

## WORKING GROUP ON SUSTAINABLE ON-FARM IRRIGATION SYSTEMS DEVELOPMENT (WG-SON-FARM)

### FIRST DRAFT SCOPING DOCUMENT

#### 1. Introduction and rationale

- 1.1 If arid and semi-arid water stressed regions are to harness sustainable production gains and subsequent economic benefits, whilst managing direct and indirect environmental impacts, it is essential that:
- On-farm irrigation structures and water distribution system networks are properly designed, installed, managed and maintained;
  - Soil moisture is monitored, technical and management measures for enhancing the water infiltration and retention capacities of soils are investigated and implemented;
  - Trade-offs among on-farm irrigation technologies, socio-economic and environmental benefits are optimized;
  - Innovative local institutional arrangements are developed and promoted for operation and maintenance;
  - Top-notch scientific and development relevant research is conducted and its results are translated into actionable recommendations.
- 1.2 These issues will form the core mandate of the Working Group on Sustainable On-farm Irrigation systems (WG-SON-FARM).

#### 2. Objectives

##### 2.1 *Relevance of the Working Group (WG)*

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

- the topic of sustainable on-farm irrigation systems is relevant to the vision and mission of ICID and of interest for its members, especially in countries with a high, medium and low Human Development Index;
- the WG is expected to contribute to effective implementation of the Strategy Themes On-Farm and Knowledge and to other Strategy Themes for that matter;
- While many major investments and activities in the past stopped at the farm gate, it is increasingly being recognized that substantial resources should also be allocated to on-farm irrigation systems, if programmes on new irrigation development and/or modernization of existing systems are to make major contributions to higher agricultural production, economic growth and environmental sustainability.

##### 2.2 *Relevance of the Working Group to the scope of the Thematic Area*

2.2.1 The same justification outlined in the above is applicable for the relevance of the WG to the scope of the Thematic Area. In the coming periods, on-farm water management and development will be an imperative integral component of any new irrigation development and/or modernization activity.

##### 2.3 *Existing gap that the Working Group is expected to fill*

2.3.1 Other ICID WGs or Task Forces (TF) that have a related scope of work are: WG-ENV; WG-SDTA, WG-DROUGHT; WG-Climate; TF-VE and the recently proposed WG-M&R. The details on this WGs and TF could be appreciated at: [www.icid.org](http://www.icid.org)

2.3.2 The WG-M&R is mandated to study design and management of irrigation structures and efficient allocation and application of irrigation, but its scope ends at the farm gate. There is a gap in dealing with issues related to soil moisture management, water allocation, delivery and distribution at farm level. None of the WGs are presently mandated to make in depth study of sustainable development and management of on-farm irrigation systems.

2.3.3 This WG will also further enrich the knowledge-base of ICID community by bringing-in new insights on Flood-based Farming Systems (FBFS). FBFS represents a unique option for the management of often destructive floods in support of agricultural production and livelihoods of marginalized populations in poverty pockets in rural arid regions of Africa and Asia. Further, by their nature - using flood water rather than perennial flows - they are quintessential adaptations to climate change and variability. The systems account for about 30 million hectares across the world – inclusion an estimated 15 million hectares in Sub Saharan Africa. Substantial local wisdom has developed over the past decades in organizing FBFS and managing both the floodwater and the heavy sediment loads that go along with it, but the systems have received little policy attention, largely stayed under the radar screen of major investment programmes and have been widely neglected by the scientific community.

2.3.4 The new WG has taken good note of the activities of all relevant ICID work bodies when preparing this Scoping Document.

### 3. State of knowledge on the topic

#### 3.1 *Other International Organisations that are working on the subject*

3.1.1 There are several other International Organisations that have programs and activities on this topic:

- (a) Food and Agriculture Organisation of the United Nations (FAO);
- (b) International Fund for Agricultural Development (IFAD);
- (c) Most of the 15 research institutes that are organised within the CGIAR Consortium, especially IWMI and ICARDA;
- (d) Multilateral development banks: ADB, AFDB, IADB, WB;
- (e) A number of universities and institutes for international education: AIT, Irrigation Training and Research Centre of California Polytechnic State University, McGill University, UNESCO-IHE;
- (f) Private companies and Foundations, namely MetaMeta and the Spate Irrigation Network

#### 3.2 *The niche that the WG ICID is expected to fill in this area*

3.2.1 The specific niche that this WG can fill in this area can be formulated as follows:

- (a) Enrich the data-base on current and potential perennial irrigation and FBFS command areas through also the use of GIS and Remote sensing techniques;
- (b) Documented understanding of up-to-date technologies, methodologies and practise on the topic;
- (c) How-to-do easy to read knowledge products (with audio-visuals) on specific thematic areas such as managing soil moisture; novel indigenous and state of the art modern field water distribution systems; calibration, validation and application of relevant models;
- (d) Country overview papers based on review and analyses of manuals, guidelines, codes of practice and standards on development, modernization and management of on-farm irrigation systems in the countries that are represented in the WG;
- (e) Organise knowledge and experience sharing events – webinars, workshops, seminars or symposia on the topic;
- (f) Prepare research articles and overview papers on the topic for publication in Irrigation and Drainage (IRD).
- (g) Formulate a position paper on key issues for sustainable development and management of on-farm irrigation systems.
- (h) Support the Central Office with updating of the data base on micro-irrigation systems at country scale.

#### 3.3 *How is the Working Group expected to collaborate with the other International Organisations?*

3.3.1 Several members of the former WG-ON-FARM who are expected to join this new WG-SON-FARM are well connected to a number of international organizations (IFAD, FAO, IWMI, WWC, GWP and others) and will have the possibilities to share the initiatives and achievements of the WG. On the other hand, the international organizations will be encouraged to actively contribute to the activities of the WG by nominating permanent observers. The adoption of a policy to make all knowledge products of the WG available on an open source basis in line with the Creative Commons will facilitate this collaboration.

## 4. Work Plan

### 4.1 Scope

4.1.1 The WG is expected to support research, evidence-based documentation and dissemination on latest scientifically significant and societal relevant issues and accordingly make recommendations with respect to:

- (a) Identifying, planning and formulating approaches, methodologies, technologies and field practices for sustainable development and management of on-farm irrigation systems;
- (b) Balancing the trade-offs between socio-economic benefits and maintaining sustainable environments;
- (c) Interaction between adoption of top-end on-farm irrigation technologies and the resulting required operation and maintenance as well as institutional arrangements;
- (d) Guidelines for design of on-farm irrigation structures and automation of field water distribution networks;
- (e) Use of Information and Communications Technology (ICT) viz. mobile, internet, GIS and remote sensing, for efficient on-farm water management.

4.1.2 Annex 1 has the details on the results-based work-plan for the period 2014 to 2019.

### 4.2 Target audience

4.2.1 Farmers, grassroots/community organizations, practitioners and managers, researchers, development organizations and policy shapers interested in and are actively working and promoting sustainable development and management of on-farm irrigation systems.

### 4.3 Outputs

4.3.1 The major expected outputs during the six-year life of the WG are the following:

- (a) Six How-To-Do thematic notes supported with audio-visual material;
- (b) Three publications in the Irrigation and Drainage (IRD) journal: 2 research articles and one overview paper;
- (c) Six country overview papers published through relevant national facilities;
- (d) At least two workshops, seminars or symposiums successfully organized.
- (e) A position paper on sustainable development and management of on-farm irrigation systems

### 4.4 Timelines

4.4.1 Sustainable development and management of on-farm irrigation systems is an evolving important topic in light of its role in support of global food production. Nonetheless, it is recommended that the initial term of this WG will be set at six years. This timeline is based on the work-plan given in annex 1, which will be further refined during the inaugural meeting 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 invitation of outsiders that are interested in the topic on a Permanent Observers (PO) or ad hoc basis.

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 and especially in policy development, decision making and implementation in practice.

4.5.3 **Appendix** has the work-plan detailing the major activities for the period 2014 to 2019 and the main actors responsible for realizing the activities.

## 5. Core Group

5.1 The Core Group consists of:

*Convenor:* Dr. Abraham Mehari Hale

*Members:* Mr. Felix Reinders (former Chairman of WG On-Farm), Dr. A.K. Randev (Former Secretary, WG On-Farm); Mr Suman Sijapati, Mr Mohd Yazid bin Abdullah, Ms. Sabine Saidel



**RESULTS-BASED WORK PLAN FOR THE WORKING GROUP ON SUSTAINABLE ON-FARM IRRIGATION SYSTEMS (WG-SON-FARM)**

Activity	2014	2015	2016	2017	2018	2019	Actors
Mailing of draft Scoping Document to members of the drafting team, former members of the Working Group On-Farm, Central Office and selected individuals	Green						Convener
Comments on Updated Scoping Document received	Yellow						All consulted individuals
Scoping document finalized and sent to all who contributed to the drafting	White	Green					Convener
Invitation to National Committees for nominations and information		Red					Central Office
Submission of nominations & information		Yellow					National Committees facilitated by Central office
1st Meeting Montpellier - scoping document and work plan discussed, modified as necessary, and adopted			Red				Members and Permanent Observers
Exchange of information, knowledge, experience, networking		Blue	Blue	Blue	Blue	Blue	Members and Permanent Observers
Support the Central Office with updating of the data base on (micro) irrigation systems		Blue	Blue	Blue	Blue	Blue	Members and Permanent Observers
Prepare country overview papers (one square represents one paper)			Blue	Blue	Blue	Blue	Some members
How-To-Do Thematic documents ready (one square represents one document)				Blue	Blue	Blue	Some members

