RIO+20 SUMMIT CONFERENCE

MEETING REPORT
UNITED NATIONS Rio+20

Introduction

Being one of the Organizing Partners appointed by the UN for the Rio+20 Conference, the Committee on WFEO-UN Relations (CWUR) organized and implemented the WFEO activities at Rio+20.

WFEO succeeded to be invited to take part of discussions at the highest level of the Conference. WFEO gained good visibility and high reputation within the United Nations family.

The approved document of the Rio +20 Summit Conference comprises 283 statements and recommendations. More than 20% refer to Science, Engineering and Technology (SET) matters (Annex 1). Recognizing the importance of Engineering and Technology, the Document specifically has a section devoted to Technology as one of the means of implementation of the Conference recommendations. Many of the statements and recommendations reflect or are in agreement with espoused positions and actions taken by the Scientific and Technological Communities Major Group in the last 6 years at the U.N. Commission on Sustainable Development (CSD), where WFEO took care of the Engineering and Technological thinking.

Participation and Activities

- WFEO delegation: 43 members of WFEO Organizations from Brazil, Canada, India, Japan, Malaysia, Morocco, Palestine, Peru, Spain, Tunisia and USA were registered to attend the meeting.
- Forum on Science Technology and Innovation for Sustainable Development: This Forum was organized by ICSU with the cooperation of WFEO. WFEO contributed locally in setting up this event, managed a stand representing the Federation and delivered an opening speech (Annex 2). Members of the WFEO delegation contributed with presentations at different sessions.
- Seminar on Sustainable Communities: This Seminar was organized by the WFEO Committees on WFEO-UN Relations (CWUR) and Engineering and Environment (CEE) with the cooperation of the World Bank and UNESCO. It was attended by about 70 participants from Argentina, Bolivia, Brazil, Canada, Ecuador, France, Germany, Japan, Kenya, Korea, South Africa, Switzerland, UK and USA. The Seminar delivered a Declaration on Sustainable Communities stating the views of the Engineering professionals on achieving sustainability in cities and rural communities. This Declaration was conveyed to all WFEO Member Organizations, UNESCO and The World Bank (Annex 3).
- Rio+20 Conference: WFEO was very active in establishing the positions of the Major Group of Scientific and Technological Communities on different issues of the Conference. The presence of the WFEO President showed the importance WFEO gave to the Rio+20 meeting. On behalf of WFEO and ICSU, a joint statement was delivered by Nobel Prize Prof Yuan-Tseh Lee at the opening session of the Conference (Annex 4). Registered Members of the WFEO delegation attended all sessions of the Summit Meeting of Heads of State.
- HL Round-Table: High Level Round-Table meetings between Government representatives and invited Major Groups were held in parallel sessions to discuss ways for implementing the Rio+20 decisions. The WFEO-UN Relation Committee presented views and proposals of the Engineering community at one of such High Level Round-Tables (Annex 5).

Contacts with Authorities

- UN Secretary General: The UN Secretary General Ban Ki Moon addressed all Major Groups to stress the importance of the Civil Society role in the global process of establishing sustainable development programs. On this occasion, President Al Kharafi conferred the WFEO Gold Medal to the Secretary General.
- UNESCO: WFEO met with the UNESCO DDG Prof. Gretchen Kalonji to reiterate the wish to strengthen WFEO good relations with UNESCO.

- WORLD BANK: Members of the World Bank who attended the Seminar on Sustainable Communities expressed their satisfaction for the high standards demonstrated by the Engineering Community towards achieving sustainable development goals in urban and rural communities.
- FEBRAE: The WFEO President Adel Al Kharafi recognized the support provided by FEBRAE to WFEO in supporting the activities performed by the Committee on WFEO-UN Relations. FEBRAE President, Engr. José Tadeu da Silva, restated his commitment to provide the Committee increased support for its activities.

Houda AIT-MIK
WFEO Project Manager
June 29th 2012

ANNEX 1

Rio+20 Final Document
Science, Engineering and Technology Issues

The following recommendations of the Final Document related to SET issues incorporate WFEO contributions to the text of the Final Document that were carried out by the members of the Committee on WFEO-UN Relations (WURC) and members of WFEO delegations to different CSD meetings. Many of such contributions were part of the "Amendments Proposed by the Scientific and Technological Community Major Group to the Rio+20 Zero Draft" sent to the UN Secretariat in February 2012.

Rio+20 Final Document
19. We recognize the need to achieve sustainable development through economic growth and diversification, social development and environment protection. To this end, we underscore the continued need for an enabling environment at the national and international levels, as well as continued and strengthened international cooperation, particularly in the areas of finance, debt, trade and technology transfer, as mutually agreed, and innovation and entrepreneurship, capacity building.
43. We underscore that broad public participation and access to information and judicial and administrative proceedings are essential to the promotion of sustainable development. Sustainable development requires the meaningful involvement and active participation of regional, national and sub-national legislatures and judiciaries, and all Major Groups: women, children and youth, indigenous peoples, non-governmental organizations, local authorities, workers and trade unions, business and industry, the scientific and technological community, and farmers.
48. We recognize the important contribution of the scientific and technological community to sustainable development. We are committed to working with and fostering collaboration among academic, scientific and technological community, in particular in developing countries, to close the technological gap between developing and developed countries, strengthen the science-policy interface as well as to foster international research collaboration on sustainable development.
58. We affirm that green economy policies in the context of sustainable development and poverty eradication should: • strengthen international cooperation, including the provision of financial resources, capacity building and technology transfer to developing countries; • contribute to closing technology gaps between developed and developing countries and reduce the technological dependence of developing countries using all appropriate measures.
63. We acknowledge that it will be important to take into account the opportunities and challenges, as well as the costs and benefits of green economy policies in the context of sustainable development and poverty eradication, using the best available scientific data and analysis.
65. We recognize the power of communications technologies, including connection technologies and innovative applications to promote knowledge exchange, technical cooperation and capacity building for sustainable development. These technologies and applications can build capacity and enable the sharing of experiences and knowledge in the different areas of sustainable development in an open and transparent manner.
66. Recognizing the importance of linking financing, technology, capacity building and national needs for sustainable development policies, including green economy in the context of sustainable development and poverty eradication, we invite the UN System, in cooperation with relevant donors and international organizations to coordinate and provide information upon request.

72. We recognize the critical role of technology as well as the importance of promoting innovation, in particular in developing countries. We invite governments, as appropriate, to create enabling frameworks that foster environmentally sound technology, research and development, and innovation, including in support of green economy in the context of sustainable development and poverty eradication.

73. We emphasize the importance of technology transfer to developing countries and recall the provisions on technology transfer, finance, access to information, and intellectual property rights as agreed in the Johannesburg Plan of Implementation, in particular its call to promote, facilitate and finance, as appropriate, access to and the development, transfer and diffusion of environmentally sound technologies and corresponding know-how, in particular to developing countries.

74. We recognize that the efforts of developing countries that choose to implement green economy policies in the context of sustainable development and poverty eradication should be supported through technical and technological assistance.

76. We resolve to strengthen the institutional framework for sustainable development, which will, *inter alia*, promote the science-policy interface through inclusive, evidence-based and transparent scientific assessments, as well as access to reliable, relevant and timely data in areas related to the three dimensions of sustainable development, building on existing mechanisms, as appropriate; in this regard, strengthen participation of all countries in international sustainable development processes and capacity building.

85. The high level forum could strengthen the science-policy interface through review of documentation bringing together dispersed information and assessments, including in the form of a global sustainable development report, building on existing assessments.

88. We invite the United Nations General Assembly, in its 67th Session, to adopt a Resolution strengthening and upgrading UNEP in the following manner:

- Promote a strong science-policy interface, building on existing international instruments, assessments, panels and information networks, including the Global Environmental Outlook, as one of the processes aimed at bringing together information and assessment to support informed decision-making;
- Disseminate and share evidence-based environmental information and raise public awareness on critical as well as emerging environmental issues;
- Provide capacity building to countries as well as support and facilitate access to technology.

84. We decide to establish a universal intergovernmental high level political forum, building on the strengths, experiences, resources and inclusive participation modalities of the Commission on Sustainable Development, and subsequently replacing the Commission. The high level political forum shall follow up on the implementation of sustainable development and should avoid overlap with existing structures, bodies and entities in a cost-effective manner.

85. The high level forum could

- promote transparency and implementation through further enhancing the consultative role and participation of Major Groups and other relevant stakeholders at the international level in order to better make use of their expertise, while retaining the intergovernmental nature of discussions;
- strengthen the science-policy interface through review of documentation bringing together dispersed information and assessments, including in the form of a global sustainable development report, building on existing assessments;
- enhance evidence-based decision-making at all levels and contribute to strengthen ongoing efforts of capacity building for data collection and analysis in developing countries.

88. We invite the United Nations General Assembly, in its 67th Session, to adopt a Resolution strengthening and upgrading UNEP in the following manner:

- Promote a strong science-policy interface, building on existing international instruments, assessments, panels and information networks, including the Global Environmental Outlook, as one of the processes aimed at bringing together information and assessment to support informed decision-making
- Disseminate and share evidence-based environmental information and raise public awareness on critical as well as emerging environmental issues;
- Provide capacity building to countries as well as support and facilitate access to technology.

109. We recognize the importance to take the necessary actions to better address the needs of rural communities through, *inter alia*, enhancing access by agricultural producers to education and training, knowledge, and appropriate and affordable technologies, including for efficient irrigation, reuse of treated waste water, water harvesting and storage.

110. Key areas for investment and support include: sustainable agricultural practices; rural infrastructure, storage capacities and related technologies; research and development on sustainable agricultural technologies; developing strong agricultural cooperatives and value chains; and strengthening urban-rural linkages. We also recognize the need to significantly reduce post-harvest and other food losses and waste throughout the food supply chain.

114. We resolve to take action to enhance agricultural research, extension services, training and education to improve agricultural productivity and sustainability through the voluntary sharing of knowledge and good practices. We further resolve to improve access to information, technical knowledge and know-how, including through new information and communication technologies that empower farmers, fishers and foresters to choose among diverse methods of achieving sustainable agricultural production. We call for the strengthening of international cooperation on agricultural research for development.
120. We reaffirm the commitments made in the Johannesburg Plan of Implementation and Millennium Declaration regarding halving by 2015 the proportion of people without access to safe drinking water and basic sanitation and the development of integrated water resource management and water efficiency plans, ensuring sustainable water use. We commit to the progressive realization of access to safe and affordable drinking water and basic sanitation for all, as necessary for poverty eradication and to protect human health, and to significantly improve the implementation of integrated water resource management at all levels as appropriate. In this regard, we reiterate these commitments in particular for developing countries through the mobilization of resources from all sources, capacity building and technology transfer.
127. We reaffirm support for the implementation of national and sub-national policies and strategies, based on individual national circumstances and development aspirations, using an appropriate energy mix to meet developmental needs, including through increased use of renewable energy sources and other low-emission technologies, the more efficient use of energy, greater reliance on advanced energy technologies, including cleaner fossil fuel technologies, and the sustainable use of traditional energy resources. We commit to promoting sustainable modern energy services for all through national and sub-national efforts, *inter alia*, on electrification and dissemination of sustainable cooking and heating solutions, including through collaborative actions to share best practices and adopt policies, as appropriate. We urge governments to create enabling environments that facilitate public and private sector investment in relevant and needed cleaner energy technologies.
128. We recognize that improving energy efficiency, increasing the share of renewable energy, cleaner and energy-efficient technologies are important for sustainable development, including in addressing climate change. We also recognize the need for energy efficiency measures in urban planning, buildings, and transportation, and in the production of goods and services and in the design of products. We also recognize the importance of promoting incentives in favour of, and removing disincentives to, energy efficiency and the diversification of the energy mix, including promoting research and development in all countries, including developing countries.
129. We note the launching of the initiative by the Secretary General on "Sustainable Energy for All", which focus on access to energy, energy efficiency and renewable energies. We are all determined to act to make sustainable energy for all a reality, and through this, help eradicate poverty and lead to sustainable development and global prosperity. We recognize that countries' activities in broader energy-related issues are of great importance and are prioritized according to their specific challenges, capacities and circumstances, including energy mix.
143. We call for further collaboration and cooperation at national and international levels to strengthen health systems through increased health financing, recruitment, development, training and retention of the health work force, improved distribution and access to safe, affordable, effective and quality medicines, vaccines and medical technologies, and through improving health infrastructure.
154. We recognize that opportunities for decent work for all and job creation can be availed through, *inter alia*, public and private investments in scientific and technological innovation, public works in restoring, regenerating and conserving natural resources and ecosystems, and social and community services.
160. We recognize the importance of building the capacity of developing countries to be able to benefit from the conservation and sustainable use of the oceans and seas and their resources and, in this regard, we emphasize the need for cooperation in marine scientific research to implement the provisions of UNCLOS (United Nations Convention on the Law of the Sea) and the outcomes of the major summits on sustainable development, as well as for the transfer of technology, taking into account the Intergovernmental Oceanographic Commission (IOC) Guidelines for the transfer of marine technology.
163. We note with concern that the health of oceans and marine biodiversity are negatively affected by marine pollution, including marine debris, especially plastic, persistent organic pollutants, heavy metals, and nitrogen-based compounds, from a number of marine and land-based sources, including shipping and land runoff. We commit to take action by 2025, based on collected scientific data, to achieve significant reductions in marine debris to prevent harm to the coastal and marine environment.
166. We call for support to initiatives that address ocean acidification and the impacts of climate change on marine and coastal ecosystems and resources. In this regard, we reiterate the need to work collectively to prevent further ocean acidification, as well as enhance the resilience of marine ecosystems and of the communities whose livelihoods depend on them, and to support marine scientific research, monitoring and observation of ocean acidification and particularly vulnerable ecosystems, including through enhanced international cooperation.

168. We commit to urgently develop and implement science based management plans, including by reducing or suspending fishing catch and effort commensurate with the status of the stock. We further commit to enhance action to manage bycatch, discards, and other adverse ecosystem impacts from fisheries including by eliminating destructive fishing practices. We also commit to enhance actions to protect vulnerable marine ecosystems from significant adverse impacts including through the effective use of impact assessments.
176. We support international cooperation with a view to conserving coral reef and mangrove ecosystems and realizing their social, economic and environmental benefits as well as facilitating technical collaboration and voluntary information sharing.
177. We reaffirm the importance of area based conservation measures, including marine protected areas consistent with international law and based on best available scientific information as a tool for conservation of biological diversity and sustainable use of its components.
184. We invite all of Africa's development partners, in particular developed countries, to support African countries in strengthening human capacities and democratic institutions, including through facilitating the transfer of technology needed by African countries as mutually agreed.
186. We call for disaster risk reduction and building of resilience to disasters to be addressed with a renewed sense of urgency in the context of sustainable development and poverty eradication, and, as appropriate, to be integrated into policies, plans, programmes, and budgets at all levels and considered within relevant future frameworks.
187. We recognize the importance of early warning systems as part of effective disaster risk reduction at all levels in order to reduce economic and social damages including the loss of human life, and in this regard encourage States to integrate such systems into their national disaster risk reduction strategies and plans. We encourage donors and the international community to enhance international cooperation in support of disaster risk reduction in developing countries as appropriate through technical assistance, technology transfer as mutually agreed, capacity building and training programmes. We further recognize the importance of comprehensive hazard and risk assessments, and knowledge and information sharing, including reliable geospatial information. We commit to undertake and strengthen in a timely manner risk assessment and disaster risk reduction instruments.
188. We stress the importance of stronger inter-linkages among disaster risk reduction, recovery and long-term development planning, and call for more coordinated and comprehensive strategies that integrate disaster risk reduction and climate change adaptation considerations into public and private investment, decision making and planning of humanitarian and development actions in order to reduce risk, increase resilience and provide a smoother transition between relief, recovery and development.
191. We note with grave concern the significant gap between the aggregate effect of Parties' mitigation pledges in terms of global annual emissions of greenhouse gases by 2020 and aggregate emission pathways consistent with having a likely chance of holding the increase in global average temperature below 2 °C or 1.5 °C above pre-industrial levels. We recognize the importance of mobilizing funding from a variety of sources, public and private, bilateral and multilateral, including innovative sources of finance, to support nationally appropriate mitigation actions, adaptation measures, technology development and transfer and capacity-building in developing countries.
193. We call for enhanced efforts to achieve the sustainable management of forests, reforestation, restoration and afforestation, and we support all efforts that effectively slow, halt and reverse deforestation and forest degradation, including *inter alia* promoting trade in legally-harvested forest products. We note the importance of ongoing initiatives such as reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries. We commit to improving the livelihoods of people and communities by creating the conditions needed for them to sustainably manage forests including through strengthening cooperation arrangements in the areas of finance, trade, transfer of environmentally sound technologies, capacity-building and governance, as well as by promoting secure land tenure, particularly decision-making and benefit sharing, in accordance with national legislation and priorities.
197. We reaffirm the intrinsic value of biological diversity, as well as the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its critical role in maintaining ecosystems that provide essential services, which are critical foundations for sustainable development and human well-being.
204. We take note of the establishment of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, and invite an early commencement of its work, in order to provide the best available policy-relevant information on biodiversity to assist decision-makers.
207. We note the importance of mitigating the effects of desertification, land degradation and drought, including by preserving and developing oases, restoring degraded lands, improving soil quality and improving water management, in order to contribute to sustainable development and poverty eradication. We also encourage capacity building, extension training programmes, and scientific studies and initiatives aimed at deepening understanding and raising awareness of the economic, social and environmental benefits of sustainable land management policies and practices.

208. We stress the importance of the further development and implementation of scientifically based, sound and socially inclusive methods and indicators for monitoring and assessing the extent of desertification, land degradation and drought, as well as the importance of efforts underway to promote scientific research and strengthen the scientific base of activities to address desertification and drought under the UNCCD. In this respect, we take note of the decision of the COP10 of the UNCCD to establish an ad hoc Working Group, taking into account regional balance, to discuss specific options for the provision of scientific advice to its Parties.
213. We reaffirm our aim to achieve by 2020 sound management of chemicals throughout their life cycle and of hazardous waste in ways that lead to minimization of significant adverse effects on human health and the environment, as set out in the Johannesburg Plan of Implementation.
215. We are deeply concerned that many countries, in particular least developed countries, lack the capacity for sound management of chemicals and waste throughout their life-cycle. Additional efforts are needed to enhance work towards strengthening capacities, including through partnerships, technical assistance and improved governance structures. We encourage countries and organizations which have made progress toward achieving the goal of sound management of chemicals by 2020 to assist other countries by sharing knowledge, experience and best practices.
217. We commend existing and call for continued, new and innovative public-private partnerships among industry, governments, academia and other non-governmental stakeholders aiming to enhance capacity and technology for environmentally sound chemicals and waste management, including for waste prevention.
218. We recognize the importance of adopting a life-cycle approach and of further development and implementation of policies for resource efficiency and environmentally sound waste management. We therefore commit to further reduce, reuse and recycle waste (3Rs) as well as to increase energy recovery from waste with a view to managing the majority of global waste in an environmentally sound manner and where possible as a resource. Solid wastes, such as electronic waste and plastics, pose particular challenges which should be addressed.
220. We recognize the importance of science-based assessment of the risks posed by chemicals to human beings and the environment, and of reducing human and environmental exposure to hazardous chemicals. We encourage the development of environmentally sound and safer alternatives to hazardous chemicals in products and processes. To this end, we encourage, *inter alia*, life-cycle assessment, public information, extended producer responsibility, research and development, sustainable design and knowledge sharing, as appropriate.
225. Countries reaffirm the commitments they have made to phase out harmful and inefficient fossil fuel subsidies that encourage wasteful consumption and undermine sustainable development. We invite others to consider rationalizing inefficient fossil fuel subsidies by removing market distortions, including restructuring taxation and phasing out harmful subsidies.
227. We note that mining offers the opportunity to catalyze broad-based economic development, reduce poverty and assist countries in meeting internationally agreed development goals, including the MDGs, when managed effectively and properly. We recognize that governments need strong capacities to develop, manage, and regulate their mining industries in the interest of sustainable development.
230. We resolve to improve the capacity of our education systems to prepare people to pursue sustainable development, including through enhanced teacher training, the development of curricula around sustainability, the development of training programmes that prepare students for careers in fields related to sustainability, and more effective use of information and communication technologies to enhance learning outcomes.
235. We underscore the importance of supporting educational institutions, especially higher educational institutions in developing countries, to carry out research and innovation for sustainable development, including in the field of education, to develop quality and innovative programmes, including entrepreneurship and business skills training, professional, technical, vocational training and lifelong learning, geared to bridging skills gaps for advancing national sustainable development objectives.
240. We resolve to undertake legislation and administrative reforms to give women equal rights with men to economic resources, including access to ownership and control over land and other forms of property, credit, inheritance, natural resources and appropriate new technology.
248. We resolve to establish an inclusive and transparent intergovernmental process on SDGs that is open to all stakeholders with a view to developing global sustainable development goals to be agreed by the United Nations General Assembly. At the outset, this open working group will decide on its method of work, including developing modalities, to ensure the full involvement of relevant stakeholders and expertise from civil society, the scientific community and the UN system in its work in order to provide a diversity of perspectives and experience. It will submit a report to the 68th session of the UNGA containing a proposal for sustainable development goals for consideration and appropriate action.
250. We recognize that progress towards the achievement of the goals needs to be assessed and accompanied by targets and indicators while taking into account different national circumstances, capacities and levels of development.
251. We recognize that there is a need for global, integrated and scientifically-based information on sustainable development. In this regard, we request the relevant bodies of the United Nations system, within their respective mandates, to support regional economic commissions to collect and compile national inputs in order to inform this global effort.

VI. Means of implementation

B. Technology

269. We emphasize the importance of technology transfer to developing countries and recall the provisions on technology transfer, finance, access to information, and intellectual property rights as agreed in the Johannesburg Plan of Implementation, in particular its call to promote, facilitate and finance, as appropriate, access to and the development, transfer and diffusion of environmentally sound technologies and corresponding know-how, in particular to developing countries, on favourable terms, including on concessional and preferential terms, as mutually agreed.

270. We stress the importance of access by all countries to environmentally sound technologies, new knowledge, know-how and expertise. We further stress the importance of cooperative action on technology innovation, research and development. We agree to explore modalities in the relevant fora for enhanced access to environmentally sound technologies by developing countries.

271. We underline the need for enabling environments for the development, adaptation, dissemination, and transfer of environmentally sound technologies. In this context, we note the role of foreign direct investment, international trade and international cooperation in the transfer of environmentally sound technologies. We engage in our countries as well as through international cooperation to promote investment in science, innovation, and technology for sustainable development.

272. We recognize the importance of strengthened national, scientific and technological capacities for sustainable development. This can help countries, especially developing countries, to develop their own innovative solutions, scientific research and new, environmentally sound technologies, with the support of the international community. To this end, we support building science and technology capacity, with both women and men as contributors and beneficiaries, including through collaboration among research institutions, universities, the private sector, governments, non-governmental organizations, and scientists.

273. We request relevant UN agencies to identify options for a facilitation mechanism that promotes the development, transfer and dissemination of clean and environmentally sound technologies by, *inter alia*, assessing technology needs of developing countries, options to address them and capacity building. We request the UN Secretary General, on the basis of the options identified and taking into account existing models, to make recommendations regarding the facilitation mechanism to the 67th Session of the UN General Assembly.

274. We recognize the importance of space-technology-based data, in situ monitoring, and reliable geospatial information for sustainable development policy-making, programming and project operations. In this context, we note the relevance of global mapping and recognize the efforts in developing global environmental observing systems, including by the Eye on Earth network and through the Global Earth Observation System of Systems. We recognize the need to support developing countries in their efforts to collect environmental data.

275. We recognize the importance of strengthening international, regional and national capacities in research and technology assessment, especially in view of the rapid development and possible deployment of new technologies that may also have unintended negative impacts, in particular on biodiversity and health, or other unforeseen consequences.

276. We recognize the need to facilitate informed policy decision-making on sustainable development issues and in this regard to strengthen the science-policy interface.

C. Capacity building

277. We emphasize the need for enhanced capacity building for sustainable development and, in this regard, we call for strengthening technical and scientific cooperation including North-South, South-South and triangular cooperation. We reiterate the importance of human resource development, including training, exchange of experiences and expertise, knowledge transfer and technical assistance for capacity-building, which involves strengthening institutional capacity, including planning, management and monitoring capacities.

278. We call for the continued and focused implementation of the UNEP Bali Strategic Plan for Technology Support and Capacity Building.

280. We invite all relevant agencies of the United Nations system and other relevant international organizations to support developing countries and, in particular, least developed countries in capacity-building for developing resource-efficient and inclusive economies, including through:

- sharing sustainable practices in various economic sectors;
- enhancing knowledge and capacity to integrate disaster risk reduction and resilience into development plans.

ANNEX 2

Rio+20 - FORUM ON SCIENCE, TECHNOLOGY AND INNOVATION FOR SUSTAINABLE DEVELOPMENT

Opening Remarks by WFEO Representative

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.

Jorge Spitalnik
Chair, WFEO-UN Relations Committee

ANNEX 3
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.

ANNEX 4

Scientific and Technological Community Major Group

Address to Rio+20 Plenary by Prof. Yuan Tseh Lee

I am pleased to take the floor on behalf of the Scientific and Technological Community Major Group.

Science has sounded the alarm that the future wellbeing of humankind is at risk, and that we are facing serious changes in Earth's life support system. Our continued existence on Earth depends on natural resources, but science shows that these are being depleted at unprecedented rates, that we are degrading vital ecosystems services.

This Rio+20 Summit must heed these warnings from scientists and engineers, and action must be taken now to find and implement the right solutions. This is crucial as progress has been limited in the last two decades on implementing sustainable development. Pressures on the environment are such that they cause fundamental changes in the Earth's system and move us beyond safe natural boundaries. Major social and economic challenges persist, such as bridging the development divide between North and South and alleviating poverty. The Scientific and Technological Communities have been following the Rio + 20 preparations, and throughout this long process we have upheld our conviction that science, engineering and technology - along with societal transformation – are key to our sustainable future. Science is essential to develop the knowledge base, to define targets and to monitor progress on our efforts to move to a sustainable future. Engineering and technology have a crucial role to play, as they will create and implement many of the solutions needed for a transition to sustainable development. Many implementable solutions exist. However, these are not the only solutions we will need, as societies, economies and politics will also need to transform.

To achieve our goals on sustainable development, we need political commitment at a totally different scale. We must move beyond the "business as usual" of the past two decades, which has seen a series of inadequate incremental steps. We need strong leadership and political commitment at the global, regional and local levels to take action. We urge governments to follow through on the commitments they are making in the Rio+20 Outcome document. It is essential that Rio + 20 marks the start of a process, and that all actors maintain a strong commitment to implementation of what is agreed.

An important part of this will be improving links between governments and the Scientific and Technological Communities. These Communities stand ready to deliver our knowledge and skills to fulfill our side of this partnership.

We recognize the need for more interdisciplinary research that addresses the full range of issues for sustainable development; of the environment, society, human behavior, politics and economics, and science and engineering overarch these issues. We recognize the need to engage end-users from the outset to co-design research to produce the knowledge, engineering, technologies and services that societies require. As such, we are working to bring policy-makers, business and other stakeholder groups into science and technology processes. We recognize the need to build scientific and engineering capacity in developing countries, so that these countries can train their own scientists and engineers and fully participate in the generation of knowledge and clean technology. We recognize the need to fully engage, civil society, including women, indigenous peoples and other vulnerable groups in the creation of an ethical, participatory science and technology model.

Rio + 20 should be the beginning of the transformational change placing humanity on a sustainable track. More than ever before, science and scientists, engineers and innovative technologies, are needed to help face the greatest challenges of our times.

ANNEX 5

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.

Jorge Spitalnik, Chair
WFEO-UN Relations Committee