



World Federation  
of Engineering  
Organisations

# The Committee on Engineering and the Environment

## Putting Farmers First With Engineers' Support

By Darrel Danyluk, P.Eng.

*Darrel Danyluk chairs the WFEO Standing Committee on Engineering and the Environment (CEE).*

Engineers are keenly aware about teamwork . whether within or across engineering disciplines, or working with other professions and societal groups. Such teamwork occurs through WFEO's contributions to the United Nations Commission on Sustainable Development (UNCSD), a body that follows up on the 1992 UN Conference on Environment and Development, the Rio de Janeiro "Earth Summit".

Specifically, the WFEO, with the International Council for Science (ICSU), represents engineering and science through the Scientific and Technological Community (S&T). S&T is one of nine major groups, which also include Business and Industry; Women, Children and Youth; Indigenous Peoples; Local Government; Labour, NGOs and Farmers. Each group provides direct input as the UNCSD, in two-year cycles, addresses specific themes. Recently, the major theme has been sustainability of agriculture, rural development and land, as well as drought and desertification, with specific reference to Africa. These topics were central at UNCSD meetings in February and May in New York, where WFEO, led by Jorge Spitalnik, the Chair of the Standing Committee on Energy, had observer status as did the Standing Committees on Engineering and the Environment, and Capacity Building.

The S&T Community teamed up with the Industry and Farmers Major Groups in the Farmers First, a joint call to action that urges a broad-based, knowledge-centred approach to sustainable and socially responsible increases in agricultural output.

Farmers First aims to:

1. Safeguard natural resources
2. Share knowledge
3. Build local access and capacity
4. Protect harvests
5. Enable access to markets
6. Prioritize research imperatives.

Science and engineering are critical to reaching these goals. For example, applying engineering technologies to gathering, movement and warehousing of crops can vastly improve sustainability and standards of living. During the May UNCSD meeting, CEE and the Energy and Capacity Building Committees, organized a side-event on *Capacity Building – Words Into Action . Infrastructure ... Engineering ... Quality of Life ... how do they fit?* The event attracted 71 delegates from more than 20 countries and featured a roundtable highlighting issues and recommended actions. They included rural job-creation to discourage migration to urban centres, and extension of education and technology, particularly to rural women.

Some specific recommendations touch on engineers' role in providing and building infrastructure that would reduce food-loss by means of abattoirs and storage facilities, improve access to open-source technologies and funding to transfer proprietary technology, enhance electrical reliability and safeguard ecosystems. All are valuable messages that we will continue to share with the UNCSD in coordination with WFEO team members and ICSU colleagues.

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*"Farmers First urges a broad-based, knowledge-centred approach to sustainable and socially responsible increases in agricultural output."*



# 3<sup>RD</sup>WFEO-JFES-JSCE Symposium: Disaster Risk Management, Sept. 3, 2009

By Dr. Nguyen Son Hung, P.Eng.



**Speakers and WFEO-CEE/DRM members participating in the Symposium  
where 17 papers were presented.**



## 3<sup>RD</sup> WFEO- JFES- JSCE JOINT INTERNATIONAL SYMPOSIUM DISASTER RISK MANAGEMENT PROCEEDINGS



Under the support of



SCIENCE COUNCIL OF JAPAN

September 3<sup>rd</sup>, 2009  
Fukuoka University, Fukuoka, JAPAN

The Joint Symposium on Disaster Risk Management, held September 3, in Fukuoka, Japan, was the third organized by World Federation of Engineering Organizations (WFEO), Japan Federation of Engineering Societies (JFES) and Japan Society of Civil Engineers (JSCE), with the support of the Science Council of Japan as part of the international program of JSCE's National Assembly Congress. The first and second symposiums were held in 2007 and 2008. The Task Group on Disaster Risk Management of the Standing Committee on Engineering and the Environment in WFEO (WFEO-CEE/DRM) was a main secretariat of these symposiums, which received enthusiastic support from the JSCE and JFES secretariats.

The latest symposium brought together a keynote lecture and 16 papers on the philosophies, policies and practices on seismic and water-related disasters. It attracted more than 65 participants from 15 countries (Algeria, Bangladesh, Canada, India, Indonesia, Japan, Korea, Mongolia, Myanmar, Nepal, Philippines, Taiwan, Thailand, Turkey and Sri Lanka).

Prof. M. Hamada, JSCE's Past President, titled his keynote lecture *"Global Increase of Natural Disasters and the Recommendations by the Science Council of Japan for the Creation of a Safe and Secure Society"*. Prof. K. Takeuchi, Director of International Center for Water Hazard and Risk Management (ICHARM), under the auspices of UNESCO, presented *"Potential Contribution of Asia to New Science Program: Integrated Research on Disaster Risk"*. Eng. U Than Myint, Immediate Past President of Myanmar Engineering Society, introduced *"Policies, Disaster Mitigation Measures and Infrastructure Development in Disaster Risk Management of Myanmar"*. Prof. B.M. Pacheco, Chairman, Committee on DMAPS and DQRP, Philippine Institute of Civil Engineers, presented *"Disaster Risk Management Philosophies in Coping with Earthquakes or Floods"*. In addition, the state-of-the-art technologies in architecture were also showcased in Prof. A. Wada's presentation titled *"Integrity, Strength and Deformability in Seismic Design of Multi-story Structures"*. The proceedings are posted on WFEO's website and can be downloaded.

After the symposium, a meeting was held to introduce and report WFEO-CEE/DRM's activities, and some new members joined. The recent symposium brought together more papers, speakers and participants than the previous two. It is expected to serve as a positive catalyst for larger-scale, joint symposiums in the future involving WFEO and other organizations from around the world to focus on disaster risk management issues of global interest.

# **WFEO-CEE/DRM's Activities and Release of Guideline for Water-Related Disaster Risk Management**

**By Dr.Yumio ISHII, P.Eng.**

## **WFEO-CEE/DRM Now and in the Future**

WFEO-CEE/DRM is a Task Group on Disaster Risk Management (TG-DRM) established by the Standing Committee on Engineering and the Environment (CEE) at WFEO's 2007 General Assembly, New Delhi, India. The group's main purposes are:

- (1) Introducing or recommending important philosophy and basic concepts, effective structural (hard) and non-structural (soft) measures, traditional and high technologies and good examples for risk management of water and earthquake-related disasters to engineers and policymakers;
- (2) Promoting the exchange of information and opinions on the above-mentioned disaster risk management; and
- (3) Merging and introducing knowledge and experiences to avoid disasters, and promoting sustainable and sound development to offset inappropriate human actions related to residing and living, and developing infrastructure etc.

TG-DRM is composed of two subsidiary task groups, one dealing with water-related disasters (WDRM) and one with earthquake-related disasters (EDRM). I have chaired DRM and WDRM and Prof. Kazuhiko Kawashima, Tokyo Institute of Technology, EDRM. At present, DRM has about 35 members from 15 countries. The TG-DRM's main activities in the last two years were:

- (1) Annually holding two Joint International Symposiums on DRM with WFEO in Japan. (proceedings can be downloaded from the Japan Federation of Engineering Societies website <http://www.jfes.or.jp/activities/iac-en.html>);
- (2) Holding a Panel on DRM with the American Society of Civil Engineers at WEC2008, Brasilia, Brazil; and
- (3) Releasing a draft framework of Guideline for Water-related Risk Management (Fundamentals, Floods, Tsunamis, Storm Surges and Droughts) at WEC2008. Three drafts, on Fundamentals, Floods and Tsunamis will be released at the coming WFEO Kuwait GA for discussion and review. (See also following article, on next page.)

As disaster occurrences have recently increased around the world and disaster risk management has become a crucial issue in achieving the UN's Millennium Development Goals, TG-DRM strongly expects WFEO members to support upgrading the task force to a standing committee at the coming WFEO Kuwait GA. This would allow extension of the task force's activities, notably by:

- (1) Continuing to hold the annual Joint International Symposium on DRM with more collaboration by other disciplines, such as architecture, and mechanical, information and medical engineering etc., plus other international organizations;
- (2) For WDRM, reviewing and updating the released guideline draft and preparing the guideline draft for Droughts and Storm Surges; and preparing technical documents for Seismic Retrofit Technology for Buildings and Infrastructure, Seismic Isolation Technology and Construction Methods for Earthquake-proof Structures;
- (3) Cooperating with other international organizations to hold seminars or workshops to introduce and disseminate the guidelines, technical documents, and experiences on disaster risk management around the world, particularly, in developing countries; and
- (4) To achieve the mentioned goals, keenly welcoming new members and ideas from around the world, particularly from WFEO member countries. We also plan closer collaboration with other standing committees in WFEO, such as CEE, CIC, CCB and WIE, to further enhance synergy of activities in WFEO.



# **Draft Guideline on Water-Related Risk Management Prepared for Review**

With the cooperation of CTI Engineering Co. Ltd., the Secretariat of TG-DRM prepared a three-part draft, covering Fundamentals for DRM, DRM for Floods, and DRM for Tsunamis of the Guideline for Water-related Risk Management (WDRM). At the coming WFEO Kuwait GA, the drafts will be released for review in 2010 by TG-DRM members and other researchers and engineers in WFEO. The final draft will be completed and released at WEC2011, Geneva, Switzerland. After the GA, the draft will be posted on the websites of WFEO or JFES for downloading. We keenly welcome your comments and opinions.



The Fundamentals Draft covers important basics for WDRM and consists of three sections: (1) Current Situation and Trend of Global Water-related Disasters, (2) Importance of WDRM and Its Basics and (3) Key Points of Main Components of WDRM. Section 2 focuses on crucial and basic key points for WDRM and briefs on climate-change adaptation strategies to cope with WDRM. Section 3 highlights indices for WDRM and their evaluation, key points of prevention/mitigation, preparedness, response and recovery.

The DRM Draft for Floods is composed of eight sections: (1) Current Situations and Issues of Flood Disaster Risk Management, (2) Strategic Flood Disaster Risk Management, (3) Assessment of Flood Disaster Risks, (4) Flood Disaster Risk Prevention/Mitigation, (5) Preparedness Measures for Flood Disaster Risk (Building Communities Resilient to Flood Disaster), (6) Emergency Response, (7) Recovery and Rehabilitation, and (8) Climate Change Adaptation Strategies to Cope with Flood Disasters.

The DRM Draft for Tsunamis consists of three sections: (1) Tsunami and its Disasters, (2) Mitigation of Tsunami Disaster Risk, and (3) Assessment of Tsunami Disaster Risk. Section 2 focuses on basic concepts of mitigation, structural and nonstructural measures, and responses just after tsunamis.

The draft is primarily material for discussion and will be gradually revised into a final draft that is expected to be useful for engineers and policymakers around the world. Your collaboration and that of other members is needed to make it happen.

## **WFEO Meetings and Events**

2 November 2009 Kuwait City, Kuwait – WFEO-CEE Face-to-Face Meeting #3

1-6 November 2009 Kuwait City, Kuwait – WFEO General Assembly, Executive Council and Standing Committee Meetings

## **WFEO-CEE Upcoming Events**

Sustainable Infrastructure and Built Environment in Developing Countries, 2-3 November, 2009 – Bandung, Indonesia  
[www.sibe-2009.org](http://www.sibe-2009.org)

Society for Sustainability and Environmental Engineering, 2009 International Conference, 23-24 November 2009 Melbourne, Australia [www.sustaintheplanet09.com](http://www.sustaintheplanet09.com)

UN Framework Convention on Climate Change – Conference of the Parties #15  
7-18 December, 2009 Copenhagen, Denmark [www.unfccc.org](http://www.unfccc.org)

International Disaster Risk Conference 2010, 30 May – 3 June 2010, Davos, Switzerland [www.idrccdavos2010.org](http://www.idrccdavos2010.org)

WFEO International Conference on Climate Change – April 2011 (date TBC), Calgary, Alberta, Canada