

Tehran Declaration

October 2011, Tehran, Iran

The 21st ICID Congress, the 8th International Micro Irrigation Congress and the 62nd IEC meeting of ICID were held between 19-23 October 2011 in Tehran, Iran. More than 1200 delegates from 55 countries attended the event. More than 200 papers were presented. Representatives from FAO-UN, ADB joined the event, given the importance of the topics of the Congress and related meetings on Investment in Agricultural Water Sector.

While the Congress was focused on considering the theme on “**Water Productivity Towards Food Security**”, the Micro Irrigation Congress deliberated on issues related to “**Innovations in Technology and Management of Micro Irrigation for Enhanced Productivity**”. As a result of intense deliberations following the presentations, the following recommendations emerged:

(1) Throughout the world the increasing signs of water stress, accentuated by the climate change are too imminent. The changes in the patterns of precipitation and temperature impact agricultural sector severely, particularly with rainfed agriculture. Increasing physical water productivity reduces the need for additional water required in irrigated lands to meet the increasing demand for doubling food production, meeting other water requirements, while at the same time providing sufficient water for the sustainability of ecosystems.

(2) As water becomes a more limiting resource than land and other resources it is logical to focus on “maximizing water productivity”. Creating an enabling environment allows the adoption of improved water management and other rainfed agriculture technologies to achieve this productivity increase. Where needed, the national policies can be changed involving the stakeholders to encourage maximizing water productivity by valuing water. A financial policy which reallocates to water use efficient practices and options can yield the desired results.

(3) Rainfed agriculture is very important to enhance food security and ecosystems sustainability. However, especially in the arid and semi-arid region, rainfed agriculture produces much below the potential achievable. Returns on investment in rainfed systems need to be high and hence it is essential in many areas to apply supplemental irrigation, water harvesting and soil and water conservation in addition to facilitating access to necessary inputs, to achieve better results.

(4) Impacts of climate change and droughts on rainfed production require more emphasis and consideration. It is important to increase support to research and capacity building in support of rainfed agriculture. Especially for understanding the impacts of climate change and adaptation measures in addition to optimizing water management.

(5) Cost of desalination of water for agriculture use is generally prohibitively high. Therefore water productivity efforts should focus on:

1. decreasing water losses in different phases of supply, distribution and consumption;
2. improving irrigation methods, optimizing farming, garden and green area patterns.
3. reuse of wastewater for agricultural and city green areas.

(6) Irrigation Water Productivity (IWP) is a promising tool to evaluate the effectiveness of water allocated to agriculture from economical and environmental consideration particularly within water stressed regions. Local knowledge and modern technological information are required to increase water productivity.

(7) It is important to realize that irrigation has an important role in the crop production process. However, in order to have high water productivity there are other important key players in this process, which need to be aligned with irrigation technology and management.

Examples are, proper agro technology, improving the soil condition, better seeds, appropriate fertilization, and above all the importance of farm management.

(8) Evaporation from the field is an actual water loss within rainfed and irrigation schemes, which is not recoverable. So attempts need to be directed to technology and management of irrigation and drainage, planning and operation to minimize such water loss.

(9) Supplemental irrigation is a key strategy, so far underutilized on a regional basis to unlock the yield potential under rainfed water scarcity conditions. Realizing that sub-surface drip irrigation is more effective than conventional drip irrigation systems in decreasing water evaporation and deep percolation especially in warm regions and light soils can act as a catalyst to seek funding support.

(10) The concept of crop water requirement needs to be reconsidered with the aim to focus on the actual water consumed by crops. Irrigation technology needs to be directed to the systems, which minimize losses and hence moving towards more water productivity.

(11) Water management practices and technologies with high irrigation water productivity need to be studied and recommended for planning, decision making and design, based on the basin water balance rather than measurements at the farm level.

(12) There is an urgent need to improve designs and to increase micro-irrigation systems efficiency by incorporating latest research findings. In countries with low literacy level of farmers, priority would have to be given to training of illiterate farmers to apply pressurized and micro-irrigation systems.

(13) Recognizing that increase in water productivity based on crop for drop needs to be given prime importance in the 21st Century.

(14) The participants expressed their high appreciation for the organizers, the Iranian National Committee on Irrigation and Drainage (IRNCID), for the excellent and friendly organization of the Congress.