

**MINUTES OF THE 1ST VIRTUAL MEETING OF THE
WORKING GROUP ON CLIMATE CHANGE AND
AGRICULTURAL WATER MANAGEMENT (WG-CLIMATE)**
17 January 2023, 14:30-16:00 hours (Indian Standard Time)

Strategy Theme: Basin
Presented by the Chairman

Year of Establishment: 2015

Extended the completion of the Mandate: 2023

Mandate: (a) To share the information about the prediction of the global and regional climate change and climate variability; (b) To explore and analyse the implications of climate change and climate variability for agricultural water management including irrigation, drainage, and flood control; (c) To promote archiving useful information and case studies on climate change for practical use in improved impact assessment and adaptation development; (d) To enhance discussion on climate change and water management at national and regional scales among the stakeholders including academicians, practitioners, decision makers, media as well as farmers and water users in a region; and (e) To join the international dialogue on Climate change and water management.

Participants: (1) Prof. Dr. Ray Shyan Wu, Chairman (Chinese Taipei Committee); (2) Dr. Fuqiang Tian, Vice Chair (China); (3) Dr. Amani Alfara (Canada); (4) Ms. Lin Lin Fan (China); (5) Dr. Jia Bin Wu (China); (6) Dr. Jih Shun Liu (Chinese Taipei Committee); (7) Eng. (Ms.) Nermeen El-Tahan (Egypt); (8) Mr. Atin Kumar Tyagi (India); (9) Prof. Anna Dalla Marta (Italy); (10) Dr. Kumiko Tsujimoto (Japan); (11) Dr. Takanori Nagano (Japan); (12) Ir. Wan Noorul Hafilah Binti Wan Ariffin (Malaysia); (13) Engr. Ghulam Zakir-Hassan Sial (Pakistan); (14) Prof. Sue Walker (South Africa); (15) Ms. T. Janaki Meegastenna (Sri Lanka); (16) Ms. Dilek Demirel Yazici (Turkey); (17) President Prof. Dr. Ragab Ragab (United Kingdom).

Observer: (i) VP Dr. Tsugihiko Watanabe (Japan); (ii) Secretary General of CTCID (Chinese Taipei Committee).

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WG-CLIMATE Minutes Item 1. Welcome new members

1. Chair Dr. Ray Shyan Wu (Chinese Taipei Committee) welcomed all participants and new members of the group into the meeting. The new members viz. Dr. Amani Alfara (Canada), Ir. Wan Noorul Hafilah Binti Wan Ariffin (Malaysia), and Engr. Ghulam Zakir Hassan Sial (Pakistan) attended the virtual meeting and made a brief introduction by themselves. The Chair also delivered the opening remarks saying not only the WG-CLIMATE focus on climate change, but the other Working Groups also exchange the same topic. Therefore, the Chair looks forward to seeing the differences and common ground between all the Working Groups which probably might be discussed in the next virtual meeting or annual meeting.

WG-CLIMATE Minutes Item 2. Brief follow-up of the last meeting of the WG in 2022: based on the minutes

2. The group quickly reviewed the last annual meeting of the Working Group held in November 2022 and confirmed the work plan of the group. According to the publication plan, the group agreed to deliver a book titled “Guide to Innovated Irrigation and Drainage Management under the Changing Climate” ranging between 100 and 200 pages, which focuses on irrigation and drainage under climate change. The minutes of the Working Group in 2022 are given in **Appendix 1**.

WG-CLIMATE Minutes Item 3. Working Progress on WG publication “Guide to Innovated Irrigation and Drainage Management under the Changing Climate.”

3. The group noted that during the 2022 meeting, all the WG members were invited to contribute to the publication “Guide to Innovated Irrigation and Drainage Management under the Changing Climate”. The Chair sent the guidelines to all the members and requested more attribution. WG Chair requested every member of the WG to contribute to the publication and take responsibility for the task and a certain delivery. The Chair appreciated Dr. Tsugihiko Watanabe (Japan), Vice President of ICID, for preparing the draft table of contents of the publication (refer to **Appendix 2**), including a general introduction, impacts of climate change, adaptation, and some specific items. The publication focuses on tackling the different challenges resulting from climate change in different regions and has those adaptations as case studies.

4. The Chair sent the working plan related to the promised work for the book after the virtual meeting again in June 2022. Each chapter has been defined and the responsible members for the inputs have been identified. Some members suggested that the book should increase more case studies from different countries. The chair encouraged more developing countries and young professionals to submit case studies (maximum 10 pages). The chair will share case study examples with the WG members. In addition, it was proposed that Prof. Sue Walker will invite more scholars from African countries to contribute case studies. The editors of each chapter were arranged as follows:

- Chapter I:** General Introduction (Sue Walker), under 20 pages
- Chapter II:** Impacts of climate change on agricultural water management (Nozar Ghahreman), 30 pages
- Chapter III:** Adaptation to changing climate in agricultural water management (Ashish Pandey, Waleed Hassan), 30 pages
- Chapter IV:** Smart water management against the climate change (Takanori Nagano, Jih-Shun Liu), 30 pages
- Chapter V:** Case studies on climate change impact on agricultural water management and adaptation (Ray-Shyan Wu, Fiaz Hussain), each case study should be concise in 10 pages. The contribution of each member in this chapter is also highly expected
- Chapter VI:** Conclusion - Guide to Innovated Irrigation and Drainage Management under the Changing Climate (to be decided)

5. The Chair requested responsible members to finish their first draft within three months and share the same with the Chair well in time. Prof. Sue Walker (South Africa) informed the Chair that she will start to work on it.

WG-CLIMATE Minutes Item 4. Proposal for International Workshop in India 2023 (WG-CLIMATE)

6. In this part, the group reviewed the draft of the proposal for organizing an International Workshop in India in November 2023 and discussed about the proposed international partners, keynote speakers, number of persons expected to attend, recommendations on the list of Review Committee, and the other suggestion. For the proposed international partners, Vice Chair Dr. Fuqiang Tian informed that he has drafted the proposal and contacted the water program of the United Nations Educational, Scientific and Cultural Organization (UNESCO) to participate in the International Workshop. Therefore, we had a certain international partner already. In addition, President Prof. Dr. Ragab Ragab (United Kingdom) suggested the Food and Agriculture Organization of the United Nations (FAO) or the International Commission on Large Dams (ICOLD) as another international partner. Chair informed that he would try to identify it.

7. For keynote speakers, VP Dr. Tsugihiko Watanabe accepted to deliver the keynote speech in India 2023, but he suggested inviting people from the town site to give some new ideas. For the number of persons expected to attend, President Prof. Dr. Ragab Ragab recommended modifying it from 30 to 100. The President also recommended changing the International Workshop's timeframe from 3 hours to 1 day. The review committee of the workshop is VP Dr. Tsugihiko Watanabe, Prof. Dr. Ray Shyan Wu, and Dr. Fuqiang Tian. The revised draft proposal for the organization of the International Workshop in India in 2023 is given in Appendix 3 (Note: After discussing with ICID Central Office, considering the availability of the time slots and rooms at the event, the timeframe of this International Workshop should be 3 hours).

WG-CLIMATE Minutes Item 5. Webinar before 2023 India WG meeting

8. The WG discussed the progress of organizing the Webinar at the meeting and proposed that the topic of the webinar will be decided soon. During the last meeting at the Adelaide, Dr. Watanabe informed that the Multilingual Technical Dictionary (MTD) will become a useful tool that can be worked on the CLOUD. He also suggested that WG can contribute to the theme of "climate change on agricultural water management." During the meeting, President Prof. Dr. Ragab Ragab suggested the webinar could focus on the relationship between CO₂, paddy fields, and climate change and also the adaptation to them. President expressed his willingness to know how different countries cope with the food influenced by flood and climate change. Dr. Amani Alfarra (Canada) expanded the topic and raised a different aspect of suggestion which emphasized the nature-based solution to the climate change. The Chair concluded that he would ask the Secretary General of the Chinese Taipei Committee to organize a webinar based on members' opinion.

WG-CLIMATE Minutes Item 6. Suggestions on WG activities in 2023

9. The Chair noted that WG-CLIMATE should have a second Web meeting which might be in May this year.

WG-CLIMATE Minutes Item 7. Any other business

10. Chair Dr. Ray Shyan Wu expressed his gratitude toward all the participants and Secretariat of CTCID for recording this meeting and preparing the minutes.



**MINUTES OF THE 7TH MEETING OF THE
WORKING GROUP ON CLIMATE CHANGE AND
AGRICULTURAL WATER MANAGEMENT (WG-CLIMATE)**

07 October 2022, 14:00-15:45 hours (Session I) and 16:15-18:00 hours (Session II)
Adelaide, Australia

Strategy Theme: Basin

Presented by the Chairman

Year of Establishment: 2015

Extended the completion of the Mandate: 2023

Mandate: (a) To share the information about the prediction of the global and regional climate change and climate variability; (b) To explore and analyse the implications of climate change and climate variability for agricultural water management including irrigation, drainage, and flood control; (c) To promote archiving useful information and case studies on climate change for practical use in improved impact assessment and adaptation development; (d) To enhance discussion on climate change and water management at national and regional scales among the stakeholders including academicians, practitioners, decision makers, media as well as farmers and water users in a region; and (e) To join the international dialogue on Climate change and water management.

Members present: (1) Dr. Ray Shyan Wu, Chairman (Chinese Taipei Committee); (2) Dr. Jih-Shun, Liu (Chinese Taipei Committee); (3) Mr. Sunil Kumar (India); (4) Dr. Nozar Ghahreman (Iran); (5) Mr. Tikaram Baral (Nepal); (6) Prof. Sue Walker (South Africa); (7) VP Prof. Dr. Choi, Jin-Yong (South Korea); (8) Ir. Wan Noorul Hafilah Binti Wan Ariffin represented by Mukhlis Bin Zainol Abidin (Malaysia).

Observer: VP Dr. Tsugihiko Watanabe (Japan)

Office Bearer Hon.: VPH Mochammad Amron (Indonesia)

Observers: (1) Hakibu M. Tanko (Canada); (2) Chung Feng Ding (Chinese Taipei Committee); (3) Mr. Chih-Sheng Chen (Chinese Taipei Committee); (4) Jih-Shun Liu (Chinese Taipei Committee); (5) Dr. Sheng-Wei Wang (Chinese Taipei Committee); (6) Jen-Yao Wu (Chinese Taipei Committee); (7) Hwa-Lung Yu (Chinese Taipei Committee); (8) Chun-Hung Chu (Chinese Taipei Committee); (9) Ming-Yi Chen (Chinese Taipei Committee); (10) Yang Te Chuan (Chinese Taipei Committee); (11) Han-Jung Huang (Chinese Taipei Committee); (12) Dr. Revalin Herdianto (Indonesia); (13) Budi Wignyosukarto (Indonesia); (14) Foyya Yusuf Aquino (Indonesia); (15) Diyana Aslan (Malaysia); (16) Waseem Nazir (Pakistan); (17) Ms. Mona Liza F. Delos Reyes (Philippines).

Meeting attended virtually: (i) Dr. Fuqiang Tian, Vice Chair (China); (ii) Dr. Waleed Hassan M. Abou El Hassan, Secretary (Egypt); (iii) Dr. Anton Urfels, Director Member (Germany); (iv) Mr. Atin Kumar Tyagi, Direct Member, Jain Irrigation Systems Ltd. (India).

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WG-CLIMATE Minutes Item 1. Action taken report by Chair

1. Chair Dr. Ray Shyan Wu welcomed all participants in the meeting and presented the report on the action taken on the decisions and proposals of the working group at its meeting held in November 2021.
2. The group reviewed the nomination of Dr. Amani Alfarra (Canada), Ir. Wan Noorul Hafilah Binti Wan Ariffin (Malaysia), and Engr. Ghulam Zakir Hassan Sial (Pakistan) for the membership of the group. Only one member, Ir. Wan Noorul Hafilah Binti Wan Ariffin (Malaysia) attended the working group and made a brief introduction by herself. The nomination of Ir. Wan Noorul Hafilah Binti Wan Ariffin was accepted as Member while the other two members were accepted as Provisional Members. Membership status is given in **Annex 3 (page 29)**.

WG-CLIMATE Minutes Item 2. Road Map to ICID Vision 2030 – Status of activities on climate change and agricultural water management

3. The group reviewed the Action Plan of the Road Map to ICID Vision 2030 and confirmed the expected Goals under the Action Plan (refer to **Annex**). According to the publication plan, the group agreed to deliver a document titled “Guide to Innovated Irrigation and Drainage Management under the Changing Climate” ranging between 100 and 200 pages, which focuses on irrigation and drainage in climate change.

WG-CLIMATE Minutes Item 2.1: Work Plan of the group

4. Chair informed the group members that the 72nd International Executive Council (IEC) vide its Resolution IEC 2/72 had approved the extension of WG till 2023. With the approval of 2 years extension of the working group, any suggestions of the possible contributions to future issues relating to the Sixth Assessment Report (AR6) will be encouraged.

WG-CLIMATE Minutes Item 2.2: Publication of the outcomes of the WG

5. The group noted that during 2021 meeting, all the WG members were invited to contribute to the publication "Guide to Innovated Irrigation and Drainage Management under the Changing Climate". The Chair sent the guidelines to all the members and requested more attribution. However, there was little progress on the book. WG Chair requested every member of the WG to contribute to the publication and take responsibility for the task and a certain delivery.

6. The Chair sent the working plan related to the promised work for the book after the virtual meeting again in June 2022. Each chapter has been defined as well as the responsible members for the inputs have been identified. Some members suggested that the book should increase more case studies from different countries. The chair encouraged more developing countries and young professionals to submit case studies (maximum 10 pages). The chair will share case studies examples to the WG members. In addition, Prof. Sue Walker will invite more scholars from African countries to contribute case studies. The editors of each chapter were arranged as follows:

- Chapter I:** General Introduction (Sue Walker), under 20 pages
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- Chapter VI:** Conclusion - Guide to Innovated Irrigation and Drainage Management under the Changing Climate (to be decided)

7. The Chair requested responsible members to finish their first draft within three months and share the same with the Chair well in time.

WG-CLIMATE Minutes Item 3. Exchange of information, knowledge & networking

8. The ICID Central Office requested every working group to organize meetings regularly each year and after deliberation, WG agreed to hold four meetings in 2023.

WG-CLIMATE Minutes Item 4. Website of the WG

9. The group noted that Dr. Fuqiang Tian, the head of the WG Website Managing Team, shared members' CVs, group photos of 3 meetings, workshop materials, and publications – published and non-published for the website update. At the Adelaide meeting, Chair Dr. Wu thanked Dr. Tian for his effort and requested to continue the work of improving the WG website. The chair also encouraged members to share their ideas about the website and give feedback to Dr. Tian.

WG-CLIMATE Minutes Item 4.1: Webinar/Web-based seminar

10. The WG discussed the progress of organizing the Webinar at the meeting and proposed that the topic of the webinar will be decided soon.

WG-CLIMATE Minutes Item 5. Updating Multilingual Technical Dictionary (MTD)

11. At the Adelaide meeting, Dr. Watanabe, Vice President of ICID, informed that the Multilingual Technical Dictionary (MTD) will become a useful tool that can be worked on the CLOUD. He also suggested that WG can contribute to the theme of "climate change on agricultural water management".

WG-CLIMATE Minutes Item 6. Any other business

12. **ICID Members' Profile Section:** The group noted that as a new initiative, ICID had launched a new website (<https://icid-ciid.org>) as part of ICID's 70th Anniversary Celebration to meet the new web technologies. ICID Central

Office 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. Members were encouraged to review and update their information using their credentials and help ICID Central Office to maintain accurate information.

13. **Register on World Irrigation and Drainage Schemes (WI&DS):** WG also noted ICID's initiative to document the development of irrigation and drainage schemes in the world by establishing an online Register on "World Irrigation and Drainage Schemes (WI&DS)". WI&DS will fulfil 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 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. Chair encouraged members to urge all irrigation and drainage scheme owners, managers, and researchers across the world and especially in their respective countries for contributing to the register. The review process and other details are outlined on the portal < <https://wip.icidevents.org/> > in detail.

14. **25th International Congress on Irrigation and Drainage:** The WG will organize a workshop with other working groups, such as Environment, during the 75th IEC and 25th ICID Congress in India in November 2023.

15. Chair Dr. Ray Shyan Wu expressed his gratitude toward CTCID Deputy Secretary General Tony Chih-Sheng Chen for recording this meeting and preparing the minutes.



Annex [Appendix XIV, Item 2]

ROAD MAP TO ICID VISION 2030 – ACTIVITIES OF WG-CLIMATE

Goal/ Strategies	Activities	Outcomes / Outputs	Milestone for Year 2017	Milestone for Year 2018	Milestone for Year 2019	Milestone for Year 2020	Milestone for Year 2021	Milestone for Year 2022	Milestone for Year 2023
Goal B: Be a catalyst for change in policies and practices									
B2. Strategy: Promoting Risk Management Approaches									
B3. Strategy: Integrated irrigation and drainage management	3.2 Organize the introduction of the cases to be applied to other regions	Compilation of Cases	2 Case Studies in the humid region (introduction in WG Meeting)	2 Case Studies in arid/semi-arid region (introduction in WG Meeting)	2 Case Studies on unique examples (introduction in WG Meeting)	Extra Case Studies and comparison of the cases (introduction in WG Meeting)	Integration to conclude in general		
B6. Strategy: Helping development of climate change adaptation strategy	6.1 Develop Guideline for Water Management Practices under Changing Climate	Guidelines	General policy and table of contents are decided	The first draft of the core parts	Release the First Draft Guidelines in WIF3			Release the Final Draft Guidelines	
	6.2 Prepare Position Paper on Smart Water Management for Mitigating Climate Change	Position Paper	2nd Workshop on Post Paris 2015	3rd Workshop on Post Paris 2015	Discuss in a Side Event and Release the Draft in WIF3				
	6.3 Develop a position paper on adaptation to climate change	Position Paper	Communication with International Organizations	Communication with International Organizations	Release the First Draft Paper in WIF3			Release the Final Draft	
Goal D: Enable cross disciplinary and inter-sectoral engagement									
D2. Strategy: Develop technical documents in non-technical language	2.1 Integrated Assessment of Climate Change Impacts	Brief Guidelines with Compilation of Case Studies	2 Case Studies with a focus on technical background and uncertainty (introduction in WG Meeting)	2 Case Studies with the previous year's focus plus economic and social aspects (introduction in WG Meeting)	2 Case Studies with the previous year's focus plus financial and institutional arrangement (introduction in WG Meeting) and Introduction of state-of-the- art methodologies and their outcomes in WIF3	2 Case Studies with the previous year's focus plus interest groups (introduction in WG Meeting)	Release the Brochure		

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



DRAFT TABLE OF CONTENTS

Tentative Title of the publication (*tbid*):

Guide to Innovated Irrigation and Drainage Management under the Changing Climate

Contents (Draft)

- C.1 General Introduction
 - 1.1 Overview of the changing climate as one of the most serious global issues
 - 1.2 Agricultural water management as a mean to adapt to weather and climate
 - 1.3 Outline of the recent problems in agriculture and water use due to the climate change
- C.2 Impacts of climate change on agricultural water management
 - 2.1 Global climate change
 - 2.2 Impacts of climate change on basin hydrology and water resources
 - 2.3 Impacts of climate change on agricultural production
 - 2.4 Impacts of climate change on irrigation and drainage
 - 2.5 Case studies on climate change impacts on agricultural water management
- C.3 Adaptation to changing climate in agricultural water management
 - 3.1 Adaptation in agricultural production
 - crops -cropping pattern -cultivar and breeding -GM
 - 3.2 Adaptation with irrigation and drainage management
 - expansion of irrigation, -on-farm water management practices, -application method, -drainage improvement
 - 3.3 Countermeasures to climate change damages
 - warning system, -damage compensation, - insurances
 - 3.4 Institutional modification to adapt to climate change in agricultural water management
 - governmental policy, -facility design criteria, -management organization
 - 3.5 Case studies on adaptation to climate change in agricultural water management
- C.4 Smart water management against the climate change
 - 4.1 Smart agricultural water management as an innovated technology - overview
 - 4.2 Smart water management for adapting to the changing climate
 - 4.3 Smart water management for mitigating the climate change and for sustainable production
- C.5 Case studies on climate change impact on agricultural water management and adaptation
- C.6 Conclusion - Guide to Innovated Irrigation and Drainage Management under the Changing Climate
 - 6.1 Information, technologies, and preparedness
 - 6.2 Integrated and innovated assessment of climate change impacts
 - 6.3 Preparation and attitude of establishment of adaptation strategy to changing climate
 - 6.4 Promotion of smart water management

(Appendices if necessary)



EXPRESSION OF INTEREST FOR THE INTERNATIONAL WORKSHOP DURING 74TH IEC IN 2023

Date: To be decided by Organizer

Duration: International Workshops (3 hours only)

I. Title of the International Workshop (theme):
INNOVATED AGRICULTURAL WATER MANAGEMENT UNDER CLIMATE CHANGE

II. Proposing Working Group: **INTERNATIONAL WORKSHOP**

III. Background / Objectives of the Workshop:

Based on Sixth Assessment Report, the workshop aims to reduce the adverse impacts of extreme events of climate change through finding the smarter water management and the adaptation development.

IV. Scope of the workshop (300 words):

In order to explore and analyse the implications of climate change and climate variability for agricultural water management including irrigation, drainage, and flood control, this workshop would like to promote archiving useful information and case studies on climate change for practical use in improved impact assessment and adaptation development. Through the case studies, the participants will be able to learn the practical experience, such as smart water management and innovated techs from various countries. We would like to enhance discussion on climate change and water management at national and regional scales among the stakeholders including academicians, practitioners, decision makers, media as well as farmers and water users in a region. This workshop could be a platform for integrating real time practice and exchanging experience.

V. Sub-topics / sub-themes:

1. Impacts of climate change in agricultural water management
2. Adaptation to changing climate in agricultural water management.
3. Smart water management against the climate change
4. Case Studies

VI. Proposed International Partner (s), if any: (TBC)

1. United Nations Educational, Scientific and Cultural Organization
2. Food and Agriculture Organization of the United Nations
3. International Commission on Large Dams

VII. Other details:

1. Keynote Speakers, if any: VP Dr. Tsugihiko Watanabe (TBC)
2. Number of persons expected to attend: 100
3. Sponsorship, if any: ICID central office will look for sponsorship (TBC)
4. Do you plan to bring out the Proceedings (USB or Hard copy), and timeframe?
We will bring out the Proceedings by a USB and timeframe will be 3 hours.
5. Review Committee:

1. VP Dr. Tsugihiko Watanabe (Japan)
2. Prof. Dr. Ray Shyan Wu (Chinese Taipei)
3. Dr. Fuqiang Tian (China)

VIII. Schedule for submission of abstracts / full papers

- Submission of abstracts (max. 300 words): 2023/3/15
- Notification of acceptance : 2023/3/30
- Submission of full paper : 2023/4/30
- Notification of acceptance of full papers : 2023/5/31

IX. Contact coordinates:

- | | |
|---|---|
| 1. Chair: Prof. Dr. Ray Shyan Wu | Email: ctcid@triwra.org.tw |
| 2. Coordinator: ICID Central Office, New Delhi, India | Email: icid@icid.org |

