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

04 September 2024, 08:30-10:00 hours (Session I) and 10:30-12:00 hours (Session II)
Sydney, Australia

Strategy Theme: Climate Change and Impacts

Members present: (1) Dr. Ray Shyan Wu (Chinese Taipei Committee); (2) Vice President Dr. Fuqiang Tian (China); (3) Mr. V.C. Ballard (Australia); (4) Mr. Khosro Morovati (China); (5) Dr. Hui Lu (China); (6) Dr. Jih-Shun Liu (Chinese Taipei Committee); (7) Dr. Ming-Che Hu (Chinese Taipei Committee); (8) Dr. Nozar Ghahreman (Iran); (9) Dr. Takanori Nagano (Japan); (10) Dr. Hiroki Minakawa (Japan); (11) Ir. Wan Noorul Hafilah Binti Wan Ariffin (Malaysia); (12) Mr. Ahmad Bin Darus (Malaysia); (13) Dato's Ir. Mohd Azmi Bin Ismail (Malaysia); (14) Mr. Thayalam Sekaran (Malaysia); (15) Mr. Tikaram Baral (Nepal); (16) VPH Prof. Choi, Jin-Yong (South Korea); (17) Pongsak Suttinon (Thailand); (18) PH Dr. Ragab Ragab (UK).

Permanent Observer: Md. Faiz Alam – IWMI (India)

New nominees: (i) Dr. Tony Chih-Sheng Chen (Chinese Taipei Committee); (ii) Dr. Kuo-Wei Liao (Chinese Taipei Committee).

Observers: (1) Ann Ballard (Australia); (2) Ms. Chiung Yaho Huang (Chinese Taipei Committee); (3) Chung Feng Ding (Chinese Taipei Committee); (4) Sheng Wei Wang (Chinese Taipei Committee); (5) Mr. Kailaiselvam Velayudan (Malaysia); (6) Ahmad Anuar Othman (Malaysia); (7) Mohd Adnan Ahmad Fauzi (Malaysia); (8) Dr. Luxon Nhamo (South Africa); (9) Moono Shin (South Korea).

Website: https://icid-ciid.org/wbody/WG-CLIMATE

WG-CLIMATE Minutes Item 1: A brief Report on the Restructuring of Working Group by the Chair

1. At the 74th International Executive Council (IEC) meeting in Vizag, India, a proposal for the restructuring of the Working Groups was discussed and approved. Among the existing 18 working groups, 9 working groups completed their mandate in November 2023. The remaining working groups have been structured into 11 new working groups under four themes: (1) Irrigation and Drainage; (2) Natural Resources; (3) Climate Change and Impacts; and (4) Sustainable Development. Under these four themes, the WG-CLIMATE has been included in theme 3 (Climate Change and Impacts), and two working groups viz. WG-MWSCD and WG-AFM have been integrated with the WG-CLIMATE. As per the structure approved by PCTA, a new group - the Working Group on Climate Change and Agricultural Water Management (WG-CLIMATE) has been approved by integrating the mandates of two WGs - WG-MWSCD and WG-AFM.

2. Dr. Ray Shyan Wu organized the first online meeting of the WG-CLIMATE on 10 June 2024 and invited all the members to join the new WG-CLIMATE. During the online meeting, Dr. Ray Shyan Wu discussed the draft Scoping Document; election of the new Chair, Vice Chair, Secretary; draft publication; organization of the international workshop; etc. Minutes of the virtual meetings of all work bodies have been uploaded on a dedicated webpage - **https://icid-ciid.org/inner_page/152**

3. During the Sydney meeting, Dr. Ray Shyan Wu briefly reported the process. PH Prof. Ragab also explained the motive of the restructuring and the process. The new WG-CLIMATE has been included in theme 3 (Climate Change and Impacts), and two working groups viz. WG-MWSCD and WG-AFM have been integrated with the new WG-CLIMATE.

WG-CLIMATE Minutes Item 2: Discussion on the Scoping Document

4. At the Sydney meeting, Dr. Ray Shyan Wu informed the group members that he prepared and circulated the draft Scoping Document for the establishment of the new WG-CLIMATE (refer to **Annex 1**) with the members of WG-CLIMATE, WG-AFM and WG-MWSCD for their comments and suggestions.

6. During the meeting, members discussed about the name of the new working group. After deliberations, it was agreed that, to attract broader interest, the name of the new working group should be changed to "Working Group on Water Resources Management under Changing Climate" and same was recommended to PCTA/IEC, which was subsequently approved by IEC vide resolution no. 2/75. For the four tasks mentioned in the scoping document, the following members volunteered to take the leading role:

Task 1: Dr. Tikaram Baral, Department of Water resources and Irrigation, Nepal

Task 2: Dr. Mohammad Faiz Alam, IWMI

Task 4: Dr. Wan Noorul Hafilah Wan Ariffin, Irrigation and Drainage department, Malaysia

7. The group reviewed and accepted the nominations of Dr. Hwa-Lung Yu (Chinese Taipei Committee), Dr. Tony Chih-Sheng Chen (Chinese Taipei Committee), and Dr. Kuo-Wei Liao (Chinese Taipei Committee) as members as they participated in the meeting while Dr. Saroj Karki (Nepal) and Dr. Kittiwet Kuntiyawichai (Thailand) as Provisional Members due to their non-participation. Membership status is given in **Annex 3, page 27.**

WG-CLIMATE Minutes Item 3: Election of Chair, Vice Chair, and Secretary of Restructured New WG

8. The members who have expressed their willingness to serve were as follows: Dr. Ray-Shyan Wu for Chair, Dr. Fuqiang Tian, Dr. Ashish Pandey, and Dr. Nozar Ghahreman for Vice Chair, and Dr. Takanori Nagano and Amali Abraham Amali for Secretary of the new WG-CLIMATE. Dr. Ray Shyan Wu was supported by the members to be the Chair. Dr. Ray Shyan Wu is grateful for the volunteer and contribution of Dr. Nozar Ghahreman. However, due to the condition that only one person can be assigned to each position under the current rule. Dr. Fuqiang Tian, who has already served as the Vice Chair was nominated by Chair and supported by the members to be the Vice Chair. Dr. Takanori Nagano was also nominated by the Chair and supported by the members to serve as the Secretary. Considering the big size of the new working group, it may become more functional with increase numbers of vice chairs, especially representing the merged working groups. The members agreed to pursue the possibility in the coming year.

WG-CLIMATE Minutes Item 4: Road Map to ICID Vision 2030 - Status of Activities on Climate Change and Agricultural Water Management

9. The Action Plan of the Road Map to ICID Vision 2030 of the erstwhile WG-CLIMATE, WG-AFM, and WG-MWSCD is given in **Annex 2**. The group will revise the new Action Plan for the Road Map to ICID Vision 2030 as per the mandate of the newly established WG-CLIMATE at the meeting.

WG-CLIMATE Minutes Item 5: International Workshop on "Towards Sustainable Agricultural Water Management under Climate Change" hosted by CTCID and WG-CLIMATE

10. Chair provided brief updates on the workshop. International Workshop on "Towards Sustainable Agricultural Water Management under Climate Change" was organized during the Sydney meeting wherein 15 presentations were made and the audience was more than 50 (the room's capacity). Members agreed to hold similar workshops every year.

WG-CLIMATE Minutes Item 6: Activities of the erstwhile Working Group – Publication/ Report/ Guidelines

11. The new WG will review and undertake the pending activities of the erstwhile working group of WG-AFM, WG-CLIMATE, and WG-MWSCD.

WG-CLIMATE Minutes Item 6.1: Publication of the Working Group on 'Adaptive Flood Risk Management' by WG-AFM

12. As per the minutes of the erstwhile WG-AFM, it was decided to publish a document titled 'Adaptive Flood Risk Management' (covering both structural and non-structural aspects of flood management) based on the workshop papers and country presentations on floods along with the country case studies, covering both structural and non-structural aspects of flood management as part of the Road Map to ICID Vision 2030.

13. Based on the publication of the WG, Malaysian National Committee (MANCID) has presented its case study on flood management in Malaysia with an emphasis on non-structural measures with the title of 'National Flood Forecasting and Warning Systems'. The case study was accepted for inclusion in the publication of the WG. Moroccan National Committee (ANAFIDE) and other members of the group are yet to present their case study. The new WG will review and undertake the pending activities of the erstwhile working group of WG-AFM, WG-CLIMATE, and WG-MWSCD.

WG-CLIMATE Minutes Item 6.2: Finalization of Draft Indices, Guidelines, and Technical Summary Report by WG-MWSCD

14. Mr. Clarke Ballard, the former Vice Chair of the WG-MWSCD presented the final framework of the report. The members appraised the contributions of Mr. Frank Dimick and Mr. Clarke Ballard for a long time since the formation of WG-MWSCD.

WG-CLIMATE Minutes Item 6.3: Publication of erstwhile WG-CLIMATE

15. Dr. Ray Shyan Wu explained the final structure of the book. The book currently consists of 10 chapters with 212 pages. After the final revision the book it is expected to be published electronically by the ICID Central Office.

WG-CLIMATE Minutes Item 7: Any other business

16. The WG is planning to host an international workshop during 4th World Irrigation Forum (WIF4) in 2025, and members are welcomed to share their ideas and experiences.

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Annex 1 [Appendix 18, Item 2]

WORKING GROUP ON WATER RESOURCES MANAGEMENT UNDER CHANGING CLIMATE (WG-CLIMATE)

SCOPING DOCUMENT

*(Prepared by **Ray-Shyan Wu** in consultation with the Central Office and with contributions as received by e-mail from various specialists)*

1. Introduction

The ICID congress themes highlighted that climate change needs to be recognized as an added stress on the increasingly uncertain complex and interlinked issues of rural development and food security under demographic changes, overstretched environmental and natural resources. As we still lack sufficient knowledge to better understand what is going on and what can be predicted in climate change with reasonable accuracy and cannot wait until the whole understanding of the future climate change and its impacts are known. Challenges due to climate change should be considered as another driving force to improve the irrigation and drainage system. It is, therefore, necessary to factor known impacts of climate change in all processes of planning, design, implementation, operation, maintenance, and management of the irrigation and drainage activities. According to the Fifth Assessment Report of IPCC, it is extremely likely that human influence has been the dominant cause of global warming, and the IPCC AR5 comprehensively assessed observed changes in the climate system based on available observational datasets. AR6 moves a step forward with a process-based understanding of climate change built on fundamental physical science.

The world has already warmed by 1 °C since pre-industrial times, due to human activity. On current trends, it is likely to pass the 1.5 °C mark between 2030 and 2052, which stresses an urgent development of an efficient implementation of adaption measures based on presently available information, including infrastructure improvement and institutional reorganization, design criteria revision, and management strategy for the extreme events. Even much research has been carried out all over the world with a number of useful outcomes in terms of better availability of information related to climate, and state-of-the-art techniques to evaluate and predict the impacts of climate change including adaptation measures. Still, it is felt that the challenges due to climate change in the irrigation, drainage, and other relevant sectors would be long-lasting which calls for focused and concerted efforts from all stakeholders.

With these situations and understandings of climate change and the increased role of irrigation and drainage in achieving food security in the present situation, ICID as the platform for promoting the irrigation and drainage sector is under obligation to organize a semi-permanent or standing working group on climate change for the coming decades. ICID Working Group (hereafter referred to as “Working Group” or “WG”) on Climate Change and Agricultural Water Management (hereafter referred as “WG-CLIMATE”), which was established in 2005. The Working Group was established in 2005 with the name of “WG on Global Climate Change and Irrigation“, by well-designed coordination of a devoted leader Dr. Mark Svendsen. In 2007, it was renamed “WG on Climate Change and Agricultural Water Management” refining the target area expanding from just “irrigation” to the wider scope “water management”. The establishment was based on the recognition that the looming climate change and its likely impacts on water management for agriculture require cooperation cutting across institutional and disciplinary boundaries. This was aimed at -

(a) developing arena where relevant players or stakeholders may communicate and collaborate for the intensification of data collection networks,
(b) research into methodologies to downscale the climate impacts on water and agriculture,
(c) review of the operation of storage systems, enhancing soil water storage with water harvesting structures, and
(d) sharing knowledge and information

Every third year ICID triennial Congresses are organized to discuss and evaluate the upcoming and dynamic changes within the water sector in the entire world. The 22nd ICID Congress main theme was “Securing Water for Food and Rural Community under Climate Change”. As it shows explicitly, climate change is one of the most serious and urgent issues for human society and the global environment. The theme was organized in the context that improving irrigation and drainage systems and rural development would play a key role in achieving rural water and food security under impending climate change, especially in developing countries. Under this theme, two congress questions were raised and the one related to climate change was “How Irrigation and Drainage play an important role in Climate Change Adaptation?” with three sub-questions: 1) Understanding Impacts of Climate Change on Land and Water Use, 2) Revisiting Design and Operation Criteria for Irrigation and Drainage Facilities, and 3) Managing Frequent Floods and Droughts. Similarly, the 23rd ICID Congress was organized in Mexico City in October 2017 with the main theme “Modernization of Irrigation and Drainage towards a New Green Revolution” and two questions “Water Productivity, Revisiting the concepts in light of water, energy and food nexus” and “State of knowledge of irrigation techniques and practicalities within given socio-economic settings”. The adaptation of precision irrigation systems using new technologies such as ICT, IoT, remote sensing, control systems, and modeling is the way toward modernization of irrigation and drainage under the green revolution to combat water scarcity.

In the past decade, the WG-CLIMATE has performed well in the context of climate change impact on irrigation and drainage systems and needs to be continued with updated objectives and mandates with a focus on climate change adaptation, mitigation, and smart agricultural water management.

2. Formal Mandates

The WG set up the mandate to review the progression of and predictions for Global Climate Change (GCC) variability and to explore and analyze the medium-term implications of climate change variability for irrigation, drainage, and flood management. It stimulates discussion and raises awareness of water-related GCC issues within the ICID network and at national scales among scientists and policymakers. The WG collaborates with global partners like the UN System-wide Global Framework for Climate Services (GFCS) under the leadership of WMO.

2.1 The WG Mandate 2005

(a) To review the progression of and predictions for Global Climate Change (GCC) and climate variability,
(b) To explore and analyze the medium-term implications of climate change and climate variability for irrigation, drainage, and flood control,
(c) To stimulate discussion and raise awareness of water-related GCC issues within the ICID family,
(d) To stimulate discussion at national scales among scientists, policymakers, and, through the media, the general public on GCC and water, and
(e) To join the international dialogue on GCC and water

2.2 The WG Mandate 2015

(a) To share information about future predictions of the global and regional climate change and climate variability,
(b) To explore and analyze 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 academician, practitioners, decision-makers, media as well as farmers and water users in a region,
(e) To join the international dialogue on Climate change and water management.

2.3 Activities and Outcomes

The WG personnel are approved and recommended by the national committee of ICID members and permanent observers. At the occasion of the WG meeting in the IEC in October 2015, the country members included Japan (Chairperson), Chinese Taipei (vice-chairperson), China (Secretary), and members from South Africa, Indonesia, Spain, Turkey, and Korea. The Secretary General of ICID is a member, and Representatives of WMO, IFPRI, IWMI, and FAO are the permanent observers.

The WG has organized the workshop on climate change almost every year taking the opportunity of IEC of ICID. In the workshop, activities, and outcomes of the WG members and observers were presented and shared for their further challenges. Especially, in the First World Irrigation Forum, held in Mardin, Turkey in 2013, the WG co-organized the Workshop “Management of Water, Crops and Soils under Climate Change”. There, seventeen contributions both oral and posters were presented. The main outcomes of the workshop include; 1) It was obvious from the presentations with global evidence that climate change is a fact not a fiction and the skepticism about climate change is reversing to believing in, 2) The current extreme weather events of drought, floods, hurricanes, tornados, and cyclones are becoming regular visitors more than ever, and 3) In agriculture industry, the impact is visible through the change in sowing and harvest dates, length of growing season, water availability for irrigation, evapotranspiration and the shift in agro-climatic zones. The papers presented covered a wide range of climate change impacts and offered solutions to counter the impact through adaptation and mitigation measures. These covered the introduction of new water management techniques (e.g. SRI for Paddy Rice), new drought tolerant crops (e.g. Bambara groundnut), reducing greenhouse gases (NH_4, N_2O) through lowering the groundwater table, and reservoir management. The results also indicated that farmers are now familiar with the changing climate and are adjusting their activities accordingly. (Source: Summary Report of First World Irrigation Forum)

Dr. T. Watanabe (Honorable Chairperson) served as the general reporter for the main theme (Question 58) of ICID 22nd Congress “How Irrigation and Drainage play an important role in Climate Change Adaptation”. The outcomes consist of climate change impact assessment via suitable scenarios, models, and applications. Design and operation criteria for irrigation modernization, improvement, and planning via facilities and institutions for food and water security under climate change. The activities of the WG-CLIMATE for 2017 to 2021 are only for Goals B and D of ICID Vision 2030, also activities involved in the whole process of the ICID activities due to the characteristics of climate change. The strategies involved integrated irrigation and drainage management, helping the development of climate change adaptation strategy, develop a guideline for water management practices under changing climate, prepare position paper on smart water management for mitigation and adaptation of climate change, develop integrated impact assessment of climate change with case studies and apply to other regions.

2.4 71st IEC Virtual Meeting (2020)

The outbreak of the COVID-19 pandemic has affected everyone and the irrigation sector is no different. Given the emerging situation of COVID-19, many meetings have been postponed until the situation comes under control. With this difficult situation, members were requested to make full use of WebEx platform for virtual meetings to ensure regular contributions

from the WG members as well as to discuss and initiate follow-up actions emerging from the minutes of the previous WG meeting and review the progress of the action points. Accordingly, in order to organize the WebEx Meetings, Webinars, and e-Discussions, ICID Central Office requested Chairs of the work bodies to initiate the processes. The following activities and actions were taken in WebEx meetings.

(a) Updated the membership of WG-CLIMATE. Dr. Ray Shyan Wu was elected as the new Chair, Dr. Fuqiang Tian, as the new Vice Chair, and Dr. Waleed Hassan as the new Secretary.
(b) Forward the publication planning "Guide to Innovated Irrigation and Drainage Management under the Changing Climate".
(c) Continuation in exchange of information, knowledge & networking via updating the website of the WG and Multilingual Technical Dictionary (MTD).
(d) The present tenure of the WG as established in 2015 comes to a closure in 2021. The WG decided to propose a new updated mandate proposal and scoping document.

2.5 *72nd IEC Meeting (2021)*

The 72nd International Executive Council (IEC), through its Resolution IEC 2/72, sanctioned the continuation of the WG until 2023. This approval resulted in a 2-year extension for the working group.

3. Proposal for reconstitution of WG

Based on the current climate change issue and challenges and the new role ICID is to play in sustainable development, review of past activities and outcomes of the WG, the mandate, scope, and timelines for reconstitution of WG are defined as follows:

Climate change, with its multifaceted challenges, significantly impacts agricultural water management, notably concerning issues of water scarcity and flooding. The ongoing advancements in the accuracy and reliability of climate change projections emphasize the urgent need for us to fast-track the creation of models for impact assessment and the design of suitable adaptation strategies. An open sharing of experiences within the ICID community can greatly contribute to this endeavour.

A milestone in addressing these challenges is the 2023 integration of the Working Groups on Climate (WG-CLIMATE), Water Scarcity and Drought (WG-MWSCD), and Adaptive Flood Management (WG-AFM). This fusion marks a significant stride towards devising a holistic approach for climate change adaptation and mitigation.

3.1 The WG new Name:

"**Water Resources Management under Changing Climate** "

3.2 The WG Main Objectives:

The original objectives of the WG are still relevant and to be carried over:

(a) To prepare the arena and develop a network for cooperation cutting across institutional and disciplinary boundaries. It includes sharing useful information, applicable methods, and case studies (both successful and unsuccessful).
(b) Focus on information exchange and interconnectedness development in the community, compilation and archiving of experiences and case studies on climate change impact assessment and adaptation strategy from all over the world.
(c) Develop more understanding in an integrated manner with focus on inter-sectoral and trans-boundary approach.

3.3 Updated Mandate 2023:

Since climate change future projections are much more precise and reliable with higher temporal and spatial resolution and development of models for assessing the impacts and designing adaptation measures are being accelerated. Therefore, it is a need of time to develop an integrated approach to address challenges of complex climate change and climate variability as assessment and adaptation planning at local scale. So keeping in view the climate change adaptation and mitigation for agricultural water management at local scale, the following updated mandate is proposed.

(a) Investigating and interpreting global and regional variabilities of climate change and understanding their implications for agricultural water management.
(b) Encouraging the exchange of information from both successful and less successful local climate change case studies to enhance impact assessment and adaptation efforts.
(c) Crafting a "Guide to Water Management under Changing Climate and Water Variability" for disseminating knowledge about climate change adaptation and intelligent agricultural water use.
(d) Fostering interaction among a diverse array of stakeholders on strategies for climate change mitigation and adaptation in agricultural water management across national, regional, and local levels.
(e) Engaging in international conversations on climate change and water management.

3.4 Formation of Task Forces

The updated mandate provides a comprehensive, integrative approach to addressing the complex challenges of climate change and climate variability in relation to agricultural water management. To achieve the mandate, four tasks are suggested,

Task 1: Explore the impact assessment variability on current and near-future water systems, focusing on agricultural applications and the measures implemented to manage these systems effectively.

Task 2: Explore adaptation strategies, particularly addressing water scarcity and competing demands, with a primary emphasis on agricultural water needs. Include flood management strategies that engage the community, concentrating on how floods affect agricultural water management.

Task 3: Explore mitigation strategies applicable to agricultural water management across both developed and developing countries.

Task 4: Organize workshops and develop a guide titled "Guide to Water Management under Changing Climate and Water Variability." This publication will provide insights into adapting to climate change and implementing intelligent agricultural water management practices. During its development, organize workshops at annual meetings to encourage the exchange of ideas and discussions on these topics.

3.5 Relevance of the Working Group:

The relevance of the WG can be specified as follows:

(a) The topic of climate change and water management is relevant to the vision and mission of ICID and of higher interest for its members, especially in developing countries that are sensitive and vulnerable to climate change;

(b) It may be expected that, in the coming period, climate change impact and adaptation strategies be factored in all processes and activities of irrigation and drainage.

3.6 Expected collaboration with other International Organizations

International Organizations (ADB, FAO, IFPRI, IWMI, WB, WMO, etc.) can contribute to the activities of the WG as Permanent Observers (PO). On the other hand, presentations on the works and achievements of the WG could be presented at the occasion of events organized by International Organizations.

4. Work Plan

4.1 Scope:

The WG is expected to investigate, analyze, and disseminate information on new developments and formulate recommendations. The plan is with respect to:

(a) The progression of and predictions for climate change and climate variability

(b) The medium-term adaptation strategies of climate change and climate variability for irrigation, drainage, and flood control

(c) The water environment issues relating to climate change within the scope of agricultural water management activities within ICID

(d) The international dialogue on climate change and agricultural water environment between regions and countries.

A proposal for the six-year rolling plan is shown in **Appendix A**.

4.2 Target audience:

The target audience for this working group will be meteorologists, farmers, managers of irrigation schemes, researchers, consultants, government officials, and staff of international organizations working on the topic.

4.3 Outputs

The expected outputs can be expected from this WG:

(a) Sharing knowledge and experiences with and by the representatives of NCs, and disseminating this knowledge within their country;

(b) Presenting a condensed overview of existing key reports (IPCC, UNESCO, WMO, etc.), national adaptation guidelines, and other relevant publications on the topic;

(c) Organizing or co-organizing at least one workshop, seminar, or symposium every two years when an international ICID meeting; and

(d) Distributing ICID experiences in practice for adaptation to climate change in the irrigation, drainage, and flood sector

4.4 Timelines

While climate change is a very important and complex issue to deal with in the management of agricultural water sectors, it is recommended that the term of this WG be set further for the next six years up to 2029. The timeline would have to be

based on the scope of work and the expected outputs. Details of the timeline would have to be formulated and refined at the meetings of the WG.

4.5 Collaborators and dissemination strategy

4.5.1 The WG would have to base its activities on an open attitude with a clear scope for the invitation of outsiders.

4.5.2 The dissemination strategy would have to be based on reaching those who can apply the findings and recommendations of the WG in their research, especially in policy development, decision making, and implementation in practice.

4.6 Core Group and Members

This draft has been circulated among the members of WG-climate. Comments received from the members of the WG have been included in this scoping document. The Core Group consists of:

Convener (Chair):	Prof. Ray-Shyan Wu	(Chinese Taipei Committee)
Vice Chair:	Dr. Fuqiang Tian	(China)
Secretary:	Dr. Waleed Hassan M. Abou El Hassan	(Egypt)
Members:	Prof. Sue Walker	(South Africa)
	Prof. Choi, Jin-Yong	(South Korea)
	Mr. Jafer Kathom Alwan Alamiryi	(Iraq)
	Eng. Janaki Meegstenna	(Sri Lanka)
	Ms. Dilek Demirel Yazici	(Turkey)
	Dr. Jih Shun Liu	(Chinese Taipei Committee)
	Eng (Ms.) Nermeen Essam El-Tahan	(Egypt)
	Engr. Reynaldo L. Baloloy	(Philippines)
	Dr. Kumiko TSUJIMOTO	(Japan)
	Dr. Mika Tähtikarhu	(Finland)
	Dr. Nozar Ghahreman	(Iran)
	Mr. Michael Davidson	(United States of America)
	Dr. Takanori NAGANO	(Japan)
Direct Member:	Dr. Anton Urfels	(Germany)
Observer:	Prof. Dr. Tsugihiro WATANABE	(Japan)
Provisional Member:	Prof. Anna Dalla Marta	(Italy)

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Annex 1 [Para 4.1, Appendix A]

SIX YEAR ROLLING PLAN

Item of Mandate	2023	2024	2025	2026	2027	2028	2029	
Mailing the Scoping Document to participants (current WG Climate)								Chairperson, Vice-Chair and Secretary of WG Climate
Comments on Scoping Document,								Web meeting
Finalizing Scoping Document and detailing of Work plan on 74st ICE								Chairperson, Vice-Chair and Secretary
Invitation to NC for nominations and information								Central Office
Submission of nominations and information								National Committees
Meeting in 75th ICE								Members and Permanent Observers. Electing Chairperson, Vice-Chair and Secretary
Finalize Climate Change guide book								Selected / nominated members
Meeting in 76th ICE								Members and Permanent Observers
Side event with workshop on AR6 topics								Selected members
Meeting in 77th ICE								Members and Permanent Observers
Side event with workshop on topics								Members and Permanent Observers
Meeting in 78th ICE								Selected members
Side event with workshop on topics								Members and Permanent Observers
Meeting in 79th ICE TBA								Selected members
Meeting in 80th ICE TBA								Members and Permanent Observers
Position paper on key issues related to the Climate Change Smart Agricultural Water Management								Chairperson, Vice-Chair and Secretary

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Annex 2 [Appendix 18, Item 4]

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

Goal/ Strategies	Activities	Outcomes / Outputs	Milestone for 2017	Milestone for 2018	Milestone for 2019	Milestone for 2020	Milestone for 2021	Milestone for 2022	Milestone for 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	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		

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Annex 2 [Appendix 18, Item 4]

2.2 ROAD MAP TO ICID VISION 2030 – ACTIVITIES OF WG-AFM

	Activity	Outcomes/ Outputs	Milestone for 2017	Milestone for 2018	Milestone for 2019	Milestone for 2020	Milestone for 2021	Milestone for 2022	Milestone for 2023	Milestone for 2024
Goal B: Be a catalyst for change in policies and practices										
Strategy B5 : Encouraging Development of Drought Management Policies	5.1 Develop Guidelines on Flood Risk Management Strategies	Guidelines		Release first draft guidelines	Release of the finalized guidelines		Updating of the guidelines		Including the guidelines in the WG publication	
	5.3 Publication of the WG on Adaptive Flood Risk Management				Preparing Country reports	Preparing Country reports	Preparing Country reports	Draft Publication	Final Publication	
Goal C: Facilitate the exchange of information, knowledge and technology										
Strategy C3 : Promoting Regional Cooperation	3.3 Organise internal/ international workshop on flood management	Proceedings of the workshop	Invite member countries and IOs like WMO, ICOLD, IAHR, APFM, etc. (discussion in WG meeting)	Workshop	Workshop	Workshop		Workshop in Australia		
	4.25 Case studies on flood mitigation measures	Technical report		Finalizing the first set of case studies		Publishing a paper in IRD journal		Finalizing the third set of case studies		
Goal F: Facilitate capacity development										
Strategy F3: Technical Training of Young Professionals from Member Countries	3.10 To launch e-Discussion on Flood Risk Management	Outcome	e-Discussion on Flood Risk Management (discussion in the WG meeting)	To invite member countries/IOs for an e-Discussion on Flood Risk Management					Preparing a workshop for YP.	Webinar workshops for YPF in March 2024

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Annex 2 [Appendix 18, Item 4]

2.3 ROAD MAP TO ICID VISION 2030 – ACTIVITIES OF WG-MWSCD

	Activity	Outcomes/ Outputs	Milestone for 2017	Milestone for 2018	Milestone for 2019	Milestone for 2020	Milestone for 2021	Milestone for 2022	Milestone for 2023	Remarks
	Goal B: Be a catalyst for change in policies and practices									
Strategy B2 : Promoting Risk Management	Encourage entities to reduce risks of water scarcity by planning for competing demands Look for existing indices related to water scarcity	Increased water reliability. Increased understanding of consequences of water scarcity / Links to articles & papers related to water scarcity				Final review article summarizing country case studies related to addressing water scarcity		Complete final document on summarizing all activities of WG-MWSDC related to Risk Management		
Strategy B4 : Encouraging Development of Drought Management Policies	4.1 Advocating role of agricultural drainage under drought	Advocacy material			Evaluate National /international level country papers	Evaluate National papers on area/ basin and local level country papers				
	4.2 Manging with limited water under drought	Technical report/ Guidelines						Complete final technical paper on Managing Water Scarcity Under Conflicting Demands		
	4.3 Develop guidelines on drought risk management strategies	Guidelines		Finalisation of the draft guidelines	Release the finalised guidelines		Updation of guidelines	Complete final review paper on Final review document		
Strategy B7: Advocate for Maintaining Balance between Development and Environment	7.1 Compile best practices in irrigation and drainage in the world on managing water caused by competing demands	Report	First meeting of WG	Host workshop at ICID Canada	Prepare summary report on ICID Canada workshop	Final review article summarizing country case studies related to addressing water scarcity/ Conduct an international workshop for the WG (include appropriate data from workshop in final technical paper)	Prepare review article summarizing country case studies related to addressing scarcity on state and local levels	Complete final document summarizing all activities of WG-MWSCD		

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

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