

SUSTAINABLE ENGINEERING PRACTICES, ETHICS AND GOVERNANCE

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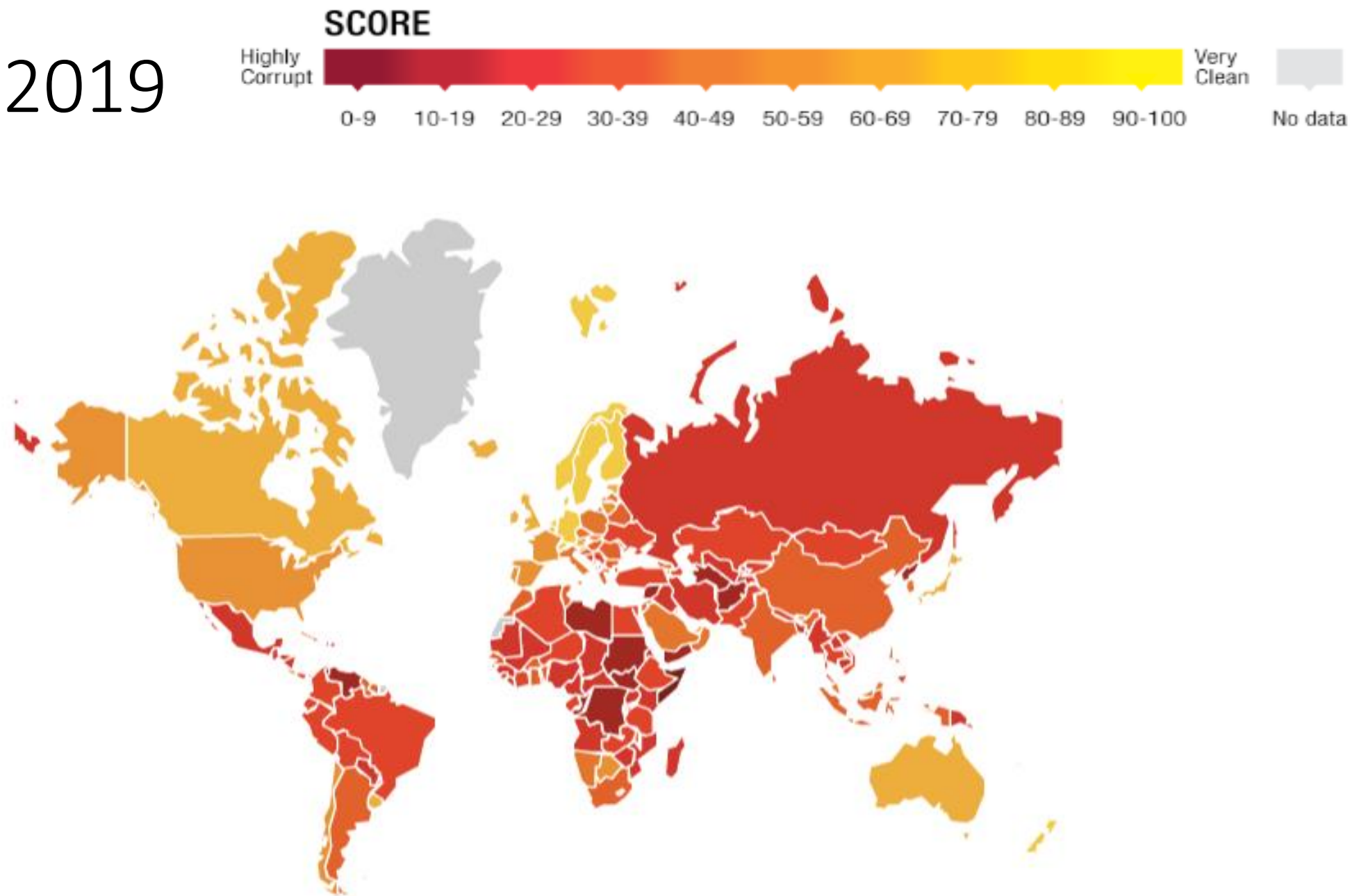
Why Sustainable Engineering Practices, Ethics and Governance?

- According to WEF-PACI in its Global Risks Report 2020, illicit financial flows cost developing countries 1.26 trillion dollars each year while EU loses more than 159 billion dollars each year to corruption and 3.6 trillion dollars lost globally;
- Up to today despite many initiatives and research by various actors on corruption and its demises, the world is still experiencing monopoly, discretion and lack of accountability;
- Up to today again many ethical issues continue to emerge in engineering professional practices.

“Bribery and corruption exist across all industries but, in the sectors of engineering, construction and real-estate, they pose a particular set of challenges”.

2015 WEF- UI PACI Project Task Force;

CPI 2019



What's Sustainable Engineering

Sustainable engineering is the process of designing or operating systems such that they use energy and resources sustainably, in other words, at a rate that does not compromise the natural environment, or the ability of future generations to meet their own needs.

Sustainability is the practice of living life in ways that maintain and protect natural resources such as water, air, soil, wetlands, and forests;

These confirm that “Humanity has the ability to make development sustainable- to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs” Brundtland Report 1987;

Engineering Sustainability Pillars

Economical

Efficient Allocation-
techno economic
systems

Viable

Environmental

Ecological- natural
resources &
ecological capacity

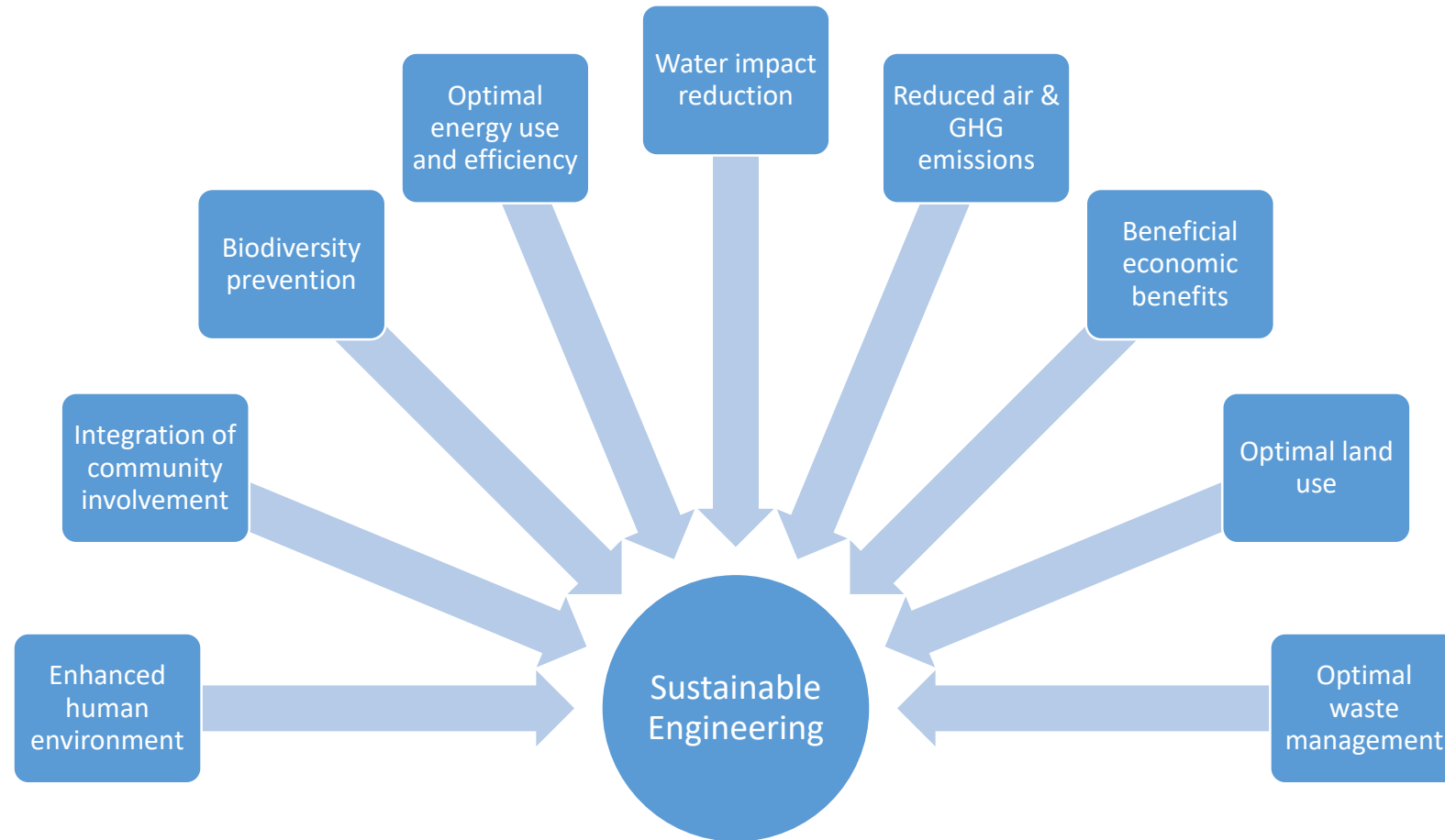
Bearable

Social

Just Distribution-
human capital & social
expectations

Equitable

Engineering **Scope** for Sustainability



Engineering **Guiding Principles** for Sustainable Development

1. Look beyond your own locality and immediate future;
2. Innovate and be creative;
3. Seek a balanced solution;
4. Seek engagement from all stakeholders;
5. Make sure you know the needs and wants;
6. Plan and manage effectively;
7. Give sustainability the benefits of doubts;
8. If polluters must pollute, then they must pay as well;
9. Adopt a holistic “Cradle-to-grave” approach;
10. Do things right, having decided on the right thing to do;
11. Beware cost reductions that masquerades as value engineering;
12. Practice what you preach.

What's sustainable Engineering Ethics

Sustainable ethics is a new discipline that analyses the issues regarding our moral obligations to future generations with respect to the environment;

Principles of ethics:



Common Engineering Ethical Problems

- Technical incompetence or misrepresentation of competence;
- Conflict of interests;
- Discrimination, favoritism or harassment;
- Misuse of resources by clients and companies;
- Failure to protect public health, safety and welfare;
- Improper relations with clients or contractors;
- Improper political or community involvement;
- Mishandling of sensitive informations;
- Failure to protect the environment;
- Poor quality control mechanisms or quality of work;
- **Corruption- is the abuse of power or position for personal gain. There are many forms of corruption including bribery, embezzlement, and extortion.**

What's Sustainable Engineering Governance

Fundamental Principles:

Always ensure the engineering practice is free from corruption and:

- The services provided by **engineers** require honesty, impartiality, fairness and equity and must be dedicated to the protection of public health, safety and welfare;
- **Engineers** must perform under a standard of professional behavior that require adherence to the highest principles of ethical conduct;
- **Engineers** shall hold paramount the safety, health and welfare of the public in the performance of their professional duties;
- **Engineers** – must be proactive and able to begin with an end in mind hence required to perform services only in the areas of their competences.

The Cause and Effects of Governance



Impacts of Good Governance



Governance Sustainable Outcomes

- **Fiduciary obligations** – put in place necessary legislations and policies then ensure their full compliances;
- **Liability and Accountability** – put in place enforceable codes of conduct for all practitioners of the profession;
- **Peer review mechanisms** – put in place independent and objective process in all project cycles to ensure the attainment of projects value for money and fit for purpose;
- **Integrity pacts** – to ensure regular monitoring of stakeholders in all projects cycles for projects' successful and timely implementations.

WFEO on the move to achieve SDGs

WFEO through CAC focuses on SDG 16 and is aimed at activities for “Promoting Peaceful and Inclusive Societies for Sustainable Development, providing access to Justice for all and building Effective, Accountable and Inclusive Institutions at all levels”. Priority interventions mainly target at:

- Promoting the rule of law at the National and International levels and ensuring equal justice for all;
- Developing effective, accountable and transparent Institutions at all levels;
- Ensuring responsive, inclusive, participatory and representative decision making at all levels;
- Broadening and strengthening the participation of developing Countries in the Institutions of Global Governance;
- Ensuring public access to information and protecting fundamental freedoms in accordance with National Registration and International agreements;
- Promoting and enforcing non-discriminatory laws and policies for sustainable development.

The game changer- with new perspectives

Are engineers inventing new ways?

New approach to solving Problems



Join us in celebrating the first

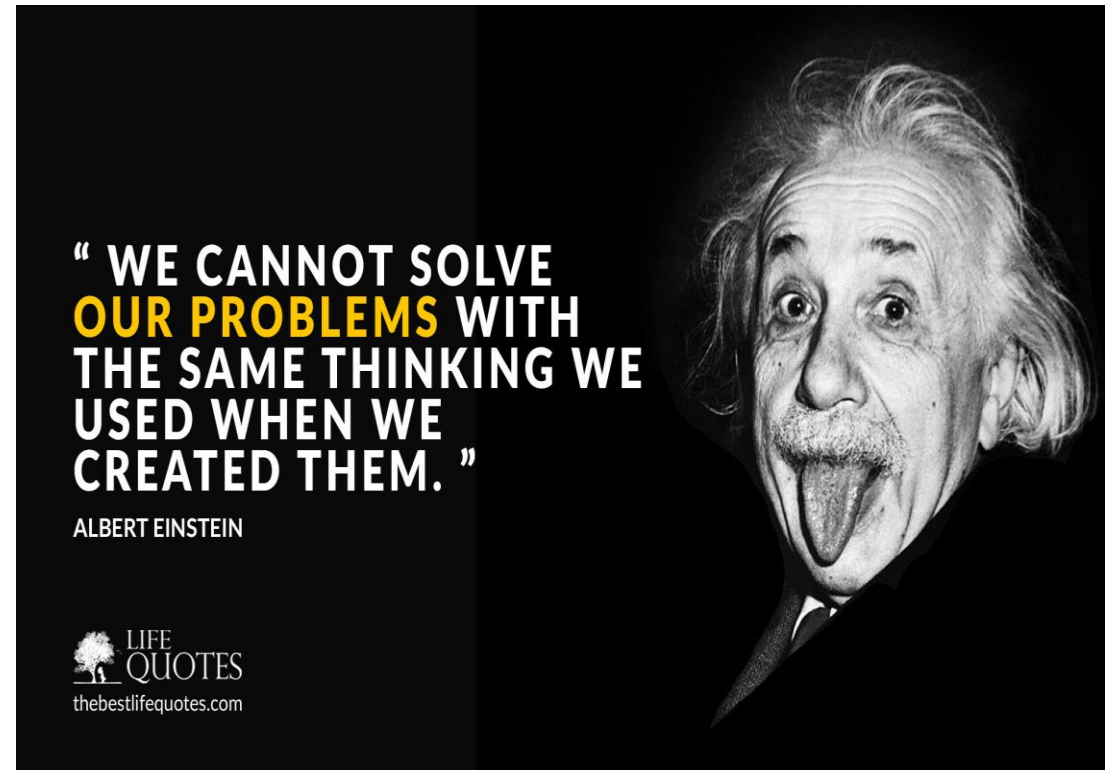
WORLD ENGINEERING DAY FOR SUSTAINABLE DEVELOPMENT

4 March 2020

#WorldEngDay2020 worldengineeringday.net

The graphic features a central logo of a globe made of colorful segments, surrounded by a gear-like border. To the left of the logo is a vertical strip of six small images: a large industrial tank, a bridge, a person in a lab, a wind turbine, a solar panel, and a group of people. To the right is another vertical strip of six small images: a person climbing a structure, a person in a lab, a person in a field, a person in a field, a person in a field, and a person in a field.

Corruption & Inequality



**" WE CANNOT SOLVE
OUR PROBLEMS WITH
THE SAME THINKING WE
USED WHEN WE
CREATED THEM. "**

ALBERT EINSTEIN

LIFE QUOTES
thebestlifequotes.com

The graphic features a black and white portrait of Albert Einstein on the right, sticking his tongue out. The background is dark with a vertical gradient. The quote is in white and yellow text on the left. The Life Quotes logo and website are at the bottom left.

Can Engineering solve these Problems?

Dynamics of Ethics

- **Laws** – a duty of care within the purpose, freedom and barrier
- **Dilemmas** – conflicts between economic and environmental requirements, self and public interests
- **Inequality** – widening gap between the rich and the poor
- **Profits** – keep changing
- Standards of life – **costs** keep rising
- **Behaviors** – vary with cultural and economical diversities

Consequences

- **Corruption** on the rise
- Engineering practices and ethics are becoming **futile**
- Loss of national wealth due to **misallocation** and **misappropriations**
- **Loss of trust** among peers and stakeholders
- **Loss of courage** and motivation to innovation and creativity
- **Loss of focus** to the vision
- **Stunt** or retarded Growth

Engineering Practices and Ethics – A futile endeavor!

- Best practice and ethics imply stresses and tensions;
- The rightness or wrongness of the actions- no or unworthy rewards;
- The goodness or badness of the consequences of actions- innocents can still be punished and non participants are promoted, praised and honored;
- Best practice imply profits- when ethics are neglected;
- Lobbying, peddling, influence, circumventing laws are the order of the day.

Recommendations

- Eradicate monopoly and discretion while increasing accountability at all engineering levels of Governance in public and private institutions;
- Ensure Integrity pacts for monitoring and evaluation by stakeholders in infrastructure projects at all cycles should be emphasized as a best practice and properly implemented;
- Strengthening coordination in order to increase knowledge and skills base for engineering professionals to properly understand corruption, ethics and governance for sustainability;
- Promote initiatives that promote sustainable trust and integrity within institutional, behavioral and technological dimensions for sustainable engineering practices, ethics and governance;
- Promoting collective actions by stakeholders for transparency in all project cycles, permitting and licensing processes in order to minimize corruption.

The End – Thank You For Kind Attention



“Overcoming corruption is really about four key Principles: Culture, Responsibility, Accountability and Effectiveness”

HE Paul KAGAME
Nigeria, 11.06.2019