

INNOVATION POLICY FOR INCLUSIVE SUSTAINABLE DEVELOPMENT IN THE ARAB REGION

Economic And Social Commission For Western Asia



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Innovation for Inclusive Sustainable Development
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Outline

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- Innovation Policies and SDGs
 - SDG priorities for Arab countries and Impact on Policies
 - Youth Employment
 - Climate Change
 - Social Innovation
- Concluding Remarks

A Quick Guide to the Report

- Chapter one lays the foundations
 - Innovation and innovation policies (IP) frameworks
 - Lessons from developed and emerging (Asian) countries
 - IP in some Arab countries
- Chapter two is the core chapter
 - IP Vision
 - Components of the IP
 - Monitoring and evaluation
- Chapter three address SDGs and IP
 - ‘Triple bottom line’ of economic, social and sustainable development thanks to IP
 - Three priority sectors for Arab countries

Rationale (I)

- Innovation and IP
 - Determine social, economic and sustainable development
 - Determined by the surrounding framework conditions
- Arab countries currently face acute socio-economic and near existential challenges
- Innovation is essential for Arab countries
 - To address socio-economic challenges
 - Cannot be effective without addressing framework conditions

Rationale (II)

- Framework Conditions are important for leveraging innovation even in advanced developed countries
- ‘In recent years we have witnessed incredible technological advances [...] But while these innovations have changed lives, they have not yet boosted measured productivity growth. [...] A major shortfall of measured productivity slowdown has been a shortfall of public and private investment’ (Barack Obama, *The Economist*, Oct 8, 2016)
- Arab countries epitomize poor framework conditions
 - Low levels of productive investment,
 - Shortcomings of the education system,
 - Weak to inexistent support for entrepreneurs

Rationale (III): Arab Countries Ranks in Global Innovation Index, 2016

Country (Global Rank)	Institutions	Human Capital and Research	Infrastructure	Market Sophistication	Business Sophistication	Knowledge and Technology Outputs	Creative Outputs
UAE (41)	22	41	23	42	24	86	70
KSA (49)	72	32	39	38	66	75	47
Qatar (50)	34	59	16	68	78	88	49
Bahrain (57)	55	68	29	91	59	61	74
Kuwait (67)	75	72	48	50	127	51	64
Lebanon (70)	91	76	84	99	63	74	51
Morocco (72)	74	61	45	98	125	72	67
Oman (73)	41	52	51	90	124	95	79
Tunisia (77)	70	45	70	123	107	89	81
Jordan (82)	63	86	79	115	116	79	78
Egypt (107)	123	82	82	110	122	94	97
Algeria (113)	113	79	86	117	118	100	122
Yemen (128)	126	111	128	111	128	124	125

What is Innovation....today?

- ‘The implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations.’ (*Oslo Manual, 2005*)
- ‘new’ relates to a specific **context** or market not in absolute terms
- Innovation not **necessarily** the result of cutting-edge R&D (or any of it!) at the frontier of knowledge
- Innovation address both tangible (products and services) and **intangible** (organization and marketing) assets

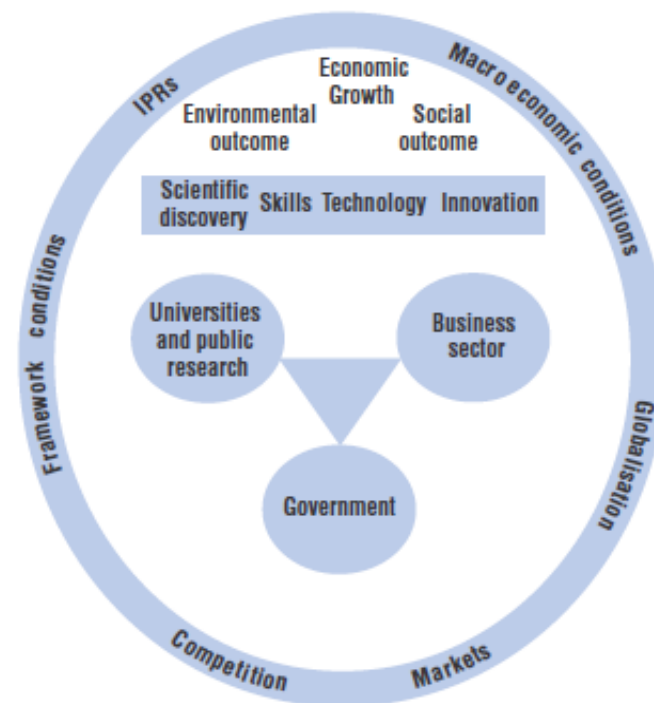
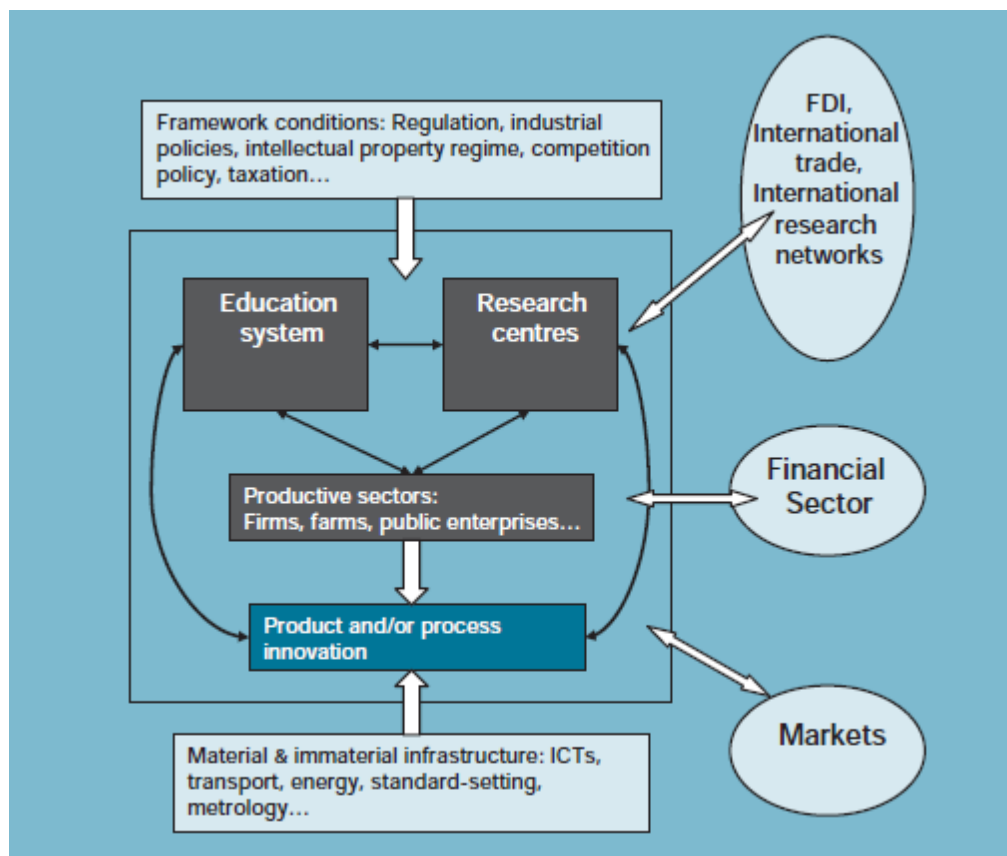
IP...what do they entail? (I)

- A **system approach** aimed at building an effective **National Innovation System (NIS)**
- Good interaction between the supply and demand side of innovation (the **core fabric**)
- Adequate levels public and private **investments**
- Innovation geared to address relevant **socio-economic** and **environmental** concerns
- **Broad set** of measures and incentives
- High-level **governance council** chaired by topmost political authority
- An **implementation agency** with proper authority delegation
- Monitoring and evaluation based on **quantifiable and measurable indicators**

IP...what do they entail? (II)

- Suggested **working definition**: *The broad set of policy measures that address both the demand and supply side of knowledge and technology for the purpose of ensuring sustainable economic growth and addressing social and environmental concerns*
- Should be elaborated at the highest political level with a **whole-of-government** approach
- Gaps towards building an effective NIS are **specific to each country** and hinder any one-size-fits-all approach
- **Regional cooperation** leveraging complementarities between countries with close socio-economic and/or cultural links are possible (e.g., the EU) and can be followed by Arab countries

NIS Frameworks: UNCTAD & OECD



Innovation Policies in Arab Countries (I)

- Many Arab countries have elaborated a form of IP to improve their NIS
 - Focus on technical issues, some weakly related with socio-economic priorities
 - Distinct strategies could co-exist with unclear coordination
- Some countries have a broader national growth and development strategy that includes innovation but...
 - IP contribution to broader national strategy could often be better articulated

Innovation Policies in Arab Countries (II)

- **Egypt:** National Strategy for Science, Technology and Innovation 2015-2030 (Ministry of Scientific Research under supervision of the Higher Council for Science and Technology chaired by Prime Minister)
- **Jordan:** The National Policy and Strategy for Science, Technology and Innovation 2013-2017 (Higher Council for Science and Technology- board of HCST involves many ministries and chambers of Trade and Industry)
- **Morocco:** Morocco Innovation Initiative (Ministry of Industry, Trade and new Technologies) and National Strategy for the Development of scientific Research towards Horizon 2025 (Ministry of Higher Education)
- **Saudi Arabia:** National Policy for Science and Technology (King Abdul-Aziz City of Science and Technology) and STI included within the 10th National development Plan 2015-2019 (Ministry of Economy and Planning)
- **United Arab Emirates:** Science Technology and Innovation Policy (launched in 2015) and National Innovation Strategy (National Science, Technology and Innovation Committee (chaired by the Minister of Cabinet Affairs)

Elaborating the IP vision (I)

- Spell out the “**what for**” question articulated around a limited set of strategic objectives expressed in non-technical language
- Next, the “**by which means**” question address shortcomings and gaps in the country’s NIS which are needed to realize the strategic objectives
 - Determine specific initiatives
- A third step relates to the NIS actors or, in simpler terms, the “**by whom**” question through empowerment and improvement of their quality and efficiency

Elaborating the IP vision (II)

- A set of well-defined **targets** and associated **indicators**.
- A **high-level steering committee** to ensure proper stewardship and arbitrate in case of conflict
- An **implementation agency** with adequate budget and delegation of authority
- Possible **priorities** for Arab countries' IP vision:
 - Improve relationship between the NIS actors
 - Bring forward an economic system that fosters innovation
 - Improve quality of human capital
 - Address sustainable development and social issue,
 - Contribute to Peace and security
 - Encourage societal values that support risk-taking and entrepreneurship and reward it.

Major NIS challenges faced by Arab Countries

- Education and Training
 - Inadequate methods of learning
 - High levels of educated unemployed
 - Low levels of VET
- Research and Development
 - Mainly concentrated within PRI and Universities
 - Broken link between R&D and socio-economic needs
- Regulatory Framework
 - Low volumes (and quality) of FDI & intra-Arab FDI
 - Low levels of Patenting
 - Inefficient competition
- Support to Innovators
 - Venture Capital and other early financing still nascent
 - No effective clusters/networks
 - Insufficient business services particularly for SMEs

Improving Education and Training (I)

- Quality education requires a **new approaches to build 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 **strong generic skills**, so that specific skills can be more easily acquired later during **lifelong learning**
- New teaching methods could be gradually implemented in **pilot schools** before larger scale deployment

Improving Education and Training (II)

- Develop **Vocational Education Training (VET)** at higher secondary and post-secondary level to address scarcity of mid-level or craft competencies
- Address **Brain Drain** issue with measures aimed at leveraging skilled expatriates:
 - Temporary recruitment for concrete projects
 - Facilities to exercise their entrepreneurship spirit and launch businesses in their home country
 - Appropriate support to stay connected with global knowledge networks

Strengthening Research and Development (I)

- **Bayh-Dole type legislations** to favour technology transfer of university research to industry
- **Technology Transfer Offices (TTO)** to manage this technology transfer of universities' research
- **Open Science** improve efficiency, avoid duplication of effort and enable more research on the same data
- Arab scientists should participate more actively to **international research programs** addressing issues of global concern

Strengthening Research and Development (II)

- **Trade, FDI and foreign technology licensing** are particularly critical to facilitate Arab countries' technological catch-up
- **Selective screening** of trade and foreign technology licensing and channelling of FDI towards specific technologies and sectors might be on the agenda of policy measures.
- Arab countries might consider **research grants** to support firm's R&D due to their weak tax system and firm's weak R&D capacity.

Consolidating Regulatory Framework (I)

- **FDI flows:** steep fall from levels reached in 2008 and intra-Arab FDI flows are nascent
 - Predictable, non-discriminatory and transparent regulatory and legal frameworks & simpler business-related procedures
 - Reinforce and deepen regional economic integration
 - Improve data collection of FDI statistics.
- **Public procurement:** acquire foreign technologies and develop the demand side for local innovation
 - Procurement of innovative goods and services
 - Pre-commercial procurement
 - Catalytic procurement

Consolidating Regulatory Framework (II)

- **Patenting:** Options for strengthening
 - Wide exceptions, including broad research exceptions
 - High standards of non-obviousness and inventive steps
 - Narrow claims and narrow "doctrine of equivalents"
 - Transparent and accessible opportunities for opposing patents.
 - Arab countries might consider the development of **utility models**: a second-tier patent regime 'accorded to inventions which show local or regional novelty.
- Fair and transparent **competition** is still absent in the vast majority of Arab countries.
 - Establishing a fair competition law is an essential **complement to IPR**

Supporting Innovators (I)

- **Business services** through public-private partnership with private sector specialists to offer a range of business services to young innovative firms.
 - Technological and personalised support
 - Design services in a more comprehensive manner and not only as part of ad hoc initiatives
- Improve efficiency and impact of **Incubation** structures
 - Improve evaluation metrics (KPIs) of Science and Technology parks with aim of moving towards more **advanced services**
 - Develop one-stop shop centralized information portals to SMEs

Supporting Innovators (II)

- Develop **early stage financing** of innovative firms
 - **Public venture capital** funds and **public guarantee instruments** in cooperation with the banking sector
 - **Business angel networks** supporting firms with high growth potential in their early development phase.
- **Clusters** are important mechanisms that might create an effective innovation eco-systems.
 - Address structural factors lying behind successful clusters
- **Networks** are more formal mechanisms built around specific projects
 - Improve intra-Arab networking, with neighbouring EU and other developed and emerging countries

Monitoring and Evaluation of IP (I)

- Choosing the most appropriate M&E indicators depends on the specific **targets** and dedicated **means** set out by each country's specific IP
- Recognized major **indicators**
 - Spending levels on R&D
 - Innovation carried out by firms
 - Exports of high-tech products
 - Patenting
 - Quantity and quality of graduates particularly in technical and scientific disciplines.
- **Innovation Indexes** combine many indicators
 - Comparing performance of countries' Innovation
 - Rankings should be considered with caution

Monitoring and Evaluation of IP (II)

- Available data highlights, with very few exceptions, **low levels** of spending on R&D, patenting and high-tech exports in Arab countries
- Arab countries are considered as **innovation underperformers** relative to their GDP
- Arab countries should **improve their statistical data collection** for innovation indicators particularly as regards firms' innovation surveys and detailed spending levels on R&D
- **Specific indicators** addressing Arab countries gaps should be developed (e.g., educational outcomes, vocational training and brain drain)
 - Need for an Arab regional measurement framework

IP and SDGs

- The **UN development agenda 2030** and its 17 Sustainable Development Goals (SDGs) with their 169 targets are closely related with Science, Technology and Innovation
 - 19 targets refer to significant overall technology performance improvement
 - 12 targets to universal access to sustainable technology
 - 17 targets to global effective innovation system for sustainable development
- IP covering SDGs contribute to the **‘triple bottom line’** of an inclusive and sustainable economic growth.

Arab Countries SDGs Priorities (I)

(first Arab Sustainable Development Report)

- Human Dignity and well-Being
 - Growth with little impact on human well-being.
 - Unemployment remains the highest in the world
 - Conflicts fuelled by Inequality of opportunities and income
 - Educational achievement not leading to employment
- Sustainable and resilient societies
 - Population Growth
 - Water productivity and irrigation efficiencies well below global averages
 - Resource consumption increasing at unsustainable rates
 - Climate change exacerbating extreme weather events
 - Marine and terrestrial ecosystems facing significant pressures

Arab Countries SDGs Priorities (II)

(first Arab Sustainable Development Report)

- Peace, governance and institutions
 - Arab region is the least peaceful part of the world
 - Misuse of public funds and cronyism is worsening
- Implementation and Partnership for Sustainable Development
 - Narrow the **financing gap** for achieving sustainable development
 - Transform Arab region from mostly a user of technology to **producer**
 - Leverage knowledge generated into the productive sectors to develop **diversified economies**
 - **Improve statistical capacity** in the Arab region in view of the anticipated 100+ global indicators to be used for monitoring the SDGs

IP and SDGs: the way ahead

- Provide **visionary leadership** for STI as an integral component of SDG strategies
- Address **social economy** when building an enabling environment for STI
- Provide funding for **social and environmentally relevant projects**
- Provide **incentives for talent** to address social and environmental issues
- Develop **Inclusive Innovation** initiatives
- And... on overall contribute to the '**triple bottom line**' of an inclusive and sustainable economic growth by addressing specific high priority SDG sectors

High priority SDG sectors and IP: Youth Employment

- Economic Growth and Shared Benefits
 - Encourage pursue of profits through **productivity gains**
 - Develop greater **transparency** and **freer entry** into various economic sectors
- Active labour Market Programs (ALMP)
 - Innovative entrepreneurship of Youth and SMEs
 - Support all activities that brings something **new** to the market
- Increased quality and relevance of education and training to adapt to a rapidly changing labour market
 - Autonomy and independent thinking and capacity for **lifelong learning**
 - Develop **VET** with active involvement of private sector

High priority SDG sectors and IP: Climate Change

- Climate Change Mitigation
 - Comprehensive **green growth** strategies
 - **Clean energy** and **greening industry** initiatives integrated within IP
- Education, Research and Development
 - Develop **climate change education and awareness**
 - Strengthen local and **regional models** for measurement and assessment of climate change impact (e.g., RICCAR)
- Local innovation for Climate Change adaptation
 - Strengthen role and capabilities of **local authorities** and communities to develop climate change initiatives

High priority SDG sectors and IP: Social Innovation

- Complement scientific and technical development for better social effect
 - **Social security** systems are social innovations
 - Introduces new **organizational models** and **behavior**
 - High **potential** for Arab countries to further develop social innovation
- Social innovation **scaling-up** needs sound approaches
 - Understand **peoples' needs** with empathy
 - Leadership skills at local level, financial support mechanisms, and appropriate public policy
- Competition and award programs
 - Public and private partners teaming to address specific social challenges (e.g., refugees)

Concluding Remarks

- 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**
- But STI on its own cannot do miracles and cannot be leveraged in the absence of **proper socio-political** conditions and resulting socio-economic model that **rewards effort and entrepreneurship** at the expense of rent seeking and associated corruption
- Some Arab leaders might have (partially) got the message...but the road ahead is still long and arduous

THANK YOU!

QUESTIONS?

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