GO→SPIN for Science Policy
A Global Observatory for Science, Technology and Innovation Policy Instruments

Guillermo A. Lemarchand
Science Policy Consultant
Division of Science Policy and Capacity Building
Natural Sciences Sector, UNESCO, Paris
What is GO→SPIN?

GO→SPIN is a global observatory on science, engineering, technology and innovation (SETI) policies, policy instruments and indicators that provides new and revolutionary tools for knowledge brokers, decision-makers and SETI policy experts.

The GO→SPIN platform is based on a recently designed methodology for the standardization and systematization of information on science, technology and innovation policies, policy instruments and indicators and consists of a cluster of six databases coupled with innovative graphic and analytic tools.
What are a policy instruments?

- **Policy instruments** are the means employed by those who exercise power and authority to influence the decisions made by other agents.
- They *induce and motivate* individuals, groups, firms, organizations and institutions to behave in accordance with the guidelines and criteria established by the policies.
- They are the *connecting link* between the *purpose expressed in a policy statement* and its *implementation* in practice.
The structure of GO→SPIN analytic units

- **Policy**
  - **Legal device**
  - **Organizational structure**
  - **Operational mechanisms**
  - **Effect**

**Policy Instruments**

- **Policy**
- **Legal device**
- **Organizational structure**
- **Operational mechanisms**
- **Effect**

**Policy**

- Statements by high level government officials or representatives of the private sector, generally associated with top level government bodies.
- Laws, decrees, regulations, bylaws, contracts, and formal agreements.
- Individual institutions and organizations, procedures & methodologies they employ.
- Actual mechanisms that make the instrument function on a day-to-day basis.
Who are the potential GO→SPIN users?

GO→SPIN has been devised for knowledge brokers, planners, directors and administrators of science and technology in governments, parliaments, universities, research institutions, production enterprises concerned with innovation, international organizations working for development; research workers and specialists whose field of study embraces science, technology and innovation policies.
This is the GO→SPIN Conceptual framework

Structure of National STI System

Legal Framework on Science, Technology and Innovation

Operational Instruments to Promote Research and Innovation Activities

<table>
<thead>
<tr>
<th>Categories</th>
<th>Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Decision-Making Level</td>
<td>Institutions, links and description of major programmes</td>
</tr>
<tr>
<td>2. Promotion Level (funding)</td>
<td></td>
</tr>
<tr>
<td>3. Implementation Level</td>
<td></td>
</tr>
<tr>
<td>4. Evaluation Level</td>
<td></td>
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</tbody>
</table>

The organisation chart is presented in a normalized way allowing the possibility of designing a “topological metrics” in order to measure the degree of complexity of each NSTI system and eventually derived from them new policy indicators.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. National Laws and Acts</td>
<td>Access to complete texts</td>
</tr>
<tr>
<td>2. National Decrees</td>
<td></td>
</tr>
<tr>
<td>3. National Regulations</td>
<td></td>
</tr>
<tr>
<td>4. International Agreements</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Categories</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Organized by Objectives and Strategic Goals</td>
<td>Classified in 9 different categories/list of instruments</td>
</tr>
<tr>
<td>2. Organized by Type of Mechanism or facility</td>
<td>Classified in 11 different categories/list of instruments</td>
</tr>
<tr>
<td>3. Organized by Type of Beneficiary</td>
<td>Classified in 18 different categories/list of instruments</td>
</tr>
</tbody>
</table>

Each individual STI Policy Instrument is analysed using the same 12 different dimensions in order to make them comparable. Later-on they are classified by objectives and goals, type of mechanisms and type of beneficiary.
SPIN partners

- Inventory of 33 NSTI Systems in LAC
- Inventory of SETI legal frameworks
- 650 operational SETI policy instruments
- 450 temporal series of indicators
- A database of 170 organisms for SETI technical and financial cooperation
- 840 titles on SETI issues
- National reports

http://spin.unesco.org.uy
The prototype has 33 individual national reports + LAC regional report, approx. 320 pages of information (in Eng & Spa).

Description of each national research and innovation system

Each organization chart is organized following a topological metrics to study their complexity level and function.
Full-text access to the complete SETI legal framework in each country
<table>
<thead>
<tr>
<th>Analytic dimensions used in each operational SETI policy instr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Title of the SETI operational policy instrument</td>
</tr>
<tr>
<td>2. Keywords</td>
</tr>
<tr>
<td>3. Overview with a short description of the nature and main goals of the instrument.</td>
</tr>
<tr>
<td>4. Objectives of the plan (or the SETI policy) to which the instrument relates.</td>
</tr>
<tr>
<td>5. Specific objectives</td>
</tr>
<tr>
<td>6. Sectoral and horizontal approach of the instrument</td>
</tr>
<tr>
<td>7. Mode of support/Type of Mechanism.</td>
</tr>
<tr>
<td>8. Conditions to apply for the instrument.</td>
</tr>
<tr>
<td>9. Target groups/Beneficiaries.</td>
</tr>
<tr>
<td>10. Eligibility/Selection Criteria.</td>
</tr>
<tr>
<td>11. Eligible costs.</td>
</tr>
<tr>
<td>12. Source of funding.</td>
</tr>
<tr>
<td>13. Mode of disbursement of financial resources</td>
</tr>
<tr>
<td>15. Continuity of the instrument in time</td>
</tr>
<tr>
<td>16. Geographical coverage: Provincial, national or regional.</td>
</tr>
<tr>
<td>17. Results, outcomes and evidence of success of a given measure.</td>
</tr>
<tr>
<td>18. Relevant links.</td>
</tr>
</tbody>
</table>
Classification of the SETI operational policy instruments by objectives and goals

a) Strengthening the production of new endogenous scientific knowledge.

b) Strengthening the infrastructure of research laboratories in the public and private sectors.

c) Human resources for research, innovation and strategic planning. Capacity-building, education and training of specialized human capital for (1) the production of new scientific knowledge; (2) development of new technologies; (3) promotion of innovation within the productive and services systems and (4) management of the knowledge society.

d) Strengthening gender equality for research and innovation.

e) Strengthening the social appropriation of scientific knowledge and new technologies.

f) Development of strategic technological areas and new niche products and services with high added value. Promotion and development of innovation in the production of goods and services. Promotion of start-ups in areas of high technology.

g) Promotion of the development of green technologies and social-inclusion technologies.

h) Research and innovation eco-system: strengthening co-ordination, networking and integration processes which promote synergies among the different actors of the national scientific, technological and productive innovation system (i.e. government, university and productive sectors).

i) Strengthening the quality of technology foresight studies to: assess the potential of high-value markets; develop business plans for high-tech companies; construct and analyse long-term scenarios and; provide consulting services and strategic intelligence.

j) Strengthening regional and international cooperation, networking and promotion of SETI activities.
Classification by type of facility
1. Grant (grant funds)
2. Donations (individuals / companies)
3. Loans
4. Creation and support of technological poles and centres of excellence
5. Tax incentives
6. Technical Assistance
7. Scholarships
8. Credit incentives and venture capitals
9. Financial security
10. Trust funds
11. Information Services

Classification by type of beneficiary
1. Technical and support staff at SETI
2. Students
3. Professionals / PhDs
4. Teachers / Researchers
5. Universities
6. Research centres
7. Technical training centres
8. Schools / Colleges / Institutes
9. Corporations / Foundations
10. Professional Institutes
11. SETI local groups (e.g. a group of independent researchers)
12. Private company
13. Science and technology public or private non-profit organizations
14. Ad hoc associations
15. Individuals
16. Small businesses
17. Public institutions 18. Co-operatives
Red de información sobre política científica
SPIN: Science Policy Information Network
Indicators Module (completed at global level):
i.e. granted patents per million people

Indicators Module: i.e. SCI publications per million people

Source: Science Citation Index (SCI), Social Science Citation Index (SSCI), Arts & Humanities Citation Index (A&HCI). Published by THOMSON REUTERS. Some data published by UN Statistics division.
%(HighTech Exp/Manuf. Exp.) versus % (Manuf.Exp./Total Exp.) versus Total granted patents (bubble size)
Characteristics of the different SETI policies platforms

- STPI-IDRC (1978) - Registered number of STI policy instruments: 166
- ERAWATCH (2005-on) - Number of countries included in the survey: 50
- ECLAC (2008) - Number of Latin America and the Caribbean countries included in the survey: 250
- IADB-RICYT (2009-on) - Registered number of regional science policy instruments: 143
- UNESCO-SPIN (2010-on) - Number of temporal series of indicators: 156
- UNESCO-SPIN (2010-on) - Inventory of Financial and Technical STI institutions of cooperation: 160
- UNESCO-SPIN (2010-on) - Digital library (number of documents): 652

Source: UNESCO, August 2011
New tools

GO→SPIN Tools
- Text Mining Analytical Tool
- STI policies – Historical Records
- Country Profiler Tool
- Regions
- External Databases
- Tutorial
- Terms of Use

New geographical scope
The new GO→SPIN platform will have the following characteristics (1)

1. A detailed inventory of each national innovation system in the region, with a description of their institutional structure and details of their main programmes, priorities, performance, planning and strategies for international co-operation.

2. A database encompassing all the relevant SETI legal frameworks for each country, with access to the complete texts of the legal devices.

3. An inventory with detailed descriptions of the technical and financial SETI policy instruments, each individual operational policy instrument is described using 18 different fields. The descriptors include 11 categories by objectives and strategic goals, 11 categories by type of facility and 19 categories by type of beneficiary. This module works as a complex database allowing the combination of different descriptors available within the 18 fields in order to find any specific type of instrument.

4. A country profiler tool which combines all the SETI information about each country (and also at regional level) with links to official national documents on SETI policies, access to other databases and SETI country reports, studies by National Academies of Science, etc.
4. A powerful geo-referenced analytical software (Stat Planet) which includes more than 450 temporal series, some of them ranging from 1950 to the present time. These time series encompass different groups of indicators: economic, social, governance, gender, environmental, ICT and SETI. The evolution of different indicators can also be studied over time and compared with other regions or countries to allow decision makers and specialists to detect different patterns in the data in order to develop prospective studies.

5. A database containing 200 descriptions of national and international organizations and other NGOs which provide technical and financial co-operation in science and technology. These institutions are classified by area and type of co-operation, geographical focus and type of beneficiary.

6. A digital library specializing in SETI with over 1,000 titles produced by UNESCO.

7. A special module on gender SETI statistics and SETI policy instruments.
The new GO→SPIN platform will have the following characteristics (3)

7. A innovative module, called CLIC (Connecting Local and International Content) which was already developed by UNESCO Social a Human Sciences Sector. This module will allow drawing on a range of knowledge repositories, integrate context-specific knowledge through mobilizing decentralized content contribution; “redeem grey literature” through online peer review; facilitate customized search and retrieval of specialized documents within different academic repositories in Africa and elsewhere, facilitate tapping different cultural approaches for innovation and legitimize decision-making on complex issues through best-available knowledge.

8. An inventory of all the existing research and innovation facilities in each country, describing the main research topics, laboratory facilities, personnel and recent production will be implemented through an on-line standard form that will feed a new specific data base.

9. A new module will be added to the GO→SPIN platform in order to have access to a new library with reports on SETI policies and country reviews prepared by international experts.
The key characteristic of the GO→SPIN website is the integration of:

- tools for data collection and content management system, and
- presentation and data analysis of information on a user friendly public on-line web platform.

The solution is built to be modular and flexible to ensure that it can be easily upgraded and to accommodate future elements.
Extending GO→SPIN to the developing world
Available databases working in 2011: Geographical coverage

<table>
<thead>
<tr>
<th>UNESCO Regions</th>
<th>Total Countries</th>
<th>ECLAC</th>
<th>IADB-RICYT</th>
<th>ERAWATCH</th>
<th>GO→SPIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>54</td>
<td>1</td>
<td>—</td>
<td>5*</td>
<td>6**</td>
</tr>
<tr>
<td>Arab States</td>
<td>21</td>
<td>—</td>
<td>—</td>
<td>5</td>
<td>—</td>
</tr>
<tr>
<td>Asia and the Pacific</td>
<td>50</td>
<td>10</td>
<td>—</td>
<td>7</td>
<td>—</td>
</tr>
<tr>
<td>Europe and North America</td>
<td>53</td>
<td>18</td>
<td>—</td>
<td>43</td>
<td>—</td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>34</td>
<td>12</td>
<td>14</td>
<td>4</td>
<td>33</td>
</tr>
</tbody>
</table>

The GO→SPIN initiative is a four year project (see the scaling-up project)
GO→SPIN and ERAWATCH by year 2012
GO ➔ SPIN and ERAWATCH by year 2015
Laboratory of ideas

Catalyst for international cooperation

Standard-setter

Capacity builder

Clearing-house

5 functions of UNESCO
STIGAP and GO→SPIN initiatives apply innovative technologies to provide decision-makers and knowledge-brokers with accurate information about STI policies around the world.

The GO→SPIN platform is establishing through the “Paris Guidelines” new ways to standardize and normalize information about STI policies that can be easily replicated by its Member States and might be used by other similar initiatives around the world.

The new knowledge on SETI policies generated by STIGAP and GO→SPIN initiatives will be available for free via internet for any potential user in the world.
The Division of Science Policy and Capacity Building will implement training programmes for the collection, generation and improvement of information on national SETI policies for experts, decision makers and governmental managers around the world, while the STIGAP associated networks will promote the generation of new experts on SETI policies around the world.

STIGAP and GO→SPIN initiatives will be used to promote South-South and North-South-South cooperation on SETI policies among Member States.
Thank you!!

Guillermo A. Lemarchand
ga.lemarchand@unesco.org
galemarchand@gmail.com

For further information on GO→SPIN visit the following websites:

http://spin.unesco.org.uy/


YOU TUBE: GO-SPIN for Science Policy 2012.wmv
Merci !  شكرا
Thank you !  Спасибо  謝謝
¡Muchas Gracias! Obrigado!