

**Regional/Thematic Symposium on
Broadening the Application of the Sustainability Science Approach
in support of the 2030 Agenda for Sustainable Development
(19 to 21 December 2016, Kuala Lumpur, Malaysia)**

Future of Transdisciplinarity Research to Tackle Sustainability Challenges in the Arab Region

By

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This Presentation

- The sociopolitical and economic perspective in Arab Region
- Knowledge & Technology Production in Arab Region
- From MDGs – SDGs
- Meeting Targets: 2030 Agenda in Arab Region
- What can Arab Scientists do?
- Transdisciplinarity Approach for Arab Countries
- Concluding Remarks / Recommendations

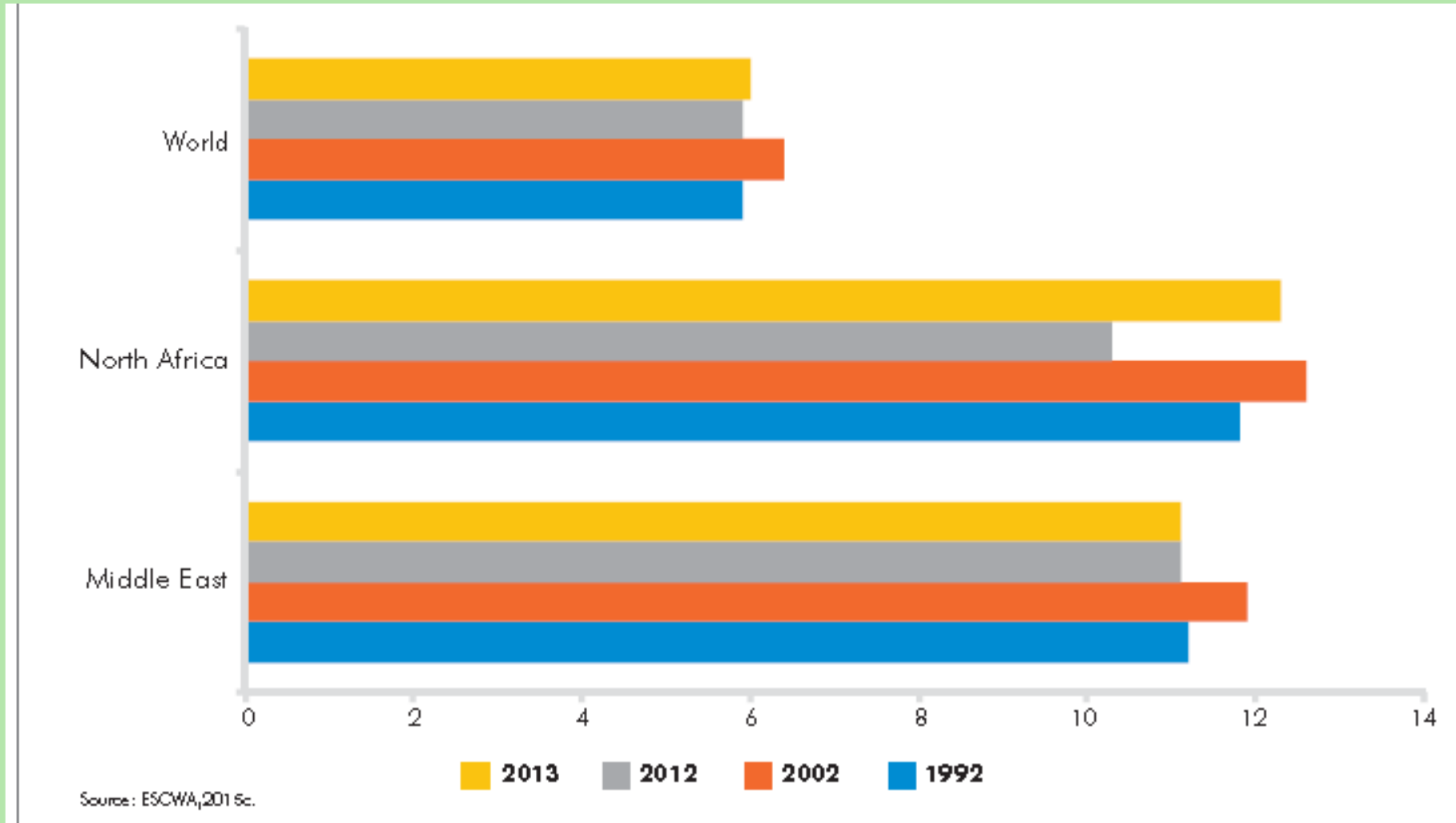
Preamble

- Difficult times in Arab Region :
 - *Even before 2010, the **research output** of Arab World was equivalent to a small industrialized nation.*
 - *Since "**Arab Awakening**", deterioration of an already weak science, inter alia, culture & structure*
 - *One of the worst outcomes of wars is the **destruction of Science infrastructure.***
 - *Scientists, engineers, medical doctors ...etc. suffered most in certain Arab countries torn apart by invasion / armed conflict .*

... Preamble

- Unemployment, poverty and marginalization are on the increase for Arab youth & women:
 - **Young Arabs** (15-29 years) number 105 million and growing fast.
 - @ 30% of youth are **unemployed** compared with 14% world average.
 - **Arab Women**: 50% unlikely to find a job compared with a 16% world average.
- **Uncertainty** is prevailing in the Arab Region.
- By 2020, 75% of Arabs could be “**living in countries vulnerable to conflict**” unless:
 - *Genuine efforts are made to address people’s aspirations for well-being, dignity ...etc. (Arab SD Report, 2015)!*

Unemployment Rate in Arab States (%)



Knowledge & Technology Production in Arab Region

- R&D Expenditure in Arab World (2007) is 0.20% of GDP:
 - 1.00 in *Developing Countries*
 - 1.7 *World average*
- Judging by international scientific publication records:
 - *Arab World publications amount to a mere 0.2%*
- Number of researchers (per million) is 373:
 - 580 in *Developing Countries*
 - 1081 *World average*
- **Arab World is mostly recipient to Knowledge & technology**

Divergences - Shared Challenges

- Arab countries at **varying development levels**:
 - *Oil producing countries with high per capita income levels*
 - *Other Arab countries rely on foreign aid*
 - *High income disparities within Arab countries*
- Thus would be **disingenuous** to consider the Arab World as one block from development perspective
 - *Oil-producing – Middle East – North Africa – Less Developed (LDCs)*
- *Nonetheless*, there are **common challenges** :
 - *E.g. water, energy, food security, employment,, and migration.*

From MDGs – SDGs ...

- Difficulty in **measuring** progress in MDGs achievements in Arab World:
 - *Disproportionate amongst Arab countries*
 - *Only 42% of the 45 MDGs' **indicators** could be identified for six Arab countries*
 - *Substantial progress was achieved for some MDGs but others remain **intangible**.*
- **New serious challenges emerged in the Arab region.**

From MDGs – **SDGs**

- SDGs constitutes a more **inclusive, encompassing, and integrative** model of SD:
 - *Integrated: economic, social, environmental, development, human rights, peace and security*
 - *interconnected and Evidence-based*
 - *Advocates national **ownership***
 - *The 2030 Agenda is **merely a guide** for national action, yet its core value is encouraging international collaboration.*
- **SDGs provide an excellent framework for Arab Countries to align its SD plans with.**

No.	Emerging Issues (identified by UNDESA, GSDR 2016)	1: No Poverty	2: Zero Hunger	3: Good Health & Well-being	4: Quality Education	5: Gender Equality	6: Clean Water & Sanitation	7: Affordable Clean Energy	8: Decent Work and Economic Growth	9: Industry, Innovation & Infrastructure	10: Reduced Inequality	11: Sustainable Cities & Communities	12: Responsible Consumption & Production	13: Climate Action	14: Life below water	15: Life on Land	16: Peace, Justice & Strong Institutions	17: Partnerships for the Goals	Sum of Scores
1	Establishing governance mechanisms for the SDGs, from global (UN) to regional, national, and local levels.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	100
2	Coping with the increasing impacts of climate changes.	5	5	5	0	3	5	5	5	0	0	5	3	5	5	5	0	3	69
3	Political instability and social unrest from increased income and wealth inequalities.	3	5	5	5	3	3	3	5	5	5	5	3	3	0	3	5	4	76
4	Ensuring access to affordable, sustainable, and reliable modern energy services for all.	5	5	5	3	0	5	5	5	5	5	5	5	5	5	5	0	5	86
5	Accelerating the implementation of environmentally-friendly renewable energy.	0	0	5	0	0	3	3	3	3	0	5	5	5	5	5	0	5	55
6	The need to develop alternative economic models that decouple economic growth resource use and minimize environmental degradation.	0						4	4	4	4	5	5	5	0	3	3	5	49
7	The need to protect and restore ecosystems.	3	3	5	3	0	5	3	3	0	0	5	5	5	5	5	0	5	65
8	Persistence of poverty globally, including the poor in rich countries.	5	5	5	5	5	4	4	5	0	5	5	3	0	0	0	5	5	72
9	Strengthen and enhance the means of implementation and global partnership for sustainable development.	5	4	4	4	4	3	3	5	3	5	4	3	5	3	5	3	5	80
10	Highly unequal distribution of household wealth across and within nations.	5	5	5	5	4	0	0	5	0	5	5	3	0	0	0	5	5	61

EXAMPLES OF RECENT NATIONAL DEVELOPMENT STRATEGIES IN ARAB COUNTRIES

- * Qatar's National Vision 2030 (2009) and National Development Strategy 2011-2016
- * Saudi Arabia's Vision 2030 (2016)
- * The United Arab Emirates' National Agenda Vision 21; National Green Growth Strategy; and Abu Dhabi Economic Vision 2030
- * Jordan's National Resilience Plan 2014-16 (2014) and National Vision 2030 (in preparation)
- * Lebanon's National Sustainable Development Strategy (in preparation)
- * Bahrain's Vision 2030 (2007)
- * Development Strategy of the New Tunisia (2012); National Sustainable Development Strategy 2016-2020 (2014); Guidance Note for the Strategic Development Plan 2016-2020 (in preparation)
- * Iraq's National Development Plan 2010-2014 (2010)
- * Egypt's Sustainable Development Strategy (2030)
- * Algeria's National Strategy for the Fight Against Poverty (2005-2015) and Five-Year Plan (2010-2014)
- * Sudan's Interim Poverty Reduction Strategy Paper (2012)
- * Djibouti's Poverty Reduction Strategy Paper (2009)
- * Morocco's National Sustainable Development Strategy (2015)

Science in SDGs / 2030 Agenda

- Paragraph 35 in SDGs Declaration **recognized** *“the central role that science, technology and innovation play in enabling the international community to respond to sustainable development challenges.”* and **committed to** *“strengthen the role of the science-policy interface in environmental governance”*.

Meeting Targets: 2030 Agenda in Arab Countries (1/2)

- SDGs provides an opportunity for Arab countries to **meet social – environmental – economic ...** in its national targets.
- It is an opportunity for promoting national **scientific capacities** as SDGs assume evidence-based approaches e.g. **SDG 9**:
 - *"build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation"*

Meeting Targets: 2030 Agenda in Arab Region (2/2)

- Can be an **opportunity for Arab integration** to meet regional common challenges :
 - *Especially in the fields of Water, Energy, Climate Change, Technology*
 - *while accounting for **national priorities***
- Also an opportunity for **global cooperation** making use of knowledge bases **and accessing green financing** and technologies.

What can Arab Scientists do?

- Despite a discourse advocating Arab economic integration and cooperation in Science & Technology, **lost opportunities** are many and still being witnessed till the day.
- Despite the civil war /turmoil / political instability in several Arab Countries, scientists and policy professionals have a duty to explore how they can contribute to meeting the **Sustainability challenge**:
 - *by promoting human well-being while preserving the natural environment for future generations*
- **STI proved instrumental** in many countries in enabling sustainable development and promoting resilience.
- **Inaction should not be an option in spite of the odds.**

Looking Forward

- Embark on the path of sustainable development requires an understanding of prevailing sociopolitical, economic & environmental conditions which are also prerequisites for any future plans to advance **Sustainability Science**
- By virtue of modern social media, **Arab youth are more connected to the world** than ever before. They are also better educated than ever before. **Arab Governments are yet to act on this potential!**
 - *There is a clear need to have an **enabling infrastructure***
- SDGs and 2030 Agenda should be an opportunity for advancing Sustainability Science
- However, rebuilding using a **“business-as usual- scenario”** will not achieve SDGs by 2030.
- **A transdisciplinary approach** can be so prudent considering the much needed efforts to reconstruct physical and human infrastructure in several Arab countries as it assumes a holistic and inclusive research methodology.

Enabling Environment for STI

- Achieving SDGs and meeting targets in 2030 Agenda won't be possible without **a conducive STI environment** e.g. SDGs (9, 17, 6, 11, 13 & 15):
 - *Prudent science policies should be developed addressing, inter alia,:*
 - *Science advice to governments, good governance, monitoring, youth science education and development*
- **Commitment** to application of promulgated policies and implementation to address national and international issues like:
 - *Climate change*
 - *Disaster Risk Reduction*
 - *Data Sharing*
 - *Management of natural resources*
 - *International Scientific Cooperation*

Transdisciplinarity Approach for Arab Countries

- Transdisciplinary research approach is more needed than ever considering the political instability in the Arab World since:
 - **Traditional methods will not** achieve SDGs and 2030 Agenda
 - Increasingly realized, in some Arab establishments, that solid progress only occurred when **a holistic approach was pursued**; concurrently accounting for institutional, regulatory, human resource
 - **Advocates inclusiveness** which is so much needed in post-war reconstruction, recovery and reconciliation
 - e.g. **transdisciplinarity** can start by scientists working with communities with priority of development needs e.g. applied research for expanding sanitation to marginal communities ...etc.

■ Concluding Remarks / Recommendations (1/2)

■ Arab Countries need to:

- *Create an enabling environment for STI through including STI in SD plans.*
- *Promote educating students in four specific disciplines — science, technology, engineering and mathematics (STEM) in an **interdisciplinary and applied approach**.*
- *Engage in expanding knowledge and data sharing at the regional and international levels. E.g. the “**Open Data in a Big Data World**” international Accord provides an opportunity (by ICSU, IAP, TWAS & ISSC).*

Concluding Remarks / Recommendations (2/2)

- Arab Countries need to:
 - *Make use of expertise of Arab scientist in the diaspora*
 - *But not before embarking on the creation of an enabling conducive environment for STI and entrepreneurship*
- There is a need to promote collaborative scientific and technological infrastructure in an integrated manner.
- Adoption of a **transdisciplinary** approach in rebuilding the knowledge base should help Arab countries better address development challenges within the SDGs and 2030 Agenda