



الإمارات العربية المتحدة
وزارة الاقتصاد
UNITED ARAB EMIRATES
MINISTRY OF ECONOMY



Dialogue on Utilizing the IP System for Economic, Social and Cultural Development in Digital Era- Japan and Selected Arab Countries Tokyo, October 28 and 29, 2019

Case of Egypt

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www.asrt.sci.eg

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STI Ecosystem in Egypt

Experience of Egypt
(with special focus on ASRT)

IPR system and
emerging technologies



Target:

One of the best 30 Economies and 60 GII globally by 2030

Vision

By 2030, Egypt shall have a balanced, diversified competitive economy that counts on innovation and knowledge, and based on justice, social integration and participation.

knowledge, innovation and scientific research pillar in Egypt's vision 2030:

By 2030, Egypt shall be creative, innovative and productive in science, technology and knowledge through comprehensive integrated system that guarantees the developmental value of innovation and knowledge, and links knowledge applications and innovation outcomes to the national goals and challenges.

Development of Egypt relies on permanently learning generations able to produce and use knowledge

Nurturing enabling environment for STI and improving its capabilities to produce knowledge efficiently and effectively, to increase the rate of growth of the national economy, and to achieve sustainable development of the society and elevate the quality of human life

Enhancing knowledge production and helping other institutions to achieve 80% of food sufficient and deepening of local manufactured products (above 70% local components)

Nurturing Enabling Environment for STI

- 1-STI policies/laws/legislatives
- 2-Building of scientific base
- 3- Integrated STI ecosystem
- 4- Basic & converging sciences
- 5- Academia/Industry/public Partnership (3P)
- 6- International Cooperation
- 7- Science for society

Production, Transfer and Localization of Technology

- 1-Health
- 2-Energy
- 3- Clean water
- 4-Food and Agriculture
- 5-Environment
- 6- Emerging Technologies
- 7- Strategic Industries (Textile, Pharmaceuticals, Electronics)
- 8-ICT
- 9-Education
- 10-Media
- 11-Political sciences
- 12-Transportation
- 13-Tourism
- 14-Social sciences and Humanities

Fund, STI Policies, Follow Up, Monitoring and Impact Assessment

Vision

Mission

Strategic Objectives

Tracks

Pillars

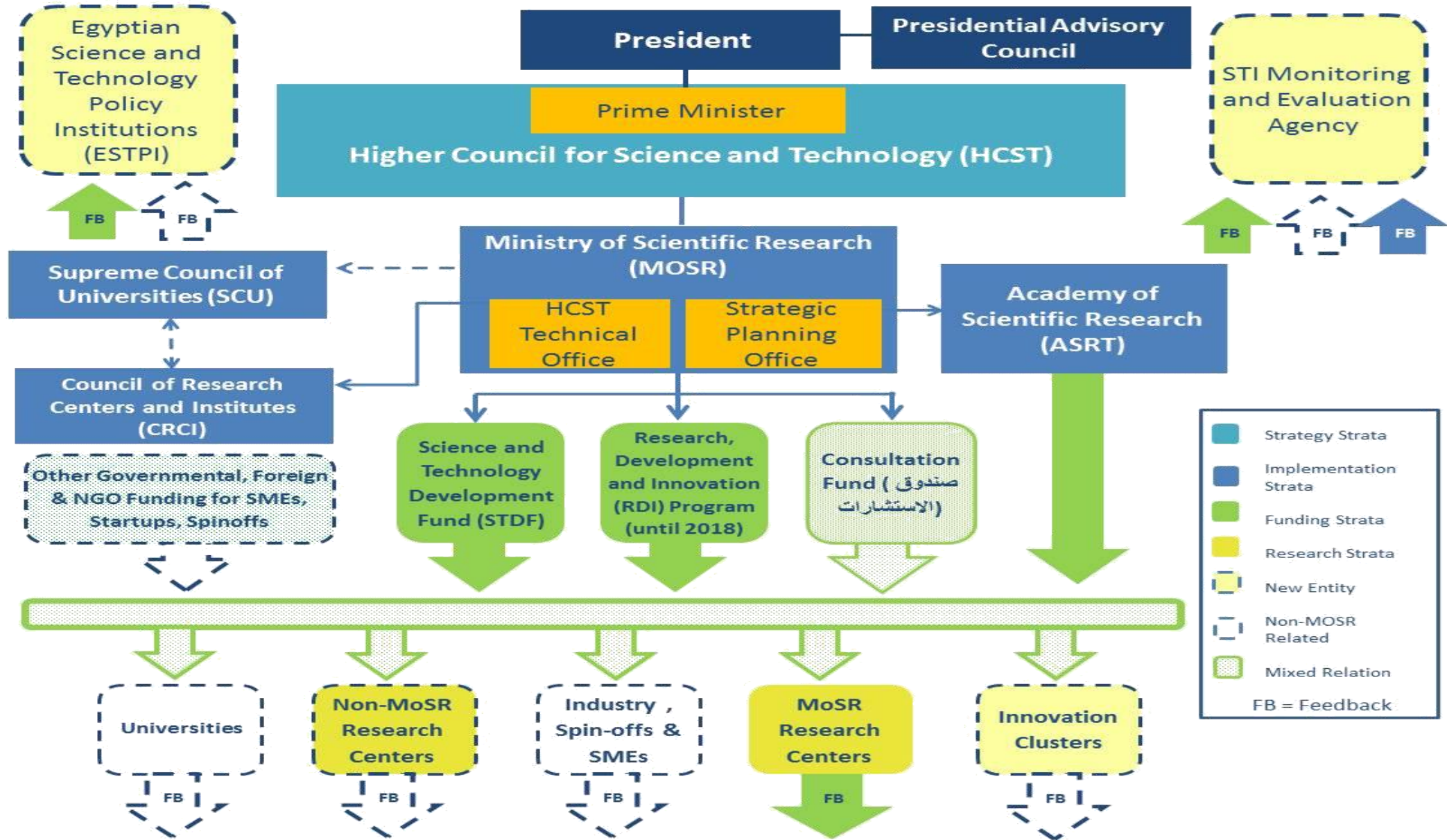
Tools
2714

Outlines of Egypt STI strategy 2030

Strategic Objectives

- **Creating an environment that encourages knowledge localization and production**
Increasing knowledge production through the creation of well prepared legislative, investment and funding environment, and infrastructure
- **Preparing and improving an integrated national innovation system**
Promoting / enhancing innovation efficiency through encouraging innovative production, increasing the link between innovation and needs, and improving elementary education, higher education, research and development.
- **Linking knowledge applications and innovation outcomes to national priorities**
Determining the sectoral priorities and challenges, and their ways of canalization/stimulation through increasing the knowledge based production of the priority sectors, and targeting raising the local components

National STI Organogram



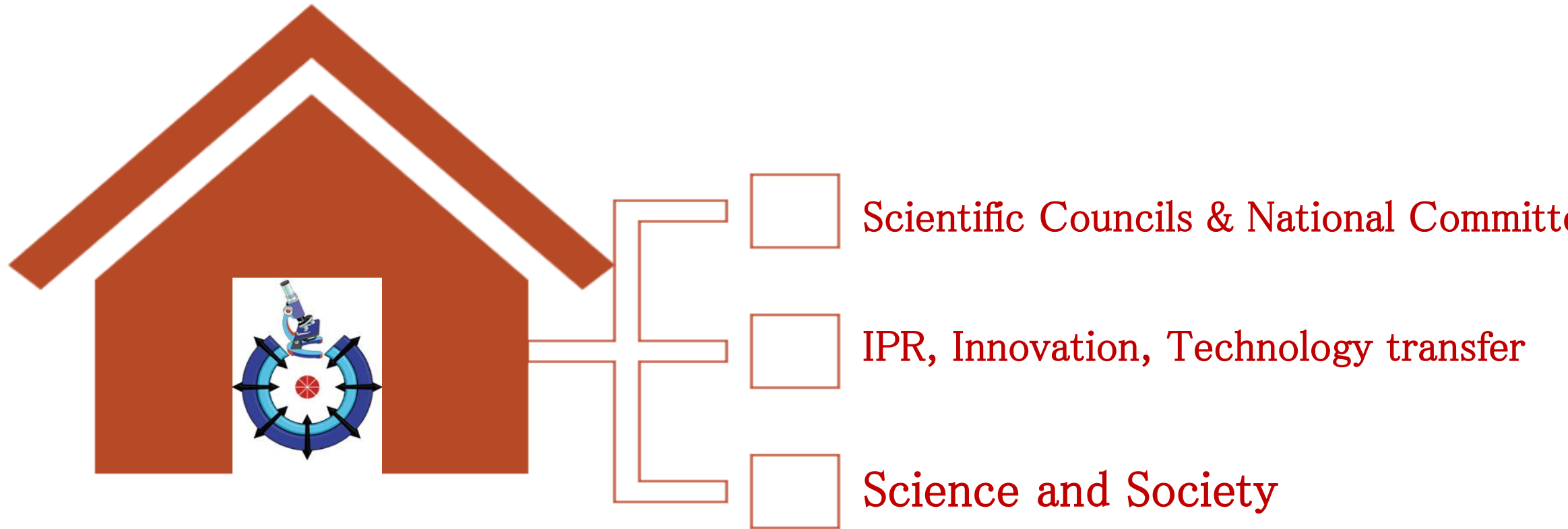


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Better Science for Better Life





ASRT is the National Academy of Science, has a triple mandate, i.e. the **House of Expertise and the National Think Tank** of Egypt, the second (the first based on actual expenditures) national STI funding organization and **the main governmental supporter of complete cycle of innovation and IPR in Egypt**

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Vision:

أكاديمية وطنية فاعلة تتعاون مع باقى عناصر منظومة العلوم والتكنولوجيا والابتكار في تحسين وضع مصر العلمي والاقتصادي
Effective National Academy, cooperates with other entities of STI, to improve scientific and economic status of Egypt

Mission:

تهيئة بيئة مشجعة للعلوم والتكنولوجيا ودعم الدورة الكاملة للابتكار
Nurturing enabling environment for STI and supporting the complete cycle of innovation

To achieve the aforementioned strategic objectives, ASRT action plan I (2014-2018) and II (2018-2022) pays too much attention to the following:

- ✓ Efficient IPR system to attract and foster technological investments and Technology transfer
- ✓ Efficient National Network of technology transfer
- ✓ Public Network of Technological Incubators & Accelerators
- ✓ Establishing Egyptian STI Observatory
- ✓ Partnership through Co-funding and joint fund between national and international funding bodies
- ✓ Public Private Partnership (PPP)
- ✓ Scientific Research Networks and Technological Alliances
- ✓ Recognition of Excellence in Science
- ✓ Benchmarking, performance and impact assessment of research institutions

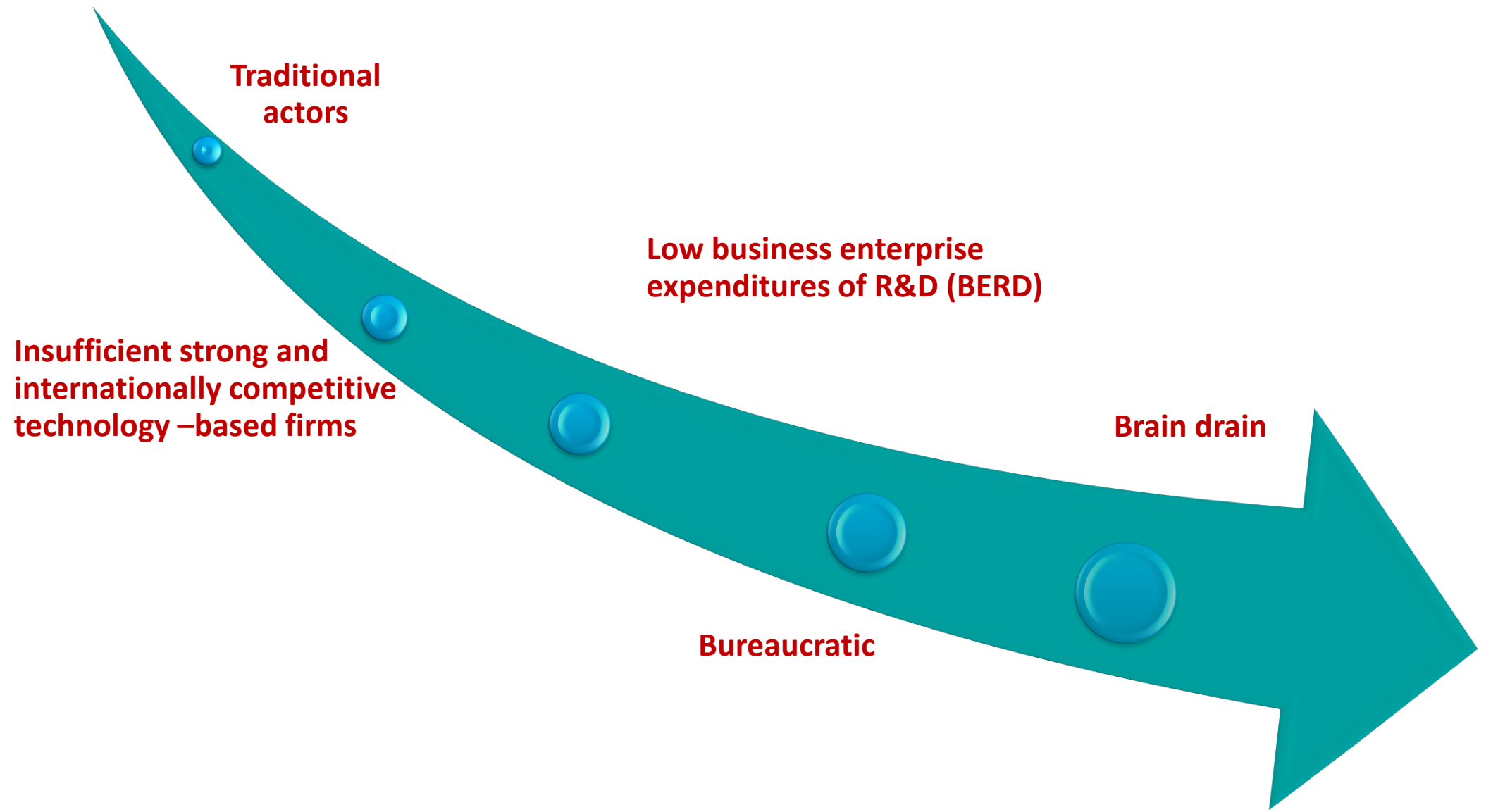
SWOT analysis of Egypt's STI system

A. Strengths

- *New supportive legislatives
- *Rapid growing number of incubators
- *Good ICT infrastructure
- *Well developed system for entrepreneurs
- * Highest growth rate in scientific publications worldwide
- * Good Int. Collaboration
- * National network of technology transfer offices, IPR regional offices and IPR help desks
- * Political support and governmental intention to empower youth
- * Biggest digital library worldwide (EKB)
- *One of the most efficient IPR office (ISA)
- * Growing number of qualified researchers



Weaknesses



Traditional actors

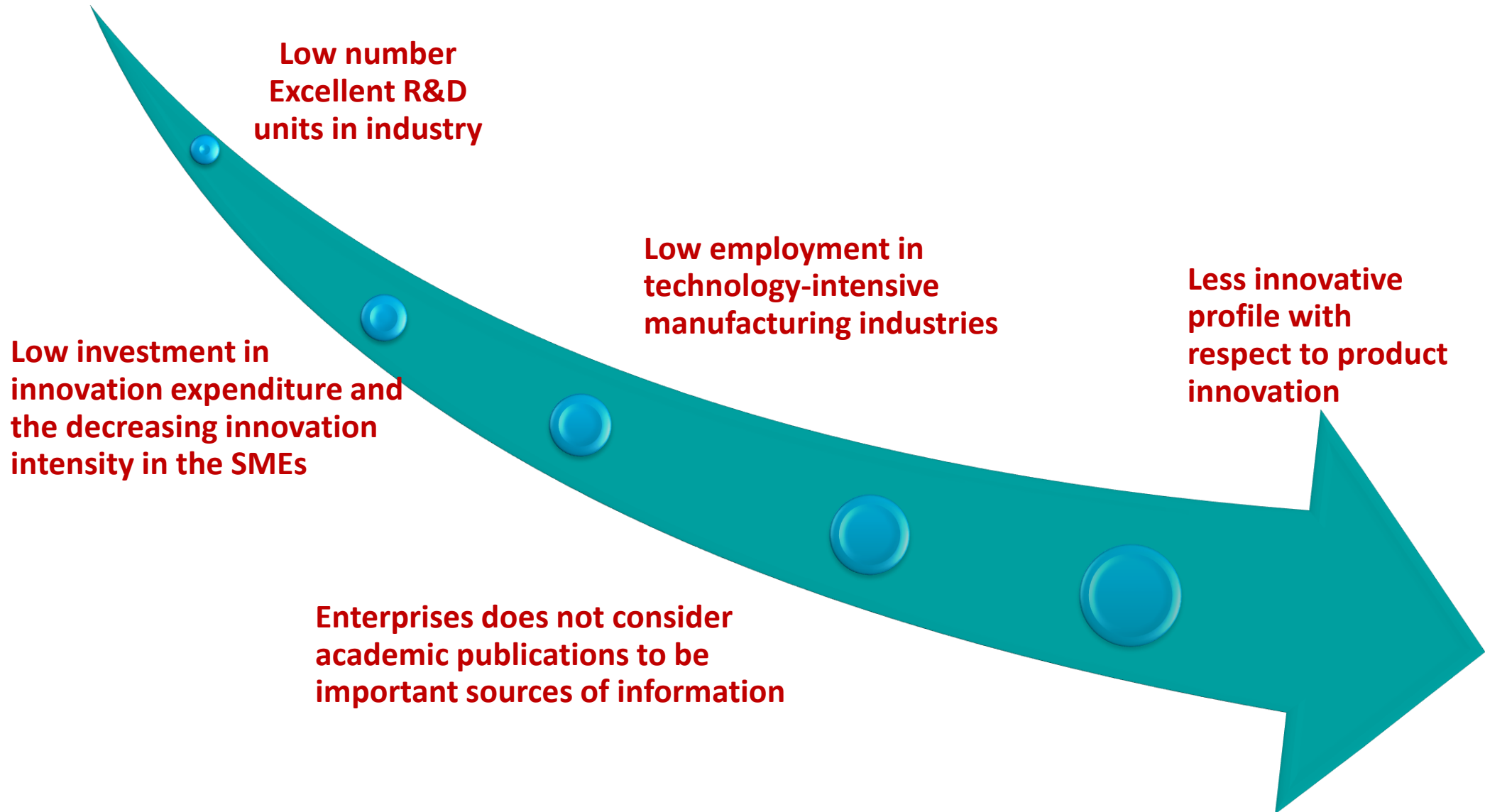
Low business enterprise expenditures of R&D (BERD)

Insufficient strong and internationally competitive technology-based firms

Brain drain

Bureaucratic

Weaknesses



Opportunities

- * Increasing numbers of highly qualified fresh PhD holders from top universities in developing countries
- * On going mega project in education reforming
- * Economic reforming
- * On going mega projects on logistics, supply chain, renewable energies and smart agriculture
- * Establishment of new branches of international campus (IBCs) and Technological Universities
- * Diffusion of innovation culture

Threats

- * Incentives launched by neighboring countries to attract talented entrepreneurs, Innovators, Inventors and high-tech based investments
- * Focusing on applied research on the expense of basic sciences
- * Political instability in the region
- * Growing numbers of private universities that attracts highly qualified research to teaching activities
- * Frequent changes in STI system
- * Believes of decision makers that copying of a successful experience of a developed country is the short, most reliable and best way to achieve similar success in STI
- * Absence of enabling environment to cope with fast emerging technologies

News

THE EGYPTIAN ACADEMY OF SCIENCES

A. M. MOSHARRAFA PASHA

Published online 04 May 1946

Abstract

EGYPTIAN men of science have for some time felt the need for establishing an academy of sciences in Cairo. So far the bulk of research work carried out in Egypt has been published in foreign journals or communicated to learned societies abroad. Although the Institut d'Egypte was founded in 1859 (reviving an older institute founded by Napoleon) and counts among its four sections one for Physical and Mathematical Sciences and another for Medicine, Agronomy and Natural History, its main tendency remained literary and artistic. Thus we find Osman Ghaleb Pasha (1845-1920), the biologist, publishing his work on the migrations of *Filaria rytipleurites* in the *Comptes rendus* of the Paris Academy in 1878. Previously Mahmoud El Falaki Pasha (1830-85), the astronomer and physicist, published his work on terrestrial magnetism in the *Comptes rendus* of the Paris Academy (1856) and the *Mémoires couronnés et mémoires des Savants étrangers* of the Belgian Academy (1856).

Nature 1946

Pakistan and Egypt had highest rises in research output in 2018

Dec.2018

Global production of scientific papers hit an all-time high this year, estimates show, with emerging economies rising fastest.

Emerging economies showed some of the largest increases in research output in 2018, according to estimates from the publishing-services company Clarivate Analytics. Pakistan and Egypt topped the list in percentage terms, with rises of 21% and 15.9%, respectively.

China's publications rose by about 15%, and India, Brazil, Mexico and Iran all saw their output grow by more than 8% compared with 2017 (see 'Countries with biggest rises in research output').

Globally, research output rose by around 5% in 2018, to an estimated 1,620,731 papers listed in a vast science-citation database Web of Science, the highest ever (see 'Research output rose again in 2018').

The figures might also reflect changes in how the database is curated, which has added more local or national journals to the mix. But some geographical regions, notably in Africa, are still under-represented, says Tijssen.

Increases in funding and international collaborations might also have boosted the rise in publications in Egypt and Pakistan, say Tijssen and Wagner.

Nature 2018

The International Journal
ENTREPRENEURSHIP AND SUSTAINABILITY ISSUES

ISSN 2345-0282 (online) <http://jssidoi.org/jesi/>

2017 Volume 5 Number 2 (December)

[http://doi.org/10.9770/jesi.2017.5.2\(3\)](http://doi.org/10.9770/jesi.2017.5.2(3))



Publisher

<http://jssidoi.org/esc/home>

REVIEW OF THE EGYPT SCIENCE AND TECHNOLOGY SYSTEM; SWOT ANALYSIS

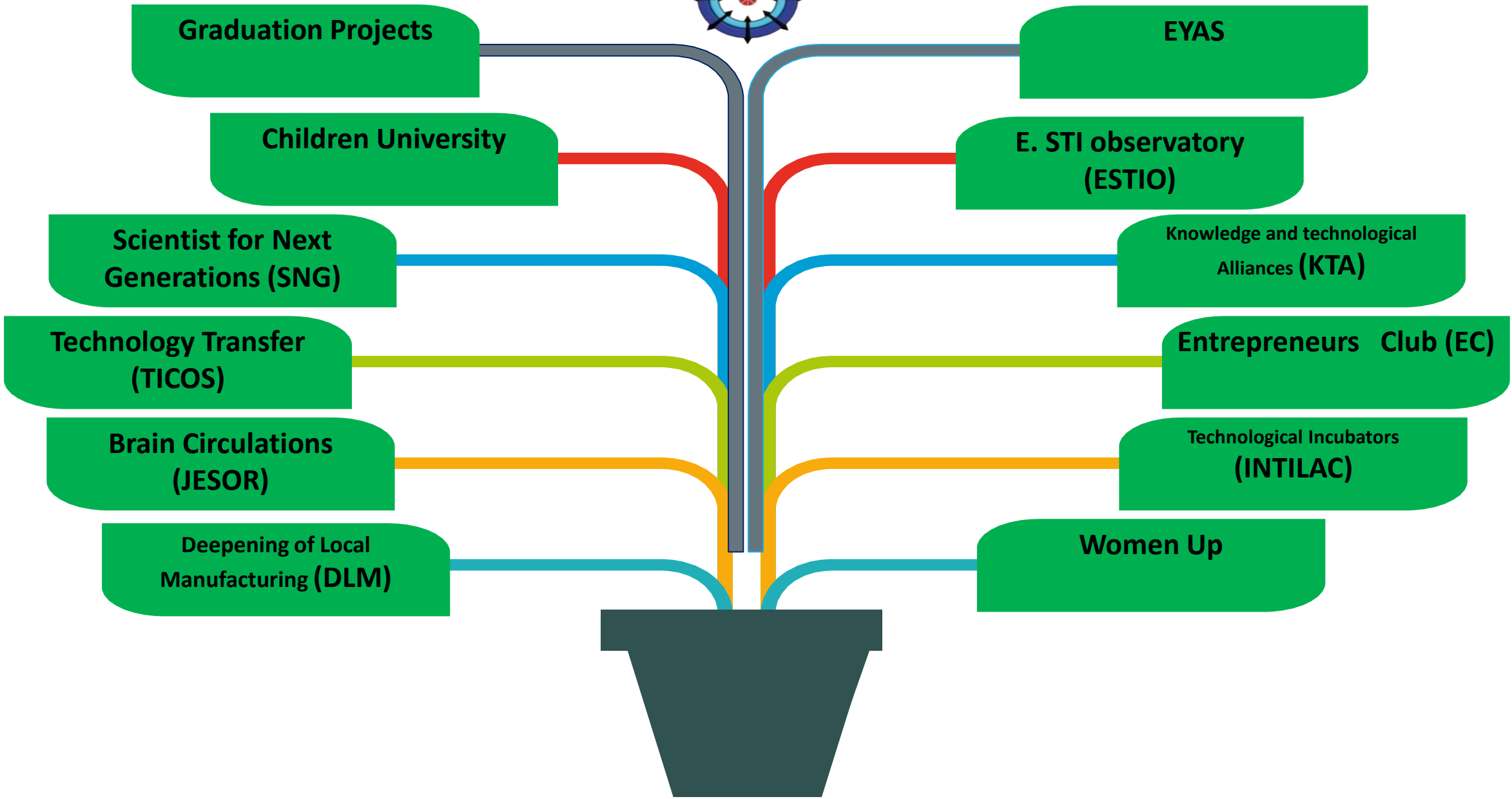
Amr Radwan¹, Mahmoud Sakr^{2*}

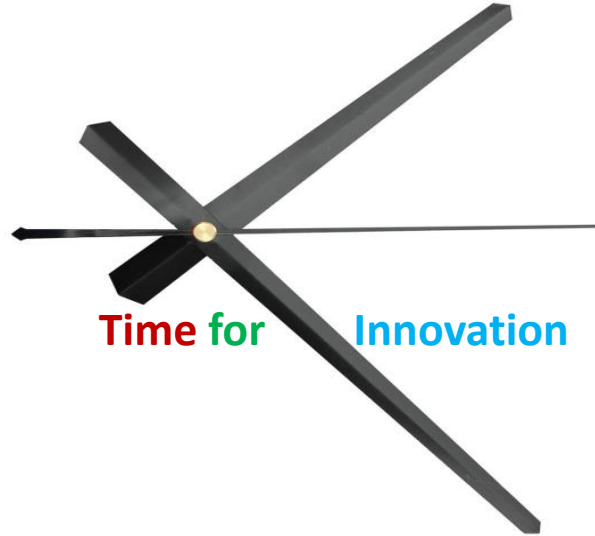
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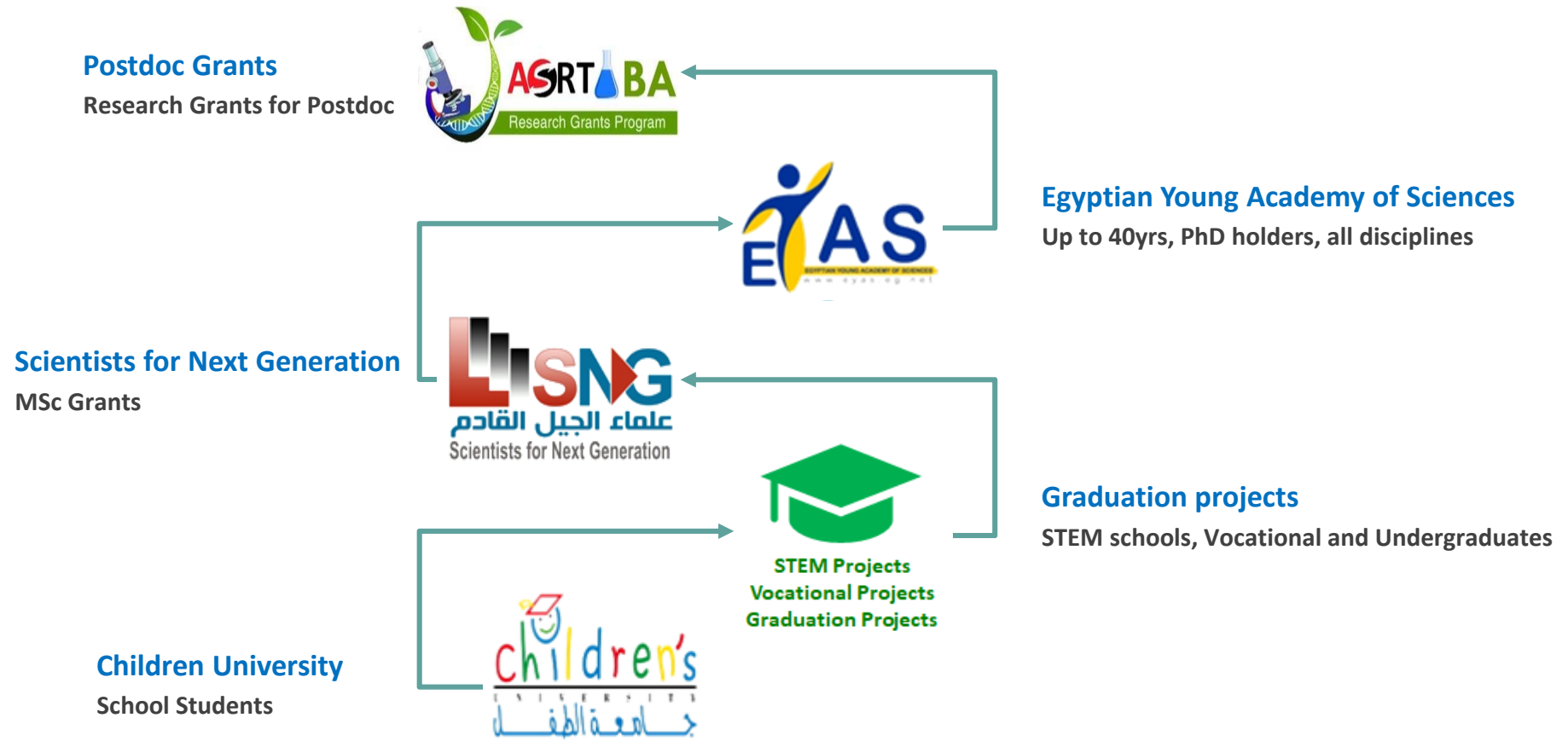
Time for Innovation



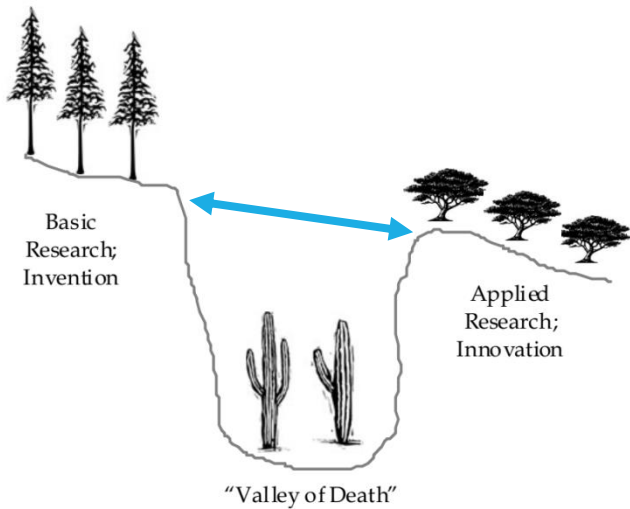
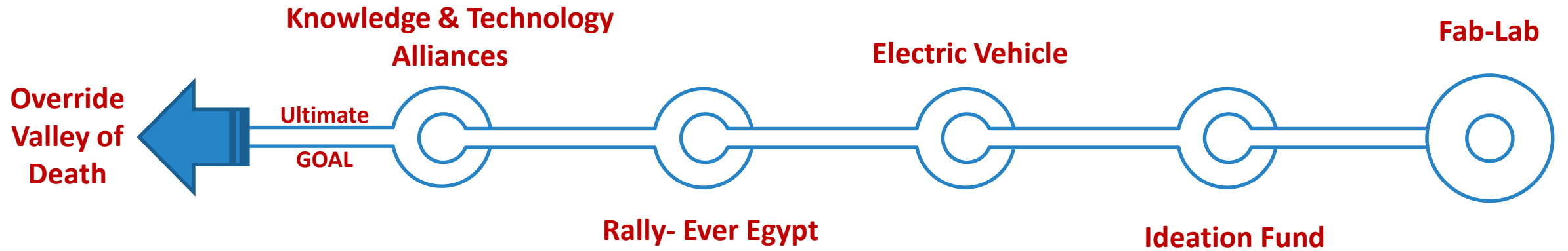
Joint Collaborative Efforts of Egyptian Expatriates and Scientific Organizations towards tackling national R&D challenges



1- Nurturing Enabling Environment for Innovation (Capacity Building Programs)



2-Deepen Local Manufacturing (DLM)



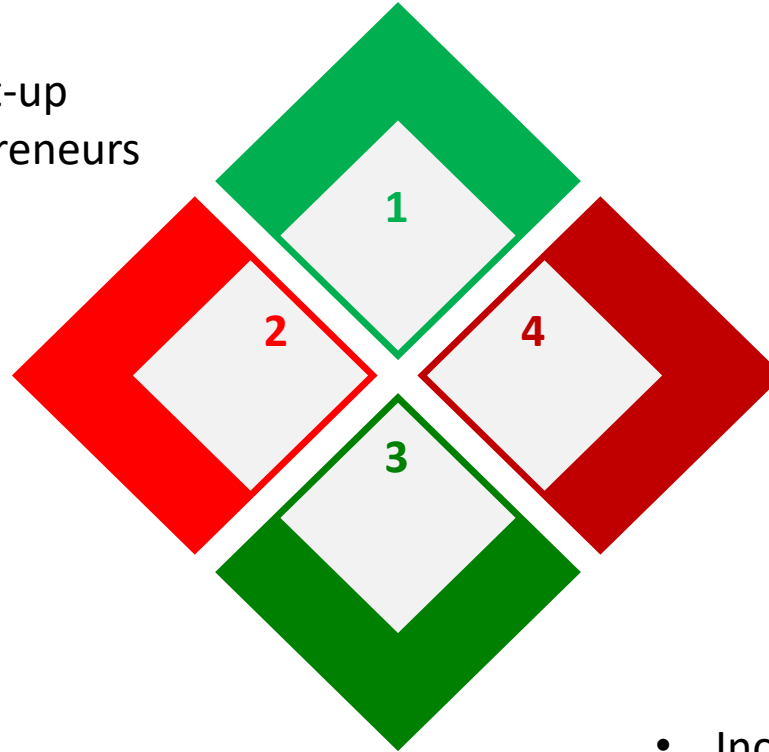
3/1- Entrepreneurship and Innovation Support Programs

Intilac

- Incubation Idea to start-up
- Target group: all entrepreneurs
- All sectors

Women Up

- Empower women social entrepreneurs and female households
- Allowed sectors: water, energy, food



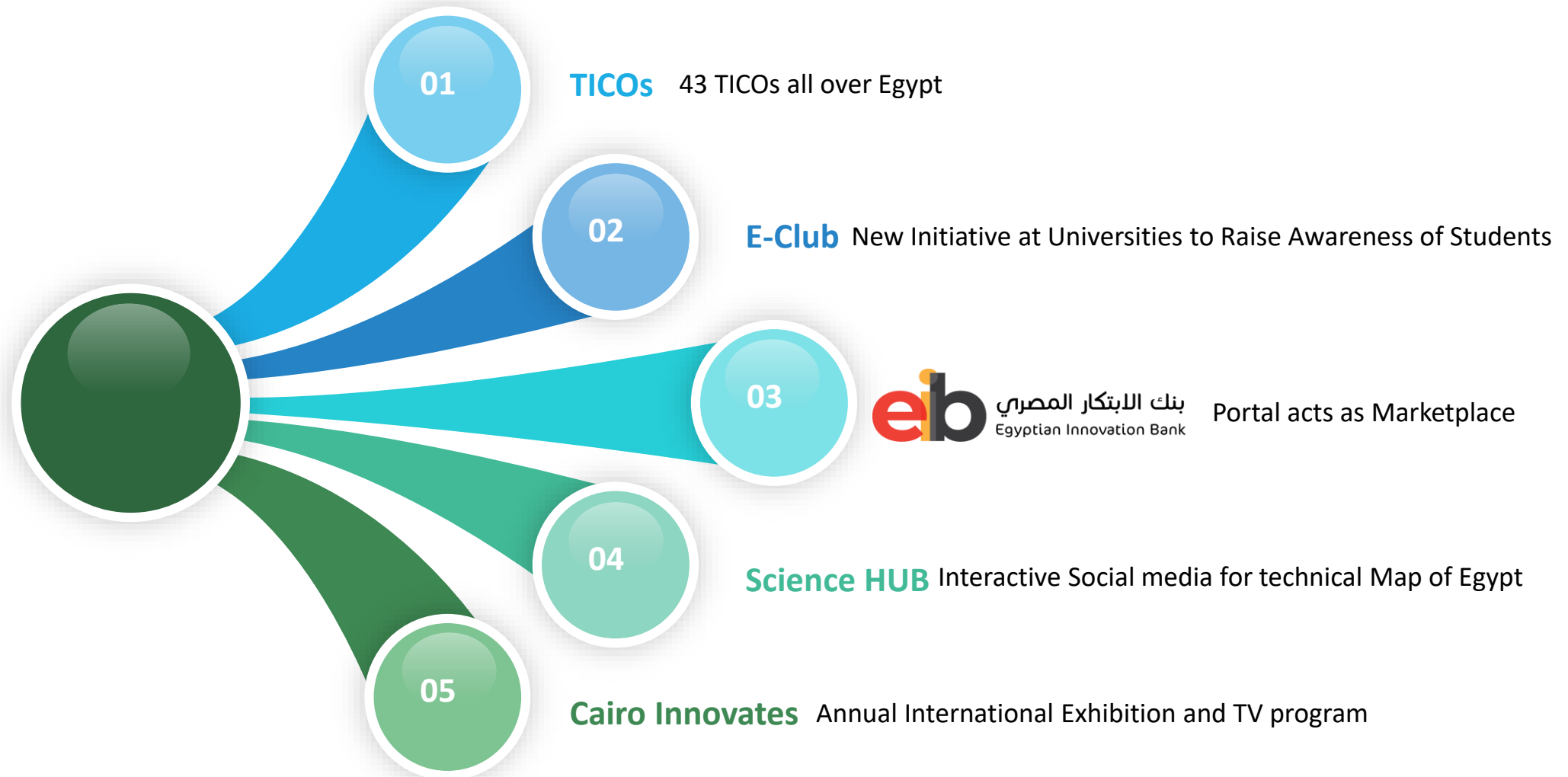
Accelerator 101

- Accelerate Start-ups and networking with smart money
- Target group: all entrepreneurs
- All sectors

Tanmia we Tatwer

- Incubation and Acceleration
- Target group: all with concentration on women, youth, upper Egypt
- Allowed sectors: Agribusiness, Handicrafts, clean and clear

3/2- Entrepreneurship and Innovation Support Programs



Example 1: Technology, Innovation Commercialization Offices (TICOs)



➤ Bridging the gap between scientific research and industry



- Knowledge for knowledge's sake
- Recognition
- Publications, open discourse
- Academic freedom

- Management of knowledge for profit
- Competitive advantage
- Limited public disclosure
- Confidentiality

Technology, Innovation Commercialization Offices (TICOs)



ASRT supports Conducting of research to develop & transfer solutions to real problems of high national priority. Through TICOs network it:

- Facilitate partnerships between academia and industry to allow adoption of research outcomes for *society* benefit
 - Protect intellectual property to enhances adoption of research outcomes and generation of income
 - Helps in marketing of IP to create creates real value
 - Provides ideation and prototyping seed fund at the institutional levels
 - Offers technological and innovative solutions based on research findings
-
- **Now we have 43 office**

Technology, Innovation Commercialization Offices (TICOs)



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TTO

- * Matchmaking between industry and academia
- * Offer technological and innovative solutions to industrial problems
- * Define industrial challenges and transforming it into R&D proposals to be funded with the aim of solving the problem
- * Commercialization of research findings, innovations and patents

TICS

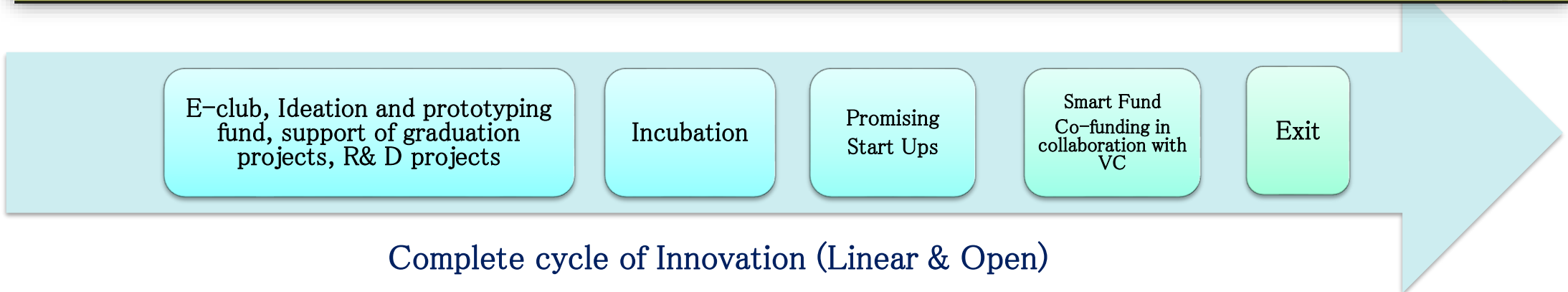
- * IPR protection & Capacity building
- * Raising IPR awareness
- * Helps institutions to develop institutional IPR Policies

GICO

- * Disseminate national and international funding opportunities
- * Capacity building in proposal writing, research project management, ethics, Research team, networking and finding appropriate partners for Int. grants

TICO

Example 2: Technological Incubators (INTILAC)



INTILAC is:

The largest national, governmental and multidisciplinary network of technological Incubators (17 branches), targeting undergraduate and postgraduate students and their graduation projects, the entrepreneurs in their early steps, the researchers in Universities and Research Centers and social innovators

Vision:

Boosting innovation ecosystem in Egypt through establishing a public national network of general and specialized technological Incubators all over Egypt, capable to accommodate and transform innovative ideas into final commercial products (Startup/Spinoff) .

Mission:

Incubate, accelerate, spin, technology push and create jobs

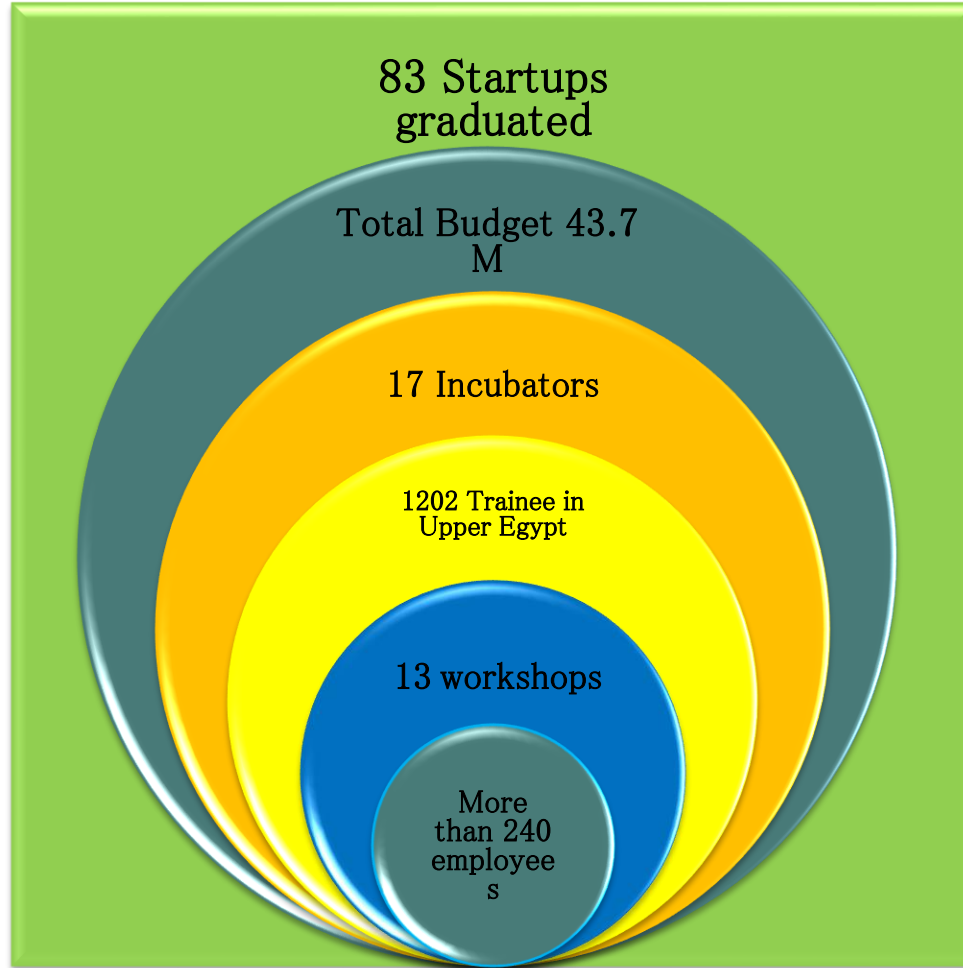
INTILAC Branches

	Incubator	Specialization	Address
1	Bedaya-Cairo	General	Bedaya Center - General Authority for Investments and Free Zones - Nasr City
2	Bedaya-Sohag	General	ASRT Regional Center - Karman -Sohag
3	GESR - Cairo	General	Mokattam - Cairo
4	Ice- Alex	General	Alexandria
5	Suez	General	ASRT Regional Center - Suez University
6	Hemma	General	Assuit University
7	Rawak	General	Faculty of Engineering - Al-Azhur University - Quena
8	Heliopolis	General	Heliopolis University

INTILAC Branches

	Incubator	Specialization	Address
9	Tech Space	Artificial Intelligence & Block chain	Nile University
10	Tareek	IT	Electronics Research Institute
11	Ed venture	Education	Nahdet Masr Foundation
12	Tafaneen	Design and Jewelers	Fashion Technology Center
13	Ebdaa	Augmented & Virtual Reality	Chamber of Information Technology
14	Ebni – Cairo	Internet of Things	Etisal
15	Ebni – Borg El–Arab	Internet of Things	Etisal
16	Naseej	Textile	ASRT Regional Center – Tanta
17	Wathba	Furniture	ASRT Regional Center - Damietta

INTILAC in Numbers



Example 3: Egyptian Innovation Bank (eib)

← → ↻ https://eib.eg



الدخول

تسجيل

إتصل بنا

احداث

أخبار

الخدمات

عن البنك

الرئيسية



www.eib.eg



بنك الابتكار المصري

بنك الكتروني وطني يساهم في التنمية التكنولوجية القائمة على الابتكار والاختراع مع حفظ كامل الحقوق الأدبية والفكرية لعملاء البنك, بضمان أكاديمية البحث العلمي والتكنولوجيا – طبقاً للقانون رقم 82 لسنة 2002

تعرف على المزيد



بنك الابتكار المصري
Egyptian Innovation Bank

www.eib.eg

The screenshot shows the homepage of the Egyptian Innovation Bank (EIB). The browser address bar displays "https://eib.eg". The navigation menu includes "الرئيسية" (Home), "عن البنك" (About the Bank), "الخدمات" (Services), "أخبار" (News), "إحداثيات" (Locations), "إتصل بنا" (Contact Us), "تسجيل" (Registration), and "الدخول" (Login). The main content area features three columns:

- Left Column:** "طور لأصحاب التحديات" (Develop for challenge owners). Subtext: "إعرض التحدي التكنولوجي الذي تواجهه لإيجاد حلول" (Present the technological challenge you are facing to find solutions). Button: "أضف تحدي" (Add challenge).
- Middle Column:** "استثمر للمستثمرين ورجال الصناعة" (Invest for investors and industry professionals). Subtext: "تواصل واستثمر في فرص تكنولوجية واعدة للمستقبل" (Connect and invest in promising technological opportunities for the future). Buttons: "سجل كمستثمر" (Register as investor) and "استعرض الابتكارات" (View innovations).
- Right Column:** "ابتكر للمبتكرين" (Innovate for innovators). Subtext: "قدم حل إبداعي مبتكر ليدخل حيز التنافسية والتطبيق" (Present a creative, innovative solution to enter the competitive and application markets). Button: "أضف ابتكارك" (Add your innovation).

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Egyptian Patent Legal System



- Ancient traders from China, Egypt and India used logos to distinguish their products from others.
- Starting with Law No. 132/1949, there have been several amendments in the course of developing Egypt's patent legal system
- Now Law No. 82/2002
- Focused on amending and unifying the previously separate laws for patents, trademarks, designs and copyrights in line with TRIPS, which Egypt joined in 1995

Egyptian Patent Legal System



- EGPO was established in 1951, became an affiliated organization under the ASRT since 1971
- Deals mainly with patents and utility models
- EGPO is active in Egypt's joining of various international agreements, for example:
 - Paris convention in 1951
 - WIPO in 1975
 - PCT in 2003
- In 2013, EGPO was the first office in the Arab region to be appointed as an ISA and IPEA
- National IPR Academy (2019)

Egyptian Patent Legal System



- Since issuing Egypt IPR law (82) in 2002, sincere efforts have been done to improve the legal framework for IPR protection and enforcement, with the aim to attract more investment
- Establishment of the Economic Court in 2008 has significantly affected the development in the area of IPR
- After 2011 Revolution, and as a result of political instability, the governmental focus on IPR file has been significantly reduced
- In 2014, Egypt started to regain its stability back and the government took decisive actions to boost technology transfer and commercialization and targeting knowledge-based economy
- Issuing of Egypt law for STI incentives (law no.23) in 2018 can be considered as one of the main decisive actions towards creating enabling environment for innovation, better utilization of IPR and technology transfer

IP Development Strategy - Egypt Vision 2030



A. Background Information

IP development strategy was established for following purposes:

Promote and strengthen the technological capacity of local industries for economic and societal benefits

- Provide key recommendations for reinforcing exclusive rights and promoting public domain simultaneously
- Suggest efficient operational plan for different types of IP rights (patents, utility models, trade secrets, etc.)

Enhance the usability of IP in Egyptian national industrial sectors

- Create protection system for traditional knowledge in order to promote Egypt's potential in traditional medicines and agriculture

Improve IP administration and ensure appropriate enforcement

- Modernize of IP administration by collective management system and institutional changes enhance client orientation level of IP services



B. Objectives

- Nurturing enabling environment for the localization of technology and production of knowledge
- Develop and promote an integrated national innovation system
- Connect knowledge and the innovation outputs with country priorities

C. Expected Benefits in Economic Growth

- Increasing competitiveness
- Providing new job opportunities.
- Improve Egypt's position on the global market
- Increase exports

IP Development Strategy : ASRT role



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The main public supporter of innovation and IPR, as the main drivers of technology transfer in Egypt through:

EGPO

- The sole government organization that receives, examines and registers patent applications
- Cooperates with WIPO to protect IP and create an environment for better IP protection
- IPR awareness and capacity building

TICO

- Helps in marketing IP so that it can create real value and become commercially useful
- Provides ideation and prototyping seed fund
- Offer technological and innovative solutions based on research findings

INTILAC

National network of 17 general and specialized technological incubators in partnership with Universities, research institutions, NGOs and private sector

www.eib.eg

- Electronic portal of innovation
- On line market place for Inventors, Innovators, Bankers, Funding Organization, VCs, Investors, Business men, Industry,etc.

Egyptian Patent Office: Global Challenges

1. Old IP system vs fast growing emerging technologies (Biotechnology, Big data, AI, 3D,)

2. Open access Vs Protection of information content

3. Requalification of IPR (Bilateral partnerships, WIPO support and National Initiatives)

Egyptian Patent Office: National Challenges

1. Civilization Rights

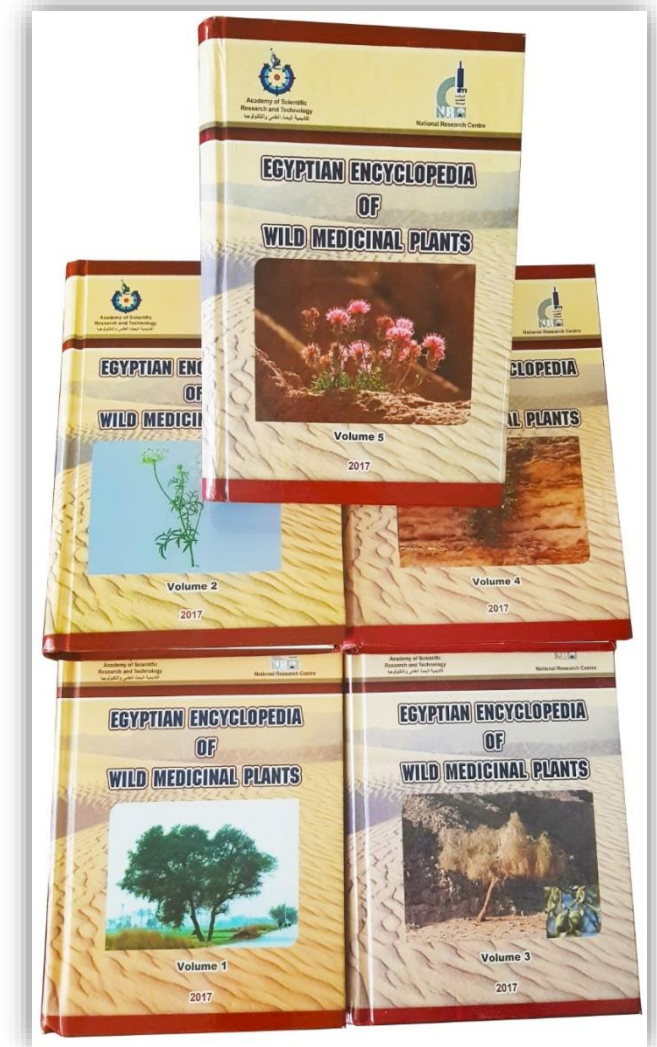
2. Genetic Resources Rights

**3. No 100% IPR protection
(Monopoly Vs Technology Diffusion)**

Wealth of Egypt

1- Encyclopedia of Wild Medicinal Plants

- The flora Egypt contains 2,145 species
- ASRT has launched a national project “ Wealth of Egypt” aiming at documentation, protection , preservation and better utilization of Egyptian wealth from genetic resources and IK
- The specific objectives of the project are:
 - 1) Series volume of Monographs together will structure the Egyptian Encyclopaedia of the main wild medicinal plants and will be published by ARST.
 - 2) Established database on the wild medicinal plants in Egypt.
 - 3) Reports on the status of wild medicinal plants the different phyto-geographical regions in Egypt.
 - 4) A DNA barcodes of the selected wild medicinal plants.



شكرا
Thank You

Mangrove forest Red Sea, Egypt
Mahmoud, December 2015