



INTERNATIONAL WEBINAR



# TOWARD RESILIENT SOCIETIES: THE ENGINEERING CONTRIBUTION

*Engineering for Resilient Societies and Disaster Risk  
Management*



WFEO / FMO

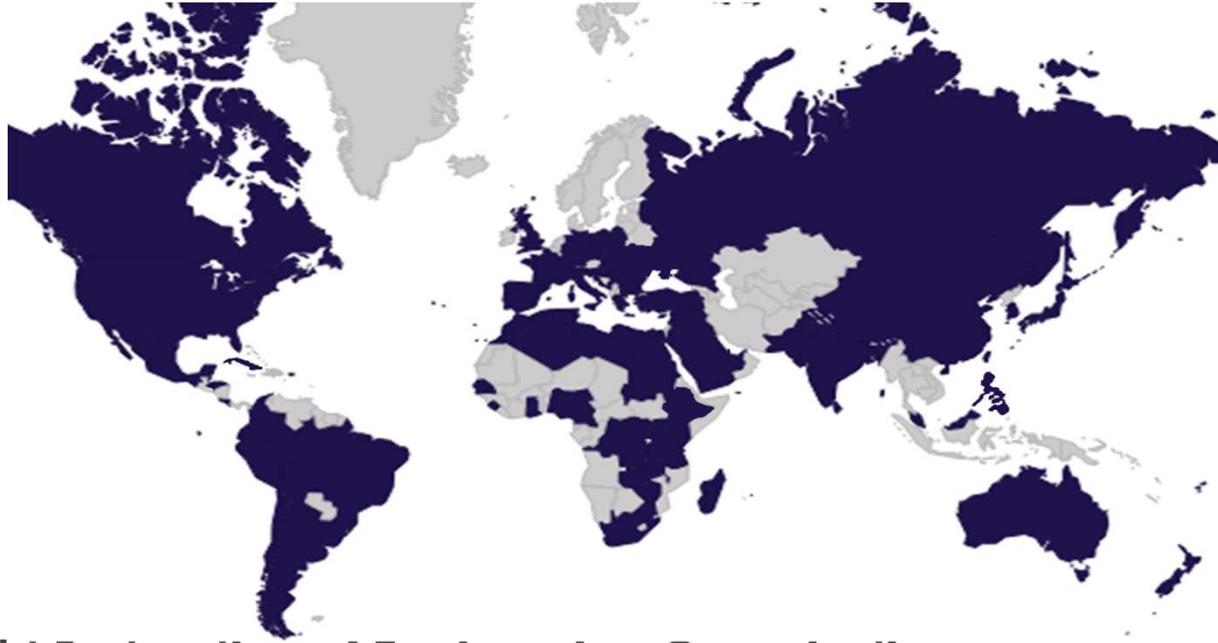


**WORLD  
ENGINEERING  
DAY** FOR SUSTAINABLE  
DEVELOPMENT

*Dr. Marlene Kanga AM  
WFEO President 2017-19*

*9 March 2021*

[www.wfeo.org](http://www.wfeo.org)



### **The World Federation of Engineering Organizations:**

- **The peak international body for professional engineering institutions**
- **Founded in 1968, Under the auspices of UNESCO**
- **100+ national professional engineering institutions, 12 international and continental/regional professional engineering institutions, representing 30 million engineers**
- **Co-Chair - Major Science and Technology Group at UN, Representation at major UN Organisations, Associate of UNESCO**
- **Colegio del Ingenieros del Peru (CIP) is a national member for Peru and hosts the Committee for Disaster Risk Management**



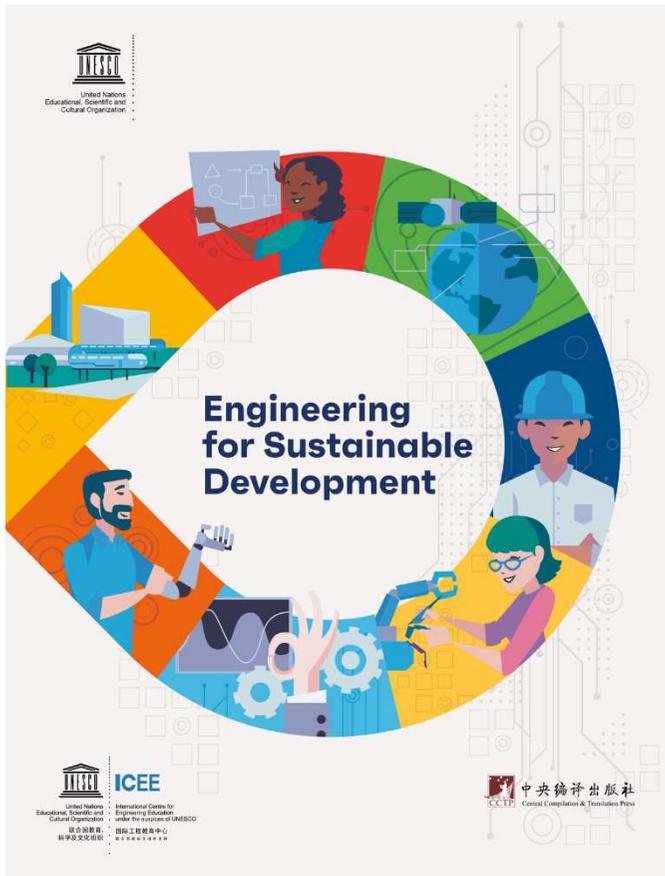


- A key objective of the World Federation of Engineering Organizations, since 2018, is to **advance the UN SDGs through engineering.**
- **WFEO is working with UNESCO** and other international engineering organizations to advance the 2030 Agenda including the **declaration of World Engineering Day for Sustainable Development in November 2019.**
- The **UNESCO Engineering Report – Engineering for the Sustainable Development Goals**, aligns with this vision and shows the important work that needs to be done by engineers and **“how engineering can make it happen”.**



# UNESCO Engineering Report March 2021

## Engineering for Sustainable Development and Resilience



Spanish version: <http://on.unesco.org/Ingen21>

- Civil, structural, electrical, mechanical, environmental, software and telecommunications engineers are contributing to safe, inclusive and resilient cities, facilitating access to affordable housing and public transport, clean air, water and energy, as well as the protection of natural and cultural heritage assets and greater resilience against natural disasters.
- Advanced engineering technologies are used in energy and resource efficient buildings, smart city lighting, efficient transportation systems, renewable energy sources, integrated water resource management, geospatial engineering, building information modelling, and data analytics are making cities more livable and sustainable.



# Engineering for Natural Disaster Risk Management



Photo: Terrie Sharp/Pixabay, Article, <https://www.ice.org.uk/news-and-insight/the-civil-engineer/january-2021/wfeo-climate-stories-dr-marlene-kanga>

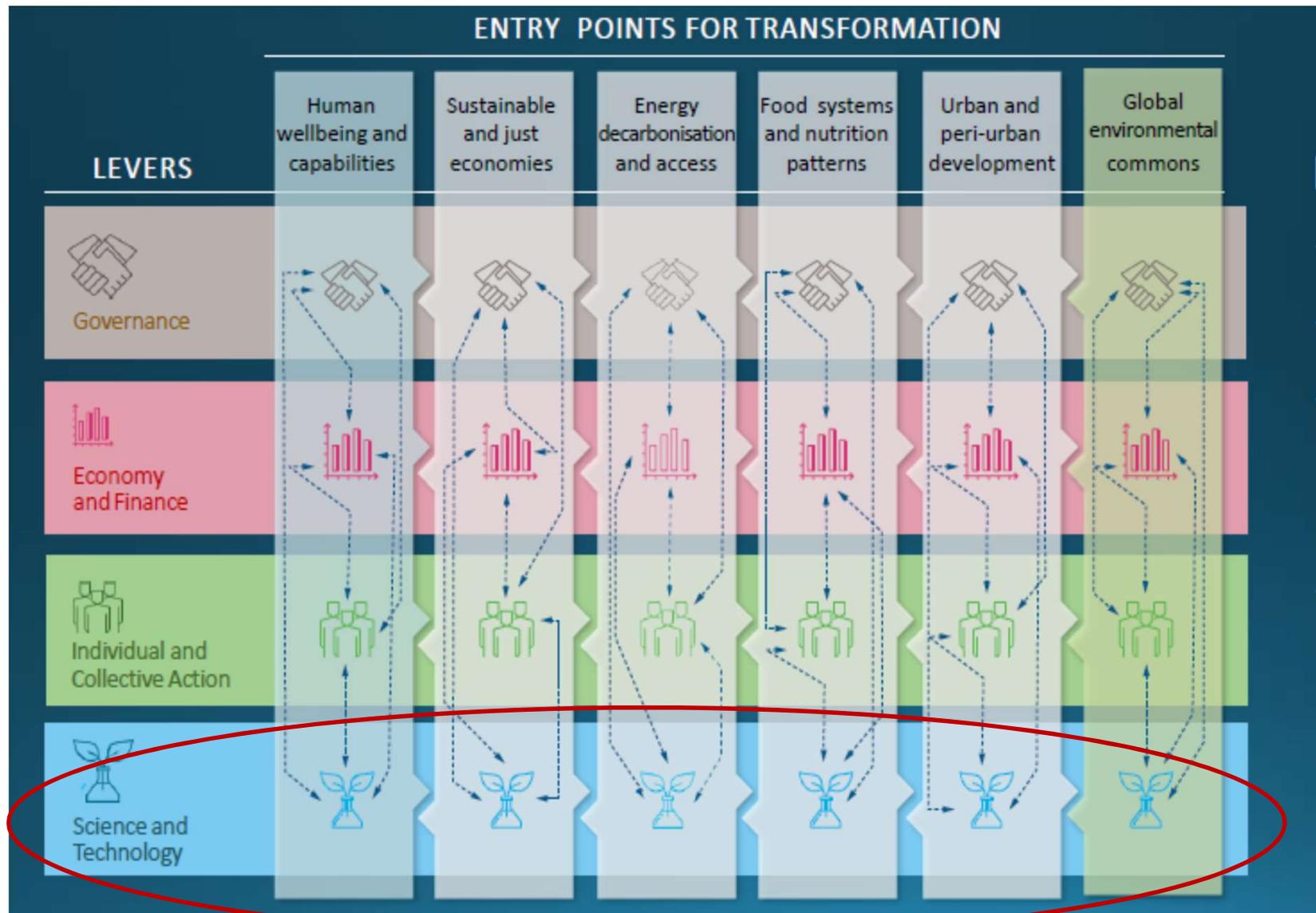


Smoke Haze from bush fires resulting from climate change pollutes the city of Sydney January 2020.  
Photo Marlene Kanga, UNESCO Engineering Report, March 2021, <http://on.unesco.org/Eng2021>

- **Reduction** - Risk analysis to identify and analyse risks from natural hazards to infrastructure (roads, dams, ports, water supply and electricity networks etc.), develop and implement strategies to reducing the magnitude of their impact
- **Readiness and response** - develop early warning and monitoring systems and capabilities before an event to enable rapid and effective response especially to engineering assets such as lifelines (roads, gas, electricity, water etc.)
- **Recovery** - develop coordinated and prioritised or recovery, advocate for appropriate funding, better standards etc.



# Science and Engineering as the Lever for the transformation pathway



# Celebrating the Impact and Outcomes of Engineering for Sustainable Development

- **World Engineering Day for Sustainable Development - 4<sup>th</sup> March every year, inaugural celebration 4<sup>th</sup> March 2020**
- **An opportunity to celebrate the impact and outcomes of engineering for a better, sustainable world**
- **Encourage young people, boys and girls, to consider engineering as a career for positive change for a better sustainable world**



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## ***Engineering* for Sustainable Development**

- **Participation**
- **Influence**
- **Representation**



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



**WFEO / FMOI**



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

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