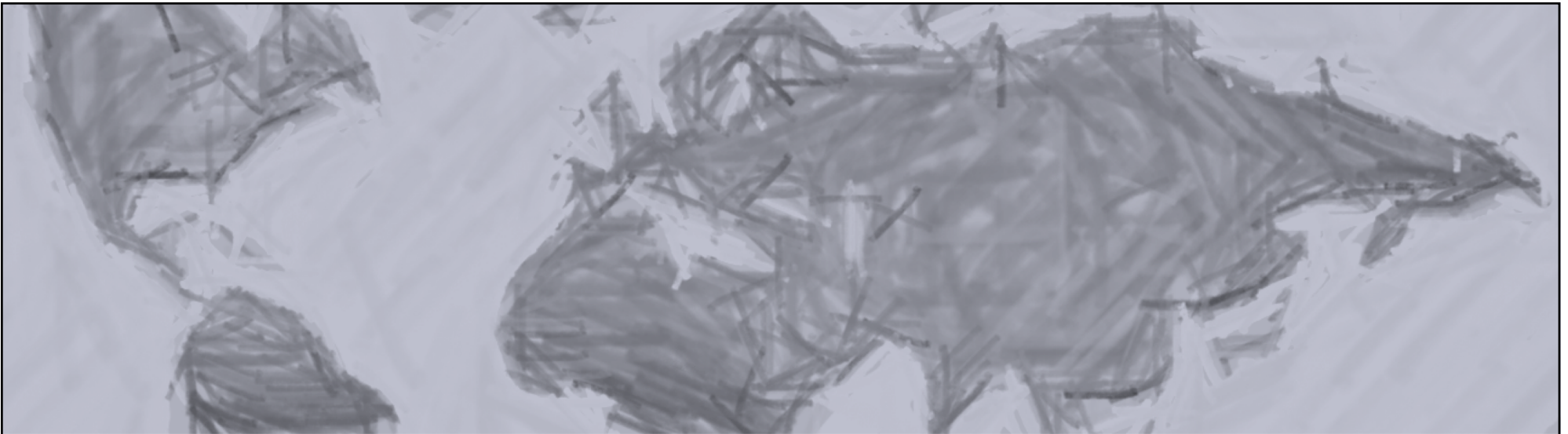




# The World Federation of Engineering Organizations Engineering Sustainable Development

Dr. Marlene Kanga AM  
Hon.FIEAust Hon.FIChemE FTSE  
President  
24 April 2018

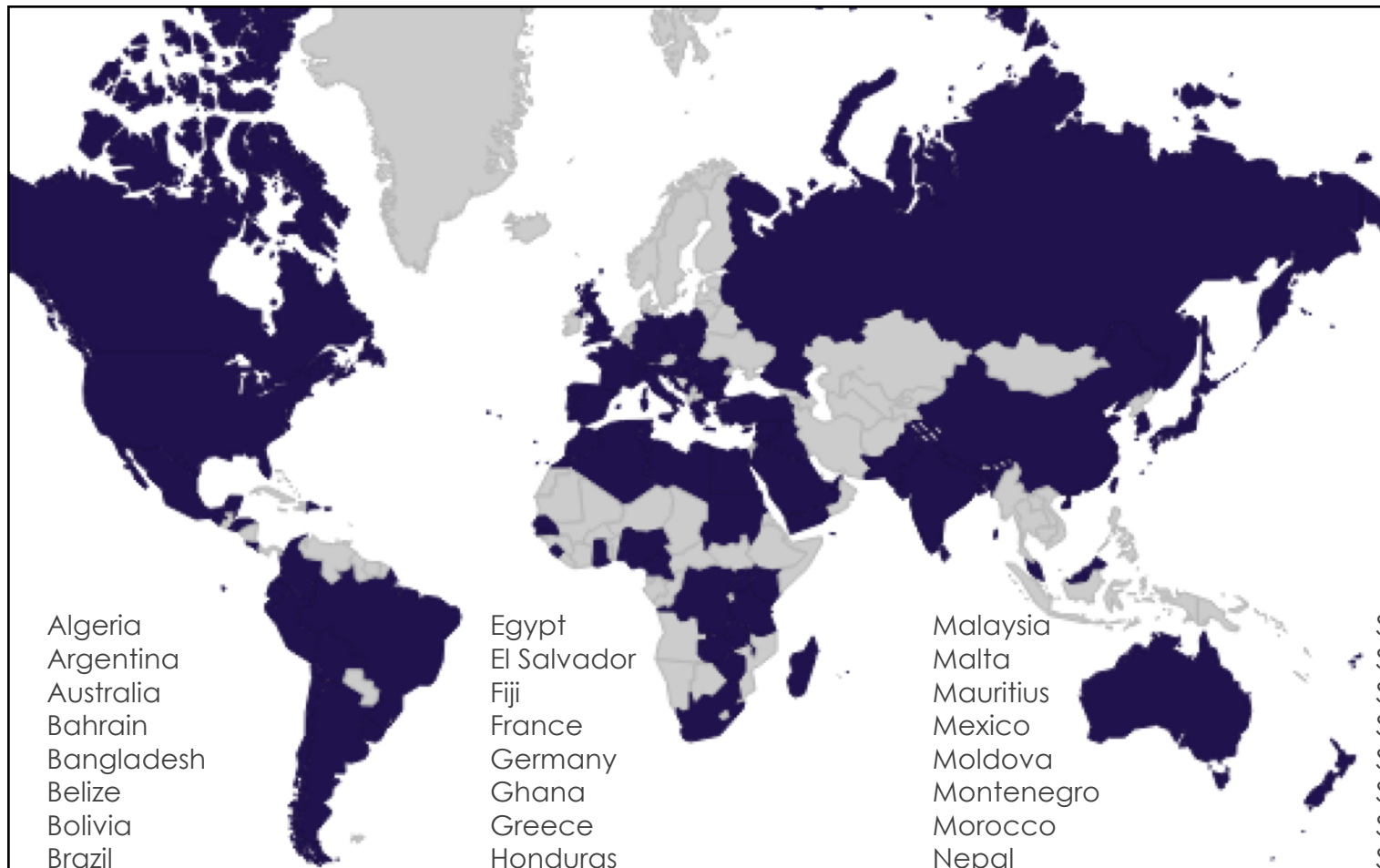




- The international organization for the engineering profession
- Founded in 1968
- Under the auspices of UNESCO
- 90+ national engineering institutions
- Representing 20 million engineers



# *Engineering* for Sustainable Development



Algeria  
Argentina  
Australia  
Bahrain  
Bangladesh  
Belize  
Bolivia  
Brazil  
Bulgaria  
Cameroon  
Canada  
Chile  
China  
Colombia  
Costa Rica  
Cote d'Ivoire  
Croatia  
Cyprus  
Czech Republic  
Dominican Republic  
DR Congo  
Ecuador

Egypt  
El Salvador  
Fiji  
France  
Germany  
Ghana  
Greece  
Honduras  
Hong Kong  
Hungary  
India  
Iraq  
Italy  
Japan  
Jordan  
Kenya  
Korea  
Kuwait  
Lebanon  
Libya  
Madagascar  
Malawi

Malaysia  
Malta  
Mauritius  
Mexico  
Moldova  
Montenegro  
Morocco  
Nepal  
New Zealand  
Nigeria  
Pakistan  
Palestine  
Peru  
Poland  
Portugal  
Puerto Rico  
Romania  
Russia  
Saudi Arabia  
Senegal  
Serbia  
Sierra Leone

Singapore  
Slovakia  
Slovenia  
South Africa  
Spain  
Sri Lanka  
Sudan  
Switzerland  
Syria  
Taiwan  
Tanzania  
Tunisia  
Turkey  
Uganda  
United Arab Emirates  
United Kingdom  
United States  
Uruguay  
Yemen  
Zambia  
Zimbabwe







**Recognised NGO at UNESCO**

**Member major Science and Technology Group at UN**

**10 x Standing Technical Committees**

**Executive Council**

**Executive Board**

**Supported by a small secretariat based in Paris**

***Engineering* for Sustainable Development**





# WFEO Standing Technical Committees

- Engineering and the Environment (Hosted by UK)
- Energy (Hosted by USA)
- Engineering Education (Hosted by Lebanon)
- Information and Communication (Hosted by India)
- Engineering and Innovative Technologies (Hosted by China)
- Engineering Capacity Building (South Africa)
- Disaster Risk Management (Japan)
- Anti-Corruption (Hosted by Zimbabwe)
- Women in Engineering (Hosted by Nigeria)
- Young Engineers/Future Leaders (Hosted by Kuwait)

Also

- UN Relations Committee (Hosted by USA)



**Influencing...**

a respected source of advice & guidance on  
engineering and technology

**Supporting...**

UN sustainable development goals

**Partnering...**

with our international peers in engineering  
and science

**Growing...**

engineering capacity and mobility

**Improving...**

the ethical engineering practice and a diverse  
and inclusive profession

**Convening...**

world engineers' events

**Recognising...**

excellence in engineering





# SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD





# Partnering with our international peers

- UN SDG 17 : Partnerships
- Together we can progress joint objectives in education, training and sustainable development
- Partnerships with:
  - International Engineering Alliance (IEA)
  - International Federation of Engineering Education Societies (IFEES)
  - Federation of International Consulting Engineers (FIDIC)
  - International Network for Women Engineers and Scientists (INWES)
  - International Centre for Engineering Education (ICEE, UNESCO Centre)
  - International Science Technology and Innovation Centre for South-South Cooperation (ISTIC, Malaysia, UNESCO Centre)
  - International Science Council (ISC)

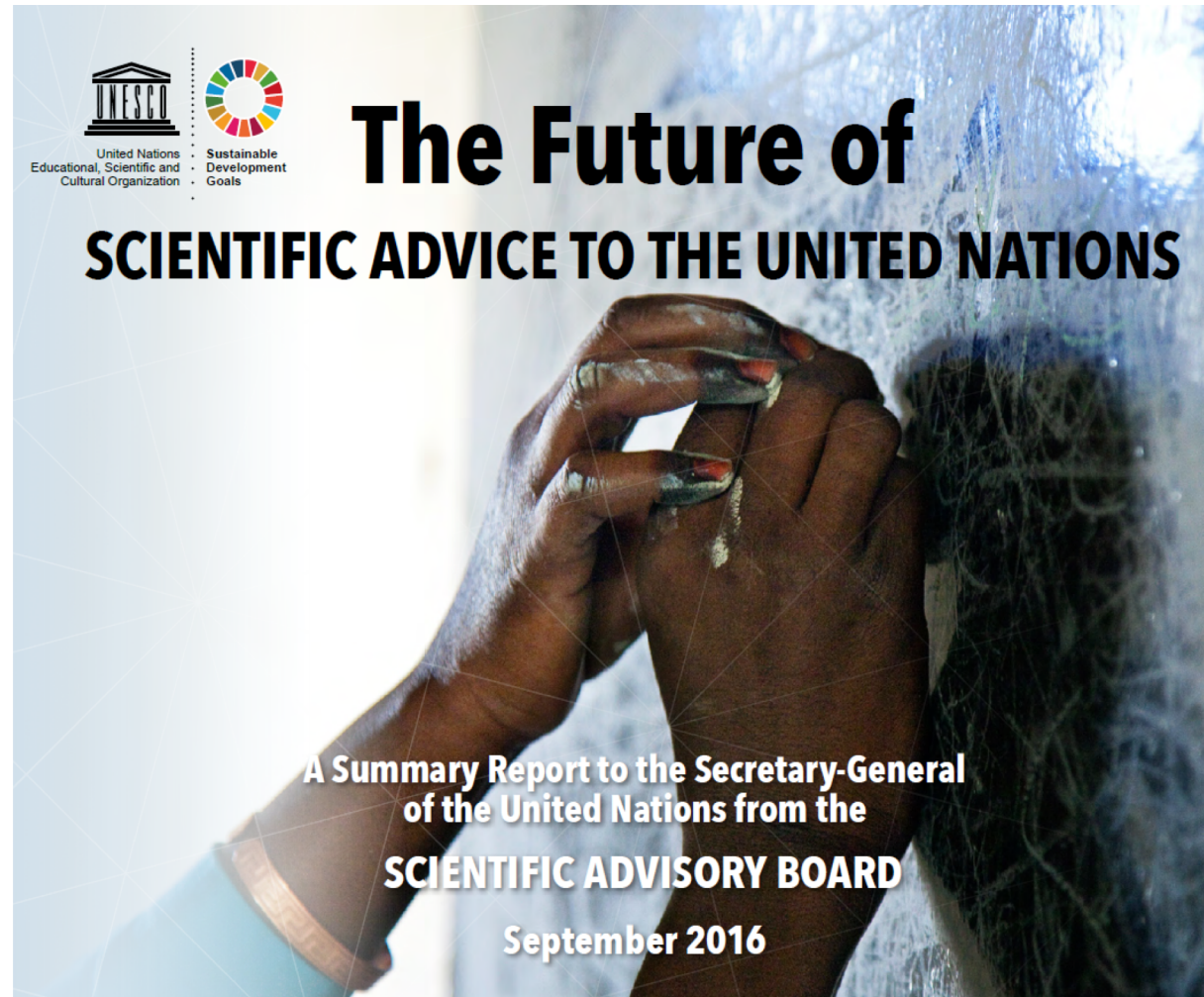


# Working with international organisations

- **UN Economic and Social Council, (ECOSOC),**
- **UN Department of Economic and Social Affairs (UNDESA),**
- **UN Development Program (UNDP),**
- **UN Educational, Scientific and Cultural Organisation (UNESCO),**
- **UN Industrial Development Organisation (UNIDO)**
- **UN Environmental Program (UNEP)**
- **UN Framework on Climate Change (UNFCCC)**
- **UN Office for Disaster Risk Reduction (UNISDR),**
- **The International Atomic Energy Agency (IAEA)**
- **The World Meteorological Organisation (WMO)**
- **World Bank, OECD etc.**



# Member of UN Scientific Advisory Board





# WFEO @ COP23



COP23 | FIJI

UN CLIMATE CHANGE CONFERENCE

BONN 2017

“Engineers need to mobilise and implement feasible solutions to existing and future built infrastructure systems.”



# WFEO and Commission on Status of Women, United Nations (CSW61)



- UN SDG 5 : Gender Equality
- Development of international strategic approaches for an inclusive profession in science and technology



# WFEO @ OECD Integrity Forum March 2018



- UN SDG 16 : Improving governance
- Fostering ethical engineering practice
- Supported development of ISO 37000
- Training and development programs





# WFEO @ UN to High Level Political Forum on Science & Technology and SDGs




- Participation in HLPF May 2018, UN New York
- Participation in HLPF July 2018 UN New York
- Report on progress on UN SDG in science and technology




# WFEO – UNESCO Declaration



WFEO / FMOI




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



United Nations  
Educational, Scientific and  
Cultural Organization

## Paris Declaration

Advancing the United Nations  
Sustainable Development Goals  
through Engineering



The World Federation of Engineering Organizations (WFEO) is the main body for engineering globally, representing nearly 100 nations and some 30 million engineers.

The members of WFEO are the national and regional professional engineering institutions of the world. WFEO is a member of the United Nations Scientific and Technological Community (UN STC) Major Group and has an official Associate status with UNESCO.

UNESCO, as the United Nations agency for education, science and culture, supports engineering through its Natural Sciences Sector, and acknowledges engineering as a powerful means to achieve sustainable development, capacity-building in engineering education and gender equality in developing countries, as well as the safeguarding of world heritage.



*Engineering* for Sustainable Development

# WFEO Engineering 2030 Plan

- **WFEO Engineering 2030** - A Plan to develop engineering capacity for a sustainable world through partnerships with educators, government, industry and professional engineering institutions
- a strategic initiative to address the gap in engineering capacity and the quality of engineering professionals
- recognises that engineers are essential for sustainable development good engineering is essential achieving the UN Sustainable Development Goals Consistent with the mission and objectives of WFEO
- WFEO will play a key role in leading and co-ordinating the Plan
- Result of wide consultation between national and international members of WFEO and other international partners



# Engineering 2030 – Principles for Action

1. **Encourage young people** – To consider engineering as a career
2. **Graduate Outcomes** - Agree with educators, government, industry
3. **Global standards** - for engineering education and professional development
4. **Partnerships** – with international standard setting organisations for consistent framework (IEA, ENAEE etc)
5. **Support** – development of national engineering education systems to comply with agreed standards
6. **Capacity Building** – for accreditation of engineering education and accreditation bodies
7. **Capacity Building** – for professional engineering institutions
8. **Develop professional development pathways** – so graduates meet employer needs
9. **Support national and international registration** – for recognition of qualifications and experienced of practising engineers
10. **Liaise with governments** – to establish consistent regulation policies for engineers
11. **Establish an international platform for engineering standards** – Education and professional development, under auspices of WFEO and UNESCO
12. **Report on progress** - to UNESCO and other international organisations



# Engineering 2030 – Partnerships

1. **UNESCO and other UN bodies** – Member major UN Science & Technology Group
2. **National and International Members of WFEO** – These are the professional engineering institutions that will both deliver and benefit from the Plan
3. **International Engineering Alliance and European Network for Engineering Education** – Key bodies for international standards in engineering education
4. **Engineering educators** – these will be part of providing support and mentoring and others will benefit from the Plan
5. **Industry and Employers and associations** – they will inform the requirements for effective engineering graduates and for professional development
6. **National and international efforts** - recognise current capacity building efforts and collaborate to increase impact
7. **WFEO Standing Technical Committees** – support aspects of the plan, e.g. ethical engineering practices, diversity, youth leadership





# Engineering 2030 – Sample Projects

1. **Encouraging young people to study engineering** – Development of awareness of opportunities in careers in engineering for boys and girls
2. **Engaging with Industry** – To inform industry needs for graduate outcomes and continuing professional development
3. **Professional Engineering Institutions** – Establish and develop professional engineering institutions including governance, leaderships training and systems
4. **National and international registration of engineers** – registers to recognise qualifications and ongoing professional development of engineers, will also support mobility
5. **Regulation of engineers** – Review best practice models and liaise with government
6. **Sustainability in engineering** - including sustainable engineering in engineering education and professional development
7. **Ethical Practice of Engineering** – develop training programs based on the ISO standard. Training will be distributed by various means, including international partners.
8. **Diversity in engineering** - ensuring a diverse engineering profession.

*Engineering* for Sustainable Development





## *Engineering* for Sustainable Development

- Participation
- Influence
- Representation



The world's engineers  
united in rising to  
**the world's challenges.**  
For a better, sustainable  
world.



**The World Federation of Engineering  
Organizations**

Fédération Mondiale des Organisations d'Ingénieurs