

**MINUTES OF THE VIRTUAL MEETING OF  
WORKING GROUP MODERNIZATION AND REVITALIZATION OF  
IRRIGATION SCHEMES (WG-M&R)  
12 December 2022 - 13:30 – 14:45 IST**

---

**Members present:** (1) VPH Ian Makin, Chair (UK); (2) Dr. Dong Bin, Vice Chair (China); (3) Dr. Yalong Li (China); (4) Dr. Hwa-Lung Yu (Chinese Taipei Committee); (5) Prof. Dr. Tarek Ahmed El-Samman (Egypt); (6) Dr. Sanjay Belsare (India); (7) Prof. Sunil D. Gorantiwar (India); (8) Dr. Neelam Patel (India); (9) Dr. Mohsen Barahimi (Iran); (10) Dr. Toshihiko Kuno (Japan); (11) Dr. Shinji Fukuda (Japan); (12) Ms. Mona Liza Delos Reyes (Philippines); (13) Engr. Reyne B. Ugay (Philippines); (14) Mr. Jan Potgieter (South Africa); (15) Dr. Macdex Mutema (South Africa)

**Permanent Observer:** Mr. Alan Kendall Clark (UK)

### 1. Confirmation of Agenda

The participants agreed to the proposed agenda.

### 2. Welcome to new members

Dr. Macdex Mutema (South Africa) introduced himself with a summary of his work in the Institution of Agricultural Engineering, Pretoria to improve water delivery in open canal systems. He was welcomed as a full member of the WG-M&R.

Dr. Hwa-Lung Yu (Chinese Taipei Committee) was accepted as a member in Adelaide and has confirmed that he will be happy to contribute to the development of the Guidelines on Modernization.

Dr. Usman Khalid Awan (Pakistan) was not present in Adelaide. It is understood that he has changed jobs and Central Office has requested the Pakistan National Committee (PANCID) to provide updated contact information and/or an alternate nominee.

Shortly after the meeting, the Central Office forwarded three nominations for membership from the National Committee of Turkey. These are:

- Mr. Ali Volkan SEYFİ, DSI (State Hydraulic Works) / Ankara
- Ms. Bedriye Nur Dikenli AYTEKIN, DSI (State Hydraulic Works) / Ankara
- Mr. Bilal Alpaslan, DSI (State Hydraulic Works) / Ankara

As the mandate for the current WG expires at the end of 2023, the Chair proposes to accept these provisional nominations immediately and confirm their membership if they make contributions to the WG during 2023 by written contributions and/or participation in future online discussions.

### 3. Development of Guidelines on Modernization of Irrigation and Drainage Services (15 minutes)

Chair Ian Makin introduced the agenda item by outlining a proposal to complete the WG mandate by producing the ICID Guidelines on Modernization of Irrigation and Drainage Services by the end of 2023. A short discussion of the current status and content of the proposed guidelines followed, including:

#### a. Confirmation of the proposed structure of guidelines

- i. Dr. Tarek El-Saman noted that the definition of Modernization should include maintenance as a specific component of modernization. He encouraged the inclusion of economic returns in the case studies of investments in modernization. He also noted the importance of the inclusion of specific activities focusing on capacity development on modernization and the subsequent operation of upgraded irrigation and drainage systems. Dr. Mohsen (Iranian NC) offered to work with the writing team to further refine the definition of modernization. Macdex Mutema observed that the current definition is silent with respect to sustainable operations and the importance of the protection of the environment.
- ii. Alan Clark asked whether the Guidelines would include specific information on piped distribution systems. Ian Makin confirmed the intention to include as much detail as possible on piped irrigation, both low and high

pressure, noting that the WG-M&R has been seeking case studies of such systems. Rob Rendell presented a case study from Vietnam at the International Workshop in Adelaide. Alan Clark offered to provide further inputs on piped irrigation systems. Dr. Sanjay Belsare noted that piped networks are the preferred strategy for the development of new systems in Maharashtra. He would be willing to provide additional information and examples of the development of modernized systems.

- iii. Dr. Sanjay Belsare noted the need to provide guidance on the norms of costs and/or returns that are required when making a decision to invest in modernization. Dr. Sanjay confirmed his willingness to contribute to the sections on stakeholder engagement in the modernization process.

**b. Agreement to lead/write the development of chapters**

- i. Dr. Sanjay Belsare confirmed his willingness to contribute, with Sani Bala, to the sections on stakeholder engagement in the modernization process. An updated annotated content of the proposed guidelines is given in **Annex 1**.
- ii. Shinji Fukuda reported that the draft of the section assigned to his team will be shared in early 2023.
- iii. Ian Makin proposed to arrange a meeting of the proposed authors of the chapters towards the end on 23rd or 24th January 2023 to finalize the production plan (**Annex 2**).

**c. Proposed milestones for writing and reviews**

Given the uncertainty regarding the timing of the proposed World Irrigation Forum IV, currently scheduled for April 2023 in Beijing, the Chair proposed that the release of the Guidelines should be rescheduled to the next Congress to be held in Vizag, India during November 2023. The proposed schedule of activities and milestones for the preparation of the guidelines is given in **Annex 2**.

**d. Proposed publication strategy**

It is proposed that the Guidelines are produced as an electronic “living document” to be available as: (i) a hosted document on the ICID web page, available for online referencing, (ii) a download for local printing as a hardcopy reference document, and (iii) potentially as an e-document for use on mobile devices. The initial focus will be on finalizing the online hosted document format for release during the November 2023 Congress in Vizag.

**4. Update on Norms and Processes for O&M of irrigation and drainage systems (15 minutes)**

Dr. Mona Liza Delos Reyes led the discussion of progress on the survey of Norms and Processes for O&M of I&D systems.

**a. Update on the processing of questionnaires and analysis**

- i. A total of 25 responses to the questionnaire have been received and encoded into SPSS for analysis. Mona gave a quick overview of the preliminary analysis of the data. The data has been shared with the core team assigned to the study. Dr. Neelam Patel agreed to collaborate with Mona to develop a more detailed analysis of the survey data. After a brief discussion of the processes for transferring the data between different users of SPSS software, Dr. Patel requested Mona to send a copy of the exported data file in Excel format for analysis.
- ii. Dr. Mohsin noted that there is a diverse environment and social setting in Iran. The Iran NC plans to send further data for inclusion in the analysis.

**b. Proposed structure of the report**

Given the initial status of the analysis, it was agreed it is too early to discuss the format and production of the report on the study. Once the next stage of analysis is completed, a further core-team meeting will be organized to discuss the findings and to flesh out a report structure. Authors of the report will be identified at that stage.

## **5. Proposals for WG\_M&R meetings, webinars, e-Discussion 2023**

Ian Makin reminded the members of the support the Central Office provides to the WGs in the scheduling, organization, and implementation of remote meetings such as this one. He noted that President Ragab is encouraging all WGs to meet at least once per quarter to help progress the work on each's mandates between the annual physical meetings. He noted that the full WG-MR didn't meet quarterly during 2021/22 but with sub-group meetings, we were able to maintain progress and organize the international workshop in Adelaide in October 2022.

Ian Makin proposed another meeting of the WG, probably sometime in late February.

In addition to the virtual WG meetings, ICID is encouraging the WGs to host e-Discussions and webinars to further expand the dissemination of the WGs' work and to raise the profile of ICID in the profession. To this end, CO has circulated guidelines and a template (**Annex 3**) for proposing virtual events to be hosted by ICID.

Ian Makin informed the WG he is exploring a potential webinar on Water Productivity with Colin Steley who is preparing a publication on the topic with FAO. Colin Steley has confirmed he will be able to lead either an e-Discussion or webinar in early 2023. A background note and invitation to the event will be developed with Colin in the next few weeks, aiming for a discussion/webinar in March/ April 2023.

Ian Makin requested the members to think about potential topics for webinars and/or e Discussions they would like to present and/or contribute to, noting that these events do not have to be the effort of a single person.

Alan Clark indicated he is interested in information about piped irrigation in the modernization of irrigation services; he noted there are quite a lot of examples, but most seem to be reports of proposals and initial installations rather than case studies of experiences with routine operations. Dong Bin noted that there is an experience of pressurized irrigation for cash crops in N. China and suggested that the China NC may be able to provide more information. Sanjay Belsare noted that Maharashtra has about five years of experience using the Indian National Guidelines for piped irrigation. Alan Clark and Sanjay Belsare agreed to collaborate to explore developing a webinar on the topic of piped irrigation services.

Jan Potgieter explained that South Africa has guidelines for the modernization of small-scale irrigation, including using pipelines that he would share with the WG.

## **6. Proposals for WG-M&R post Vizag meeting in November 2023 (15 minutes)**

Ian Makin provided the background to the proposal by President Ragab that each WG consider the future activities and arrangements following the completion of each WG mandate as part of the proposed restructuring of WG etc. to reduce overlapping mandates enabling more focussed discussions and enabling compression of the number of sessions required for WG meetings at each IEC.

In Adelaide, the WG proposed to PCTA that we would not seek a new mandate beyond November 2023 but would be happy to continue to contribute to activities on modernization. President Ragab agrees that modernization is an important topic that ICID should continue to work on and to provide leadership.

Sanjay Belsare agreed that the WG-MR should complete its mandate by end of 2023 and the topics discussed today (pipelines, O&M standards etc.) should be included in future WG mandates.

Ian Makin requested the members to think about areas where the modernization topic could be expanded and/or integrated into the mandates of future WGs.

## **7. Any other Business**

There was no other business discussed. The meeting closed at 14:45.

**ANNOTATED CONTENTS OF GUIDELINES ON MODERNIZATION OF  
IRRIGATION AND DRAINAGE SERVICES  
(DECEMBER 2022)**

The following annotated contents list is intended as a basis for discussions leading up to preparation of a draft document of about 150 to be published as an ICID guidebook on Modernization and Revitalization of Irrigation and Drainage Services. The document is intended to provide guidance to ICID members and other stakeholders in the I&D sector and should be a living document on the ICID web site that can be updated with inputs from different Work groups in future. The first edition of the guide is intended for release at the 4th World Irrigation Forum in 2023.

**Preface** (2 pages)

**Executive summary of overall report** (2-3 Pages)

**Key Messages** (1-2 pages of bullet points)

Key take-home messages and action points for implementation of modernization and revitalization strategies

**1. Introduction (2-3 pages) (Ian W Makin)**

Background to publication, working of ICID WG on Modernization and Revitalization, linkages to ICID Action Plan, intended audience of publication, why publication on M&R needed given the other publications on same topic (ADB, WB, FAO, others?) – what’s new in this approach?

**2. Modernization and revitalization of irrigation and drainage services (10 - 15 pages plus case study annexes)**

*2.1. Definition of modernization and revitalization, (Ian W Makin)*

Modernization and revitalization of services is not only about infrastructure and is unlikely to be a one-shot exercise (ref Charles Burt – Tehran Gulharti lecture). Systems are dynamic, modernized systems must be able to evolve in a changing landscape (agricultural, social, economic, water resource, and climate changes)

We propose that ICID adopts the following definition of modernization:

Modernization is the process of upgrading infrastructure, operations, maintenance and management of irrigation systems to sustain the water delivery service requirements of farmers and optimize production and water productivity.

This definition encapsulates concept elements that distinguish “modernization” of irrigation services from “rehabilitation” of irrigation systems. These elements are expanded as:

- (i) “process” reflecting the need that modernization of systems should be a continuous exercise to enable incorporation of future changes in the irrigation system and service requirements of the farmers. Ideally the process will align with existing government development and budgetary timeframes and systems;
- (ii) “upgrading” means improving beyond what is existing; not replacing or rehabilitating. It means applying design best practices to infrastructure to optimize operation requirements and maximize system performance and efficiencies;
- (iii) “infrastructure” means all physical assets related to the irrigation system, including headworks, conveyance systems, drainage systems, monitoring systems, communication systems, farm and access road networks, operation buildings etc.;
- (iv) “operations and management” means all human resources and management processes responsible for managing, operating and maintaining the irrigation system including ground and surface water management, and the associated physical infrastructure;

- (v) “irrigation system” encapsulates all physical and non-physical components that contribute to convert water and nutrients into food and fiber. This includes the infrastructure, water resources, agency staff, farmers, services providers, supply and market chains required to enable farmers conduct a viable enterprise, whether for subsistence or in active engagement with external markets;
- (vi) “sustain” means that the irrigation system will continue to deliver a defined level of performance after upgrading. This includes managing the water resources to: (i) account for reallocations to other users, (ii) prevent adverse depletion of land and water resources, and (iii) enhance resilience to climate variability and adverse impacts anticipated from climate change. It also means ensuring that all costs relating to management, operation, maintenance, and asset depreciation of the system are affordable and are fully covered through either government, user (farmer), or private sector financing;
- (vii) “water delivery service requirements of the farmers” means ensuring reliable, adequate and flexible supply of water as agreed with farmers allowing them to maximize water and agricultural productivity. This requires farmers to be involved in planning, design and operation of the irrigation system, and in routine water management decisions;
- (viii) “optimize production and water productivity” means farmers must endeavor, and be supported through technology transfer and extension services, to optimize the productivity of their land with the available water.

In this definition, modernization is not limited to the introduction of modern hardware and/or software techniques but involves fundamental transformation of the way in which the business of irrigated agriculture is done. In the majority of cases, modernization of irrigation infrastructure and services will be a more relevant and cost-effective investment than rehabilitation, or restoration, of the original infrastructure.

#### 2.2. *Definition of applicability of different M&R strategies*

One size does not fit all situations

#### 2.3. *Definition of Institutions and Governance arrangements (Lead author required)*

Understanding of the system specific current, and potential, institutional and governance arrangements is essential to achieve sustainable modernization of services. Roles and responsibilities, constraints, and opportunities.

#### 2.4. *Definition of performance measures (Dr. Kuno Toshihiko)*

What are the appropriate performance measures in different situations – determining what must be measured rather than deciding what can be done from what is available

#### 2.5. *Diagnostic approaches to design of interventions – case study examples (Dr. Mona Liza Delos Reyes)*

### 3. **Irrigation and drainage services – getting the relevant stakeholders involved (Engr. Muhammad Sani Bala, Sanjay Belsare)**

Which stakeholders is modernization intended to address – whose problems is modernization of I&D services intended to resolve? What are the real problems in the specific system being addressed?

What are the roles and responsibilities of different stakeholders in different settings? Governance and institutional developments achievable.

### 4. **Modernizing irrigation and drainage systems for service delivery (20 pages+ plus case study examples)**

Definition of what are the objectives of modernization and revitalization interventions

#### 4.1. *Services (Dr. Shinji Fukuda)*

#### 4.2. *Infrastructure – (Brian Wahlin tbc)*

#### 4.3. *Management (Mr. Yazid Bin Abdullah)*

- 4.4. *Capacity development for modernization (Melvyn Kay - tbc)*
- 4.5. *Change management (SG Ashwin Pandya)*
- 5. Sustaining revitalized I&D services (up to 20 pages plus case study examples/illustrations)**
  - 5.1. *Asset management (Dr Martin Burton)*
  - 5.2. *Financing sustainable service delivery (Ian Makin – with ADB/WB colleagues)*
  - 5.3. *Responding to changing needs (Ian Makin and Ms. Mona Liza Delos Reyes)*
  - 5.4. *Stakeholders roles and responsibilities (Jan Potgieter and Dr. Shinji Fukuda)*
  - 5.5. *Capacity development for sustainability (Melvyn Kay tbc)*
- 6. ICID recommendations on Modernization and Revitalization of I&D services (4-5 pages)**
  - 6.1. *What can ICID members do to enhance I&D services*
  - 6.2. *How will ICID help members and other stakeholders*
  - 6.3. *What next*

**References**

**PROPOSED SCHEDULE FOR PRODUCTION OF GUIDELINES ON MODERNIZATION**

	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
<b>Physical meetings</b>															
Adelaide, Australia															
Vizag, India															
<b>Virtual meetings of chapter authors</b>				23-Jan			03-Apr			10-Jul					
<b>Draft chapters</b>															
Exec Summary															
Chapter 1															
Chapter 2															
Chapter 3															
Chapter 4															
Chapter 5															
References															
Annexes															
<b>Review of drafts</b>															
<b>Revision</b>															
<b>Final revisions</b>															
<b>Preparation of web version of guidelines</b>															
<b>Publication on-line (ICID web-site)</b>															

## ICID GUIDELINES ON ORGANIZATION OF VIRTUAL MEETINGS ETC.

### TERMS OF REFERENCES FOR ORGANIZING VIRTUAL ONLINE MEETINGS, WEBINARS AND E-DISCUSSIONS FOR WORKING GROUPS

#### 1.0 Virtual Online Meetings

As WG members are aware, the ICID's Working Groups have only one face-to-face meeting during annual IEC meetings where members meet to discuss various technical and other agenda items. Although members are encouraged to participate in this face to face meeting as well as contribute through e-mail to the activities of the WG, they sometimes are neither able to attend WG meeting during IEC nor able to contribute to the activities of the WG through emails, resulting in discontinuation of their membership, if they are not able to contribute for two years (one year in case of provisional members), consecutively depriving the purpose of sharing experience and knowledge.

In order to ensure regular contribution of the WG members and avoid their discontinuation due to non-contribution, especially from those who are unable to attend annual meetings, it is desirable that WGs make full use of Virtual online platform for virtual meetings in between two face-to-face meetings to discuss progress of activities of the WG as well as to ensure contribution from all members. These virtual meetings can be utilized to discuss various administrative and technical issues such that time during IEC meetings can be utilized more fruitfully.

The Terms of References for organizing Virtual online meetings are as below:

- (i) The Chairperson develops a brief agenda based on the past minutes, in consultation with Vice Chair and Secretary of the WG.
- (ii) The Chairperson decides, in consultation with Vice Chair and secretary, on the five potential dates for having such a meeting and conveys it to ICID Central Office (ICID CO).
- (iii) The ICID CO conducts a 'Doodle Poll' to arrive at a consensus date. A convenient time will be decided by the ICID CO considering the geographical spread of the members.
- (iv) Based on 'Doodle Poll', ICID CO will announce the consensus date and time and send invitations along with details for joining the Virtual online meeting.
- (v) The Chairperson to prepare a 'Summary Report' of the proceedings within 7 days.
- (vi) There is no cost involved in joining these meetings other than regular internet charges.
- (vii) The only requirement is a computer with microphone; Internet connection, and WebCam for video streaming (optional).

Regularly, ICID has been organising virtual online meetings which can be accessed at [https://icid-ciid.org/inner\\_page/152](https://icid-ciid.org/inner_page/152) for more information.

#### 2.0 Webinar (Web-seminar)

Webinar means a Web-based seminar which is an efficient tool to disseminate and share knowledge and vast expertise available within and outside the ICID fraternity. ICID, under its policy for wider knowledge dissemination has been taking the lead to organize webinars for its members, in particular and wider irrigation and drainage community, in general, to create awareness and bring a common understanding among the various stakeholders in the irrigation and drainage sector, particularly in the area Agricultural Water Management (AWM). ICID through its webinars, under Professional and Young Professional series, facilitates various experts/speakers to present their innovations, research and other related topics to be recognized at an international level. The webinars are customized keeping in view the requirement of different professionals working in the AWM sector.

Webinar may be in the form of presentation, lecture or seminar that will be transmitted over the Web using video conferencing software. Webinars allow groups in remote geographic locations to listen and participate in the same conference regardless of the geographic distance between them. The key feature of these webinars may be their interactive elements - the ability to give, receive and discuss information in real-time. Speaker will be able to share audio, documents and applications with webinar attendees. ICID webinars are also recorded for later viewing (sans of course the interactive elements) and is available on ICID media for the benefit of those who could not attend live webinar. In this sense, a recorded webinar becomes a webcast.



The Terms of References for organizing a Webinar are as below:

- (i) The Chairperson/Working Group decides or proposes to organize a Webinar on a particular topic of their choice and firms up the name of speaker.
- (ii) The Chairperson/Working Group decides upon the probable date during the year in consultation with the Speaker and ICID Central Office (ICID CO).
- (iii) The structure of a typical Webinar will be: Welcome and introduction (5 minutes), presentation by the Speaker (40 minutes), discussion (10 minutes) and closing (5minutes) – a total of about 60 minutes.
- (iv) The ICID CO, thereafter, co-ordinates (ascertain a write up a month before the date of webinar and presentation slides etc) with the Speaker and firms up a convenient time considering the geographical spread of the members.
- (v) The ICID CO will run a dummy trial (optional) with the Speaker prior to actual Webinar on mutually aggregable date and time.
- (vi) The ICID CO will take care of all the publicity and invitations to the stake holders along with details for joining the Webinar.
- (vii) There is no cost involved in joining the Webinar other than regular internet charges.
- (viii) The only requirement is Computer with microphone; Internet, and WebCam (optional)

As a new initiative, ICID has been organising several webinars in the past which can be accessed at [https://icid-ciid.org/inner\\_page/66](https://icid-ciid.org/inner_page/66) for more information.

### 3.0 e-Discussions

The e-Discussions are online exchanges among members of a group, in written (text) form, that are organized to reflect in depth information on important questions related to ongoing projects, initiatives, or development themes. Participants go to the e-Discussion space independently to read, contribute their views and comments, and respond to others by noting points of agreement or differences, sharing significant evidence, and raising relevant issues. The group's responses to the questions discussed represent a concrete output of the e-Discussion. These responses may be summarized by the facilitator, adapted for use in documentation, and applied in the event planning and in relevant development contexts. The e-Discussion provides a forum for experts, practitioners, and representatives from a range of institutions and enterprises in different parts of the world to come together virtually to raise questions and share experiences and good practices in subject matter being discussed.

The Terms of References for organizing an e-Discussion are as below:

- (i) The Chairperson/Working Group decides or proposes to organize an e-Discussion on a particular topic of their choice and identifies a 'Lead Person' or 'Core Team' in its annual/virtual Virtual online meetings.
- (ii) The Chairperson/Working Group decides upon the probable dates (two weeks) during the year in consultation with the ICID Central Office (ICID CO).
- (iii) The 'Lead Person' or 'Core Team' prepares a 2-page concept note giving brief introduction, objective, scope and expected outcome from the e-discussion, a month before the date of e-discussions.
- (iv) The structure of a typical e-Discussion will be: it usually takes place over a pre-decided period of two weeks or so, the 'Lead Person' monitors the discussion and post questions and intervene or stimulate the discussion in the logical direction, and prepares a 'Summary Report' of the e-discussion and present it during the next WG meeting.
- (v) The ICID CO co-ordinates (ascertain the "Concept Note' etc.) with the 'Lead Person' and the Chairperson of the WG.
- (vi) The ICID CO will take care of all the publicity and invitations to the stake holders along with details for joining the e-Discussion.
- (vii) There is no cost involved in joining the e-Discussion other than regular internet charges.

The e-Discussions were held in 2017, 2018 and 2019 on various topics which can be accessed at [https://icid-ciid.org/inner\\_page/68](https://icid-ciid.org/inner_page/68)

