

WORKING GROUP ON WATER SAVING IN IRRIGATED AREAS (WG-WATS)**DRAFT SCOPING DOCUMENT****1. Introduction**

- 1.1 Today, agriculture consumes 70 percent of all global water withdrawn for consumptive use, up to 95 percent in several arid and semi-arid countries. In fact, irrigated agriculture has played a major role in the development of rural economies, supporting economic growth and poverty reduction. The irrigation water, passing from its source to the field and then finally consumed by crops, has been through many links, including water resources allocation, conveyance, distribution, irrigation, soil evaporation and plant transpiration, etc. So, corresponding measures should be taken at each of these links. In order to reflect the essence of water-saving irrigation in a comprehensive and objective way and make the issue less complicated, the irrigation water consumption, irrigation water using efficiency, and engineering and technical requirements, etc. have been selected as the key criteria on water saving in irrigated land.
- 1.2 There is a vast range of techniques and technologies available for minimizing water losses and maximizing water saving in agriculture and efficient use of irrigation water, ranging from simple tubes for field water application to sophisticated canal automation and telemetry. Water saving practices in irrigated agriculture can be categorized as engineering, management, technology, technique, policies and institutional. The success of these parameters depends on the level of their integration and socio-economic dimensions of a given locality. The modern irrigation knows how to use less water to produce more agriculture products.

2. Objectives*1.1 Relevance of the Working Group:**1.1.1 The relevance of the WG can be specified as follows:*

- (a) the topic of water saving in irrigated area is relevant to the vision and mission of ICID and of interest for its members, in all countries with a high, medium and low Human Development Index;
- (b) the WG is expected to contribute to effective implementation of the Strategy Theme Schemes and to other strategy themes for that matter;
- (c) Water saving in irrigation is critical for many regions of the World, especially in the arid and semi-arid zones;
- (d) Fresh water is limited, therefore needs more control on water withdrawal and usage in order to be able to meet water and food security;
- (e) "WatSave Award" is specific brand of ICID since 1997 in the International level. Therefore new WG needs to revisit the criteria and measure for nominees and applications.

1.2 Relevance of the Working Group to the scope of the Thematic Area

- 1.2.1 For the relevance of the WG to the scope of the Thematic Area the same argumentation is applicable as shown under the relevance. One of key objective for huge investment in irrigation infrastructure in the world is controlling water losses and saving fresh and limited water through water conveyance, distribution and application in order to meet food security.

1.3 Existing gap that the Working Group is expected to fill

- 1.3.1 Two ICID active working groups (WG On-Farm and WG-Crop) which relatively closed to the mandate of proposed working group are focused on water productivity, crop requirement as well as efficient application of water at the field level, and there is a gap in dealing with prevents water losses from resources to the field, and how to save water in the farm, as well as there is a gap in aspect of approaches to technology, technique, policies and institutional to water saving from lowest level in the farm to the upper level to the field, basin, and national program. None of the WGs are presently mandated to study the issues related to agricultural water saving from resources to the field, and from region to national level.

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. This especially concerns the:

- (a) Food and Agriculture Organisation of the United Nations (FAO);
- (b) International Water Management Institute (IWMI) ;
- (c) International Fund for Agricultural Development (IFAD);
- (d) International Rice Research Institute (IRRI);
- (e) International Livestock Research Institute (ILRI),
- (f) professional international water associations, like: IAH, IAHR, ICOLD, IHA, IWA, IWRA, as well as national ones not incorporated within ICID;
- (g) Institutes for international education: UNESCO-IHE...

3.2 The niche that ICID is expected to fill in this area

3.2.1 The specific niche that this WG can fill on the issue bulleted under "Scope" can be formulated as follows:

- (a) to exchange information and network on the issues in order to be up to date with new developments, methods and approaches;
- (b) to review and prepare a condensed overview of existing key books, manuals, guidelines and other relevant publications on the issues;
- (c) to prepare and present reports and/or case studies on recent development in the countries that are represented in the WG;
- (d) to collect and review manuals, guidelines and standards on sustainable water management in irrigation in the countries that are represented in the WG;
- (e) to consult with ICID Central Office on the continuation of data collection with respect to developments in irrigation methods in the Member Countries (MC);
- (f) to organise international workshops, seminars or symposia on the issue;

3.2.2 This can be the basis to present recommendations and if mature a position paper on key issues on developing irrigation and sustainable water management, and in fine to prepare an overview paper on the state of the art on the topic for publication in *Irrigation and Drainage (IRD)*.

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

3.3.1 International Organisations can contribute to the activities of the WG by nominating Permanent Observers (PO). On the other hand presentations of the work and achievements of the WG can be presented at the occasion of events organized by International Organisations.

4. Work Plan

4.1 A tentative Work Plan is proposed by core group, which of course has to be enriched by the WG itself during the first step of its work.

- (a) To recognize methods and techniques for water saving in Agriculture;
- (b) Experiences on application of technologies and innovations to save water;
- (c) Identifying management, planning and best practices on water saving;
- (d) Water accounting and irrigation auditing at various levels (scheme and/or system);
- (e) National policies and strategies to support water saving and prevent water losses;
- (f) Identifying and promoting successful water saving tools and processes;
- (g) The role of water authorities and institution for water saving;
- (h) success stories,

4.2 Scope

4.2.1 The WG is expected to investigate, analyse, and disseminate information on new developments and to formulate recommendations with respect to:

- (a) water accounting and irrigation auditing (and other ancillary uses);
- (b) irrigation water measuring devices;
- (c) assessment of water loss in various components of irrigation systems;
- (d) various methods and techniques used for water saving in irrigation;
- (e) policies and strategies for irrigation water saving;
- (f) charging for Irrigation Services;
- (g) success stories and best management practices in water saving;
- (h) tools and processes apply in irrigation water saving;
- (i) outreach of water saving technologies;
- (j) WatSave Awards.

4.3 Target audience

4.3.1 The target audience for this working group will be managers of irrigation systems, consultants, researchers, government agents, farmers' organizations, manufacturers and staff of International Organisations working on the topic.

4.4 Outputs

4.4.1 The following outputs can be expected from this WG:

- (a) although it is an indirect output sharing of knowledge and experience by representatives of NCs will also enable them to disseminate this knowledge within their country;
- (b) guidelines on sustainable water management in irrigation;
- (c) condensed overview of existing key books, manuals, guidelines and other relevant publications on the topic;
- (d) the WG is expected to organise at least one workshop, seminar or symposium in three years at occasion of an international ICID meeting;
- (e) overview paper on the state of the art on the topic for publication in *Irrigation and Drainage (IRD)*

4.5 Timelines

4.5.1 While irrigation development and water management in irrigation are very important issues in light of its role in support of global food production it is recommended that the initial term of this WG will be set at six years. The timeline would have to be based on the scope of work and the expected output. Details of the timeline would have to be formulated and refined during the inaugural meeting of the WG.

4.6 Collaborators and dissemination strategy

4.6.1 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 PO, or ad hoc basis.

4.6.2 The dissemination strategy should be based of 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.

5. Core Group

5.1 This draft is prepared and proposed by core group. The Core Group consists of:

- | | | |
|-----|--------------------|------------------------------|
| (a) | Mr. Mehrzad Ehsani | (ehsani2@gmail.com) |
| (b) | Mr. Thierry Facon | (Thierry.Facon@fao.org) |
| (c) | Mr. John Replogle | (John.Replogle@ars.usda.gov) |
| (d) | Dr. Nico Benade | (nico@nbsystems.co.za) |



Appendix to Annex

**DETAILS OF WORK PLAN FOR
WORKING GROUP ON WATER SAVING IN IRRIGATED AREAS**

1. According to the tentative working plan that proposed by core group, WG may needs more clarification on objectives and work plan topic in order to be used as guideline and discussion materials during the meetings. Concept note and details of objectives are as follows:
2. Approaches to water saving in irrigated agriculture may be categorized as management, technology, technique and policies. The success of these approaches depends on the level of their integration and socio-economic dimensions of a given locality. WG would identify the various tools and procedure which apply by countries in order to save water or control water losses. Documentation of successful stories and collect experiences all around world would be one of the main responsibilities of WG.
3. **Policy and legal approaches to Water Saving:** WG would identify law and regulation applied by various countries to prevent water loss and encourage water savings in agriculture. It should also determine the role of water fee and charging to smart motivation on water saving. Appropriate national guidelines and regulations for water saving need to be developed and implemented. According to the strategy run in most of countries, irrigation infrastructure investment is mostly funded by the public sector. Increasing investment and involvement of private sector is crucial for up-scaling of irrigation technologies.
4. **Technology Approaches to Water Saving:** There is a vast range of technologies available for improved operation, better management and efficient use of irrigation water in schemes levels. Reducing water losses on distribution networks such as irrigation schemes, is a low cost target that can be achieved over a relative short period, compared to construction of a new storage capacity to increase water supply. This type of effective water saving is mainly dependent on innovative management and application of innovative technologies. Priority should therefore be given to training of managers to support adoption of available technologies, in particular measurement and metering of water use on irrigation schemes and information systems for canal water management.
5. **Techniques Approaches to Water Saving:** Agricultural water saving techniques, know how to use less water for the specific plantation, how to reuse some of the water and to recycle them. The main idea is to use the minimum amount of water needed and to optimize the usage. A systematic approach to water saving in agricultural requires actions at all levels, from farms to irrigation schemes, and from local to national action and strategies, as well as, from innovation to developing techniques and technologies needs to cope with irrigated water losses and water saving. WG should identify traditional and modern methods for water saving within member countries. Collecting experiences and knowledge on methods and techniques which normally apply for better management of irrigation water would be considered in the WG agenda.
6. **Water Accounting and Irrigation Auditing:** Water saving measures need to be based on a thorough understanding of water balance and linkages between surface and groundwater and beneficial and non-beneficial uses of water. Water accounting use is a key step in managing irrigation water use. Producers may choose from several technologies, methods, and calculations to assist them with this practice.
7. By auditing any irrigation system on a regular basis, producers can monitor the water use trend over a period of time. Irrigation audit provides critical information about an irrigation system's efficiency; it can be used to detect problem areas before they become endemic to the whole system.
8. **Best Practices and Successful Story on Water Saving:** There are many successful practices, and research findings potent works and non-conventional pathways of achieving water saving in irrigation. A few of them are rated as outstanding contributions in water savings/ conservation across the world. There is urgent need to explore all those innovations and success story and share with stakeholders i.e. irrigation managers and policy makers. There is also need to strengthen the process of transfer and dissemination of water saving management skills from professional experts in the governments and international organizations to the farmers.



ⁱ Annex [66th IEC Agenda, Appendix XIII, page 129]