in agriculture and its impact on health and environment*" organized during 23rd Congress wherein several guidelines on water treatment were presented in two sessions of Special Session during the 23rd ICID Congress. The Summary Report of the session is awaited from Dr. Jamie Collado (Mexico), the coordinator of the session.

WG-NCWRI Agenda Item 4: Discuss and develop work plan based on new mandate

9. The members present may deliberate on development of work plan based on new mandate and ICID Vision 2030.

WG-NCWRI Agenda Item 5: Joint Session of Strategy Theme On-Farm, 15 August 2018, Canada

10. The Sub-Committee on Themes, Topics and Work Plans for Future ICID Events (SC-E-THEMES) during its meeting at Mexico, suggested to make the WG meetings/ sessions technically richer and beneficial to the stakeholders and industries by exploring the ways of combining the meetings of work bodies with areas of common interest or holding webinars, etc. The SC-E-THEME during its virtual meeting on 10 April 2018 suggested to make the meetings of the WG more-lively and reduce overall duration of the ICID events and suggested to explore possibility of organizing joint session of WG under strategy theme ON-Farm. Accordingly, it has been proposed to organize a Joint Session of three WGs under Strategy Theme On-Farm on 15 August 2018 in Saskatoon, Canada. WG-WATER & CROPS, WG-SON-FARM and WG-NCWRI (*erstwhile PQW*) fall under the theme 'ON-FARM'. In this respect, an online WebEx meeting of the Chairs/VC/Secretaries was organized on 07 June 2018 to develop a common agenda for the Joint Session of these WGs.

11. All members are requested to join the Joint Session and enrich the proceedings of the meeting

WG-NCWRI Agenda Item 6: Publication of the erstwhile Working Group

12. During the Mexico meeting, the group noted that due to non-availability of three papers, the Technical Paper of the WG is still pending for finalization. Accordingly, the Chair and ICID CO has followed-up with Dr. Biswas, Dr. Vincent and Prof. Rensburg to send the final papers as their contribution to the Chair.

13. WG Chair may further update the WG members.

WG-NCWRI Agenda Item 7: Any other business



NOTES FOR CHAIRPERSON:

1. Draft minutes of this meeting to be submitted to ICID Secretariat at Saskatoon, Canada after the meeting.
2. Chair to participate and present the WG report to PCTA meeting on 16 August 2018.

**WORKING GROUP ON USE OF NON-CONVENTIONAL WATER
RESOURCES FOR IRRIGATION (WG-NCWRI)**

UPDATED SCOPING DOCUMENT

1. Introduction

1.1 With the rapid development of economy and the increasing growth of population, Shortage of fresh water becomes a global problem. Agriculture is the biggest water consumer nearly accounting for 70% of the total water supply worldwide. Use of Non-Conventional Water Resources for irrigation could meet such fresh water shortage. Non-Conventional waters consist of raw domestic/industrial wastewater, reclaimed water, agricultural drainage water, mining water, harvested rainwater, and brackish/saline groundwater. In many developing countries, a major part of the wastewater generated by domestic and industrial sectors is used for crop production in an untreated or partly treated form. The protection of public health and the environment are the main concerns associated with uncontrolled wastewater irrigation. In other words, the quality of the produced food, the consumer safety and the health of farm workers are of great concern. Other concerns include the salinity and heavy metal accumulation and pollution caused by nutrient leaching. In fact, secondary effluent contains dissolved solids, heavy metals, pesticides and pathogens that might jeopardize sustainable agriculture, groundwater quality, soil quality/ productivity and human health, however, the nutrients contained in such waste water are beneficial for agriculture up to certain concentrations.

It is very important to prevent contamination and reduce contamination risks for NCWRI, therefore, a set of techniques, policies and strategies must be considered in the process of planning, designing, operation and management.

1.2 Despite national water quality standards related to NCWRI released by some countries, there are no globally accepted guidelines or standards with respect to planning, designing, operation and management which is urgently needed for NCWRI.

1.3 The following aspects are of major importance for safety and efficient irrigation with non-conventional water resources:

- (a) Feasible plan at regional level to minimize soil and water contamination.
- (b) Election of tolerant plants especially when using saline/brackish water to obtain good economic yields and product quality.
- (c) Continuous monitoring and evaluation of irrigation practices to prevent environment degradation.
- (d) Learning and compiling successful experiences from different countries to help those who have no experience with the use of non-conventional water resources.
- (e) Enhancing quality standards and codes of practice for NCWRI to ensure safe and efficient use.
- (f) Formulating policies and regulations to encourage the use of NCWRI.
- (g) Ensure environmental and economic sustainability using non-conventional waters in particular for the countries where these waters are the only available resources.
- (h) Develop capacity building programme (workshops, seminars, visiting sites, etc.) to train the users of NCWRI.
- (i) Develop a programme to involve stakeholders and local water authorities.
- (j) Inclusion of governance and institution as well as the gender in the whole practice of NCWRI.
- (k) Contributing to the Water-Food-Energy Nexus adopted by ICID with NCWR at heart.

1.4 In this Updated Scoping Document the relevant aspects of each of these items will be reviewed, and the objectives, state of knowledge on the topic and work plan will be presented.

2. Objectives

2.1 Relevance of the NCWI working group

2.1.1 The relevance of the WG can be specified as follows:

- (a) The remit and mandate of NCWRI is relevant to the mission and purpose of ICID and promotes science and technologies in acquiring and managing non-conventional water resources for irrigation in developed and developing countries.
- (b) The use of NCWRI WG is expected to contribute to sustainable agriculture water management by using NCWR.

- (c) The use of NCWR is expected to improve food security, increasing food production, increasing water productivity and increasing irrigated land area.
- (d) NCWRI will be the key topic of most NCs to help alleviate global fresh water shortage.

2.2 Relevance of the NCWRI WG to the scope of the Thematic Area

- 2.2.1 NCWRI falls under ICID strategic theme of “On Farm” which is relevant to water management at field scale. NCWR WG will cover different aspects of “on farm” irrigation and drainage but with difference as management of NCWR requires different “on farm” management.
- 2.2.2 Technical and institutional solutions development may be required for promoting of non-conventional water resources for irrigation.
- 2.3 Existing gap that the Working Group is expected to fill
 - 2.3.1 Other ICID WGs that have related scopes of work are: WG-DROUGHT, WG- Water & Crops, WG-ON-FARM are mostly focused on fresh water availability while WG-ENV focuses on protecting the environment from the excessive use of fertilizers and agrochemicals.
 - 2.3.2 None of the WGs are presently mandated to study the issues related to safe and efficient use of NCWRI.
 - 2.3.3 The new WG was made aware of the activities of these WGs prior to the preparation of this Updated Scoping Document.
 - 2.3.4 The new NCWR WG will attract more members involved in the themes of NCWR as this area of science is wider than the previous area of poor quality water of the current WG.

3. State of knowledge on the topic

3.1 Other International Organizations that are working on the subject

- 3.1.1 There are several other International Organizations, Universities and institutes that have programs and activities on this topic. This especially concerns the:
 - (a) Food and Agriculture Organization of the United Nations (FAO);
 - (b) World Health Organization (WHO)
 - (c) International partnerships: World Water Council (WWC);
 - (d) Relative research institutes: Agricultural Research Organization of Israel (ARO); The Jacob Blaustein Institute for Desert Research (BIDR); U. S. Salinity Laboratory, ARS; Technical and Research Center of Suez Environment (CIRSEE); Commonwealth Scientific and Industrial Research Organization, Australia (CSIRO), Chinese Academy of Agricultural Sciences (CAAS), China Institute of Water Resources and Hydropower Research (IWHR), Beijing Institute of Science and Technology (BWSTI).
 - (e) Universities: Israel Institute of Technology (Technion); China Agricultural University (CAU); University of Western Australia (UWA); University of Ottawa (WO); Central Asian Research Institute of Irrigation (SANIIRI); Iowa State University (ISU); Islamic Azad University (IAU); Bahauddin Zakariya University (BZU); Central Soil Salinity Research Institute (ICAR-CSSRI); Wageningen University (WU); University of California Riverside (UCR); University of Utah (UT); University of Sydney (USYD); Alexandria University (AU); Michigan State University (MSU).

3.2 Mandate of the Working Group

3.2.1 Mandate of the Working Group can be formulated as follows:

- (a) Exchanging knowledge, experience and data as well as networking on the topic in order to be up-to-date with new developments, methods and approaches.
- (b) Preparing comprehensive reviews and prospects with respect to different aspects of NCWR.
- (c) Producing technical manuals, guidelines or standards with respect to all NCWR including waste water, drainage water and saline/brackish water.
- (d) Organizing international workshops, seminars and meetings on the NCWR topic.
- (e) Producing documents on successful case studies with the new developments with respect to NCWR presented by the members from different countries.
- (f) Enlarging the membership of the WG by encouraging more member countries where the use of non-conventional waters is a common practice for irrigation management.
- (g) Finalizing the publication of a Technical Paper pending from the activities of the WG-PQW.

- 3.3 How is the Working Group expected to collaborate with the other International Organizations?
- 3.3.1 International Organizations can contribute to the activities of the NCWRI WG by nominating Permanent Observers (PO). On the other hand, presentations of the work and achievements of the NCWRI WG can be presented at the events organized by International Organizations.
- 4. Work Plan**
- 4.1 Scope
- 4.1.1 The NCWR WG is planning to formulate recommendations through investigation, and knowledge exchange of new developments. The NCWRI-WG will be able to advise on:
- (a) Optimum planning and design of irrigation that safeguard the environment when using NCWR;
 - (b) Managing field crops by considering the type of crops that suit the NCWR, e.g. selection of salt tolerant crops for each water salinity level;
 - (c) Suitable techniques/treatments to improve irrigation water.
 - (d) Best irrigation strategies to avoid environment pollution;
 - (e) Matching irrigation systems for use with NCWR, e.g. anti-clogging and pressurized irrigation system;
 - (f) Monitoring & evaluation of soil and water environment;
 - (g) Standardization and codes of practice in design, operation and management.
- 4.1.2 A proposal for the six-year plan is show in **Appendix B**.
- 4.2 Target audience
- 4.2.1 The target audience for this working group will be managers of irrigation schemes, researchers, consultants, government officials, farmers/farmer's representatives, students, young professionals, agronomists, irrigation engineers, and staff of International Organizations working on the topic (e.g. FAO, IFAD, and WB).
- 4.3 Outputs
- 4.3.1 The following outputs can be expected from this WG:
- (a) Knowledge and experience exchange among representatives of NCs;
 - (b) Comprehensive review papers to be published in irrigation and Drainage (IRD) or ICID;
 - (c) Technical reports/supplements to IRD/ICID on successful study cases.
 - (d) ICID guidelines /recommendations on the use of non-conventional water resources for irrigation.
 - (e) Annual/bi-annual workshop, seminar and symposium to be held at the ICID events
 - (f) Developing and running capacity building program dedicated to the NCWR users.
- 4.4 Timelines
- 4.4.1 While use of non-conventional water resources for irrigation is a very important issue in light of its role in alleviation of global water shortage and support of global food production it is recommended that the term of this WG will be set at six years. The timeline would have to be based on the scope of work and the expected output. Details of the timeline would have to be formulated and refined during the inaugural meeting of the WG.
- 4.5 Collaborators and dissemination strategy
- 4.5.1 The NCWRI WG would strengthen links with relevant international organizations.
- 4.5.2 The NCWRI WG would promote collaboration among members and permanent observers from different NCs.
- 4.5.3 The media (Twitter, YouTube, Blogs, Facebook, Instagram, etc.) would be used for dissemination of the developments and approaches in this topic.



Appendix B to Annex 1, Para 4.1.2

SIX-YEAR PLAN

Item of Mandate	2018	2019	2020	2021	2022	2023	Actor(s)
Preparing Draft work plan and Mailing to Participants							Chair/Secretary
Comments incorporated in an Updated Work plan Document							Participants in informal meeting
Invitation sent to NCs for nominations and Information							Central office
Submission of nominations and information							NCs
1 st Meeting in Saskatoon, Canada							Members and PO*
Knowledge and experience exchange as a continuous activity							Members and PO*
Preparing review paper on the NCWRI to be published in IRD/ICID							Members and PO*
ICID guidelines on the use of waste water for irrigation. This activity will only be realized if the WG gets help from relevant Organizations such as FAO, IFAD, WHO							Some Members and invited participants
Capacity Building- Training Workshop							ICID-HQ to advertise
Organizing International workshop on 2019 on Water-Food-Energy Nexus - the case for NCWRI							Members, PO* and invited participants



A. Status of membership of the Working Group

Sl. No.	Members	Member from	Remarks
1	Dr. (Ms.) Anna Tedeschi, Chair (Italy)	2017	Confirmed to continue
2	Dr. Wenyong Wu, Secretary, 2017 (China)	2016	Confirmed to continue
3	Dr. Seung Heon Lee (Korea, Rep.of)	2017	Confirmed to continue
4	VPH Dr. Samia El-Guindy (Egypt)	1999	
5	VPH Dr. R. Ragab (UK)	1997	Confirmed to continue
6	VPH Dr. Karim Shiati (Iran)	1997	Confirmed to continue
7	Prof. Leon van Rensburg (South Africa)	2010	
8	Dr. Takanori Nagano (Japan)	2011	Confirmed to continue
9	Dr. Tapas Kumar Biswas (Australia)	2012	Confirmed to continue
	Permanent Observers		
(i)	FAO representative		
(ii)	ICBA representative (UAE)		

B. New Nomination received from the National Committees

Sl. No.	Name	Country	Remarks
1.	Dr. Muhammad Munir Ahmad	Pakistan	Nomination received
2.	Dr. Mohamed Shaban M. Abu Salama	Egypt	Nomination received
3.	Dr. Hussein Abdel Halim El Gammal	Egypt	Nomination received



ROAD MAP TO ICID VISION 2030 – ACTIVITIES OF WORK BODIES

Goals/ Strategies	Activities	Outcomes/ Outputs	Milestone for Year 2017	Milestone for Year 2018	Milestone for Year 2019	Milestone for Year 2020	Mileston e for Year 2021
GOAL A: Enable Higher Crop Productivity with Less Water and Energy							
A7. Strategy: Using Wastewater or Poor Quality Water for Irrigation	7.1 Compile best practices for sustainably managing and using non- conventional water resources	Case studies					
	7.2 Contribute to the establishment of national policy for re-use of treated wastewater in irrigation	Position Paper					
	7.3 Participate in research on the development of sewage	Guidelines					

(Source: Consultative Group (CG) Report: A Water Secure World Free of Poverty & Hunger: A Road Map to ICID Vision 2030)

