

Minutes of the Fourth Meeting of the
WORKING GROUP ON WATER AND CROPS (WG-CROP)
 Tehran, Iran
 18 October 2011: 13:30-17:00 hours
Strategy Theme: On-Farm

Year of Establishment: 2007

Completion of the Mandate: 2013

Mandate: To promote the efficient use of water in crop production, to provide input to test crop water models, to investigate the use of energy crops for bio-fuel production, to develop techniques for rainfall harvesting, to promote the multifunctional use of water in paddy (rice) cultivation, to investigate the adaptation of agriculture to climate change and to promote low input agriculture.

Members Present: (1) Vice President Dr. Ragab Ragab, Chairman (UK, 2007); (2) Dr. K. Yella Reddy, Secretary (India, 2009); (3) Prof. M.E.V. Scarascia (Italy, 2007) represented by Dr. Graziano Ghinassi; (4) Prof. Tai Cheol Kim (Korea, 2007); (5) Dr. Andrew Sanewe (South Africa, 2007); (6) Ms. Jaleh Vaziri (Iran, 2009), (7) Prof. Rai Niaz (Pakistan, 2009); and (8) Dr Koji Inosako (Japan, 2010).

Observers: (i) Dr. Magadi T. Abdelhamid (Egypt); (ii) Ir. Awadis Arslan (Syria); (iii) Ir. Ali Reza Massah Bavani (Iran); (iv) Ir. Salah Saadv Zarad (Egypt); (v) Mr. Maurice Roos (USA); (vi) Ir. Daisuke Watabe (Japan); (vii) Ir. Shicchin Baranchulun (Mongolia); (viii) Ir. Balbabaee Nurlan (Kazakhstan); (ix) Ir. Sahar Malekzadeh (Iran); (x) Eng. Othman S. Omar (Tanzania); (xi) Ir. Karim Akmal (Iran), (xii) Ir. Anna Tedeschi (Italy), (xiii) Ir. N. Ashokaraja (India), (xiv) Ir. Sadjjad S. Hossein (Iran), (xv) Ir. Sadegh Jafari (Iran), (xvi) Ir. R. Davtalab (Iran), (xvii) Ir. Nagar Sharif Mood (Iran), (xviii) Ir. Sanaz Barnous (Iran); (xix) Ir. Khhighsuren A (Iran); and (xx) Prof. Dr. Mohd. Amin Mohd Soom (Malaysia).

Permanent Observers: No permanent observers participated in the WG meeting.

Website: <<http://www.wg-crop.icidonline.org>>.

Item 1 : Confirmation of the minutes of the 3rd meeting of the WG-CROP

The minutes of the 3rd meeting of the Working Group held in October 2010 at Yogyakarta, Indonesia were confirmed.

Item 2 : Review of the membership of the Working Group

Prof. Dr. Mohd Amin Mohd Soom's nomination was received for the membership of the WG from Malaysian National Committee on Irrigation and Drainage (MANCID). The CV of the nominee was circulated to the members present in the meeting. His nomination was accepted by the WG. The members extended warm welcome to Dr. Soom.

Attendance of members at meetings in 2009 and 2010 were presented during the meeting. The Chairman informed that representation of a member in the Working Group meeting by any other representative of the concerned National Committee was not deemed to be a contribution by a member. The ICID by-law 3.1.7 stipulated that members not contributing to the activities by attendance or correspondence for two consecutive years shall be replaced in consultation with their National Committees.

It was observed that members from China, Chinese Taipei, France, Slovenia and Spain had not been contributing to the activities of the WG for past two or more years. In view of above, the Central Office requested these National Committees to either confirm the participation of their existing nominees or send a fresh nomination. In response, the Spanish National Committee of ICID (CERYD) informed vide e-mail dated 17 August 2011 that Mr. Vincente

Carelon (Spain) has retired in September 2011. The Central Office may invite fresh nominations from other countries.

Dr. Magdi T. Abdelhamid's (Egypt) nomination was endorsed by VPH Dr. Hassan Amer, Chairman of the Egypt National committee. The Working Group accepted his nomination.

Mr. Laurie C. Tollefson, Vice Chairman (Canada, 2009), VPH Prof. dr. Brane Maticic (Slovenia) and Mr. Chen, Yih-Rong (Chinese Taipei) had informed the secretariat in advance that they would not be able to attend the Tehran meetings.

The American National Committee had requested the Secretariat to continue the membership of Prof. R. G. Allen (USA) in the WG. The members of Working Group have ratified the absence of Prof. R. G. Allen (USA) in view of his vast experience and contribution to ICID.

The Chairman requested all the members to contribute towards achieving the goals of Working Group and participate actively in the Group meetings, workshops and seminars.

Item 3 : Precision Agriculture: Promote the efficient use of water and low input in crop production

Dr. Hossein Dehghanisani (Iran) was to make a presentation on '*Precision Irrigation*' and concentrate on real time climate data at farm level for calculation of crop water requirement and irrigation scheduling but he was not present in the meeting to make presentation. However, the members felt the importance of the subject and opined to give him an opportunity once again to make presentation in the Adelaide meeting in June 2012.

The meeting was cut short by one hour due to the building security check ahead of the visit of country president on the following day. The Chairman of the WG, who was to make a presentation on '*Water Footprint*' voluntarily agreed to do it in Adelaide meeting in June 2012, in order to complete other agenda items in time.

The members have felt the need to know about various good quality moisture sensors available in different parts of the world for accurate measurement of soil moisture in different situations for improvement in design of irrigation systems and application rates. The chairman explained the latest technology and instruments used for large scale actual evaporation as well as large scale soil water measurements.

Item 4 : Energy crops for bio-fuel production

The Chairman informed that no contributions had been received to support the Task Force on Water for Bio-Energy and Food (TF-BIO-ENERGY). Dr Andrew Sanawe (South Africa), however, informed the WG about the Workshop proposed to be held in Adelaide in 2011 on '*Water use by crops for bio-fuel*'. He indicated that South Africa's experiences will be presented in that workshop either by himself or by his colleague. It was suggested that India be invited to share its experiences in the Adelaide workshop. Dr. Reddy agreed to identify the university/organization working in this area and invite them to present their findings in the workshop at Adelaide. These presentations will be hopefully part of a joint workshop with WG on Climate.

Item 5 : Multi-functionality of water use in paddy (Rice) cultivation

Dr. Graziano Ghinassi (Italy) presented paper on '*Agriculture Water Multi Functionality*'. He presented studies made on Basin level in (i) Marta river basin and (ii) Mignone river basin and indicated that 50% of the water was used for agriculture and the remaining goes for other sectors. FAO Penman Formula was used in estimating the irrigation water requirement while doing the water budgeting studies.

Prof. Tai-Cheol Kim (Korea) presented paper on the same theme and indicated that 2100 mm of water was applied to paddy, whereas 995 mm accounted for return flow, resulting actual use of 1100 mm by paddy crop. He informed that the return flow is reused in the downstream. He has also informed that less water results into poor rice quality (taste). Dr Reddy (India), however, informed the house that in general the rice grown in upland areas with less water tastes better than that grown in delta area, with more water.

Dr. Inosako Koji (Japan) presented paper on '*Small scale hydropower generation using Agricultural Water*' as new power source in Japan. He stated eight reasons for going for small hydropower in canal system. He informed that 8.8 m fall in the canal (effective head of 8.0 m) with discharge of 0.45 cumec would be necessary for design of suitable small hydro generation units.

Item 6 : Management of Agriculture under Climate Change

Dr. Alireza Massah (Iran) made a presentation titled "*The potential impact of climate change on Iran's agriculture*" and explained the methodology followed in detail with two case studies. He indicated that the climate change in Iran will be responsible for (i) increase in temperature of 0.04°C/year and (ii) decrease of rainfall by 20 mm/year by the end of current century. This will ultimately lead to the decrease in the crop yields in the range of about 21.2 to 125.4 kg/ha/year depending on the crop, which will be a serious concern for the people of Iran.

6.1 Internal workshop on 'Management of Agriculture under Climate Change'

Dr. K. Yella Reddy (India) was to present his two papers during the Tehran meeting / Workshop, viz. (i) Introduction of drip Irrigation for Paddy crop; and (ii) Mapping and Auditing of Multiple Uses of Water Services in Krishna Western Delta using MASSMUS Methodology – A Case Study.

In view of the limited time to complete the agenda, the Chairman requested Dr Reddy to make presentation in the Adelaide meeting/workshop after combining the two papers in one presentation of 15 minutes. Dr. Reddy agreed to do so.

The WG felt that the climate change effect on agriculture is going to be a serious issue across the world and hence there is a need to focus on the issue. It was proposed to organize one day workshop on 'Management of Agriculture under Climate Change' in Turkey 2013. The Chairman requested the members to circulate the agenda widely and invite more papers for presentation in the proposed workshop. He also suggested to organize the workshop jointly with WG on Climate.

Item 7 : Website of WG

The Chairman and Central Office had been updating the WG activities in the webpage of WG-CROP from time to time. A lot of information, documents and links are available in the website. The Chairman has placed SALTMED model and other related documents (required input data templates) in the website of WG for free download by WG members. He informed the members to make use of the website and benefit others.

Item 8 : Work plan

The joint workshop on '*Management of Agriculture under Climate Change*' is proposed as per Item 6.1 above. New activities suggested were:

1. The rainfall harvesting at farm level - Dr. Andrew Sanewe (South Africa) will give presentation on the topic during Adelaide meeting 2012.
2. New technologies for measuring evapotranspiration and soil moisture - VP Dr. Ragab Ragab (UK) will give presentation on this subject at Adelaide 2012. A possible presentation from Mr. Andrew Rue (South Africa) on Remote Sensing techniques may be invited.
3. Water Security and Food Security under climate and land use changes - Presentation by Prof. Rai Niaz (Pakistan) is expected on the topic at Adelaide 2012.

A three year rolling work plan needs to be developed. A table of activities based on the above will shortly be supplied to the Central Office.

Item 9 : Any other business**• International Conference on 'World Crop 2010', London (UK)**

The Chairman informed that he attended the International Conference in London on behalf of ICID as per the request of the President, ICID and presented the paper on '*Water and Food Security*'. In addition, he shared three important observations from other speakers in the conference, (i) about short supply of Phosphorous and Potassium, which are mined natural resources and are two important fertilizers for crop production, (ii) Bio technology is needed to enhance plants to have deep rooted system for extraction of fertilizers from deeper layers, and (iii) to increase the photosynthesis efficiency of C3 to bring them to the level of C4 plants. He suggested that recycle and reuse of Phosphorous and Potassium need to be exercised to meet the future demands.

- **FAO's Regional 'Sustainable Water Resources Use in Asia'**

The Chairman informed the members of this activity.

- **INWEPF Symposium and 8th INWEPF Steering Meeting**

Prof Mohd Amin Mohd Soom (Malaysia) briefed the WG.

- **INWEPF Symposium in Thailand (THAICID) – Outcome**

Prof. Tai Cheol Kim (Korea) briefed the WG on the Symposium.
