

HUMAN CAPACITY BUILDING: EDUCATION, VOCATIONAL AND SKILLED LABOR PROMOTING POLICIES

Economic And Social Commission For Western Asia



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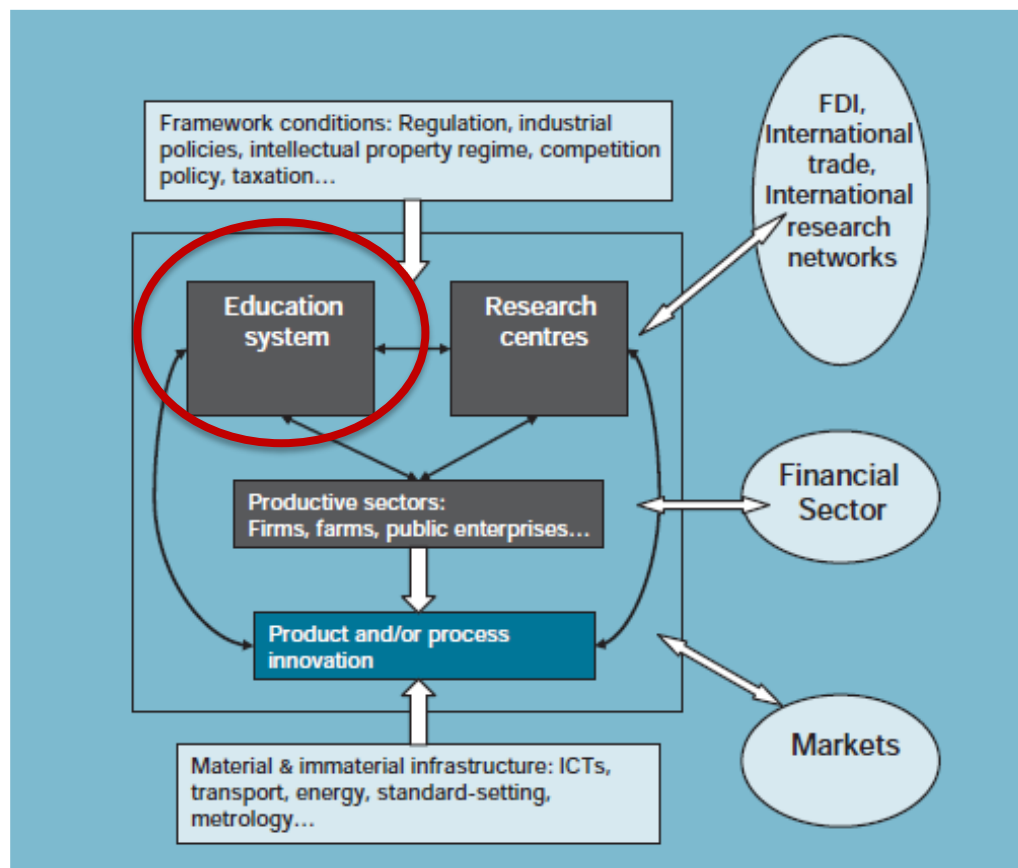
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Human Capital & Innovation

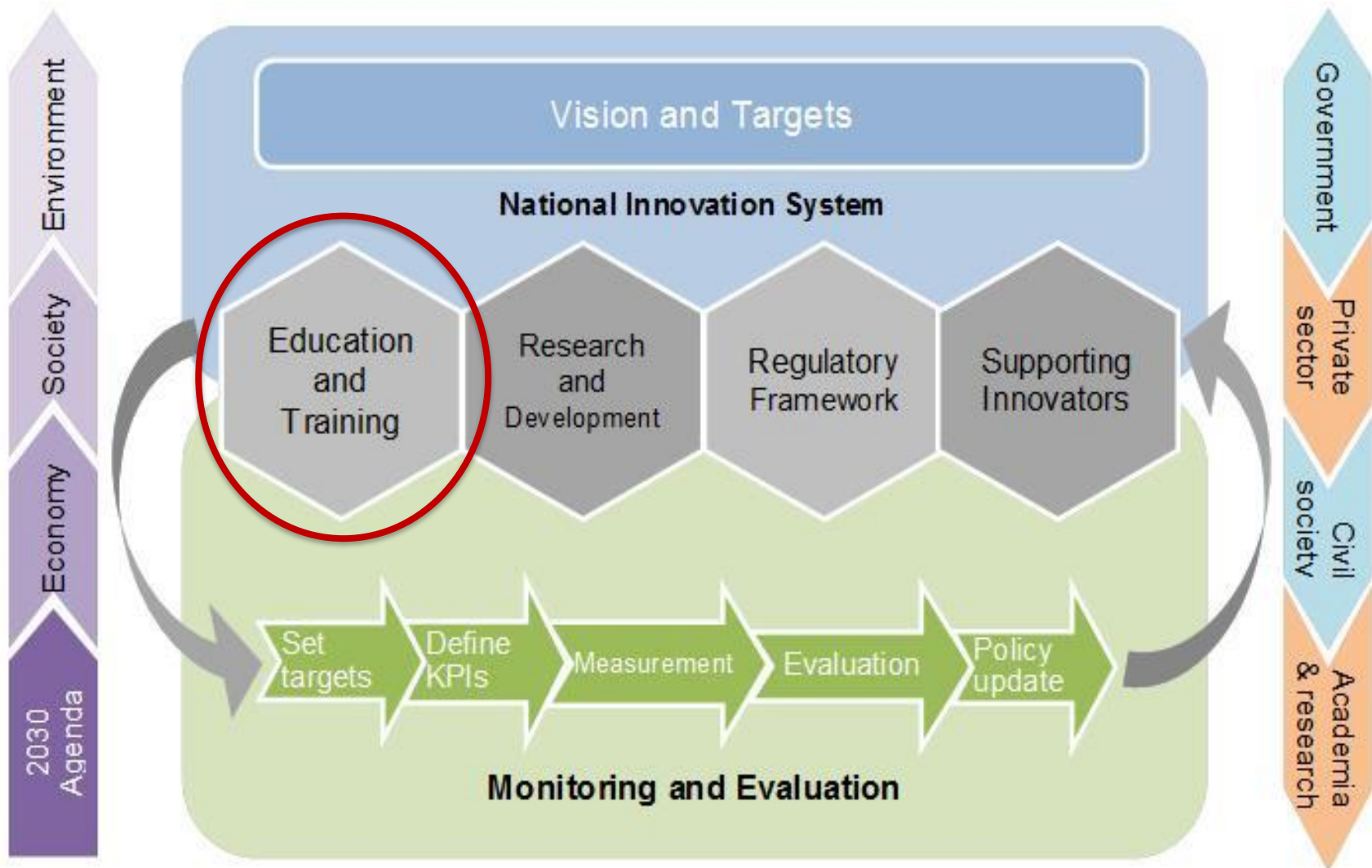
- **Human Capital is essential for Innovation** and it is one of its essential ingredient
- **Education system is crucial** for building the human capital and thus promoting Innovation
- Today the education system includes primary & secondary school, higher education, training & vocation training, and life long learning.
- It has been proven that the availability of Science, Technology Engineering, Mathematics (**STEM**) specialists is important for Innovation as they have specialized knowledge.
- Problem solving, critical thinking, creative thinking and behavioral skills are equally important.

Innovation & Education

Innovation models identifies Education System as a main component of the National Innovation System.



ESCWA Framework for Innovation



Human Capital and Research in GII

2	Human capital and research
2.1.	Education
2.1.1.	Expenditure on education
2.1.2.	Government expenditure on education per pupil, secondary
2.1.3.	School life expectancy
2.1.4.	Assessment in reading, mathematics, and science
2.1.5.	Pupil-teacher ratio, secondary
2.2.	Tertiary education
2.2.1.	Tertiary enrolment
2.2.2.	Graduates in science and engineering
2.2.3.	Tertiary level inbound mobility
2.3.	Research and development (R&D)
2.3.1.	Researchers
2.3.2.	Gross expenditure on R&D (GERD)
2.3.3.	Global R&D companies, average expenditure top 3
2.3.4.	QS university ranking average score top 3 universities

Human Capital & skills for Innovation

- An **OECD survey** of adult population problem-solving proficiency in a technology-rich environment found that nearly **two thirds of the population lacks the necessary skills**.
- A major policy priority lies in improving the percentage of entrants to tertiary education in (STEM) fields.
- **Example:** As part of the Five-Year Strategic Plan for Federal STEM Education (2013), the **United States** aimed to increase the number of graduates in STEM fields by **one third**.
- Key elements to **boost participation in STEM** fields:
 - raising skills of teachers
 - or reforming school curriculums.
 - or attracting top STEM graduates into teaching, particularly in low-performing schools.

Human Capital & skills for Innovation

Others issues that require special attention:

- **Gender gap**
- The relevance of specialized graduates' certificates to the labor market
- **Brain drain** especially in developing countries.

Examples: In **Argentina**, the Scientists and Researchers Overseas Network establishes links with Argentinian researchers located abroad and encourages their return to the country through job opportunities. **Belgium, Finland, France, Germany and Sweden** provide financing or assistance for expatriate researchers to return to their home countries.

- Use of technology and e-learning platforms for enhancing education, training, skills and life long learning.

Human Capital & skills for Innovation

Lesson Learned from successful catch-up strategy in Asia is to increase skilled labor.

- Most countries with a low level of GDP per capita in 1981 appear to have increased the average years of tertiary schooling and enhanced STEM programs.
- That is a logical catch-up ingredient, because **the ability to absorb new technologies and innovate is dependent largely on advanced skills, particularly in STEM specialties.**

Human Capital & skills for Innovation

Policies deal with three main features, as follows:

- **Demand-pull:** To improve demand for highly skilled labour, whether in companies or in academia and public administration (for example, through tax incentives for hiring PhD holders)
- **Supply-pull:** To improve training and lifelong learning opportunities, encouraging the mobility of the highly skilled people, targeting researchers (through financial incentives and scholarships) and targeting inactive/underrepresented populations.
- **Matching demand and supply:** Collection of Data to monitor and forecast gaps, development of information platforms to better connect labor markets and skills formation systems, and enhance skills policy governance.



Activity

Finland

Finland has the best ranking in education system since some years. Let us discover the secret behind the success of education system in Finland.

- <https://www.youtube.com/watch?v=oZkPgsGLnP4>
- https://www.youtube.com/watch?v=Z-FLCy_efRA



Activity

Singapore

Singapore is also recognized among the top countries in education system.

Let us have a look about their experience:

- <https://www.youtube.com/watch?v=sEn6OKsVoMs>

HUMAN CAPITAL AND EDUCATION SYSTEM IN THE ARAB COUNTRIES

Economic And Social Commission For Western Asia

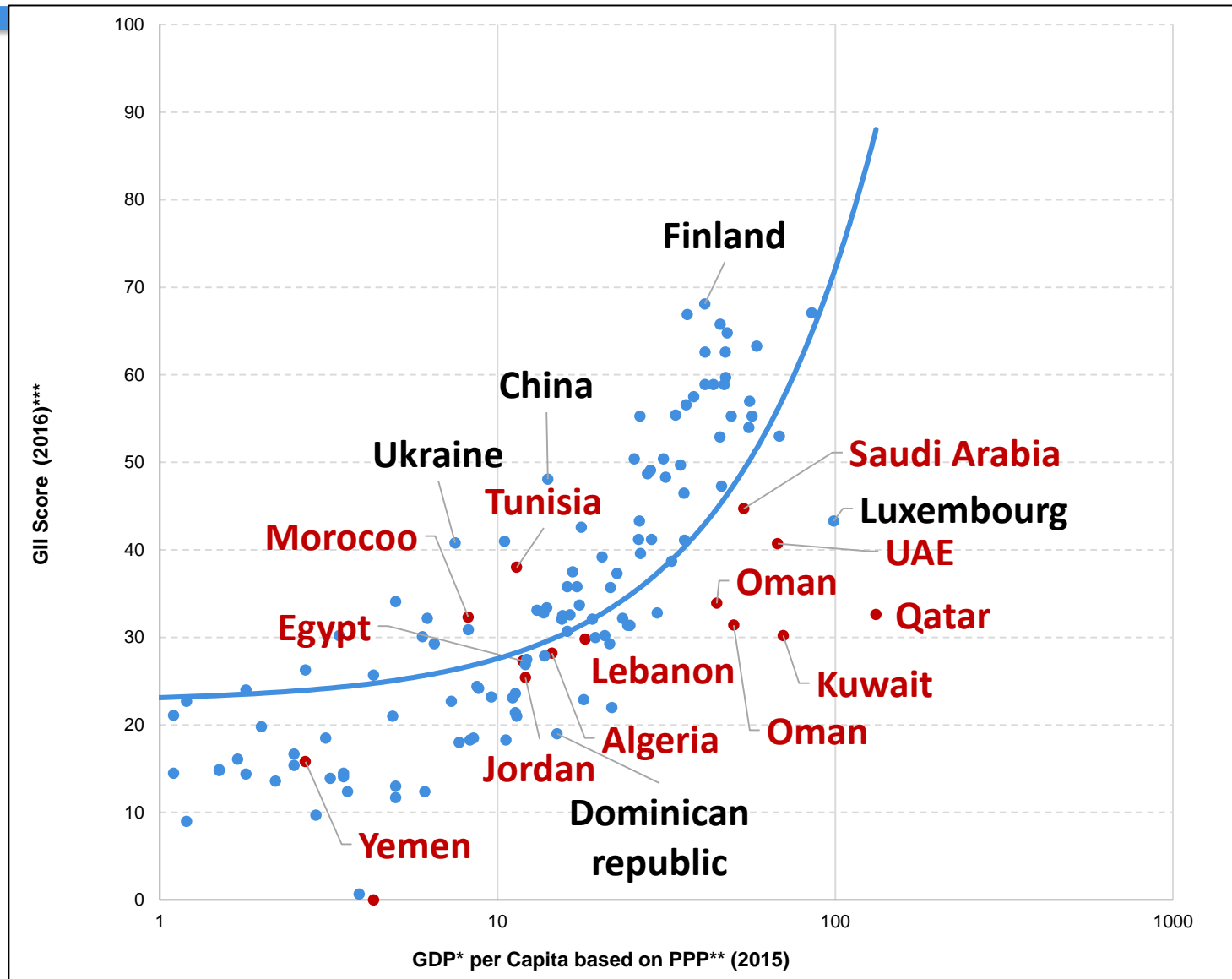


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40
YEARS

Human Capital and research in the Arab countries, GII 2016



Human Capital and research in the Arab countries, GII 2016

1. Education
 2. Tertiary education
 3. R&D
- **Global behaviour**
 - Tend to around 15 for low income
 - Accelerate with GDP/capita
 - Finland, China, Ukraine champions
 - **Arab countries**
 - Morocco and Tunisia have good performance
 - Most Gulf underperforming
 - Other countries on average

Innovation Policies and Education in the Arab countries

Egypt:

- One of the main pillar of the **National Strategy for STI (2015-2030)** for creating and stimulating supportive environment for Innovation are:
 - Support the **development of human resources** and infrastructure
 - Scientific research and Educational industry and Scientific culture.

Jordan:

- The Program of National Policy and Strategy for STI (HCST), 2013-2017 **allocated 1.8 million JOD for Infrastructure and human resources** and **0.4 million JOD for higher Education and scientific centers.**
- The National Innovation Strategy 2013-2017 (HCST) has a **specific cluster for Education and career guidance services (JOD 3 million)**

Innovation Policies and Education in the Arab countries

KSA:

- The National Policy for Science and Technology (2012) included two strategic plan (out of 10) related to human capital:
 - **Improving quality of education and training;**
 - **Fostering individuals' creativity and innovation capabilities**
- The First National STI Plan from 2010 to 2014 comprised a number of pillars including: **RDI capacity-building;**
developing human resources.

Innovation Policies and Education in the Arab countries

UAE

- The STI Policy, 2015 identified **five key enablers** for the success of the STI Policy: **talent**, investment and incentives, **universities and supporting institutions**, regulation and IP protection, and partnerships and networks.

Indicator	Source	2012 results	2021 targets	Key sponsor
Average TIMSS score	International Association for the Evaluation of Educational Achievement	Rank 23 of 42 (2011 report)	Among the top 15 countries	Ministry of Education
Average PISA score	Organization for Economic Co-operation and Development	Rank 46 of 65 (2012 Report)	Among the top 20 countries	Ministry of Education
Global Innovation Index	INSEAD	Rank 47 (2015 Report)	Among the top 10 countries	Ministry of Economy

Major challenges faced by Arab Countries in Education and training

Education and Training

- Quality of education
- Inadequate methods of learning
- High levels of educated unemployed
- Low levels of Vocational Education and Training
- Low number of graduate in STEM, especially among women
- Brain drain
- Cognitive skills

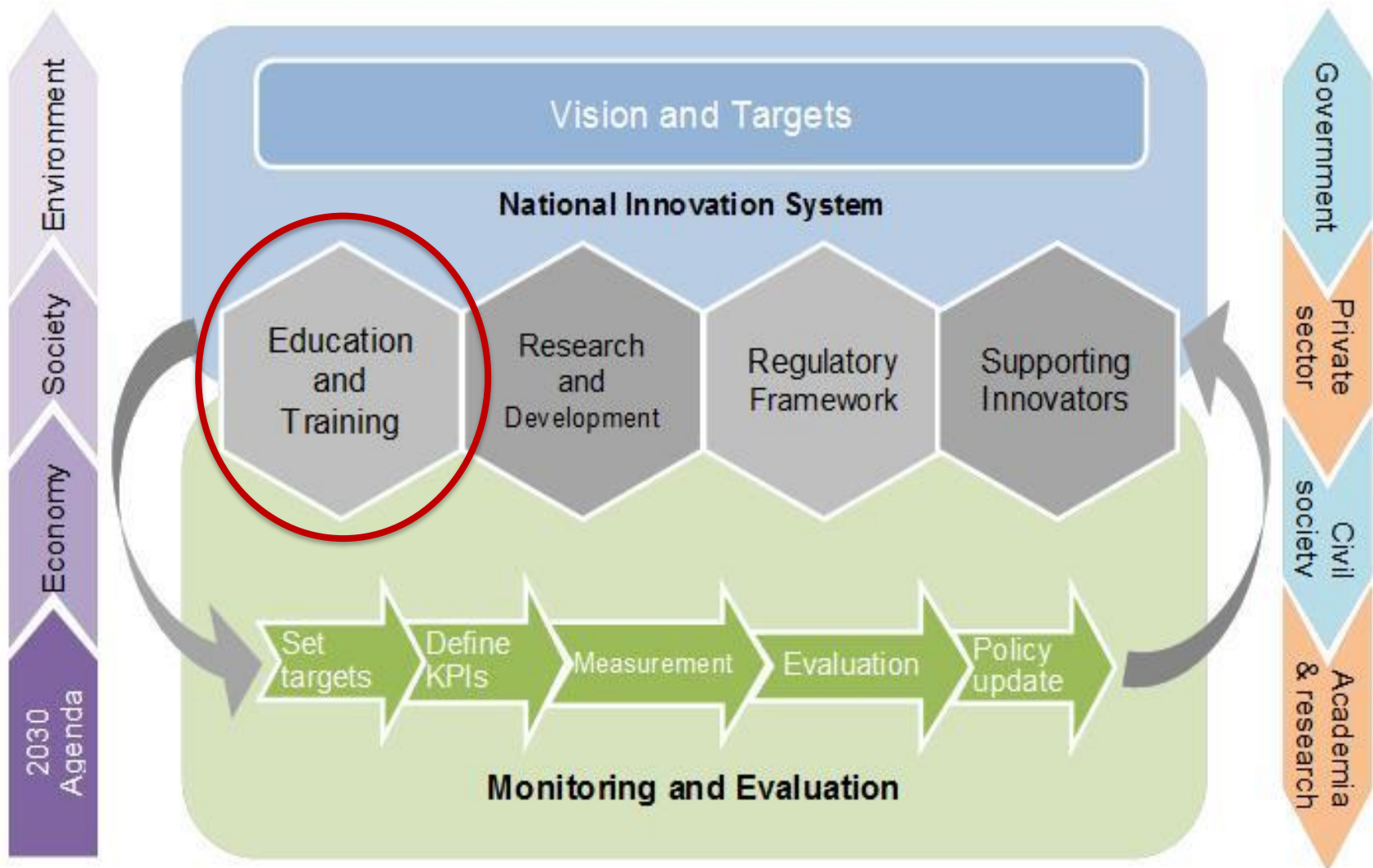


Group Work

Choose one of the following questions:

1. Give us one positive aspect of the pre-tertiary education system in your country.
2. Give us one positive aspect of the pre-tertiary education system in your country.
3. Give us one negative aspect of the tertiary education in your country.
4. Give us one positive aspect of the tertiary education in your country.

ESCWA Framework for Innovation



Education and Training for promoting Innovation Policies

This determines the availability of **competent** technicians and scientists, and **potential innovators**, and **increases the absorptive capacity of the economy**.

Four Goals:

- Developing quality education,
- Developing new skills and teaching methods
- Developing skills for all, which includes vocational training and life long learning
- Addressing the brain drain (essential for the Arab region)

Inclusiveness is crucial in the education system

Improving Education and Training

- Quality education requires a **new approach for building skills** away from rote learning and memorization.
- Student's well-being and development of their **curiosity and critical thinking** during the early stages of primary education is a must to nurture future innovators.
- Secondary and tertiary education policies should focus on the development of **strong generic skills**, so that specific skills can be more easily acquired later during **lifelong learning**.

Improving Education and Training

- **Enrolments in STEM** specialties should be increased, especially among girls, and improving links between the education system and industry.
- **Funding and financial incentives** that avoid distortions and that encourage higher education
- Encourage **lifelong and learner-centred** learning methods that develop independent mindsets and enable innovative talents to emerge.
- Develop skills for innovation and **entrepreneurship**

Improving Education and Training

- New teaching methods could be gradually implemented by developing them first within **pilot schools** before larger scale deployment.
- Develop **Vocational Education Training (VET)** at higher secondary and post-secondary level to address the scarcity of mid-level or craft competencies that hinders serious industrialization effort and technology transfer.
- Improve **mid-level skills** as they influence the technological absorptive capacity and enhance the quality of the industrial and agricultural productivity.

Improving Education and Training

- **Brain Drain** should be addressed as well through measures aimed at leveraging skilled Diasporas; measures might include:
 - Temporary recruitment of expatriate experts for concrete developmental projects,
 - Offering returning expatriates appropriate conditions whereby they can keep connection with global knowledge networks in their respective specialties.

Concluding Remark

- Transforming Arab countries into **learning societies** capable of leveraging science, technology and innovation at the service of an inclusive and sustainable development is both **doable** and **necessary to address the social, economical and environmental challenges in the Arab countries.**

THANK YOU!

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