



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

A hand holding a glowing globe with architectural blueprints overlaid. The globe is the central focus, showing green continents and blue oceans. It is surrounded by a bright, golden-yellow light. Overlaid on the scene are various architectural blueprints, including a large circular structure on the left and a tall building on the right. The hand holding the globe is visible at the bottom, with a blue wristband featuring a circular logo.

Biennial Report 2021 - 2023



Editors

Jacques de Méreuil, Théo Belaud, Ivan Juiz and the WFEO contributors

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WFEO at a glance

The World Federation of Engineering Organizations (WFEO) was founded in 1968 under the auspices of UNESCO and is the peak body for engineering, representing the professional engineering institutions from nearly 100 nations and some 30 million engineers

WFEO is the international voice of engineering, recognised by the United Nations as a leading non-government organization in engineering

WFEO works closely with UN agencies including UNESCO as well as the OECD, the World Bank and other international organizations in science and engineering to address key global issues, especially to advance the United Nations Sustainable Development Goals (SDGs) through engineering

Major Initiatives

WFEO at the United Nations

WFEO co-chairs the Scientific and Technological Major Group at the United Nations with the International Science Council. WFEO participates in the High Level Political Forums and holds side events annually in relation with the UN SDGs

WFEO and Capacity Building for Engineering

WFEO is working with its international partners to increase the number and quality of engineers through improving engineering education standards, the development of national engineering education systems and training for accreditation bodies, registration bodies and professional engineering institutions

WFEO and the UNFCCC and COP meetings

WFEO attends the UNFCCC meetings annually and organises side events at the Conference of the Parties (COP) meetings to represent the engineering view on climate change

WFEO and Diversity in Engineering

WFEO is active in supporting diversity in engineering including women and young engineers through attraction, retention and support programs and recognition awards

WFEO and Africa and Small Island Developing States (SIDS)

WFEO is facilitating the development of engineering capacity in Africa and SIDS to support infrastructure growth, resilience against natural disasters and climate change impacts

WFEO World Engineers Convention

This event is held every four years and is the “Olympics of Engineering”

WFEO Academy

WFEO Academy provides training for engineering educators and assessors of engineering education programs for accreditation purposes and for the professional development of qualified engineers

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Report of the President



José Vieira
WFE0 President

“ In the current geopolitical and social context, at a time of much disruption, uncertainty and unprecedented climate change, the role of engineers is more critical than ever. We need engineers who possess the necessary technical skills and ethical integrity to address the substantial challenges our planet faces and strive for sustainable development that benefits all.”

During the biennium 2021-2023, I had the privilege and honour of serving as the President of the World Federation of Engineering Organizations (WFE0).

In my inaugural presidential address to the WFE0 General Assembly in Costa Rica in March 2022, I highlighted the fact that the beginning of the third decade of the 21st century ushered in a markedly different social, economic, and geopolitical environment compared to recent years, posing a multitude of distinctive challenges.

At that time, we made a commitment to uphold and, whenever possible, enhance the momentum of activities outlined in the WFE0 2030 strategic plan. Our aim was to fortify WFE0's standing as the foremost international organization for engineers. From the initiatives that have emerged during this biennium, some key highlights include:

- **Strengthen international collaboration.** WFE0 holds recognition from the United Nations as a leading non-governmental organization in science and technology. The primary objective of these collaborations has been to address significant global issues, with a particular emphasis on advancing the UN Sustainable Development Goals (SDGs) through engineering.

- **WFE0 Academy.** In March 2022, WFE0 launched the WFE0 Academy, a free training platform accessible to all WFE0 members. This platform, in 104 languages, offers online courses tailored for the continuous professional development of engineers, as well as training for engineering educators and assessors involved in engineering education program accreditation. The development of this platform aligns with WFE0's Engineering 2030 Plan, which seeks to empower more countries with engineers possessing the requisite skills for sustainable development.



Addressing the WFE0 statement at the United Nations 2023 Water Conference plenary session, New York, 23 March 2023.

- **World Engineering Day.** The format selected for the WED celebration promotes the active involvement of WFE0 National Members in globally sharing their accomplishments. It encompasses events such as the Young Engineers Competition (WED Hackathon) award ceremony, and the hosting of an international conference addressing a contemporary engineering topic. In 2022, WED took place in San José, Costa Rica, featuring a conference centred on the theme "Build Back Wiser—Engineering the Future". In 2023, the event was held in Madrid, focusing on the theme "Engineering the Cities of the Future". Both of these celebrations experienced tremendous success, reaching an extensive audience of more than 50 million individuals through various social media channels, predominantly among young people.

- **Enhance the visibility of STC/PIC initiatives.** The Standing Technical Committees represent the heart of the Federation's engineering and technological expertise. Policy Implementation Committees, on the other hand, are responsible for addressing a range of non-technical issues associated with the engineering profession, including social and economic matters. Given that the excellence of their activities and results should reinforce WFE0's global reputation, we strongly encourage them to publish reports and papers on specific topics. This applies to publications such as "Engineering Resilience in Disaster Risk Management for Sustainable Development" released by the Committee on Disaster Risk Management in May 2022, and "Engineering, Groundwater, and Integrated Water Resources Management" published by the Committee on Water in October 2023.



Addressing on the opening ceremony of the World Robot Conference, Beijing, 17 August 2023



Addressing on the opening ceremony of the World Engineering Day, Madrid, 4 March 2023

- **WFEO Model Code of Ethics.** Engineering and engineers occupy a central role in the ongoing technological revolution driven by emerging and disruptive technologies such as AI, Big Data, and IoT. It becomes imperative for them to prioritize security, embrace transparency and responsibility, mitigate the digital divide and other development disparities, promote inclusivity and equity, and ensure that technologies and machines remain under the control of humanity. In light of these circumstances, WFEO decided to revise its Model Code of Ethics to meet these evolving requirements which will be presented at the General Assembly in October 2023.

WFEO co-chairs the Scientific and Technological Major Group at the United Nations with the International Science Council (ISC). Additionally, WFEO actively engages in the High-Level Political Forum and holds side events annually aligned with SDGs. During this period, several significant initiatives were conducted within the United Nations framework:

- **UN High Level Political Forum on Sustainable Development, 6 July 2022.** UNESCO/WFEO Side Event: Utilizing Open Science Principles for Quality Engineering Education to advance the SDGs.

- **UN High Level Political Forum on Sustainable Development, 7 July 2022.** WFEO/ISC Side Event: SDG midterm review: what have we learned from implementation to date? How can we fast-track progress?

- **WFEO-UNESCO Joint Meeting for Member States, October 27, 2022.** The strategic role of engineering for accelerating the delivery of the 2030 Agenda, UNESCO Headquarters in Paris.

- **UN STI Forum of STC MG, May 3, 2023.** WFEO/ISC Special Event: STI&E Solutions for the SDGs: Theory, Practice, and Application.

- **UN STI Forum of STC MG, May 4, 2023.** WFEO Side Event: Engineering solutions for water adaptation.

- **UN STI Forum of STC MG, March 23, 2023.** WFEO/ISC Side Event UN Water Conference: The Role of the S&T Community on the Pillars for Accelerating Progress and Transformative Actions on SDG 6.

Emphasizing WFEO's contribution to the work of international agencies on engineering-related matters is of great significance. These collaborations underscore WFEO's pivotal role in addressing global engineering challenges across diverse international contexts: **UNESCO** (Associate Status, collaborates on engineering issues including education, diversity, water, natural disasters,

capacity building), **ECOSOC** (member of UN Major Group for Scientific and Technological Community, recognised as an ECOSOC accredited body); **UNFCCC** (contribution to the Conference of the Parties events and to address climate change); **UNEP** (accredited body with contribution to various programs); **UNIDO** (consultative status, contribution on engineering capacity building for social and economic development); **UNISDR** (observer status and contribution to natural disaster risk mitigation through engineering); **IAEA** (observer status and contribution on energy and technology matters); **ISO** (consultative status with several ISO technical committees); **FAO** (WFEO and FAO are preparing a number of joint projects to be announced by 2024); **ITU** (WFEO joined ITU as a member in July 2023); **OECD** (collaborates on engineering and integrity relating to anti-corruption, data and artificial intelligence).



Executive Council member Ania Lopez, President-Elect Mustafa Shehu, President José Vieira, FAO Director-General QU Dongyu, Past President Gong Ke and Executive Director Jacques de Méréuil at an Institutional Meeting in FAO HQ, Rome, 25 October 2022

We firmly believe that engineering and engineers play a fundamental role in finding and implementing innovative solutions to address the global climate crisis and in constructing resilient infrastructure essential for a sustainable development. In light of this perspective, on March 1st, 2023, the WFEO Executive Board approved the establishment of the Working Group on **Engineering and Climate Change**. Its primary goal is to centralize and coordinate activities related to the issue of climate change, with a specific emphasis on advancing SDG 13. Moreover, it is noteworthy that WFEO was selected by the United Nations Framework Convention on Climate Change (UNFCCC) to host side events during COP27 in November 2022 and COP28 in November 2023.



Institutional Meeting with ITU Secretary General Houlin Zhao, Geneva, 24 October 2022



Addressing on the opening ceremony of the 78th Brazilian Engineering Week, Gramado, 8 August 2023

Additionally, it is important to highlight the successful project that WFEO has developed on Climate Change Education in Small Island Developing States (SIDS) in Mauritius, in collaboration with UNESCO, which aims to provide training for teachers in sustainable development.

When considering our international collaborations, it is noteworthy to highlight the signing of MoUs with several similar organizations: **ISC**, in April 2022, to strengthen the partnership for the advancement of the SDGs; **IEA** to update the Graduate Attributes and Professional Competencies with translations into the six official languages of UNESCO; **ISOCARP-IFLA-IUA** to promote public awareness of the importance of collaboration among Architects, Engineers, Landscape Architects, and Urban & Regional Planners in creating a better and more liveable built environment and addressing the climate crisis.

Within WFEO activities, we dedicate significant efforts to provide support for initiatives conducted by our national and international members, with a particular focus on developing countries, especially in the African region. The 8th edition of **UNESCO-Africa Engineering Week** was hosted in Addis Ababa, Ethiopia, in November 2022, and the 9th Edition of this flagship WFEO event for Africa occurred in Pretoria, South Africa, in September 2023. Also we took part in the inaugural **STI in Africa Day**, which occurred on 2 May 2023, alongside the STI Forum in New York. Furthermore, WFEO, ASCE, and UN DESA jointly organized the Global Solutions Summit 2023 event on 5 May, with a specific focus on "Harnessing Science, Technology, and Innovation for the SDGs 2030 through the Diaspora, Youth, and the African Continental Free Trade Area".

Over the past two years, WFEO has consolidated its role as the peak international organization for the engineering profession. This achievement is the result of dedicated collaborative efforts, and I extend my gratitude to all who played a part in it, including the members of the Executive Board, Executive Council, Secretariat, committees, as well as our national and international members. I believe that we continue to enhance this meritorious work in favor of Engineering and dignify the work of Engineers in scaling up and improving infrastructure, ultimately alleviating poverty, prioritizing sustainable development, and furthering social progress.

José M P Vieira
President of the World Federation of Engineering Organizations

The following is the list of Prof. José Vieira's international engagements:

- **World Engineering Day 2022**, Closing remarks, San José Costa Rica, 4 March 2022.
- **World Engineering Summit 2022**, Closing remarks, San José Costa Rica, 7 March 2022.
- **WFEO awarding ceremony**, Closing video remarks, 12 April 2022.
- **UN STI Forum Engineering Resilience in Disaster Risk Management for Sustainable Development**, Opening remarks at the Side event, 5 May 2022.
- **Spanish version of Engineering Resilience in Disaster Risk Management for Sustainable Development**, Opening address at the Book launch, 9 May 2022.
- **Pan American Engineering Summit (UPADI)**, Opening address, 10 June 2022.
- **UN HLPF 2022 Utilizing Open Science Principles for Quality Engineering Education to advance the UN SDGs**, Moderator at the Side event, 6 July 2022.
- **UN HLPF Side event SDG midterm review: What have we learned from implementation to date?** Moderator, 7 July 2022.
- **Conference on Engineering Education Accreditation ICEEA 2022**, Video message, 16 July 2022.
- **30th FEIAP General Assembly and the 6th International Convention**, Video message, 27 July 2022.
- **7th World Robot Conference 2022**, Opening video message, 18 August 2022.
- **70th Anniversary Unión Mexicana de Asociaciones de Ingenieros (UMAI)**, Video message, 19 August 2022.
- **WFEO-YEFL webinar series Engineering the Future – Fulfilling Offshore Wind Potential**, Speaker, 1 September 2022.
- **International Tunneling and Underground Space Association (ITA) General Assembly**, Video message, 2 September 2022.
- **77th SOEA: Engineering and Agronomy Official Week**, Opening address and participation, Goiânia, Brazil, 4 to 6 October 2022.
- **IESL / New South Wales Chapter Annual Conference**, Video message, 22 October 2022.
- **International Telecommunication Union (ITU), Institutional Meeting** with Secretary General Houlin Zhao, Geneva, Switzerland, 24 October 2022.
- **Food and Agriculture Organisation (FAO), Institutional Meeting** with Director General Qu Dongyu, Rome, Italy, 25 October 2022.
- **WFEO-UNESCO Joint Meeting for Member States – The strategic role of engineering for accelerating the delivery of the 2030 Agenda**, General introduction and moderator on Session 2, UNESCO HQ, Paris, 27 October 2022.
- **UPADI 2022 Convention and General Assembly**, Video message, 31 Oct. 2022
- **Award ceremony of the "Ingenio al Feminile Competition" event**, Video message, Roma, Italy, 3 November 2022.
- **8th UNESCO Africa Engineering Week and 6th Africa Engineering Conference**, Video message, 7 November 2022.
- **WFEO-WIE webinar Gender Perspectives on Achieving the SDG 5**, Opening remarks, 19 November 2022.
- **Climate Change Education Workshop Mauritius**, Opening video message, 22 November 2022.
- **Zhongguancun Forum 2022**, Video message, 25 November 2022.
- **WFEO Webinar on Climate Change**, Opening remarks, 5 December 2022.
- **37th Indian Engineering Congress 2022**, Video message, 17 December 2022.
- **17th General Assembly of the World Council of Civil Engineers**, Address and participation, Porto, Portugal, 26 January 2023.
- **FAEO Engineering Policy and Presidential Inauguration**, Goodwill video message, Kigali, Rwanda, 27 January 2023.
- **Statement following the earthquake in Syria and Türkiye**, February 2023.
- **WFEO-YEFL Webinar Smart Sustainable Communities and Frontier Technologies**, Opening remarks, 24 February 2023.
- **Engineering and Sustainability Inaugural Conference of the Year OE 2023: Energy and Climate**, Chair, Braga, Portugal, 27 February 2023.
- **Conference Engineering the cities of the future**, Moderator of Round Table and remarks at Opening and Closing Ceremonies, Madrid, Spain, 3 March 2023.
- **World Engineering Day 2023**, Opening and Closing remarks, Madrid, Spain, 4 March 2023.
- **WFEO-ISC Side-Event at the UN 2023 Water Conference**, Moderator, UN HQ, New York, 23 March 2023.
- **UN 2023 Water Conference plenary session**, Statement address, UN HQ, New York, 23 March 2023.
- **H.J. Sabbagh Prize for Excellence in Engineering Construction Ceremony 2023**, Welcome video message, 21 April 2023.
- **WFEO Side-event at UN STI Forum Engineering solutions for water adaptation**, Moderator, 4 May 2023.
- **Conference on Engineering Education Accreditation ICEEA 2023**, Video message, 27 July 2023.
- **78th SOEA: Engineering and Agronomy Official Week**, Opening address and participation, Gramado, Brazil, 8 to 11 August 2023.
- **8th World Robot Conference 2023**, Opening address and participation, Beijing, China, 17 to 20 August 2023.
- **WFEO-WIE webinar Resilient Women, Resilient World**, Opening remarks, 1 September 2023.
- **CAST/WFEO-China Conference 2023 High-level Seminar on Engineering Innovation for a More Resilient World**, Opening video message, 5 Sept. 2023.
- **CAST 2023 Conference on Science Literacy**, Opening video message, 19 September 2023.

Report of the President-Elect



Mustafa Shehu
WFE0 President-Elect

It was on Wednesday 9th March 2022, history was made at the WFE0 General Assembly in San Jose, Costa Rica that saw my emergence as the president-elect of WFE0. It was a very exciting and humbling experience to see that my colleagues have entrusted me with the leadership of this global engineering body. The support for my candidature enjoyed global outreach as I was the only candidate that contested for the position that year.

The main duty of a President-elect is to support the President in all his duties, act on his behalf in assignments he delegates to him as well as observe closely how the Federation is being run in preparation to taking over the leadership in two years to come. In this regard, I had the privilege and honor of working closely with President Jose Vieira and Immediate Past President Gong Ke in the last two years.

Regarding one of the main cardinal objectives of WFE0 that is Capacity Building, I represented WFE0 at the Capacity Building Forum that took place in Livingstone, Zimbabwe 16-20 August 2022.



Addressing WFE0-UNESCO Information meeting in Paris, 27 October 2022

WFE0 has a very strong partnership with UNESCO over the years and the relationship is waxing stronger in recent years. In addition to the important role WFE0 played in the production of the second engineering report, it also organized a program aimed at informing the UNESCO Member States of the achievements recorded so far and how we can progress further.



President Jose Vieira, President-elect Mustafa Shehu Immediate Past president Gong Ke and Executive Director Jacques de Mereuil after the declaration of election result



Past President GONG Ke, UNIDO Managing Director of the Directorate of Technical Cooperation Ciyong Zou and President-Elect Mustafa Shehu at UNIDO Headquarters, Vienna, Austria, 31 October 2022

Similarly, WFEO has developed relations with International Telecommunications Union (ITU), Food and Agricultural Organization (FAO) and United Nations Industrial Development Organization (UNIDO). The leadership of WFEO paid working visits to these organizations and I was part of the delegation.



Closing Remarks at the WFEO Committee on Women in Engineering webinar "Gender Perspectives on Achieving the SDG#5", 19 November 2022

I also represented the WFEO at the UNESCO Africa Engineering/Conference that took place in Addis Ababa, Ethiopia 7 to 12 November 2022.



At the Opening Ceremony of the Africa Engineering Week/Conference in Addis Ababa, Ethiopia, 7 to 12 November 2022

WFEO takes its relationship with International Members very seriously. It is in this regard I attended the Conference on Information Society and Advanced Technologies in the Arab World organized by the Federation of Arab Engineers in Baghdad, Iraq, on 17-19 December 2022. I presented a paper at the opening ceremony which was attended by 18 engineering institutions in the Arab region.



Signing the Madrid Declaration in Madrid, Spain, 4 March 2023

This year WFEO celebrated the 4th World Engineering Day in the famous and historic city of Madrid, Spain. The theme of WED2023 was 'Engineering innovation for a more resilient world'. Along side the celebration, there was a conference organised by the Spanish Engineering Institution with the theme 'Engineering the Cities of the future'. Many technical papers were presented at the end of which the Madrid Declaration was signed for implementation as WFEO contribution towards attainment of the Sustainable Development Goals.

Another important partner to WFEO is the international Engineering Alliance IEA. I was privileged to attend the 2023 IEA Meeting which took place in Taichung, Chinese Taipei. I had a special meeting with the leadership of the IEA with a view to strengthening their relationship with WFEO. It was also pleasing to see that Nigeria, through the Council for the regulation of Engineering in Nigeria (COREN) was admitted to provisional signatory status of the IEA.



At IEAM2023 in Taichung after Nigeria has been declared to have provisional signatory status of the IEA

Report of the Executive Director



Jacques de Méreuil
WFE0 Executive Director

1. Administration, staff and finance

Since the San José General Assembly in March 2022, the Secretariat's staff has remained stable, with Operation Officer Théo Bélaud and IT & Communication Manager Ivan Juiz activities completed by our part time Finance Officer Isabelle Cafaro, who has helped us enhance our financial and administrative management. Following the adaptation period in time of Covid-19, the WFE0 Secretariat has set up a hybrid working organization (remote/face-to face) to be a smart, agile and resourceful team. It has been coordinating in setting up a high number of virtual meetings of the Executive Board and other internal meetings, as well as with our many partners and member institutions. It has also provided assistance to the Standing Technical Committees (STCs), Policy Implementation Committees (PICs) and Working Groups, to develop their activities, setting up webinars which were key to accomplishing their missions. Board committee meetings - finance, nominations, membership, awards...- essentials to initiate the decision process of the Federation, were also held virtually.

The financial situation of the Federation is sound, in spite of difficulties encountered, in particular in raising sponsorship for important projects such as the World Engineering Day celebration and the WFE0 Academy, and after a strongly positive result in 2021 (+€37,740), it became slightly negative in 2022 (-€677). At the end of 2022, the level of reserves was reaching €592,000.

2. Relations with UNESCO and other partners

2.1. UNESCO

The Secretariat activity, beyond servicing our members and governing bodies, is turned towards international institutions, and in particular UNESCO. We went on developing relations with the National Sciences Sector, while the Sector as well as other parts of UNESCO have been going through various changes in staff and structure.

2.2. Main activities with other institutional partners included :

- coordination with the International Science Council staff to assist on the WFE0-ISC joint leadership of the UN Scientific and Technological Community Major Group, for annual main events

such as the STI Forum and the High Level Political Forum.

- Since early 2023: monthly briefing with FIDIC officers to coordinate joint projects and bring mutual updates on areas of common interest.
- Since 2022: frequent meetings with Engineers Without Borders officers and preparation of a MoU to be signed in 2023.
- October 2023: I was part of the Board delegation which visited the International Telecommunications Union (ITU) in Geneva and the Food and Agriculture Organization (FAO) in Rome.
- Since then, the Secretariat has submitted an application for ITU membership, which was accepted at an ITU Executive Council meeting in July 2023. The Secretariat also participated in regular meetings with FAO officers to prepare a MoU, including a joint award project.
- The Secretariat also assisted the Water Committee to submit an application for UN Water membership, which was accepted in August 2023.
- The Secretariat has been liaising with the Office for Climate Education to provide administrative and financial support to the joint activities under the MoU signed in 2021, including training sessions in Mauritius jointly delivered with WFE0's Education Committee, and preparing future projects.

3. Relations with members and internal projects

3.1. New Members

During the last biennial, the Federation welcomed new national members (Ordre des Ingénieurs en Génie Civil du Burkina Faso, Engineering Society of Liberia, Ordem dos Engenheiros de Moçambique, Ordem dos Engenheiros de Cabo Verde), affiliate members (Engineers Board of Kenya, Federation of Myanmar Engineering Societies), and more institutions have started or will enter the application process this year.

At the March 2022 Executive Council in Costa Rica, Eng. Santiago Sotuyo, from Uruguay, was admitted in the membership category of "Distinguished Fellow".

3.2. WFE0 Academy.

Since the announcement and launch in Spring 2022 of the WFE0 Academy, the Secretariat has been assisting the Education Committee and Dr. Marlene Kanga, in liaison with our contractor for website and communication management, in developing the Federation's training portal, an important project designed to provide transversal skills to practitioners, engineering educators and accreditation bodies.

3.3. UNESCO World Engineering Day for Sustainable Development.

As during the previous biennium, the Secretariat has worked closely with UNESCO staff and with the Federation's contractor based in Australia to coordinate the WED celebrations delivery. This consists in liaising with all WFE0 members involved in hosting a WED event, assisting the Hackathon team, preparing the 4 March live stream of various events, recruiting sponsors, etc. In addition to this, the Secretariat has been preparing further development of WED in order to raise its impact and visibility, by negotiating since Spring 2023 a new partnership with a major media company for the coming years.

3.4. Updating the WFE0 Code of Ethics.

The Secretariat assisted Prof. Gong Ke in his work as chair of the ad hoc working group on editing the WFE0 Model Code of Ethics, in close association with members of the working group and CAST



Ivan Juiz, IT and Communications manager, Théo Belaud, Operations Officer, Jacques de Méreuil, Executive Director and Gustave Nzeng, WFEO National Member representative for the Democratic Republic of the Congo, at the WFEO HQ in Paris

staff. During this six-month process, the working group was set up, three meetings organized including a face-to-face one during the Madrid Executive Council meetings, and five regional webinars presenting the updating work were held during Summer 2023.

3.5. Relations with members.

The end of the lock down period was an opportunity to visit members or prospects again.

I visited in particular the Estonian Association of Engineers in December 2022 for their 100-year anniversary meeting, where I made a presentation of WFEO. I also attended the Engineers' Europe General Assembly meeting in Cannes in June 2023 for the Engineers Europe GA. As part of the preparation of WFEO meetings, I visited the staff and headquarters of the Federation's members for Spain (in 2022) and for the Czech Republic (in 2023). During the visit to Prague in March 2023, I gave a WFEO presentation at the Czech Senate.

The Secretariat welcomed an official visit to the WFEO headquarters of a delegation from our National Member for China, conducted by Dr. Luo Hui, director for CAST International affairs, and Prof. Gong Ke, WFEO immediate Past President.

As every year, the Secretariat also participated in the steering committee of the Africa Engineering Week, which is co-organized by UNESCO, FAEO and WFEO.

The Secretariat prepared the face-to-face Federation's meetings which were held during the last biennium (WED event and Special Executive Council meeting in Madrid, WEC2023 and General Assembly meetings in Prague), having monthly or weekly meetings with the host member and its partners or contractors. The Secretariat also started the preparation of the Executive Council meetings to be held in Kigali, Rwanda, in October 2024.

In July 2023, the Secretariat launched a survey in order to better know its members, in terms of size, impact, capacities and relevance, with a focus on women engineers.

3.6. Development of the hydrology multi-NGOs projects.

Since 2016 the Secretariat has been representing WFEO in joint projects involving NGOs with associate status at UNESCO, funded by UNESCO, organizing 3-week training sessions in basic hydrology techniques for project managers and staff of local NGOs in Africa, in partnership with the Burkina Faso engineering faculty 2IE. Some

120 people benefited from the sessions, from 10 countries. In 2021, an ad hoc project named ACIFO was initiated in cooperation with 2IE, ENGEES (a top hydro-engineering school in Strasbourg) and the UNIT Foundation (a WFEO associate), to set up a one-year training program, bachelor level, in water infrastructure and projects management. The new training would consist of a 3-month online session, a 3-month on site (Ouagadougou) session, and a 3-month internship. In 2023, a 3 year 500K€ funding was approved in principle by the French network of water regional agencies. However, the funding and actual implementation were postponed until further notice after political disruptions in the region resulted in the French government suspending its cooperation.

4. Communication

The website is continuously updated to focus on WFEO international leadership and activities.

The Flash Info newsletter, published on a bimonthly basis, is sent to more and more readers from our membership, associates and friends, providing updates on activities, projects and information of interest to engineers.



Théo Belaud and Jacques de Méreuil at the WFEO-UNESCO Joint Meeting for Member States, 27 October 2022

We continue to develop our presence in the social media platforms (Facebook, Twitter, LinkedIn, Youtube). This activity has become more and more critical as we have continuously increasing our number of online events and webinars, as well as for preparing the yearly World Engineering Day celebrations. We prepare, support, and do the post Zoom webinar work, along with their promotional banners, flyers, and video editing.

The quality of the membership management and relations is crucial to the Federation's relevance to members. To this end and to improve WFEO's membership management and relations, the secretariat is developing an internal database on member organizations' that will store contact information, leaders, current and historical data,...

More than ever, I wish to stress the importance of consolidating the Federation's Secretariat. WFEO deserves to grow faster and bigger and become capable of carrying large-scale projects that will make a difference on how and how much engineers contribute to building a better future. Our Secretariat has proven how relevant it is for WFEO Members to have a permanent team based in UNESCO headquarters, with regular contacts with its officers, Member States delegations, and other NGOs. But whilst we have been relying for many years on the format of an agile and versatile team, this format will probably need some expansion to be up to the challenges of making WFEO a more visible and impactful organization.

WFEO Executive Council

Executive Board Members

José Manuel Vieira
President

Ashok Basa
Executive Vice President

François Lureau
Treasurer

Mustafa B. Shehu
President-Elect

Seng Chuan Tan
Executive Vice President

Gong Ke
Past President

Jacques de Méreuil
Executive Director

Standing Technical Committee Chairs

José Macharé
Disaster Risk Management

Martin Manuhwa
Engineering Capacity Building

S.S. Rathore
Information & Communication

Zaw Min Aung
Education in Engineering

Davide Stronati
Engineering & the Environment

Ignacio Gonzalez-Castelao
Water

Jean Eudes Moncomble
Energy

Jing Peng
Eng. for Innovative Technologies

Policy Implementation Committee Chairs

Papias Kazawadi
Anti-corruption

Yetunde Holloway
Women in Engineering

Firas Bou Diab
Young Engineers / Future Leaders

National Members

Wael Abdulmajeed
Iraq

Joel Krüger
Brazil

Nathaniel Matalanga
Kenya

Kenichi Tsukahara
Japan

Richard Coackley
United Kingdom

Ruomei Li
China

Gustave Nzeng
Democratic Republic of the Congo

Navinchandra Vasoya
India

Alexandre Kounitzky
Switzerland

Ania Lopez
Italy

Oscar Sanchez
Costa Rica

International Members

Paul Jowitt
Commonwealth Engineers Council (CEC)

Carlén Bou-Chedid
Federation of African Engineering
Organizations (FAEO)

Jorge Abramian
World Council of Civil Engineers
(WCCE)

Adil Al Hadithi
Federation of Arab Engineers (FAE)

Huang Wei
Federation of Engineering Institutions
of Asia and the Pacific (FEIAP)

Shankar Krishnan
International Federation of Medical and
Biological Engineering (IFMBE)

Ralph Appel
Engineers European (Ex-FEANI)

Salvador Landeros Ayala
Pan American Federation of
Engineering Societies (UPADI)

Non voting Members

Alain Jouanjus
Auditor

Marlene Kanga
Chair of the Governance Committee

K. N. Gunalan
Chair of WFEO-UN Relations Committee

Martin Van Veelen
Chair of WG on Infrastructure Report Card

WFEO Academy

The WFEO Academy fulfills a key mandate for WFEO, to facilitate engineering education and development around the world especially where it is needed most. Supported by UNESCO and WFEO's partners, it demonstrates the UNESCO Open Science Principles in action, to transfer knowledge and expertise, for engineers with the right skills, in Asia, Africa and Latin America.

Main Themes covered in the past two years:

- Training for engineering educators, accreditation bodies and professional engineering institutions
- Collaborating with WFEO members and partners, including the International Engineering Alliance (IEA), the International Federation of Engineering Education Societies (IFEES) and the Global Engineering Deans Council (GEDC), for world class training content

Since it was formed more than 50 years ago, a key objective of WFEO has been the education and training of engineers around the world. This continues to be a priority as raising and harmonizing engineering education standards is essential to advance the UN Sustainable Development Goals.

WFEO proudly launched the WFEO ACADEMY training portal on World Engineering Day, on 4th March 2022, with UNESCO and its partners, IEA, IFEES, GEDC and WFEO members and affiliates. The WFEO Academy training portal delivers on the WFEO priority for engineering education and training.

The project is led by Dr Marlene Kanga, WFEO President in 2017-2019, under the auspices of the WFEO Committee on Education in Engineering. This website provides training and builds capacity for accreditation bodies and professional engineering institutions, enabling them to achieve international standards and the requirements of signatory status of IEA.

WFEO ACADEMY also provides training for engineering educators to develop the curriculum and pedagogies for outcomes based education that are a key requirement to achieve the international benchmarks for engineering education. A third component is training for qualified engineers, technologists and technicians for essential skills in areas such as safety, disaster and risk management, project management, ethics and leadership, that are required across all disciplines and are essential for competent and responsible practice. These skills are essential in the application of technical expertise to engineering works to advance sustainable development.

The WFEO Academy is a beacon of international cooperation with UNESCO, WFEO members, WFEO national and international members, and WFEO partners, including IEA.

As at June 2023, webinars were provided by IEA, IFEES, The Institution of Engineers Mauritius, The Myanmar Engineering Council and the Accreditation Board for Engineering and Technology (ABET). The webinars have been taken up by engineers from around the world.

WFEO will continue to grow the reach of the WFEO Academy as knowledge and expertise is shared across the engineering community internationally.



Key achievements

Since its launch at World Engineering Day for Sustainable development in 4th March 2022, the WFEO Academy has grown quickly with a wide range of training content for engineering educators, engineering institutions and accreditation bodies and qualified engineers, technologists and technicians, providing much needed knowledge transfer and support in regions where these are most needed, around the world.

UNESCO has recognized the importance of the WFEO Academy, as it progresses key recommendations of the Second UNESCO Engineering Report, in particular to train more engineers with the right skills. The WFEO Academy also activates the UNESCO Open Science Principles, by providing knowledge transfer to countries that need to train engineering educators and engineering education accreditation organizations for quality engineering education.

The training content on the WFEO Academy is available to individuals that are members of WFEO members, associates and affiliates at no cost. Individuals need to register to access the courses indicating their member organization and will automatically receive a certificate of completion after attending the course and successfully completing a short quiz. The certificates can be used to support the requirements for Continuous Professional Development (CPD) to maintain registration status. The instructions to register are at: www.wfeoacademy.com



Homepage of the WFEO Academy website

World Engineering Day - 4th March each year



WFEO led the proposal to declare 4th March, World Engineering Day for Sustainable Development (WED), the founding day of the Federation. The first WED was celebrated on 4th March 2020.

The Day is an opportunity to engage with the community on the importance of engineering for sustainable development and to engage with government and industry to address the need for engineering capacity and the quality of engineers around the world.

The celebration of the 2022 edition of the WED Day reached more than 56 million via social media channels, which, to our knowledge, has never been achieved before for an engineering event. The theme of WED 2022 was *"Build Back Wiser – Engineering the Future"*.

Two new international events were held – the 24-Hour LIVE streaming of engineering from around the world and the global World Engineering Day Hackathon, a world first event, to engage young engineers and engineering students from every continent around the world.

The 24 Hours-LIVE event was hosted from eight hubs: Sydney (Australia), Beijing (China), Mumbai (India), Kumasi (Ghana), Paris (France), London (UK), Washington DC (USA) and San Jose (Costa Rica). The event had more than 30,000 views, making this one of the largest international engineering events ever held. More than 80 percent of the views were by young people below the age of 35 and 30 percent of viewers were women.

This amazing international celebration was generously supported by our international partners – UNESCO, International Federation of Consulting Engineers (FIDIC), International Federation of Engineering Education Societies (IFEES), Global Engineering Deans Council (GEDC), International Engineering Alliance (IEA), International Network for Women Engineers and Scientists (INWES) and Engineers Without Borders (EWB). We also appreciate support from the members, associates and affiliates of WFEO that provided videos and messages that were played during the 24 Hour Live Event.

The 2023 edition of the WED was celebrated across the globe with the theme *"Engineering Innovation For a More Resilient World"* by many engineering institutions, businesses, UN bodies and social groups. An estimated 58 million people were engaged via social media and other platforms, demonstrating the growing importance of this UNESCO international day for engineering.

The 4 March 2023 celebration also focused on a 2 day-conference Engineering the Cities of the Future that was organized by IIE, the Institute of Engineering of Spain, on 2 and 3 March in Madrid, a conference on Sustainability hosted by the Institution of Engineers, Singapore and a webinar hosted by UNESCO.

On this occasion, the finalists' submissions of the WED Hackathon were shown on our live stream, as well as the announcement of the winner. On this same day, the Madrid Declaration, as the commitment of WFEO and its members to advance resilient and sustainable development, was signed and released. Our Committees, Member organizations, as well as UNESCO celebrated the 2023 edition of the WED by hosting several webinars, which were broadcast live.

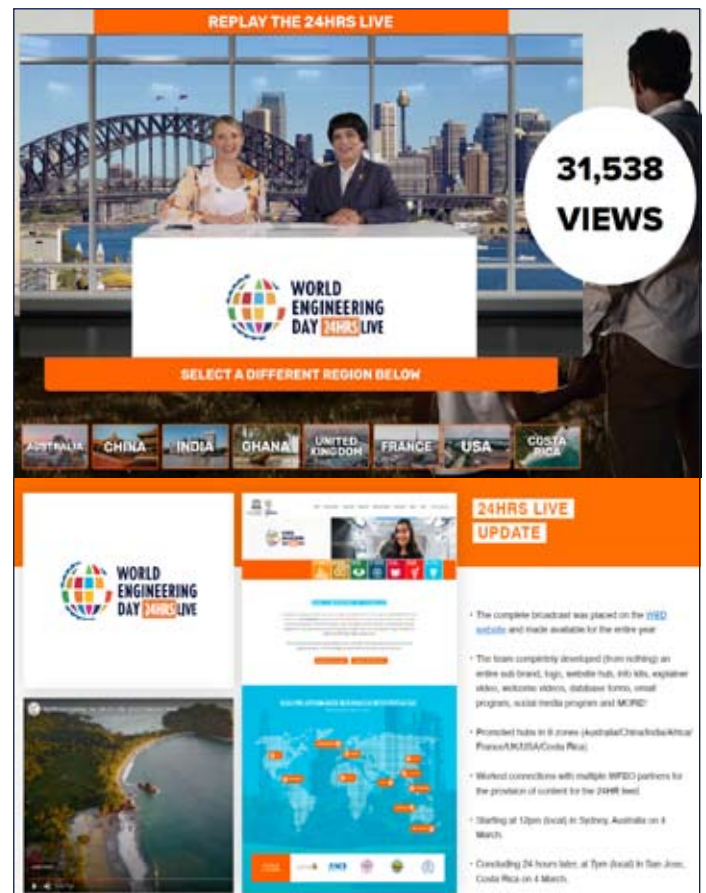
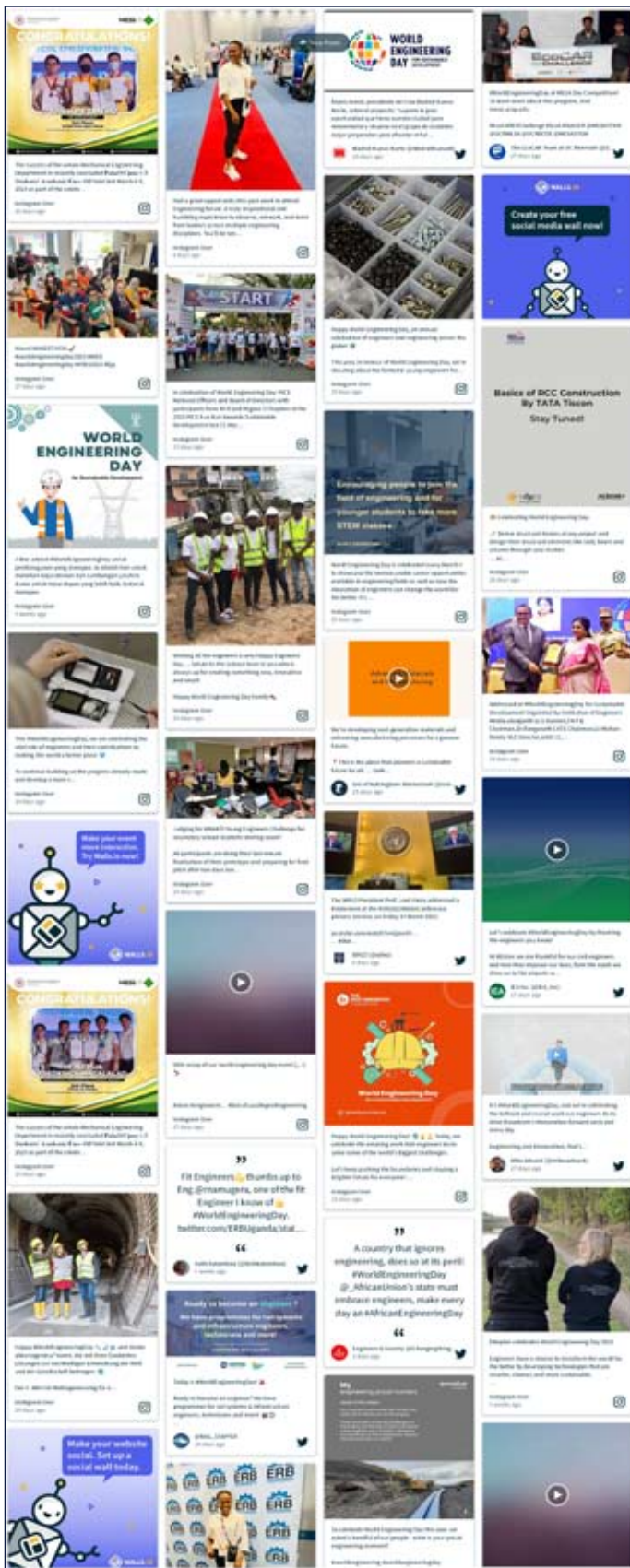
The WED website is available at www.WorldEngineeringDay.net



Tweet from United Nations recognizing the role of engineers on World Engineering Day, 4 March 2023



The World Engineering Day 2023 Hackathon Winning teams



Streaming of the 24 Hours-LIVE event, hosted from eight hubs around the world, 4 March 2022



Banner of the WED 2022 edition



The international round table on engineering to celebrate World Engineering Day organized by UNESCO, 4 March 2022

WFEO and UN Relations

WFEO is involved at the major UN events on important issues relating to science, technology and engineering, through its presence at the High Level Political Forum (HLPF), the Science Technology Innovation Forum (STI Forum), the UN Water Conference, the UNFCCC COP meetings and the UN Commission on the Status of Women (CSW) meetings.

The WFEO UN Relations Committee (WURC) is a Policy Implementation Committee, with the mission of engaging with the different UN agencies as well as intergovernmental organizations requiring engineering content, systems, methodologies and analyses. WURC enables WFEO to contribute to the ongoing discussions at various UN agencies at the highest international levels.

WFEO is the co-chair of the Science and Technology Community of the UN Major Group of Stakeholders, with the International Science Council, the other co-chair.

Since 2022, WFEO is also the Co-Chair of the Advocacy Task Group of all the Major Groups of Stakeholders at the UN.

In the 2023 STI Forum, the most important UN event to discuss science, technology and innovation, WFEO organized the inaugural STI in Africa Day 2023 and was actively involved in four on-site events. This is the first time that WFEO has had so much exposure in this forum. All these events have put WFEO on a path to greater recognition of the work of engineers.

The WFEO Committee on Engineering and the Environment has arranged side events at the Conference of the Parties (COP) climate meetings held each year. The WFEO Committee on Water organized a Side event at the UN Water Conference. The WFEO Committee for Women in Engineering has also attended and participated in side events at the UN Commission on the Status of Women (CSW).

WFEO is also active in other UN agencies including UNIDO, UNEP, ISO, FAO, ITU and others.



WFEO Past President Dr Marlene Kanga AO delivers the keynote address at the Global Solutions Summit, 5 May 2023



Associate Status, collaborates on engineering issues including education, diversity, water, natural disasters, capacity building



Member of UN Major Group for Scientific and Technological Community. Recognised as an ECOSOC accredited body



Admitted NGO. Involvement in the UNFCCC Conference of the Parties (COP) events to address climate change



Accredited organization with contribution to various programs



Consultative status, contribution on engineering capacity building for social and economic development



Observer status and contribution to natural disaster risk mitigation through engineering



Observer status and contribution on energy and technology matters



Liaison organization. In consultative status on several ISO technical committees



WFEO and FAO are preparing joint projects in agriculture, food and engineering, to be announced by 2024



WFEO joined the International Telecommunication Union as a member in July 2023



Partner status



Dr K.N. Gunalan chairs the WFE0-ISC special event at the UN STI Forum, 3 May 2023



Speakers at the WFE0 side event at the UN STI Forum "Engineering solutions for water adaptation", 4 May 2023



WFE0 Past President Dr Marlene Kanga chairs the session 2 in the first Africa Day at the UN STI Forum, 2 May 2023



Speakers during the Q&A discussion at the CSW66 side event, 14 March 2022

WFEO and UNESCO

WFEO has been recognized by UNESCO since 1968 as an important non-governmental organization with associate status to provide important advice in relation to engineering and for the implementation of UNESCO programs.

Engineering has always been a means to address UNESCO's priorities, and has become increasingly important in order to progress the UN Sustainable Development Goals.

WFEO and UNESCO work together on key UNESCO priorities including the 2030 Agenda, Africa, Renewable Energy, Gender equality in engineering, Climate Change Education and the Small Island Developing States (SIDS).

On 27 October 2022, at UNESCO Headquarters in Paris, the WFEO-UNESCO Joint Meeting for Member States – *The strategic role of engineering for accelerating the delivery of the 2030 Agenda* presented the UNESCO-WFEO partnership and contributions to the SDGs by working with Member States, especially on engineering capacity building and education, and how it is relevant to the variety of regional and national contexts with regard to building more inclusive and responsible communities.



Poster of the WFEO-UNESCO Joint Meeting for Member States



General introduction by Prof. José Vieira at the WFEO-UNESCO Joint Meeting



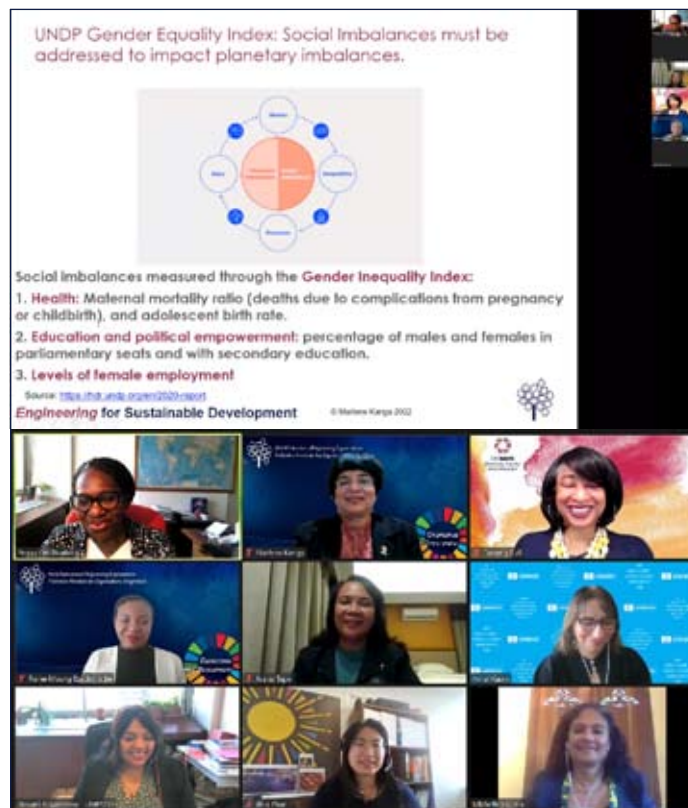
Opening Remarks by Abou Amani, Director, Division of Water Sciences, UNESCO

Agenda of the WFEO-UNESCO/SC Joint Meeting for Member States

2:00 p.m. – 2:05 p.m.	Opening Remarks, by Abou Amani, Director, Division of Water Sciences, UNESCO
Session 1 - UNESCO and WFEO: a long history of partnership for engineering – Moderator Dr Marlene Kanga, Past President, WFEO	
2:05 p.m. – 2:15 p.m.	Welcome address, by Ezra Clark, Director a.i., Division of Science Policy and Basic Science, UNESCO
2:15 p.m. – 2:30 p.m.	General introduction: the role of WFEO and the importance of bringing together the global community of engineers, by Prof. José Vieira, WFEO President
2:30 p.m. – 2:45 p.m.	From WFEO's creation to the World Engineering Day for Sustainable Development: reflecting on UNESCO's and WFEO's shared accomplishments, by Prof. Gong Ke, Immediate Past President, WFEO
Session 2 - Recent Milestones and Key Initiatives - Moderator Prof. José Vieira, WFEO President	
2:45 p.m. – 3:00 p.m.	UNESCO Recommendation on Open Science: a strategic global framework to accelerate the delivery of SDGs, by Ana Pervic, Programme Specialist, Science Technology Innovation Policy, UNESCO
3:00 p.m. – 3:15 p.m.	WFEO's projects in engineering education (mentoring programmes, WFEO Academy), by Dr. Marlene Kanga, WFEO Past President
3:15 p.m. – 3:30 p.m.	Engineering Initiatives in Disaster Risk Management: WFEO's Committee on DRM, World Bank, IRDR, Sendai Framework, by Prof. José Macharé, Chair WFEO Committee on DRM
3:30 p.m. – 3:45 p.m.	Young Engineers Initiatives on SDG13, by Firas Bou Diab, Chair Young Engineers /Future Leaders Committee
3:45 p.m. – 4:00 p.m.	Coffee Break
Session 3 - Mobilizing Engineers for UNESCO Member States' Priorities - Moderator Amal Karry, Chief of Section, Basic Science, Research Innovation and Engineering, UNESCO	
4:00 p.m. – 4:30 p.m.	Roundtable - Engineering as a lever to achieve UNESCO's priorities for Africa and SIDS: WFEO speaker from Mauritius – Raj Prayog Hemaningh, Past President, Institution of Engineers of Mauritius, Yemide Holloway, Chair, WFEO Women in Engineering committee, and Soichiro Tanihara, Chief of Disaster Risk Reduction Unit, UNESCO.
4:30 p.m. – 4:45 p.m.	Q&A session
4:45 p.m. – 5:00 p.m.	Closing by Mustafa Shehu, President-elect, WFEO
5:30 p.m. – 6:30 p.m.	Reception



WFEU Past President Dr Marlene Kanga (left) presenting on the work of WFEU in increasing the number of engineers in Africa at the UNESCO side event at the UN STI Forum, 4 May 2023



UNESCO and WFEU side event at the UN Women CSW66 – Role of Women in STEM in addressing Climate Change, 22 March 2022



WFEU Past President Dr Marlene Kanga moderated the UNESCO Renewable Energy Webinar organized by the UNESCO Capacity Building Section Natural Sciences Sector, 10 July 2023



WFEU and UNESCO side event at the United Nations High Level Political Forum on Sustainable Development, 6 July 2022

WFEO-IEA Collaboration on Engineering Education

The collaboration between the International Engineering Alliance (IEA) and WFEO is mutually beneficial, ensuring that engineering education is delivered to the highest standards around the world and to ensure that engineering educators and students are supported for the best outcomes for sustainable development.

Main Themes covered in the past two years:

Collaboration between WFEO and IEA to:

- Progress the translation of the Graduate Attributes and Professional Competencies Framework into the six official UNESCO languages
- Progress the coordination of the mentoring projects for Mauritius, Kenya and Ghana to achieve IEA signatory status
- Support for the WFEO Academy training portal.

The collaboration between WFEO and IEA progressed strongly with ongoing work on the GAPC, the international engineering benchmark that is the basis for mutual recognition of engineering qualifications and professional engineering credentials across more than 30 nations.

The GAPC was reviewed between November 2019 and March 2021 and unanimously approved by the IEA signatories in June 2021.

The reviewed GAPC reflect contemporary requirements for the engineering workforce and to support the engineering role in building a more sustainable and equitable world.

WFEO subsequently engaged with its partner, the International Centre for Engineering Education, a UNESCO Category II Centre based at Tsinghua University, to translate the GAPC into the six official UNESCO languages including French, Spanish, Arabic, Russian and Chinese.

These translations were completed in January 2022 and reviewed by IEA Signatories. The translations into French, Spanish and Chinese were published in June 2023. Translations into Russian and Arabic are being reviewed by the relevant IEA signatories and will be published later in 2023.

The translations are intended to provide greater clarity and understanding for all IEA signatories and as guidance to enable IEA signatories to work effectively within their communities and within the IEA. It should be noted that the translated GAPC documents do not replace the approved (2021.1) English version of the GAPC which remains the default authority.

WFEO also continued to collaborate with the IEA on other projects in engineering education including the WFEO Academy which has important training webinars delivered by the IEA on procedures for becoming an IEA signatory.










Key achievements

The collaboration between WFEO and the International Engineering Alliance (IEA), progressed strongly with ongoing work on the Graduate Attributes and Professional Competencies Framework, the establishment of mentoring projects for the Institution of Engineers Mauritius and Engineers Board of Kenya and the contribution of IEA training webinars to the WFEO Academy.



International Engineering Alliance published translation of the Graduate Attributes and Professional Competencies Framework

Standing Technical Committees

	Committee on Disaster Risk Management (CDRM)
	Committee on Energy (CE)
	Committee on Engineering Capacity Building (CECB)
	Committee on Engineering and the Environment (CEE)
	Committee on Education in Engineering (CEIE)
	Committee on Engineering for Innovative Technologies (CEIT)
	Committee on Information and Communication (CIC)
	Committee on Water (CW)

Policy Implementation Committees

	Committee on Anti Corruption (CAC)
	Committee on Women in Engineering (WIE)
	Committee on Young Engineers / Future Leaders (YEFL)

Working Groups

	WFEO-UN Relations Committee (WURC)
	Working Group on Infrastructure Report Card (WGIRC)



The committee leadership to create awareness of disaster risk management is crucial for building resilient societies.

By educating individuals and communities about potential hazards, promoting preparedness, and fostering a culture of risk reduction, we empower people to make informed decisions and take proactive measures to mitigate risks, saving lives and protecting communities.

José Macharé,
Chair of CDRM,
Peruvian Engineers Association

Resilience was the main objective. With a focused approach, the Committee successfully published the informative booklet titled *"Engineering Resilience in Disaster Risk Management for Sustainable Development"*. This comprehensive resource provides valuable insights and guidance for stakeholders in mitigating risks and enhancing resilience.

In addition to its publication efforts, the CDRM played a crucial role in organizing impactful events that addressed key areas of disaster risk management. These events included *"Humanitarian Logistics in Disaster Cases: New Technologies for Decision Making"* which explored innovative approaches to humanitarian logistics in emergency situations. *"Strengthening Efforts to Protect and Safeguard the World's Cultural and Natural Heritage"* emphasized the importance of preserving our invaluable cultural and natural assets in the face of disasters.

The Committee also focused on *"Infrastructure Systems for Resilient Societies"* highlighting the challenges and opportunities in ensuring that our infrastructure withstands and recovers from disasters. Discussions on *"Institutional Frameworks and Public Policies for Resilient Societies"* emphasized the significance of effective governance structures and policies to foster resilience.

"Land Use Planning for Resilient Societies" underscored the importance of strategic planning and sustainable land use practices to minimize vulnerabilities. The CDRM recognized the essential role of engineering in risk-informed development through the event *"Engineering: Driver for the Risk-Informed Development"* and showcased real-life cases in Afghanistan and Ukraine under *"Engineering for Humanity"*.

The Committee also explored frameworks and recent developments for disaster resilience and risk intelligence, ensuring that up-to-date strategies and technologies were incorporated into disaster management practices. Additionally, the CDRM addressed the critical issue of wildfire resilience using the Insurance Institute for Business & Home Safety (IBHS) research, aiming to mitigate the devastating impact of wildfires through innovative approaches.

Through their various initiatives, the CDRM made significant contributions to disaster risk management and highlighted the crucial role of engineering, policy frameworks, land use planning, and cultural heritage preservation in building resilient societies for a sustainable future.



SUSTAINABLE DEVELOPMENT GOALS



Emphasizing the integration of engineering practices and innovative technologies, the committee contributes to the development of resilient infrastructure systems. The focus is on enhancing infrastructure resilience, incorporating risk-informed designs, and implementing climate change adaptation measures promoting sustainable industrial development and resilient infrastructure.



The booklet prepared by the Committee contributes to building sustainable cities and communities by promoting resilient infrastructure, sustainable urban planning, and inclusive communities. It provides insights, guidance, and knowledge exchange to support the creation of safe, sustainable, and resilient cities and communities.



CDRM poster for the International Day for Disaster Risk Reduction, 13 October 2022

Key achievements

The Committee published a booklet on Engineering resilience in Disaster Risk Management for Sustainable Development, and organized events on various topics contributing to Sustainable Development Goals related to cities, infrastructure, climate action, institutions, and partnerships.



CDRM and the Peruvian Engineers Association organized a webinar to present their publication on Sustainable Development on 9 June 2022



CDRM and the Peruvian Engineers Association organized the webinar "Frameworks and Recent Developments for Disaster Resilience and Risk Intelligence" on 20 January 2023



CDRM, the Peruvian Engineers Association and UNESCO with the support of the Institution of Civil Engineers UK, organized the webinar "Engineering: Driver for the risk informed development" on 15 September 2022



CDRM, the Peruvian Engineers Association, Engineering New Zealand and the Ghana Institution of Engineers organized the webinar "Infrastructure Systems for Resilient Societies" on 12 July 2022



CDRM, the Peruvian Engineers Association, the Science Council of Japan and the Hong Kong Institution of Engineers organized the webinar "Land use planning for resilient societies" on 9 August 2022



The objective of the Committee on Energy is to be the engineering reference for programs, strategies and policies aiming to move toward sustainable -that is to say clean, resilient and inclusive - energy systems around the world.

As energy is intimately linked to transitions in societies and economies, the Committee's considerations include the consequences of major global events as Covid-19 pandemic, wars or adaptation to climate change.

Jean Eudes Moncomble,
Chair of CE,
Ingénieurs et Scientifiques de France

For the past two years, the Committee on Energy has been meeting once a quarter by videoconference. In addition to these plenary meetings, the Task Groups dedicated to a theme meet regularly.

Since the last report, the number of Task Groups has increased from seven to eight: one Task Group has completed its work, and two others have been created.

The "Climate Change" Task Group, led by Jorge Spitalnik, held intensive discussions to draft a concise text for the 2022 Sharm el-Sheikh Conference on Climate Change, known as COP 27. The text gives the engineering community's point of view, asserting the urgency of implementing mitigation and adaptation policies in the face of climate change.

The two main levers are the quest for greater energy efficiency and the decarbonization of energy systems through the development of renewable energies and nuclear power. Fossil fuels, which will be in use for the time being, must be combined with carbon capture and storage technologies.

The massive use of electricity will be crucial; the resilience of energy systems raises questions about the use of land, water and certain raw materials. Realistic national energy policies must be combined with greater international cooperation, and must take greater account of adaptation to the consequences of climate change.

Energy choices must take account of the Sustainable Development Goals, and be based on a systemic approach that favors mature technologies without neglecting research and innovation efforts. The balance between economic progress, social justice and environmental preservation is a sine qua non for public acceptance of energy policies.

This WFEO "Energy and Climate" statement has been presented on several occasions, including at a side event organized by WFEO at the UNFCCC meetings in Bonn in June 2022.

Five other Task Groups have continued their work and, for the most part, completed it with the drafting of a note.



SUSTAINABLE DEVELOPMENT GOALS



The SDG#7 is obviously closely linked to energy issues and highlights two major challenges: physical and economic access to energy, because billions of people do not have access to satisfactory cooking modes or to electricity; the consequent environmental damage has a negative impact on our planet and its inhabitants.



One of the causes of global warming is the use of fossil fuels, which highlights the major relationship between energy and SDG#13. It is essential to promote decarbonized energy sources (renewable and nuclear) or technologies like carbon capture. But the adaptation of energy systems to the consequences of climate change is more and more a major challenge.

The Task Groups and their chairs are:

- Energy storage (Philip Pascall),
- Energy internet (Sun Hongbin),
- Hydrogen (Massimiliano Capezzali),
- Solar (Carsten Ahrens),
- Electrification (Abubakar Sambo).

These five topics will be presented at the session organized by the Committee on Energy at WEC 2023.

In addition, two new Task Groups have been created: the first, devoted to e-mobility, is chaired by Bakr Bahaj; the second, dealing with energy efficiency, is chaired by Ruomei Li.

A number of other themes were addressed by the Committee: these did not give rise to a report, but rather to presentations. These included: cities and energy, the vulnerability of energy systems, and energy sovereignty. In addition, the link between the SDGs and energy was further explored.

Among the public events at which this work was presented were the following:

- "The engineer, a player in the sustainable city" during the "Engineering the Cities of the Future" event, associated to the WED 2023, 2 March 2023 in Madrid, Spain.
- "Energy and Climate Change: Global Stocktake", Side event, Bonn Climate Change Conference, UNFCCC, 5 June 2023.
- The right use of energy sovereignty, Engineers Europe Annual Business Meeting, 9 June 2023, Cannes, France.
- Keynote speech by the Committee Chair, organization of a session dedicated to energy and participation in the session on climate change at WEC 2023, October 2023.



Jean Eudes Moncomble presenting at the "Engineering the cities of the future" event, during the "Energy and Raw materials, dependency of cities" segment, Madrid, Spain, 3 March 2023



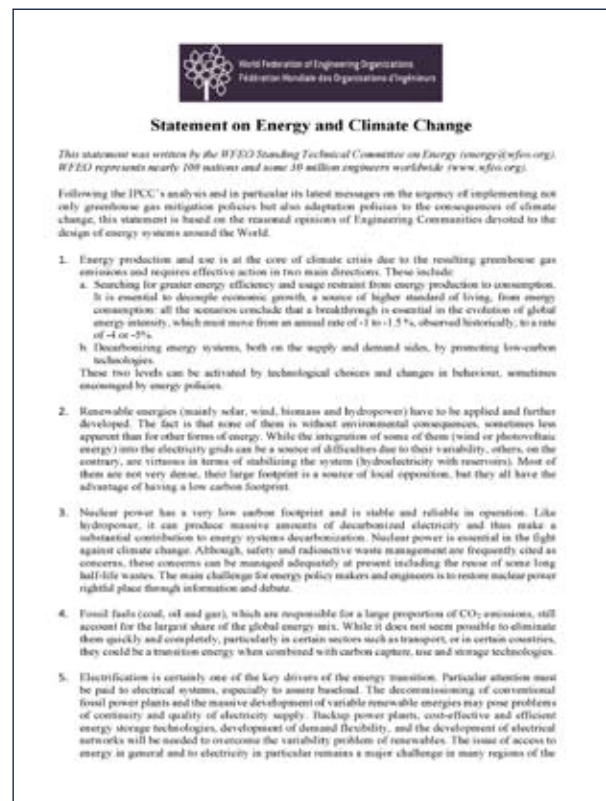
Jean Eudes Moncomble presenting at the "Energy and Climate Change: Global Stocktake – the Engineering Community Perspective" event at the UNFCCC Conference in Bonn, Germany, 5 June 2023

Key achievements

Two key achievements are representative of the work of the Committee on Energy during the last two years: on the one hand the WFEO Statement "Energy and Climate Change" because it offers a concrete contribution from the engineering community to the definition of energy and climate policies, by emphasizing the effectiveness and realism of solutions; and secondly, the broader reflection on the SDGs, because it shows how energy, far from being an obstacle, can be a real asset in moving towards clean, resilient and inclusive energy systems that are acceptable to citizens.



Jean Eudes Moncomble (second right) at the Engineers Europe national members forum meeting, during the round table on SDG#7: Affordable and clean energy, Cannes, France, 8 June 2023



First page of the WFEO Statement on "Energy and Climate Change"



We believe that the impact of capacity building and development is that the outcomes of the committee's work will empower national members of WFEO to strengthen their economies, governments, institutions and individuals through education, training, mentoring, orientation, and the mobilization of resources for development.

Engineering Capacity Building is a lever for economic, social, and sustainable development, and is recognized as a priority in the success of every country, it is the greatest enabler to the achievement of the SDGs.

**Martin Manuhwa, Chair of CECB,
Engineering Council of Zimbabwe**

The following are the themes for 2022-2023 which produced the tangible outcomes below.

- **Engineering Capacity Building activities in developing and developed countries.**
 - Engineering Capacity Building projects and co-operative initiatives. (compendium, Digital platform for continuing professional development, MOOC, e-Books for CECB in conjunction with the "Sibo the Engineer" project).
 - Events (Africa Engineering Week, congresses, and workshops).
 - Engineering Capacity Building publications (webinars, newsletters, magazines).
 - Engineering Capacity Building awareness, training and development of systems.
 - Capacity Building training on water and sanitation infrastructure assets maintenance to local authorities' management and engineering practitioners.

Ethiopian state President officially opens the 2022 UNESCO Africa Engineering Week:

President Sahle-Work Zewde of Ethiopia attended the opening of the 6th African Engineering Conference under the theme "Accelerating sustainable infrastructure development in Africa together" at the Ethiopian Science Museum. In her speech, she said "Africa have a number of priority areas for its development but there is one that clearly stands above the others that is infrastructure. Africa has a vast infrastructure deficit; it is a big constraint in its growth".

The CECB jointly organised the 2022 WFEO-CECB Capacity Building in Engineering Education International Forum, Africa-Asia Pacific Accord, and Zimbabwe Institution of Engineers Biennial Conference, held from 16 to 20 August 2022 in Victoria Falls, Zimbabwe with the theme "Engineering the Future through Quality Engineering Education, Partnerships, Capacity Building and Innovative Infrastructure".



SUSTAINABLE DEVELOPMENT GOALS



To contribute to the achievement of the SDG#16 & SDG#17, the CECB has projects for:

- Preparing a unified model contracts covering all areas of transaction in the fields of engineering and constructions in a portal for ease access of training and Continuing professional development materials.
- Setting unified requirements for qualification and classification of contractors and engineering professionals.
- Setting the rules securing public safety in the works of building and construction.
- Intensify the organization of training courses and seminars in all WFEO members' countries to exchange experiences and to keep pace with the scientific developments and needs of labour market.

The CECB promoted two critical preconference events namely, "Capacity Building training on water and sanitation infrastructure assets maintenance to local authorities management and engineering practitioners in SADC" and "Robotics and Artificial intelligence Workshop and Bootcamp for school children", both supported by SADC, UNESCO and the South African Department of Science and Innovation (DSI). The event featured comprehensive technical and social programmes.

Various workshops and webinars were hosted by the CECB, the most popular ones being:

- On 28 of February 2022, with a topic "Building Better Engineering Capacity: The Role of Disruptive Technologies To Achieve The SDGs",
- WFEO side event at the UN-STI FORUM where our chair presented.
- UNESCO WED 2023 events in Madrid, Spain.

"Sibo the Engineer" takes Capacity Building to another Level

The CECB is part of the "Sibo the Engineer" programme that aims to raise interest in the Science, Technology, Engineering, and Mathematics (STEM) fields among children by creating inclusive and diverse STEM content for young children aged 8–12 years.

This includes a series of STEM children books, real-world activities such as site visits and virtual reality tours of engineering sites, and an animation based on "Sibo the Civil Engineer" book.



WFEF incoming President Mustafa Shehu (centre), President of the Democratic Federal Republic of Ethiopia H.E Sahle-Work Zewde, FAEO Immediate Past President Eng. Carlien Bou-Chedid, Minister of Defense Ethiopia Dr. Abraham Belay and Eng. Martin Manuhwa, WFEF CECB Chair and the Africa Engineering Week Chairman at the official opening of last year's edition of AEW in Addis Ababa, Ethiopia, from 7 to 11 November 2022



CECB participated in the WEEF GEDC Partnerships forum in Cape Town in December 2022



ECZ Chair Eng. Rwodzi, ZIE President Eng. Mavhiya-Bhiza, ZIE past President Eng. Mpala, ZIE CEO Dr. Diarra, Eng. Michelle Sibongile Maphosa, Eng. Kim Bwanya, Ms. Catriona MacArthur and Ms. Melina San Martin - RAENG Programme Managers

Key achievements

- The Africa Engineering Week (AEW) continued to be steered by CECB, the 2022 edition was held in Ethiopia with the theme "Infrastructure Development in Africa" and in South Africa in 2023 with the theme "Celebrating and Growing Engineering Excellence in the African Region". The AEW Declarations were published by WFEF, FAEO and UNESCO.
- Capacity Building in SDGs for WFEF national members via conferences, webinars, and workshops. CECB attended the WEEF & GEDC partnering with AEEA and supported by WCCE, FAEO, WFEF and UNESCO, held in Cape Town, South Africa, from 28 November to 1 December 2022, under the theme: "Adapting to Global Disruption",
- Development of a new edition of the capacity building manual and a Compendium in order to meet engineering capacity needs to deliver the SDGs as well as facilitating trade. CECB participated in three AU and AfCFTA events in Cape Town (SA), Bulawayo (Zimbabwe) and Johannesburg (SA)
- Capacity Building for engineering project planning, design, implementation, and management, in light of the fourth industrial revolution and sustainable development.
- Developing a hub linking online resources to facilitate continuous professional development.



CECB Chair at the Cape Town AU – AfCFTA event on Capacity Building and Trade Facilitation



The work of the Committee on Engineering and the Environment is aimed at enabling WFEO and the global engineering profession to support the achievement of the Sustainable Development Goals, addressing in particular SDG#13.

Davide Stronati,
Chair of CEE,
Institution of Engineers UK

The work of the CEE is aimed at enabling WFEO and the global engineering profession to support the achievement of the *UN Sustainable Development Goals* through the development, application, promotion and communication of:

- Environmentally sustainable and accountable engineering practices and technologies;
- The adaptation of infrastructures to the impacts of a changing climate (SDG#13), decreasing resources and increased populations;
- Assessing and promoting engineering practices to mitigate climate change (SDG#13);
- Coordinating perspectives on the engineering required to deliver SDGs #6, #7, #9 and #11;
- Policy frameworks, sets of guidelines and best practice for practicing engineers on responsible environmental stewardship and sustainable and ethical practices in various areas of engineering practice.

Since 2021, the CEE has continued to work on SDG#13 'Climate action', primarily through its participation in *United Nations Framework Convention on Climate Change (UNFCCC)* events alongside other WFEO Standing Technical Committee representatives.

Members of the CEE attend and present at all *UNFCCC Conference of the Parties (COP)* meetings, and at all intersessional *Bonn Climate Change Conferences* to promote the role of engineers in combating climatic uncertainty.

Most recently, the CEE hosted an event in Bonn on 5 June 2023, in partnership with the *WFEO Standing Technical Committee on Energy*, the *Engineering Institute of Canada (EIC)*, the *Institute of Electrical and Electronics Engineers (IEEE)* and the *European Business Council for Sustainable Energy (e5)*. The event was titled "Energy and Climate Change: Global Stock take – the Engineering Community Perspective".

The Committee is currently preparing for participation to the *COP 28*, through engagement with the *WFEO Committee on Young Engineers/Future Leaders*.



WFEO and the CEE express their deep concern on the matter of climate change, and have summarized their position and commitment to act quickly through a *Declaration on Climate Emergency*, which has now been signed by around 30 professional engineering bodies.

The CEE organizes and participates in webinars. The CEE webinars have been held in 2022 and 2023, with participation from all other WFEO Committees and external organizations such as the *International Coalition for Sustainable Infrastructure (ICSI)* and the *Commonwealth Engineers Council (CEC)*.

The CEE contributes expert knowledge to global reports, most recently to FIDIC's upcoming *State of the World* report; "Navigating the Digital Journey to Reducing Carbon".

The CEE has two working groups, one on *Climate Adaptation* and one on *Climate Mitigation*. The aims of these groups are to advance specialist projects and provide expert advice to external stakeholders. The members of these groups are spokespeople for WFEO on the subject of Climate Change.

Climate Change Adaptation Task Group

This group is led by Darrel Danyluk, an independent advisor to the CEE, and firstly aims to promote the *Code of Practice on Principles of Climate Change Adaptation for Engineers* by engaging with National Members. Each year, Engineers Canada and Polytechnique Montreal have continued their Massive Open On-Line Course "Sustainability in Practice". This course presents the principles explained in the *WFEO Model Code of Practice for Sustainable Development and Environmental Stewardship*.

Climate Change Mitigation Task Group

The *WFEO Climate Change Mitigation Best Practice Project* is led by Prof. Wu of the *China Association for Science and Technology (CAST)*. This project is aimed at mitigating climate change on our planet. The *WFEO Climate Change Mitigation Best Practice Project* will build a database/collaborative platform to collect, organize and store successful engineering projects, plans and ideas from WFEO national members and partners. The project mainly focuses on civil and construction engineering.

Key achievements

Event hosted at COP 27 in Egypt, in partnership with the Institute of Electrical and Electronics Engineers (IEEE) and Engineering Institute of Canada (EIC), titled "The global engineering view: Delivering an equitable, sustainable and low carbon resilient world".

Webinar on Climate Change on 5 December 2022. Speakers were representatives from WFEO Committees actively involved in the achievement of the UN Sustainable Development Goals.



Ignacio González-Castelao, Davide Stronati, David Lapp and Darrel Danyluk at the UNFCCC Bonn Climate Change Conference, after the WFEO side event "Implementing Equitable, Sustainable and Climate Resilient Infrastructure & Local Adaptive Capacity", 11 June 2022



Davide Stronati, Aitazaz A. Farooque, Saifur Rahman, Tariq S Durrani and Jianping Wu at the COP 27 in Sharm El-Sheikh, Egypt, after their side event "The global engineering view: delivering an equitable, sustainable and low carbon resilient world", 10 November 2022



WFEO side event "Increased climate action, building resilience and lowering emissions: Lessons learned" at the COP26 in Glasgow, 6 November 2021



Aitazaz A. Farooque, Davide Stronati and Saifur Rahman at the WFEO side event at the COP 27 in Sharm El-Sheikh, Egypt, 10 November 2022



Davide Stronati and Katie Momber (CEE Secretariat) at the COP26 in Glasgow, 6 November 2021



CEIE focuses on collaboration with different institutions around the world to upgrade the quality of engineering education, to achieve more qualified engineers with appropriate skills to address the critical needs according to UN SDGs.

Zaw Min Aung,
Chair of CEIE,
Myanmar Engineering Council

The Committee on Education in Engineering (CEIE) is hosted by the Myanmar Engineering Council (MEngC). The following are highlights from CEIE activities.

Engineering Education Mentoring projects

A CEIE – International Engineering Alliance (IEA) Working Group chaired by the Chair of the CEIE was established in November 2019. Members of the Working Group are representatives of IEA signatories and WFEO members. Mentoring tracking schedules were closely monitored to meet CEIE's aim to achieve new IEA signatories in the near future.

The following three mentoring projects were organized and conducted online since March 2021.

- The Engineers Board of Kenya (EBK) mentored by the Pakistan Engineering Council (PEC) and the Board of Engineers Malaysia (BEM),
- Institute of Engineers Malaysia (IEM) mentored by National Board of Accreditation, India,
- Ghana Tertiary Education Commission mentored by the China Association for Science and Technology (CAST) and MÜDEK (Association for Evaluation and Accreditation of Engineering Programs).

Completed an initial term of 3 years, concluded in November 2022 per an MOU between WFEO and IEA. Final meeting was on 23 February 2023 with a report to the annual IEA meeting in June 2023. CEIE thanks WFEO Past President Dr Marlene Kanga, UNESCO & IEA for their support and working closely and collaboratively.

The ICEEA Conference

MEngC hosted the Annual International Conference on Engineering Education Accreditation (ICEEA) 2021 and ICEEA 2022 presided by Prof. Dr. Aung Kyaw Myat, President of MEngC, and Prof. Dr Zaw Min Aung, Chair of CEIE.

The conferences catalyzed international academia to share experience and exchange their good practices and insights from their engineering education and accreditation practice perspectives. Over 600 delegates attended each conference.



SUSTAINABLE DEVELOPMENT GOALS



The Committee focus is on SDG#4 – Education through mentoring institutions, organising conferences and publishing journals to improve the quality of engineering education around the world. CEIE emphasizes Quality Education and recognizes that teachers and educators are the keys to achieve all of the SDG targets.



CEIE worked on mentoring of educators in developing countries through international WFEO members' cooperation till the end of 2022. Moreover, CEIE has been working in partnership with many organizations around the world for organizing ICEEA conferences, publishing IDEAS journals and organizing the WEC 2023 education session which is relevant to the SDG#17.

The speakers were from established organizations such as:

- UNESCO,
- WFEO,
- International Engineering Alliance (IEA),
- Federation of Engineering Institutions of Asia and the Pacific (FEIAP),
- Engineers Australia (EA),
- China Association for Science and Technology (CAST),
- Institute of Engineering Education Taiwan (IIEET),
- Board of Engineers Malaysia (BEM),
- National Board of Accreditation (India),
- Pakistan Engineering Council (PEC),
- Institute of Engineers Malaysia (IEM),
- Institute of Engineers Singapore (IES),
- Philippine Technological Council (PTC).

and experts from higher education institutions. All recordings from ICEEA 2021 and ICEEA 2022 are available online, on WFEO website. MEngC hosted ICEEA 2023 on 27 and 28 July 2023.

The IDEAS Journal

As an immediate follow up of ICEEA 2022, CEIE published the IDEAS Journal (issue no. 20) in mid October 2022. There were around 8 papers of both local and international experts on Engineering Education in this issue. We have gathered more papers from experts presented at ICEEA 2022 for upcoming issues of IDEAS Journal – 21, aimed to publish in 2023. Papers from upcoming ICEEA 2023 would go into IDEAS Journal – 22.

WFEO Academy website

A CEIE project was established in March 2022 for online training for engineering education, accreditation bodies and professional engineering institutions.

The project has collaboration from the IEA's signatories, IFEEs, GEDC and WFEO members. The website address is www.wfeoacademy.com.

The WFEO Academy activates UNESCO Open Science Principles to provide vital training and individuals can access the courses at no cost as long as they are a member of a WFEO member, associate or affiliate organization. Two newsletters have been circulated in February 2023 and August 2023.



Annual International Conference on Engineering Education Accreditation ICEEA 2022, held on 16 and 17 July 2022



Observation of meeting with Industry during Mentoring Accreditation visit, Mauritius, June 2023

Key achievements

- Mentoring Programs (2020 - 2022)
- Organization of International Conference on Engineering Education & Accreditation (ICEEA) 2021, 2022 and to organize each per year to continue from ICEEA 2023 onwards
- Publication of IDEAS Journal -20 and to publish two issues per year to come from 2023 onwards
- Establishment WFEO Academy website
- Organization of the Education Session in WEC2023 in Prague



Mentoring Accreditation Visit to Université des Mascareignes, Mauritius, June 2023



Assessor team (Chem Engg.) and observers at University of Mauritius, 28 June 2022



The Committee on Engineering for Innovative Technologies (CEIT), hosted by China Association of Science and Technology since 2015, undertakes to lead the engineering profession worldwide towards promotion and application of engineering for innovative technologies for sustainable development and helping developing countries to close the technology gap which is essential to sustain the UN 2030 Sustainable Development Agenda.

Jing Peng,
Chair of CEIT,
China Association for Science and Technology



SUSTAINABLE DEVELOPMENT GOALS



Innovative technologies are attracting more and more researchers and investment. New sustainable industries are being created and will expand in the near future. The Goal of the Committee is to advance the use of innovative technologies, especially Artificial Intelligence and Big Data, for sustainable development.

For the past two years, CEIT has been dedicated to be a leading international comprehensive platform for engineering professionals from multi-stakeholders to:

- Promote ethical and responsible development and application of Big Data and Artificial Intelligence.
- Identify the next innovative technologies for sustainable development.
- Share the innovative engineering experience in building a sustainable society.
- Enhance national and international collaboration among multi-stakeholders to promote innovative technology engineering to facilitate a sustainable world.

Big Data and Artificial Intelligence

WFEO calls for promoting responsible conduct of Big Data and AI innovation and application in Engineering. CEIT set its focused area on Big Data and AI, carrying out a series of activities on related topics to further promote innovation and application of Big Data and AI.

In celebration of WED 2022, CEIT held a webinar on *Build Back Wiser: Engineering a Sustainable, Inclusive and Green Future with Ethical AI* on 17 March 2022. This webinar convened engineers, policymakers, researchers and educators to discuss the roles and responsibilities of engineers while conducting AI innovations and applications.

In June 2022, CEIT invited Prof. Gong Ke (WFEO's immediate Past President) to attend the Dialogues of the *Institute for Accountability in the Digital Age (I4ADA)* and to discuss with its chair Mr. Frits Bussemaker, who is also member of the *CEIT Working Group on AI & Big Data*, on the responsibilities of engineers, engineering ethics, technology neutrality, and the role of engineers in the digital age.

On 4 May 2023, Mr. Li Pan, Executive Director of the *CEIT Working Group on AI & Big Data*, attended the online workshop on "*New Technology vs Disaster Risk Reduction: Opportunities and Emerging Risks*" organized by the *Integrated Research on Disaster Risk (IRDR)*, and presented "*An Open Cocktail of Engineering, AI, DRR...*".

Digital Transformation

On 15 August 2022, CEIT held the *International Seminar on Digitization and Green Transformation* in Huzhou, China. This seminar aimed to facilitate discussions on the important role of digital technology and digital innovation on Green transformation and low-carbon development, as well as illustrating the successful cases from around the globe to demonstrate good digital solutions to promote green and low-carbon development and achieve UN SDG#13.

The *ASEAN Engineering Digital Transformation Summit* was held on 18 March 2022. It was a virtual summit curated by engineering & technology experts from various industries across the region to gather and discuss topics that are currently at the top of the world's agenda, as well as network with their peers. Dr. Peng Jing, Chair of CEIT, was invited to give a report on *Digital Transformation in Engineering: Its Principles and Application*.

Engineering Innovations

The *2022 China International Fair for Trade in Services (CIFTIS)* was held from 31 August to 5 September in Beijing. During the Fair, CEIT on behalf of WFEO hosted an exhibition and a high-level seminar with the topic "*Engineering Innovations for Green and Low Carbon Development*". Experts and scholars from government, industry, universities and institutes participated in the seminar, exchanged and shared their views on how engineering can help achieve green and low-carbon development from three dimensions: technological revolution, policy support, and industrial development.

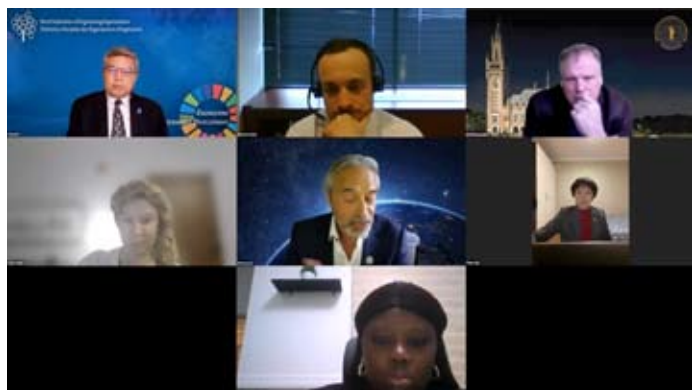
Best Practices of Engineering Innovations for Green and Low carbon development were showcased at the exhibition, aiming to promote the important role of engineering practice in serving green and low-carbon development, display the innovative practice achievements of engineering innovation serving green and low-carbon development, and promote global engineering innovation exchanges.



High-level Seminar on Engineering Innovations for Green and Low Carbon Development, Beijing, China, September 2022



Webinar on Build Back Wiser Engineering a Sustainable, Inclusive and Green Future with Ethical AI, online, March 2022



Panelists at Webinar on Build Back Wiser Engineering a Sustainable, Inclusive and Green Future with Ethical AI, 17 March 2022

Key achievements

The CEIT Working Group on AI & Big Data

In order to further promote the innovation of Big Data and Artificial Intelligence and the development of the industry, and to promote the application of Big Data and AI in creating a better life for humanity, CEIT set up the Working Group on AI & Big Data with experts from industry, academia and government.

The CEIT Working Group on AI & Big Data continually carried out activities in CEIT's focused area, including organising the webinar on AI Ethics, the Dialogues of I4ADA on Accountability in digital age, attending the IRDR workshop on "New Technology vs Disaster Risk Reduction: Opportunities and Emerging Risks". The working group also helped with the promotion of the World Engineering Day on Douyin Platform with the topic "Looking for Engineers", played approximately 520 million times.



Exhibition on Engineering Innovations for Green and Low Carbon Development, Beijing, China, September 2022



The International Seminar on Digitization and Green Transformation, Huzhou, China, August 2022



CIC is dedicated to the field of 'Information and Communication' and has the responsibility to leverage the Information and Communication Technology Paradigm. CIC fulfills the tasks allocated by WFEO in accordance with the United Nation's Sustainable Development Goals. The CIC is presently hosted by The Institution of Engineers (India).

**S.S. Rathore,
Chair of CIC,
Institution of Engineers India**

The CIC has planned that both the external and internal objectives as set out in the WFEO Strategic Plan (2019-2023) would be addressed through the Committee's objectives.

Essentially, the work of the CIC is to be actively involved in propagating and assisting in the achievement of the SDGs. The particular SDGs relevant in the context of CIC are SDG #9 and SDG #11.

The pandemic had caused CIC to reorient plans and planned to hold programs virtually until the situation improved. The advantage of using digital platforms for conducting various events is the ability to reach out to a large number of engineers spanning geographic boundaries and this was being given due impetus. The CIC strives to spread awareness in different geographies on the significance of technological applications in developing sustainable cities and habitats. Also, the significance of innovations, especially in the context of developing countries in addressing local challenges, was highlighted.

CIC Technical Sessions

A hybrid CIC Session was organized on 17 December 2022, concurrently with the 37th Indian Engineering Congress at Chennai. The session commenced with a brief address from Prof. Dr. José Vieira, WFEO President, followed by a keynote address by Mr. S.S. Rathore, Institution of Engineers (India) Past President, and Chair, CIC on the topic "SDG 9 – Industry, Innovation and Infrastructure: Ahmedabad Metro Rail Project".

A keynote Address in the CIC parallel session on "Big Data in Support of Digital Economy" was given by Mr. Mahesh Mahajan, Chief of Product, Mindtree NXT. Immediate WFEO Past President Prof Gong Ke was the co-chair of the session.

On the World Telecommunication and Information Society Day 2022, the Qatar Overseas Chapter of the Institution of Engineers (India) hosted a virtual webinar on 17 May 2022 under the aegis of the WFEO-CIC. Mr. S S Rathore, Past President, IEI and Chairman, WFEO-CIC was one of the Guest of Honours on the occasion and delivered a lecture highlighting the activities of the WFEO-CIC.

Webinars

A webinar on the theme "Green Technologies: Precursor for transition to Smart Sustainable Cities" was conducted on 22 February 2022 under the aegis of CIC in association with the Institution of Engineers, Malaysia (IEM) involving eminent panelists from both organizations.



SUSTAINABLE DEVELOPMENT GOALS



The CIC session on SDG#9: Ahmedabad Metro Rail Project" and keynote address on "Big Data in Support of Digital Economy" organized in the 37th Indian Technology Congress held in December 2022. A Monograph titled "Ethics in Artificial Intelligence: Bias, Fairness and Beyond" is expected to be published by Springer in November 2023.



The Webinars organized by the CIC had speakers highlighting the theme "Green Technologies: Precursor for transition to Smart Sustainable Cities".

- The CIC Session on "Smart Technologies for Smart Cities", conducted in the 36th Indian Engineering Congress in December 2021.
- The International conference planned in association with Quality Council of India on SDG#11.

An hybrid CIC Session on "Smart Technologies for Smart Cities" was conducted on 27 December 2021 at New Delhi concurrently with the 36th Indian Engineering Congress. The Session comprised of virtual speeches from Prof Gong Ke, President, WFEO and Dr. Marlene Kanga, Past President, WFEO

The Webinars were widely attended by engineering students, practitioners and academia.

Planned Activities

Proposed publications include a monograph on Ethics in Artificial Intelligence: "Bias, Fairness and Beyond" expected to be published by Springer in August 2023.

One virtual seminar on AI is scheduled in the 1st week of October 2023.



Keynote Address in the CIC session at the 37th Indian Engineering Congress, Chennai, India, 17 December 2022



Panelists of the CIC webinar Green Technologies Precursor for transition to Smart Sustainable Cities, 22 February 2022



The World Telecommunication and Information Society Day 2022 of the Qatar Overseas Chapter of The Institution of Engineers India held online, 17 May 2022



Poster of the 37th Indian Engineering Congress, Chennai, India, 16 to 28 December 2022

“ Water is a universal good indispensable for life that affects many sectors, giving this resource a social, environmental, and economic dimension. It is a good that knows no borders and, also, conveys many of the impacts of climate change to society.

The WFEO Water Committee brings together all engineering disciplines to have a stronger voice on the water scene, to become more relevant in global water decisions and to remind society and politicians of the importance of engineering contribution to achieving the goals and targets of SDG#6, which is interlinked with the entire UN's Agenda 2030.

Ignacio González-Castelao Martínez-Peñuela,
Chair of CW,
Instituto de la Ingeniería de España

Once the activities of the Working Group on Water were concluded, the WFEO General Assembly, held in Costa Rica in March 2022, approved the transformation of this Working Group into a Standing Technical Committee on Water (CW), hosted by the *Instituto de la Ingeniería de España* (Spain) and the *Ordem dos Engenheiros of Portugal* (OEP).

Following the approval of the establishment of the CW, WFEO member organizations were asked to designate representatives to this Committee. The CW has currently 14 representatives from WFEO national member organizations, 3 representatives of WFEO international members, 1 representative of a WFEO associate and 2 WFEO committee representatives. Also, there are 5 delegates appointed by the CW to serve on WFEO Standing Technical Committees.

Since its foundation, the CW has organized and/or participated in different forums highlighting the role of engineering in achieving the Sustainable Development Goals, especially SDG#6 "Clean water and sanitation", which is interlinked with the entire 2030 Agenda.

The following are the main activities carried out or participated in by the CW:

- *Ibero-American Congress of Civil Engineering 2022*. 19-22 May, Puerto Vallarta (Mexico).
- *UNFCCC Bonn Climate Change Conference*. Side event organized by the *WFEO Committee for Engineering and the Environment*, and *The Engineering Institute of Canada*. 6-16 June 2022. Bonn, Germany.
- *2nd International Congress of Engineering*. 23 September 2022. Coimbra, Portugal.
- *47th International Symposium of the CIB Commission W062 "Water supply and drainage in buildings"*. 23-26 October 2022, Chinese Taipei.
- *WFEO virtual webinar on Climate Change*. 10 November 2022.



The role of engineers is key to achieving the Agenda 2030, but maybe more visible in SDG#6 and SDG#13. To address the goals and targets of these SDGs, Engineers have expanded their thinking beyond strictly technical solutions, focusing more on environmental and social aspects, such as, gender-sensitive planning, human-rights-based approach, "do no significant harm" principle, and leaving-no-one-behind, among others.

Facing present and future water-related challenges (those related to population growth and climate change, mainly), engineers' capacity today goes far beyond traditional solutions providing the best response (green, blue or/and grey) to each specific case. With particular attention to sustainability, circularity, carbon neutrality and resilience of water sources. This contributes to a sustainable, intelligent, and inclusive development.

- "Engineering the cities of the future" (WED 2023). 2-4 March 2023. Madrid, Spain.
- Side Event organized by WFEO and ISC at the UN 2023 Water Conference: "The Role of the S&T Community on the Pillars for Accelerating Progress and Transformative Actions on SDG#6". 23 March 2023. UN Headquarters New York, USA.
- *University Marathon Relay New York Water Week*. 20-26 March 2023. New York, USA.
- WFEO virtual side event at UN 2023 STI Forum: "Engineering solutions for water adaptation". 4 May 2023.
- WFEO Water Committee session on "SDG Goals: Water Challenges" at the 7th World Engineers Convention WEC 2023. 11-13 October 2023. Prague, Czech Republic.

Also, CW is participating in UN-Water meetings in order to be engaged with the global movement supporting SDG#6. The main issue is now the SDG#6 Accelerating Framework and the "Water Action Agenda".

WFEO has become "Partner" of UN-Water in August 2023.

CW has been selected as an expert to review the "2023 Global Sustainable Development Report" (International Science Council - ISC- and UN Department of Economic and Social Affairs - UN DESA). In September 2022, the CW sent the review of the document to ISC-UN DESA.

CW has also made its voluntary contribution to:

- "Chapter 7: Transboundary Cooperation" of the United Nations World Water Development Report (UNWWDR) 2024 "Leveraging Water for Peace and Prosperity".
- "Chapter on SDG#6 – Clean Water and Sanitation" of the "United in Science report", (document coordinated by the World Meteorological Organization).



Participation of Ignacio González-Castelao, Chair of WFEO Water Committee, at the "Ibero-American Congress of Civil Engineering 2022", 19 May 2022

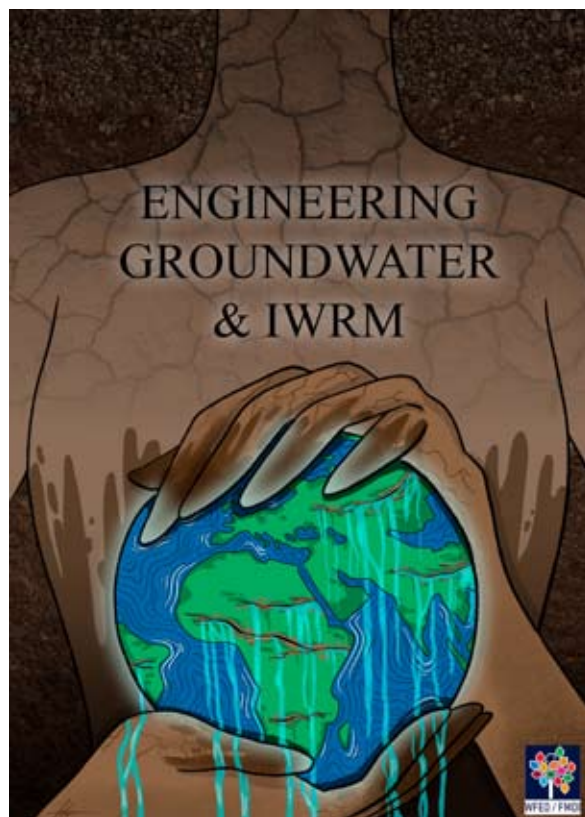


WFEO delegation at the UN Water Conference 2023. Ignacio González-Castelao (Chair WFEO Water Committee), Prof. José Vieira (WFEO President), William Kelly, and K.N. Gunalan (Chair of WFEO-UN Relations Committee), 23 March 2023

Key achievements

In March 2023, the world came together at the UN Water Conference 2023, convened by the UN General Assembly. The WFEO President, Prof. José Vieira, made a statement at the UN 2023 Water Conference plenary session, on 23 March.

The outcome of this conference was the "Water Action Agenda", which has been materialized through various commitments, pledges, and actions. CW has drafted the document "Engineering, Groundwater, and Integrated Water Resources Management", which is WFEO's first commitment to the "Water Action Agenda".



CW drafted the document "Engineering, Groundwater, and Integrated Water Resources Management"



Participation of Prof. Armando Silva Afonso, Vice-Chair of WFEO Water Committee, at the "2nd International Congress of Engineering 2022", 23 September 2022



The WIE is a Policy Implementation Committee of the WFEO. The Committee works collaboratively to empower, inspire, encourage, and share the achievements of women in engineering and technology around the world, and has given women engineers across different continents an opportunity for knowledge sharing across all disciplines of engineering thereby positioning the women engineers for better professional delivery.

**Yetunde Holloway,
Chair of WIE,
Nigerian Society of Engineers**

For the past two years, the Committee of Women in Engineering has worked around their overarching themes as follows:

- *Theme 1: Engineering Workforce Capacity building- to increase diversity and inclusivity in the future skills pipeline*
- *Theme 2: Engineering Workforce Capacity building- to encourage female engineering retention and leadership*
- *Theme 3: Collection of Engineering Strategic Indicators*
- *Theme 4: Working in Partnership to address the Sustainable Development Goals, with a particular emphasis on Goal 5-Gender Equality, and its relationship to the other Goals in particular SDG#13 and #17*

The activities covered under these themes are as follows:

WIE in collaboration with the *International Science Council (ISC)*, the *International Network of Women Engineers and Scientists (INWES)* and the *United Nations University* organized a webinar on *Intersectionality of Gender, Climate Change and Engineering*. The webinar is in series, the first part of the webinar was held virtually on 17 September, 2021 and the second part was held on 15 October 2021.

WIE in collaboration with the *Institution of Engineering and Technology (IET)*, the *Association of Professional Women Engineers of Nigeria (APWEN)*, the *Federation of African Engineering Organizations (FAEO)* and the *International Network for Women Engineers and Scientists (INWES)* hosted the first webinar of the *Women Leadership Series: "Engineering Workforce Capacity Building – to increase diversity and inclusivity in the future skills pipeline"* on 24 September 2021.

WIE was represented in a panel session of the *Green Zone of COP26*, where they are taking part in the debate entitled "Using the SDGs to tackle the Climate Emergency: Here's how!"

WIE organized the second webinar series on *theme 1-Female Retention and leadership in Engineering* on 26 November 2021.



SUSTAINABLE DEVELOPMENT GOALS



In relation with the World Engineering Day 2022 theme, WIE organized a 2 day event on the theme *Resilient Women, Resilient World*. The 2-day event which was held virtually in July 2022 addressed issues of Climate Change as it relates to women.

In collaboration with *FAEO-Women in Engineering*, WIE hosted a panel session on the theme: *Innovative Ways of adopting and mitigating Climate Change in Africa*. The webinar which took place on 13 October 2022 focused on the effect of Climate change in Africa with - success stories of mitigating perennial flooding across the continent during rainy seasons.

In celebrating the *International Women in Engineering Day 2022*, WIE hosted winners of the 2019 and 2020 *WFEO-GREE Awards* in a webinar themed "*Leadership for Innovation in Engineering*" in line with the *INWED 2022* theme: "*Inventors & Innovators*". The programme which held virtually on 22 July 2022 was a huge success with about 100 participants. The webinar was organized as one of the activities towards the achievement of the WIE strategic theme 2.

The Committee hosted a webinar on the theme *Gender Perspectives on Achieving SDG#5*. To celebrate the *International Day of Men*. The webinar which took place on 19 November, 2022, highlighted different approaches/views towards achieving gender equality, which is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world.

In collaboration with *FAEO-Women in Engineering*, the WIE hosted a panel session on the theme: *Innovative Ways of adopting and mitigating Climate Change in Africa*. The webinar which took place on 13 October 2022 focused on the effect of Climate change in Africa- Success stories of mitigating perennial flooding across the continent during raining seasons.

WIE, as part of their "*Strategic Indicators*" Action Theme has developed, in collaboration with *Engineers Canada*, a *Gender Equality Scorecard* which is being used to encourage *Professional Engineering Institutions (PEIs)* and engineering regulators to collect and report on metrics related to professionally registered women engineers in their institutions or licensed by their engineering regulators.

Key achievements

WIE has published 4 newsletters from 2021-2022. Arrangements in a place for the first publication in 2023. The newsletters are available on the WFEW website.

The WIE Committee sent a statement to mark the celebration of *World Engineering Day (WED) 2022*. In celebration of WED 2023, the FAEO-Women in Engineering Committee in collaboration with WFEW-WIE organized a "W(I)E Shout Out". The exercise allowed inclusive participation and enables WIE to show-off its huge diversity of female engineers from all over the world, which is in line with basic goals of the committee.

UN CSW67 Virtual Parallel Session: "The Challenges and Opportunities of Achieving Gender Equality- Africa speaks". The sixty-seventh session of the Commission on the Status of Women took place from 6 to 17 March 2023. The session focused on the priority theme, 'Innovation and Technological Change, and Education in the Digital Age for Achieving Gender Equality and the Empowerment of All Women and Girls. For the first time, FAEO-WIE in collaboration with WFEW WIE participated in the high profile event with a virtual parallel webinar on 8th of March. It was an interactive session with a panel of six eminent speakers and a number of participants from the various regions of Africa. Kindly click here to watch the recorded session of the event.

The Committee in collaboration with FAEO- Women in Engineering Committee organized the second edition of the STEAM Virtual Art Competition on 13 October 2022 to commemorate International Women in Engineering Day INWED 2022. This edition of the competition targeted two age groups 6-8 and 9-11 years across Africa and it was in line with the INWED theme for 2022 -Inventors and Innovators # Imagine the future. Winners were beautifully awarded.

Speakers at the WIE webinar on "Leadership for Innovation in Engineering", 22 July 2022

Banner of the WIE side event at the CSW 66, 21 March 2022

A section of Speakers at Webinar on Gender Perspectives on Achieving SDG#5, 19 November 2022

“

The YEFL committee is a dedicated group of young engineers working to establish YEFL as the leading global authority representing the voices of young professionals in engineering. By highlighting the important role of young engineers in achieving the United Nations' Sustainable Development Goals, YEFL aims to promote their recognition and success.

**Firas N Bou Diab,
Chair of YEFL,
Federation of Lebanese Engineers**

YEFL Webinar Series: "Engineering the Future"

The series has covered diverse topics addressing pressing issues and providing valuable insights. Webinars conducted include "Lessons from Turkey-Syria Earthquake & Rebuilding for A Resilient Future" in June 2023, "Psychological Safety in the Workplace" in collaboration with Young Engineers Australia (YEA) of Engineers Australia (EA) in October 2022, "Fulfilling Offshore Wind Potential" in September 2022, and "Ethics in Engineering" in collaboration with the South African Institute of Civil Engineering (SAICE), Global Infrastructure Anti-Corruption Centre (GIACC), FIDIC Future Leaders Council, and WFEQ Committee on Anti-Corruption (CAC) in November 2021.

YEFL in World Engineering Day (WED)

WED Hackathon cultivated a spirit of collaboration among engineering students and simulated the dynamics of a real-world project. YEFL members actively engaged in the Hackathon working group, attending preparatory meetings and playing a vital part in the preliminary evaluation phase. YEFL Chair served as one of the Finalist Judges.

YEFL organized a webinar titled "Smart Sustainable Communities And Frontier Technologies" on 24 February 2023, in collaboration with the International Federation of Consulting Engineers (FIDIC), the International Association of Public Transport (UITP) and the Student Platform for Engineering Education Development (SPEED).

On 15 February 2022, YEFL organized a panel discussion titled "An Inspiring and Collective Young Engineering Vision". The panel featured young leaders representing diverse geographical regions, who were nominated by FIDIC Future Leaders Council, European Young Engineers, and SPEED.

Engineering the Cities of the Future Conference

On 2 March 2023, YEFL Chair participated in a roundtable discussion titled "Mobility and Communications: Challenges of a Sustainable Urban Environment" at the "Engineering the Cities of the Future" conference in Madrid. The Chair shared insights and perspectives on the topic, emphasizing the importance of integrating innovative engineering solutions to ensure a safe and efficient transportation system.



Young engineers have a crucial role to play in climate action by designing sustainable and energy-efficient systems, advocating for sustainable policies, and raising awareness among their peers and communities. Together, they can create a sustainable and resilient future for generations to come.



Young Engineers have the power to advocate for sustainable urban development, promote community engagement, and champion social equity in Cities. By embracing the principles of SDG#11, Young Engineers can create urban spaces that prioritize accessibility, green spaces, and resilient infrastructure, fostering vibrant communities for all.

WFEQ-UNESCO Joint Meeting for Member States – The strategic role of engineering for accelerating the delivery of the 2030 Agenda

The event held at UNESCO in Paris on 27 October 2022 showcased the collaborative efforts between UNESCO and WFEQ in addressing SDGs through capacity building and education. Firas Bou Diab delivered a presentation highlighting YEFL Committee's dedication to involving young engineers in driving sustainable development.

7th Annual Multi-stakeholder Forum on Science Technology and Innovation for the SDGs - Side Event

"Preparing the Future Engineering Workforce to Achieve the SDGs Through Multi-Stakeholder Engagement" - UN STI Forum

On 6 May 2022, YEFL, along with the International Telecommunication Union (ITU), Engineering for Change (E4C) and other partners, presented the results of programs designed to equip young engineers with the skills necessary for sustainable development. YEFL members Pulkit Kanotra and Michaela Chan shared strategies implemented by YEFL to mitigate the impact of Climate change.

UNDRR Risk Reduction Hub event “Accelerating Implementation of DRR and Resilience in Infrastructure”

The Risk Reduction Hub held on 17 May 2023 served as a space to discuss key themes for advancing risk reduction across regions. YEFL contributed with a statement from youth on supporting governments to integrate resilience as a core value in infrastructure planning and implementation.

Reflections from COP27

YEFL WG on SDG#13 led the official COP27 side event “Utilising expertise of the youth to bridge the science-policy divide and improve access to finance” at the UNFCCC COP27 Conference. This event was held in partnership with several international organizations. YEFL member Kirils Holstovs participated in the panel discussion advocating for an enhanced role for young people in Climate Policy.

Capacity Building Sessions

YEFL WG on SDG#13 organized capacity building sessions on the En-ROADS Climate Solutions Simulator and UNFCCC COP Simulator, providing practical webinars to help youth understand COP, especially for first-time attendees.

100th Anniversary Conference of the Geological Society of China

During the conference held on 29 November 2022, YEFL Chair emphasized on GSC's global influence in Earth science communication, its role in providing scientific information and its support for policy-making.

Key achievements

CLIMATE DECLARATION - COP26 Joint Statement of International Youth Organizations, by:

- WFEU Young Engineers / Future Leaders Committee,
- Major Group for Children and Youth (MGCY)
- Science-Policy Interface Platform
- Members of the UN Secretary General's Youth Advisory Group on Climate Change
- YOUNGO – UNFCCC
- Global Youth Climate Network
- UN Youth4Climate Pre-COP26 delegate, Latvia

Singapore Sea Level Rise Design Competition

YEFL WG on SDG#13 achieved victory in the Singapore Sea Level Rise Design Competition, organized by *Water Science Policy (WSP)* and the *Institute for Environment and Sustainability (IES)* at the renowned Lee Kuan Yew School of Public Policy, National University of Singapore. Their exceptional submission was featured on the WSP website.

2022 Global Roundtable for Young Scientist Scholar

In a keynote address on 11 November 2022, YEFL Chair emphasized WFEU's commitment to promoting sustainability through Engineering. It resonated as an inspirational call to action, motivating individuals to contribute and drive change towards sustainability.



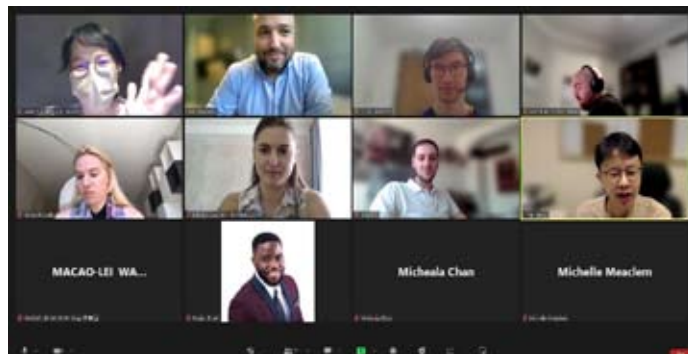
Committee Members unite on Zoom



Firas Bou Diab at the WFEU-UNESCO Joint Meeting for Member States, 27 October 2022



Speakers of the WFEU-YEFL Side event at COP27, 10 November 2022



Zooming in for a productive Committee session

“ The WFEO UN Relations Committee has achieved greater visibility for WFEO and the work of its Standing Committee at the UN. We hope to continue to build on these and continue to communicate to the UN member states that engineering is crucial to advancing the UN Sustainable Development Goals.

K. N. Gunalan,
Chair of WURC,
American Society of Civil Engineers

The WFEO UN Relations Committee (WURC) collaborates with the *International Science Council (ISC)* as co-Chairs of the *Scientific and Technological Community Major Group* and has actively engaged with the other 20 *Major Groups and Other Stakeholders (MGoS)* at the UN. As the co-Chair for Advocacy Task Group of the MGoS, the Chair, Dr K. N. Gunalan and Dr. William Kelly engaged in meetings leading up to the UN Science Technology and Innovation (STI) Forum and High Level Political Forum (HLPF), contributing to both oral and written interventions.

The Committee provided verbal and written consultation on the 2022 Ministerial Declaration and coordinated interventions during the 2022 *STI Forum Thematic Sessions* by Ms. Reine Essobmadge, Cameroon, Ms. Juana Tapel, Philippines, from *WFEO Committee on Women in Engineering* and former WFEO President Dr. Marlene Kanga. The Chair also intervened during Thematic Session 6 and organized a side event during the 2022 STI Forum titled “*Engineering Resilience Through Disaster Risk Management*” in coordination with the *WFEO Committee on Disaster Risk Management*. A side event was organized during the 2022 HLPF titled “*Utilizing Open Science Principles for Quality Engineering Education to Advance UN SDGs*” in coordination with the *WFEO Committee on Education in Engineering*.

The Chair and Dr. William Kelly participated in the Small and Medium Enterprises (SME) Group meeting organized by the *UN Department of Economic and Social Affairs (DESA)* at UN Headquarters in January 2023 and participated in Infrastructure, Water, Sustainable Cities, Capacity Building discussions.

WFEO engaged at the *UN Water Conference* at a side event coordinated with the *WFEO Committee on Water*. President Jose Vieira delivered a speech from the podium at the General Assembly hall.

At the recommendation of the Chair, UN DESA invited WFEO to chair a Thematic Session during Africa Day. Dr. Marlene Kanga chaired the session and participated in the discussions leading up to the STI Forum in 2023. At the request of WFEO, UN DESA convened a session on the eve of the 2023 STI Forum which was coordinated with ISC by Dr. William Kelly. This session is to become an ongoing annual event during the STI Forum giving WFEO the high level visibility at the UN and was focussed on engineering solutions for sustainable development. The formal sessions were recorded and are available for viewing on UNWebTV and WFEO website.

SUSTAINABLE DEVELOPMENT GOALS



President Jose Vieira, Past Presidents Gong Ke and Marlene Kanga along with William Kelly, Ignacio Gonzalez-Castelao Martinez, K. N. Gunalan highlighted WFEO's engagement and contributions to SDG's #4, #5, #6, #7, #13, #16 and #17 at various UN events.

Again at the request of WFEO, the *Global Solutions Summit* was organized on the final day of the 2023 *STI Forum* in collaboration with WFEO and Global Solutions with a focus on innovations and solutions for sustainable development week and Dr. Marlene Kanga delivered the opening remarks for the session. This session was recorded and is available on UNWebTV and WFEO website.

An important outcome of the *Global Solutions Summit* is the Africa Coalition which includes the 54 Member States of the Africa Union. WFEO has been invited to become a strategic partner of the Coalition with the opportunity to expand current WFEO Committee projects in Africa including those focusing on education and capacity building, natural disaster risk management, action on climate change and sustainable solutions for water and energy.

Key achievements

WFEO has increased its access and visibility at the UN and has raised awareness and understanding of the key role of engineers in implementation of the UN Sustainable Development Goals.

"E" is now being used with "STI & E"! We now have a confirmed event during the annual Science Technology and Innovation STI Forum at the UN Headquarters in New York, to showcase WFEO successes and engineering experts to work with UN to meet the 2030 agenda.



Speakers at the WFEO and UNESCO side event at the United Nations High Level Political Forum on Sustainable Development, 6 July 2022



Dr Tom Soo, Executive Director of the International Association for Hydro-Environment Engineering and Research (IAHR), Eng. Ignacio González-Castelao, Chair WFEO Committee on Water, Prof. José Vieira, WFEO President, Dr K N Gunalan, Chair WFEO UN Relations Committee and Dr Gregory De Costa, Academic Specialist at Open Polytechnic of New Zealand at the WFEO-ISC Side-Event at UN 2023 Water Conference, 23 March 2023



Dr. KN Gunalan's intervention at the 7th STI Forum, during the thematic Session 6 "Delivering on SDGs: Next Steps for the TFM and its partners", 6 May 2022



Dr K.N. Gunalan at the UN SDG Summit, 18 September 2023



It's high time for the WFEO-CAC and its partners to enhance collaboration by engaging with other national stakeholders globally in dissemination of available materials by educating the society through Universities and practitioners in the infrastructure sector about corruption detection, prevention, assessment of damages and risks in order to materially eradicate it.

**Papias Kazawadi,
Chair of CAC,
Institution of Engineers Rwanda**

The theme for the International Anti-Corruption Day 2022 focused on the *United Nations Convention Against Corruption (UNCAC)* at 20 and was "Uniting the World Against Corruption". The Engineering Community in WFEO under CAC marked this Day with "Anti-Corruption Awareness campaigns, Education and training of Stakeholders".

2023 started with increased momentum through CAC under the theme *Anti-Corruption Publications (webinars, newsletters, magazines)* and culminating with the *International Anti-Corruption Day (IACD) 2023*.

Today, it is globally perceived as an impediment to resilient infrastructure development whereby without appropriate and proper measures it will never be eradicated or even be reduced. It's reliably known as the abuse of entrusted power for personal gains. Infrastructure on the other hand is the integrated set of social, physical, and ecological components that provide services to meet human needs.

The infrastructure lifecycle is the series of stages within infrastructure-related projects, from conception, planning to design, execution, maintenance, and replacement or decommissioning. This includes the management of performance, risks, and costs throughout the process.

Globally the nature, size, and complexity of infrastructure projects determine the extent of monopoly and discretion resulting from different interests and capacities of players in terms of finance, knowledge, skills, and experiences. This by default results in monopoly and discretion and when combined together become fertile grounds for nourishing corruption, particularly in the absence of a proper and efficient accountability systems in the society.

Corruption occurs in any phase of the infrastructure projects ranging from conception, planning to design, procurement, execution, operation, and maintenance plus disposal. It is also seen and impacted through infrastructures developed without meeting among others value-for-money criteria, proper quality and fit-for-purpose that are usually benchmarked on different national priorities, and outside the set project duration.

Its liabilities are severely felt in several failing structures in Africa and Asia Pacific, where defective infrastructures were built at overpriced costs hence slowing public investments, poor services delivery, and undermining the proper functioning of the society among others.



SUSTAINABLE DEVELOPMENT GOALS



CAC believes that diligently educating the society through professional practitioners and students on corruption, its liabilities, with how to detect and prevent it will materially reduce its curse.

Under WFEO-GIACC (*Global Infrastructure Anti-Corruption Centre Alliance*), 15 *Projects Anti-Corruption System (PACS)* Standards were published in November 2021 while a *University Anti-Corruption Course* was also published in April 2023 as measures to continue detecting and preventing corruption in Infrastructure Projects globally.

Key achievements

Since 2019, when I became the Chair of the WFEO Anti-Corruption Committee, we have consistently been able to carry out advocacy programs and activities aimed at raising awareness of anti-corruption measures within the engineering fraternity and the community at large through webinars and conferences.

We also issued statements on every 9th December that are aligned to the International Anti-Corruption themes endorsed by the United Nations.



**World Federation of Engineering Organizations
Fédération Mondiale des Organisations d'Ingénieurs
Policy Implementation Committee on Anti Corruption**



CHAIRMAN'S STATEMENT ON

9th DECEMBER 2022, THE INTERNATIONAL ANTI-CORRUPTION DAY

Esteemed members and the community at large,
Today is International Anti-Corruption Day (IACD) (<https://www.uncac.org/en/observances/anti-corruption-day/>). The 2022 IACD seeks to highlight the crucial link between anti-corruption and peace, security, and development and marks the start of efforts to mark the twentieth anniversary of the UN Convention against Corruption (UNCAC). The theme of this year focuses on IACD at 20 and is "Uniting the World Against Corruption". The Engineering Community in WFEO under the Committee for Anti-corruption (CAC) is marking this Day with "Anti-Corruption Awareness campaigns, Education and training of Stakeholders". We acknowledge the unprecedented impacts on economic and societal systems brought by the global effects of COVID-19 pandemic and the war in Ukraine. This has tremendously affected the pace, scope and mode of our Anti-Corruption Strategy roll out at national, regional and continental levels.

The Committee encourages all professional engineering institutions to implement the anti-corruption awareness advocacy and prevention mandates at both institutional and community levels. This can be achieved through activities to include individual networking meetings for knowledge sharing by either physical or virtual or both conferences, seminars and workshops. Through this approach our members have continued to participate in the ISO activities particularly the WG2 on revision of ISO 37001 related to anti-bribery management systems and standards on Brazil and I take this opportunity to congratulate them all.

Excerpt from the Chairman's Statement on the 2022 World Anti-Corruption Day, 9 December 2022

Updates on the WFEO Model Code of Ethics

1. Background

The current version of the WFEO Model Code of Ethics was released in 2011, and consists of three parts, the preamble, the code and the guidelines. This model code has been promoted to WFEO member organizations to mobilize engineers across the world to conduct their engineering practices in an ethical and responsible manner.

However, in the past decade, emerging innovative technologies such as digital technology and biotechnology have been posing many new challenges to engineering ethics, and the UN Sustainable Development Agenda has set higher requirements on engineering ethics.

In viewing of the importance to update the Model Code of Ethics to guide member organizations and global engineering society to behave more responsibly and ethically in the wave of *Fourth Industrial Revolution* and align with the requirements of achieving the *UN Sustainable Development Goals (SDGs)*, the Executive Board decided to set up an AdHoc task group, consisting of members from different continents and chaired by immediate past president Gong Ke, to revise the WFEO Model Code of Ethics.

2. Revision Progress

The task group was established in November 2022, and the revision was carried out in following phases:

Phase 1: Based on previous discussions, especially the webinar organized by WFEO CEIT on the WFEO Model Code of Ethics, a Zero draft was prepared and shared with group members as well as invited international experts. About 40 specific suggestions were received and further discussed within the task group.

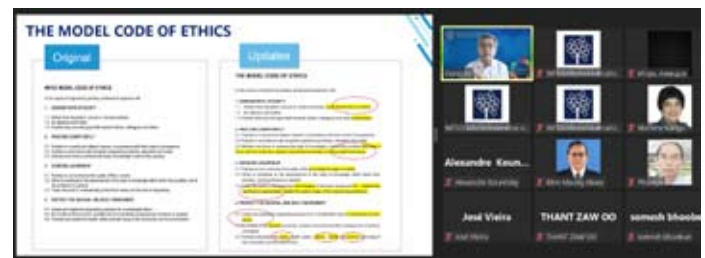
After the discussion, the first version of the updated Code was worked out. This version kept the structure of the current Model Code and most of the contents for continuity, while making necessary amendments in response to the new requirements from the UN Sustainable Development Agenda and the challenges of the new industrial revolution.

Phase 2: The first version was reported to the WFEO Executive Council on 1st March 2023, and gained wide agreement as well as good suggestions. Then, the Special Meeting for Updating WFEO Model Code of Ethics was convened in Madrid, to reach further consensus on the revision of the Model Code. It is agreed that the further revision emphasized the six core values and principles approved by the WFEO Executive Council on 1 March 2023.

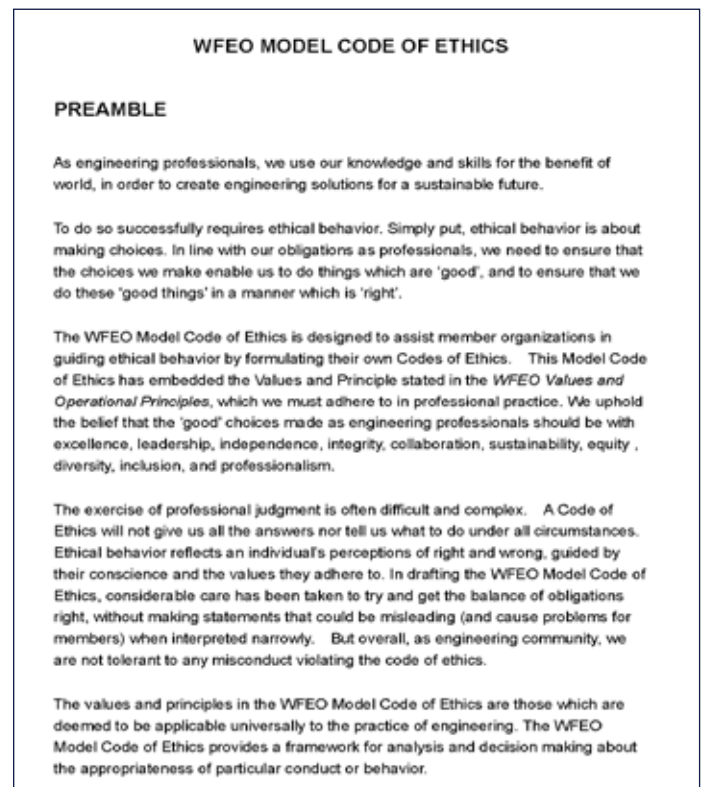
In line with the latest *WFEO Values and Operating Principles* (in page 59) adopted by the WFEO Executive Council, clear requirements were given to WFEO member organizations to develop their own ethical code referring to the WFEO Model Code, to promote ethics training and effectively punish violations. With these and other amendments, the second version was submitted to the Executive Board and was agreed by the Board to use this version for further consultation to member organizations.

Phase 3: Consultation webinars were convened in July and August 2023 in different parts of the world. With careful consideration of the comments and suggestions from these webinars, the final

version will be submitted to the Executive Council for final approval and then the updated WFEO Model Code of Ethics will be officially released in the General Assembly in October 2023.



Regional Presentation of WFEO's revised Code of Ethics chaired by WFEO Past President Gong Ke, 2 August 2023



First page of the current WFEO Code of Ethics

Work of WFE0 members and partners - SIDS Climate Change Education

The Climate Change Education Project demonstrates the ongoing commitment by WFE0 to training and education for all its national members, especially those that are most vulnerable to the impacts of climate change, and to ensure that no one is left behind.

Main Theme covered in the past two years:

- The delivery of the in person Climate Change Workshop in November 2022 was a major achievement after nearly three years of delays due to COVID-19. The workshops were enthusiastically received with positive long term benefits and outcomes.

The Small Island Developing States (SIDS) are particularly vulnerable to climate change and its impacts especially with sea-level rise threatening the small island communities around the world.

WFE0 has collaborated with the Office of Climate Change Education (OCE), a UNESCO Category II Centre, to deliver a Climate Change Education Workshop for primary and secondary school teachers and teacher trainers in Mauritius.

The project was the result of the partnership with UNESCO, the Institution of Engineers Mauritius, a WFE0 national member, OCE, the Mauritius Ministry of Education, Tertiary Education, Science and Technology, the Mauritius National Commission to UNESCO and Mauritius Institute of Education (MIE). The project was funded by the National Environment Agency Singapore (NEA) that donated the prize money from the WFE0 2019 H.J. Sabbagh Award for Engineering Construction Excellence "Sustainable Development for Smart Cities" to support the project.

The objective of the Climate Change Education Workshop was curriculum development and teacher training for world class climate change education for primary and secondary schools in Mauritius.

Planning commenced in September 2019 but in-person delivery was delayed due to COVID-19.

The project took three years to deliver and remained focused as a result of the passion and dedication of all the representatives of the partners that were involved. The project was initiated and led by former WFE0 President (2017-2019), Dr Marlene Kanga.

The first session was delivered virtually on 29-30 June 2021. This was enthusiastically received by the teachers who attended. The in person workshop was the second session and was held on 22-25 November 2022, at the Mauritius Institute of Education.

OCE provided expert facilitators led by Dr David Wilgenbus, Executive Director and Dr Simon Klein, Science Officer. Training materials were shipped from Paris to Mauritius for the teachers who attended. The workshop also included a Hands-On Learning session at the beach, using the UNESCO Sandwatch Teaching tools that have been developed specifically for the Small Island Developing States

The significant outcome of the training project was training for primary and secondary school teachers, from Mauritius and Rodrigues and training for Teacher Trainers. The attendees also developed national curricula for ongoing teaching of climate change – causes and effects, with long term benefits for the people of Mauritius.



Key achievement

The significant outcome of the Climate Change Education Project was the development of developed national curricula for ongoing teaching of climate change – causes and effects, with long term benefits for the people of Mauritius.

It is hoped that the partnership model for the delivery of the climate change education project can be replicated for other SIDS in the Central American and Pacific regions, with the support of WFE0 national and international members.



Climate Change Workshop participants, Mauritius, 24 Nov. 2022



Dr Simon Klein, OCE (at right), in an interactive workshop with participants, Mauritius, 23 November 2022

Work of WFEO members and partners associates in SIDS: Mauritius mentoring

The support of the WFEO-IEA mentoring project by the Minister for Science and Technology, the Mauritius Institute of Education, the Tertiary Education Commission, the Quality Assurance Authority, the Council for Registration of Professional Engineers, and the President of the Institution of Engineers Mauritius (IEM), indicates the importance of the project to the government, education authorities and the engineering community.

Main Theme covered in the past two years:

- Progress with establishing the structure and procedures for International Engineering Alliance (IEA) signatories, training for engineering educators and assessors and site visits to observe accreditation by the Engineering Accreditation Board.

The Small Island Developing States (SIDS) are particularly vulnerable to the challenges of climate change and have unique challenges in developing sustainable infrastructure to support the development of their economies. WFEO has had a special focus on supporting its national members that are SIDS,

The support for IEM, a national member of WFEO, to achieve signatory status at IEA is therefore a priority project. The WFEO Committee for Education in Engineering has been coordinating the mentoring of IEM Engineering Accreditation Board (EAB) with the goal of achieving IEA Signatory status and having its engineering programs achieve recognition as being at international standards. The project is the outcome of collaboration between WFEO and IEA.

IEA has approved the National Board of Accreditation, India and the Engineering Council of South Africa as mentors to the IEM EAB. Both organizations are signatories of the International Engineering Alliance. Good progress was being made in establishing the necessary structure and procedures for accreditation of engineering programs, during 2021.

The next important step in the journey to recognition as an international signatory of the International Engineering Alliance was site visits by the mentors to Mauritius. With the lifting of COVID-19 travel restrictions, visits were made to the three universities providing engineering education programs in Mauritius in June 2022.

Dr Sanjay Agrawal, the mentor representing the National Board of Accreditation, India, attended in person, Prof Collier-Reed of Engineering Council of South Africa attended virtually and Dr Marlene Kanga, former WFEO President 2017-2019 also attended the visits as part of the WFEO-IEA mentoring alliance.

The visits were supported by the Government of Mauritius through the Ministry of Science and Technology, the Mauritius Tertiary Education Commission, the Council for the Professional Regulation of Engineers, and the Mauritius Quality Assurance Authority for Education, demonstrating national support in the education system for the mentoring program.

Mock accreditation visits were led by local assessors with non-participatory observation by mentors at:

- University of Mauritius – Civil and Chemical & Environmental engineering programs
- University de Mascareignes – Civil engineering program
- University of Technology – Electrical & Electronics and Telecommunications engineering programs.



Key achievement

Support for the Institution of Engineers Mauritius in achieving its objective of becoming a signatory of the International Engineering Alliance is an important priority.

As a Small Island Developing State (SIDS), Mauritius has unique challenges and increasing the quality of engineering education will support the nation's progress for sustainable development.

Dr Sanjay Agrawal, representing the National Board of Accreditation, India provided training to the engineering educators and assessors. The educators and assessors also accessed the training webinars on the WFEO Academy website (see page 13) as part of their preparation for the visit.

Further site visits are to occur in November 2023.



Opening of IEA Mentoring Visit Program: L to R: Chair Quality Assurance Authority, Chair Council for Registration of Professional Engineers, President Institution of Engineers Mauritius, WFEO President 2017-2019 Dr Marlene Kanga, Vice Prime Minister and Minister for Science and Technology Mauritius, Dr S Agrawal, Mentor NBA India, Dr Andrew Chan, Chair Engineering Accreditation Board Mauritius, Chair Mauritius Institute of Education, Chair Tertiary Education Commission Mauritius, 27 June 2022

International organization partners projects - ISC & FAO

International Science Council



International
Science Council



The International Science Council (ISC) is an important partner of WFEU with collaborations in many areas especially in engaging with the United Nations in New York.

ISC and WFEU are Co-Chairs of the Science and Technology Major Group. The Major Groups and Other Stakeholders (MGoS) have an important role in the implementation, follow-up and review of the Sustainable Development Goals (SDGs). It was established by the General Assembly in its resolution 67/290 and in paragraph 89 of the 2030 Agenda.

The ISC and WFEU collaborate to organize various side events at the UN Science Technology and Innovation Forum (STI) held in May each year and the High Level Political Forum (HLPF), held in July each year. In May 2023, the ISC and WFEU co-organised a special event that discussed ways for improving understanding and communications of the critical role of science, technology, innovation and engineering for achieving the SDGs. The event had a focus on -SDG#6, #7, #9, #11, and #17 and addressed the urgent need to accelerate progress in the Decade of Action.

The event was Chaired by Chair: Dr. K.N. Gunalan, Chair WFEU UN Relations Committee. Presentations were made on groundwater engineering, sustainable infrastructure, Natural and Nature-Based Solutions and Food Systems.

In July 2023, the ISC released a position paper, "Rescuing and integrating the Global Agenda: Harnessing Science and Technology more effectively", prepared for the 2023 High-level Political Forum (HLPF) by Fellows of the International Science Council on behalf of the Scientific and Technological Community Major Group. WFEU Past President Gong Ke was one of the lead authors of the publication that addressed the need for science and technology to advance the UN SDGs.

The WFEU Committee on Disaster Risk Management also collaborates with the ISC on the Integrated Research on Disaster Risk (IRDR) programme. The IRDR has a global, multi-disciplinary approach to dealing with the challenges brought by natural disasters, mitigating their impacts, improving related policy-making mechanisms, and addressing technological and health-related events when these are consequences of natural hazards.

Another major area of collaboration is diversity and inclusion. The ISC has collaborated with the WFEU Committee for Women in Engineering in organizing side events at the UN Commission on the Status of Women (CSW) and in making joint statements on the need for greater diversity in science and technology and engineering to advance the UN SDGs.

 SUSTAINABLE DEVELOPMENT GOALS



Food and Agriculture Organization



The Food and Agriculture Organization of the United Nations (FAO) is a specialized agency of the United Nations that leads international efforts to defeat hunger and improve nutrition and food security. As an important UN organization, WFEU has been discussing a joint agreement with FAO to progress projects of mutual interest.

Both FAO and WFEU are committed to advancing the UN Sustainable Goals in their work. The collaboration between agronomists and engineers from various disciplines, is expected to result in new innovations that could offer new technologies and approaches for sustainable agriculture.

In the first instance, WFEU and FAO plan to promote Agenda 2030 and the SDG#2 – No Hunger, through an award that recognizes significant innovative approaches using technology that addresses the need for sustainable agriculture. The Award will be open to young men and women engineers and agronomists. WFEU proposes to dedicate its existing WFEU Medal of Excellence in Engineering award for the purposes of this project which will be important to celebrate the achievements of engineers and agronomists and scientists in this field.

WFEU and FAO may also propose other joint technical projects in food and agriculture engineering through its technical committees. Each organization will also invite the other to major events such as the WFEU General Assembly, World Engineers Congress, FAO World Food Forum and FAO General Assembly. In June 2023, Eng Ania Lopez, WFEU National Member representing Italy, attended the FAO General Assembly in Rome. An invitation for a FAO representative to attend the WFEU General assembly in Prague has been extended as well as for a senior official to make a presentation at WEC2023.



SUSTAINABLE DEVELOPMENT GOALS



43rd Session of the FAO Conference, July 2023

International organization partners projects - ISO & ITU

International Organization for Standardization



The International Organization for Standardization (ISO) is an international standard development organization composed of representatives from the national standards organizations of member countries. It is an independent and non-governmental organization. Membership consists of national standards bodies. There are 169 members at ISO in their country, with each country having only one member.

ISO develops and publishes international standards in all technical and nontechnical fields other than electrical and electronic engineering, which are the responsibility of the International Electrotechnical Commission. It has developed nearly 25,000 standards, covering everything from manufactured products and technology to food safety, agriculture, and healthcare. ISO has 804 technical committees and subcommittees concerned with standards development. ISO is committed to advancing the UN Sustainable Development Goals through its standards.

WFEO is a Category A Liaison member of ISO. National members can nominate experts to represent WFEO at the technical committees. There are more than 30 WFEO member representatives on the following ISO Committees:

- ISO TC 197 Hydrogen technologies
- ISO/TC 282 Water Re-use
- ISO/TC 207/ SC 5 Committee Life Cycle Assessment
- ISO/TC 176 Quality management and quality assurance
- ISO/TC 309 Governance of organizations
- ISO/TC 292 Security and resilience
- ISO/IEC JTC 1/SC 41 Internet of Things and Digital Twin
- ISO TEC 59 Building and Civil Engineering Works
- ISO/IEC JTC 1 Information Technology
- ISO/TC 268 Sustainable cities and communities
- ISO/PC 337 Guidelines for the promotion and implementation of gender equality
- ISO/TC 299 Robotics
- ISO/TC 301 Energy management and energy savings
- ISO/TC 319 Standardisation of Karst terminology
- ISO/TC 182 Geotechnics



ISO Annual Meeting 2023, Brisbane, Australia, 21 September 2023

International Telecommunication Union



The International Telecommunication Union (ITU) is the United Nations specialized agency for information and communication technologies – ICTs.

Founded in 1865 to facilitate international connectivity in communications networks, ITU allocates global radio spectrum and satellite orbits, develops the technical standards that ensure networks and technologies seamlessly interconnect, and strives to improve access to ICTs to underserved communities worldwide. In line with its mandate and the World Summit on the Information Society (WSIS) outcome documents, the ITU continues playing a key role in WSIS implementation and follow-up.

During the summer of 2023, we received confirmation of WFEO's approval as a Member of ITU. This follows the application which was prepared by the Secretariat in March, after a WFEO delegation comprising WFEO President José Vieira, immediate past President Gong Ke, President elect Mustafa Shehu and Executive Director Jacques de Méreuil visited ITU headquarters in Geneva, Switzerland, and met its Secretary-General Mr. Zhao Houlin.

During the discussion, WFEO representatives introduced the Federation and its key activities regarding the implementation of SDGs. They mentioned in particular the UN Moonshot project regarding the implementation of broadband in Africa. Both sides found in this meeting a large field of common interest to work together, and follow up discussion will be carried out after this visit.



Gong Ke, Zhao Houlin, José Vieira, Mustafa Shehu and Jacques de Méreuil

International organization partners projects - Africa Coalition

UN Department of Economic and Social Affairs (DESA) and UN Economic Commission on Africa (ECA) - Coalition on Science, Technology, and Innovation for Africa



The Coalition on Science, Technology, and Innovation for Africa (the Africa Coalition for STI) was formed as an outcome of the inaugural Africa Day held on 2 May 2023 at the United Nations HQ in New York, on the sidelines of the UN Science Technology and Innovation Forum. WFEO is a Strategic Partner of the Coalition and will coordinate relevant projects in engineering that advance the SDGs and align with the objectives of the Coalition.

The Coalition is a multi-stakeholder, interest group that Member States wishing to share experiences, resources, and practices in addressing common complex challenges can hatch and nurture new initiatives that can benefit national and global STI capabilities to accelerate the attainment of the SDGs and the aspirations of their people. The Coalition will serve as a global go-to place and platform to identify, refine, and incubate scalable international action and cooperation on STI for the SDGs in Africa. The Coalition is led by the African member states of South Africa, Morocco, Ethiopia and Ghana with the support of The UN Department of Economic and Social Affairs (DESA) and UN Economic Commission on Africa (ECA).

The Africa Coalition for STI will create a pathway for African states to develop, deploy, and expand their use of STI in the context of the SDGs. Its objective is:

- Relying on the potential of African people, especially its youth and diaspora, to expand financial and educational opportunities to find workable and scalable STI solutions for the African states;
- Work within the African Continental Free Trade Area with African financial firms, and Africa's growing industrial base to increase investments into research and development and build out its infrastructure to support the STI for the SDGs;
- Develop STI roadmaps at national and sub-national levels and implement related capacity building activities for African states and their stakeholders;
- Develop and enhance the agenda of STI for Africa in the UN processes and mechanism.



Dr K.N. Gunalan, Chair, WURC, H.E. Mothu Joyini, Ambassador for South Africa, Co-Chair UN STI Forum and of the member states that is leading the Africa Coalition and WFEO Past President Dr Marlene Kanga at the inaugural UN Africa Day, New York, 2 May 2023



It is expected that the Africa Coalition for STI will facilitate the collaboration of WFEO and its partners, with UN DESA, UN ECA and members of the African Union that are part of the Africa Coalition, to advance the UN SDGs, especially through engineering.

The following WFEO committees, members and partners have agreed to participate in the Coalition.

- WFEO Young Engineers Future Leaders Committee – capacity building and professional development for young engineers
- WFEO Academy – Online training and professional development for engineering educators and qualified engineers, technologists and technicians
- Federation of African Engineering Organizations (FAEO), WFEO Member, – implementation of renewable energy projects, mainly capacity building, however, requires significant funding to proceed.
- TCC, Kwame Nkrumah University of Science and Technology, Ghana, (UNESCO Category II Centre), training for engineers, technologists and technicians, however, significant funding is required to proceed.
- Office of Climate Change Education (UNESCO Category II Centre) – capacity building for climate change education through the African Regional Resilience Initiative on Climate Education (ARRICE) Project
- Global Infrastructure Anti-Corruption Centre – training for engineering in dealing with corruption in infrastructure projects at no cost.
- International Centre for Engineering Education (ICEE), Tsinghua University China, (UNESCO Category II Centre), capacity building in engineering, however, significant funding is required to proceed.
- International Network for Women Engineers and Scientists (INWES) Africa Regional Network – formation and support for women in STEM networks in Africa
- Royal Academy of Engineering – Africa Catalyst and other projects for capacity building in engineering in Africa, details are to be confirmed.

The Coalition is in the process of being established and specific project outcomes and timelines are to be confirmed. It is expected that each member of the Coalition will progress their own projects independently and report to the Africa Coalition, UN DESA and UN ECA, at the UN STI Forum at least annually. The Africa Coalition is a significant initiative and a further opportunity for WFEO to demonstrate its leadership in advancing the UN SDGs through engineering.

UNESCO-Africa Engineering Week

Every year is held the Africa Engineering Week, co-sponsored by WFEO and UNESCO. WFEO national members for South Africa (2014), Zimbabwe (2015), Nigeria (2016), Rwanda (2017), Kenya (2018), Zambia (2019), Ghana (2021) and Ethiopia (2022) hosted and organized the last ones with the support of the Federation of African Engineering Organizations.

**UNESCO 9th Africa Engineering Week
and
7th Africa Engineering Conference**


Date: 25-28 September 2023

Venue: CSIR ICC, Pretoria South Africa

Theme: Celebrating Engineering
Excellence in the African Region



**7th
Edition of Africa
Engineering
Week**




**and 5th Africa
Engineering
Conference**

Organised by The Ghana Institution of Engineering in collaboration
with the Federation of African Engineering Organizations, the World
Federation of Engineering Organisations and UNESCO

at Accra Marriott Hotel, Ghana from 4th - 8th October 2021.

THEME: ENGINEERING, INTER-AFRICAN TRADE AND
THE SUSTAINABLE DEVELOPMENT GOALS



**8TH EDITION OF AFRICA
ENGINEERING WEEK**
AND 6TH AFRICA ENGINEERING CONFERENCE

November 7 - 11, 2022
Addis Ababa, Ethiopia

Organised by

- Ethiopian Association of Civil Engineers (EACE)
- Federation of African Engineering Organizations (FAEO)
- World Federation of Engineering Organizations (WFEO)
- UNESCO



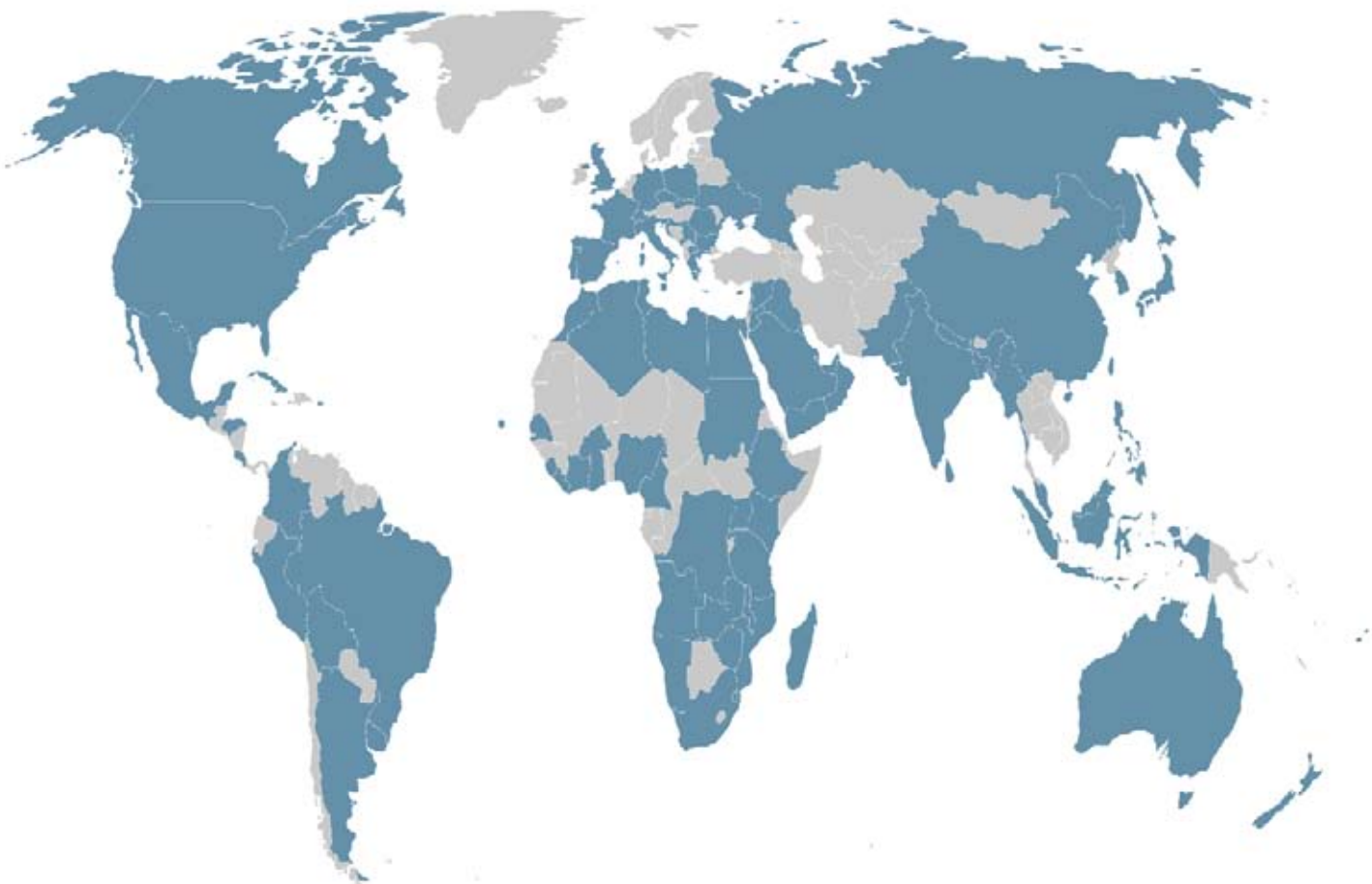
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**THEME: ACCELERATING SUSTAINABLE INFRASTRUCTURE
DEVELOPMENT IN AFRICA TOGETHER**



WFEO Members

WFEO has some 130 members & associates from all regions of the world



National and Affiliated Members

Algeria	Union Nationale des Scientifiques et Technologues Algériens
Angola	Engineer Angolan Association
Argentina	Junta Central de los Consejos Profesionales de Agrimensura, Arquitectura e Ingeniería
Australia	Engineers Australia
Bahrain	Bahrain Society of Engineers
Bangladesh	Institution of Engineers, Bangladesh
Bolivia	Sociedad de Ingenieros de Bolivia
Brazil	Conselho Federal de Engenharia e Agronomia (CONFEA)
Bulgaria	Federation of the Scientific – Engineering Unions in Bulgaria
Burkina Faso	Ordre des Ingénieurs en Génie Civil du Burkina Faso
Cabo Verde	Ordem dos Engenheiros de Cabo Verde
Cameroon	Association Professionnelle des Ingénieurs Conseils et Sociétés d'Ingénierie du Cameroun
Canada	Engineers Canada
China	China Association for Science and Technology
Chinese Taipei (Aff.)	Chinese Institute of Engineers
Colombia	Sociedad Colombiana de Ingenieros
Congo Democratic Rep.	Ordre National des Ingénieurs Civils
Costa Rica	Colegio Federado de Ingenieros y de Arquitectos de Costa Rica
Côte d'Ivoire	Fédération Nationale des Organisations d'Ing. Architectes Géomètres et Urbanistes de Côte d'Ivoire
Croatia	Croatian Chamber of Civil Engineers
Cuba	Unión nacional de arquitectos e ingenieros de la construcción de Cuba
Cyprus	Scientific Technical Chamber of Cyprus
Czech Republic	Czech Association of Scientific and Technical Societies
Egypt	Egyptian Engineers Syndicate
Eswatini	Architects, Engineers, Surveyors & Allied Professionals of Eswatini
Ethiopia	Ethiopian Association of Civil Engineers
Fiji	Fiji Institution of Engineers
France	Ingénieurs et Scientifiques de France

Ghana	Ghana Institution of Engineers
Greece	Technical Chamber of Greece
Honduras	Colegio de Ingenieros Civiles de Honduras
Hong Kong, SAR of China (Aff.)	Hong Kong Institution of Engineers
India	Institution of Engineers, India
Indonesia	Institution Engineers Indonesia
Iraq	Iraqi Engineers' Union
Italy	Consiglio Nazionale degli Ingegneri
Japan	Science Council of Japan
Jordan	Jordan Engineers' Association
Kenya	Institution of Engineers of Kenya
Kenya (Aff.)	Engineers Board of Kenya
Korea	Korean Federation of Eng. Organisations
Kuwait	Kuwait Society of Engineers
Lebanon	Ordre des Ing. et Architectes de Beyrouth
Liberia	Engineering Society of Liberia
Libya	Libyan Syndicate of Engineers
Macau, SAR of China (Aff.)	Macau Institute of Engineers
Madagascar	Ordre des Ingénieurs de Madagascar
Malawi	Malawi Institution of Engineers
Malaysia	Institution of Engineers, Malaysia
Malta	Chamber of Engineers, Malta
Mauritius	Institution of Engineers, Mauritius
Mexico	Union Mexicana de Asociaciones de Ing. A.C.
Montenegro	Engineers Chamber of Montenegro
Morocco	Union Nationale des Ingénieurs Marocains
Mozambique	Ordem dos Engenheiros de Moçambique
Myanmar	Myanmar Engineering Council
Myanmar (Aff.)	Fed. of Myanmar Engineering Societies
Namibia	Engineering Council of Namibia
Nepal	Nepal Engineers' Association
New Zealand	Engineering New Zealand
Nigeria	Nigerian Society of Engineers
North Macedonia	Chamber of Certified Architects. and Eng.
Oman	Oman Society of Engineers
Pakistan	Institution of Engineers, Pakistan
Pakistan (Aff.)	Pakistan Engineering Council
Palestine	General Union of Palestinian Engineers
Peru	Peruvian Engineers Association
Poland	Polish Federation of Engineering Associations
Portugal	Ordem dos Engenheiros
Portugal (Aff.)	Ordem dos Engenheiros Tecnicos
Puerto Rico	Colegio de Ing. y Agrimensores de P.R.
Qatar	Qatar Society of Engineers
Romania	General Association of Eng. in Romania
Rwanda	Institution of Engineers, Rwanda
Saudi Arabia	Saudi Council of Engineers
Senegal	Union Nationale des Ingénieurs du Sénégal
Serbia	Serbian Chamber of Engineers
Sierra Leone	Sierra Leone Institution of Engineers
Singapore	Institution of Engineers, Singapore
Slovakia	Association of Slovak Scientific & Tech. Societies
Slovenia	Slovenian Chamber of Engineers
South Africa	Engineering Council of South Africa
Spain	Instituto de la Ingenieria de España
Sri Lanka	Institution of Engineers, Sri Lanka
Sudan	Federation of Sudanese Engineers
Switzerland	Swiss National Committee for FEANI-WFEO
Syria	Order of Syrian Engineers and Architects
Tanzania	Institution of Engineers, Tanzania
The Philippines	Philippine Technological Council
Tunisia	Ordre des Ingénieurs Tunisiens
Uganda	Uganda Institution of Professional Engineers
Ukraine	Ukrainian Union Scientific and Eng. Associations
United Arab Emirates	Society of Engineers, UAE
United Kingdom	Institution of Civil Engineers, UK
United States, America (Aff.)	American Society of Civil Engineers
Uruguay	Asociacion de Ingenieros del Uruguay
Yemen	Syndicate of Yemeni Engineers
Zambia	Engineering Institution of Zambia
Zimbabwe	Engineering Council of Zimbabwe

International Members

Commonwealth Engineers Council (CEC)
Engineering Association of Mediterranean Countries (EAMC)
Engineers Europe (Ex-FEANI)
Federation of Arab Engineers (FAE)
Federation of African Engineering Organizations (FAEO)
Federation of Engineering Institutions of Asia and the Pacific (FEIAP)
Federation of Engineering Institutions of South and Central Asia (FEISCA)
International Federation for Medical and Biological Engineering (IFMBE)
International Federation of Municipal Engineers (IFME)
Union Panamericana de Asociaciones de Ingenieros (UPADI)
Union of Scientific and Engineering Associations (USEA, Russia)
World Council of Civil Engineers (WCCE)

Distinguished Fellows

Prof. Dr. Jürgen Kretschmann
Santiago Sotuyo Blanco

Corporate Associates

Archirodon NV
Consolidated Contractors Company (C.C.C.)

Non-for-Profit Associates

Colegio de Ingenieros Civiles del Estado de Jalisco A.C. (CICEJ)
DMT Society for Teaching and Education (DMT-LB)
European Council of Engineers Chambers (ECEC)
Fondation Université Numérique Ingénierie et Technologie (UNIT)
Global Chinese Power & Energy Society (GCPES)
International Association of Engineering and Architecture (IAEA)
Japan Federation of Engineering Societies (JFES)
South African Institution Of Civil Engineering (SAICE)
World Geospatial Industry Council (WGIC)

Sponsors

Thanks to our corporate and non-for-profit generous donors, WFEO has been able to achieve some key projects and activities, including World Engineering Day celebration, awards and engineering education projects. We are grateful for their support

Consolidated Contractors Company (C.C.C.)
Gree Electric Appliances.
St James House
Intel Corporation
École polytechnique fédérale de Lausanne (EPFL)
Trane Technologies
Dongfang Electronics
Global Chinese Power & Energy Society (GCPES)
World Geospatial Industry Council (WGIC)

WFEO Awards

The purpose of WFEO Awards is to direct the world's attention to the role of engineering in sustainable development.

The H. J. Sabbagh Prize For Excellence in Engineering Construction

The 2022 H.J. Sabbagh Prize for Excellence in Engineering Construction Ceremony was held online on 21 April 2023.



The prize was awarded to the Maritime and Port Authority of Singapore (MPA), for its completion of the reclamation work of the Tuas Port.

The Jury has selected this project in consideration of many remarkable features, including the excellence of the team of nominated engineers in solving complex infrastructure technical issues, the vision in building this large-scale infrastructure project for productivity enhancements while taking a wise and careful approach to environmental and sustainability aspects.

The completion of the Tuas Port Phase 1 project marked a significant milestone in the Tuas Next Generation Port development, which would be the largest fully automated containerised port in the world, capable of handling 65 million twenty-foot equivalent units (TEUs).



MPA has chosen to generously donate the USD 10,000 prize of its award in favor of WFEO engineering education projects, similarly to past laureates of the Prize.

MPA's kind donation will support WFEO's joint climate change education program in Small Islands Developing States (SIDS), in cooperation with UNESCO and the Office for Climate Education (OCE), which is currently conducting schools and educators training sessions on climate change in Fiji and Mauritius.

WFEO is grateful for this donation, especially as its activities in the field of education has become increasingly important in recent years, with the development of joint mentoring programs to help national engineering education systems to reach the highest standards.



The 2021 WFEO awarding ceremony was held on 12 April 2022. Dr. Shamila Nair-Bedouelle, UNESCO Assistant Director-General for Natural Sciences, gave a welcome address.



The 2021 WFEO Gree Women in Engineering Award

Wai Yie Leong

Director of Research Excellence at Perdana University, Malaysia
Electrical engineer specialised in medical signal processing, Industrial Revolution 4.0 technology, 5G and telecommunications
Immediate Past Chair of The Institution of Engineering and Technology (Malaysia)
Vice President of the Institution of Engineers Malaysia (IEM)
Vice President of International Network of Women Engineers and Scientists (INWES)
Member of the WFEO Committee on Women in Engineering

The 2021 WFEO Medal for Engineering Excellence

Neil MacLeod

Past President of the South African Institution of Civil Engineering
Civil engineer, specialising in the provision of water and sanitation
Awardee of the Stockholm Industry Water Award in 2014
Honorary Fellow of the Institute of Municipal Engineering of Southern Africa
Fellow of the South African Academy of Engineering
Fellow of the International Water Association

The 2021 WFEO Medal for Excellence in Engineering Education

Prof. Enzo Siviero

Rector of the eCampus University Novedrate, Como, Italy
Consultant Professor in China: Tongji University, Shanghai and Chang'An University, Xi'An
Awarded the honorary degree in Architecture by Politecnico di Bari in 2009
Member of the Board of Community of the Community of Mediterranean Universities
Deputy Secretary General of the Engineering Association of Mediterranean Countries
Vice-President of the Structural Engineers World Congress

Prof. Kai Sang LOCK

Emeritus President of the Institution of Engineers, Singapore
Professor of Engineering at Singapore Institute of Technology
Deputy Chair of the Washington Accord
Chairman of the Accreditation Committee for the Energy Services Companies
Co-Chair of the Steering Committee for the Singapore Certified Energy Managers Scheme
Awardee of the Public Service Star award in 2020

Future events



2024 WFEO EXECUTIVE COUNCIL MEETING

TOGETHER WITH

GLOBAL ENGINEERING CONFERENCE
ON SUSTAINABLE DEVELOPMENT

28th - 31st October 2024
KIGALI CONVENTION CENTER

Theme: Capacity Building for Africa for 2030 Infrastructure to mitigate Climate Change

Sub-themes



Montréal

2027

→

Creating tomorrow's world together

8th World Engineers Convention – WEC 2027

October 4–10, 2027
Montréal, Canada



MONTRÉAL — CANADA
WEC 2027
8th WORLD ENGINEERS CONVENTION



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Remembering those we lost



Vilas Mujumdar

It is with profound sadness that we have been informed of the passing of our beloved colleague and friend Vilas Mujumdar in late March of 2023 at the age of 81.

Dr. Mujumdar was an American civil engineer and he also held a PhD in Public policy, with a specialization on disaster risk management. A Fellow of the UK Institution of Structural Engineers and many other engineering societies, he has authored two books and dozens of technical publications, and has served as Chief Engineering Editor for Natural Hazards Review. In the American public sector, he served notably as Chief of Operations at the Division of State Architect of the State of California, and Director of Engineering Research Centers Program at the National Science Foundation (NSF). He was a Board member of the American Society of Civil Engineers (ASCE).

He served in many positions at WFEO for many years and always with great enthusiasm and a deep sense of service, including as Member of the Executive Council (USA Representative), Vice-Chair of the Disaster Risk Management Committee, and Chair of the Governance Committee. He was awarded the 2019 WFEO medal for Engineering Excellence, and in 2021, he became one of the first WFEO Distinguished Fellows.



Conrado Bauer

Conrado Ernesto Bauer was WFEO President from 1995 to 1999. Conrado, aged 96, died on 27 July 2023.

Among the projects that were carried out under his presidency, we can highlight the increasing involvement of the Federation in the Natural Disaster Reduction programmes, the update of the WFEO Model Code of Ethics so as to incorporate references to Sustainable Development, and the organization of the first World Engineers Convention, held for the first time in Hanover in June 2000 and the decision to make it a regular WFEO event.

A civil engineer in Hydraulics, he held the positions of Minister of Social Welfare of Argentina from 1968 to 1969, and Minister of Public Works and Services from 1982 to 1983. Prior to his national positions, he had held administrative positions in the government of the Province of Buenos Aires. He also served as Dean of the Faculty of Engineering of the University of La Plata. He was a member of the Academia Nacional de Ingenieros de la República Argentina.



Bill Henry

Bill Henry passed away on 26 November 2022, at the age of 81.

He lived most of his early years in Hingham, Massachusetts, where he attended Hingham High School and then Thayer Academy. Bill went to MIT for college where he earned a Bachelor of Science in Mechanical Engineering in 1957 and a Master of Science in Mechanical Engineering in 1958.

Bill had extensive experience in engineering and science policy through his career with the U.S. National Academy of Engineering and the Department of State.

Among his many professional activities, Bill Henry was a member of WFEO Committee on Anti-Corruption, Past Chair of the American Association of Engineering Societies (AAES), and Past President of the American Society of Civil Engineers (ASCE). He was Co-Chair of the Union of Pan American Engineering Societies (UPADI) Anti-Corruption Working Group and Advisory Council Member of the Global Infrastructure Anti-Corruption Centre (GIACC).

Our Sponsors

WFEO Sponsors



Consolidated Contractors Company (CCC) is the largest construction company in the Middle East and ranks among the top 25 international contractors with a revenue of 7.4 billion USD in 2017. CCC has offices and projects in over 40 countries, and a workforce of 120,000 employees.



Gree Electric Appliances Inc. of Zhuhai is the world's largest residential air-conditioner manufacturer. The Company distributes its products within China's domestic market and to overseas markets under the brand name of GREE.

World Engineering Day Sponsors



St James's House is a leading publishing, communications and events company that supports a range of public, private and third-sector organizations. St James's House boasts a bold visual identity; one that has earned them a reputation as one of the world's leading publishing and communications companies.



Intel Corporation is an American multinational corporation and technology company. It is the world's largest semiconductor chip manufacturer by revenue and is the developer of the x86 series of microprocessors, found in most personal computers (PCs).



Trane Technologies is a manufacturer of heating, ventilating and air conditioning (HVAC) systems and building management systems and controls.



Dongfang Electronics is a hi-tech business group, combining research and development, manufacturing and operation, technical services and system integration, and one of the major suppliers of China's energy management system solutions.



Global Chinese Power & Energy Society is a nonprofit organization that aims to provide a communication platform for Chinese scientists all over the world. GCPES is able to enhance the connection and communication between them by organizing academic conferences and publishing academic works.



World Geospatial Industry Council is a registered not-for-profit trade association of commercial geospatial companies representing the entire value-chain of the geospatial ecosystem.



École Polytechnique Fédérale de Lausanne, located in Switzerland, is one of Europe's most vibrant and cosmopolitan science and technology institutions. It welcomes students, professors and collaborators of more than 120 nationalities.



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

WFEO Values and Operating Principles

Approved 1 March 2023

As the peak global organisation for engineering, representing more than 100 professional engineering institutions and more than 30 million engineers, the World Federation of Engineering Organisations (WFEO), leads by example in its day-to-day operations, and with the expectations it places on its members, affiliates and associates and their representatives, and the organisation's partners and supporters.

Excellence in Leadership and Independence underpin all our work and we strive to ensure that it is recognised internationally.

Integrity Honesty and Transparency are part of our endeavours to deliver our purpose. We are guided in all our activities by the highest standards of ethics, honesty and integrity. When acting on behalf of WFEO we demonstrate excellence in engineering. We represent WFEO and make statements on behalf of WFEO only with explicit prior approval of the WFEO President and Executive Board.

Collaboration is important for our work and we welcome the support and contribution from around the world from WFEO and its members, affiliates and associates, as this is critical to our success.

Sustainability is essential for our future and we strive to promote public awareness and understanding of the role, impact and benefits of engineering to advance the UN Sustainable Development Goals through engineering and in all our engagements with the United Nations and its agencies, such as UNESCO, and other international organisations.

Diversity, Equity and Inclusion are fundamental human rights, and we treat all our members and their representatives equally, regardless of age, nationality, gender, religion, culture, or political affiliation. We believe this commitment delivers the best outcomes for WFEO and for the enhancement of engineering around the world.

Professionalism, Courtesy and Pride are integral to all our actions and activities at all times. We do not engage in any form of discrimination, harassment, bullying or professional misconduct, or make false accusations as this reduces the quality, integrity and pace of our work and prevents the healthy exchange of ideas and opinions.

We respect each other and the general public and value and support the efforts of all representatives nominated to WFEO at all times. We encourage the work of our colleagues and celebrate their achievements. We respect the privacy and confidentiality of information that is shared as part of the work of WFEO.



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
世界工程组织联合会



**“Engineers, men and women, are constantly innovating
to meet the challenges of our world.”**

**Excerpt from the message of
Ms Audrey Azoulay, Director-General of UNESCO,
4 March 2023,
World Engineering Day for Sustainable Development**

WFEO / FMOI
Maison de l'Unesco - 1 rue Miollis, 75015 Paris, France
Tel : +33 (0) 1 45 68 48 46
secretariat@wfeo.org www.wfeo.org @wfeo

