

## BRIEFING NOTE

### Background

Engineers Canada is an active member of the World Federation of Engineering Organizations (WFEO). Darrel Danyluk, P.Eng., a Past-President of Engineers Canada, chairs the WFEO Standing Committee on Engineering and the Environment and is a Vice-President of WFEO. One of his roles is to represent WFEO (and Canada) as a delegate at meetings of the United Nations Commission on Sustainable Development.

The Commission recently held its 16<sup>th</sup> meeting (referred to a CSD-16) in New York, which was attended by Darrel and several senior WFEO representatives. The meeting identified 11 issues to in key areas agreed that should be addressed before the next meeting of the CSD in 2009. The key areas and the associated issues were recently reported by WFEO ([www.wfeo.org](http://www.wfeo.org)) and are included in this briefing note.

### CSD-16 Meeting Attendees

The meeting involved approximately 1300 people including Ministers of Environment, Ministers of Infrastructure, Ministers of Agriculture from about 25 countries, the other countries had their executives of similar departments. A total of about 100 countries were represented.

### CSD Key Areas

The key areas to be addressed in 2008-2009 are agriculture, rural development, land, drought, desertification and Africa. The Commission operates with the first year being devoted to understanding the issues for the selected key areas with the second year devoted to discussing and agreeing to solutions.

The changing climate and adaptation to it in relation to agriculture was mentioned by many speakers at CSD-16. Climate change is expected to affect water resources and to have a strong impact on drought and desertification. Climate change was for some speakers the most urgent challenge faced by African countries, the Small Island Developing States and other countries whose economies depend on activities affected by climate.

The key points being made by attendees at CSD-16 was to gain a broad understanding of the issues surrounding the topic being addressed. The UNCSD-17 in 2009 will challenge the attendees to propose solutions to these problems.

The role of engineers, through WFEO, is to help developing countries devise adaptation strategies through financial assistance, technology transfer and capacity building. Much of the needed knowledge already exists within the scientific and engineering communities; however, the knowledge often does not reach those that could benefit the most. Capacity building, focused on sharing the existing knowledge effectively must be a priority.

***The challenge for WFEO and the world engineering community will be to propose solutions for tabling in 2009 and then arguing for their acceptance. All national and international members are being asked to consider the 11 issues described below and to submit ideas and solutions which have been successful in their own areas that the delegates can propose at UNCSD-17.***

We believe it is a great opportunity to profile and promote the work of Canadian engineers and engineering firms internationally through Engineers Canada participation in WFEO.

## **CSD-16 Key Outcomes and Statements**

The key outcomes and statements reported by the attendees from the meeting were as follows:

1. To achieve sustainable development in these key areas there will need to be an enabling environment, good governance, and institutional structure that encourage and assist, as well as capacity building. There is a strong need for strengthening science research and education focused on solutions. There must be mechanisms for facilitating dialogue between scientists and technologists, decision makers and farmers. WFEO will work with these groups to improve extension services so that information and solutions get into the hands of farmers, particularly small-scale farmers. An example of the problem is that half of the food grown is wasted before it can get to the consumer through poor harvesting techniques and incorrect storage allowing vermin to attack and product rotting to occur.
2. Productivity and competitiveness in most sectors is low, inhibiting the potential of Africa to move into higher value-added activities beyond bulk commodities. Low levels of private sector investment, weak domestic financial markets, lack of technological capacity and limited transfer of technologies are among the obstacles to economic diversification and industrial upgrading.
3. Efficient water resources development and management as well as reusing safe wastewater can be a key factor in increasing resilience to climate changes and ensuring food security. Also, improved irrigation efficiencies and on-farm management practices could contribute towards overcoming water shortages and enhancing food security.
4. The use of food crops for producing biofuels has been a source of concern for many countries. However, biofuels can help overcome fossil fuel dependency and provide employment opportunities if their production meets sustainability criteria. Focusing efforts on those biofuels which do not compete with food production can offer promising results to mitigate climate change and to stimulate economic and rural development.
5. Increased interaction among scientists, policy makers and local communities can accelerate the dissemination and adaptation of new and emerging technologies and corresponding knowledge from laboratories to field application in developing countries, with assistance from development partners.
6. Investments in research and development particularly in innovative and sustainable agricultural technologies and infrastructure are urgently required. The international community should step up support to investments in agriculture and substantially increase official development assistance in support of international research and on-the-ground outreach, training and extension services in agriculture.
7. Capacity building, transfer of technologies in accordance with the Bali Strategic Plan for Technology Support and Capacity building, technical cooperation and partnership are needed.

8. Scientific solutions are critical to increasing agricultural productivity. Investment in science and technology, training, capacity building and information sharing are important for addressing long-term constraints.
9. Climate change was identified as a major challenge for many countries in terms of its potential impact on water and food security, contributing in particular to an increase in extreme hydrological events such as floods and drought.
10. The absence of water treatment facilities in certain areas poses an obstacle for environmental management and for providing safe drinking water. This obstacle could be overcome by developing and implementing sustainable water and sanitation plans which take into account wastewater management. In this regard, it is important to use technologies that are suitable to local conditions.
11. Response to the current food crisis requires an increase in agricultural productivity, while ensuring that natural resources are managed in a suitable manner, and ecosystems are preserved. Reducing pre- and post-harvest losses, which average around 50% globally and are highest in developing countries, demands transfer and dissemination of existing technologies and management practices, including risk management tools, and provision of good science to small-scale farmers in rural areas. The response to the food crisis should look at both causes and symptoms, but disaggregated statistics of natural, human, social and physical capital are often missing. Further studies should help to increase understanding of the impacts of biotechnology and biofuels in relation to food security with a view to developing a balance between biofuels and production.

## **Responding to this Constituent Member Request**

WFEO is requesting all of its member organizations worldwide to respond with information on activities and solutions that have or are addressing these issues for each key area. In the case of Canada this includes our country as well as solutions implemented in other countries by Canadian engineers and engineering firms. Engineers Canada will compile and consolidate the information received and forward it to the WFEO Executive for tabling at the next CSD meeting.

We are seeking copies of reports or other forms of documentation that demonstrate solutions to any, many or all of these 11 issues. Authorship will be acknowledged by WFEO in its presentations to the CSD.

Constituent members are requested to respond to each of the 11 topics by inserting their information or references underneath each question or in a separate answer sheet. If there are electronic copies of reports available, please list them in your responses and provide the linkages or the electronic version.

Alternatively, constituent members can ask their individual members and firms to submit their information directly to Engineers Canada ([lynn.tremblay@engineerscanada.ca](mailto:lynn.tremblay@engineerscanada.ca)). We suggest this briefing note be used to provide the necessary background information to enable engineers/firms to provide this information.

Thank you for your cooperation and we look forward to your response.

Darrel Danyluk, P.Eng.  
Vice-President WFEO  
Chair, WFEO Committee on Engineering and the Environment  
Engineers Canada  
1100-180 Elgin Street  
Ottawa, Ontario K2P 2K3

August 22, 2008