



World Federation of Engineering Organizations
Fédération Mondiale des Organisations d'Ingénieurs
Federación Mundial de Organizaciones de Ingeniería
Всемирной федерации инженерных организаций
الإتحاد العالمي للمنظمات الهندسية
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Biennial Report 2011 - 2013



*WFEO, the Voice of
Engineers*



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On 4 March 1968, representatives of 50 scientific and technical associations from all over the world met under the auspices of the United Nations Educational, Scientific and Cultural Organization (UNESCO) in Paris to establish the World Federation of Engineering Organizations whose charter as an international, non-governmental organization is to unite multidisciplinary engineering associations throughout the world.

WFEO at a Glance



WFEO is a leading international NGO and a world class source of information and advice to national and international organizations.

It is active across all engineering disciplines and is steadily deploying a strategy to achieve its goal of providing engineering related solutions to the challenges of the 21st century.

WFEO in Brief

WFEO was founded in 1968 under the auspices of UNESCO

- ✦ Headquarters at UNESCO in Paris
- ✦ Acts through ten Standing Technical Committees addressing such issues as engineering and the environment, disaster risk management, engineering capacity building, energy, education, engineering for innovative technologies and other
- ✦ Brings together national engineering organizations from over 90 nations
- ✦ Represents some 20 million engineers from around the world.
- ✦ Aims at enhancing the practice of engineering
- ✦ Makes information on engineering available to the countries of the world
- ✦ Fosters socio-economic security and sustainable development through the proper application of technology
- ✦ Cooperates with UN bodies and other international sister organizations: UNFCCC, UNEP, UNISDR, UNCSD, UNESCO, OECD, World Energy Council, WMO
- ✦ Encourages public private partnerships by including the engineering dimension.

Report of the President WFEO from Geneva to Singapore

Eng. Adel MMJ Al-Kharafi is the President of the World Federation of Engineering Organizations and has been active with the organization since 2009 holding the positions of President-elect and Member of the Executive Board.

As the 2013 general assembly meetings are approaching and marking the end of my mandate as president of the **World Federation of Engineering Organizations**, I would like to share with you some of my thoughts and report on my actions during my presidency.

From 2011 to 2013

Engineers throughout the world need a strong, visible and recognized WFEO and a stronger WFEO requires the active participation of its members not only to be aware of and share the most recent developments in engineering occurring in the world but also to have an international platform in which they can express their views and be heard in their respective countries and on the international scene.

Immediately after the September 2011 General Assembly in Geneva, I got down to further analyze the Federation's situation, how it works, how it is perceived internationally and among its membership, what were its strengths and its weaknesses. What was and is the impact of the worldwide economic, financial and social crisis on WFEO and the role of engineers in addressing the many challenges of the 21st century.

To start with, WFEO can surely benefit from the world's crisis. Engineering being a global activity it became obvious at all levels in society and among national and international bodies that the role of engineers was essential to face the critical global problems the world has to face.

I have noted that our Federation has established its mission and vision; It has some 70 active national members and ten Standing Technical Committees in charge of implementing its vision and mission in line with the Federation's strategic plan; Its executive board and council meet every year and its general assembly every other year; Its members organize conferences, forums and workshops on the occasion of its meetings with the Federations flagship event, the World Engineers' Convention (WEC) which takes place every four years.

I immediately wanted to do more. I have asked that the WFEO Strategic and Action Plans be reviewed and updated. Communication and visibility being of vital importance to an organization such as WFEO and Past President Maria Prieto having set a project to enhance communication and visibility through a Virtual Service Centre, I contacted companies in my country and abroad to provide sponsorship for this project and WFEO received USD \$100,000.



Eng. Adel MMJ Al-Kharafi
President of the World Federation
of Engineering Organizations
2011 - 2013

The VSC project underwent several progress phases and today we have a full time communication and marketing director and a webmaster at headquarters to continue the effort and ensure additional revenues for the Federation.

Thanks to donations from the **Kuwait Society of Engineers**, a Project Manager and Advisor International Affairs also joined headquarters.

I can say that during my presidency, WFEO significantly strengthened its involvement in international organizations, communication with most member countries improved, a new STC and STC task groups were established and more information about the work of the Standing Technical Committees was circulated.

Relations with UNESCO

I have met several times with UNESCO, Director General Irina Bokova, and the Assistant Director General for Natural Sciences, Gretchen Kalonji, which led to two brainstorming sessions with UNESCO and a more focused meeting on 11 April 2013. The outcome of these sessions is now being organized and followed up with WFEO committee chairs and headquarters.

I was also able to meet with several UNESCO heads of delegations and ambassadors to France and invited them to dinner with WFEO executive council members and committee chairs in 2010 on the occasion of our executive board meetings.

The UNESCO Director General also invited me to join the Ad Hoc Group to advise the UN Secretary-General on the science-related recommendations of the Global Sustainability Panel. Thanks to the input of some WFEO officials and the commitment of CEE Chair Darrel Danyluk, WFEO was able to ensure that engineering is recognized and taken into consideration in the Ad Hoc Group's report.

I must say that WFEO is now recognized as a partner at UNESCO. In fact, on the occasion of a recent study concerning the free of charge occupation of offices, WFEO was included among the few NGOs whose presence in the vicinity of the UNESCO secretariat was appropriate.

Relations with Members and other International Organizations

Already as President Elect, I had organized a conference on engineering in Africa, which took place in Cairo in January 2010 which gathered many African engineering societies and the WFEO international member, the Federation of African Engineering Organizations. Thanks to this effort, there is today one African Engineering Organization gathering and representing all African countries in WFEO.

I took advantage of a trip to the USA in May 2011 to meet with officials from AAES, our US national member, and with several other engineering associations in this country as well as State Department officials, where I promoted engineering and WFEO.

I took note of the importance of relations that WFEO had established over the years with UN bodies such as the UNCSD, the UNFCCC, ECOSOC and UNEP. And in order to consolidate these relations, I attended the meetings of UNCSD-19 in New York in March 2011, and met on this occasion with leading personalities from UN bodies and gave my support to the WFEO STCs involved in these bodies. Finally, I ensured the establishment of the WFEO-UN relations committee under the chairmanship of Jorge Spitalnik.

I followed up the Federation's relations with other important international organizations such as OECD, WTO, WMO, EU and many more, and encouraged those STCs that could further strengthen these relations.

My participation as WFEO President in national and international events included

In 2011

27 - 30 September - Italy

30th ICSU General Assembly.

3 October - Singapore

Inaugural FEIAP convention.

2 - 4 November - Korea

Opening ceremony of the 2011 annual conference of the KSCE.

17 - 19 November - Turkey

UCTEA 8th International Energy Symposium. Meeting with the Minister of Energy and Natural Resources and other personalities.

8 December - Belgium

1st Engineers' European Day. The event was co-organized by the **European Council of Civil Engineers (ECCE)** and the **European Council of Engineering Chambers (ECEC)** and was the first ever attempt made by WFEO to establish relations with the European Union. I had the opportunity to meet and discuss with the EU Commissioner, Mrs. Maria Damanaki. The large audience included leaders of European and National Engineering Organizations. As a result, the 5th Presidents meeting of the European Engineering Organizations was organized during the WFEO executive council meetings in Ljubljana (Slovenia) in September 2012.

15 December - India

26th Indian Engineering Congress. On this occasion, I organized a meeting with several WFEO members from Asia to discuss the development of engineering education as well as the difficulties faced by engineers who apply for jobs in the Gulf region. The idea of signing an agreement with Asian countries on the exchange of information related to engineering education and the evaluation of higher level education was raised during this meeting.

In 2012

11 May - Italy

Visit to the Italian Engineering Council to regain their involvement and their very essential contribution to WFEO.

21 - 22 May - Sweden

The European Maritime Day 2012 under the theme of Sustainable Growth from the Oceans, Seas and Coasts: Blue Growth. I made a presentation to an audience of about one thousand participants on WFEO and focused on the role of engineers facing the complex economic and social challenges in today's world. I met again with Maria DAMANAKI and Catharina Elmsäter-Svärd, the Swedish Minister of Infrastructure who showed interest in collaborating with WFEO.

31 May - 1 June - Costa Rica

I addressed the opening ceremony of Expo Maintenance Conference on 31 May and presented the WFEO activities during my speech. One of the objectives of the conference was to establish links between engineering, education, innovation, industry and services to achieve efficient and effective sustainable development. I met with the Costa Rican Minister of Science and Technology, Alejandro Cruz and with the Minister of Environment, Energy and Telecommunication as well as the Minister of Oil. I also discussed with Mrs. Irene Campos- President of UPADI the subjects of interest to both organizations.

10 - 15 June - Brazil

Participation in the Rio+20 Conference together with 43 people from WFEO. On this occasion I conferred the WFEO Gold Medal to the UN Secretary General Ban Ki Moon.

4 October - Italy

Meeting with the presidents and high officials of Italian engineering associations. I also participated together with President Elect Marwan Abdelhamid in a roundtable on the EU new proposal of qualification directives.

12 December - India

27th Indian Engineering Congress on Engineering for Sustainable Development and Inclusive Growth: Vision 2025 held in New Delhi and organized by WFEO national member the Institution of Engineers, India.

22 - 23 October - China

2012 Workshop on Innovations in ICT Education in Beijing (China). The meeting was jointly organized by the WFEO STC on Information and Communication, IEEE and the WFEO National Member, the China Association for Science and Technology (CAST). The workshop was also sponsored by UNESCO. I met with IEEE and CAST officers to discuss the development of collaboration with these organizations. I also recognized the role of IEEE in the organization of this successful workshop.

In 2013

10 - 12 February - Kuwait

Support to the first Youth Convention organized by the WFEO Young Engineers/Future Leaders (YE/FL) standing committee. The three themes of the convention included: Youth; Engineering and Technology and Global International Relations. Dr. Gretchen Kalonji, UNESCO Assistant Director General of the Sciences Sector was a keynote speaker and she generously announced her support to the YE/FL Committee.

8 May - Bahrain

The Bahrain Society of Engineers (BSE) 40th anniversary celebration under the patronage of His Majesty The King Hamad Bin Issa Al Khalifa with whom I was able to meet. I also discussed with the president and other officers of BSE.



Just one last word

of acknowledgement

My sincere thanks go to former presidents Barry Grear and Maria Prieto Laffargue, to the members of the executive board and council, the executive director and the headquarters staff on whom I was able to rely for advice and assistance. I wish Marwan Abdelhamid success in his endeavors to further develop WFEO.

of condolences

My truthful thoughts go to the family of B.J. Vasoya from India whom I was proud to meet and know as well to the family of Carlos Roberto dos Santos Moura from Brazil both eminent engineers who served WFEO to the best of their ability and my sympathies to the family of Ibrahim Abu Ayyash who was the Secretary General of Union Engineers of Palestine. And not to forget Bill Rourke from Engineers Australia.

Message from the President-Elect

Eng. Marwan ABDELHAMID has devoted his time to WFEO for over 36 years as member of the Executive Council and Vice President. He has been awarded three times the medal for outstanding services to WFEO.



Eng. Marwan Abdelhamid
President-Elect of the World
Federation of Engineering
Organizations

Looking ahead towards the future

After being involved in WFEO for many years and as President-Elect since 2011, I am now looking forward to act as President of the World Federation of Engineering Organizations. I know the challenges and the responsibilities will be great but I am building on the achievements of my predecessors and will now bring my own vision and ideas to further develop and improve the Federation's accomplishments. WFEO is to become the recognized leader of the engineering profession and the trustworthy source of advice and information.

"I am ready to take on the responsibility of President of the World Federation of Engineering Organizations. See you soon in Singapore."

In an ever changing world that is looking for solutions to its tremendous socioeconomic, environmental, financial difficulties, ethics, production efficiency, innovation, sustainability and more, the need for engineers to help face these challenges has now become a fact among governments, international development agencies and organizations, as well as decision makers at all levels.

As President-Elect for two years, I have learned a lot from President Adel Al Kharafi to whom I gave all my support and advice, accompanying or representing him in many members' events and conferences and doing my best to have his action plan achieved in the best way.

I have also visited several countries that were either not members of WFEO or had stopped their involvement in the Federation and was able to bring more than five countries onboard.

Last but not least, I have initiated the **World Engineering Forum** (WEF) under the auspices of WFEO. It is meant to become the vehicle for facilitating cooperation and enhancing collaboration between policy makers, and the private and public sectors to implement Sustainable Development. I am progressing at accelerated pace and count on WFEO members to help me.

My appreciation goes to the executive council, national members and headquarters for their assistance.

Report of the Executive Director



Mrs. Tahani Youssef
Executive Director of the World
Federation of Engineering
Organizations

Our Federation is developing at rapid pace. It is more visible and better acknowledged among national and international organizations. Several Standing Technical Committees are recognized worldwide for their professionalism and valuable input; more members have developed a better sense of belonging to an international family; the executive board is following very closely the activities of the Federation and the executive council members express their enthusiasm about the Federation's actions.

"Despite the world financial crisis, most of our members continued to pay their subscriptions on time. The generous subventions received from the Kuwait Society of Engineers, the continuous efforts made by the Standing Technical Committees to receive funding from outside sources made it possible to further increase the reserves of the Federation."

As a result of the above and at the same time to follow up and reinforce this development, the number of staff at headquarters at UNESCO in Paris increased to five people with the recruitment of a new full time communication and marketing director and a webmaster. I have managed this team and supervised its work and a Headquarters Support Team was formed that meets regularly to better coordinate the work with WFEO officers, national members, STCs and other international bodies and organizations.

A completely revamped and restructured website is now online to the satisfaction of many of our members and WFEO officials. The website being a living tool, it will be continuously updated and developed thanks to the involvement of all.

For the first time, an executive brief and WFEO e-newsletters were published as well as a special issue on the World Engineers Summit of Singapore. Hundreds of people from WFEO and others read it and sent their comments and congratulations.

Financial Situation

Despite the world financial crisis, most of our members continued to pay their subscriptions on time. The generous subventions received from the Kuwait Society of Engineers, the continuous efforts made by the Standing Technical Committees to receive funding from outside sources and the very strict control of expenses at headquarters made it possible to further increase the reserves of the Federation. I remain confident that we shall be able to increase our income to cover the extra expenses incurred due to the recruitment of the new staff. We still expect and hope that our most affluent members will follow the example of those who have increased the number of their shares.

Headquarters' activities

The normal regular administrative tasks were carried out by headquarters.

I continued to work closely with STCs to follow up their work, coordinate their collaboration with international organizations and highlight their actions with the involvement of the HQST to enhance the visibility of WFEO.

I have also maintained relations with our membership and continued to be involved in the organization of WFEO and members' events. I travelled several times to Geneva and attended several meetings in Paris with our Swiss colleagues and UNESCO to help organize the 2011 World Engineers' Convention (WEC2011) and the WFEO general assembly meetings in Geneva, Switzerland.

I also travelled to Ljubljana to help organize the 2012 executive council meetings and the World Engineering Summit and finally to Singapore last April to help organize the general assembly meetings and the World Engineers Summit.

I followed-up the numerous efforts of President Adel Al Kharafi that included bringing new members to the Federation and encouraging others to stay and be better involved in the Federation; establishing a WFEO marketing strategy; reviewing the WFEO strategic and action plans; establishing closer relations with members and international organizations. In this respect I participated in a European conference on the industrial competitiveness and reindustrialization in Europe

I have also organized and attended meetings and teleconferences with OECD and IEEE and followed up the collaboration efforts with these organizations.

Cooperation with UNESCO

After closely following up relations with UNESCO over the years, I have been invited to attend many of its events and have succeeded in establishing direct relationships with UNESCO officials and national delegations.

I organized several meetings for the President with UNESCO high officials and took the necessary steps to build on the several brainstorming sessions organized between WFEO and UNESCO in 2011 and 2012, the WFEO objective being to reinforce the Engineering Initiative that was established under the leadership of Assistant Director General for the Sciences Sector Gretchen Kalonji.

The Engineering Report prepared by WFEO and UNESCO in September 2009 continues to be widely circulated and raises great interest.

As it did for the three first WECs, UNESCO was a sponsor of the fourth World Engineers' Convention held in Geneva and supported the participation of engineers from developing countries in this event.

The WFEO committees on engineering and the environment, on capacity building and energy have established working relations with UNESCO and will continue to enhance the collaborative relations between both organizations.

I am particularly grateful to the President as well as the members of the Executive Council whose support and assistance made me able to carry out the tasks of the secretariat efficiently.

Executive Council



WFEO Standing Technical Committees (STCs)



STCs



Committee on Engineering and the Environment (CEE)

The Committee on Engineering and the Environment (CEE) engages in a facilitating role among its members and the WFEO community. Where necessary, this role may include leadership and coordination among members and other committees of WFEO.

The CEE conducted its 2011-2013 activities through a four-year strategic plan focusing on five themes:

1. Engineering and climate change adaptation
2. Climate change mitigation and engineering
3. Engineering and agriculture
4. Engineering and sustainability in mining
5. Environmental and sustainable engineering practice

Each theme is led by an individual chair that formed an international working group to execute an action plan that is reported annually. The following lists accomplishments at the committee level followed by achievements and progress in each of the five themes.

“The CEE conducts its business in a transparent, inclusive and consultative manner among its members as well as in partnership with the other committees and structures within the WFEO. The committee is executing a thematic, results-oriented program for 2011-2015 through a strategic plan that is reviewed annually.”

Darrel Danyluk, Chairman of CEE (Canada)

WFEO - CEE Level

1. Completed and published four-year strategic plan (2011-2015) and secured theme leaders in five areas of work.
2. Published four newsletters:
 - Engineering and sustainable mining - April 2012
 - Engineering and agriculture - September 2012
 - Climate change mitigation - April 2013
 - Climate change adaptation - September 2013
3. Publication of Environmental Impacts of Major Sporting Events Report (Theme 1 2007-2011 Strategic Plan)
4. Successful negotiation of Memorandum of Understanding between WFEO and World Meteorological Organization
5. Formation and initial chair of Informal Standing Committee Chairs Committee.
6. Participation in the formation and operation of the UN Relations Committee.
7. Part of the WFEO team participating in and representing the WFEO at the United Nations Rio +20 Conference (June 2012). This included active participation in the development of interventions for the final text from the conference.
8. Provided the secretariat and part of the WFEO team that organized and delivered the WFEO event “World Sustainable Communities Day” at Rio + 20.
9. The CEE is working towards recognition of WFEO as an official observing organization within the UNFCCC. This will permit WFEO to participate and intervene in meetings of the convention and enable engineers to more directly engage with country negotiators. The goal is to achieve that recognition by COP 19 (November 2013).





**Ensure
Environmental
Sustainability**

Engineering and Climate Change Adaptation

1. Publication of Workshop Report on Special Session on Climate Change – WEC 2011
2. Participated in UNFCCC Bonn Meetings in May 2012 and June 2013 and delivered two side events/workshops:
May 2012 – Tools for Infrastructure Climate Risk Assessment:
An Update on Knowledge Development and Capacity Building.
June 2013 – Knowledge Development and Capacity- Building for Adapting Bridge Infrastructure in Honduras.
In addition, the WFEO presented at the 2nd Durban Forum on Capacity Building that was part of the 2013 UNFCCC Bonn meeting. A presentation on engineers needs for climate information was presented as part of a WMO side event at the 2013 meeting as well. (Information support was received from the Standing Committee on Capacity Building)
3. Completed project with the Colegio of Civil Engineers of Honduras (CICH) assessing climate risks and vulnerability of four highway bridges in Honduras using the Engineers Canada PIEVC Engineering Protocol.
The work included a review of procurement and construction practices to recommend adjustments for current and future climate adaptation. The project was sponsored by the Government of Canada and managed by Engineers Canada in partnership with CICH;. A key objective was building in-country capacity for engineers and climate scientists to undertake subsequent assessments with decreasing outside technical support.
4. Attendance and representation of WFEO at UN Conference of the Parties Meetings #18 (Durban, South Africa, 2011) and #19 (Doha, Qatar, 2012)
5. Organization and delivery of Training Workshop on the PIEVC Engineering Protocol at WES 2013, Singapore, September 2013.
6. Presentation on climate change and infrastructure adaptation in Costa Rica and Honduras to GIZ (German Center for International Development) in April 2013.

Engineering and Agriculture

1. Formation of task group in progress. Draft action plan completed for review and implementation by the task group once a viable number of volunteers is secured.
2. Events in the early planning stages include two workshops:
A seminar on the use of salted water on agriculture, and a Workshop on grain storage and waste reduction.
3. This theme continues to manage the working relationship between the Committee and the Farming First organization, providing advice and the engineering perspective. Farming First exists to articulate, endorse and promote practical, actionable programs and activities to further sustainable agricultural development worldwide. It enjoys the support of 131 organizations representing the world's farmers, scientists, engineers and industry as well as agricultural development organizations.

Climate Change Mitigation

1. Organization of speakers and chairing of Green Buildings Session at WEF 2012, Ljubljana (Slovenia).
2. Secured agreement for WFEO linkage to the Future Climate Engineering Solutions Project through co-chairing of activities by ICE and IMECHE (current chair of the Project)
3. Organization and delivery of Future Climate Engineering Solutions workshop – WES 2013, Singapore.





Environmental and sustainable engineering practice

- 1. This theme produced a code of practice and interpretive guide entitled "International Code of Practice for Sustainable Development and Environmental Stewardship for Engineers". The draft was sent to all WFEO national and international members for review in April 2013. The goal is to finalize the document for adoption at the WFEO General Assembly in September 2013.
- 2. The final version of the document will be published in the fall of 2013 following approval. Workshops and webinars to help explain and interpret the code will be offered on demand.

Milestones for the committee have been reported above. It should be noted that Engineers Canada is entering its final two years as host and chair of the committee. The search for a national member to transfer the committee is in its early stages, but this task has been recognized as part of the 2011-2015 strategic plan.

Lessons learned over the past two years include:

1. There is a need to form and nurture partnerships with other STCs and outside organizations to achieve progress in the work. In some cases these partnerships can lead to additional financial support and sponsorship as relationships and trust evolves. An example is our MOU with the WMO. Signed in October 2012, this agreement has already provided dividends to raise our profile and voice with the climate community.
2. Volunteers are the backbone for achieving progress and volunteers need support for expenses such as travel, so that opportunities to secure sponsorship and/ or support of the volunteers host organizations' should be strongly encouraged and pursued. Failure to support our volunteers will result in our voice not heard at important policy development and consultation events of existing and emerging United Nations entities and processes.
3. Due to limited financial and human resources, the scope of work in most themes must be limited to capacity-building in its many forms e.g. workshops, publications, website material creation and timely updating, linking and networking and information transfer. There are no resources to undertake original research unless external funding is secured.
4. Coordination of work among STCs should be enhanced. We have had good collaboration on specific tasks or events with other committees when these are time limited and focused. The informal group of STC's is a step forward in addressing this.
5. Selective participation in UN bodies such as UNFCCC and UN-CSD has vastly improved the profile of WFEO and engineering within the UN agencies as well as UNESCO and OECD. This effort should continue through the WURC at the policy level as well as on a more technical and capacity-building level through individual STCs and WFEO HQ.

The CEE is focusing its climate change adaptation work in Central and South America. The region is supported by UPADI. and Engineers Canada has strong historical links with the Colegio of Engineers and Architects of Costa Rica. The Engineering and Agriculture group has its initial focus on agricultural issues in Africa. The theme leader is located in Tunisia and his network is centered in the African countries.

The other themes do not have a specific geographic focus except through the participation of the working group members who are located across most regions of the world.





UN Millennium Goals

The work of the CEE directly contributes to UN Millennium Goal #7 – Ensure Environmental Sustainability. It directly supports Target 7A – Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources. Engineers following the international code of practice on sustainable development and environmental stewardship will contribute through their work. Indirectly it supports Target 7C – Halve the proportion of people without access to safe drinking water and sanitation through engineering practice focused on providing reliable and sustainable water supply and wastewater treatment infrastructure.

UN MDG's National members may use the "International Code of Practice on Sustainable Development and Environmental Stewardship" guide to instruct their engineers on good practice. The guide can also be forwarded to national governments to make them aware of the role and responsibilities engineers assume in their contributions. The engineering resource could be used to provide confidence to adjust government policies and practices to account for engagement of engineers in infrastructure design, operation and maintenance.

The **CEE** enables WFEO and the global engineering profession to support the achievement of the **UN Millennium Development Goal 7** (Environmental Sustainability) through the development, application, promotion and communication of:

1. Environmentally sustainable engineering practices and technologies;
2. The adaptation of infrastructures to the impacts of a changing climate;
3. Assessing and promoting clean technologies and engineering practices to mitigate climate change;
4. Presenting engineering perspectives on the international elements of the agricultural supply chain to United Nations agencies and commissions, national members of the Federation and other international non-government organizations;
5. Developing guidelines for practicing engineers on responsible environmental stewardship and sustainable practices in various areas of practice including mining and agriculture.
6. Engaging with United Nations entities (UNFCCC, UN-CSD, and WMO) on the development and implementation of appropriate environment, sustainability and climate change policies and processes at the international, national and local levels in partnership with other WFEO standing committees as well as the WFEO UN Relations Committee.

Responsibility and Sustainability

The work of CEE in climate change adaptation on providing the engineering perspective and solutions towards adapting infrastructure to current and future climate risks. Adapting infrastructure improves its resilience to climate impacts by reducing loss and damage as well as maintaining the quality of life provided by infrastructure for its long service life. Assessing risks helps to optimize limited resources to addressing the weakest links within the critical infrastructures that serve a society.

The application of existing technologies as proposed by the Future Climate Engineering Solutions Project will enhance efforts to reduce GHG emissions and slow the rate of climate change to an acceptable level.

Capacity-building work in the agriculture and mining sectors will expand the ability of engineers to contribute engineering solutions that are sustainable and reduce environmental impact.

The publication of an international code of practice for sustainable development and environmental stewardship will provide engineers worldwide with a tool and reference to fulfill their responsibilities to achieve sustainable infrastructure that respects, accounts for and addresses environmental, social and economic impacts of development. This demonstrates leadership by sending a strong and united message to the UN and world leaders.

Innovation

The **Committee on Engineering and the Environment** is exploring cost-effective use of existing technologies to reduce GHG emissions. Good engineering practice can provide an innovative and overarching strategy, as demonstrated in the Future Climate-Engineering Solutions Project.



Committee on Engineering Capacity Building (CECB)

Capacity Building in the engineering environment is a lever for economic, social and sustainable development and is recognized as a priority in the global engineering community.

Showcasing Initiatives Developed on Building Engineering Capacity

The Committee on Engineering Capacity Building under the Chairmanship of Mr. Dan Clinton P.E of the United States was successfully handed over in 2011 to South Africa under the Chairmanship of Mr. Christopher Campbell Pr. Eng. The key themes which were identified by the South Africa hosts for continuity and enhancement which will be briefly expanded on in this report include, Engineering Capacity Building for:

- Globalization and Mobility;
- Developing Countries;
- Developed Countries; and
- New Technologies.

It is important to note that the activities of the Committee and the projects which have been previously developed and which we continue to develop take a broad view on Engineering Capacity Building as it is an issue which not only affects Developing Countries with their need for infrastructure development but also Developed Countries which generally have infrastructure replacement needs coupled with an ever aging Engineering cadre. In addition, new Technologies require the refocusing of Education and Training to ensure that sufficient new generation capacity will be created for the life cycle management of these new developments.

“The mission of the WFEO-CECB is to identify and mobilize a representative international team of individuals from member countries, with a thorough understanding of the needs of communities.”

Christopher Campbell, Chairman of CECB (South Africa)

To this end the publication and wide distribution of the Capacity Building Guidebook in 2010, at the General Assembly in Geneva (Switzerland) in 2011 as well as subsequent distribution has created a base from which these themes could be addressed and has become the catalyst for the development of future knowledge sharing initiatives coordinated through WFEO on this subject.

Though the Guideline 2010 has been published primarily in English as the official version, an executive summary has been published as a Chinese Translation in 2012 and work is being done on similar translations, in as many languages as possible, as it is indeed a useful and relevant publication for all countries facing the challenge of developing local engineering capacity. The efforts and insights of the Engineering Capacity Building Committee have attracted the interests of not only UNESCO through its Engineering Initiative Program with a focus on capacity building in Africa which started in 2012, but also subsequently with WFEO affiliated institutions such as the Ghana Institute of Engineering who are in the process of addressing Engineering Capacity challenges in their growing Oil and Gas industries.

The latter had extended the honor of hosting the Chair of the Committee to be its Keynote Speaker during the 2013 Ghana Institute of Engineering Week celebrations on the theme of “Building Engineering Capacity for sustainable development in an Oil and Gas Economy”.





In keeping with the focus on knowledge sharing on the subject of building Engineering Capacity, the Committee has developed an electronic based Capacity Building Compendium with the official launch targeted to take place at the General Assembly in Singapore in September 2013. The “Compendium” is an on-line facility, accessible through the WFEO Website via the “Knowledge Center”.

Using the Guidebook 2010 for context, persons seeking or sharing insight, government decision makers, related organizations and simply the curious may be able to access the Capacity Building Compendium and explore the possibilities that this global resource opens to them. The “Compendium” intends to serve as a source for articles, papers, programs, projects, games and links to organizations which have facilities such as toolkits and the like, all of which relate to Engineering Capacity Building, beginning as early as the foundation stages of education through to issues on Continuous Professional Development and Mentorship.

This development indeed will position WFEO to be the most recognized organization able to co-ordinate and facilitate efforts from all quarters on the subject of Building Engineering Capacity for the future.

Project Achievements

The Capacity Building Guidebook 2010 was launched in 2011 just before the Geneva General Assembly and was one of the major achievements of the Committee under the custodianship of the USA. The first executive summary translated into Chinese was made available in 2012 and future translations into other languages are an ongoing effort. The Capacity Building Compendium is to be launched in September 2013 at the General Assembly in Singapore. Lessons learnt in meeting these objectives is that though there is a need for broad consultation, often one has to take the efforts of the smaller more focused groups of participants in the Committee and forge ahead in order to achieve targeted milestones. The democratic consultative and participative approach unfortunately does not work in the global Committee type of environment which we are attempting to manage as there are many dynamics to consider in the process, geographical location and differing time zones being but only one constraint.

Project Focus

The issue of Engineering Capacity Building relates directly to developing skills, capability and sustainable resource bases which are able to contribute to infrastructure development and maintenance with a focus on legacy technologies as well as on new technologies. This is a crucial ingredient for addressing economic growth and sustainability with the resultant ability for Countries to address areas such as the development of future resilient infrastructure through innovation, to not only encourage green technologies as part of the developments for meeting future energy needs but also to focus on engineering to mitigate climate change. Furthermore this Capacity will be best positioned to develop systems and methods of addressing food security, water security and similar such global challenges. All of this can only be done if one has developed the requisite Engineering Capacity to ensure that we not only meet the UN Millennium Development Goals but also those goals to which we aspire well into the future.



Committee on Engineering for Innovative Technologies (CEIT)

The Committee on Engineering for Innovative Technologies (CEIT) has set its objectives in the area of technological evolutions in order to identify suitable technologies for sustainable development especially in the context of the UN Millennium Development Goals

The former WFEO Standing Committee on Engineering for Innovative Technologies is now hosted by The Institutions of Engineers India (India), WFEO's Indian National Member.

WFEO CEIT Committee focuses on recognizing new innovative technologies and in promoting the worldwide contributions of high level researcher through technologies nodal centers to focus mainly on technology transfer in the spirit of the United Nations Framework Convention on Climate Change (UNFCCC) by approaching WFEO member countries in different regions and by organizing regional meetings and conferences as per WFEO charter.

The committee aims at facilitating technology adaption mainly nanotechnology smart materials, smart materials sensor networks, convergence of micro Nano bio info virtual reality and bio engineering in the developing and under developed countries through the promotion of planning and execution of innovative technologies for sustainable product development, productive innovation in industry and innovation for sustainable development.

CEIT has formulated a strategic action plan which includes Nodal Centers and redefines its objectives based on the following themes:

- Innovation in Nanotechnology
- Innovation in Smart Materials
- Innovation for Sustainable Development
- Innovation in Public Systems
- Sensor Network - virtual Reality
- Innovation in Bio Engineering

During the FEISCA Regional seminar about the "Role of Regional Cooperation in Generation and Transmission of Electricity in South Asia", an Indian Delegation representing WFEO participated and presented a paper in Dhaka (Bangladesh) on 14 January 2012.

- On 12 February 2012, the 'Nodal Technology Center' of CEIT-WFEO was opened in Jaipur, Rajasthan (India)

- The Committee attended and made a presentation at the WFEO Executive Board meeting held at the UNESCO in Paris from 6 to 9 March 2012.

- The president of the Institutions of Engineers India, the Indian national member of WFEO participated to the General Assembly of FEIAP in Seoul on 17-18 May 2012

- On 7 July 2012, the Chair of CEIT held an interactive discussion with the Director of CIPS, an autonomous body of Government of India and explored the possibility of taking forward the Mission of the Committee.

- Discussions were also held with office bearers of the "Society for Environment and Energy Development (SEED)" an accredited NGO, to promote joined activities, both in research and implementation areas of innovation.

- The Indian delegation representing IEI and WFEO attended the FEISCA Regional Conference held in Kathmandu (Nepal) on 18 July 2012, organized by the "Nepal Engineers Association (NEA)" around the theme: "Thinking Big- Engineers leadership in Nation Buildings".

- Regarding "Safety in Sustainable developments" a seminar was held in New Delhi (India) during the 2nd week of August 2012.

"CEIT drives the society by providing innovative technical solutions and processes for sustainable development as well as a knowledge platform for involving country specific policies with innovative knowledge."

R. P. Gupta, Chairman of CEIT (India)



- The Indian Regional Nodal Centre Hyderabad was launched with the cooperation and supervision of Mr. G. Prabhakar, Member of the Ex Council of WFEO and has started functioning to promote young and women engineers in innovative technology. Following its success this model will be replicated in others feasible economies.

- In order to involve Women Engineers in a major way a wing of WFEO-CEIT was established last December in Bangalore, (India). In addition, a Regional Conference was held with the support of CEIT in October 2012 by the Women Engineers for international networking of Women Engineers and Scientists.

- The 4th face-to-face meetings were held on 17 September 2012 in Ljubljana (Slovenia) and were attended by 18 members.

- A popular Lecture & Demonstration of "ON DEMAND HYDROGEN - A RELIABLE SOURCE OF CLEAN ENERGY" was held on Thursday 18 October 2012 in Hyderabad (India).

- Innovations in Infrastructure Development by A P by - Shri A Chakrapani, Director of the Centre for Innovations in Public Systems Administrative Staff College of India in Hyderabad (India), held on 15 November 2012.

- WFEO President, Eng. Adel MMJ Al-Kharafi, Mrs Maria Jesus Prieto Laffargue, Immediate Past President of WFEO; Mr Marwan Abdelhamid, President-Elect of WFEO; attended the 27th Indian Engineering Congress 2012 on Engineering for Sustainable Development and Inclusive Growth: Vision 2025, which was held in New Delhi (India) on 13-16 December 2012.

- The International gathering was held on 15 December 2012 on the sidelines of the 27th Indian Engineering Congress, which took place at Vigyan Bhawan, New Delhi (India) on 13-16 December 2012.

- The International Meeting was attended by selected distinguished guests and other invitees, The Indian Delegation attended WFEO executive meetings on 8-12 April 2013 and a presentation was held by the CEIT chair of WFEO to the executive council.

- The CEIT chair attended the 13th NEA National Convention of Engineers – "Culminating Engineers' Vision and Wisdom for Connecting Transition to the Prosperous Future" which was held on 28 – 30 April 2013 in Kathmandu (Nepal), and the FEISCA regional seminar.

The 2nd FEIAP Convention and International Conference on "Engineering Initiative for Sustainable Development – Integrating Innovation and Ethics" was organized by The Institution of Engineers (India), Andhra Pradesh State Centre on 8-11 May 2013 at the Hotel Raj Krishna, Hyderabad (India).

The program was inaugurated by the Honorable Governor of Andhra Pradesh, Shri E S L Narasimhan. In his inaugural address, he stressed upon the need of innovation in the engineering field, particularly to solve the energy crisis in India.

Upcoming activities scheduled for CEIT for 2013

- Opening of a new regional Nodal Centre in Bangalore (India) in July 2013.
- 5th face-to-face Meeting of the WFEO Standing Committee on Engineering for Innovative Technologies (WFEO-CEIT) in Singapore in September 2013.

Nodal Centers for Innovative Technologies

A Nodal Centre for Innovative Technologies in Jaipur (India) was implemented to facilitate technology adoption through knowledge-based articles, networking, e-mailings and website.

The Regional Nodal Centre of WFEO-CEIT which opened in Hyderabad (India) promotes Propagation and Promotion of Innovative Technologies.

Propagation: The Committee has taken up propagating by reaching out to the people among the rural areas especially in underdeveloped and developing countries.

Promotion: The Committee, in order to promote innovative technology has been providing both financial and mentorship support to under graduate engineering students that are carrying out R & D projects.





Committee on Anti-Corruption (CAC)

“Committee on Anti-Corruption (CAC) is a Standing Committee of WFEO with the purpose of engaging the worldwide engineering community in the global efforts to fight corruption”

Alliances and partnership are crucial in addressing corruption. The committee has placed this issue on the top of its priorities. There are a large number of initiatives initiated by international organizations to address corruption. This issue is on the agenda of every stakeholder such as Governments, business associations, funders and donors, international organizations, etc. For this reason the committee has sought, from the early beginning, to learn about ongoing initiatives in order to identify partners and join forces with them.

Cooperation with the UNDP

Over the past two years (2011-2013) the CAC has been heavily involved in UNDP programs on corruption in the MENA region. The CAC chairman served as a member of the UNDP task force that was created to develop training courses on business integrity for small and medium size enterprises. The CAC was represented in a number of UNDP workshops and training held in Tunis and Cairo.

Triangular cooperation: UNDP/WFEO-CAC/CSOs

The CAC was also requested by the UNDP to provide technical assistance to nascent civil society organizations in Tunisia. Following a funding request that was presented by the CAC to provide training to NGOs in Tunisia, the UNDP has provided a grant equal to 50,000 USD to one nascent NGO, Engineers Without Borders. The grant management is done by the beneficiary organization, however the technical program is being handled by the CAC. As part of this grant, the CAC provided and managed the delivery of twelve events, including six training workshops.

Cooperation with Foundation for The Future

Triangular cooperation proves to be an efficient concept. Funding agencies show willingness to support nascent civil societies organizations to working on corruption provided that technical assistance is provided by a third party. The Foundation for the Future, a funding agency has accepted to provide a grant to Engineers Without Borders to develop a training program to its affiliates and members and civil society activists, based on the same principle presented in the previous paragraph. The grant is equal to 15,000 USD. The CAC is in charge of the design and delivery of the training. The request to the funding agency, FFF was presented by both the WFEO/CAC and EWB.

Cooperation with the Ministry of Foreign Affairs of The Netherlands

A similar program to the previous one has also been implemented with support of the Ministry of Foreign Affairs of the Netherlands. The latter has accepted to provide a funding equal to 50,000 USD to train nascent civil society organizations in Tunisia on corruption and ethics. The program was completed in 2012 and has produced good impact.

“The main mission of the CAC Committee is to provide advice and guideline for WFEO member organizations on how to develop local strategies to encourage engineers to play a proactive role in the fight against corruption.”

Kamel Ayadi, Chairman of CAC (Tunisia)



Social and moral responsibility of engineers

Infrastructure is one of the most corrupt industries. Every year, 10 % of global expenditures on infrastructure are being lost in bribery. Engineers are well positioned to address this issue, given their crucial role in building infrastructure, from design, execution, tendering and maintenance. For this reason, international community expects engineers to be leading global efforts and providing advice and solution as to how best corruption in infrastructure could be addressed. This is a social and moral responsibility of engineers, and consequently of the WFEO and its members organizations as a whole. The CAC was established in 2007 for the purpose of engaging the worldwide engineering community in the global efforts to fight corruption.

Milestones and Major Achievements

One of the major achievements of the CAC over the past two years was the consolidation of the WFEO status as a trusted advisor to international organizations on corruption in infrastructure. This was true since the CAC was requested by the UNDP to deliver a capacity building program on corruption to nascent civil society organizations. The committee was also successful in engaging in collective actions through the establishment of alliances with a number of partners, such as the GIACC, WJP, Foundation For the Future, the British Standards Institution, etc .

The CAC focus over the past two years was on Africa and Middle East where corruption is rampant.

Cooperation with World Justice Project

The WJP is leading a global, multidisciplinary effort to strengthen the rule of law for the development of communities of opportunity and equity. The CAC has been involved over the past two years in the WJP main initiatives. This includes contribution to the WJP Rule of Law Index, participation in the WJP world forum in The Hague, July 2013, and hosting the WJP workshop on Rule of Law and corruption held in Tunis in June 2012.

Cooperation with International Organization for Standardization (ISO)

The ISO has established a Project Committee which has been tasked with agreeing whether it is appropriate for ISO to publish an anti-bribery standard, and, if so, to agree the scope and wording of the standard. Neill Stansbury, who is a member of the WFEO Anti-Corruption Standing Committee, has been appointed Chairman of the ISO Project Committee.

The CAC is strongly in support of the new ISO standard, and passed a resolution calling for the creation of such a standard at its meeting in Geneva in September 2011.

The WFEO CAC has been granted observer status and was invited to attend the first meeting of the committee that was held in London in June 2013.

Capacity Building

Members of the CAC have conducted a number of training workshops in a number of countries. The CAC chairman has moderated 15 training workshops in Tunis. Beneficiaries were civil society members and engineers working in public and private sectors.



CAC



Committee on Information and Communication (CIC)

The WFEO-CIC objective is to help promote the Information and Communication Technology (ICT) to be applied globally. It focuses on narrowing the ICT gap between developed and developing countries.

The main activity of CIC over the past few months has focused on organizing the joint workshop on Innovations in ICT (Information Communication Technology) Education (WIIE '12). This workshop was proposed by the Chairman of WFEO-CIC, Prof. GONG, during his participation to the IEEE board meeting in December 2011, during which, both parties agreed to jointly organize this workshop in order to address the impact of the recent challenges of revolutionary developments in ICT and its applications to the training of ICT engineers.

Over 150 participants from prestigious research institutes and universities from the USA, Canada, UK, China, and other countries, as well as entrepreneurs of major ICT companies such as Microsoft, IBM, Intel, Toshiba, etc. addressed the theme "Why and how ICT education needs to be reformed." This large audience was proof that the workshop was of great interest to both, academia and industry.

Michael Lightner, vice president of IEEE; Tony Hey, vice president of Microsoft Research Connections; Tariq Durrani, Prof. of University of Strathclyde (UK); Mark Erickson, director of Cooperative Education and Academic Advising for the College of Computer and Information Science at Northeastern University (U.S), and Ke GONG, vice president of the China Institute of Communication and chair of WFEO/CIC, made keynote speeches on "ICT Education: Evolution and Revolution", "ICT in ICT Education: Gamification, MOOCs and All That", "Bologna Process and Its Impact on Engineering Education in Europe", "Academic Industry Partnerships: Cooperative Education" and "ICT Education Reform: Why and How?".

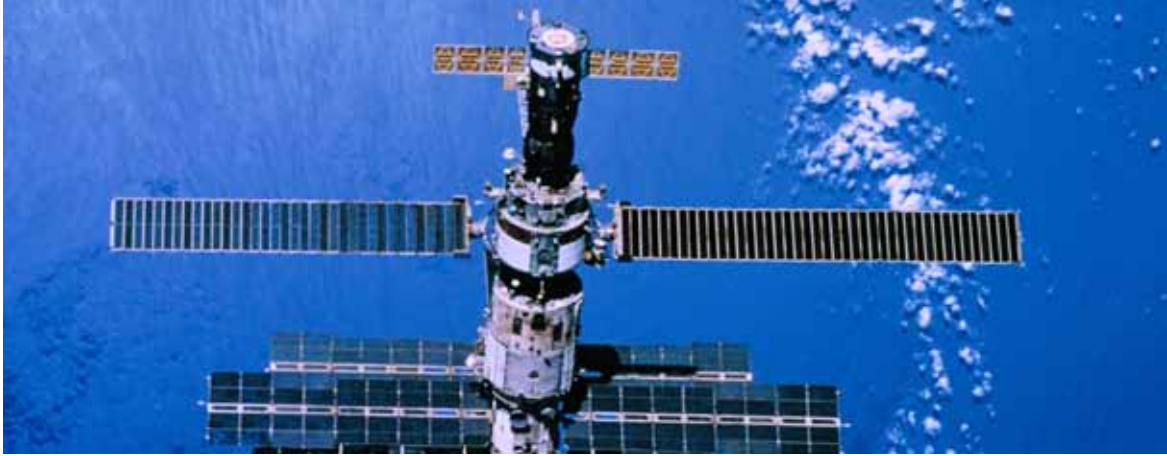
The workshop consisted of 3 panel discussions concentrating on "Challenges to and Development Trends of ICT Curriculum Design", "Enhancing the Quality of ICT Education by cooperating with industry", and "Quality Control and Accreditation of ICT Education".

Leading speakers who shared their thoughts and interacted largely with the attendees included Prof. Shouwen Yu, deputy director of Expert Committee of Chinese Engineering Education Accreditation; Mr. Sung Jo Kim, senior vice president of Accreditation Board for Engineering Education of Korea (ABEEK); Dr. Troy Vasiga of Waterloo University (Canada); Mrs. Miwako Doi, chief fellow of Toshiba Corporate Research & Development Center; Dr. Yun Wang, CTO of IBM China Research Center; Dr. Honesty Young, chief research officer of Intel Asia-Pacific R&D; Prof. Jiannong Cao of Hong Kong Polytechnic University; Prof. Jianguo Ma of Tianjin University, China; Prof. Xiqin Wang, of Tsinghua University (China); Prof. Baolin Yin of Beihang University; Prof. Daoxu Chen of Nanjing University (China); and Prof. Yang Yang of China Academy of Science.

"Cultivating the spirit of innovation is central to CIC and one of the main missions of WFEO"

Ke Gong, Chairman of CIC (China)





The workshop's attendees voted over 19 arguable and valuable topics with the following conclusions:

- Setting-up close Industry/University and Technical Schools Partnerships as being a necessary factor for quality enhancement by providing real problem solving training in the workplace and within teams, with industrial co-workers. However, time and cost were identified as the main difficulties.
- Coop or likely mode of longtime (> 6 months) and routine work in industry is a good practice and is recommended for implementation in ICT programs.
- ICT faculty departments should be required to have or gain industry experience.
- Curriculum re-design should lay emphasis on combination of fundamental courses with practical training such as capstone design experience.
- The most important fundamental components for innovation in ICT are cultivating the spirit of innovation among students by providing them with more opportunities to solve practical problems in hands-on works.
- Attention should be given to on-line learning which can definitely support the education of students
- Accreditation is still arguable and debatable

WFEO president Adel Al Kharafi attended the workshop and made a speech during the opening plenary. The WFEO national member, the China Association for Science and Technology (CAST) hosting the CIC, made great efforts in the organization of this workshop and contributed largely to its success. IEEE shared part of the cost of the workshop. Dr. Gretchen Kalonji, UNESCO Assistant Director for the Sciences Sector, showed great interest and gave strong support to the workshop.

Milestones

WIIE'2012 is a milestone in the collaboration between WFEO/CIC and IEEE. Five teleconferences were held in preparation of this event, which was a sign of the solid working relationship that exists between both organizations.





Committee on Disaster Risk Management (CDRM)

The WFEO-CDRM addresses issues relating to potential damage of and risks to human life and livelihood through the proper application of technology and engineering approaches.

The WFEO Committee on Disaster Risk Management (CDRM), which counts 48 members from 20 countries, was established at the WFEO General Council which was held in December 2009 in Kuwait, and completed its activities for the first four-year term in September 2013. The Committee consists of three sub-task groups, namely, Sub-Task Group on Water-related Disaster Risk Management (WDRM), Sub-Task Group on Earthquake Disaster Risk Management (EDRM), and Sub-Task Group on Resource for Disaster Risk Management. CDRM has been engaging in active discussions, exchange of information and opinions, and publication activities to deliver its recommendations with regard to matters concerning disaster investigation, disaster response, and disaster reduction.

The committee conducts activities to meet the following objectives:

- 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-related disasters and earthquake disasters to the engineers and policy-makers.
- Promoting the exchange of information and opinions on the above mentioned disaster risk management.
- Merging and introducing knowledge and experiences to avoid disasters and to promote sustainable and sound development because inappropriate actions of human (residing, living, infrastructure developing etc.) may cause them.

“The disasters which are closely related to all aspects of human life, such as socio-economic activities and the environment should be considered in the CDRM scope of activities, and because there is a broad range of disasters, members of WFEO-CDRM are taking action based on interests, concerns and priorities.”

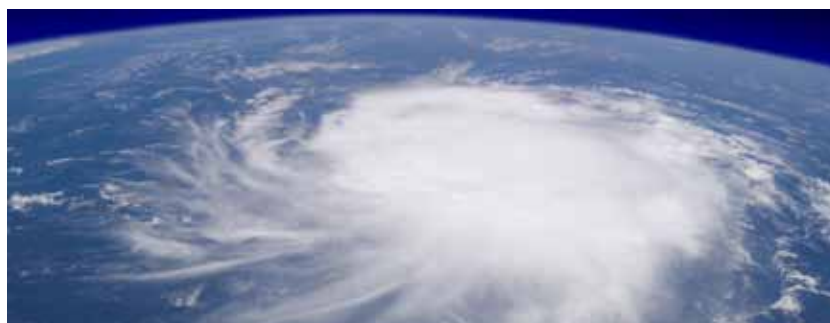
Dr. Yumio Ishii. P.E., Chairman of CDRM (Japan)

Meetings

CDRM holds regular meetings through annual Face to Face meetings and communication via e-mail. CDRM also issues a yearly NEWSLETTER.

The regular Face-to-Face meetings were held in Geneva (Switzerland) in 2011 and in Ljubljana (Slovenia) in 2012. In these meetings, members shared results of activities, approved new members, and provided reports of investigations, and discussed the plan for the next year.

The NEWSLETTER reported on the Great East Japan Earth Quake of 2011, and introduced interaction with international institutions and also the result of the Joint Symposium of 2012.





Collaboration with International Organizations

At the 3rd Session of the Global Platform for Disaster Risk Reduction and World Reconstruction of the UN International Strategy for Disaster Reduction Conference (UNISDR) held from 9 to 13 May 2011 in Geneva (Switzerland), the Chair of CDRM reported the state of the Great East Japan Earthquake Disaster based on the Draft Guideline for Water-Related Disaster Risk Management published by CDRM, with particular emphasis on the indirect damage caused by the disaster which should be regarded as the triple disaster of seismic motion, tsunami, and radiation. The Chair also participated in the 4th Session of the Global Platform for Disaster Risk Reduction of UNISDR held under the theme "Invest Today for a Safer Tomorrow" in Geneva (Switzerland) from 19 to 23 May 2013, and exchanged views and opinions with other participants.

- For the purpose of seeking future cooperation for developing disaster risk management guidelines and technical transfer programs, a series of meetings with a team of Natural Science Sector Unit for Natural Disaster of UNESCO was held in September 2012, April 2013, and May 2013 and a meeting with OECD was held in March 2013. There will be ongoing discussions with the parties to examine this issue.
- The 9th Conference of the International Institute for Infrastructure, Renewal and Reconstruction (I3R2) was held by a member of CDRM on 4 February 2013. The member gave a lecture at the Conference.
- The Chair of CDRM participated in the World Bank TV Conference on 5 February 2013.

Activities

JFES-AIJ-WFEO Joint Symposium on DRM.

CDRM holds JFES (The Japan Federation of Engineering Societies)-AIJ-WFEO Joint Symposium on DRM once a year since its establishment. The Symposium offers a good opportunity to exchange technical information related to disaster response and disaster prevention between various countries in the world.

The 2011 JFES-WFEO Joint Symposium on DRM, 8 September 2011 at Aichi University:

- JSCE Fights Against 2011 Great East Japan Earthquake
- The Impact of the 11 March 2011 Great East-Japan Earthquake
- Characteristics of Coastal Damages
- Damage of Concrete Structures by Tsunami
- Earthquake News: On Gigantic Tohoku Pacific Earthquake in Japan

The 2012 JFES-WFEO Joint Symposium on DRM 13 September 2012 at Nagoya University:

- Damage of Bridges Due to 2011 Great East Japan Earthquake
- Tsunami Disaster in Sanriku Fishing Villages and the Challenges of Disaster Mitigation and Restoration
- Flood Management in Urban Area Bangkok (Thailand)
- Recent Development and Application on Seismic Isolation in China
- Damage Reduction Countermeasures for Bridge Structures
- Long-period Ground Motion and High-rise Buildings

Panel on DRM

CDRM hosted a Panel on DRM which was held as part of the WEC2011 Convention in Geneva (Switzerland) in September 2011, where issues on disaster risk reduction and disaster mitigation technologies were discussed. In 2012, CDRM participated in Disaster Risk management sessions held as part of the WEF 2012 Forum in Ljubljana (Slovenia), and members presented lectures on disaster risk management.

Disaster Investigation

In response to the occurrence of 2011 New Zealand Earthquake and 2011 East Japan Great Earthquake, study teams were dispatched to the affected sites to investigate the state of disasters and the extent of damage caused by these earthquakes. The results of these investigations will be utilized to develop a guideline for earthquake disaster management, which is being prepared.



The WFEO CE aims at addressing Energy Challenges.

The Committee on Energy consists of a Chairman and six regional Vice-Chairmen representing: North America, Asia/Pacific, Latin America, Europe/Russia, Middle East/South Central Asia, and Africa. Committee Officers are appointed by their respective National Member organizations.

- Africa - Prof. Abubakar S Sambo (Nigeria)
- Asia/Pacific – Mr. Ruomei Li (China)
- Europe/Russia - Dr. Daniel Favrat (Switzerland)
- Latin America - Mr. Mario Wieggers (Argentina)
- Middle East/South Central Asia - Mr. Pradeep Chaturvedi (India)
- North America - Mr. Kenneth Kok (USA)

Our members represent Argentina, Australia, Bolivia, Brazil, Canada, China, France, Greece, Ghana, Germany, Japan, India, Ivory Coast, Kenya, Kuwait, Mauritius, Nigeria, Palestine, Peru, Slovenia, Switzerland, United Kingdom, United States, and Zimbabwe.

Including Task Groups our membership is sixty (60) strong representing 24 different countries.

The Committee on Energy's vision is "to become the engineering reference for assessing the feasibility of current and cutting edge energy technologies for sustainable development". Our mission is "to provide the engineer with updated, unbiased and reliable information on the feasibility of the different energy technologies based on scientific principles, engineering criteria and demonstrated technological development".

The Committee on Energy has Taskforces on:

- Wind Power
- Nuclear Energy
- Sustainable Energy
- Solar Energy
- BioEnergy

The Committee on Energy has produced three reports previously on Wind Power, Nuclear Power and Sustainable Energy. As these fields are continually changing as new technologies are developed these Task Forces are updating their earlier reports to reflect current knowledge.

The Wind Power Task Force is being chaired by Geraldo Tavares of Brazil, the Nuclear Power Task Force is being temporary Chaired by Jorge Spitalnik of Brazil, and the Sustainable Energy Task Force is being chaired by Pradeep Chaturvedi of India.

The BioEnergy and Solar Energy Task Force are currently finishing their studies and preparing their reports. The Solar Energy Report is planned to be published in 2015. Carsten Ahrens of Germany is Chair of the Solar Energy Task Force and Dermot Roddy of United Kingdom is Chair of BioEnergy Task Force.

"The Committee on Energy's objective is to be the engineering reference for energy sustainable development based on engineering criteria and actively participate in sustainable energy programs around the world by providing subject matter experts."

**Sam Grossman,
Chairman of CE (USA)**



Milestones

The current milestones for the Committee on Energy over the next two years are:

- Support UNESCO Biosphere Reserve Program with our engineering subject matter experts
- Support UNESCO on other programs that provide technical training to developing countries
- Complete Report on Solar Energy
- Update Nuclear Power Feasibility Report
- Update Sustainable Energy Engineering Report
- Update Wind-Power Feasibility Report

UN Millennium Goals

The Committee on Energy is leading the WFEO's efforts to support this initiative from the UN Secretary General Ban Ki-moon. Sustainable Energy for all seeks to mobilize action from all sectors of society in support of three interlinked objectives to be achieved by 2030: providing universal access to modern energy services; doubling the global rate of improvement in energy efficiency; and doubling the share of renewable energy in the global energy mix.

Through its Taskforces, Conferences and Reports, the Committee on Energy will be supporting SEFA by collecting and disseminating best practices and recommendations

International Conferences

The Committee on Energy organizes and supports International Conferences such as the upcoming:

- **The International conference on Engineering for Sustainable Energy in Developing Countries**, Guangzhou (China), 8-9 September, 2013.
- **2013 Solar World Congress**, Cancun (Mexico), 3-5 November, 2013.

The Committee on Energy is also working on launching studies for Urban Waste, Hydrogen Utilization, Tidal Power, and Carbon Capture Technologies. Other topics being evaluated for studying are Superconductor Technologies for Power Transmission, Energy Storage Devices/Systems, Energy Resource Estimation Methodologies, and Near-Term Energy Demand/Supply.

The Committee on Energy has worked closely with Kuwait Engineering Group for the creation of an Energy Center in Kuwait. WFEO endorsed cooperation with the Energy Center of Kuwait toward establishing programs of research and development in energy matters.

Geneva Declaration

The Committee on Energy also authored the Geneva Declaration specifically dealing with energy matters that was endorsed by the WEC2011.

Ljubljana Call

In Ljubljana (Slovenia), at the World Engineering Forum the Committee on Energy moved the International Engineering Societies Call on Governments to Support the United Nations "Sustainable Energy for All" initiative to the WFEO Executive Council and received full endorsement.





Committee on Young Engineers/Future Leaders (YE/FL)

WFEO YE/FL Committee gathers young engineers and students from different countries.

Youth Convention Kuwait 2013

The first Youth Convention held by WFEO, Young Engineers/Future Leaders (YE/FL) standing committee took place in Kuwait City (Kuwait) on 10-12 February 2013. There were three days of technical sessions covering a variety of topics relevant to young engineers, from how to start your own business, to humanitarian work in the developing world.

The event was generously sponsored under the patronage of His Highness, the Amir Sheikh Sabah Al-Ahmad Al-Sabah. Recently, the government of Kuwait has placed an emphasis on youth engineers supporting Kuwait's development as they enter into their careers, and has even appointed a Minister of Youth to ensure that the voice of young people is recognized. Public Works Minister Abdul Aziz Al-Ibrahim, representative of the Amir, spoke at the opening ceremony.

Ms. Gretchen Kalonji, Director of Natural Sciences at the United Nations Education, Scientific, and Cultural Organization (UNESCO), spoke during the opening ceremony and pledged her support to the YE/FL and committed to strengthening youth relationships globally, using UNESCO's network in whatever way may be beneficial to the YE/FL.

WFEO President-elect, Mr. Marwan Abdelhamid, Kuwait Society of Engineers President, Eng Husam Al Kharafi, and Kuwait Foundation for Advancement of Sciences and Director of Scientific Culture, Dr. Hamed AlAjian were also among the distinguished speakers during the opening ceremony.

The opening ceremony keynote speaker was the Former Minister of Foreign Affairs of Kuwait, Dr. Sheikh Muhammed Al-Sabah, who identified 3 major challenges young engineers will have to address throughout their careers, most notably environmental degradation, the information revolution, and the population explosion during the next thirty years, resulting in various environmental challenges.

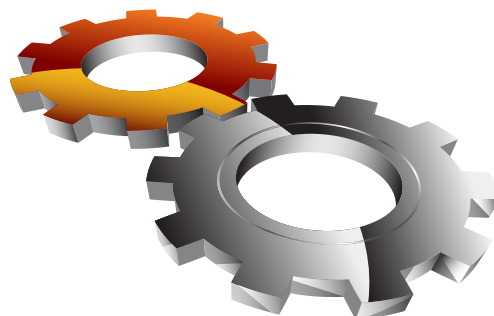
The technical sessions began with Andrew Lamb, Director of Engineers without Borders UK. Although the developing world faces many problems, young engineers, in particular, are motivated to help defy the poverty phenomena and the many variables it poses as a result.

The Ministry of Youth, Dr. Fawaz Alhchinan, noted that this conference came at a time when everyone is looking forward to the role of young people, evident by the newly established, Ministry of Youth, which serves as a voice for the youth.

CEO of Al Maktoum Foundation, Mr. Sultan Lootah, recognized the need to focus on training teachers to use technology.

The first day ended with the discussion of the breakthrough with the Kuwait National Youth Project which was born when the team reviewed the idea of the project, which is aimed at the 17-30 years age group, with a vision and mission of turning hobbies into professions. Project "Together," as it has been termed, aims to consolidate the Kuwaiti identity by creating youth experiences through the development of projects in young hands and minds to promote personal investment in the development of solutions to address the world's problems.

Day two of the sessions began with Mr. Michael Michaud, Managing director of the American Society of Mechanical Engineers, who's reviewed the latest scientific achievements in the field of technology industries, which is capable of solving many problems, including the evolution of social media, the web and its impact on the speed of communication, and easy access to available information.





Kyle Twitchell, Younger Member Program Director at the American Society of Civil Engineers, gave a dynamic speech regarding his work with rooftop farms. This new and innovative idea is relevant to many of the issues engineers confront with respect to urban design, reduction of permeable area and resulting drainage issues, and ultimately climate change.

The general supervisor of the Student Chapter of the Kuwait Society of Petroleum Engineers, Dr. Abdullah Al Sayeed, spoke about the evolution of civilizations thanks to engineering works. He cited that engineers boast a thriving body of knowledge that made possible landmarks such as the hanging gardens of Babylon, the Greek temples, Arab palaces, and the Great Wall of China..

The secretary general of the European Federation of National Engineering Associations (FEANI), Eng Dirk Bochar, pointed to a shortage in professional engineering cadres around the world, citing that this deficit requires encouraging parents and educators to encourage their children to join the engineering profession. The world is facing many challenges currently, and there is an urgent need for engineers who are able to work in all parts of the world, capable of solving global problems, who have the flexibility and mindset capable of dealing with all types of people for the benefit of humanity.

Eng Mei Ling Fam, Singapore Delegate, presented the upcoming World Engineering Summit which will be held in September 2013, in Singapore, on the topic of Innovative and Sustainable Solutions to Climate Change.

The sessions on day three of the conference revolved around youth experience, where several young engineers shared their professional and personal experiences in the engineering industry post-graduation. President of the Association of Industrial Engineers in Kuwait, Engineer Salem Al Dosari, reviewed his experience and failures that ultimately led to his personal success.

Following the youth experiences, UNESCO Goodwill Ambassador, Dr. Hayat Sindi shared her personal success story of overcoming the cultural expectations of a young woman in Saudi Arabia.

In 2009, Dr. Sindi was chosen as one of 15 “pop tech” award recipients. Pop tech brings together social innovators to affect change in the real world through unconventional means.

Vivas Kumar, student representative board member of Engineers without Borders USA, spoke about Grassroots International Relations and Economic development with respect to his experiences in Engineers without Borders.

Concluding the convention’s technical sessions was the Founder of South African Women Engineering, Naadiya Moosajee who shared her personal success story.

Lessons Learned

The various speakers came from a plethora of backgrounds, but all seemed to echo some constant themes. As engineers, we have a responsibility to promote and sustain our profession; else, we will face a critical shortage of engineers in just one generation. While invention of new technology is paramount to the advancement of society, equally important is the innovation to find new applications using existing technology, and finally, education of engineers in all levels of their careers to maintain relevancy. From these themes, goals emerged for the YE/FL committee to pursue long-term.

In the closing ceremony, the Declaration, given by YE/FL Vice-Chair, Kate Johnson included four recommendations for YE/FL to undertake as the committee evolves. They are as follows: To provide more training and workshops to develop young engineers as leaders, not just in their core business, but in the engineering profession as a whole, by providing preparation prior to entering the industry as professionals, encourage and support education curriculums to provide soft skills, thereby yielding young engineering graduates with excellent presentation, networking, technical writing and managerial skills to be effective as employed professionals, raise the bar of the engineering profession by encouraging employers to require employee involvement in professional societies, obtain and maintain professional registration or licensure, and reward merit, not tenure, to link competency to strategy, and support global exchange within companies and universities to facilitate knowledge sharing across the globe..

Committee on Education in Engineering (CEIE)

WFEO CEIE addresses the issue of reviewing the engineering programs through collaboration with different educational establishments and organizations.

CEIE was part of the organizing committee for the first Engineering Education Conference in Beirut (Lebanon) under the title "Internationalization of Engineering Curriculum" which was held on 28 February 2012.

CEIE was also an active member in the organization committee of another conference which took place in Beirut (Lebanon) on 23 March 2012 by the federation of Arab Engineer – Committee on Education and Training and the Federation of Lebanese Engineers under the title "The second conference of officials of Engineering Education in the Arab World".

CEIE is planning a Congress this year on 24 -25 October 2013 in the city of Beirut (Lebanon) under the title "impact of Globalization on engineering education". A special website was dedicated to this conference as well as an organizing committee, and a scientific committee was created for the Congress.

The Committee will participate actively in the 120th ASEE meeting in Atlanta, Georgia (USA) on 22 and 23 June 2013, and in the meetings of the federation of Arab Engineers' Committee on Education and Training.

A new website for the Committee was launched in January 2012. CEIE is preparing the 18th issue of its Magazine "Ideas" that will focus on "Impact of Globalization on Engineering Education" that will also be the theme of the next 9th World Congress on Education.

The October 2013 Congress on the "Impact of Globalization on Engineering Education" will include:

- Current trends and global perspectives in engineering education.
- Global trends and perspectives in technology education.
- International cooperation in engineering education (universities, industry).
- Role of engineering education in sustainable development.
- Impact of globalization on engineering education development.
- Globalization and universities.
- Development of students.
- Internationalization of curricula and programs.
- New framework for engineering education.
- Faculty development.
- Globalization and engineering associations.
- Globalization, industry and the global market place.
- Knowledge, competencies and skills in engineering education.
- International mobility (engineers, faculty, students and members of organizations).
- Cultural awareness and the impact of globalization on the work entourage.
- Internationalization of training.
- Engineering programs recognition/accreditation.

Dr. Peter Greenwood, Chair of the task group on Mobility has written a paper on Accreditation and Mobility of Engineers that was approved by the WFEO Executive Council

A publication on "Creating a Culture for Scholarly and Systematic Innovation in Engineering Education" is presented on the website of CEIE.

"Impact of globalization on engineering education is the main focus of CEIE to prepare tomorrow's engineers"

***A. M. Alameddine, Chairman of CEIE
(Lebanon)***



WFEO Challenges



Innovation

- CE is exploring ways to support UNESCO World Heritage/ Bio Sphere Sites with Renewable Energy Demonstration Projects
- Innovation in ICT is closely related to ICT education. CIC continues to address this topic with IEEE, the world's most influential institution in the ICT area, and with the WFEO committees on education in engineering and engineering and the environment.
- CEE is exploring cost-effective use of existing technologies to reduce GHG emissions through good engineering practice can provide an innovative and overlooked strategy, through the Future Climate-Engineering Solutions Project.

UN Sustainable Development Goals (SDG)

- CEE National members may use the guide to instruct their engineers on good practice. The guide can also be forwarded to national governments to make them aware of the role and responsibilities engineers assume in their contributions. The engineering resource could be used to provide confidence to adjust government policies and practices to account for engagement of engineers in infrastructure design, operation and maintenance.
- CE is leading the WFEO's efforts to support this initiative from the UN Secretary General Ban Ki-moon. Sustainable Energy for all seeks to mobilize action from all sectors of society in support of three interlinked objectives to be achieved by 2030: providing universal access to modern energy services; doubling the global rate of improvement in energy efficiency; and doubling the share of renewable energy in the global energy mix. Through its Taskforces, Conferences and Reports, the Energy Committee will be supporting SEFA by collecting and disseminating best practices and recommendations
- CEE is exploring cost-effective use of existing technologies to reduce GHG emissions through good engineering practice can provide an innovative and overlooked strategy, through the Future Climate-Engineering Solutions Project.
- WIE promotes gender balance for human resources development.
- CIC has established working-links with UN-GAID in 2011 and was involved in the action of opening digital-Geo library in 2012. CIC is exploring the opportunity of organizing joint activities with UN-GAID.



Responsibility and Sustainability

- CEE: The publication of an international code of practice for sustainable development and environmental stewardship will provide engineers with a tool and reference to fulfill their responsibilities to achieve sustainable infrastructure that respects, accounts for and addresses environmental, social and economic impacts of development.
- CE is exploring ways to support UNESCO's Regional Renewable Energy Boot Camps in developing countries (Malaysia, Kazakhstan, and Mali) by providing subject matter experts to bolster the teaching staff.
- CIC: Green ICT is becoming a hot topic of sustainability; CIC chairman Prof. GONG addressed this issue during the IEEE International Conference on Communication held in China in August 2012.
- WIE: Empowerment of women in science, technology and engineering worldwide started in WFEO in 2007 and led to the establishment of WIE.
- The CAC has organized a number of events on Corporate Social Responsibility and Social Accountability. CAC is promoting the CSR, particularly dimensions related to transparency, business ethics, sustainability etc. The CAC has developed expertise to help enterprises integrate anti-corruption mechanisms to foster sustainability and accountability. The CAC has been working with World Bank and the Foundation For Future to implement social accountability tools, such as participatory budgeting and local governance.

WFEO-WIE focuses on addressing the issue of gender in engineering among young people and professionals in line with the important global theme of gender as adopted by the UNESCO program and the UN Sustainable Development Goals.

World Engineers' Convention 2011: Engineers Power the World - Facing the Global Energy Challenge

More than 1,800 engineers, researchers, representatives of business, government and education gathered in Geneva (Switzerland) between 8 and 9 September 2011 at the World Engineers' Convention 2011 (WEC 2011) to seek and encourage innovative engineering solutions aimed at solving the problem of global sustainable use of energy.

The Challenges

Meeting the world's growing demand for energy services and at the same time addressing the serious concerns about greenhouse gas contributions to climate change are enormous challenges today.

The growing world population – UN estimates are 9 billion people in 2050, growing economies in developing countries, particularly China and India, and improvements in the standard of living around the globe will lead to an increase in energy consumption by about 40% as expected by the IEA current policy scenario. With fossil fuels continuing to be the main energy source, without carbon capture and storage the Intergovernmental Panel on Climate Change (IPCC) suggested target to limit global warming to +2-degree C will be missed. Moreover, climate change has occurred and will continue to occur for decades, even if GHG emissions are reduced, and engineered facilities need to be functional and safe in the environments resulting from climate change.

The Conclusions reached

1. To guarantee a good quality of life for everyone, all available energy sources must be considered.
2. The use of any given technology requires a thorough analysis of the technological, economical, and environmental feasibility of implementing scientifically sound and efficiently engineered solutions.
3. The technologies we need to supply energy for substantially improving global quality of life are available or at an advanced stage of development or are currently being demonstrated. The goal is to secure a low-carbon energy supply. If the +2-degree C target is to be met, it is important that GHG emissions – and CO₂ emissions in particular – be drastically reduced during the production and consumption of different forms of energy.
4. Switching to a low-carbon economy will take substantial investment and time. In the transport sector, modifying unsustainable energy consumption patterns will necessitate difficult social adjustments

Investing in the Future

Besides financial resources, well trained, creative and highly motivated engineers are a pre-requisite for the successful development of the sustainable technologies needed and their implementation. The role of engineers in attaining energy security has to be emphasized.

"On the occasion of the World Engineers' Convention in Geneva (WEC 2011) we, engineers from around the world, have dealt with the question of how our future energy supply can be guaranteed in a sustainable and safe way.

Our conclusion is that there is enough green energy to meet the increasing global demand for energy".

Ruedi Noser, President of the Association World Engineers' Convention 2011 and member of the Swiss Parliament (Switzerland)



World Engineering Forum 2012: Sustainable Construction for People

The Ljubljana Declaration on Sustainable Buildings and Infrastructure and the World Engineering Forum on Sustainable Construction for People, that was held in Ljubljana (Slovenia) on the occasion of the WFEO Executive Council meetings from 16 to 20 September 2012

Considerations on Sustainable Buildings and Infrastructure needs

- There is an urgent societal need to achieve sustainable design and construction of buildings and infrastructure to meet the needs of human well-being and environmental protection.
- Existing and new technologies combined with improved processes and procedures will enable implementation and management for sustainable construction of buildings and infrastructure.
- Implementable solutions for sustainable construction must account for local and regional needs, cultures, priorities, and available human and financial capacity.
- Developments proposals and projects require thorough analysis of their technical, economic and environmental feasibility and social and cultural impacts, before their approval and implementation.
- International standardization on sustainability principles in buildings and infrastructure available worldwide.
- It is necessary, through interdisciplinary collaboration of engineers, architects, planners and scientist, to implement effective solutions and new models for communities due to rapidly changing demographics and living conditions.

Investing in the Future

The World Federation of Engineering Organizations and its members are ready, willing and able to contribute their expertise, creativity and declaration to delivering the elements of this Declaration.

"We are at the beginning of this process. We have not come very far. But every long march starts with the first step. And we – I believe – have made a few early steps already. This is why your conference is coming to Slovenia at the time, which is particularly propitious, and we hope to learn from you."

Dr Danilo Türk, President of the Republic of Slovenia

Ljubljana Declaration

Sustainability and reliability of buildings and infrastructure for communities should be considered through integrated design by multidisciplinary teams, who are committed to life-cycle analysis (project inception to end of service life).

Sustainable technological improvement as well as sound, evidence based policies are needed to assure construction of sustainable buildings and the supporting infrastructure services (transportation, water and wastewater, gas pipeline, electrical distribution and communication systems).

By exchanging and applying scientific and technical knowledge, innovation and practice, engineers create sustainable solutions to the design, construction, operations, maintenance and decommissioning of building and infrastructure that support communities, for:

- **Buildings**
- **Communities**
- **Disaster Risk Management**



WFEO and UN Bodies

WFEO has long standing cooperation with its numerous partners, based on shared development objectives



UN Bodies

Through its Professional Societies and Members worldwide, WFEO assists UN bodies with the analysis of the technical, economic and environmental feasibility of sustainable development proposals, and the implementation of Best Practices to achieve the sustainable development goals. The WFEO-UN Relations Committee (WURC) was created with the mission of acting as the WFEO interface with different UN agencies.

This Committee's activities focus on specific areas of UN initiatives with importance to WFEO and which are related to sustainable development issues. More particularly, it takes care of WFEO activities and programs developed within UNCSD, UNFCCC, UNESCO and UNISDR, including those related to the Rio+20 Conference.



UNFCCC (UN Framework Convention on Climate Change)

Adaptation of Sustainable Civil Infrastructure to Climate Change Impacts.

As a UNFCCC partner WFEO's overall objectives is to contribute to a sustainable implementation of UNFCCC adaptation goals and strategies applied to civil infrastructure as well as contributing towards Goal 7 of the UN Millennium Goals for Development (MDG's) to ensure Environmental Sustainability. The main purpose is to develop and implement engineering tools, policies and practices for risk assessment and adaptation of existing and new civil infrastructure to climate change, through building knowledge, experience and appropriate techniques to enhance technical capacity of engineers in order to adapt civil infrastructures to these climate changes, in particular within developing and least developed settings.



WFEO-UN Relations Committee

During the period 2012-2013, the Committee concentrated its activities on actions developed with ECOSOC, UNDESA, UNEP, UNISDR, UNFCCC, UNDP, UNESCO and WMO.

Main activities

UNDESA (UN Department of Economic and Social Affairs)

In the Post Rio+20 frameworks, the Committee gave advice to the WFEO Executive Council on the process of creation of the High Level Political Forum on Sustainable Development (HLPF). During the HLPF negotiations, the Committee promoted the attendance of WFEO members at Regional Meetings held in Bogota (Colombia), Bangkok (Thailand) and Dubai (UAE).

UNEP (United Nations Environment Programme)

WFEO contributed to the UNEP Quadrennial Report by reporting on the Federation's activities in the field of the environment.

ECOSOC (United Nations Economic and Social Council)

At the request of the Inter-Agency Committee for the UN Decade on Education for Sustainable Development, the Committee delivered a document on Disaster Risk Reduction with the support of the WFEO Standing Committee on Engineering and the Environment and the Standing Committee on Disaster Risk Management.

WFEO and UN Bodies

WFEO has long standing cooperation with its numerous partners, based on shared development objectives



UNEP (United Nations Environment Programme)

WFEO is listed as an accredited organization with observers' status to the UNEP governing council and Global Ministerial Environment Forum (GC/GMEF). Engineers are those most frequently involved in technology transfer, and a strategic partnership with UNEP and the International Federation of Consulting Engineers (FIDIC), which is registered with the World Summit on Sustainable Development (WSSD), has been set in place, as local technology transfer practitioners are the primary know-how providers, users, and beneficiaries.



UNISDR (United Nations for Disaster Risk Reduction)

To contribute to a holistic approach in research education and in Integrated Earth System Risk Analysis and Sustainable Disaster Management, WFEO has acquired a consultative status with UNISDR in terms of natural disaster mitigation and human-induced environmental hazards. has been set in place, as local technology transfer practitioners are the primary know-how providers, users, and beneficiaries. Has been set in place, as local technology transfer practitioners are the primary know-how providers, users, and beneficiaries.

UNCSD (United Nations Conference on Sustainable Development)

WFEO is one of the nine participants to the UN Scientific & Technology Major Group as an «Organizing Partners OPs» with a consultative status through its Ad Hoc committee with the UNESCO Rio+20.



UNFCCC (The United Nations Framework Convention on Climate Change)

WFEO Committee on Engineering and the Environment (CEE) was appointed to represent WFEO at UNFCCC. It participated in meetings, organized workshops and "side events" on infrastructure and climate change adaptation.

UNESCO and THE World Bank

RIO+20

Being one of the Organizing Partners appointed by UNDESA for the Rio+20 Conference, the Committee organized and implemented the WFEO activities at Rio+20. A delegation of 43 members from WFEO attended the event.

WFEO organized a "Seminar on Sustainable Communities" in the framework of the Rio+20 Conference in Brazil with the co-sponsorship of UNESCO and The World Bank.

Other Actions

WURC other activities include follow up of agreements signed by WFEO with WMO (the World Meteorological Organization) and OECD the Organization for Economic Co-operation and Development.



WFEO Awards

WFEO awards every two years, the Medal of Engineering Excellence for Distinguished Achievement Service of Humanity, the Medal of Excellence in Engineering Education and the Hassib J. Sabbagh Engineering Construction Excellence Award for Green Constructions.

WFEO Medal of Engineering Excellence



Dr. Bill Salmon (USA)
2011 winner

The recipient for this award is chosen based on his or her noteworthy contributions to the practice, theory, or public status of engineering. Selection also takes into consideration the appreciable experience in the profession, international standing as well as significant educational accomplishments.

The 2011 recipient of the WFEO Medal of Engineering Excellence was Dr. Bill Salmon from the United States for his extensive experience in engineering and science policy with the U.S. National Academy of Engineering and the Department of State.

WFEO Medal of Excellence in Engineering Education



Prof. Włodzimierz
Miszański (Poland)
2011 winner

The recipient of this award is chosen based on his or her noteworthy contributions to the improvement of engineering education. Special consideration is also given to outstanding services rendered by educators to engineering educational institutions, and to those involved in the education of engineers.

The 2011 recipient of the WFEO Medal of Excellence in Engineering Education is Professor Włodzimierz Miszański from Poland for his dedication in numerous engineering education programs throughout his career, as well as for organizing international conferences and congresses on engineering education and for his work as editor of the international journal IDEAS.

Hassib J. Sabbagh Award for Engineering Construction Excellence



Dr. Riad Zakhem (USA)
2011 winner

Mr. Suhail Sabbagh from the Consolidated Contractors Group (CCC) presented this award to Riad Zakhem.

The CCC under the leadership of late Hassib J. Sabbagh gave WFEO the responsibility for organizing the Hassib J. Sabbagh Award for Engineering Construction Excellence.

The purpose of this Award is to direct world attention to the role of engineering in sustainable development.

Dr. Riad Zakhem from the United States received the 2011 Hassib J. Sabbagh Award for a project installing a 99.3 KW System on a warehouse in Littleton Colorado.



WFEO Members

WFEO has some 90 members from all regions of the world.

National and Affiliated Members

- Union Nationale des Agronomes, **Algeria**.
- Unión Argentina de Asociaciones de Ingenieros, **Argentina**.
- Engineers Australia, **Australia**.
- The Bahrain Society of Engineers, **Bahrain**.
- The institution of Engineers, Bangladesh, **Bangladesh**.
- Association of Professional Engineers of Belize, **Belize**.
- Sociedad de Ingenieros de Bolivia, **Bolivia**.
- Federacao Brasileira de Associacoes de Engenheiros, **Brazil**.
- Federation of the Scientific - Engineering Unions in Bulgaria, **Bulgaria**.
- Association Professionnelle des Ingénieurs Conseils et Sociétés d'Ingénierie du Cameroun, **Cameroun**.
- Engineers Canada / Ingénieurs Canada, **Canada**.
- Instituto de Ingenieros de Chile, **Chile**.
- China Association for Science and Technology, **China**.
- Sociedad Colombiana de Ingenieros, **Colombia**.
- Colegio Federado de Ingenieros y de Arquitectos de Costa Rica, **Costa Rica**.
- Croatian Chamber of Civil Engineers, **Croatia**.
- Cyprus Professional Engineers' Association, **Cyprus**.
- The Czech Association of Scientific and Technical Societies, **Czech Republic**.
- L'Association Congolaise des Ingénieurs Civils, **Democratic Republic of Congo**.
- Colegio Dominicano de Ingenieros, Arquitectos y Agrimensores, **Dominican Republic**.
- Sociedad de Ingenieros del Ecuador, **Ecuador**.
- Egyptian Engineering Association, **Egypt**.
- The Fiji Institution of Engineers, **Fiji Islands**.
- Ingénieurs et des Scientifiques de France, **France**.
- German Federation of Technical and Scientific Organisations, **Germany**.
- Ghana Institution of Engineers, **Ghana**.
- Technical Chamber of Greece, **Greece**.
- Colegio de Ingenieros Civiles de Honduras, **Honduras**.
- The Hong Kong Institution of Engineers, Hong Kong, **China**.
- The Federation of Technical and Scientific Societies, **Hungary**.
- The Institution of Engineers, India, **India**.
- The Iraqi Engineers' Union, **Iraq**.
- Consiglio Nazionale Degli Ingegneri, **Italy**.
- Fédération Nationale des Organisations d'Ingénieurs, Architectes Géomètres et Urbanistes de Côte d'Ivoire, **Ivory Coast**.
- Science Council of Japan, **Japan**.
- Jordan Engineers' Association, **Jordan**.
- Institution of Engineers of Kenya, **Kenya**.
- The Korean Federation of Engineering Organisation, **Korea**.
- Kuwait Society of Engineers, **Kuwait**.
- Ordre des Ingénieurs et Architectes du Liban, **Lebanon**.
- Libyan Syndicate of Engineers, **Libya**.
- Ordre des Ingénieurs de Madagascar, **Madagascar**.
- Malawi Institution of Engineers, **Malawi**.
- The Institution of Engineers of Malaysia, **Malaysia**.
- Malta Chamber of Engineers, **Malta**.
- The Institution of Engineers, Mauritius, **Mauritius**.
- Unión Mexicana de Asociaciones de Ingenieros A.C., **Mexico**.
- Engineering Association of Moldova, **Moldova**.
- Engineers Chamber of Montenegro, **Montenegro**.
- Union Nationale des Ingénieurs Marocains, **Morocco**.
- Nepal Engineers' Association, **Nepal**.
- The Institution of Professional Engineers, New Zealand, **New Zealand**.
- The Nigerian Society of Engineers, **Nigeria**.
- Institution of Engineers, Pakistan, **Pakistan**.

- General Union of Palestinian Engineers, **Palestine**.
- Sociedad de Ingenieros del Perú, **Peru**.
- Polish Federation of Engineering Associations, **Poland**.
- Colegio de Ingenieros y Agrimensores de Puerto Rico, **Puerto Rico**.
- The General Association of Engineers in Romania, **Romania**.
- Union of Scientific and Engineering Associations, **Russia**.
- Saudi Council of Engineers, **Saudi Arabia**.
- Union Nationale des Ingénieurs du Sénégal, **Senegal**.
- Serbian Chamber of Engineers, **Serbia**.
- Sierra Leone Institution of Engineers, **Sierra Leone**.
- The Institution of Engineers, Singapore **Singapore**.
- Association of Slovak Scientific & Technological Societies, **Slovakia**.
- Slovenian Chamber of Engineers, **Slovenia**.
- Engineering Council of South Africa, **South Africa**.
- Instituto de la Ingeniería de España, **Spain**.
- The Institution of Engineers, Sri Lanka, **Sri Lanka**.
- Federation of Sudanese Engineers, **Sudan**.
- Swiss Society of Engineers and Architects, **Switzerland**.
- Order of Syrian Engineers and Architects, **Syria**.
- The Chinese Institute of Engineers, **Taiwan, R.O.C**
- The Institution of Engineers, Tanzania, **Tanzania**.
- Ordre des Ingénieurs Tunisiens, **Tunisia**.
- Union of Chambers of Turkish Engineers and Architects, **Turkey**.
- Uganda Institution of Professional Engineers, **Uganda**.
- UAE Society of Engineers, **United Arab Emirates**.
- The Institution of Civil Engineers, UK, **United Kingdom**.
- American Association of Engineering Societies, **United States of America**.
- Asociación de Ingenieros del Uruguay, **Uruguay**.
- Syndicate of Yemeni Engineers, **Yemen**.
- The Engineering Institution of Zambia, **Zambia**.
- The Zimbabwe Institution of Engineers, **Zimbabwe**.

International Members

- ASEAN Federation of Engineering Organisations (AFEO).
- Commonwealth Engineers Council (CEC).
- Federation of African Engineering Organizations (FAEO).
- Federation of Arab Engineers (FAE).
- European Federation of National Engineering Associations (FEANI).
- Federation of Engineering Institutions in the Asia Pacific (FEIAP).
- Federation of Engineering Institutions of South and Central Asia (FEISCA).
- Pan American Federation of Engineering Societies (UPADI).
- Union of Scientific and Engineering Associations (USEA).
- World Council of Civil Engineers (WCCE).

ASSOCIATES

Distinguished Associate

- Consolidated Contractors Group (CCC).

Associates

- Asian Civil Engineering Coordinating Council (ACECC).
- Federal Council of Engineering, Architecture and Agronomics (CONFEA).
- The Japan Federation of Engineering Societies (JFES).
- Madrid Worldwide Engineering Center Foundation (MCMI).
- Pakistan Engineering Council (PEC).

Individual Associate

- Dipl. Eng. Hermann Sturm, **Germany**.

In Memoriam

In Memoriam

WFEO presents its deepest regrets on the passing of three of its most dedicated contributors and would like to commemorate their work and lifelong dedication to the Engineering world.

B. J. Vasoya



Engr. B J Vasoya, FIE had a distinguished career spanning over 5 decades as an eminent civil engineer and able administrator. He worked as the Chief Engineer in Department of Water Recourses and has handled the world's largest single canal irrigation project – Sardar Sarovar Project.

He was then elevated as the Secretary-Administrator in the Government of Gujarat, India. He was further appointed by the Government of India as the Chairman of High Power Environmental Committee. Engr. B J Vasoya made significant contributions in various fields of engineering and had many achievements to his credit.

Carlos Roberto dos Santos Moura



Civil Engineer, born on 17 February 1938 in Rio de Janeiro (Brazil), Eng. Carlos Roberto Dos Santos Moura was President of the Brazilian Federation of Engineering Societies (FEBRAE) between 2007 and 2009, and of the Brasilia Clube de Engenharia between 1995 and 2010, as well as being a Director of Clube de Engenharia of Rio de Janeiro.

William “Bill” Rourke



The first chief executive of Engineers Australia, William “Bill” Rourke, passed away after spending over 43-year in the Royal Australian Navy (RAN), reaching the rank of Rear Admiral. He spent six years from 1985 to 1991 as the chief executive of EA, and after retiring from that position, served a variety of roles at the World Federation of Engineering Organizations (WFEO).

Ibrahim A. Abu Ayyash



Eng. Ibrahim A. Abu Ayyash an eminent civil engineer was member of the Jordanian Engineering Association, member of A.S.C.E and founding Member of Jordanian National Committee for Large Dams.

He was also former president of the Jordanian Engineering Association, former president of the Federation of Arab Engineers and former member of the WFEO Executive Council.



**World Federation of Engineering Organizations /
Fédération Mondiale des Organisations d'Ingénieurs**

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