

## **Opening Remarks by WFEO Representative**

### **Rio+20 - Forum on Science, Technology and Innovation for Sustainable Development**

In the Scientific & Technological Communities Major Group at UNCSD, WFEO has conducted, together with ICSU, a comprehensive program of activities in the preparation of the Rio+20 Conference by providing scientific knowledge, engineering expertise and information on appropriate technologies that are timely and up-to-date, towards supporting the main objectives of the Conference and aiming at substantiating concepts under discussion.

We consider that our Major Group was included as one of the nine Major Groups to provide governments, policy makers and Society, the understanding of the limitations and parameters imposed by the Laws of Nature, and to tell them what is achievable scientifically and technologically, based on what we now know and on what we can do with the technological tools we have in hand, as well as with those being developed and demonstrating success potential.

We are certain that progress in all topical areas of the sustainable development debate will require substantial innovative advances in science and technology and a thorough analysis of the feasibility of proposed solutions.

We are very pleased for having been invited by ICSU to be a partner of this Forum on Science, Technology and Innovation that will highlight the role of science, engineering and technology in addressing the issues of the Conference. It is our hope that, with such a gathering of top class expertise, by laying out the current expanse of scientific knowledge and the state of the art of engineering resources and innovation, this Forum will provide governments and civil society the required information on the feasibility of solutions for sustainable development, as well as the limits we are going to encounter in trying to maximize the results of such solutions.

It is our understanding that, for tackling the issues related to sustainable development, our role is to provide policy-makers and Society, updated, unbiased and reliable information on the different technical paths and technologies, based on scientific principles, engineering criteria and demonstrated technological development.

Notwithstanding, development and application of technologies will not always be culturally accepted, thus requiring extensive research from social science to determine the appropriate conditions for their uptake.

In conclusion, let me express the WFEO deep thanks to the Brazilian Government, UNESCO, ICSU and PUC for this opportunity to have the Engineering professional actively contributing to the debate on Science, Technology and Innovation for Sustainable Development and, thus, subsidizing the deliberations of the Rio+20 Conference.

## **WFEO Statement**

### **High Level Roundtable Rio+20**

First of all I would like to thank all States' delegates of this Conference for having reached a common understanding for the final document of the Rio+20 Declaration and to express our gratitude to Brazil for its leadership in getting such understanding. But, we consider it as a first step to achieve the Conference goals and objectives.

The Scientific & Technological Communities Major Group has conducted a comprehensive program of activities for providing the Rio+20 Conference with scientific knowledge, engineering expertise and information on appropriate technologies that are timely and up-to-date, towards supporting the main objectives of the Conference and aiming at substantiating concepts under discussion.

We consider that our Major Group was included as one of the nine Major Groups to provide governments, policy makers and Society, the understanding of the limitations and parameters imposed by the Laws of Nature, and to tell them what is achievable scientifically and technologically, based on what we now know and on what we can do with the technological tools we have in hand, as well as with those being developed and that are demonstrating success potential.

We are certain that progress in all topical areas of the sustainable development debate will require substantial innovative advances in science and technology and a thorough analysis of the feasibility of proposed solutions.

It is our understanding that, for tackling the issues related to sustainable development, our role is to provide policy-makers and Society, updated, unbiased and reliable information on the different technical paths and technologies, based on scientific principles, engineering criteria and demonstrated technological development.

In particular, substantial technological improvements as well as sound, evidence based, policies are needed to assure access to fresh and safe drinking water, energy, sanitation and waste management, communications, shelter, and transport services.

The Scientific and Engineering Community is ready, willing and able to contribute its expertise, creativity and dedication to achieve the goals of this Conference.

We urge the world's leaders to accept this opportunity to engage our Community as a full partner in addressing the complex challenges as we evolve into a sustainable planet.



## **WFEO SEMINAR ON SUSTAINABLE COMMUNITIES - June 16, 2012**

### **DECLARATION**

The participants at the SEMINAR ON SUSTAINABLE COMMUNITIES, held in conjunction with RIO+20 UNITED NATIONS CONFERENCE ON SUSTAINABLE DEVELOPMENT,

#### **Considering that:**

- there is an urgent need to achieve sustainable communities to meet the needs of human wellbeing and environmental protection;
- sustainable communities will require commitment, leadership, and educational, concerted and participatory processes;
- a multidisciplinary team approach that brings together engineers with other professionals is needed to ensure a coordinated procedure to achieve sustainable land use in urban and rural areas;
- existing and new technologies combined with improved processes and procedures will allow better implementation and management of the required measures for assuring the sustainability of communities;
- implementable solutions for sustainable communities must account for local and regional needs and cultures, priorities, and available human and financial capacities;
- development proposals and projects require thorough analysis of their technical, economic and environmental feasibility and social and cultural impacts, before their approval and implementation, and
- international governance institutions must strengthen the involvement and linkages between science, engineering and policy for sustainable development.

#### **Declare that:**

Substantial technological improvements as well as sound, evidence based policies are needed to assure access to fresh and safe drinking water, energy, sanitation and waste management, communications, shelter, and transport services in communities;

By exchanging and applying scientific knowledge, engineering creativity and practice, and up-to-date technology, engineers are able to substantially introduce sustainable solutions into most areas of activity that contribute to a community's quality of life, such as for:

- Water
  - by implementing systems for efficient, effective and sustainable use of water resources including water diversification through sustainable use of groundwater and effluent waste, sustainable desalination and rainwater harvesting;
  - by managing water conservation processes for achieving a sustainable balance among different water users in all ecosystems;
  - by improving the efficiency and availability of irrigation and water management practices.
- Energy
  - by improving energy efficiency within all sources of demand in the community;
  - by implementing engineering research and development for the appropriate use of renewable energies, including biofuels;
  - by improving the economics of clean energy technologies, including solar photo-voltaic devices and bio-fuels from cellulose materials, and by achieving efficient carbon sequestration schemes for fossil-fuel based generation.
- Sanitation and Waste Management
  - through assuring sound management of human waste and waste prevention, collection and treatment, and minimization by reduction, reuse and recycling,

- recovery and disposal;
  - by improving capacity of local research and development institutions, and building skills and capacities in local governments for integrated waste management;
  - by providing technical assistance and capacity building for source separation and waste collection, treatment, disposal and establishment and improvement of waste inventories, development of policies, legal frameworks, programs, and infrastructure.
- Transport
    - by introducing policies, programs, technologies and partnerships to achieve affordable, more energy efficient and sustainable transport systems, while contributing to important co-benefits, including reductions in greenhouse gas emissions, noise and air pollution;
    - by encouraging improvements in the management of vehicle fleets, including vehicle maintenance and inspection, operational practices and logistics and the replacement of old vehicles by more efficient newer ones and/or the upgrading of older vehicles with the use of advanced technologies;
    - by implementing appropriate goods movement systems, taking advantage of approaches to reduce transport losses in the food supply, to increase fuel efficiency, and to encourage the integration of technological advances across the supply chain;
    - by reducing air pollution from the transport sector by the improvement of fuel quality, development of cleaner fuels, and promotion of vehicle fuel economy and emission standards;
    - by reducing the overall demand for personal vehicle use through the promotion and development of public transport.

The World Engineering Community is ready, willing and able to contribute its expertise, creativity and dedication to achieve the elements of this Declaration.

We urge the world's leaders to accept this opportunity to engage the World Engineering Community as a full partner in addressing the complex challenges as we evolve into a sustainable planet.