

World Science Forum

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Plenary Session

Science Engagement: Communication with Society ”

Intervention

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The UN Summit General Assembly unanimously approved the 17 UN Sustainable Development Goals (SDGs) on 27 September 2015. The SDGS 2016-2030 will replace the UN Millennium Development Goals (MDGs) 2000-2015.

The 17 UN SDGs

Goal 1: End poverty in all its forms everywhere;

Goal 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture;

Goal 3: Ensure healthy lives and promote well-being for all at all ages;

Goal 4: Ensure inclusive and equitable quality education and promote life-long learning opportunities for all;

- Goal 5: Achieve gender equality and empower all women and girls;**
- Goal 6: Ensure availability and sustainable management of water and sanitation for all;**
- Goal 7: Ensure access to affordable, reliable, sustainable, and modern energy for all;**
- Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all;**
- Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation;**
- Goal 10: Reduce inequality within and among countries;**
- Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable;**
- Goal 12: Ensure sustainable consumption and production patterns;**
- Goal 13: Take urgent action to combat climate change and its impacts;**

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development;

Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss;

Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels;

Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development.

<http://sustainabledevelopment.un.org/focussdgs.html>

The SDGs are holistic, cross-disciplinary and multi-stakeholder in participation. They break new ground with additional goals on inequalities, economic growth, decent jobs, cities and human settlements, industrialization, energy, climate change, sustainable consumption and production, peace, justice and institutions.”

The SDGs boldly proclaim end of global poverty by 2030!

Outcome of Intensive Global Consultation

The SDGs are the outcome of an inclusive consultation involving all UN Member States, the entire UN System, Experts, Civil Society, Business and millions of people from all corners of the world since Rio+20 in 2012.

By December 2014, the multi-stakeholder consultation process was completed with UN Secretary-General Ban Ki-Moon issuing his Synthesis Report on the Post-2015 Development Agenda entitled “The Road to Dignity by 2030: Ending Poverty, Transforming All Lives and Protecting the Planet”.

http://sustainabledevelopment.un.org/content/documents/5527SR_advance%20unedited_final.pdf

The UN Sec-Gen Synthesis Report Emphasizes Technology

“ In two decades since 1990, the world has halved extreme poverty, lifting 700 million out of extreme poverty. Between 2000 and 2010, an estimated 3.3 million deaths from malaria were averted, and 22 million lives were saved from fighting tuberculosis. Access to antiretroviral therapy has saved 6.6 million lives since 1995. ----- New technologies are unlocking possibilities for sustainable development. The solutions that they can generate, and the levels of access that they can enable, will be crucial to our vision for the world beyond 2015.”

In my opinion, the UN Sec-Gen Synthesis Report should have explicitly emphasized “Science and Engineering” alongside “Technology” as without science and engineering, there cannot and will not be any technology!

From MDGs to SDGs

In my view, the drastic transformation from the rather unambitious and silo-like 8 MDGs to the 17 SDGs has been brought about by the dramatic social and economic uplift since the turn of this century by South countries through infrastructure construction, domestic manufacture, industrialisation and trade and commerce.

The most striking examples have been China, the Asian Tigers of Korea, Taiwan, Hong Kong, Singapore and then, some ASEAN Countries like Malaysia and Thailand.

Science, Engineering and Technology for UN SDGs

Most if not all the SDGs are really infrastructure sector SDGs. they can be all included in SDG No 9: “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.”

In SDG No. 9, Infrastructure is linked to Industrialisation and Innovation. Contrary to the widespread belief that Innovation is the fruit of R&D in academia, SDG No.9 affirms that Innovations that create wealth and employment happen mostly in industry throughout the world.

SDG No. 9 also acknowledges that infrastructure development is the foundation for economic and social development of any country, particularly a developing country.

In Infrastructure and Construction Science, Engineering and Technology, the Country that Bestrides the World like a Colossus is China

China is continuing to build infrastructure mega-projects at home and abroad at breakneck speed.

China's tremendous infrastructure achievement will enhance her cutting-edge construction and manufacturing capabilities and capacities.

Besides technological advantage, China graduates more than one million engineers a year to supply needed skilled human capital for her construction industry.

Above all, China has the financial wherewithal as China's foreign exchange reserve in December 2014 was US\$ 3,843.0 billion.

There cannot be any doubt that China will continue to carry on with infrastructure construction at home and vastly expand her infrastructure construction projects abroad.

China's Top Global Achievement in 2014/2015

- **The Asian Infrastructure Investment Bank (AIIB).**

Asia has a massive infrastructure funding gap. Statistics from the Asian Development Bank (ADB) show that between 2010 and 2020, US \$ 8,000 billion will be needed in the Asia-Pacific region to improve its infrastructure. However, the ADB is only able to provide about 10 billion U.S. dollars annually for this.

Infrastructure funding gaps are equally massive in Africa and Latin America and even in the developed countries of Europe and North America.

Almost simultaneous with the AIIB proposal, China announced the “One Belt One Road” Project. The “Belt and Road” routes run through the continents of Asia, Europe and Africa, connecting the vibrant East Asia economies at one end and developed European economies at the other.

The Silk Road Economic Belt focuses on bringing together China, Central Asia, Russia and Europe, linking China with the Persian Gulf and the Mediterranean Sea through Central Asia and the Indian Ocean.

The Maritime Silk Road is designed to go from China's coast to Europe through the South China Sea and the Indian Ocean in one route, and from China's coast through the South China Sea to the South Pacific in the other.

One belt, one road

China is pushing to revive its ancient overland and maritime silk routes to Europe. The route connects many land and sea ports over three continents.



In the Chinese “Vision and Actions On Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road” Document,

[http://news.xinhuanet.com/english/china/2015-](http://news.xinhuanet.com/english/china/2015-03/28/c_134105858.htm)

[03/28/c_134105858.htm](http://news.xinhuanet.com/english/china/2015-03/28/c_134105858.htm) the “One Belt One Road” has been established on four principles: openness and cooperation; harmony and inclusiveness; market operation; and mutual benefits,

China has pledged some US \$900.0 billion for all her infrastructure initiatives and projects throughout the world.

China expects the annual trade volume between China and her partner countries to surpass 2.5 trillion U.S. dollars in a decade or so.

Maintenance of Infrastructure

In all the pronouncements on SDGs, AIIB, “One Belt One Road”, little or no mention is made on the need to maintain in good working order of the infrastructure assets that are being built at high capital cost and at high speed throughout the developing world.

China seems to have a fixation about building infrastructure projects overseas below budget and ahead of time. This is perhaps understandable for China to want to establish a track record as the foremost infrastructure construction nation on earth.

Their construction corporations tend to import almost everything from home without involving anything local.

This is most evident in Africa where indigenous technical expertise and project management skill are lacking. Except for the most basic labour, everything is Chinese from China. They have not nurtured African engineering and technical expertise, especially in the area of maintenance of built infrastructure.

I have been urging the Chinese Academy of Engineering to convey to the Chinese Government the urgent need for human capital nurturing in Africa starting with using the facilities of their Confucius Institutes in African countries.

ISTIC

The International Science, Technology and Innovation Centre for South-South Cooperation under the Auspices of UNESCO (ISTIC) is a successful outcome of the 2nd Summit of China+G77 in Doha 2005. The Summit urged UNESCO to balance initiatives on the supply side of S&T with more initiatives on the demand side for the benefit of peoples in South countries.

UNESCO approached Malaysia to host ISTIC as a Category II Centre in 2006. UNESCO Category II Centre is funded by the host nation. Malaysian government agreed. ISTIC was formally launched in Kuala Lumpur on 22 May 2008.

All ISTIC programmes have focused on institutional and human capital capacity building in science, engineering and technology in the South.

“Maintenance of Infrastructure” is an ISTIC priority agenda.

Since 2009, ISTIC has organized “Maintenance of Infrastructure” workshops in India (3), Kenya, Myanmar, Nigeria and Malaysia (3). ISTIC “Maintenance of Infrastructure” agenda has attracted widespread interest and increasing support in the South. ISTIC’s partner has been the Engineering Staff College of India (ESCI) Hyderabad of IE (India).

I am very encouraged by the support of all Malaysian organisations related to human capital capacity building in the construction industry like the Institution of Engineers Malaysia (IEM), Board of Engineers Malaysia (BEM), Construction Industry Development Board Malaysia (CIDB) , Malaysian Highway Authority (MHA), Master Builders Association Malaysia (MBAM) and Malaysian Service Providers Confederation (MSPC) as partners of the ISTIC Maintenance of Infrastructure agenda.

SDG No. 4 “Ensure inclusive and equitable quality education and promote life-long learning opportunities for all”

SDG No. 4 places great importance on formal technical and vocational education and training. This is crucial for providing the necessary human capital for infrastructure development and its associated construction and services SMEs.

However SDG No. 4 does not have any target on life long learning.

Accreditation of Engineering Education Qualifications

The ISTIC priority agenda associated with SDG No. 4 is “the accreditation of engineering and technology education qualifications to international standards in Asia and the Pacific”.

ISTIC’s partners are the UNESCO Regional Science Bureau for Asia and the Pacific, Jakarta and the Federation of Engineering Institutions in Asia and the Pacific (FEIAP), Kuala Lumpur. Under the UNESCO Jakarta/FEIAP Agreement under which the FEIAP program of mentoring member organisations to acceptable international accreditation standard and procedure using the FEIAP Education Guideline has been extended to Africa.

This initiative will eventually lead to the mobility of well qualified engineers and technologists in Asia, Africa and the Pacific.

My Most Urgent Campaign with respect to SDGs: SDG No. 5 “Achieve Gender Equality and Empower all Women and Girls”

SDGs are meant to eradicate global poverty by 2030. The global poor are the women and children in the world. Children are looked after by W women.

After centuries of discrimination, it is hard to imagine that Gender Equality can be achieved by the SDG deadline of 2030!

As a Commissioner of the UN Broadband Commission for Sustainable Development, I have proposed that Gender Equality be made the Overarching Agenda of all the SDGs. The Gender Equality Action Plans of all SDGs are to be monitored through Big Data collation and analysis so that the strengths and weaknesses will be highlighted to facilitate achievement of SDG No.5. Then all SDGs will be achieved.

THANK YOU