

#### UNESCO GO→SPIN Methodological and Data Collection Training Workshop Republic of Kenya

September 28 – October 2, 2020

### LECTURE 5: Completing 3 GO→SPIN surveys

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#### **Documents from the bibliography of Lecture 5 to be used in this part**





#### Research KITS Working Paper 2020-03

Toolkit for completing the  $GO \rightarrow SPIN$  surveys: Guidelines for the preparation of the inventory of SETI operational policy instruments; inventory of the SETI legal instruments; and inventory of SETI institutional ecosystem

#### Prepared by:

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Template for completing the standardized information for each individual operational policy instrument<sup>1</sup>



TO BE QUOTED AS: UNESCO GO-SPIN (2020). Global Observatory of STI Policy Instru **Educational Acientific and Cultural Ornanization: Basis** 571 Operational Policy Instrument 26-09-2020 ilobal Observatory of Science,





Argentina - STI Operational Policy Instruments



Argentina - STI Legal Framework

Type of legal instrument
National laws and acts
Theme of legal instrument
Regulations for the National Research and Innovation System Regulations on STI personnel
Title
Network Program of Argentine Researchers and Scientists Abroad (Roots). Law 26421
Enactment date
2008-11-11
Short description
This law establishes the Network Program of Argentine Researchers and Scientists Abroad (RNCES), created within the scope of the Ministry of Science, Technology and Productive movabion.
Access to full text
servicios.infoleg.gob.ar/infoleginternet/anexos/145000-149999/147138/norma.htm
Socio-Economic Objective Classification
General advancement of knowledge
Related Sustainable Development Goals (SDGs)
SDG 9. Industry, innovation and infrastructure
Target 9.b Support domestic technology development, research and innovation in developi countries, including by ensuring a conducive policy environment for, inter alia, industrial diversifie alian and value addition to commodities.



# Follow-up of UNESCO's "Recommendation on Science and Scientific Researchers"



#### GUIDELINES FOR THE PREPARATION OF A REPORT ON A UNESCO MEMBER STATE'S IMPLEMENTATION OF THE RECOMMENDATION ON SCIENCE AND SCIENTIFIC RESEARCHERS (2017)

#### I. Introduction

1. The Recommendation on Science and Scientific Researchers (hereinafter, the "Recommendation on Science") was adopted by some 195 states on 13 November 2017 meeting in the General Conference of UNESCO at its 39th session (3<u>0</u> C/Resolution 85). The Director-General transmitted the certified text in six languages by her letter of 10 May 2018 (CL/4253) to all UNESCO Member States, including your government. In that letter, she reminded each government of its duties to transmit and implement the Recommendation as well as to report back to UNESCO's Secretariat by the second quarter of 2021. The present document invites these reports, explains how to submit online, and proposes that Member States may use the online questionnaire (a copy of which appears in Annex A). Other formats are also welcome before 31 March 2021.

I. About the Recommendation on Science

 This Recommendation to UNESCO Member States provides the internationally-agreed model set of framework policies, regulations and institutional practices for national science technology and innovation (STI) systems in all countries. It is in place for the long term, and Member States are meant to comply.

3. The overall aim is to strengthen science per se, while ensuring other interests including peaceful uses of the knowledge and other benefits that science can produce. This framework addresses all of science technology and innovation together, including even science publishing and international travel. It addresses all disciplines of science, including the provaci science and the conduct of research and innovation in all settings, including the private sector, or citizen science.

4. There is a particular focus today on strong research institutions and regenerating human capital in relation to delivering sustainable development goals, as well as moving quickly toward more inclusive and more global science. There is a particular focus that each State develops capabilities to use scientific knowledge and advice for decision-making and public policy. Sharing data and knowledge across borders involves risks that must be managed.

5. One signature feature of this Recommendation is that it makes explicit an internationally-agreed balance of rights and responsibilities based on integrating science in society. The legal basis for scientific freedom is clarified, as based in internationally-agreed human rights including gender equality, but it is also, by this Recommendation, applicable for all institutions of science. Further information and background, as well as free online publicity and communications materials can be found online at <u>en unesco org/recommendation-on-science</u>. Member States are now in a phase of implementing this Recommendation.

III. Assessing the national experience of implementation

6. On a four-yearly basis, each Member State is meant to report on its experience implementing the Recommendation on Science (this is an obligation in the UNESCO Constitution). Having comparable assessments over time can be extremely valuable for decision-makers being able to develop and achieve the common global standards of the Recommendation.

7. Each report is an evidence-based self-assessment in which compliance is substantiated by documentation and references, involving analysis that typically is based on some data collection and consultation to assess the impact of measures that have been taken. Where there is less data, it may take longer to substantiate.

#### (1) Inventory of the SETI operational policy instruments







# Some examples of STI operational policy instruments in Kenya

- NRF: Competitive grants, postgraduate research programme, and several other mechanisms
- KeNIA: National Innovation Award, Leaders in Innovation Fellowship Programme
- Levy fund: based on tea, coffee and sugar sales
- Ministry of ICT: Konza Technopolis Development Authority (Science Park), proposed a new "innovation fund" and
- KIRDI: Business Incubation Services Programme
- MoITC: Kenya Industry and Entrepreneurship Project (KIEP)
- NACOSTI: Regulation of national and international research projects and researchers within Kenya
- Buy Kenya-Build Kenya Strategy
- KWS: Regulation of wildlife research, indigenous knowledge systems
- IPRs regulations, etc.



#### Inventory of the SETI operational policy instruments (I)

The SETI operational instruments Each individual "operational policy instruments" has a form with 25 different field to be completed. Some fields follow a multiple-choice format, while others have to be completed with text descriptions





Field	Description on how to fill each field
<ol> <li>Title of the instrument</li> </ol>	Provide the official title of the instrument
2. Keywords	Provide 3 to 5 keywords that describe the instrument
3. Overview	Provide a short description of the scope and goals of the instrument. The text should have a maximum of 250 words
<ol> <li>Objectives of the STI plan related with the instrument</li> </ol>	Provide a list of objectives and goals – taken from the STI national policy or plan – which are related with the expected results generated by the instrument.
<ol> <li>Other instrument objectives and goals</li> </ol>	Provide a list of objectives and goals of the instrument, which were not included above (in the previous field 4) and which are specific for the instrument.
6. Starting date	Provide the year when the operations of the instrument started. YEAR

### Example of operational policy instrument (part 1)

1. Title of the SETI operational policy instrument: CAPES scholarships for young women

 Keywords: women in science and engineering, gender equity, youth, endogenous research
 Overview: to enlarge the participation of youth and women in research and innovation at the highest level in the country by giving PhD scholarships in basic and engineering sciences to complete PhD programmes at national universities and centres of excellence in the country. Provide grants to assist young women to participate at international conferences and play short stays at foreign research centres.



4. Objectives of the plan (or the SETI policy) to which the instrument relates. Gender equity in science technology and innovation is a priority for the national development plan. The scholarship programmes is part of the national priority to reach the number or 340 000 scholarships awarded by the ministries of S&T and Education and to increase the number of graduates in engineering to 15% by 2022. The programme will foster the birth of new high-tech companies...

5. Other instruments objectives and goals. To increase the number of women in science and engineers within the bioeconomy and space research activities

6. Starting date. 2002

#### Inventory of the SETI operational policy instruments (II)

Select one or more items from the following list. Please indicate GO-→SPIN the corresponding letter(s) for each individual item(s) standardized classification for objectives and Strengthening the production of new endogenous goals of the scientific knowledge instrument 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. Strengthening programmes on science education at all levels (from primary school to postgraduate) h. Promotion of the development of green technologies and social-inclusion technologies i. Promotion of indigenous knowledge systems Research and innovation eco-system: strengthening coordination, 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) k. 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 Strengthening regional and international co-operation, networking, and promotion of STI activities

m. Awards in science, technology, and innovation

<ol> <li>Sectoral and horizontal approach of the instrument</li> </ol>	<ul> <li>Select one item from the following list by indicating the corresponding letter associated with it</li> <li>a. Sectoral: the benefits go to a specific knowledge discipline, technological area, productive sector, or a specific issue</li> <li>b. Horizontal: the benefits go to all the disciplines, areas, and sectors</li> </ul>	2. Engineering a 2.1 Civil enginee 2.2 Electrical eng engineering 2.3 Mechanical en 2.4 Chemical eng 2.5 Materials en 2.6 Medical engi 2.7 Environment
9. STI Supply and Demand Sides	<ul> <li>Select one item from the following list by indicating the corresponding letter associated with it</li> <li>a. Fostering STI's supply side (Academic Sector, government R&amp;D centres, etc.)</li> <li>b. Fostering STI's demand side (business-enterprise and other productive sectors, etc.)</li> <li>c. Fostering the link between STI's demand and supply sides</li> </ul>	2.9 Environment 2.9 Industrial bio 2.10 Nanotechno 2.11 Other engir 3. Medical and I 3.1 Basic medicin 3.2 Clinical medi 3.3 Health science
10. One and Two- digit field of science and technology classification	Select one or more items from the following list. Please indicate the corresponding number (s) for each individual item (s) 0. All fields 1.Natural sciences 1.1 Mathematics 1.2 Computer and information sciences 1.3 Physical sciences 1.4 Chemical sciences 1.5 Earth and related environmental sciences 1.6 Biological sciences 1.7 Other natural sciences	3.4 Medical bioto 3.5 Other medical 4. Agricultural al 4.1 Agriculture, f 4.2 Animal and of 4.3 Veterinary so 4.4 Agricultural k 4.5 Other agricul 5. Social science 5.1 Psychology al 5.2 Economics an 5.3 Education 5.4 Sociology





nd technology ring gineering, electronic engineering, information engineering gineering gineering ineering tal engineering tal biotechnology otechnology ology neering and technologies nealth sciences ne icine ces echnology al science nd veterinary sciences forestry, and fisheries dairy science tience biotechnology Itural sciences s and cognitive sciences nd business 5.5 Law 5.6 Political science 5.7 Social and economic geography 5.8 Media and communications 5.9 Other social sciences 6. Humanities and the arts 6.1 History and archaeology 6.2 Languages and literature 6.3 Philosophy, ethics, and religion 6.4 Arts (arts, history of arts, performing arts, music)

6.5 Other humanities



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#### Inventory of the SETI operational policy instruments (III)

11. One Digit Socio- Economic Objective Classification	<ol> <li>lect one or more items from the following list. Please indicate e corresponding number (s) for each individual item (s)</li> <li>Exploration and Exploitation of the Earth</li> <li>Environment</li> <li>Exploration and Exploitation of Space</li> <li>Transport. telecommunication. and other infrastructures</li> <li>Energy</li> <li>Industrial production and technology</li> <li>Health</li> <li>Agriculture</li> <li>Education</li> <li>Culture, recreation, religion, and mass media</li> <li>Political and social systems, structures, and processes</li> <li>General advancement of knowledge</li> <li>Defence</li> </ol>	14. Target groups / Beneficiaries	<ul> <li>Select one or more items from the following list. Please indicate the corresponding number(s) for each individual item(s)</li> <li>1. Individual researchers or professionals, PhD holders, higher-education teachers</li> <li>2. Research groups</li> <li>3. Technical and support staff for STI activities</li> <li>4. Graduate students</li> <li>5. Undergraduate students</li> <li>6. Universities, colleges, tertiary education institutions (public or private)</li> <li>7. Secondary and primary schools (public or private)</li> <li>8. Institutes and other research centres (public or private)</li> <li>9. Technical training centres (public or private)</li> <li>10. Business/enterprises (public or private) at different categories (corporations, SMEs, etc)</li> <li>11. R&amp;D non-profit organizations (public or private)</li> </ul>
12. Mode of support / Type of Mechanism a.	of support s of anism a. Grants (grant funds) b. Donations (individuals, companies) c. Loans d. Creation of, and support for, technological poles and centres of excellence e. Tax incentives f. Technical assistance g. Scholarshins		<ol> <li>Foundations (public or private)</li> <li>R&amp;D Professional Associations</li> <li>Ad hoc associations</li> <li>Co-operatives related with STI</li> </ol>
		15. Selection Criteria	This field describes how requests to access the instrument will be evaluated. It can include information on who will evaluate submissions, the time frame for awarding funds, the evaluation methodology (percentage weight of different criteria, such as innovation, experience of the submitting team/institution, sustainability, relevance to a national strategy) etc.
	<ul> <li>h. Credit incentives and venture capital</li> <li>i. Trust funds</li> <li>j. Information services</li> <li>k. Others, specify</li> </ul>	16. Eligible costs	Describe the amount of funding available to each applicant and what costs the instrument will and/or will not fund. You can indicate, for instance: the maximum amount of funds disbursed, the maximum percentage contribution (the fund will contribute to
13. Conditions to apply for the instrument	Policy instruments will always have conditions to access its services or funding. Usually these conditions are specified within the application forms to the instrument. Each condition should be clearly stated, and all conditions should be listed.		80% of project costs), the type of activities that can or cannot be funded (scholarships, travel, administration costs, investment in machinery).

### Example of operational policy instrument (part 2)

7. GO  $\rightarrow$  SPIN standardized classification for objectives and goals of the instrument: a, c, d, and l.

- 8. Sectoral and horizontal approach of the instrument: a
- 9. STI Supply and Demand Sides: a
- 10. One and Two-digit field of science and technology classification: 1, 2
- 11. One Digit Socio-Economic Objective Classification: 1,2, 3, 4, 5, 6, and 9
- 12. Mode of support / Type of Mechanism: a, g



**13.** Conditions to apply for the instrument: PhD females students in basic and engineering sciences who are accepted to complete a Category A doctorate programme at any national university or centre of excellence who completed a degree in engineering, exact or natural sciences before the year....

14. Target groups / Beneficiaries: 4

**15.** Selection Criteria: An open competition based on qualifications of the candidates, the institution at which the PhD programme is taking place, relevance of the thesis topics in relation with the S&T national policy priorities...

**16.** Eligible costs: Annual scholarships for a maximum period of four years, a maximum of XXX \$ to assist to international conferences and a maximum of XXX\$ to play a visit of 3 months to a foreign research center

#### Inventory of the SETI operational policy instruments (IV)







17. Source of funding	<ul> <li>Select one or more items from the following list. Please indicate the corresponding number(s) for each individual item(s)</li> <li>1. None</li> <li>2. Business enterprise sector</li> <li>3. Government sector</li> <li>4. Higher education sector</li> <li>5. Private non-profit sector</li> <li>6. Rest of the world business</li> <li>7. Rest of the world government sector</li> <li>8. Rest of the world higher education sector</li> <li>9. Rest of the world private non-profit sector</li> <li>10. International organizations</li> <li>11. Other, specify</li> </ul>
<ol> <li>Mode of disbursement of financial resources</li> </ol>	Describes how the funds will be made available to successful applicants to the instrument. It can include the timing of the resources, the details of access to a credit facility, due diligence steps before disbursement etc.
19. Annual budget	The total annual budget assigned for the instrument in local and other specified currencies.
Annual Budget in local currency	Insert the annual budget in local currency, for example: xxx,xxx,xxx.xx - name of the local currency
Annual budget in US\$ current	xxx, xxx, xxx.xx
Annual budget in US\$ constant	ххх,ххх,ххх.хх
Indicate the year at which is taken the constant US\$	Enter the year for the US\$ constant amount entered. For instance, for 2010 constant US\$, enter "2010".
Annual budget in international \$ PPP current	XXX,XXX,XXX.XXX
Annual budget in international \$ PPP constant	XXX,XXX,XXX.XX
Indicate the year at which is taken the constant international \$ PPP	Enter the year for constant international \$ PPP amount entered. For instance, for 2010 constant international \$ PPP, enter "2010".

20. Geographical coverage	Select one or more items from the following list. Please indicate the corresponding number(s) for each individual item(s) 1. Provincial or State 2. National 3. Regional (several countries)
21. Relation with SDGs targets	This field will be completed by UNESCO
22. Results, outcomes, and evidence of success	Indicate known results, outcomes, and evidence of success of the instrument. For instance: the number of applications received and selected, the number of beneficiaries, amounts disbursed, the effects of the instrument on the number of researchers hired by the private sector, the number of international conferences organised, prizes or patents awarded, or more detailed evidence such as Metric tons of carbon capture for a carbon capture financing fund, or any other relevant measurement or assessment employed to evaluate the impact of the instrument. If possible, provide a URL were the study of the impact of the instrument is described in detail.
23. Relevant links	Provide a URL with a direct link to the instrument's information website or the website form which you sourced the most information on the instrument.
24. Source	Provide the official source where the information on the instrument was taken (e.g. name of the institution and link)
25. Date when the form was completed	YEAR / MONTH / DAY





### Example of operational policy instrument (part 3)

#### 17.Source of funding. 3, 4



18. Mode of disbursement of financial resources. Scholarships at annual basis after approval of annual report to a maximum of 4 years; a maximum of XXX \$ to participate in international conferences per year and a maximum of XXX \$ to play one visit of 3-4 months to a foreign research institute . 19. Annual budget. B XX, XXX,XXXX

20. Geographical coverage. 2

21. Relation with SDGs Targets: TO BE COMPLETED BY UNESCO

22. Results, outcomes and evidence of success: 6,000 scholarships awarded in the last 4 yrs, 9,000 participations in international conferences, 4,000 new PhD obtained; 2,000 short term visits to foreign research centres

- 23. Relevant links. https:/www.capes.org
- 24. Source: CAPES

25. Date when the form was completed: 2016/11/16



(2) Inventory of SETI Legal Framework

The so-called "legal framework" might also be considered as a set of "legal instruments" or "legal devices." This embodies the policy, or parts of it, in the form of a law, decree or regulation. Formal agreements, contracts and international SETI cooperation treaties may also be included in this category. A legal device goes one step beyond a "policy" by stipulating obligations, rights, rewards and penalties connected with its being obeyed.





#### **Inventory of the SETI legal instruments**







6.	One Digit Socio- Economic Objective Classification	<ul> <li>Select one or more items from the following list. Please indicate the corresponding number (s) for each individual item (s)</li> <li>1. Exploration and Exploitation of the Earth</li> <li>2. Environment</li> <li>3. Exploration and Exploitation of Space</li> <li>4. Transport, telecommunication, and other infrastructures</li> <li>5. Energy</li> <li>6. Industrial production and technology</li> <li>7. Health</li> <li>8. Agriculture</li> <li>9. Education</li> <li>10. Culture, recreation, religion, and mass media</li> <li>11. Political and social systems, structures, and processes</li> <li>12. General advancement of knowledge</li> <li>13. Defence</li> </ul>
7.	Access to the full text of the legal instrument	Provide a URL link to the complete text of the legal instrument or submit a PDF file with the complete text to UNESCO
8.	Relation with SDGs targets	This field will be completed by UNESCO
9.	Source	Provide the official source where the information was taken (e.g. National Parliament Gazette, Parliament on-line database, etc). If it is possible provide a URL to the source.
10.	Date when this form was completed	YEAR/ MONTH/ DAY



**1.** *Title of the legal instrument:* **Trust Fund for the Promotion of the Software Industry (FONSOFT).** Law 25,922

- 2. Type of legal instrument: National laws and acts
- 3. Enactment date: 2004-09-07
- 4. Short description: Definition and scope. Tax treatment for the sector. Imports Trust Fund for the Promotion of the Software Industry (FONSOFT). Infringements and sanctions. General disposition
- 5. Theme of legal instrument: 3
- 6. One Digit Socio-Economic Objective Classification: 6
- 7. Access to the full text of the legal instrument: <u>www.agencia.mincyt.gob.ar/upload/ley\_25922-2.pdf</u>
- 8. Relation with SDGs targets: TO BE COMPLETED BY UNESCO
- 9. Source: National Congress of Argentina
- 10. Date when this form was completed: 2018-07-19

#### (3) Inventory of SETI institutional ecosystem







Figure 4.4. Organizational chart showing Kenya's research and innovation system. Source: Authors' production based on GO->SPIN methodology (UNESCO, 2015)



#### Inventory of institutional ecosystem (I)

1

Field		Description on how to fill each field
1.	Name of the institution/organization	Insert the complete name of the institution. Do not use acronyms
2.	Address	Insert the full address including postal codes, name of the city and name of the country
3.	Name of the director/ contact officer	FAMILY NAME, FIRST NAME
4.	Email address of the director/ contact officer	Insert email address
5.	Telephone	Insert the full number including international codes and area codes
6.	Website	Insert the complete URL
7.	Name of the Ministry or other mother institution	If the institution is linked to a mother institution or Ministry, please specify this here.
8.	Type of institution	<ul> <li>Select one item from the following list by indicating the corresponding number associated with it</li> <li>1. Government and public Institutions</li> <li>2. Business-enterprise sector</li> <li>3. Non-profit sector institutions</li> <li>4. Higher education institutions</li> </ul>

. Function	Select one or more items from the following list. Please indicate the corresponding number(s) for each individual item(s)  1. Policy planning 2. Promotion and funding 3. Research and Development 4. Innovation 5. Scientific and Technological services 6. Policy evaluation	<ul> <li>2.5 Materials engineering</li> <li>2.6 Medical engineering</li> <li>2.7 Environmental engineering</li> <li>2.8 Environmental biotechnology</li> <li>2.9 Industrial biotechnology</li> <li>2.10 Nanotechnology</li> <li>2.11 Other engineering and technologies</li> <li>3. Medical and health sciences</li> <li>3.1 Basic medicine</li> <li>3.2 Clinical medicine</li> <li>3.3 Health sciences</li> </ul>
0. Mandate	Describe what the official purpose of the institution is and how the legitimacy to perform this purpose was granted to the institution. Less than 100 words.	3.4 Medical biotechnology 3.5 Other medical science 4. Agricultural and veterinary sciences 4.1 Agriculture forestry, and ficheries
1. Historical notes	Describe the history of the institution, including how it was created, notable figures, key moments, major changes etc. Less than 250 words. A link to a more detailed historical description might be included here.	4.2 Animal and dairy science 4.3 Veterinary science 4.4 Agricultural biotechnology 4.5 Other agricultural sciences
<ol> <li>Brief description of the main activities</li> </ol>	Describe the principal activities of the institution. Less than 100 words.	5. Social sciences 5.1 Psychology and cognitive sciences 5.2 Economics and business
<ol> <li>One and Two-digit field of science and technology classification</li> </ol>	Indicate the field of science and technology activity performed by the institution according to the following classification. Select one or more items from the following list. Please indicate the corresponding number(s) for each individual item(s) 0. All fields 1.Natural sciences 1.1 Mathematics 1.2 Computer and information sciences 1.3 Physical sciences 1.4 Chemical sciences 1.5 Earth and related environmental sciences	<ul> <li>5.3 Education</li> <li>5.4 Sociology</li> <li>5.5 Law</li> <li>5.6 Political science</li> <li>5.7 Social and economic geography</li> <li>5.8 Media and communications</li> <li>5.9 Other social sciences</li> <li>6. Humanities and the arts</li> <li>6.1 History and archaeology</li> <li>6.2 Languages and literature</li> <li>6.3 Philosophy, ethics, and religion</li> <li>6.4 Arts (arts, history of arts, performing arts, music)</li> <li>6.5 Other humanities</li> </ul>
	<ul> <li>1.6 Biological sciences</li> <li>1.7 Other natural sciences</li> <li>2. Engineering and technology</li> <li>2.1 Civil engineering</li> <li>2.2 Electrical engineering, electronic engineering, information engineering</li> <li>2.3 Mechanical engineering</li> <li>2.4 Chemical engineering</li> <li>2.5 Meterials engineering</li> </ul>	

### Example of an institutional profile (part 1)

1. Name of the institution/organization: Biotechnology and Ecology Institute

2. Address: Tha Gnon Road, P.O. Box 2279, Ban Danxang, Xaythani District, Vientiane Capital

- 3. Name of the director/ contact officer: n/a
- 4. Email address of the director/ contact officer. n/a
- 5. Telephone: +856-21 740630
- 6. Website: www.most.gov.la
- 7. Name of the Ministry or other mother institution: Ministry of Science and Technology
- 8. Type of institution: 1
- 9.Function: 3

**10.** *Mandate:* The Biotechnology and Ecology Institute (BEI) has role in research, development, application and service in biotechnology and ecology. BEI consists of six Divisions and one Centre namely: The Division of General Affairs, the Division of Biotechnology, the Division of Genetic Resources, the Division of Ecology, the Division of Chemical Technology, the Division of Technical Service and the Parksan Ecology Centre.

### Example of an institutional profile (part 2)

**11.** Historical notes: BEI has established collections of orchid flowers consisting of more

than 140 species and has more than 165 other species in its glasshouse. BEI was set up as an herbarium and a natural history museum and has a function to disseminate and raise awareness on science and ecological systems. BEI carried out several research projects such as studies on Delbergia, Bryophytes, Zingiberaceae, Begoniaceae, Areceae and Ebenaceoe, in different provinces. Moreover, BEI conducts some research activities to apply biotechnology to identify plant and animal diseases.

12. Brief description of the main activities: BEI has established collections of orchid flowers consisting of more than 140 species and has more than 165 other species in its glasshouse. BEI was set up as an herbarium and a natural history museum and has a function to disseminate and raise awareness on science and ecological systems. BEI carried out several research projects such as studies on Delbergia, Bryophytes, Zingiberaceae, Begoniaceae, Areceae and Ebenaceoe, in different provinces. Moreover, BEI conducts some research activities to apply biotechnology to identify plant and animal diseases.

13. One Digit Socio-Economic Objective Classification: 1

### Inventory of institutional ecosystem (II)

			06 - Extraction of crude petroleum and natural gas	G - Wholesale and retail trade, repair of motor vehicles	81 - Services to buildings and landscape activities
			07 - Mining of metal ores	and motorcycles	82 - Office administrative office support and other
			08 - Other mining and quarrying	45 - Wholesale and retail trade and repair of motor vehicles	business support activities
			09 - Mining support service activities	and motorcycles	business support activities
			C - Manufacturing	46 - Wholesale trade, except of motor vehicles and	O - Public administration and defence, compulsory soc
			10 - Manufacture of food products	motorcycles	security
14. One Digit Socio-	Indicate the socio-economic activity	performed by the	11 - Manufacture of beverages	47 - Retail trade, except of motor vehicles and motorcycles	84 - Public administration and defence, compulsory soci
Economic Objective	institution according to the followin	ng classification. Select	12 - Manufacture of tobacco products	H - Transportation and storage	security
Classification	one or more items from the following	ng list. Please indicate	13 - Manufacture of textiles	49 - Land transport and transport via pipelines	P – Education
	the corresponding number (s) for ea	ach individual item (s)	14 - Manufacture of wearing apparel	50 - Water transport	85 - Education
			15 - Manufacture of leather and related products	52 - Warehousing and support activities for transportation	O - Human health and social work activities
	1 Exploration and Exploitation	of the Farth	16 - Manufacture of wood and of products of wood and cork, except furpiture, manufacture of articles of straw and	52 - Waterlousing and support activities	86 - Human health activities
	2 Environment		plaiting materials	I - Accommodation and food service activities	00 - Human Health activities
	2. Environment		17 - Manufacture of paper and paper products	55 - Accommodation	87 - Residential care activities
	5. Exploration and Exploration	of space	18 - Printing and reproduction of recorded media	56 - Food and beverage service activities	88 - Social work activities without accommodation
	<ol> <li>I ransport, telecommunication</li> </ol>	on, and other	19 - Manufacture of coke and refined petroleum products	J - Information and communication	R - Arts, entertainment, and recreation
	infrastructures		20 - Manufacture of chemicals and chemical products	58 - Publishing activities	90 - Creative, arts and entertainment activities
	5. Energy		21 - Manufacture of basic pharmaceutical products and	59 - Motion picture, video and television programme	91 - Libraries, archives, museums, and other cultural
	<ol><li>Industrial production and tec</li></ol>	chnology	pharmaceutical preparations	production, sound recording and music publishing activities	activities
	7. Health		22 - Manufacture of rubber and plastics products	60 - Programming and broadcasting activities	92 - Gambling and betting activities
	8. Agriculture		23 - Manufacture of other non-metallic mineral products	61 - Telecommunications	93 - Sports activities and amusement and recreation
	9. Education		24 - Manufacture of basic metals	62 - Computer programming, consultancy, and related	activities
	10 Culture recreation religion	and mass media	25 - Manufacture of fabricated metal products, except	activities	S Other convice activities
	11. Political and social systems	structures and	machinery and equipment	63 - Information service activities	04 Activities of membrankin commissions
	11. Political and social systems, s	structures, and	26 - Manufacture of computer, electronic and optical	K - Financial and insurance activities	94 - Activities of membership organizations
	processes		products 27 - Manufacture of electrical equipment	64 - Financial service activities, except insurance and	95 - Repair of computers and personal and household
	12. General advancement of kno	owledge	28 - Manufacture of machinery and equipment	pension funding	goods
	13. Defence		29 - Manufacture of motor vehicles trailers and semi-	compulsony social security	96 - Other personal service activities
15 International Standard	ONLY for business enterprise organi	izations indicate the	trailers	66 - Activities auxiliary to financial service and insurance	T - Activities of households as employers, undifferentia
Industrial Classification	main ISIC activity performed by the	institution according	30 - Manufacture of other transport equipment	activities	goods- and services-producing activities of households
(ISIC) of all ocenemic	to the following election follow	t one or more items	31 - Manufacture of furniture	L - Real estate activities	own use
(ISIC) of all economic	to the following classification. Select	t one or more items	32 - Other manufacturing	68 - Real estate activities	97 - Activities of households as employers of domestic
activities	from the following list. Please indica	ate the corresponding	33 - Repair and installation of machinery and equipment	M - Professional, scientific, and technical activities	personnel
	letter (s) for each individual item (s)	in blue. The two-digit	D - Electricity, gas, steam, and air conditioning supply	69 - Legal and accounting activities	98 - Undifferentiated goods- and services-producing
	categories are presented here for an	n easy identification of	35 - Electricity, gas, steam, and air conditioning supply	70 - Activities of head offices, management consultancy	activities of private households for own use
	which are the main company activit	ies.	E - Water supply, sewerage, waste management and	activities	activities of private nouseholds for own use
			remediation activities	71 - Architectural and engineering activities, technical	U - Activities of extraterritorial organizations and bodie
	00 no activity		36 - Water collection, treatment, and supply	testing, and analysis	99 - Activities of extraterritorial organizations and bodie
	A - Agriculture, forestry, and fishing		38 - Waste collection, treatment and disposal activities	72 - Scientific research and development73 - Advertising	
	01 - Crop and animal production, but	nting and related	materials recovery	and market research	
	service activities	and cloted	39 - Remediation activities and other waste management	74 - Other professional, scientific, and technical activities	
	02 - Forestry and logging		services	N Administrative and support service activities	
	02 - Forestry and orgging		F - Construction	77 - Rental and leasing activities 78 - Employment activities	
	05 - risning and aquaculture		41 - Construction of buildings	79 - Travel agency tour operator, reservation service and	
	B - Mining and quarrying		42 - Civil engineering	related activities	
	05 - Mining of coal and lignite		43 - Specialized construction activities	80 - Security and investigation activities	

for

### Inventory of institutional ecosystem (III)

		1		
16. Total number of researchers (head counts)	Please insert just the "number" of head counts: xxx Researchers are professionals engaged in the conception or creation of new knowledge. They conduct research and improve or develop concepts, theories, models, techniques instrumentation, software, or operational methods.	r 5	20. Total number of other supporting staff (head counts)	Please insert just the "number" of head counts: xxx Other supporting staff includes skilled and unskilled craftsmen, and administrative, secretarial, and clerical staff participating in R&D projects or directly associated with such projects.
17. Total number of women researchers (head counts)	Please insert just the "number" of head counts: xxx Women researchers are professionals engaged in the conception or creation of new knowledge. They conduct research and improve or develop concepts, theories, models, techniques instrumentation, software, or operational methods.		21. Total number of women supporting staff (head counts)	Please insert just the "number" of head counts: xxx Other women supporting staff includes skilled and unskilled craftswomen, and administrative, secretarial, and clerical staff participating in R&D projects or directly associated with such projects.
18. Total number of technicians or equivalent staff (head counts)       Please insert just the "number" of head counts: xxx         18. Total number of technicians or equivalent staff (head counts)       Technicians and equivalent staff are persons whose main tasks         18. Total number of technicians or equivalent staff (head counts)       Technicians and equivalent staff are persons whose main tasks         18. Total number of technicians or equivalent staff (head counts)       Technicians and equivalent staff are persons whose main tasks         18. Total number of technical staff (head counts)       Technicians and equivalent staff are persons whose main tasks         18. Total number of technical staff (head counts)       Technicians and equivalent staff are persons whose main tasks         18. Total number of technical staff (head counts)       Technicians and equivalent staff are persons whose main tasks         18. Total number of technical staff (head counts)       Technicians and equivalent staff are persons whose main tasks         19. Total number of technical staff (head counts)       Technicians and equivalent staff are persons whose main tasks         19. Total number of technical staff (head counts)       Technicians and equivalent staff are persons whose main tasks         19. Total number of technical staff (head counts)       Technicians and equivalent staff are persons whose main tasks         19. Total number of technical staff (head counts)       Technicians and technical tasks involving the application of concepts and operational methods and the use of research equipme	Please insert just the "number" of head counts: xxx Technicians and equivalent staff are persons whose main		22. Last annual budget of the institution in US\$	Pleases insert the budget in equivalent US\$ current expressed in numbers like: US\$ xxx,xxx,xx
	require technical knowledge and experience in one or more fields	e	23. Source	Provide the official source where the information on the instrument was taken (e.g. name of the institution and link)
	in R&D g the nd the ervision	24. Date when the form was completed	YEAR / MONTH / DAY	
19. Total number of women technicians or equivalent staff (head counts)	Please insert just the "number" of head counts: xxx Women Technicians and equivalent staff are women whose main tasks require technical knowledge and experience in one or more fields of engineering, the physical and life sciences, or the social sciences, humanities, and the arts. They participate in R&D by performing scientific and technical tasks involving the application of concepts and operational methods and the use of research equipment, normally under the supervision of researchers.			

### Example of an institutional profile (part 3)

- 14. One Digit Socio-Economic Objective Classification: 2
- 15. International Standard Industrial Classification (ISIC) of all economic activities: 00
- 16. Total number of researchers (head counts): 65
- 17. Total number of women researchers (head counts): 30
- 18. Total number of technicians or equivalent staff (head counts): 18
- 19. Total number of women technicians or equivalent staff (head counts): 10
- 20. Total number of other supporting staff (head counts): 8
- 21. Total number of women supporting staff (head counts): 6
- 22. Last annual budget of the institution in US\$: x,xxx,xxx
- 23. Source: GO →SPIN Country profile vol. 7
- 24. Date when the form was completed: 2018-04-20



# Follow-up of UNESCO's "Recommendation on Science and Scientific Researchers" (part I)

#### Part I

- Were Translations Made? Yes/No/Some but not all
- What improvements could be made:
- Was it Transmitted to Competent Authorities? Yes/No/Some but not all
- What improvements could be made:
- Were Consultations held? Yes/No/Some but not all
- Please state which were made and which could still be made:
- Were New Measures Taken for compliance? Yes/No/Some but not all
- Please state which were made and which could still be made and whether any is foreseen:



#### The headlines below and (in part II) refer to key areas of the Recommendation on Science and Scientific Researchers.

- For each headline, the essence of what this survey seeks is:
- (a) have measures been taken to implement the norms and standards of the Recommendation?
- (b) have any obstacles to compliance with its norms and standards been encountered?



# Follow-up of UNESCO's "Recommendation on Science and Scientific Researchers"



Toward a Sound Science Technology and Innovation (STI) System				
	(a)	(b)		
Data on Conditions of Scientific Researchers	Yes/No	Yes/No		
Non-Discrimination and Diversity in Employment of Researchers	Yes/No	Yes/No		

STI system and national and international objectives		
Target 9.5 of Agenda 2030	Yes/No	Yes/No
Capacities for Research Informing Public Policy and Decision-making	Yes/No	Yes/No
Science Diplomacy	Yes/No	Yes/No
Brain Drain	Yes/No	Yes/No



# Follow-up of UNESCO's "Recommendation on Science and Scientific Researchers" (part II)

Part II

The below topics refer to science in society grouped by the 10 key areas of the Recommendation.



(a) have measures been taken to implement the norms and standards of the Recommendation?(b) have any obstacles to compliance with the norms and standards been encountered?

#### 1. STI National and International Objectives

	(a)	(b)
Helps achieve Sustainable Development Goals	Yes/No	Yes/No
Helps achieve Gender Equality	Yes/No	Yes/No

#### 2. STI and Society

Knowledge Society	Yes/No	Yes/No
Peaceful Applications of S&T	Yes/No	Yes/No
Scientific Culture	Yes/No	Yes/No



# Follow-up of UNESCO's "Recommendation on Science and Scientific Researchers" (part II cont.)

#### 3. Research informing policy

	(a)	(b)
Uses S&T Knowledge for Decision-Making and Policy	Yes/No	Yes/No
Scientists Advise Government	Yes/No	Yes/No

#### 4. Science is a common good

	(a)	(b)
Openness	Yes/No	Yes/No

#### 5. Diversity of science

	(a)	(b)
Non-Discrimination and Diversity	Yes/ no	Yes/ no





#### Follow-up of UNESCO's "Recommendation on Science and Scientific Researchers" (part II cont.)

# SCIENCE AND SCIENTIFI RESEARCHERS

#### 6. Human rights standards

	(a)	(b)
Human Right to Science	Yes/No	Yes/No
Human Right to Health	Yes/No	Yes/No
Other Human Rights	Yes/No	Yes/No

#### 8. Scientific Freedom and Scientific Responsibility

	(a)	(b)
Scientific Freedom and Scientific Responsibility	Yes/No	Yes/No

#### 9. Research Integrity, Research Ethics, and Ethics of STI

	(a)	(b)
Regulations Impacting on Research	Yes/No	Yes/No
Ethics Infrastructure	Yes/No	Yes/No



# Follow-up of UNESCO's "Recommendation on Science and Scientific Researchers" (part II cont.)



#### **10. Human capital for research**

	(a)	(b)
Careers, Mobility	Yes/No	Yes/No
Learning	Yes/No	Yes/No
International Travel	Yes/No	Yes/No
Social Security	Yes/No	Yes/No
Appraisal	Yes/No	Yes/No

#### **11. Enabling Environment for Science and Research**

	(a)	(b)
Infrastructure and S&T services	Yes/No	Yes/No
Public funding	Yes/No	Yes/No
Work Conditions	Yes/No	Yes/No
Publication	Yes/No	Yes/No

# Follow-up of UNESCO's "Recommendation on Science and Scientific Researchers" (suggestions)



#### Suggestions and experiences of implementation

- Lessons learnt from experience of implementation in 2017-2020:
- Advice/perspectives for future implementation of this Recommendation:
- Suggestions to the Director-General regarding the Questionnaire,
- Monitoring Exercise or its Follow-up:
- Free form reply:



#### Follow-up of UNESCO's "Recommendation on Science and Scientific Researchers" (Annex A)



#### ANNEX A

For information: a mock-up of a sample page of the online questionnaire

#### < Back to home page

#### 1. STI and national and international objectives

Selected Topic: STI is geared to help achieve Sustainable Development Goals

This topic relates to the Recommendation at paragraphs 4 and 5 found here

 In the period 2017-2020 were measures in place to encourage that STI is geared to help achieve SDGs? (yes/no)

If yes, please describe:

[drop down menu for entering the indicators that were used]

Are there any obstacles to achieving SDGs observed in your country that relate to the STI system? (yes/no)

If yes, please describe:

[drop down menu for entering the indicators that were used]

Optional questions:

 Does your country have an overall integrated plan for designing and developing STI policies and practices geared towards achieving the SDGs, such as an 'STI roadmap for SDGs' (this practice is encouraged by the UN)? (yes/no)

If yes, please describe and attach:

Is your national STI system designed and managed to support the achievements of	the
Sustainable Development Goals? (yes/no)	

page 13
If yes, please describe:
<ul> <li>What economic, finance and policy tools are available to advance STI geared towards sustainable development and effectively meeting the SDGs?</li> </ul>
Please describe:
<ul> <li>How do international development cooperation policies address the role of STI for global development?</li> </ul>
Please describe:
<ul> <li>How is international science and research collaboration policy shaped and managed in order to contribute to achieving the SDGs.</li> </ul>
Please describe:
< Back to home page



ANNEX B - Some Options for New Indicators

page 14



A growing set of options for (new) indicators and technical reports are found online at en.unesco.org/recommendation-on-science.

Some examples are presented here below, grouped according to just one of the 10 key areas of the Recommendation:

Criteria	Performance indicators		Perception indicators
	Process indicators	Outcome indicators	
Gender equality	<ul> <li>[As used in go-spin<sup>3</sup>]</li> <li>Number of programmes funded by public funds which contain gender equality criteria <ul> <li>Percentage of research institutions (including universities) that (a) have gender equality plans and (b) provide documentation of their implementation</li> <li>Percentage of research institutions that document specific actions that minimize /reduce barriers in work environment that disadvantage one sex (e.g. flexibility of working hours)</li> <li>Percentage of research institutions that document specific actions aiming to change aspects of their organizational culture that reinforce gender bias</li> <li>Percentage of research institutions that provide training/support for researchers in regard to the inclusion of gender dimensions in the content of research</li> <li>Percentage of schools (primary and secondary) that have programmes promoting gender equality issues in regard to action of provide to actions and actions and a secondary) that have programmes promoting gender equality issues in regard to action action of provide actions and actions actions and actions action</li></ul></li></ul>	<ul> <li>[As used in go-spin]</li> <li>Percentage of women on advisory committees <ul> <li>Percentage of women in expert groups</li> <li>Percentage of women on proposal evaluation panels</li> <li>Percentage of women in projects throughout the whole life cycle (in full-time equivalent)</li> <li>Percentage of women that are principal investigators on a project</li> <li>Percentage of women that are first authors on research papers</li> <li>Percentage of research projects including gender analysis/gender dimensions in the content of research</li> <li>Percentage of women taking part in research mobility programmes</li> </ul> </li> </ul>	<ul> <li>Perception of gender roles in science amongst young people and their parents, e.g. percentage of young people who believe that science care are equally suitable for both women a men;</li> <li>Percentage of parents who believe their children (daughters) will have equal opportunities to pursue a caree in STEM</li> <li>Perception of people working in the area of R &amp; I in regard to gender equality, e.g. percentage of women ir &amp; I, who believe they have equal opportunities to pursue their careers R &amp; I in comparison to men</li> </ul>



# Thank you very much

