

## 22<sup>nd</sup> Meeting of COMSATS Coordinating Council

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16-18 April 2019, Tianjin, China



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UNESCO Programmes on STI Policy

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Opportunities for Collaboration with COMSATS

# 1

## UNESCO Programmes in STI Policy



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# 1.1

## Context: STI Policies for SDGs

**UNESCO Perspective on the use of Science, Technology and  
Innovation to achieve Sustainable Development Goals**



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### 1.1.1 UNESCO Guiding Principles for STI

- a. STI as driving role for Sustainable development
- b. National needs and contexts (social, cultural, environmental)
- c. STI dimensions of inclusiveness, gender, and ethics
- d. Science for Peace



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### 1.1.2. STI Policy at a glance

- a. **Technical advice and support** for the formulation and assessment of STI policies
- b. **Normative approach:** STI policy blueprint, *Recommendation on Science and Scientific Research* (2017), UN - IATT working group on STI Roadmaps for SDGs
- c. **Evidence for policy making:** Policy reviews, Global Observatory on STI policy instruments (GO-SPIN), STI Indicators for SDGs, UN Technology Bank for LDCs
- d. **Design of STI policy instruments and legal frameworks:** recommendations for STI reforms, STI laws, funding mechanisms, etc.
- e. **Policy guides** on STI policy instruments
- f. **Promoting a culture of innovation:** Technology business incubators, Science parks, and Grassroots Innovation

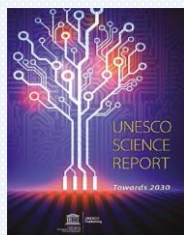


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### 1.1.3. Global monitoring of STI

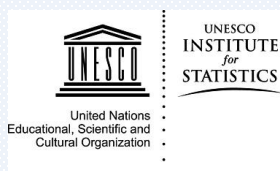


**UNESCO Science Report**  
Mapping STI landscapes  
around the world (Global,  
Regional, National) to support  
Member States in evidence-  
based STI policy decision  
making



#### **Sustainable Development Goals (SDGs)**

Indicators for monitoring  
sustainable development goals:  
Science, Technology and  
Innovation



**UNESCO Institute for Statistics**  
Collecting R&D statistics  
Methodological developments



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### 1.1.4. Capacity Building in STI policy

- a. UN - IATT working group on Capacity Building
- b. Cooperation with UNESCO Chairs and Centres
- c. Establishment of new STI policy programmes and degrees in universities, with focus on Africa
- d. Setting-up networks worldwide for STI policy training programmes and research
- e. Training and capacity-building at national and regional levels (e.g. 1000 STI policy-makers and managers received training in STI policy and governance in the last 4 years)



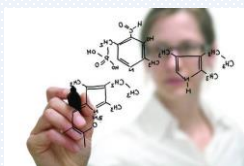
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### 1.1.5. Public awareness and society engagement with STI



UNESCO Kalinga Prize for the Popularization of Science



11 February : International Day of Women and Girls in Science



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### 1.1.6. Science Policy - Society Interface

**a. Promoting dialogue between science policy and society**

World Science Forum, Global Innovation Forum, Latin American and Caribbean Open Science Forum (CILAC), African Ministerial Forum for STI.



**b. Science advice to governments and parliamentarians**

Collaboration with the International Network for Government Science Advice (INGSA)



**c. Science Diplomacy activities**



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# 1.2

## UNESCO GO-SPIN Methodology

Global Observatory on Science, Technology and Innovation  
Policy Instruments (GO-SPIN)



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### 1.2.1. GO-SPIN: For science policy



**Map national STI landscapes**, and analyze STI policies and their implementation.

GO-SPIN supports Member States in collecting and analysing information on STI policies, while reinforcing capacities for analysis and policy-making.



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## 1.2.2 The GO-SPIN Platform

### 60+ developing countries with information on STI policies and instruments

#### a. Legal frameworks, policy instruments and units of analysis

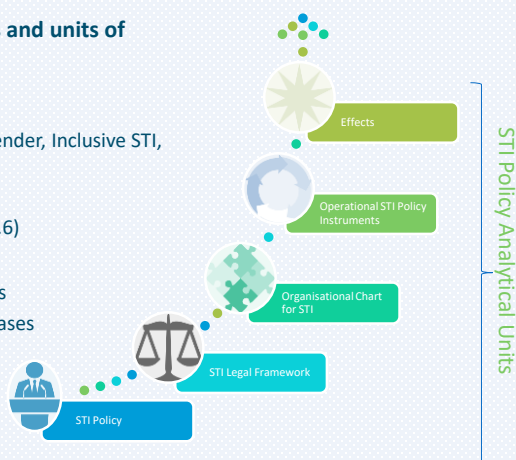
- STI Policy analytical units
- Thematic analytical units (e.g. SDGs, Gender, Inclusive STI, Open Science, etc.)
- STI indicators analytical tools
- Official reporting for SDG 17 (Target 17.6)

#### b. Digital Library

- Historical UNESCO STI Policy documents
- Links to other STI Policy relevant Databases

#### c. Capacity Building

- Training tool for STI Policy for the SDGs
- Data collection and analysis



Instruments for ensuring a policy obtains the desired effect. Adapted from Sagasti and Aráoz (1976)



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## 1.2.3. GO-SPIN Country profile series

8 volumes (2014-2018)



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## 1.2.4. Why UNESCO GO-SPIN ?

- a. Improve evidence-based decision making, STI policies design, review, implementation and evaluation
- b. Identify gaps in policy instruments for implementation
- c. Allow comparisons with other countries' STI systems performance, to follow evolution of STI indicators in time
- d. Enhance policy coordination and cooperation among ministries, academia, civil society, and the private sector
- e. Build capacities in STI governance



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United Nations  
Educational, Scientific and  
Cultural Organization

# 1.3

## STI: inclusiveness, gender and ethics



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### 1.3.1. UNESCO - inclusiveness

#### STI that leaves no one behind!

- Youth
- Women
- Persons with Disabilities
- Rural populations
- Ethnic minorities
- Others...

#### Africa priority



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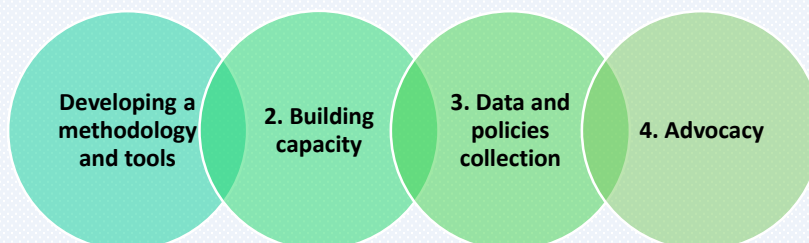
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### 1.3.2. UNESCO SAGA Programme in brief

**SAGA (STEM and Gender Advancement)** is assisting countries in:

- Reducing the gender gap in STI at all levels of education and research
- Identifying gaps in the policy mix and improving national STI policies
- Building capacity for data collection on gender in STEM



SAGA is supported by  Sweden  
Sverige



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### 1.3.3. SAGA tools

- a. Improve **evidence-based** decision making, STI policies design, review, implementation, and evaluation focused on gender equality
- b. Map **policies, instruments and measures** focused on gender equality in STI
- c. Categorise and **identify policy gaps**
- d. Illustrate the **profiles of gender equality** in STI
- e. Identify and better understand the **drivers and barriers** to STEM careers

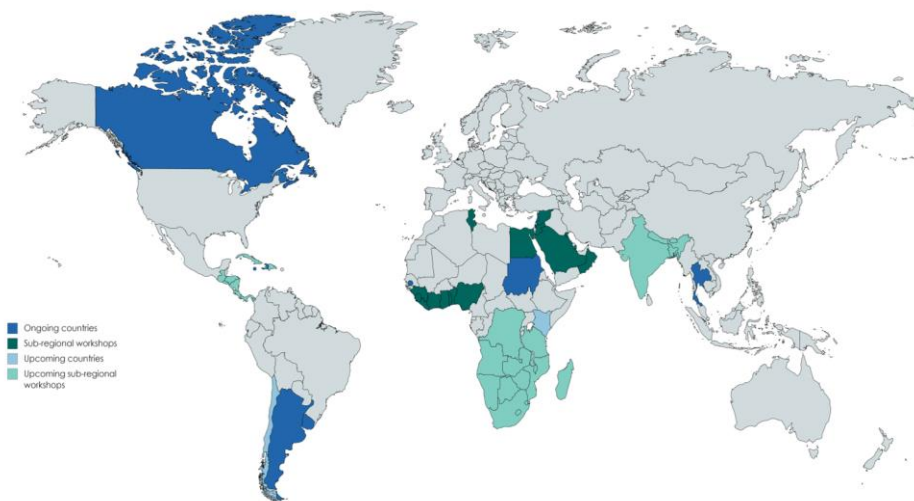


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### 1.3.4. SAGA pilots projects around the world



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### 1.3.5. STI policy impact

- Almost **150 experts** from over 90 national institutions
- Almost **20 international institutions** collaborating with SAGA
- Over **350 experts trained** from 26 countries
- Methodology downloaded more than **10,000 times** and **7 country reports** produced
- Reviews of national STI policy based on recommendations after the implementation of SAGA (STI Law Gambia, Programme in Argentina, unit on GE in STI in Quebec , etc.)



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### 1.3.6. Ethics of Science

- Bioethics
- Ethics of S&T

#### World Commission on the Ethics of Scientific Knowledge and Technology (COMEST)



The World Commission on the Ethics of Scientific Knowledge and Technology COMEST\* is an advisory body and forum for reflection that was set up by UNESCO in

The Commission is composed of eighteen leading scholars from scientific, legal, philosophical, cultural and political disciplines from various regions of the world, appointed by the UNESCO Director-General in their individual capacity, along with eleven *ex officio* members representing UNESCO's international science programmes and global science communities.

The Commission is mandated to formulate ethical principles that could provide decision-makers with criteria that extend beyond purely economic considerations.

COMEST works in several areas: environmental ethics, with reference to ethics to



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# 2

## Opportunities for Collaboration with COMSATS

On STI Policy and others



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# 2.1

## Promoting a Culture of Innovation

Science parks, Technology business incubators, Grassroots innovation



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### 2.1.1. Facilitate the development of innovation ecosystems

- a. A key challenge in promoting technological innovation in developing countries is the **lack of interconnection** between innovation stakeholders (university/research institution, industry, government and financial institutions);
- b. Building an innovation system in developing countries is complex, it involves the **formal sector** (enterprises, universities, research institutes, government, financial institutions, and NGOs) and the **informal sector** (including grassroots inventors, local and indigenous knowledge);
- c. An effective innovation system should allow private sector to generate prosperity, while ensuring that they also contribute to **enhancing quality of life** for those left behind.
- d. **Data for development!**



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### 2.1.2. Promote firm-based innovation

- a. Support **science parks** and **technology business incubators** through technical support, capacity building activities, and pilot projects;
- b. Isfahan, I.R. Iran, **Regional Centre for the Development of Science Parks and Technology Business Incubators**, Category 2 Centre under the auspices of UNESCO;
- c. The ultimate goal is to develop national capacity in creating, nurturing and managing knowledge-based SMEs: opportunities of decent work for youth.



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### 2.1.3 Support Value Addition of Grassroots Innovation

- a. **Grassroots innovation** is innovation from people, for people (to solve their own problems), by people (with community involvement);
- b. It is a bottom–up solution that responds to local contexts and the interests and needs of the communities involved;
- c. The output of grassroots innovation is a cost-effective product or service that meets local community needs, provide them with decent work, and does not add pressure to the environment. Some of them are based on indigenous knowledge, like medicine;
- d. UNESCO assists its Member States in scouting.



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### 2.1.4. Grassroots Innovation – Inclusive innovation for sustainable development

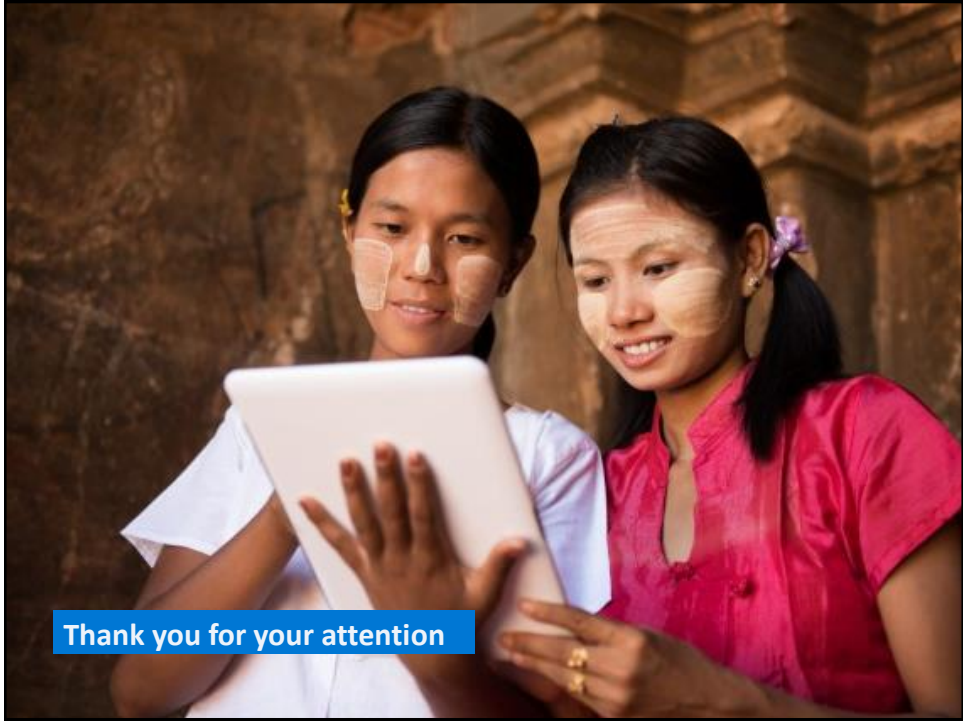
- a. Innovation can be a critical tool to reduce multidimensional poverty and promote social inclusion as well as green development: achievement of the SDG!;
- b. The current systems of innovation are not optimised for reducing socioeconomic and environmental deprivations because they were designed primarily to achieve economic growth and improve competitiveness (but with a narrow view that competitiveness is only derived from “saving labor”).
- c. A socioeconomically and environmentally inclusive innovation system is a multi-stakeholder social learning process that generates new knowledge, puts it to use **for people and planet**, and equitably and sustainably expands the capabilities, access and opportunities of those left behind;
- d. Inclusion of left behind groups in every step of the innovation process is the key of success in a **pro-SDG innovation concept**.



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Thank you for your attention