

APPENDIX XXIV [PCTA Item 9.1]

**AGENDA FOR THE 22ND MEETING OF THE
WORKING GROUP ON USE OF POOR QUALITY WATER FOR IRRIGATION (WG-PQW)**

11 October 2017, 13.30-15.00 hours (Session I)
11 October 2017, 15.30-17.00 hours (Session II)
Mexico City, Mexico

Strategy Theme: On-Farm

Presented by the Chair

Year of Establishment: 1995

Extended completion of the Mandate: 2017

Mandate: To promote a safe and good management of poor quality water for irrigation, to minimize the negative impact on human health and the environment, to promote the multiple use of poor quality water, and to give consideration to the institutional and legislation aspects with regard to the use of poor quality waters.

Website: <http://wg-pqw.icidonline.org/>

WG-PQW Agenda Item 1: Action taken report by Chair

1. The Chair will present the report on the actions taken on the decisions and proposals of the working group at its last meeting held at Chiang Mai in November 2016. The scoping document for the new 'Working Group on Non-Conventional Water Resources' is being prepared.

2. The existing membership of the WG is given at **Annex 1** (*refer electronic version for latest list*). New nominations, if any, for the membership received will be dealt suitably after the meeting. Dr. Seung Heon Lee (Korea, Rep. of) and Dr. Anna Tedeschi (Italy) have expressed their desire to join the group.

WG-PQW Agenda Item 2: Road Map to ICID Vision 2030 - Activities on use of poor quality water for irrigation

3. In view of low attendance and in absence of Chair VPH Dr. Samia El Guindy (Egypt) at the Chiang Mai meeting (2016), the group deferred the discussion on the Action Plan 2030 until Mexico Meeting in 2017. Members felt that a good number of participants/members were required before deciding on specific milestones and deliverables.

4. Based on the inputs from the workbodies at the 67th IEC and fresh inputs received upto March 2017, the Consultative Group (CG) on Action Plan 2030 finalised Action Plan for ICID as presented in their report "A Water Secure World Free of Poverty & Hunger : A Road Map to ICID Vision 2030" given in **Annex 2**. The group will discuss the action plan and initiate actions on the activities proposed for the WG.

WG-PQW Agenda Item 3: Publications of the working group

5. The publication of a Technical Paper of the WG has been pending since a long time and so far, only two papers have been received viz. from Japan and Italy, while three more papers from Dr. Tapas Biswas (Australia), Dr. Bernard Vincent (France) and Prof. Leon van Rensburg (South Africa) are awaited. The Chairperson may apprise the members.

WG-PQW Agenda Item 4: Exchange of information, knowledge & networking - Website

6. During Chiang Mai meeting (2016), VPH Dr. Ragab demonstrated the SALTMED - a distant learning course (the links of the model are available at <http://wg-pqw.icidonline.org/>). Dr. Wenyong Wu (China) made an interesting presentation on the "Use of brackish ground water for irrigation in China" which is now available on the WG Website. The website of the working group has been updated with the new membership, agenda, minutes, links, report, etc. In February 2017, the Central invited all members of the group to access the above website and provide their comments along with interesting articles/ reports. Members may like to discuss and evolve methodology for sharing of information and updation of WG website.

WG-PQW Agenda Item 5: Updating Multilingual Technical Dictionary (MTD)

7. The group discussed the updation of the Multilingual Technical Dictionary (MTD) that fall within the scope of the group during the Chiang Mai meeting (2016). The group proposed Dr. Takanori Nagano from Japan to act as a

focal point between the group and ICID task force on MTD to look into the part of MTD that was relevant to WG and suggest/ amend terminology in consultation with the WG members. Dr. Nagano may apprise the members.

WG-PQW Agenda Item 6: Country presentations by members

8. Dr. Wenyong Wu from China would be making a presentation on “Behavior and risks of organic pollutants in reclaimed water irrigation” during the meeting.

WG-PQW Agenda Item 7: Special Session on Wastewater, Mexico, October 2017

9. During the 23rd Congress, the Mexican National Committee (MXCID) organized a Special Session on “*Irrigation techniques for reuse of wastewater in agriculture and its impact on health and environment*” on 10 October 2017. The Chair or Mr Jamie Collado (MXCID) may provide a brief report of the Session at the meeting.

WG-PQW Agenda Item 8: Closure report and Scoping Document of the Working Group

10. After discussions and seeing the on-going process of WG publication, the group requested PCTA for extension of tenure and defer the scoping document submission until Mexico. In absence of the Chair VPH Dr. Samia El-Guindy at the Chiang Mai meeting (2016), the group discussed and decided that a scoping document be prepared and circulated among members before Mexico meeting in 2017. The WG also discussed the changing of the name of the group to “Non-Conventional Water Resources” instead of “Poor Quality Water for Irrigation” in the scoping document to be prepared. As per Resolution IEC-2/67, the Council has extended the tenure of the group for one year i.e. upto 2017 with the suggestion to prepare the Scoping Document and submit it at the Mexico meeting.

11. The Chair may apprise the members and present the closure report and the Scoping Document of the group to PCTA at the meeting.

SUPP: In September 2017, the draft Scoping Document for the establishment of the new WG has been finalized in cooperation with Dr. Wenyong Wu (China), Dr. (Ms.) Anna Tedesch, VPH Dr. Ragab (UK) and other members. The draft SD will be presented in the WG, discussed and recommended to PCTA for extension of the tenure up to 2018. The SD will then be circulated to all National Committees in 2018 for their comments and inviting nominations for the new WG. The draft Scoping Document is available at **Annex 3**.

WG-PQW Agenda Item 9: Any other business



NOTES FOR CHAIRPERSON:

1. Draft minutes of this meeting to be submitted to ICID Secretariat at Mexico City (Mexico) after the meeting.
2. Chair to participate and present the WG report to PCTA meeting on 13 October 2017.

Attendance of Members at 2015 and 2016 Meetings

Sl. No.	Members	Member from	2015		2016		Remarks
			Self	Contributed by mail	Self	Contributed by mail	
1.	VPH Dr. Samia El- Guindy, Chair, 2011 (Egypt)	1999	•	•			
2.	VPH Dr. R. Ragab (UK)	1997		•	•	•	
3.	VPH Dr. Karim Shiati (Iran)	1997	•			•	
4.	Prof. Leon van Rensburg (South Africa)	2010	•				
5.	Dr. Takanori Nagano (Japan)	2011	•		•		
6.	Dr. Tapas Kumar Biswas (Australia)	2012		•			
7.	Dr. Wenyong Wu (China)	2016			•		
	Permanent Observers						
(i)	FAO representative						
(ii)	ICBA representative (UAE)						



ROAD MAP TO ICID VISION 2030 – ACTIVITIES OF WORKBODIES

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)





ICID-CIID

INTERNATIONAL COMMISSION ON IRRIGATION AND DRAINAGE

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	2017	2018				2019				2020				2021				2022				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