WASWAC

**WORLD ASSOCIATION OF SOIL AND WATER CONSERVATION**

# WORLD CONFERENCE I

October 2010

# Summary Report of International Conference on Combating Land Degradation in Agricultural Areas and the First Annual Councilor Meeting of WASWAC (Landcon1010)

## 1. Conference Background

The International Conference on Combating Land Degradation in Agricultural Areas and the First Annual Councilor Meeting of WASWAC (LANDCON1010) was held in Xi'an, Shaanxi Province, China from October 11th to 15th, 2010.


Land is the foundation of human survives and development, but the Land degradation is intensifying in many parts of the world because of the unreasonable use and global climate change. According to the FAO's estimation in 2008, there are about 1.5 billion people, or a quarter of the world's population, depend directly on land that is being degraded. Land degradation could induce the deterioration of the ecological function and productivity of land directly through soil erosion, desertification, salinization, loss of bio-diversity and so on. Furthermore, the land degradation has already threatened and is

threatening the socio-economic and culture development at regional and global scales.

Fortunately, the increasing attention has been paid in combating land degradation all over world, such as the Soil and Water Conservation Engineering in the Upper and Middle Reaches of Yellow River since 1980 and “Grain for Green Project” of China, Land care Project in Australia, the GEF UNEP/FAO program on Land Degradation Assessment in Dryland Areas (LADA) and EU FP6 Integrated Project on Desertification Mitigation and Remediation of Land (DESIRE).

It is necessary to have an opportunity to share achievements and experiences and to discuss how to solve the big issue over the world. The World Association of Soil and Water Conservation (WASWAC) and Chinese Society of Soil and Water Conservation (CSSWC）initiated the International Conference on Combating Land Degradation in Agricultural Areas and the First Annual Councilor Meeting of WASWAC (Landcon1010). During this conference, the main themes are following:

- Situation and evolution of land degradation
- Mechanism and driving factors of land degradation
- Control measures of land degradation
- Evaluation of land degradation and land management on environment

- Land degradation and regional social-economic sustainable development
- Effect of global change on land degradation

## 2. Conference Organization

- Initiative organizations

World Association of Soil and Water Conservation (WASWAC)

Chinese Society of Soil and Water Conservation (CSSWC）

- Sponsors

Chinese Academy of Sciences (CAS)

Ministry of Water Resources, China (MWR)

Shaanxi Provincial People's Government

- Co-Sponsors

Europe Society for Soil and Water Conservation (ESSC)

Shaanxi Bureau for Soil and Water Conservation, China

Water Resources and Hydropower Planning and Design General Institute, MWR, China

Monitoring Center of Soil and Water Conservation, Ministry of Water Resources, China

Changjiang River Scientific Research Institute (CRSRI)

Upper and Middle Yellow River Bureau, YRCC

International Research and Training Center on Erosion and Sedimentation (IRTCES)

Institute of Eco-Environmental and Soil Sciences of Guangzhou, China

Northwest A&F University

Eijkelkamp Agrisearch Equipment BV (EAE)

- Host

Institute of Soil and Water Conservation, CAS & MWR

## 3. General Situation and Main events

### (1) Participants

There were 300 participants from 36 countries covering Asia, Europe, America and Latin America, Africa, and Australia to attend the conference. Many famous scientists in this field

attended and submitted presentations, such as Professors Sun Hong lie, Winfried E.H. Blum, Jose L. Rubio, Chi-hua Huang, Miodrag Zlatic, Samran Sombatpanit, Shan Lun, Coen C.J. Ritsema, Leo Stroosnijder, Doug Wimble, Hanspeter Liniger, and Councilors of WASWAC.

### (2) Academic exchange

During the conference, there were 276 papers submitted, 120 oral presentation and 140 posters. All papers were edited in Proceedings, which was issued by Springer THE SCIENTIFIC & TECHNICAL DEVELOPMENT GROUP. All papers will be in ISTP and can be retrieved from EI. All information can be read in WASWAC e-library.

### (3) The first WASWAC council meeting was held during the conference.

**Professor** Miodrag Zlatic，WASWAC President chaired the meeting 30 people attended，including 17 members of council and secretariat, 13 representatives of region or country.

The main procedures are:

- The President Miodrag Zlatic chaired the meeting. He gave the opening address and report of Council work.
- Immediate Past President Samran Sombatpanit reported the activities of WASWAC.
- Executive Secretary Ning Diuhu introduced the work of secretariat.
- President Miodrag Zlatic announced the result of election of new president
- The coming president professor LI Rui gave a short speech.
- Discussion and congratulation by participants

### (4) WASWAC Secretariat working meeting was held during conference

Chair: Mr Ning Duihu, Secretary General

Participants 17 attending the meeting

The main issues to be discussed are:

- The work plan of the secretariat in the coming year
- The next WASWAC world conference in 2013
- Membership, publications and others.

### (5) Some international cooperation projects were discussed or proposed.

- DESIRE project involved 16 countries
- China-Netherlands cooperation project of water resources management Wei river
- WOCAT in China
- China-Serbia cooperation project.
- China-Norway cooperation project

## 4. Main outputs

### (1) Proceedings of 2010 International Conference on Combating Land Degradation in Agricultural Areas

276 papers were edited in the proceedings issued by Springer.

### (2) WASWAC e-library (LANDCON1010)

The 120 oral presentations, 140 posters, photos and related information will be edited in WASWAC e-library

### (3) WASWAC International conference 2013

According the decision of council, every 3 years WASWAC will organize one International conference. Next conference will be held in Thailand.

## 5. Key Points of conclusions

### (1) Land Degradation is one of the most important issues over the world.

There is more and more concern about climate change, the growing scarcity of fresh water, the loss of wildlife, and pollution of the air and seas. But it is a harshest reality that about a quarter of the world's agricultural land has already been degraded, In the 1970s and 1980s alone, the world lost some 500 billion tons of topsoil. Every year about 12 million hectares - an area three times the size of Switzerland - becomes useless to agriculture. Most of presentations mentioned it is very urgent to pay more concern on our land. And we are going to need it more and more. As population and demand are growing, the world will have to vastly increase food production. The figures from China are alarming. Two thirds of the marginal farmland is in soil erosion areas and overall 34% of arable land has been affected by soil erosion.

(2) **Anthropogenic forces become increasingly important for land degradation and conservation.**

The land deterioration is the serious environmental problem in the world. Many presentations and papers analyzed both natural and human factors in land degeneration. They emphasized particularly the activities of human beings, such as over-cultivation, overgrazing, and felling of trees. Also, urban expanding has embezzled more and more good farmland. On the other hand many examples show that soil and water conservation can play an important role for combating land degradation. Such as China's Loess Plateau, where the earth was first tilled many thousands years ago, was long known as the most eroded place in the world, 1.6 billion tons of soil washed into the Yellow River every year. But now a big change is taking place. Through such measures as terracing the barren slopes and building small dams, the planting of new trees, especially implement of GRAIN FOR GREEN project, the local yields and incomes have increased a lot. During1997-2006 the measured average annual runoff and sediment yield of meddle reaches of Yellow river reduced 11.212 billion m3 and 1.18 billion T respectively, compared with the year before 1970. Soil and water conservation measures have played an important role.

### (3) Assessment of regional impacts of soil and water conservation on environment

Soil and water loss and conservation both have brought many impacts on natural and social environment at some content in the world. As matter as fact, the interaction between land degradation and regional environment/social poverty is especially serious. For example, in China there are 76% of the impoverished counties lie in areas of severe soil erosion and 90% of impoverished people live in areas affected by soil erosion, As the saying goes, “The poorer you are the more you must use the land, the more you use the land the poorer you become”. A major factor in the cycle of land use and poverty is land degradation by erosion. On the other aspect, soil and water conservation measures produce many impacts on environment, positive and negative. The impacts include all influences on water, soil, climate, biology and social conditions. There many papers and presentations were related this issue during this conference. It is necessary to use modern earth science and technology for the broad scale research of soil and water loss, evolution futures and impacts on regional ecological environment.

### (4) Challengers for Science and technology of soil and water conservation

Recently there are many new challengers for science and technology of soil and water conservation. Under the pressure from human activity and global climate change, the biological-physical-chemical processes on the earth surface have more and more new futures. As a result, the processes soil and water loss show some new changes, Also the intension of soil and water conservation have been enlarged, more comprehensive, more factors and more close to other related disciplines. Such as due to the development of industry, urbanization, and construction, soil and water loss is not only come from farming activity, but also mining, road building and others. The measure of soil and water conservation is not only including terracing, dam building, tree and grass planting, but also physical-chemical and civil engineering. Especially the off-site impacts on

environment from soil erosion have brought many problems for regional development. Along with the economical development the investment for soil and water conservation has been increased. The scale of soil and water conservation has enlarged from small watershed to region. So it is urgent to have more research on new topics of soil and water conservation, such as soil process at regional scale, soil erosion responses to global climate change, impacts of soil erosion and control on environment, new measures for new type of soil.