Science, technology and innovation (STI) policies are important drivers of social welfare and inclusion, sustainable development and economic growth. The benefits of research and innovation go beyond improving national competitiveness by creating new markets, new jobs and new sources of income. Current STI indicators focus primarily on these potential benefits; STI may also contribute to improving quality of life by improving health, food security, risk resilience; and achieving the MDGs in areas such as the eradication of poverty, social and gender equality and sustainable development. These social benefits of STI are, however, hardly measured.

Today, humanity faces unprecedented challenges. Increasing inequality and the growing impact of human action on the environment call for policies that stimulate exploration of new and renewable energy sources, assist in the sustainable management and conservation of freshwater, terrestrial resources and biodiversity, as well as lead to disaster resilience and promote social inclusion and equity. STI plays a specific role in these policies. Measuring this role and expanding STI monitoring (to include informal innovation, for example) is crucial for the formulation of multi-dimensional, comprehensive and inclusive STI policies.

Responsible, participatory and accountable governance requires access to appropriate and reliable data to make informed STI policy decisions about future actions, and their possible short and long-term impacts. Therefore, policy makers need a clear picture of their national, regional and global performance, and need to be able to estimate the impact of current STI policies and plan for future ones. The analysis of any national or regional STI policy strongly depends on the adequate mapping of the structure of STI governing bodies, STI national legal frameworks, and the implicit and explicit operational STI policy instruments. Gaps or blind spots in the information can cause a specific field to not receive adequate attention, which can result in missed opportunities for socio-economic development.

A global effort to integrate national and regional STI networks to address these gaps and improve the contribution of STI to achieving peace, social inclusion and sustainable development is the best way to respond to differences in capacity between countries and to cultural diversity. These networks will enable international comparisons, within the context of their national differences, by promoting a global dialogue based on mutual interest and respect that can help to formulate policy-relevant STI recommendations and decision-making tools, and drive social development, green societies and sustainability, with special emphasis on the needs of Africa, gender equality, youth, LDCs and SIDS as well as on the most vulnerable segments of society.

STIGAP AND GO→SPIN

UNESCO has designed the following two complementary initiatives that will work towards achieving a multi-dimensional, comprehensive and policy-relevant picture of STI activities: the Science, Technology and Innovation Global Assessment Programme (STIGAP) and the Global Observatory on Science, Technology and Innovation Policy Instruments (GO→SPIN).

Through STIGAP, UNESCO will work to enrich conventional STI monitoring systems by adding a bottom-up approach designed to fill in the gaps in the global assessment of STI. STIGAP will strive to broaden the scope and dialogue on STI data collection to come up with more relevant and country-specific data that will not only better enable countries to make informed decisions on the development of STI, but will also facilitate a finer assessment of STI at the international, regional and national levels and expand STI monitoring and its relevancy by including countries that have less developed STI policies and monitoring systems.

GO→SPIN consists of a cluster of databases equipped with powerful graphic and analytical tools which has the potential to be the first global observatory on STI policies that could provide end-users with structural information on STI national systems, descriptions of STI national priorities and goals, STI legal framework texts, a complete inventory with a full description of STI operational policy instruments, international cooperation strategies, long-term temporal series of indicators on STI, innovation surveys, as well as data on gender equality, economic, energy, environmental, governance and social issues. GO→SPIN has been devised for knowledge brokers, planners, managers and administrators of science and technology in governments, parliaments, universities, research institutions, production enterprises concerned with innovation, international organizations working for development, and researchers and specialists whose field of study embraces STI policies.

Together STIGAP and GO→SPIN will promote a transdisciplinary approach and an integrated perspective, on not only data collection and analysis, but also on the methodology employed. The GO→SPIN surveys, and the STI studies and information generated by STIGAP and by other sources will help Member States to monitor, evaluate and improve their STI policies. Their shared objective is to better monitor, evaluate and analyse STI developments and recommend evidence-based STI policies.
Objectives

1. Open a space for new standards of STI analysis, data collection and mapping which are more responsive to local contexts, more analytical, and that reflect global aspirations towards peace building, social and economic inclusion and environmental sustainability.

2. Strengthen synergies and coordination between regional and national data collection organizations and STI researchers who work on locally relevant and internationally comparable descriptions and analyses of STI activities and policies in their countries.

3. Build capacity on the formulation of quantitative and qualitative STI indicators and their collection by enhancing national expertise in Member States via training on appropriate data collection and methodologies for surveys and data entry processes.

4. Create a regional and global dialogue that reflects on the usefulness of current data and explores new data collection avenues and emerging trends by mobilizing and uniting research centres, research groups and individual researchers in regional and global networks.

5. Generate a worldwide open database (GO-SPIN) on STI policy instruments, STI governmental bodies, research and innovation systems, indicators and a specialized digital library by expanding the existing regional SPIN platform that covers Latin America and the Caribbean to include Africa, the Arab States and the Asia Pacific.

6. Establish a new mechanism to assist Member States in the generation and publication of standardized information related to the structures of their national STI systems; descriptions of their STI national priorities and goals; to access their STI legal frameworks and classify their STI policy instruments and international cooperation strategies.

Key actions and activities

1. Identify and mobilize research networks uniting regional research centres, national institutions, research groups and individual researchers (coordinated in collaboration with UNESCO’s Regional Science Bureaux) to assist Member States in the formulation of appropriate indicators and methodologies for policy analysis and design.

2. Coordinate STI indicator and standardized data collection training workshops to train the research networks on the development of standardized STI data collection to include forms of knowledge that are not generated within formalized scientific research, and forms of innovation that occur outside formal commodity and service production units.

3. Organize seminars to unite research networks, STI experts and decision-makers to situate themselves in an international context to reflect and debate on inclusive STI policies, STI policy making, build partnerships, and develop an awareness of alternative options open to governments, decision-makers and stakeholders.

4. Organize training workshops for STI governmental managers on the collection, production and generation of information related to STI policies, policy instruments and evaluation procedures.

5. Perform a global GO-SPIN survey on science, engineering, technology and innovation (SETI) operational policy instruments, governing bodies, legal frameworks and policies.

Outcomes

1. The STIGAP research networks will produce evidence-based, locally relevant, STI profiles, assessments and policy briefs with descriptions, analyses and recommendations concerning STI landscapes, alternatives, tendencies and policies.

2. A global inventory of country profiles (GO-SPIN) will provide relevant and reliable information about STI policies and policy instruments.

3. A Proposed Standard Practice for Surveys of STI Policy Instruments, STI Governing Bodies and Policies (Paris Guidelines) is implemented providing Member States a template for the generation and publication of information on their national STI policies and with a methodology to evaluate the long-term impact of STI policy instruments.

4. Governmental STI managers will be trained to collect, produce and publish STI policy analysis and technology intelligence reports following STIGAP’s methodological approaches and the Paris Guidelines.

5. A new methodology is implemented for the production of the UNESCO Science Report based on the analytic results generated by the STIGAP research networks and the GO-SPIN policy instruments database.