



مركز بيروت للأبحاث والابتكار  
BEIRUT RESEARCH & INNOVATION CENTER

# NATIONAL INNOVATION SYSTEM IN LEBANON

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*A SYSTEM APPROACH FOR GAP ANALYSIS AND PRELIMINARY  
RECOMMENDATIONS*

**October 2016**

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## Abbreviations

ALI – Association of Lebanese Industrialists  
AMIDEAST – America-Mideast Educational and Training Services Inc.  
ARU – Associated Research Units  
AU – Arab University  
AUB – American University of Beirut  
BDL – Banque du Liban  
BIAT – Business Incubation Association in Tripoli  
BSA – US-based Business Software Alliance  
CEN – European Committee for Standardization  
CIFRE – Industrial Agreement of Training through Research  
CIT – Center for Innovation and Technology  
CNRS – National Center for Scientific Research  
EEZ – Exclusive Economic Zone  
ESCWA – Economic and Social Commission for Western Asia  
EU – European Union  
GCI – Global Competitiveness Index  
GDP – Gross Domestic Product  
GII – Global Innovation Index  
GP – Good Practice  
ICT – Information and Communications Technology  
IDAL – Investment Development Authority of Lebanon  
IPO – Initial Public Offering  
IPPO – Intellectual Property Protection Office  
IPR – Intellectual Property Rights  
iSME – Innovation in Small-to-Medium Enterprises  
ISO – International Organization for Standardization  
KEI – Knowledge Economy Index  
KGTP – Knowledge Generation and Technologies Production  
KTG – Knowledge and Technologies Generation  
KTT – Knowledge and Technology Transfer  
LAEC – Lebanese Atomic Energy Commission  
LAU – Lebanese American University  
LAU-CEP – Lebanese American University Continuing Education Program  
LIBNOR – Lebanese Standards Institution  
LIRA – Lebanese Industrial Research Achievements Program  
LNIS – Lebanese National Innovation System  
LORDI – Lebanese Science Technology and Innovation Observatory  
LPA – Lebanese Petroleum Administration  
LU – Lebanese University  
M&E – Monitoring and Evaluation  
MED – Mediterranean  
MENA – Middle East and North Africa  
MoD – Ministry of Defense  
MoEHE – Ministry of Education and Higher Education  
MoET – Ministry of Economy and Trade  
MoF – Ministry of Finance  
MoFA – Ministry of Foreign Affairs  
MoI – Ministry of Industry

NIS – National Innovation System  
NTTO – National Technology Transfer Office  
OECD – Organization for Economic Cooperation and Development  
OPRL – Offshore Petroleum Law  
PoCM – Presidency of the Council of Ministers  
R&D – Research and Development  
R&T – Research and Technology  
RGP – Research Grant Program  
RNF – Association Reseau Normalisation et Francophonie  
S&T – Science and Technology  
SME – Small-to-Medium Enterprise  
STIP – Science, Technology, and Innovation Policy  
ToR – Terms of Reference  
TT – Technology Transfer  
TTU – Technology Transfer Unit  
UAE – United Arab Emirates  
VAT – Value-Added Tax  
VC – Venture Capital  
WEF – World Economic Forum  
WIPO – World Intellectual Property Organization

## 1. Preliminary Statements

### 1.1. Terms of Reference

In compliance with the ToR, this report will focus on the policy instruments that are required for innovation. It will assess the consequences and impact of applying specific innovation policies to a variety of actors involved in the innovation processes and practices. Most of our efforts have been devoted to contacting the main stakeholders and collecting the various laws, decrees and decisions.

### 1.2. Interim Report Overview

This is an interim report setting out what has been achieved so far. The heart of the report is the methodology we devised in order to tackle the different tasks assigned to us and to make it applicable in similar contexts, such as those found in MENA countries.

Detailed sections of our work will cover the following:

- A methodology based on the system model to understand, assess and analyze the Lebanese situation
- A critical overview of the basic concepts related to innovation
- A description of the Lebanese innovation landscape based on previous reports, a compilation of collected data and a series of interviews with key informants
- A compilation of the relevant policies impacting directly or indirectly the Lebanese innovation environment
- A compilation of the various actors involved in innovation activities and processes
- A preliminary analysis of the effectiveness of current policies and an identification of the major gaps hindering innovation activities in Lebanon. The analysis relies on interviews with stakeholders and, to a lesser degree, on individuals. A quantitative approach would require a strict definition and identification of the indicators corresponding to each policy instrument and a thorough collection of data but for some indicators this is difficult to gather
- An account of the difficulties faced in this work, its constraints and hence the limitations of this report
- Recommendations for amending current policies or issuing new ones
- A roadmap for establishing a technology transfer system.
- A complete bibliography

## 2. Executive Summary

The overall aim of the project launched by ESCWA is to enhance the national innovation system capacity in the beneficiaries' countries (Lebanon, Morocco, Egypt, Tunisia, and Oman) through updating the related policies and establishing a National Technology Development and Transfer Systems.

The objective of this report is to set the framework for a National Innovation System (NIS) in Lebanon and suggest an innovation policy mix allowing Lebanon to efficiently manage the innovation activities, integrate technological and market changes and join the knowledge era with the aim of securing sustainable economic growth and social prosperity in a highly risky, uncertain and challenging environment.

The first term of the NIS is **National**, meaning that the purpose of the Innovation System is to serve the national interest and the needs of the Lebanese people, bearing no geographical restrictions to the scope of this project. The second term is **Innovation**. This term covers a wide spectrum of possibilities. It is best to further distinguish between Research and Development (R&D) and Innovation. For R&D, we will adopt the US National Science Foundation definition stating the following:

"Research" is defined as a systematic study directed toward fuller scientific knowledge or understanding of the subject studied. "Development" is the systematic use of knowledge and understanding gained from research directed toward the production of useful materials, devices, systems, or methods, including design and development of prototypes and processes. Both types of activities can be conducted by universities, private or public research centers.

Innovation is defined as the implementation of a new or significantly improved production (good or service) or process, a new marketing method, or a new organization method in business practices, workplace or organization or external relations. It is useful to distinguish and categorize the different types of innovation such as incremental or radical, addressed to improve what is being done, introduce new products and services or contribute to technological advancement.

Given the challenges faced by the government and the different public institutions, a top down approach promoted and enforced by the government is not appropriate for Lebanon. In order to avoid an inefficient, underperforming set of policies addressed to the various actors involved in the innovation activities in a disconnected, uncoordinated and sometimes contradicting manner, we have adopted the system approach. The model we have designed is composed of 5 pillars or subsystems, 1) the supply side generating knowledge and producing technologies. The main actors are the universities, the research center and the CNRS, 2) the demand side responsible for using, commercializing and bringing to the end user the innovations. The main actors are the businesses (industries, SMEs, etc.), the public sector and the new entrepreneurship sector, 3) the linkages responsible for the transfer of knowledge and technologies and for the collaboration between the universities and businesses; 4) the financial eco-system, responsible for funding the innovation projects. The main actor is the Banque Du Liban (BDL), and 5) the governmental interventions responsible for regulating the activities of the different actors through systemic or micro-measures. The main actors are the public institutions.



In addressing the issue of innovation in an open system context, such as Lebanon's, one must caveat the conditions from which an analytical framework and its associated policy must depart. The margin of maneuver left for national policy makers to incentivize a process of national innovation is conditioned by powerful external stimuli and, hence, subject to a higher than usual uncertainty. There are no purely theoretical or analytical methods by which this condition can be tackled. The doorway to such a question is best deduced through the interplay of system theory with the actual developments that have been observed in the real course of events, or developments of know-how in industry under extreme risks. So far, there are two redeeming real processes in the production of knowledge at the national level that, in themselves, present us with the initial relationships from which one may begin to answer the questions: 1) in spite of the treacherous course to which the Lebanese economy is subjected, a consortium of industries have managed to survive and innovate against all odds and 2) there were rudimentary measures that insulated the sacksful niches of the production knowledge that have worked and need to be enhanced to buttress the national performance. These are not hypothetical considerations, they are real, and it is upon such courses of events that this study develops a system analysis method to broach an integrated policy framework.

As a pillar of innovation, the linkages responsible for the transfer of knowledge and technologies, as well as the collaborations between universities and businesses (Pillar 3) are an integral part of the innovation chain. In the context of universities, Knowledge and Technology Transfer (KTT) involves transferring knowledge and discoveries to the public by means of publications, educated students entering the workforce, conference exchanges, and relationships undertaken with industries.

Effectively, KTT in Lebanon can be fostered by establishing a Technology Transfer Unit (TTU) in universities or a National Technology Transfer Office (NTTO) that will coordinate and manage the different units involved in this process. KTT can thus generate important benefits for economic development. These benefits are embodied in knowledge spillovers and are realized through industry-science collaboration and technology transactions that can range from simple technical consultancy all the way to licensing of Intellectual Property (IP). In general, by improving the process of knowledge transfer countries can foster innovation and thereby raise productivity, create better job opportunities, and address societal challenges.

One of the major gaps that were observed in the innovation system relate to the current financial environment, which leaves three substantial breaches in Lebanon's innovation system. The first is funding at the early concept stage where entrepreneurs need to develop their ideas into a viable concept and product; the second and third are related to the absence of seed and early stage venture finance, respectively. Hence the most important recommendation, in this respect, is to put in place the right financial instruments to support early stage innovation.

However, as mentioned earlier, in regards to setting policy recommendations and policy frameworks, an integrated approach should be adopted instead of individualized policies, that can be implemented through a law on innovation and knowledge and technology transfer. As such, and within this framework, we are suggesting a policy mix that covers all five pillars of innovation along with the corresponding actors, as follows:

## **1. Strengthening the Knowledge Generation and Technologies Production (KTGP)**

### 1.1. Government Level

- **Ministry of Education and Higher Education (MoEHE)**. Enforcing the Higher Education Law of 2014 requiring universities to dedicate 5% of their budget to research and establish a Monitoring and Evaluation (M&E) commission to follow up including representatives from universities, CNRS and other experts
- **CNRS and Ministry of Foreign Affairs (MoFA)**. Building a portal linking Lebanese researchers and experts all over the world to promote support for R&D in Lebanon, take advantage of the Diaspora and reduce the impact of brain drain
- **CNRS**. Creating specialized research funds identified according to priorities set and managed by the CNRS with contributions from the Lebanese government, private sector, and Arab and international institutions
- **CNRS**. Promoting Associated Research Units (ARUs) extending the CNRS mandate to support private research centers and streamline administrative procedures

### 1.2. University Level

- Promoting research and innovation by releasing research-oriented faculty from teaching credits
- Catering to promotion rules, career advancement and job offerings which should include patents, research collaborations, and projects with other universities and the industrial sector as important criteria. This is an incentive for researchers to engage in innovation activities.
- Extending the functions of university laboratories to include innovative research and not only teaching and promoting their exploitation by external entities
- Creating new career opportunities for professional researchers and research technicians at the university

### 1.3. KGTP Environment Level

- Encouraging the culture of innovation and creativity in schools by adopting non-conventional educational methods
- Encouraging associations and foundations to support PhD students
- Providing training courses and certifications in managing research programs

## 2. Support for Demand Side Innovation

### 2.1. Government Level

- **BDL**. Subsidizing the purchase of an innovation by SMEs and industries This is similar to the subsidies of renewable energies for environment protection
- **Ministry of Industry (MoI)**. Enacting tax incentive laws that can take different forms including tax credits, special allowances, special exemptions, accelerated depreciation
- **Various State Actors**. Setting procurement policies to catalyze local innovative industries and services

- **Ministry of Defense (MoD) and Lebanese Army.** Allocating a percentage of its budget (1%) to R&D
- **Lebanese Petroleum Administration (LPA).** Including in contracts with oil companies a clause requiring that 3-5% of budget for oil/gas extraction in Lebanon be dedicated to R&D
- **Ministry of Telecommunication (MoT).** Improving the quality and reducing the cost of telecommunication services

#### 2.2. SMEs and Industries

- **IDAL and ALI.** Establishing a fund for innovative projects conducted in Lebanon to which SMEs/firms can apply

### 3. Enhancing Linkages between Supply and Demand-Knowledge and Technology Transfer

#### 3.1. Government Level

- **BDL.** Funding early stage innovation projects. The adequate measures can take different forms such as financing fast prototyping labs or creating dedicated funds for these highly risky and uncertain but critical innovation projects
- **CNRS.** Establishing a National Technology Transfer Office (NTTO) to coordinate the universities' TTUs, initiate efficient communication between universities and industries, provide legal advice on regulatory frameworks for scientific collaboration between universities and industries
- **CNRS and BDL.** Creating matching funds between universities and industries or researchers and entrepreneurs for seed projects
- **MoEHE-MoI-CNRS-Universities.** Establishing an Industrial Ph.D. program with possible extension to industries outside Lebanon
- **Presidency of Council of Ministers (PoCM).** Preparing a Technology Transfer Law

#### 3.2. University Level

- Redefining the legal status of universities allowing, for example, the Lebanese University to engage in licensing and commercializing the technologies produced by its researchers and private universities to adapt their non-profit status
- Relaxing or removing regulations that prevent faculty members from working with the private sector and business communities or establishing new companies
- Establishing KTTUs

#### 3.3. IPR

- **Ministry of Economy and Trade (MoET).** Updating the IPR law. Clarifying the status of software applications
- **MoET.** Issuing guidelines and code of practice for universities and businesses to supplement the laws and contribute to trust building measures between universities and businesses
- **MoET.** Establish a fund for patenting to which universities, industries or individuals can apply

- **Universities.** Adoption of a clear IPR policy such as the one submitted by ESCWA
- **CNRS.** Adoption of a clear ownership legislation for IP

#### 4. Financial Ecosystem

##### 4.1. Government Level

- **BDL.** Establishing an entity to support Early Stage innovations just as Kafalat is dedicated to Later Stage innovations

##### 4.2. Private Sector

- **Start-ups.** Encouraging them to rely on local researchers to develop new products and services

#### 5. Systemic Measures-State Level

- **CNRS.** Using M&E as a tool to track performance and determine feedback to stakeholders to improve implemented policies through the Science Technology and Innovation Policy (STIP) observatory (LORDI Initiative)
- **Various State Actors.** Strengthening institutional capacity for M&E and integrating M&E in every stage of the innovation process through an M&E unit in each key actor
- **PoCM.** Establishing an advisory committee promoting the collaboration between CNRS, Investment Development Authority of Lebanon (IDAL), BDL and external experts to coordinate innovation policy making throughout all public institutions, give guidance, and refine agency governance

As a recapitulation, below is a table highlighting all the actors that involved in the innovation system in Lebanon, with mention of best practices on a national and international level for innovation policies.

**Table 1: List of actors involved in the innovation process in Lebanon featuring examples of national and international policy best practices**

No.	Actor	Policy Description	Objective	Best Practices – National and International
1.	CNRS	- Creation of specialized research funds identified according to priorities set by CNRS and managed by it with contributions from Lebanese Government, Private sector, and Arab and International institutions - Promoting ARUs extending CNRS mandate to support private research centers and streamlining administrative procedures	Strengthening the knowledge generation and technologies production	<u>National Science Foundation - Switzerland</u> <sup>1</sup> - Promotion of scientific research in Switzerland - Promotion of competitiveness and research integration - Provision of support for young researchers - Promoting the diffusion of knowledge and access to research results with communication to the public - Pursuit of transparent transfer of technology
		- Establishing NTTU to coordinate the universities' TTU - Initiating efficient communication between universities and industries - Providing legal advice for regulatory frameworks for scientific collaboration between universities and industries - Adoption of a clear ownership legislation for IP	Enhancing linkages between supply and demand – Knowledge and technology transfer	<u>CNRS – France</u> <sup>2</sup> - Execution of research aimed at the advancement of knowledge for social, cultural and economic benefits - Generation and development of scientific information with corresponding dissemination of research results - Development of a national policy by analyzing the scientific climate and the potential for national evolution
		Using M&E as a tool to track performance and determine feedback to stakeholders to improve implemented policies through the STIP observatory (LORDI Initiative)	Defining systemic measures at the state level	<u>National Science Foundation – United States of America</u> <sup>3</sup> - Support for all fields of fundamental science and engineering education - Collaboration with universities, schools, businesses, informal scientific organizations and research institutes - Provision of access to financial support (grants) to fund specific proposals of interest and value (includes funds for equipment) - Award graduate fellowships in the sciences and in engineering - Promotion of exchange of scientific material among U.S. scientists and international countries - Pursuit of national policies for the promotion of basic

<sup>1</sup> Swiss National Science Foundation (NSF). (2011). *Mission statement*. Retrieved on January 14, 2016 from [http://www.snf.ch/SiteCollectionDocuments/snf\\_leitbild\\_e.pdf](http://www.snf.ch/SiteCollectionDocuments/snf_leitbild_e.pdf)

<sup>2</sup> National Center for Scientific Research (CNRS) – France. (2015). *Overview*. Retrieved on January 14, 2016 from <http://www.cnrs.fr/en/aboutCNRS/overview.htm>

<sup>3</sup> National Science Foundation – United States of America. (n.d.). *NSF at a glance*. Retrieved on January 14, 2016 from <http://www.nsf.gov/about/glance.jsp>

				research and education in science and engineering
2.	MoEHE	Enforcing the Higher Education Law of 2014 requiring universities to dedicate 5% of their budget to research and establish a M&E commission to follow up including representatives from universities, CNRS and other experts	Strengthening the knowledge generation and technologies production	<p><u>Ministry of Higher Education and Science – Denmark<sup>4</sup></u>  - Establishment of the Danish Agency for Science, Technology and Innovation</p> <p><u>Aim:</u> To continuously improve the conditions and settings geared towards research and innovation that will benefit the general public</p> <p><u>Four main areas of work:</u>  1. Policy development – research advisory services  2. Statistical Analysis  3. Implementation of funds to research technology development and innovation  4. Guidance and communication on national and international funding and ensuring communication among all concerned parties</p>
2.	CNRS-MoFA	<ul style="list-style-type: none"> <li>- Building a portal linking Lebanese researchers and experts all over the world to promote support for R&amp;D in Lebanon</li> <li>- Taking advantage of the Diaspora and reducing the impact of brain drain</li> </ul>	Strengthening the knowledge generation and technologies production	<p>Engagement of diaspora<sup>5</sup> by:</p> <ul style="list-style-type: none"> <li>- Offering programs and projects that link directly into diaspora-led initiatives</li> </ul> <p><u>Example:</u> <i>Migration et Developpement</i> organization in France and Morocco which engages diaspora for development action in their country of origin.  <u>Main activities</u> are based on participation, solidarity and partnership with local authorities</p> <ul style="list-style-type: none"> <li>- Establishment of funding for SMEs that is implemented by civil society players of migrant and non-migrant origins</li> </ul> <p><u>Example:</u> <i>Oxfam Novib</i> in The Netherlands which is a co-financing agency that receives subsidies from the</p>

<sup>4</sup> Ministry of Higher Education and Science – Denmark. (2014). *The Danish Agency for Science, Technology and Innovation*. <http://ufm.dk/en/the-minister-and-the-ministry/organisation/the-danish-agency-for-science-technology-and-innovation/about-the-agency>

<sup>5</sup> Keusch, M. and Schuster, N. (2012). *European good practice examples of migration and development initiatives: Particular focus on diaspora engagement*. Vienna Institute for International Dialogue and Cooperation. Vienna, Austria.

				<p>MoFA to target diaspora organizations and start capacity building activities geared towards migrants' needs.</p> <p><u>Aim:</u> To scale up diaspora projects, build alliances, and empower migrants</p> <p><u>Main activities</u> include training courses, meetings with experts, workshops on proposal writing, strategic planning, financial literacy and project management to build capacity and development skills</p> <p>- Establishment of platforms for the transfer of knowledge and raising awareness</p>
3.	CNRS-BDL	Creating matching funds between universities and industries or researchers and entrepreneurs for seed projects	Enhancing linkages between supply and demand – Knowledge and technology transfer	<p>- Establishing entities such as the UK Lebanon Tech Hub to assist the research and innovation centers set up by the CNRS (ex. fast prototyping labs) to enhance university-industry collaboration</p> <p>- Encouragement of foreign development banks</p> <p>- Maintenance of remittance flows 9major source of foreign exchange earnings)</p> <p>(Source: OTA, 1984)</p>
4.	CNRS-MoEHE-MoI-Universities	Establishing an industrial PhD program with possible extension to industries outside Lebanon	Enhancing linkages between supply and demand – Knowledge and technology transfer	- Facilitation of link between supply and demand side of innovation by hosting workshops, dissemination of research results to the public, conferences, and training courses

5.	MoET	<ul style="list-style-type: none"> <li>- Updating the IPR law</li> <li>- Clarifying the status of software applications</li> <li>- Issuing guidelines and code of practice for universities and businesses to supplement the laws and contribute to trust building measures between universities and businesses</li> <li>- Establishing a fund for patenting to which universities, industries or individuals can apply</li> </ul>	Enhancing linkages between supply and demand – Knowledge and technology transfer	<p><u>Example of IPR Policies in the University Setting – Cleveland State University, U.S. on Patent and Copyright Policies</u></p> <p><u>1. Patent Policy:</u></p> <ul style="list-style-type: none"> <li>- Pursuit of legal protection of inventions by use of patents</li> <li>- Transfer of rights in favor of permitting the inventor/creator to protect and develop the invention at his/her expense</li> </ul> <p><u>2. Copyright Policy:</u></p> <ul style="list-style-type: none"> <li>- Provision of adequate recognition and incentives to creators through a share in any proceeds of the generated material</li> <li>- Meeting requirements imposed by government agencies or private foundations that contribute funds to support the creation and publication of scholarly works</li> </ul> <p><u>General Good Practices (GP):</u></p> <p><u>GP 1</u> – Focus on select few patents to provide better support</p> <p><u>GP 2</u> – Collaborate with business intermediaries to attract customers</p> <p><u>GP 3</u> – Integrate IPR and innovation policies together to tackle country-wide challenges, across multiple sectors</p>
6.	MoT	Improving the quality and reducing the cost of telecommunications services	Supporting the demand side of innovation	<p><u>Ministry of Communication and Information Technology – Egypt<sup>6</sup></u></p> <ul style="list-style-type: none"> <li>- Development of telecommunications infrastructure nationwide</li> <li>- Launch of the “Free Internet” Initiative, a subscription-free internet connectivity scheme to give access to ICT and encourage individuals to start their own businesses</li> <li>- Development of a regulatory framework and government support</li> </ul>

<sup>6</sup> Arab Republic of Egypt – Ministry of Communication and Information Technology. (2006). *Egypt's best practices in ICT*. Retrieved on January 15, 2016 from <http://www.mcit.gov.eg/Upcont/Documents/Egypt%20Best%20Practices200711620563.pdf>



				<ul style="list-style-type: none"> <li>- Bridging the digital gap between Cairo and Alexandria and the remainder of the country</li> <li>- Creation of technology and certification centers</li> <li><u>Example:</u> Techparks, “Smart Village” (hosts new IT startups)</li> <li>- Establishment of the Information Technology Industry Development Agency (ITIDA) to promote e-businesses and develop the IT sector</li> </ul>
7.	Universities	<ul style="list-style-type: none"> <li>- Promoting research and innovation by releasing research oriented faculty from teaching credits</li> <li>- Promotion rules, career advancement and job offering should include patents, research collaborations, and projects with other universities and the industrial sector as important criteria. This is an incentive for researchers to engage in innovation activities</li> <li>- Extending the functions of university laboratories to include innovative research and not only teaching and promoting their exploitation by external entities</li> <li>- Creating new career opportunities for professional researchers and research technicians at the university</li> </ul>	Strengthening the knowledge generation and technologies production	<ul style="list-style-type: none"> <li>- Creation of TT units or offices</li> <li>- Facilitation for incentives relevant to research concerning the nature of research contracts, level of salaries, working conditions, and available career progressions for faculty and students</li> <li>- Provision of financial instruments for R&amp;D through grants, loans, equity investments, and guarantees</li> <li>- Establishment of a clear IPR system for TT engagement in universities</li> </ul>
		<ul style="list-style-type: none"> <li>- Redefining the legal status of universities allowing for example the Lebanese university to engage in licensing and commercializing the technologies produced by its researchers, and private universities to adapt their non-profit status.</li> <li>- Relaxing or removing regulations that prevent faculty members from working with private sector and business community or establishing new company</li> <li>- Establishing TTU</li> <li>- Adoption of a clear IPR policy such as the one submitted by ESCWA</li> </ul>	Enhancing linkages between supply and demand – Knowledge and technology transfer	

8.	PoCM	Preparing a technology transfer law	Enhancing linkages between supply and demand – Knowledge and technology transfer	<u>Presidency of the Council of the European Union – The Netherlands<sup>7</sup></u> - Improvement in quality of legislation, national policy reforms, and reductions in administrative burdens and costs - Removal of obstacles to innovation in internal markets - Strengthening the digital economy to boost innovation and jobs in Europe - Implementation of European research (setting up the European Research Area) and innovation programs - Provision of access to funds for innovative activities - Strengthening of internal telecommunication market on the basis of a free and open internet to boost competition and investment in the telecommunications sector
		- Establish an advisory committee promoting the collaboration between CNRS, IDAL and BDL and external experts to coordinate innovation policy making throughout all public institutions - Giving guidance and refining agencies' governance	Defining systemic measures at the state level	
9.	BDL	- Funding early stage innovation projects. The adequate measures can take different forms such as financing fast prototyping labs or creating dedicated funds for these highly risky and uncertain but critical innovation projects	Enhancing linkages between supply and demand – Knowledge and technology transfer	- Engagement with startups through hackathons and reward-based competitions  - Provision of free resources for startups such as sponsoring co-working/shared spaces <u>Example:</u> Singapore-based DBS Bank sponsors 500 square meters of co-working space in Hong Kong <sup>8</sup>  - Collaborations with venture capitals  - Establishment of startup incubators or accelerators providing services such as mentorship, legal, technical and business support for a limited period of time <u>Example:</u> Wells Fargo in the U.S. invests in up to 500,000 USD in each participant in their accelerator program <sup>9</sup>
		- Subsidizing the purchase by SMEs and Industries of an innovation. This is similar to the subsidies of renewable energies for environment protection.	Supporting the demand side of innovation	
		Establishing an entity to support early stage innovation, just as Kafalat is dedicated to later stage innovation	Providing the financial ecosystem	

<sup>7</sup> Presidency of the Council of the European Union – The Netherlands. (2015). *Letter of 28 January 2015 from the Minister of Foreign Affairs to the House of Representatives on substantive preparations for the 2016 Dutch Presidency of the Council of the European Union*. Retrieved on January 15, 2016 from <https://www.government.nl/documents/parliamentary-documents/2015/01/23/letter-to-the-house-of-representatives-about-substantive-preparations-for-the-2016-dutch-presidency-of-the-council-of-the-europ>

<sup>8</sup> Shaus, P. (2015). *Four ways banks can engage with Fintech startups*. Retrieved on January 15, 2016 from <http://bankinnovation.net/2015/11/4-ways-banks-can-engage-with-fintech-startups/>

<sup>9</sup> Ibid

10.	MoI	Preparing a tax incentives law that can take different forms including tax credits, special allowances, special exemptions and accelerated depreciation	Supporting the demand side of innovation	<p><u>France – Tax Credits</u><sup>10</sup> Application of a volume-based tax credit of 20% with a cap of 400,000 Euros per year, carried forward for 3 years</p> <p><u>The Netherlands – Special Exemption of Wage Tax</u><sup>11</sup> - Provision of an “R&amp;D Withholding Tax Credit” at 38% for the first 200,000 Euros of R&amp;D wage costs and 14% for the R&amp;D wage costs above 200,000 Euros - Startups can deduct 50% from the first 200,000 Euros of R&amp;D wage costs</p> <p><u>South Africa – Accelerated Depreciation</u><sup>12</sup> Reduction of 40% on new or unused plant/machinery in the first year of purchase and 20% reduction in each of the 3 succeeding years</p>
11.	MoD – Lebanese Army	Allocating 1% of its budget to R&D	Supporting the demand side of innovation	<p><u>Ministry of Defense – United Kingdom</u><sup>13,14</sup> - Encouragement for small and large enterprises to join the ministry to develop innovative ideas for the defense and security of the UK</p> <p>- Establishment of the following:  <ol style="list-style-type: none"> <li>1. <u>Center for Defense Enterprise (CDE)</u> – funds innovative research that is advantageous for UK armed forces and national security; helps project funded under the Center to commercialize</li> <li>2. <u>Defense Science and Technology Laboratory</u> – joins industry, academia, government bodies, and international partners to provide specialized science and technology services to the ministry and the nation</li> </ol> </p>
12.	LPA	Including a clause in contracts that requires	Supporting the demand	<u>National Petroleum Authority – Ghana</u> <sup>15</sup>

<sup>10</sup> Solignac, 2008

<sup>11</sup> The Netherlands Enterprise Agency, 2015

<sup>12</sup> Deloitte, 2014

<sup>13</sup> Center for Defense Enterprise – United Kingdom. (2015). *About us*. Retrieved on January 15, 2016 from <https://www.gov.uk/government/organisations/centre-for-defence-enterprise/about#our-responsibilities>

<sup>14</sup> Defense Science and Technology Laboratory – United Kingdom. (2015). *Overview*. Retrieved on January 15, 2016 from <https://www.gov.uk/government/publications/defence-science-and-technology-laboratory-overview>

<sup>15</sup> National Petroleum Authority – Ghana. (2010). *Mission*. Retrieved on January 15, 2016 from [http://npa.gov.gh/npa\\_new/about\\_Mission.php](http://npa.gov.gh/npa_new/about_Mission.php)

		dedicating 3-5% of the budget for oil and gas extraction in Lebanon to R&D	side of innovation	<ul style="list-style-type: none"> <li>- Regulation and monitoring for the petroleum industry in Ghana for efficient growth and stakeholder satisfaction</li> <li>- Distribution of budget or net sales percentage to R&amp;D</li> </ul> <p><u>Example of R&amp;D expenditure by alternative energy companies, oil service companies and national operators, as a percent of net sales:</u></p> <ul style="list-style-type: none"> <li>- SMA Solar Technology: 4%</li> <li>- PetroChina: 1%</li> <li>- Exxon Mobil, Chevron, and BP: less than 0.5%</li> </ul> <p><u>National Agency of Petroleum, Natural Gas and Biofuels – Brazil<sup>16</sup></u></p> <ul style="list-style-type: none"> <li>- Creation of an obligatory investment in R&amp;D; obligation to invest in 1% of the gross production of the oil and gas sector in R&amp;D projects</li> </ul>
13.	IDAL-ALI	Establishing a fund for innovative projects conducted in Lebanon to which SMEs/firms can apply	Supporting the demand side of innovation	<ul style="list-style-type: none"> <li>- Coordinating with financial entities to support industrialists (ex. cooperation with BLOM Bank)</li> <li>- Cooperation with LAU-CEP to help industrialists/enterprises develop skills and knowledge abilities to be able to compete in international markets</li> </ul>
14.	Various State Actors	<ul style="list-style-type: none"> <li>- Encouraging the culture of innovation and creativity in schools by adopting non-conventional educational methods</li> <li>- Encouraging associations and foundations to support PhD students</li> <li>- Providing training courses and certifications in managing research programs</li> </ul>	Strengthening the knowledge generation and technologies production	<ul style="list-style-type: none"> <li>- Facilitation of TT by providing support for innovators by providing incentives such as drafting tax incentives laws and facilitating patenting/copyrighting processes and costs</li> <li>- Coordination of policymakers in all sectors</li> </ul>
		Preparing procurement policies to catalyze local innovative industries and services	Supporting the demand side of innovation	
		<ul style="list-style-type: none"> <li>- Strengthening institutional capacity for M&amp;E</li> <li>- Integrating M&amp;E in every stage of the innovation process through an M&amp;E unit in each key actor</li> </ul>	Defining systemic measures at the state level	

<sup>16</sup> Belchoir, B. T. and Barros, R. (2013). *Research and development in the oil and gas industry in Brazil*. Retrieved on January 15, 2016 from <http://www.mondaq.com/brazil/x/240612/Oil+Gas+Electricity/Research+And+Development+In+The+Oil+Gas+Industry+In+Brazil>

### **3. Definitions and Concepts**

#### **1. Innovation**

An Innovation is the implementation of a new or significantly improved production (good or service) or process, a new marketing method, or a new organization method in business practices, workplace or organization or external relations (OECD/Eurostat, 2005).

Innovation brings “change that creates a new dimension of performance” (Drucker, 1985).

#### **2. Scientific Innovation**

Scientific (and technological) innovation may be defined as “the transformation of an idea into a new or improved product introduced on the market, into a new or improved operational process used in industry and commerce, or into a new approach to a social service” (OECD Stat, 2013).

#### **3. R&D; Basic Research, Applied Research**

Research and Development (R&D), as defined by Investopedia (2016), as the “investigative activities that a business chooses to conduct with the intention of making a discovery that can either lead to the development of new products or procedures, or to the improvement of existing products or procedures. R&D is one of the means by which businesses can experience future growth by developing new products or processes to improve and expand their operations”.

Under the term ‘Research’, a distinction can be made between Basic Research and Applied Research. According to Tarver (2016), “basic research seeks to delve into scientific principles from an academic standpoint, while applied research seeks to use that basic research in a real-world setting”.

#### **4. R&T**

R&T (Research and Technology) or RTD (Research and Technological Development) is “comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications” (INSME Association, 2012).

#### **5. Business Incubator**

A Business Incubator is defined as “an organization designed to accelerate the growth and success of entrepreneurial companies through an array of business support resources and services that could include physical space, capital, coaching, common services, and networking connections”. The main aim is helping young businesses flourish, through financial and technical support services, and business incubation programs are most likely sponsored by private companies, municipal entities or public institutions, including academic settings such as colleges and universities (Entrepreneur.com, 2016).

#### **6. Technology Incubator**

Technology Incubators differ from Business Incubator in the sense that Technology Incubators are a specific type of Business Incubator. It is defined as “a property-based venture which provides tangible and intangible services to new technology-based firms, entrepreneurs, and spin-offs of universities and large firms, all with the aim of helping them

increase their chances of survival and generate wealth and jobs and diffuse technology” (OECD, 1997).

### **7. Accelerator**

Accelerator and Incubator are concepts that often confused with one another. The difference between the two lies in the method adopted to help businesses move forward. Unlike incubators, accelerators can make financial investments in a startup and accelerator programs “usually have a set timeframe in which individual companies spend anywhere from a few weeks to a few months working with a group of mentors to build out their business” (Forrest, 2014).

### **8. Venture Capital Fund**

By definition, venture capitals are “startup or growth equity capital or loan capital provided by private investors (venture capitalists) or specialized financial institutions (development finance houses)” (Business Dictionary, 2015).

A Venture Capital Fund in specific is “an investment fund that manages money from investors seeking private equity stakes in startup and small and medium-sized enterprises with strong growth potential. These investments are generally characterized as high-risk/high-return opportunities” (Investopedia, 2015d).

### **9. Technopark**

This term has multiple definitions and even more synonyms attached to it. A ‘tech park’ or ‘technology park’, also referred to often as a ‘science park’, is used to describe “a variety of efforts to stimulate the development of entrepreneurial, knowledge-based small and medium-sized enterprises within a country”. In order to narrow down the vast number of definitions pertaining to this term, one can define technology park as one that 1) is linked with educational or research institutions, 2) provides infrastructure and support services for businesses, particularly real estate and office space, 3) performs a technology transfer function, and 4) performs an economic development function (Briggs and Watt, 2001).

### **10. Technology Transfer**

Technology Transfer refers to the movement of know-how, skills, technical knowledge, procedures, methods, expertise or technology from one organizational setting to another (Roessner, 2000).

### **11. Technology Commercialization**

Technology commercialization, also known as research commercialization, refers to the valorization of research and intellectual assets by industry, or the process of taking an idea to market and creating financial value. It implies the selling, licensing of, or contracting of technology services, intellectual assets, and related-knowledge into spinoff creation and R&D collaboration (Zuniga and Correa, 2013).

## **4. Innovation Policy**

This section will explain what innovation is and why it’s important. Critically we will show the importance of NIS for readiness and integration in the knowledge economy. We will discuss also the impact of innovation in developing countries and its role in generating economic growth and prosperity.

Lebanon has over the past few years, although from a low starting point, made significant gains in the area of innovation due to the vitality of the private sector and the persistent efforts of some civil servants. However, the institutional framework remains to a certain extent relatively weak and underdeveloped. Lebanon is characterized by the presence of a number of independent initiatives and institutions operating according to high international standards, yet they function in a relative policy vacuum as the central government lacks the institutions, the budget, the administrative capacity and even potentially the will to assist. However, due to the sophistication of some activities, the involvement of a large number of actors and the overall complexity and national strategic importance of this issue, it is critical for the Lebanese government to formulate a clear vision and a set of efficient policies that might allow Lebanon to contribute to the global knowledge economy.

There are many ways to define innovation. The variety of definitions presents a few alternative perspectives whilst highlighting the complexity of this issue. Below are some influential definitions from international organizations such as OECD, or prominent management experts.

- An Innovation is the implementation of a new or significantly improved production (good or service) or process, a new marketing method, or a new organization method in business practices, workplace or organization or external relations (OECD/Eurostat, 2005).
- Innovation brings “change that creates a new dimension of performance” (Drucker, 1985).

## 5. Methodology-The System Approach

Understanding the national innovation landscape is a challenging task, given the fact that many actors, institutions and organizations are involved.

One way to deal with such complexity is to start by modeling the situation; this means developing an understandable and accurate representation of reality.

An innovation system can be considered as an agglomerated interaction of private and public organizations that collaborate according to institutional rules and relationships that contribute toward the generation, usage and diffusion of knowledge. In this interaction a variety of actors are exchanging information, knowledge and money through a series of flows and processes.

**The Top-Down Conventional Approach.** Many analysts and experts, when dealing with these issues, start by defining a strategy and proposing a set of recommendations; this approach can be found in many governmental meetings in developing countries. Based on these recommendations a set of policies are designed but rarely are they implemented because of various sociopolitical obstacles. One of the reasons for the failures in such an approach is that the act of designing these strategies is rarely performed at the highest level involving all stakeholders. A second drawback is the difficulty in linking these strategies with the real world situations preventing the implementation of said policies from reaching the goal or vision initially set down by the decision maker.

**The Metric Approach.** Another approach to analyzing the situation would be what is called the metric or analytical approach. This approach is based on a set of indicators.

Benchmarking these indicators with the best practices gives potentially the needed insight to identify weaknesses, gaps and eventually the areas in which efforts should concentrate. This approach can be most useful in a process of monitoring and evaluation of an already functioning innovation eco-system.

In developing countries like Lebanon, directly applying the ‘best practices’ approved by the world’s most prestigious consultancy companies with the aim of improving ranking and indicators like patent numbers and R&D intensity is not necessarily the right path to take. Such an approach risks simply mimicking other nations whose conditions are far removed from Lebanon’s.

In the case of Lebanon where an innovation eco-system is yet to emerge, a system approach is more suitable. It allows us to take into consideration the complexity of the national innovation landscape and better understanding the interrelations between the various elements at different levels. This does not mean that metrics, indicators and benchmarking will be neglected; rather, it means simply that the focus will be on system model.

The system approach, by taking into consideration from the beginning all stakeholders and actors involved in this matter, as well as the different processes thereby has a greater chance of operationalizing diverse recommendations and policies.

### **5.1. The 5 Pillars of the National Innovation System (NIS)**

The innovation system can be defined as a network of actors and institutions that develop diffuse and use innovations. The innovation systems approach explains innovation patterns in terms of technology and knowledge flows mediated by institutions, being initially applied at national level (Lundvall, 1992).

We have modeled the National Innovation System as a set of 5 pillars or 5 sub-systems:

- The Innovation Supply Side, performing the Knowledge Generation and Technologies Production function.
- The Innovation Demand Side, performing the Knowledge Diffusion and Market Absorption function
- The Linking Intermediaries responsible for the Knowledge and Technologies Transfer
- The Innovation Ecosystem which include the Human Capital and the Business and Financial Environment
- Policy Framework setting the Government role and interventions

In order to fully understand the innovation system, we need also to identify and categorize the different actors and the different processes in which they are involved to perform their innovative activities and achieve their mission.

In the following sections we will explicate the different elements of the model. Many previous studies have been focusing on one aspect or one element of the system. We consider that being wholly science-centric focusing on the supply side or wholly consumer-centric focusing on the demand side is not the most efficient way of dealing with innovation as an integrated system. Both sides, the supply and demand sides are equally important. Essentially, they need to be linked through a web of actors and intermediaries interacting



together to improve the overall performance of the system. This is precisely what we intend to do in the next sections.

**Is Lebanon Ready for the Knowledge Era?** In the case at hand, due to limited resources, priorities should be identified and a plan of action devised accordingly. However, given that the knowledge economy is still in its early stages it is advisable to adopt an experimental rather than a strictly planned strategy. This approach allows for greater flexibility and adaptability to an uncertain and fast moving economic and technological environment. This approach requires a strong supply side subsystem. It may also fit more the ‘Lebanese mindset’ and perhaps this fit is really its most distinctive strength.

The methodology adopted is a general methodology that will be applied to the Lebanese case but could also be applied to other MENA countries facing the overlapping difficulties and sharing similar socio-economic conditions.

## 5.2. The Innovation Actors - Who is Involved in the NIS?

Fundamentally, innovations are carried out by three types of actors:

- **The Makers.** This includes actors involved in the knowledge production who are producing the services or products at any stage of the fabrication. This category is comprised of universities, research centers, but also the innovative SMEs and companies. It includes also Innovators who use their creativity and knowledge or skills. Their source of ideas is mainly located in scientific research.
- **The Enablers.** This includes actors involved in providing a functioning innovation system such as the government with its wide variety of agencies responsible for establishing and enforcing rules, regulations and laws, the financial institutions responsible for allocating funds, the intermediate entities responsible for business support and development.
- **The Users.** Among this category we find the entrepreneurs who exploit new technologies to propose new products or services and disseminate them. Such as the SMEs, government as customers, consumers.

## 5.3. The Innovation Supply Side - Knowledge Generation and Technologies Production (KGTP)

Issues related to the supply side of the NIS are issues concerned with the development, allocation, organization and management of the resources required to perform scientific, technological and innovation activities (OECD, 2014, “OECD Reviews of Innovation Policy Columbia”. 2014).

The main purpose of the supply side pillar is to advance the knowledge frontier, develop new technologies, improve the human capital, including generating the specialized scientists and the skilled technicians required to innovate efficiently.

**Does Lebanon Really Need to Produce Technologies?** Often and especially in new entrants to the knowledge economy, the production of knowledge and new technologies is neglected. This is evidently the situation in the Lebanese context. One may argue that a small country is unable to compete at the knowledge production level and should therefore adopt a strategy focused on providing services and satisfying well identified demands. For this reason, the supply side of the Lebanese national innovation system should not focus on knowledge production. Lebanon should instead prepare generations of well-educated people who can

best serve the global economy regardless the needs of the Lebanese economy and the wants of its society. Lebanon should plant the foundations for a real knowledge economy that might provide, in the long run, prosperity and sovereignty.

#### 5.4. The Innovation Demand Side - Knowledge Diffusion and Market Absorption

According to J. Edler demand side innovation policy is “a set of public measures to increase the demand for innovations, to improve the conditions for the uptake of innovations or to improve the articulation of demand” (Edler, 2007).

It is all about encouraging potential buyers, whether individual users, enterprises of different sizes or government, to ask, adopt and pay for innovative solutions, new or improved goods and services satisfying their needs and wants.

In Lebanon and Arab countries at large, the national policies and the experts’ discourses have been focusing on the supply side. Creating synergies between supply and demand sides is instrumental for the success of the NIS.

The demand side of the NIS is determined by three major types of actors: 1) Entrepreneurs, 2) SMEs, 3) Government.

**Entrepreneurs** are mainly looking for new ideas, services or products to open new market opportunities. **SMEs** are more interested in improving the performance and efficiency of their industrial activities through new equipment, packages, services, etc. **Governments** are also important actors in the demand for innovation through their procurement policies. It is very important to distinguish between these three categories of innovation users because they require different policy instruments to support them. In this report, we will focus on Tax incentives addressed to SMEs in Lebanon. For entrepreneurs, access to finance and expertise are very important and this will also be discussed in the sections below.

#### 5.5. The Linking Intermediaries- Knowledge and Technologies Transfer

The Knowledge and Technologies Transfer pillar of the NIS is perhaps the most obscure and confusing component especially in the Lebanese context where the integrated NIS is yet to emerge and where each component is practically disconnected from the others. In this report we will describe the KTT function, list the actors involved and the factors affecting the quality of this function. More specifically, we will examine the conditions for universities and enterprises to engage in KTT, the role of IPR, the most successful policy.

**Defining Technology Transfer.** We are coining this function ‘Knowledge and Technology Transfer’ (KTT) as a function distinct from the pure ‘Technology Transfer’ or ‘Technology Transfer and Commercialization’. In the literature and in implemented practices in different contexts, the term ‘Technology Transfer’ refers to the movement of know-how, skills, technical knowledge, procedures, methods, expertise or technology from one organizational setting to another (Roessner, 2000).

While technology commercialization, also known as research commercialization, refers to the valorization of research and intellectual assets by industry, or the process of taking an idea to market and creating financial value. It implies the selling, licensing of, or contracting of technology services, intellectual assets, and related-knowledge into spinoff creation and R&D collaboration (Zuniga and Correa, 2013).

**Critical Importance of KTT.** This function is perhaps the most critical function in the innovation system framework. It is critical for linking and connecting the supply side represented by the knowledge generation actors and the demand side represented by the firms, enterprises and the market at large. In the absence of such function the system will remain a set of unconnected components with no possibility to achieve its mission, reach its objectives and allow the nation to compete globally.

Any strategy neglecting this crucial aspect is vowed to inefficiency and total failure.

The figure shows the stages of the fabrication process, the investments needed at each stage and the type of investors involved.

The different stages of the fabrication process are the following:

- **Early Research.** Contributions are made to foundational science and knowledge, typically to research institutions at a laboratory scale, with limited immediate commercial returns. The knowledge and information produced tends to be of benefit globally and are hard to keep secret and can be easily disseminated at low cost (Garnaut, 2011, p. 425)
- The new knowledge is deployed to the real world via pilot, demonstration and first commercial-scale projects. These activities demand research bodies or firms take on significant risk as the technology requires proof in the intended operating environment and may not turn out to be cost competitive at first, even in cases that later turn out to be commercially successful. Some studies call this phase ‘the valley of death’, where most technologies fail either technically or financially (Grubb 2004; Murphy & Edwards 2003 cited in Garnaut, 2011, p. 425).
- **Market Uptake.** From the moment new knowledge becomes realized in a tested product or service, it is then sold to the open market. Technologies at the market uptake stage are able to compete with other mature products in the marketplace, with successful instances being associated with falling costs as market share expands (Garnaut, 2011, p. 425).

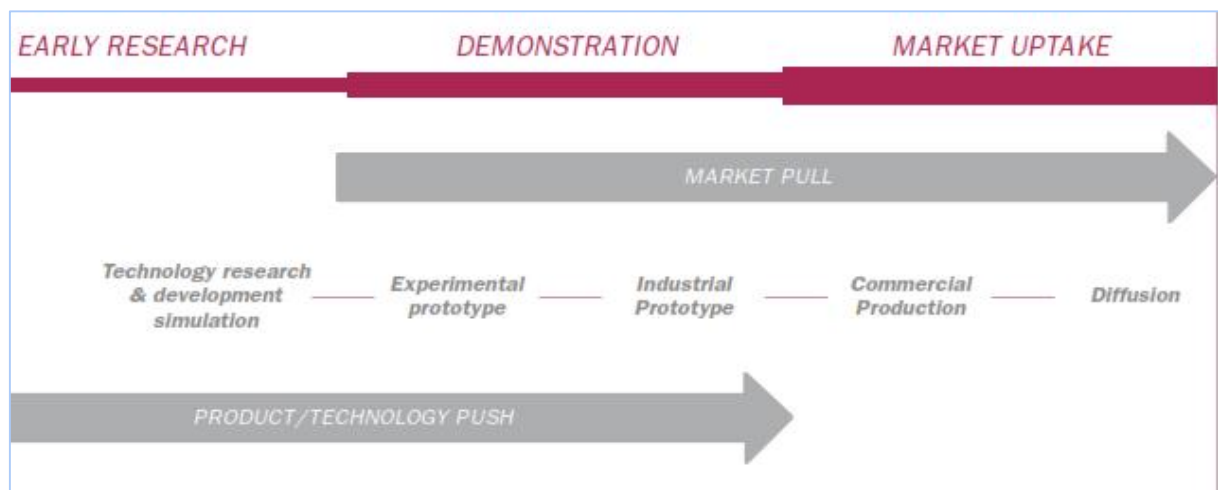


Figure 1: The different stages of the fabrication process

## 5.6. The Funding Process

The integration of the fabrication process and the funding process is shown in the figure below. This dimension of the NIS is of the highest importance since the access to funds is required at all stages, from inception to market uptake. Failing at any stage will kill irreversibly the whole process.

The funding process is summarized into two main stages, 1) the Seed Round/Angel Round and 2) the Venture Capital Round:

- *The Seed Round/Angel Round* First of all, the **Seed Round** is considered the stepping stone in the funding process. Seed capital is defined as “the initial capital used to start a business and often comes from the company founders' personal assets or from friends and family” (Investopedia, 2015c).

During this stage, the money that is usually given is of small quantities because the startup is still in the idea generation stage and is considered a high-risk investment at that point by potential VCs. The seed capital is required for research and development and to cover primary operating expenses until a product or service can start generating revenue (ibid). Ultimately, this helps in attracting VCs for the later stages which would need higher funds. There are multiple approaches to generate funds in the initial stages of development. One example is crowd funding, which is quickly becoming an important source of funding for seed-stage startups. Another example is a seed-stage “super angel” or an **Angel Round**. An Angel Round is considered part of the seed round. These usually refer to funding below 1M USD. An investor in this round, referred to as an **Angel Investor**, is a wealthy individual who provides capital for a startup, usually in exchange for convertible debt or ownership equity. On average, angel investors receive about a 15% post-seed equity position in startup companies (Ahmed, 2015). Seed-stage startups can further approach incubators and accelerators for initial funds. Even though those two terms are often used interchangeably, there are key differences in the way each one is structured (Forrest, 2014).

- *The Venture Capital Round* Once the startup has gained enough traction with users, Venture Capitals (VCs) are approached. By definition, venture capitals are “startup or growth equity capital or loan capital provided by private investors (venture capitalists) or specialized financial institutions (development finance houses)” (Business Dictionary, 2015). They are also referred to as “risk capital” as they specialize in high risk financial enterprises (ibid). There are multiple stages within process of receiving a venture capital fund. In the course of raising capital, entrepreneurs will go through a four-phased investment-decision making process
  - **Screening** - considered as the first call and/or the first meeting between the associates and/or one or two partners with the VC. At this point, the investors evaluate the risks of the investment, the market size and the industry. These factors will help to determine if the startup and the idea proposed is a fit with the VC’s fund size and investment goals.

- **Socialization** – VCs that are interested and excited with a startup’s pitch and potential of the startup will mostly call for a second meeting in order to share their knowledge with other members of the firm. During this meeting, the startup team will pitch their ideas again but to a wider number of individuals, but not the entire VC firm. If this step proves fruitful, then the team moves onto the diligence phase.
- **Due Diligence** – research is conducted in order to evaluate the team, the market, the product roadmap and sales. As this process moves forward, VCs ask the team for clarifications on the market size, defensibility, risks, or competition. Deal structures are discussed at this point and the deal terms are outlined. Afterwards, a meeting is called upon with all the partners in the VC, referred to as the “Partner Meeting”. The team should be briefed on all the diligence materials needed of them, key questions, and deal terms.
- **Decision** – VCs either provide deal terms to make decisions on their own or go through a voting procedure to seek approval for investment. Once approval is granted, a term sheet is prepared and the VCs must then convince the team (entrepreneur) to sign the term sheet and essentially partner with the firm.  
(Source: Tunguz, 2014)

### 5.6.1. Breakdown of Funding Rounds

**Series A** – first level of VC involvement<sup>17</sup>. Funds in this category fall approximately between 2M and 10M USD<sup>18</sup>. Typically in exchange for the funds provided, the VC takes about 10-30% ownership equity in the startup. Some equity schemes can reach up to 50%. The equity scheme decided on is referred to as “preferred stock”, which is the first stock that is issued after what is distributed among the startup team members (partners and co-founders), friend and family and angel investors).

**Series B** – advanced level of funding where higher amounts of capital are received from the VCs and possibly other institutional investors. At this point, given the high value of funds given, previous Seed and Series A ownership percentages are diluted proportionately and the Series B investors typically receive 33⅓% equity position in the startup.

From this point, startups have already gained enough traction in terms of product development and have understood the key factors at play in the market in order to move on to the monetization phase. Series B is an intense and rigorous step which requires high levels of scrutiny and due diligence, not to mention legal resources.

**Series C** – final level of funding after the startup has proven success in the market place. This is undertaken when a startup is aiming to expand its market share, acquisitions, or to develop new products and services. Once this is completed, an Initial Public Offering<sup>19</sup> (IPO) is conducted and the VC firms plan on executing its exit strategy from the company. Exiting typically takes 7 years to complete.

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<sup>17</sup> Unless there is a highly promising high technology startup that attracts VCs in the seed rounds

<sup>18</sup> Funds depend greatly on the firms and the stage at which the startups are at. Some firms give 500K USD for example.

<sup>19</sup> IPO is the first sale of stock by a private company to the public. IPOs are often issued by smaller, younger companies seeking the capital to expand, but can also be done by large privately owned companies looking to become publicly traded.

(Source: Ahmed, 2015)

The integration of the fabrication process and the funding process is shown in the figure below. This dimension of the NIS is of the highest importance since the access to funds is needed at all stages from inception to market uptake. Failing at any stage will kill irreversibly the whole process. The figure shows the stages of the fabrication process, the investments needed and each stage and the type of investors involved.

FUNDING PROCESS						
	EARLY STAGE		EXPANSION STAGE		LATER STAGE	
<b>INNOVATION</b>	Research Development > Technology Innovation		Experimental Prototype > Industrial Prototype		Commercialization > Mature Business	
<b>INVESTMENT PURPOSE</b>	Develop scientific breakthrough research	Assemble combine technologies create a new potential product	Validate the business concept (e.g. build prototype, develop business plan and conduct market) research	Prepare for Industrial production Build management team and complete product development	Providing working capital once shipping products or providing services	Fuel substantial growth (typically provided to business that are at least break even)
<b>TYPE OF INVESTORS</b>	- Research Funds - Universities - CNRS - Foundations, NGOs	- Angel investors - Traditional VC - Consulting firms - Incubators	- Traditional VC - Corporations	- Traditional VC - Corporations	- Traditional VC - Corporations - Building out firms - Investment banks	- Traditional VC - Corporations - Building out firms - Investment banks

Figure 2: The funding stages, the funding instruments and the types of investors in the innovation chain

## 5.7. Policy Framework - Government Role and Interventions

Because innovation is critical, getting innovation policies right is also critical. As such, policymakers need to be able to differentiate, select and continuously adjust a strategic mix of innovation policies. Our focus in this report is on the policy framework as required in the ToR. Hence, it will be examined more carefully.

Normally, and historically, the innovation activities and operations are not the natural and immediate consequences of market logic alone. In most developed countries the intervention of the government through a set of policies is critical for the success of any national innovation system and ought to lead eventually to the prosperity, sovereignty and competitiveness of the nation. This is also a point to consider in the Lebanese situation.

**The role of government** is to facilitate the process by:

- Supporting innovators through appropriate incentives and mechanisms, including, chiefly, the macro context
- Removing obstacles to innovative initiatives
- Encouraging the emergence of responsive entrepreneurs
- Forming creative and receptive populations through an appropriate education system.

**The aim of innovation policy.** The aim of innovation policies is to foster the development of technologies that don't yet exist and where the business models and markets are as yet

unknown. Organizations capable of inventing these technologies must be attracted or built and the result of their labor must be channeled into economic growth.

Hence — given the very real nature of innovations — it is not necessarily advisable to rely on any long term planning processes, rather continuous adaptive experimentation, flexibility and responsiveness seem the most appropriate features policy makers should consider for a successful innovation framework. Therefore, “policy makers need to rapidly develop new initiatives, cancel those that don’t work, scale up those that do, and then, as new industries grow, continue changing their initiatives in a highly adaptive process” (Breznitz 2014). Only then will policy makers keep pace with the industry, market and economy’s dynamic needs and capabilities.

Innovation policy is therefore defined by legislative intervention to support the generation and diffusion of new products, processes or services. This encompasses a broad array of policies, programs, and initiatives, foremost of which is the ‘national will’ to create an environment for successful innovation (Edler, Cunningham, Gök and Shapira, 2013). Policies of course do not operate in a vacuum. Innovation policies of the past were profit oriented, and nationally focused.

Today it is widely recognized that meeting challenges, ranging from environmental concerns, water availability or energy security, to caring for vulnerable populations, providing health and quality food, depends on innovation that seeks to simultaneously generate social value and economic value.

In the Lebanese case a clear national strategy, prioritizing sectors, technologies and markets, is practically nonexistent. Therefore, it is perhaps more realistic to maintain a competitive advantage based on continuous and rapid responsiveness to a rapidly changing economic and technological environment. Hence, innovations and new products must emerge in a situation of solid support. Bottlenecks should be identified as swiftly as they arise and adequate policies should be immediately developed to relieve them.

### **5.8. The Integrated NIS Model**

Finally putting all elements together, a representation of the NIS is given below:

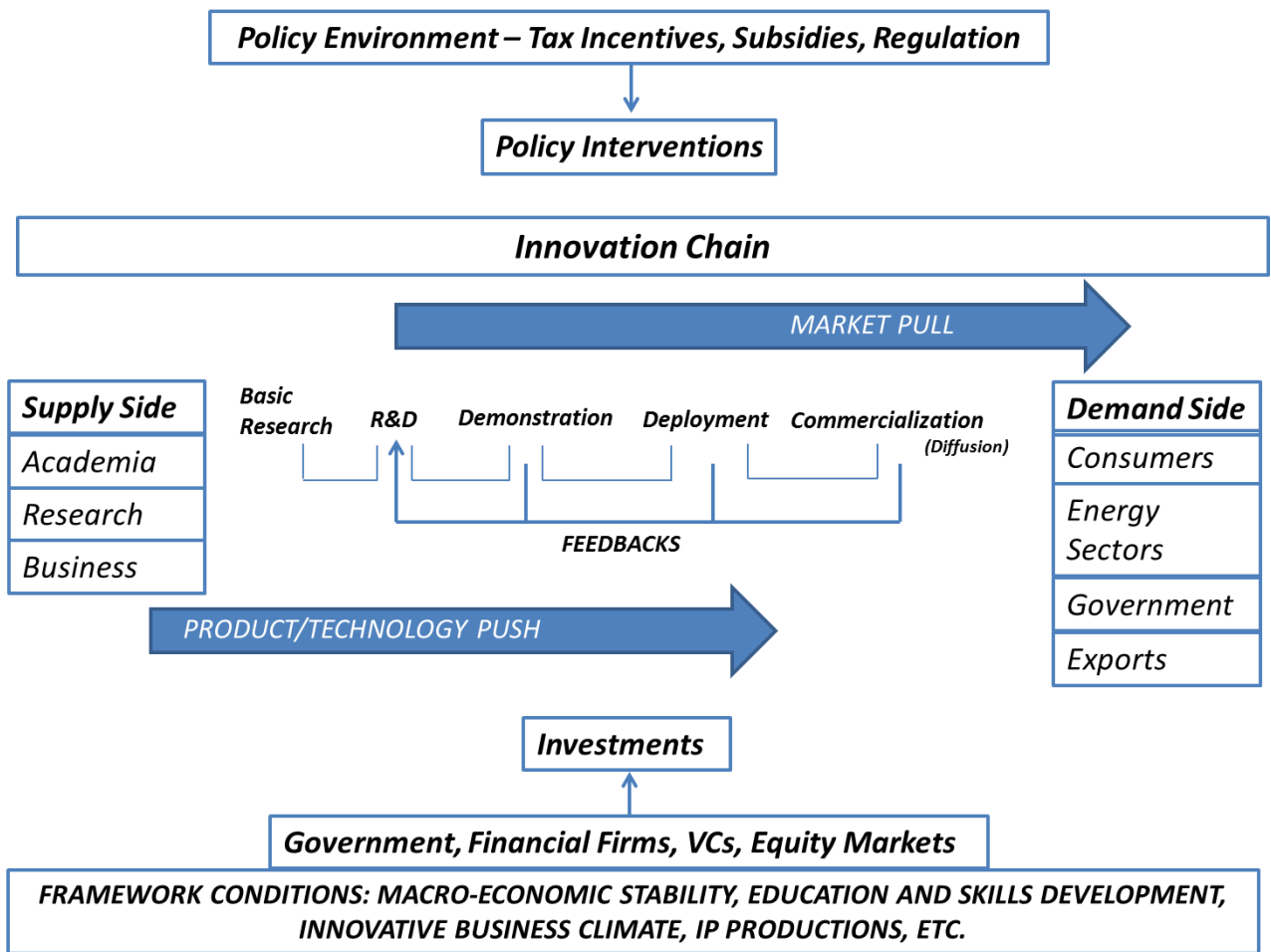


Figure 3: The integrated National Innovation model



This model shows the different components of the NIS.

It is worth noting that any system is part of a certain context and immersed in a specific environment. Hence it is worthwhile to consider the level of openness of any system including the NIS.

In this context, openness means:

- To what extent the NIS relies on international cooperation for research development and support
- To what extent the NIS will rely on foreign investments
- To what extent the NIS is geared towards exporting goods
- To what extent the NIS supply side is taking advantage of Diaspora or Expatriates.

## **6. Lebanon's Innovation Profile: What the Indices Tell about the LNIS**

The analysis of Lebanon's innovation profile relies on different documents prepared by H. Charif, S. Hanafi and R. Arvanitis and supported mainly by CNRS and ESCWA in addition to other reports and studies compiled in the bibliography. We have also used the results of an innovation survey conducted by the CNRS and supported by the World Bank between 2012 and 2013. We have harnessed the information and data provided by these documents and inserted them into our NIS model, in addition to other information collected directly from key informants. In order to analyze the Lebanese innovation system and identify the weaknesses gaps and flaws, we will adopt the failure model approach. This section will describe two types of failure, the market failure and the system failure. It will also provide a contextualization of these types of failure for the Lebanese situation.

### **6.1. Market Failure**

This is the traditional justification for failure theoretically underpinned by Nelson (1959) and Arrow (1962). The main argument is that knowledge is defined as a public good, which means that knowledge that is produced can and will be used by other actors (and externality). The creator of knowledge cannot appropriate all its benefits alone. This leads to sub-optimal knowledge production, as private returns are lower than public returns. The role of public policy therefore is to provide incentives for knowledge production in public organizations, to give financial and other support to encourage knowledge production and innovation activities in firms and start up activities and to create framework conditions (through intellectual property rights) that grant a temporary exclusivity for the commercial use of intellectual property as an incentive for innovation generation and exploitation. There is a virtue in this only when the private sector is nationalist or when it deploys the use of publicly funded knowledge in national production as opposed to transferring abroad. The transfer of nationally subsidized know-how abroad represents a fiscal leakage.

### **6.2. System Failure**

The generation of knowledge and innovation is a collective and interactive endeavor, it needs broad capabilities and relies on exchange, co-operation and interaction so that complementarities and specializations can be brought together, both for the production of knowledge and innovation as well as between producers and users. It also needs supportive

and stable framework conditions. However, cooperation is costly and risky and demands on capabilities are constantly changing.

System failures are those limitations in a system that stand in the way of providing the right framework conditions for innovative behavior (including market creation through standardization and piloting), the appropriate capabilities to create and use innovation and the right opportunities and abilities to interact and cooperate (on the supply side and between producers and potential users of innovation). The system and its actors thus need support to overcome those failures, through build-up of capability, through provision of intermediation and training, and through programs that support interaction and cooperation. The open system of Lebanon is over-determined by more powerful systems and it is the degree of openness that regulates the autonomy Lebanon will have over instituting its innovation policies.

### 6.3. Failures in the Lebanese Context

A model for investigating reasons for ‘innovation failure’ in Lebanon must take into account the following central context specific factors.

- **Infrastructural Failures.** The failure of national infrastructure such as the provision of telecommunications networks, energy provision failures, and dated and slow transportation links
- **Governance Failures.** Includes the Lebanese State’s failure to implement its own policy provisions; enforcing the rule of law and equality before the law; regulations; and smoothing cooperation between its own entities and the interaction between the public and private sectors
- **Capabilities Failures.** These failures include limitations at the level of training and research provision provided by Lebanese universities and other relevant bodies
- **Sociocultural Failures.** Lebanon is a risk averse society thanks to the political climate and it is a society enjoying too much capital. Innovation demands risk taking, grand visions and the courage to face multiple failures and undertake repeated experiments to reach and achieve an end. This courage is what separates those who succeed and those who fail.

### 6.4. The Metric Approach - Innovation and Competitiveness Indices

We will consider two main and three additional indicators in some details in order to grasp the gaps Lebanon is facing as compared with other countries and best practices. The two main indices are the ‘Global Innovation Index’ and ‘Global Competitiveness Index’. The additional indicators refer to the ‘Euro-Mediterranean Charter for Enterprise’, the ‘SME Policy Index for the Mediterranean and MENA’ and the ‘Knowledge Economy Index’ of the World Bank.

The GII and GCI will give a quantitative assessment of the innovation landscape in Lebanon as well as the business and financial climate. We will describe how these indices are designed and

how they will be useful in our analysis of the Lebanese National Innovation System (LNIS). In spite of their significance, we need of course to keep in mind that these indices alone will not provide a comprehensive perception of the situation, nor equip us with the tools for overcoming the challenges, obstacles and drawbacks of the LNIS.

#### 6.4.1. Main Indices

**Global Innovation Index.** According to the World Intellectual Property Organization (WIPO, 2015), the Global Innovation Index (GII) is an annual publication co-produced by WIPO, Cornell University and INSEAD, that ranks the innovation performance of 128 countries and economies around the world. The theme for the year 2016 is “Winning with Global Innovation” (WIPO, 2016). Innovation driven growth is much sought after by both high-income and developing countries, however, some countries prove to be more successful at improving their innovation capacities. The top 5 highest scoring countries for the years 2015 and 2016 are shown below:

**Table 2: GII rankings for the years 2015 and 2016, showing Switzerland at the top for both years**

<b>GII Ranking for 2015</b>	<b>GII Ranking for 2016</b>
<b>1. Switzerland</b>	<b>1. Switzerland</b>
2. United Kingdom	2. Sweden
3. Sweden	3. United Kingdom
4. Netherlands	4. United States of America
5. United States of America	5. Finland

The figure below shows the framework of the GII 2016 and the different indicators taken into consideration to calculate the index.

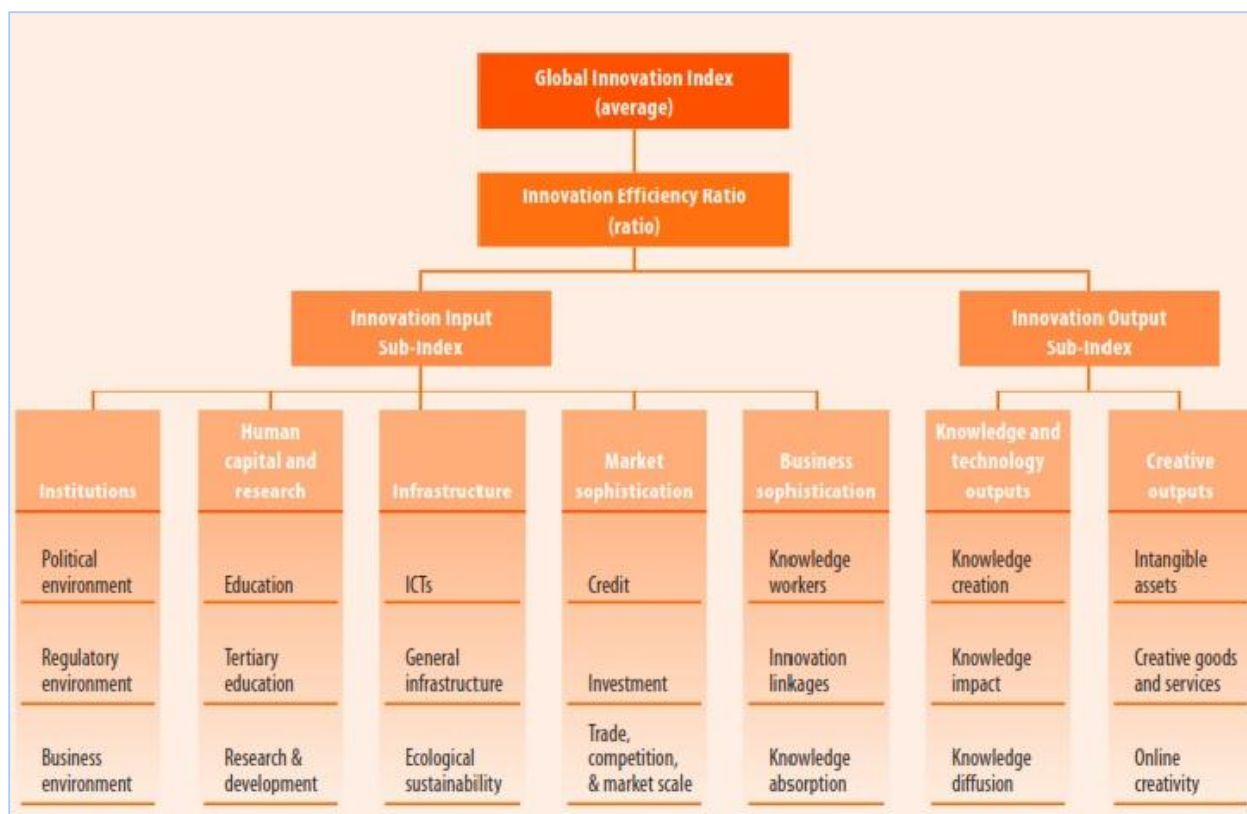


Figure 4: Global Innovation Index 2016 Conceptual Framework (WIPO, 2016)

According to the GII for 2015 and 2016, the profile for Lebanon is as such:

Table 3: GII for Lebanon in 2015 and 2016

Index	Score (0-100 or value (hard data))	Rank
<b>GII 2015</b>	<b>33.8</b>	<b>74 (out of 141 countries)</b>
Innovation Input Sub-Index	40.5	77
Innovation Output Sub-Index	27.1	76
Innovation Efficiency Ratio	0.7	87
<b>GII 2016</b>	<b>32.7</b>	<b>70 (out of 128 countries)</b>
Innovation Input Sub-Index	37.8	85
Innovation Output Sub-Index	27.6	57
Innovation Efficiency Ratio	0.7	41

Lebanon's GII score has decreased from 2015 (33.8) to 2016 (32.7), which indicates that although Lebanon has made progress in innovation, there remains multiple weaknesses that need to be addressed. GII scores that demonstrated weaknesses and strengths in Lebanon for the years 2015 and 2016 are as such:

Table 4: Weaknesses in Lebanon based on GII for 2015 and 2016

Year	2015		2016	
	Score (0-100 or value (hard data))	Rank (out of 141 countries)	Score (0-100 or value (hard data))	Rank (out of 128 countries)
<b>Political environment</b>	26.5	127	24.3	120
<b>Political stability and safety</b>	22.2	137	20.0	123
<b>Rule of Law</b>	27.0	111	28.2	108
<b>Ease of resolving insolvency</b>	33.0	117	33.1	109
<b>Expenditure on education, % GDP<sup>20</sup></b>	2.6	117	2.6	108
<b>Government expenditure/pupil, secondary level, %GDP/cap</b>	5.1	112	5.1	109
<b>Investment</b>	25.1	123	27.7	103
<b>Global R&amp;D companies, average expenditure top 3, mn \$US</b>	--	--	0.0	45
<b>General Infrastructure</b>	29.2	76	24.4	109
<b>Ease of protecting minority investors</b>	49.2	93	43.3	104
<b>University/industry research collaboration</b>	31.4	115	31.4	108
<b>Royalty and license fees payments, % total trade</b>	0.1	107	--	--
<b>High-tech imports less re-imports, % total trade</b>	2.8	126	3.9	110
<b>Knowledge impact</b>	25.8	118	25.0	109
<b>Royalty and license fees receipts, % total trade</b>	0.0	95	--	--
<b>Intangible assets</b>	34.4	117	--	--
<b>ICT<sup>21</sup> and business model creation</b>	37.7	127	45.5	110
<b>ICT and organizational model creation</b>	31.1	130	37.7	112

Table 5: Strengths in Lebanon based on GII for 2015 and 2016

Year	2015		2016	
	Score (0-100 or value (hard data))	Rank (out of 141 countries)	Score (0-100 or value (hard data))	Rank (out of 128 countries)

<sup>20</sup> GDP is Gross Domestic Product

<sup>21</sup> ICT is Information and Communication Technology

<b>Cost of redundancy dismissal, salary weeks</b>	8.7	24	8.7	21
<b>Pupil-teacher ratio, secondary level</b>	8.2	9	8.2	10
<b>Tertiary education</b>	47.0	25	42.0	38
<b>Tertiary inbound mobility, %</b>	12.8	13	7.6	21
<b>Domestic credit to private sector, % GDP</b>	98.6	30	103.3	24
<b>Intensity of local competition</b>	75.3	28	--	--
<b>Joint-venture strategic alliance deals/tr PPP\$<sup>22</sup> GDP</b>	0.0	21	--	--
<b>ICT services imports, % total trade</b>	--	--	1.7	27
<b>ICT services exports, % total trade</b>	--	--	2.7	32
<b>FDI<sup>23</sup> net inflows, % GDP</b>	6.4	24	6.5	21
<b>FDI net outflows, % GDP</b>	2.7	25	2.7	22
<b>Creative goods and services</b>	37.9	21	41.5	15
<b>Cultural and creative services export, % total trade</b>	1.3	8	--	--
<b>Printing and publishing output manufactures, %</b>	<b>4.2</b>	<b>7</b>	<b>4.2</b>	<b>1*</b>

\*Highest scoring sub-pillar - Lebanon

**Global Competitiveness Index.** The World Economic Forum annually publishes comprehensive series of reports that examine a multitude of global issues as part of its mission to improve the state of the world. Among such publications is the Global Competitiveness Report which provides an overview of the competitive performance of 140 worldwide economies for 2015-2016 (WEF, 2015). The top 5 highest scoring countries include 1) Switzerland, 2) Singapore, 3) United States of America, 4) Germany, and 5) Netherlands.

<sup>22</sup> PPP is Purchasing Power Parity

<sup>23</sup> FDI is Foreign Direct Investment

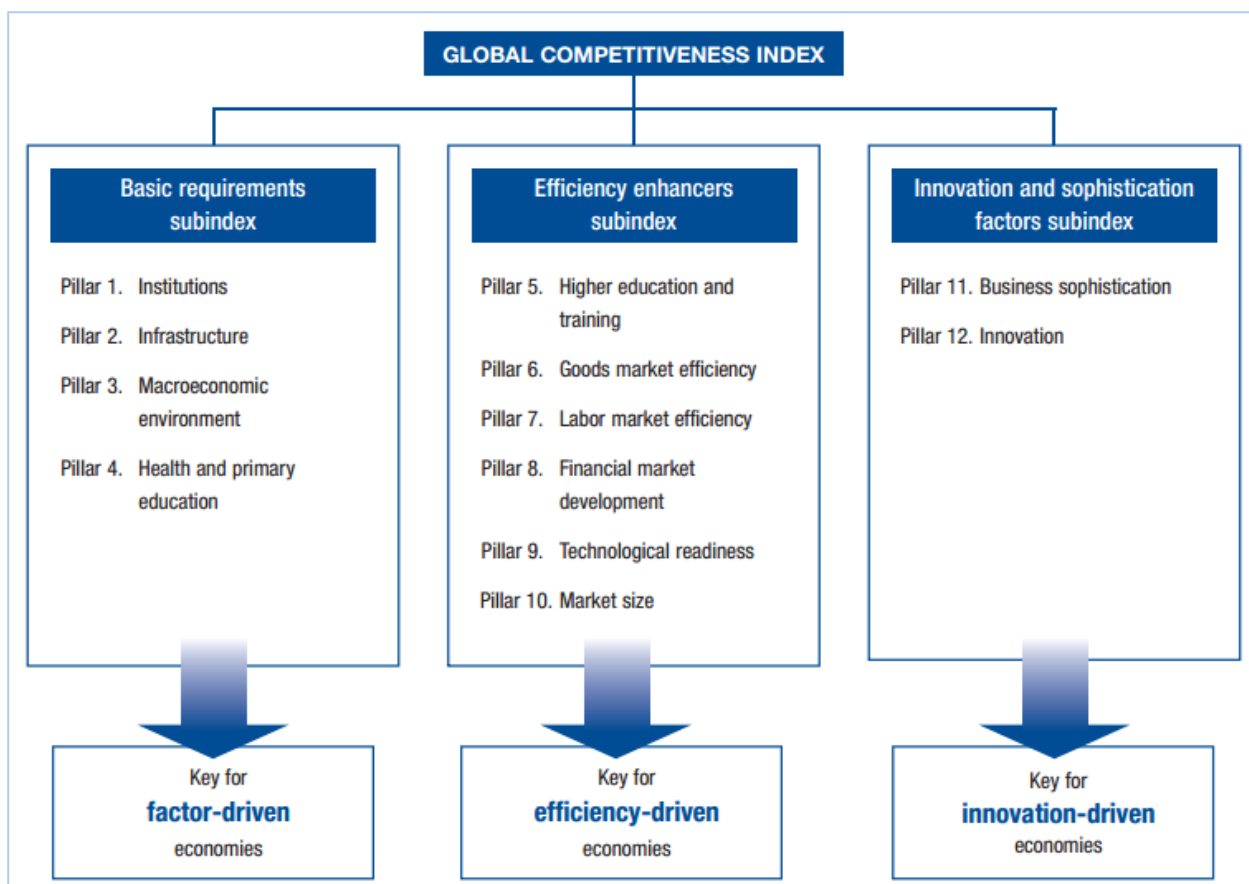


Figure 5: Global Competitiveness Index Framework 2015-2016 (Sala-i-Martin *et al.*, 2015)

According to the GCI 2015-2016 results, the profile for Lebanon is as such:

Table 6: GCI 2015-2016 results for Lebanon

Index/Sub-index	Rank (out of 140 countries)	Score (1-7)
GCI 2015-2016	<b>101</b>	<b>3.8</b>
<b>Subindex A: Basic Requirements</b>	121	3.7
<b>Subindex B: Efficiency Enhancers</b>	71	4.0
<b>Subindex C: Innovation and Sophistication Factors</b>	67	3.6

#### 6.4.2. Additional Indices

**Euro-Mediterranean Charter for Enterprise.** The Charter is a set of policy guiding framework which aims at improving the SME environment of 9 Mediterranean counties, referred to as MED countries (Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestinian Authority, Syria and Tunisia).

Since its adoption in 2004, the Charter has functioned as a guiding document for MED governments' policy building towards the private enterprise sector. It is structured under 10 policy dimensions, as stated below.

1. Simple procedures for enterprises
2. Education and training for entrepreneurs
3. Improved skills
4. Access to finance and investment-friendly taxation
5. Better market access
6. Innovative firms
7. Strong business associations
8. Quality business support schemes and services
9. Strengthening Euro-Mediterranean networks and partnerships
10. Clear and targeted information

**Charter Methodology.** As mentioned, there are 10 policy dimensions. Each dimension is divided into sub-dimensions, each of which consists of a set of indicators. In turn, each indicator is divided into 5 levels of policy development, categorized as such:

**Level 1.** No structured policy intervention

**Level 2.** Pilot projects have been developed but with no concrete policy approach

**Level 3.** Basic elements to establish consistent policy approach exist but with no implementation

**Level 4 and 5.** Refer to advanced levels of implementation/enforcement. At Level 5 in specific, policies at this stage are practiced in line with internationally recognized standards.

For countries in transition, a half point is attributed, combining elements of the two levels covered. Furthermore, in order to improve the assessment results, a weight is attributed to each sub-division and each indicator, based on the importance given to each in relation to policy development for enterprises. Weight 3 indicates the most important, while Weight 1 indicates the least important. The final score is thus calculated as a weighted average of sub-dimensions and indicators.

*(Source: European Commission, OECD, and European Training Foundation, 2008)*

Below is an example of one of the scores for Dimension 1, with its sub-dimensions and corresponding indicators, for Lebanon (Ibid).

**Table 7: Dimension 1 scores for Lebanon in 2008 for the Euro-Mediterranean Charter for Enterprise**

Dimension 1	Sub-dimensions	Indicators	Score for Lebanon
Simple procedures for enterprises	1. Institutional Framework	1.1. Delegation of responsibility for enterprise policy	2.0
		1.2. Coordination with other ministries, stakeholders and civil society	2.0



	1.3. Enterprise development strategies	2.5
	1.4. Clear task assignment	2.0
<b>Overall weighted average for sub-dimension 1.</b>	<b>2.2</b>	
2. Better legislation and administrative simplification	2.1. Delegation of responsibility for regulatory reform	2.0
	2.2. Strategy for the simplification of legislation	2.5
	2.3. Review and simplification of current legislation	2.5
	2.4. Elimination of redundant legislation and regulations	2.0
	2.5. Cost-benefit analysis of new enterprise legislation	1.0
<b>Overall weighted average for sub-dimension 2.</b>	<b>2.1</b>	
3. Cheaper and faster start-ups	3.1. Number of days for obtaining registration certificate	4.0
	3.2. Number of steps for obtaining registration certificate	5.0
	3.3. Official costs for obtaining registration certificate	4.0
	3.4. Administrative identification numbers	3.0
	3.5. Number of days for company identification number(s)	1.0
	3.6. Number of days for overall registration process	1.0
	3.7. Number of steps for overall registration process	3.0
	3.8. Silence is consent	1.0
	3.9. Costs of registration for limited liability companies	1.0
	3.10. Minimum capital requirements	1.0
	3.11. One-stop-shops (regional investment centers, etc.)	4.5
	3.12. Online registration	1.0
	3.13. Time required for	2.0

		closing a business	
		3.14.Cost required for closing a business	2.0
	<b>Overall weighted average for sub-dimension 3.</b>		<b>2.5</b>

**Overall Dimension Scores for Lebanon (for 2008).** Even though Lebanon has received poor scores in most of the Charter dimensions, for example in Dimension 2 Entrepreneurship (score of 1.0), the country seems to be relatively prominent in regards to Dimension 4 Access to Finance, Dimension 6 Innovative Firms, and Dimension 7 Business Associations. Thus, Lebanon showed a well-developed institutional framework and has the capacity to conduct innovative and effective reforms (Ibid).

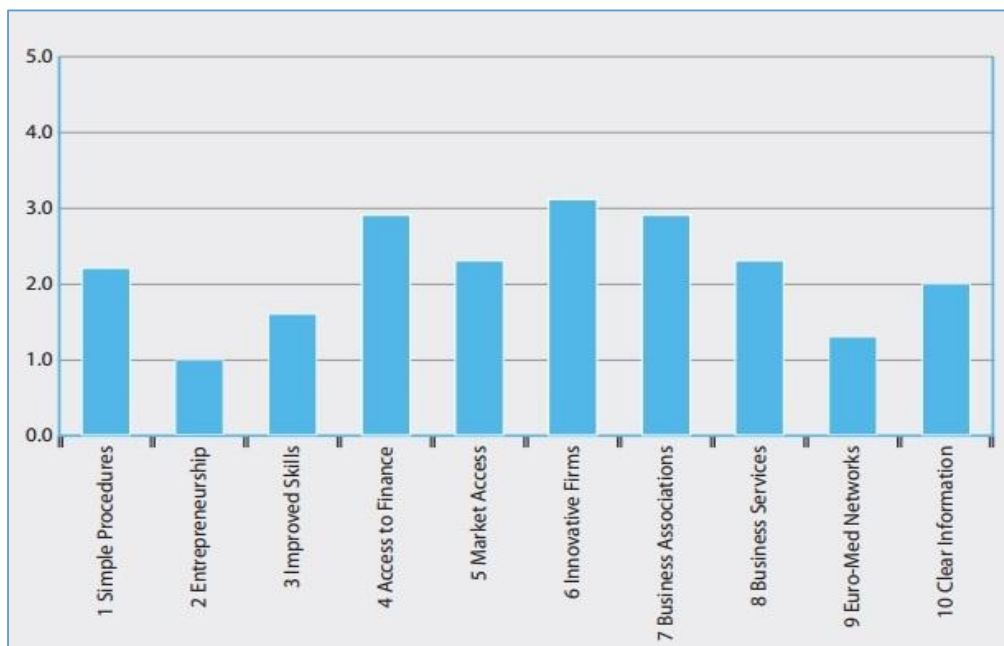


Figure 6: The overall Euro-Mediterranean Charter for Enterprise dimension scores for Lebanon for the year 2008 (European Commission, OECD, and European Training Foundation, 2008)

It is important however, to mention that the above Euro-Mediterranean Charter for Enterprise was not meant to function as a ranking system for the 9 MED countries but was to be used to help the MED governments identify common priorities, exchange experience, learn from each other’s activity and introduce elements of peer pressure (Ibid).

**SME Policy Index.** Similar to the above mentioned Euro-Mediterranean Charter for Enterprise, also jointly organized by the OECD, European Commission and the European Training Foundation, the SME Policy Index for the Mediterranean and MENA (Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, PA<sup>24</sup> and Tunisia) is “a tool to support policy makers in tapping the full potential of SMEs as drivers for job creation and economic growth. The index covers areas of key relevance for enterprise development and builds on a set of policy indicators measuring the performance of participating economies in each of those areas” (OECD/EU/ETF, 2014).

<sup>24</sup> PA: Palestinian Authority

The index updates the 2008 Euro-Mediterranean Charter for Enterprise and is also based on 10 principles that “guide the design and implementation of policies both at EU and national level”.

Those principles are:

1. Create an environment in which entrepreneurs and family businesses can thrive and entrepreneurship is rewarded
2. Ensure that honest (i.e. non-fraudulent) entrepreneurs who have faced bankruptcy quickly get a second chance
3. Design rules according to the Think Small First principle
4. Make public administrations responsive to SMEs’ needs
5. Adapt public policy tools to SME needs: facilitate SMEs’ participation in public procurement and make better use of available state aid for SMEs
6. Facilitate SMEs’ access to finance and develop a legal and business environment supportive to timely payments in commercial transactions
7. Help SMEs to benefit more from the opportunities offered by the single market.
8. Promote the upgrading of skills in SMEs and all forms of innovation
9. Enable SMEs to turn environmental challenges into opportunities
10. Encourage and support SMEs to benefit from the growth of markets

The SME Policy Index aims at “providing a structured and comparative evaluation of SME policies and initiatives by defining a country’s position on a set of key SME policy dimensions (e.g. access to finance, business development services, administrative simplification, etc.). To facilitate the measurement, dimensions are further broken down into sub-dimensions (e.g. sources of finance, legal and regulatory framework for access to finance, financial literacy) and policy indicators (credit guarantee schemes, business angel networks, microfinance facilities, etc.). Each indicator (and by extension sub-dimensions and dimensions) uses a scale of 1 to 5 (levels), where 5 broadly corresponds to good practice” (see section on Euro-Mediterranean Charter for Enterprise) (Ibid). The following figure illustrates an example of the SME Policy Index framework, with a breakdown of dimensions, sub-dimensions and indicators.

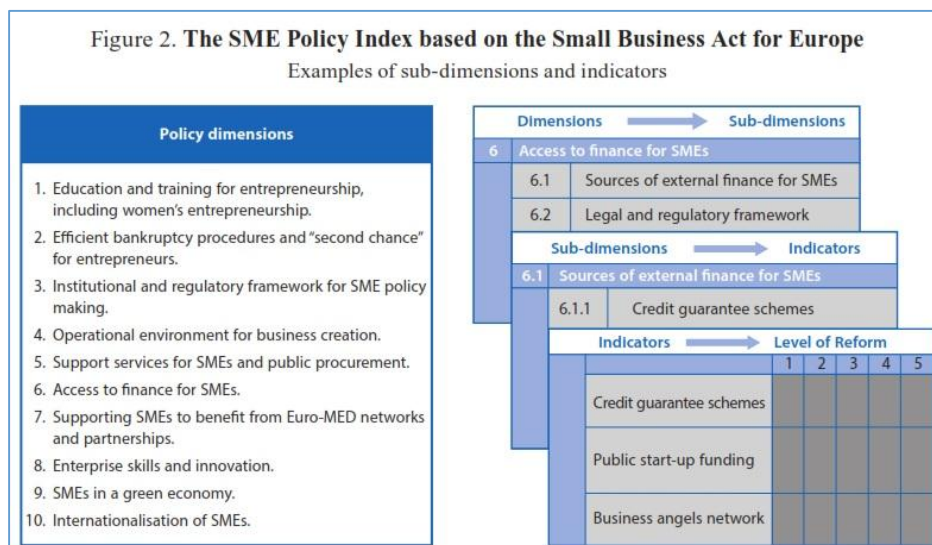


Figure 7: Breakdown of dimensions, sub-dimensions and indicators of the SME Policy Index for 2014 (OECD/EU/ETF, 2014)

The results for Lebanon, as published in 2014, are as follows:

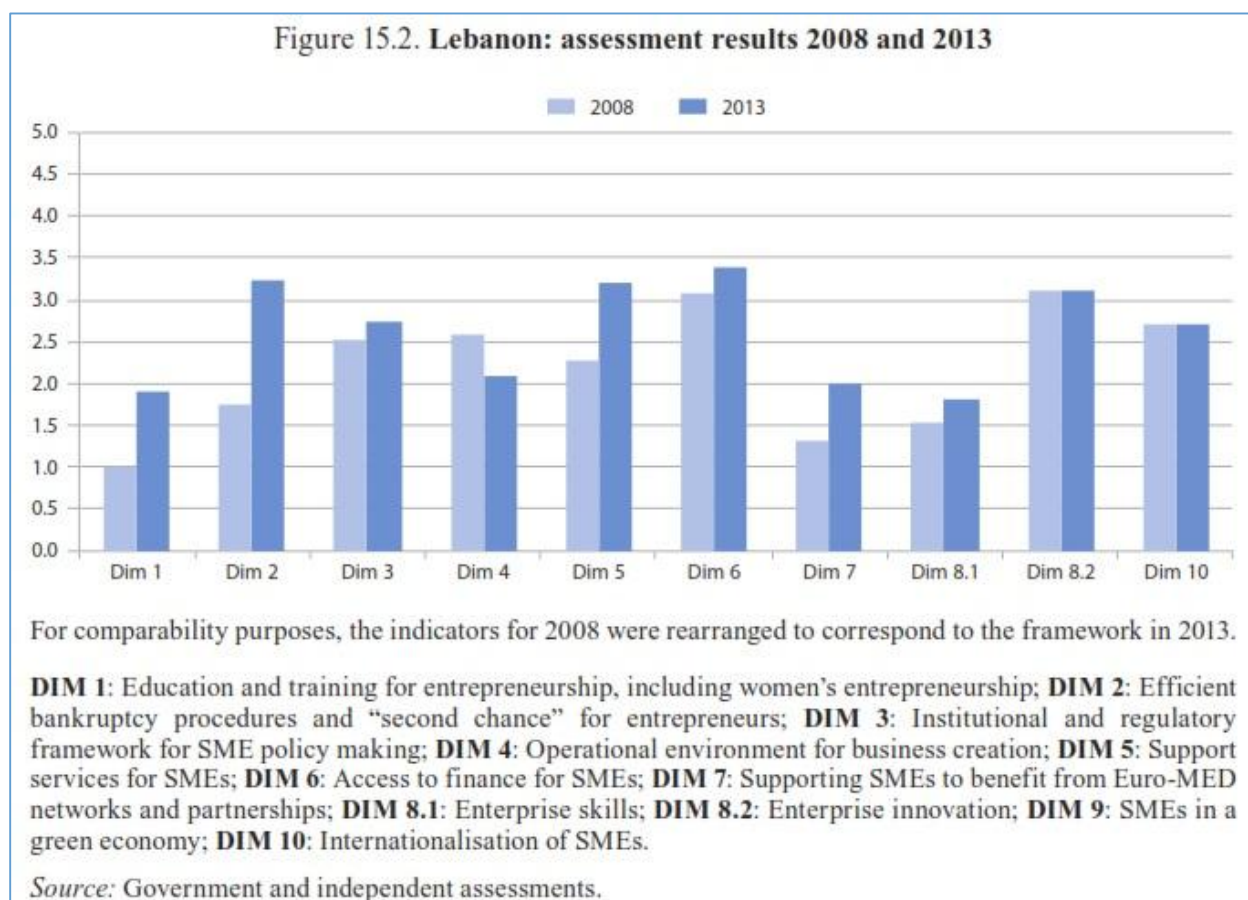


Figure 8: Results for Lebanon’s assessment SME Policy Index, comparing 2008 to 2013 (OECD/EU/ETF, 2014)

Lower scores are attributed to education and training for entrepreneurs, including women’s entrepreneurship (Dimension 1), despite a growing innovation ecosystem in the country, as well as enterprise skills (Dimension 8.1). Top scoring dimension, however, remains access to finance for SMEs, yet this is challenged by a discrepancy in access to funding along the entire innovation chain (e.g. lack of seed/early stage financing. Refer to Section 10 of the report).

**Knowledge Economy Index (KEI).** This index is based on the Knowledge Assessment Methodology (KAM) of the World Bank, under which the Knowledge Index (KI) is measured for a country's ability to generate, adopt and diffuse knowledge. The KAM also derives the KEI, which is an aggregate index representing a country's or region's overall preparedness to compete in the Knowledge Economy (KE), which represents four pillars, 1) Economic Incentive and Institutional Regime (EIR), 2) Education and Training, 3) Innovation and Technological Adoption, and 4) Information and Communications Technologies (ICT) Infrastructure.

Methodologically, the KEI, which can be displayed as a 'basic scorecard', is calculated based on the average of the normalized performance scores<sup>25</sup> (0-10) of a country or region on all 4 pillars, mentioned above. Each pillar consists of 3 sub-pillars, making a total of 12 indicators (Bashir, 2013).

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<sup>25</sup> The normalized value for an indicator for a particular country is equal to the number of countries ranked lower than that country divided by the total number of countries multiplied by ten. The index for each pillar is calculated on the basis of its being the simple arithmetic mean of the normalized values of the three indicators that make up the pillar (Bashir, 2013).

## Breakdown of the Four Pillars of a KE and their Corresponding Sub-pillars

Table 8: Breakdown of the 4 pillars of a Knowledge Economy with corresponding sub-pillars

Pillar	Description	Sub-pillars	Description	Source of Data for Sub-pillar, Year
<b>1. Economic Incentive and Institutional Regime (EIR)</b>	“Incentives that promote the efficient use of existing and new knowledge and the flourishing of entrepreneurship”	Tariff and non-tariff Barriers	“The index measures the degree of economic freedom”	Heritage Foundation's Trade Policy Index, 2009 <sup>26</sup>
		Regulatory Quality	“The index measures the incidence of market-unfriendly policies such as price controls or inadequate bank supervision, as well as perceptions of the burdens imposed by excessive regulation in areas such as foreign trade and business development”	World Bank Governance Indicators, 2007 <sup>27</sup>
		Rule of Law	“The indicator measures the extent to which agents have confidence in and abide by the rules of society. These include perceptions of the incidence of both violent and non-violent crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts”	
<b>2. Education and Training</b>	“An educated and appropriately trained population is capable of creating, sharing, and using knowledge”	Average years of schooling (>15 years old)	“This variable is used as an aggregate measure of the educational stock in a country”	Barro and Lee, 2010 <sup>28</sup>
		Secondary school enrollment	“Secondary education completes the provision of basic education that began at the primary level, and aims at laying the foundations for lifelong learning and human development, by offering more subject- or skill-	

<sup>26</sup> <http://www.heritage.org/index/> (Retrieved on February 16, 2016)

<sup>27</sup> <http://info.worldbank.org/governance/wgi/index.asp> (Retrieved on February 16, 2016)

<sup>28</sup> Barro, R. J. and Lee, J. W. (2010). *A new dataset of educational attainment in the world, 1950-2010*. National Bureau of Economic Research, Working Paper 15902, April 2010, p. 1-49

			oriented instruction using more specialized teachers”	
		Tertiary school enrollment	“Tertiary education, whether or not to an advanced research qualification, normally requires, as a minimum condition of admission, the successful completion of education at the secondary level”	
<b>3. Innovation and Technological Adoption</b>	“An efficient innovation system made up of firms, research centers, universities, think tanks, consultants, and other organizations can tap into the growing stock of global knowledge, adapt it to local needs, and create new technological solutions”	Royalty payments and recipients	Considered as an input to the innovation system	Development Data Platform <sup>29</sup> (DDP), 2007
		Patent counts	“Patents include utility patents and other types such as design patents, plant patents, reissues, defensive publications, and statutory inventions and registrations”	United States Patent and Trademark Office <sup>30</sup> (USPTO), average for 1993-1997 and 2003-2007
		Journal Articles	“Scientific and technical journal articles refer to the number of scientific and engineering articles published in the following fields: physics, biology, chemistry, mathematics, clinical medicine, biomedical research, engineering and technology, and earth and space sciences”	DDP, 2005
<b>4. ICT Infrastructure</b>	“A modern and accessible ICT infrastructure serves to facilitate the effective communication, dissemination, and processing of information”	Number of telephones (per 1000 people)	“The indicator is the sum of telephone mainlines and mobile phones”	International Telecommunication Union <sup>31</sup> (ITU), 2007
		Number of computers (per 1000 people)	“This is an indicator of personal computer penetration and use”	
		Number of internet users (per 1000 people)	“The indicator relies on nationally reported data. In some cases, it is based on national surveys, in others it is derived from reported Internet	

<sup>29</sup> <http://databank.worldbank.org/data/home.aspx> (Retrieved on February 16, 2016)

<sup>30</sup> <http://www.uspto.gov/web/offices/ac/ido/oeip/taf/reports.htm> (Retrieved on February 16, 2016)

<sup>31</sup> <http://www.itu.int/en/about/Pages/default.aspx> (Retrieved on February 16, 2016)

			Service Provider subscriber counts”	
<b>References</b>	World Bank, 2012		World Bank, 2011	



### **KEI for Lebanon (for 2012)**

Based on reported for the year 2012, Lebanon ranked 81 out of 146 countries in with a KEI score of 4.56 out of 10. Lebanon went down 13 rankings since 2000 from a rank of 68 out of 146 and a KEI score of 4.95 out of 10. This is a reflection of the deficiencies in the knowledge and economy pillars of the country (economy, education, innovation and ICT).

Thus, based on all the above mentioned indicators, we can draw a quick profile of the LNIS.

#### **Main weaknesses**

- Political instability
- Difficult political environment
- Limited expenses on education
- Limited expenses on R&D
- Weak collaboration between universities and industries
- Inefficient infrastructure: Telecommunications, electricity , transport
- Royalty fees receipts almost inexistent

#### **Main strengths**

- Very good tertiary education
- High FDI inflows and outflows
- Strong creative goods and services
- Very important cultural and creative services export

Accordingly we can observe that: 1) the inputs to the LNIS are limited and outputs almost inexistent, 2) Lebanon is facing a very challenging governmental issue in terms of governance, strategizing, planning, coordinating the different institutions and enacting laws, 3) limited collaboration between the two main pillars of the LNIS universities and industries, 4) high creativity and cultural exports, 5) excellent educated university graduates, and 6) strong banking sector.

Based on the country profile for Lebanon as featured in the Report on the implementation of the Euro-Mediterranean Charter for Enterprise (2008), some priority areas have been identified.

**Institutional Policy Framework.** It is important for Lebanon to reactivate the enterprise policy agenda (set back in 2005) in order to fit it in the new political and economic contexts emerging in this sector. Integrating SME support programs and re-launching of consultations with the private sector is needed in order to redefine priorities and update future work programs.

**Regulatory Reform.** Work should proceed towards simplifying administrative procedures (MoET, MoF, and OMSAR<sup>32</sup>) so as to relieve SMEs from imposing administrative constraints.

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<sup>32</sup> OMSAR: Office of the Minister of State for Administrative Reform

**Business Support Schemes and Services.** Business development networks and centers need to be expanded in the country in order to use them as channels for executing government and donor-funded programs alike.

**Human Capital.** Based on the scores for Dimension 2 Education and Training for Entrepreneurship, the assessment showed that there is a gap in terms of policy and delivery in lower and upper secondary levels of education, with a limited number of projects that promote entrepreneurship for students early on in school. Therefore, it is recommended to initiate dialogue between the private sector, NGOs and universities for a collective effort on determining how to promote entrepreneurship and entrepreneurial learning in schools. This could be done by providing school guidance and counseling services.

## **7. The Innovation Supply Side - Policies to Enhance the Knowledge Generation and Technologies Production Capabilities**

In this section we will analyze the salient features of the LNIS on the supply side of innovation, describe the activities of the main actor in this area, the National Council for Scientific Research (CNRS), and then suggest a series of policies and measures aiming at enhancing Lebanon's capabilities to generate knowledge and produce technologies.

### **7.1. Spending on R&D**

The amounts spent on R&D in Lebanon remains extremely low compared to other countries. R&D national expenses do not exceed 0.2% GDP which is in line with most of other Arab countries but much lower than emerging and developed countries where this percentage is between 1.5-4% of their GDP.

A closer look at this situation shows that a break down between the public and private investments in R&D are reversed compared to the most performing countries. In Lebanon, the share in R&D of the public sector, in spite of its weaknesses, is 70% and the private sector is 20% while international support is at 10%.

The survey conducted by CNRS and the World Bank in 2012-2013 shows the following.

- Only 23% of all surveyed enterprises reported that they had a unit or section dedicated to Research and Development (R&D) activities.
- However, 56% of the enterprises surveyed which lacked a department dedicated to R&D activities sought to improve their products and processes through collaboration with other entities.
- Some of the firms that did not have R&D departments still managed to assign a small number of their employees to R&D activities.

Spending on R&D activities by surveyed enterprises during the previous years in 2010 and 2011 varied enormously between one enterprise and another. Immense variation in R&D spending among enterprises performing R&D activities during the years 2010-2011 was reported, given the high value of the standard deviation between the average amount spent on R&D in 2010 (82,000 USD) and in 2011 (87,000 USD).

Only 7% of the enterprises surveyed, reported contracting R&D activities to other research centers and institutions. Spending allocated to subcontracted R&D activities varied between 27 and 100%, presumably out of all R&D spending.

**The conclusion drawn by the World Bank is “sans appel”.** Lebanon’s entire industrial sector is weighed down by mediocre levels of innovation. Available information suggests that the country is underperforming with regard to a number of innovation indicators, even in comparison to countries of similar GDP and size. Improved competitiveness of Lebanon’s industrial enterprises must become an essential objective for future policies. Action is also needed on several fronts. Numerous hurdles lie ahead, however, attaining concrete objectives holds great benefits for economic growth and sustainable socioeconomic development.

## 7.2. Human Capital Formation

According to the Global Innovation Index 2016, Lebanese expenditure on education as a percentage of the GDP is 2.6% which ranks Lebanon 108 out of 128 countries (previously ranked 117 out of 141 countries in 2015) and is considered a major weakness. In reality, this indicator does not give accurate information on the educational system in Lebanon. Although the government does not spend much on education, this weakness is compensated by the parents who spend largely on the education of their children. In contrast, the real weaknesses of the human capital formation for innovation can be listed as follows:

- Inadequacy and mismatch between the education offer and the job market
- Vocational education and training remains very limited, as having access to skillful technicians is a critical condition for a successful innovation system
- Brain drain is a major obstacle. According to a study conducted in 2013 by Mr. Omar Bizri from ESCWA, 45% of Lebanese graduates leave the country. This percentage is way above the average of other MENA countries, where this brain drain does not exceed 10%.

It is clear that the weaknesses identified above are due to poor intervention by the government. It highlights the importance of governmental implication in implementing any innovation strategy. Strategies are available but the concrete tools to achieve their objectives and put in place recommendations are lacking.

## 7.3. Structure of the Innovation Landscape – Supply Side

### 7.3.1. The Current Role of CNRS

There is no ministry in charge of the national S&T policy making in Lebanon. However, in 1962, the Government recognized the increased role of S&T in the country’s socio-economic development and this why the National Council for Scientific Research (CNRS) was created. It maintains administrative and financial autonomy under the authority of the Prime Minister.

**The CNRS has three major functions:**

**1. An advisory function.** The CNRS draws up the general outline of Lebanon’s ‘National Science Policy’ designed to develop research and optimize the use of Lebanon’s scientific resources for development purposes. It advises the government on all issues related to

science and national science policy. It also carries out surveys and inventories of on-going research activities in private and public institutions throughout the country.

**2. A programmatic and implementation function.** This function mainly involves the implementation of the ‘National Science Policy’, whereby the CNRS initiates, encourages and coordinates research activities. As part of this function, the CNRS runs several calls for proposals addressed to the overall Lebanese scientific community. It also runs and organizes scientific research activities within its work program and formulates work programs in cooperation with the appropriate ministries and the private sector.

**3. A research production function.** The CNRS manages and runs four research centers:

1. The Centre for Geophysics
2. The Centre for Marine Sciences
3. The Centre for Remote Sensing
4. The Lebanese Atomic Energy Commission (LAEC)

In addition to managing its four research institutes, the CNRS runs the following integrated action program addressed to the Lebanese scientific community as a whole:

- The Science, Technology and Innovation Policy Program
- The Research Grant Program (RGP)
- The PhD Fellowship Program
- The Science and Technology Culture Program
- The CNRS Associated Research Units (ARU)

### **7.3.2. Achievements to Date**

It is worth noticing two initiatives of the highest importance that have a direct impact on the LNIS.

**1. Launch of the Doctoral School at the Lebanese University.** It allowed many exceptional Lebanese graduates from science and engineering schools to pursue a PhD program in collaboration with international universities. As a direct consequence of this, similar PhD programs were also launched at the American University of Beirut (AUB) in 2010. However it remains difficult for Lebanese Post-Docs to find a job. The local universities underuse them as teaching professors and the Lebanese industries lack the resources and the vision to hire them for research purposes.

**2. Implementation of the STIP recommendations.** The creation of the Associated Research Units (ARUs) introduced an important possibility in the Lebanese innovation landscape and has had a vital impact on encouraging collaboration among Lebanese universities and research centers, allowing them to put together a critical mass of researchers working across disciplines. It would be interesting to explore the possibility of involving the private sector and most importantly increasing the budget share of these ARUs.

### **7.3.3. Funding CNRS**

The main segment of the CNRS budget comes from the Lebanese government. Over the last six years, the government contribution fluctuated between a low 3.1 million USD in 2003 and a high 4.5 million USD in 2005 and 2006. The total budget in 2006 was 5.766 million USD meaning that around 20% of CNRS budget is non-governmental, provided through international collaboration.

### **7.4. Higher Education Law and the Regulatory Instruments for R&D**

From the supply side perspective, the most important regulatory instrument is the law governing the activities of universities in Lebanon. This law was issued and validated in April 2014. According to this law, it is stipulated that one condition for a higher education institution to deserve the title of “university” is to allocate 5% of its annual budget for research activities. Hence, each of the 44 universities in Lebanon should allocate this corresponding amount to research. If this law is enforced, the total amount budgeted for research will jump from 10-20 million USD per year to at least 200 million USD per year. The impact on the Lebanese Innovation System will be huge. One may ask whether Lebanon has the capacity to absorb this amount of investments in research. The answer is a definite yes. Investing in research may contribute to reducing brain drain and even in reversing it. This will open opportunities for fresh graduates to work in R&D. It will also force these universities to more seriously consider the option of collaborating together on competitive research programs.

According to the new higher education law, every university must dedicate 5% of its budget to research. The implementation of this law remains very problematic, due to the fact that most Lebanese universities are teaching ones, where the main purpose is to provide a good quality of education for the students. Research is mainly conducted in the first-tier universities, namely, AUB, Université Saint Joseph (USJ), and the Lebanese University. However, none of these universities is currently dedicating 5% of its budget to R&D. The availability of means is vital in order to implement this law.

According to the General Director of the Ministry of Education, all universities will be under scrutiny for the implementation of this law. The mechanism that is considered is of an accounting and financial nature. The details of such mechanisms were not communicated, however. Such mechanisms, although important to enact the law, are definitely insufficient to reach the desired objective.

## **7.5. Enhancing Knowledge Generation and Technology Production Capabilities (KGTP)**

### **7.5.1. The Metric Approach - Innovation and Competitiveness Indices**

The GII 2016 and GCI 2015-2016, discussed in Section 6.4 of the report, give a quantitative assessment of the innovation landscape in Lebanon as well as the business and financial climate, as related to the supply side of innovation. The results of both indices serve as arguments pushing for the suggested policy measures, cited below.

i. *Global Innovation Index 2016*

**The GII 2016 Framework.** Below is the framework for the GII that shows the top indices, and sub-indices. The boxes highlighted in red cover the supply side of innovation indices, considered in this document.

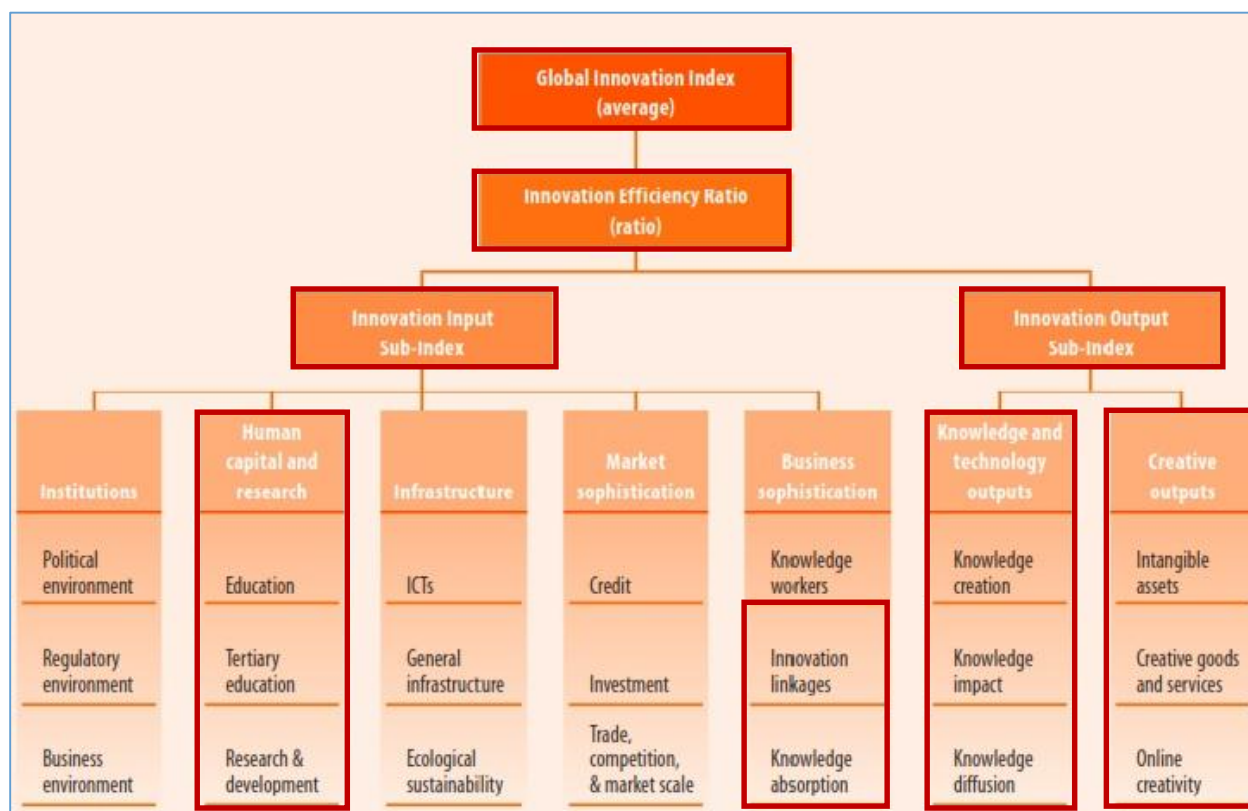


Figure 9: Global Innovation Index 2016 Conceptual Framework<sup>33</sup>

The following table indicates the results per index and sub-index for Lebanon, concerning the supply side of innovation, highlighting (in yellow) the weaknesses of the country in this pillar.

Table 9: GII 2016 results per index and sub-index for Lebanon (yellow highlights major weaknesses)

GII 2016			
Index Nb. In the Framework	Subindex	Score (0-100 or value (hard data))	Rank (out of 128 countries)
<b>2. Human Capital and Research</b>		<b>29.8</b>	<b>76</b>
	<b>2.1. Education</b>	<b>31.9</b>	<b>107</b>
	2.1.1. Expenditure on education, % GDP <sup>34</sup>	2.6	108
	2.1.2. Government expenditure/pupil, secondary level, %GDP/cap	5.1	109

<sup>33</sup> World Intellectual Property Organization/Cornell University/INSEAD. (2016). *Global Innovation Index 2016*. Beijing, China and Geneva, Switzerland

<sup>34</sup> GDP is Gross Domestic Product

	<b>2.2. Tertiary Education</b>	<b>42.0</b>	<b>38</b>
	2.2.1. Tertiary enrolment, % gross	42.8	60
	2.2.2. Graduates in science and engineering, %	23.3	34
	<b>2.3. Research and Development (R&amp;D)</b>	<b>15.4</b>	<b>48</b>
	2.3.1. Global R&D companies, average expenditure (top 3, mn \$US)	0.0	45
<b>5. Business Sophistication</b>		<b>31.7</b>	<b>63</b>
	<b>5.2. Innovation Linkages</b>	<b>27.4</b>	<b>76</b>
	5.2.1. University/industry research collaboration	31.4	108
	<b>5.3. Knowledge Absorption</b>	<b>27.1</b>	<b>71</b>
	5.3.1. Intellectual property payments, % total trade	0.1	88
	5.3.2. High-tech imports less re-imports, % total trade	3.9	110
<b>6. Knowledge and Technology Outputs</b>		<b>22.4</b>	<b>74</b>
	<b>6.1. Knowledge Creation</b>	<b>14.9</b>	<b>55</b>
	6.1.4. Scientific and technical articles/bn PPP <sup>35</sup> \$ GDP	13.3	53
	<b>6.2. Knowledge Impact</b>	<b>25.0</b>	<b>109</b>
	6.2.5. High and medium- high-tech- manufactures, %	22.0	53
<b>7. Creative Outputs</b>		<b>32.8</b>	<b>51</b>
	7.1.3. ICT <sup>36</sup> and business model creation	45.5	110
	7.1.4. ICT and organizational model creation	37.7	112

Other than the major weaknesses of the country, the GII 2016 also served to highlight the data that was reported ‘Not Available’ for the profiling of Lebanon. This is a cause for alarm given that the lack of available data in the innovation system has been a major hurdle in the policy making process, further debilitating the progress of the ecosystem.

Below is a list of the data reported as ‘not available’ for the GII 2016 of Lebanon.

**Table 10: Data marked ‘Not Available’ in the GII 2016 for Lebanon**

<b>Data Not Available</b>	
<b>Index Nb. In the Framework</b>	<b>Subindex</b>
<b>2. Human Capital and Research</b>	
	<b>2.3. Research and Development (R&amp;D)</b>
	2.3.1. Researchers, FTE <sup>37</sup> /mn pop
	2.3.2. Gross expenditure on R&D, %GDP
<b>5. Business Sophistication</b>	
	<b>5.3. Knowledge Absorption</b>

<sup>35</sup> PPP: Purchasing Power Parity

<sup>36</sup> ICT is Information and Communication Technology

<sup>37</sup> FTE: Full-time equivalent

	<i>5.3.5. Research talent, % in business enterprise</i>
<b>6. Knowledge and Technology Outputs</b>	
	<b>6.1. Knowledge Creation</b>
	<i>6.1.1. Patents by origin/bn PPP\$ GDP</i>
	<i>6.1.2. PCT<sup>38</sup> patent applications/bn PPP\$ GDP</i>
	<i>6.1.3. Utility models by origin/bn PPP\$ GDP</i>
	<b>6.2. Knowledge Impact</b>
	<i>6.2.2. New businesses/th pop. Age 15-64</i>
<b>7. Creative Outputs</b>	
	<i>7.1.1. Trademarks by origin/bn PPP\$ GDP</i>
	<i>7.1.2. Industrial designs by origin/bn PPP\$ GDP</i>

Not having availability for crucial data such as number of researchers, expenditure on R&D, research talent and how much intellectual property is being generated, from patents to utility models to industrial designs and the further mismatch between the underperformance of the R&D system and the potential of Lebanese creativity as implied by the above GII 2016 set of indicators, are strong arguments in favor of enhancing the knowledge productivity in Lebanon.

## *ii. Global Competitiveness Index*

**The GCI Framework.** Below is the framework for the GCI 2015-2016 that shows some of the indices relevant to the supply side of innovation, marked by the red boxes.

<sup>38</sup> PCT: Patent Cooperation Treaty



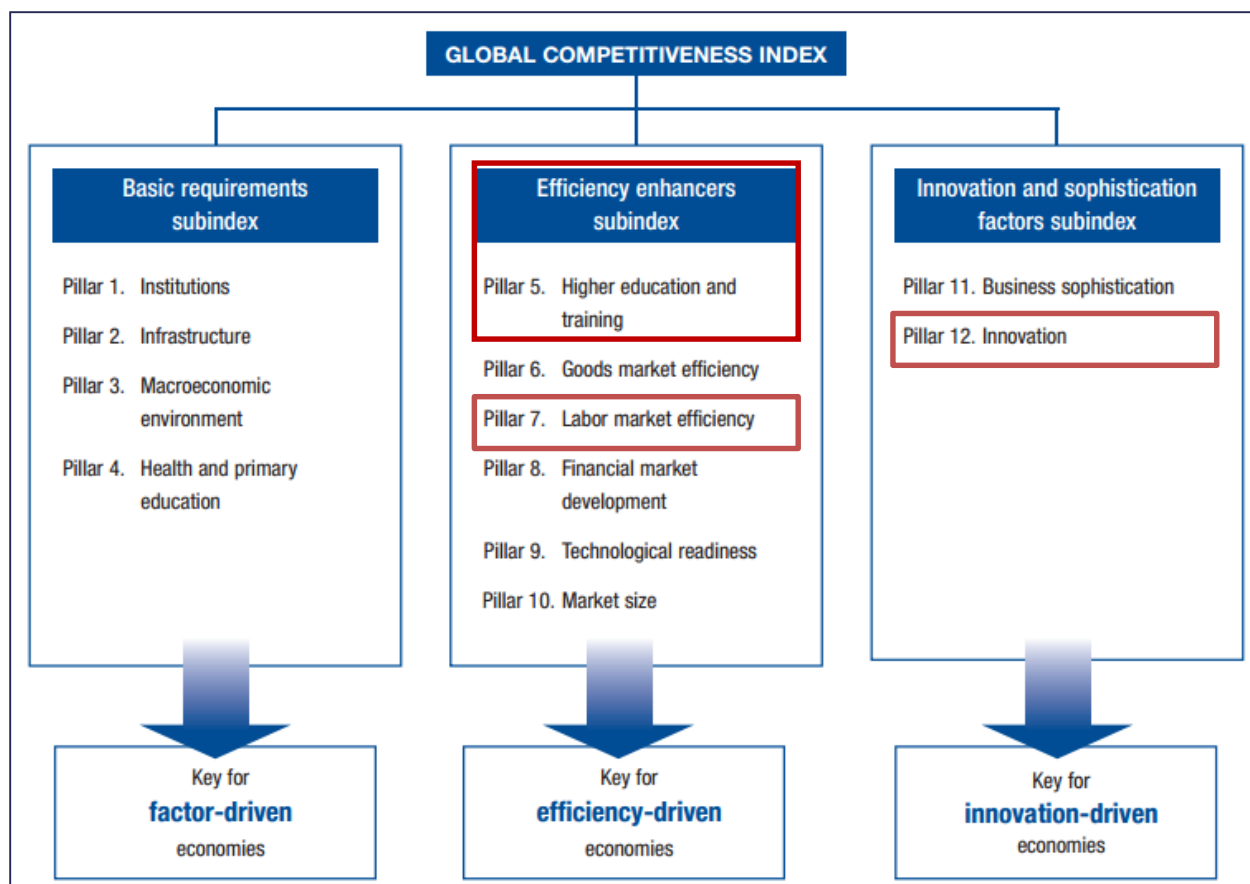


Figure 10: Global Competitiveness Index Framework 2015-2016<sup>39</sup>

The following table indicates the results of the GCI 2015-2015, per pillar and sub-pillar for Lebanon, concerning the supply side of innovation, highlighting (in yellow) the weaknesses of the country.

Table 11: The results per pillar and sub-pillar for the GCI 2015-2015 of Lebanon (supply side pillars) highlighting (in yellow) the weaknesses of the country

GCI 2015-2016			
Pillar Nb. In the Framework	Sub-pillar	Value (1-7, unless indicated otherwise by an asterisk*)	Rank (out of 140 countries)
<b>5. Higher Education and Training</b>		<b>4.5</b>	<b>58</b>
	5.2. Tertiary education enrolment, gross %*	47.9	54
	5.3. Quality of the education system	4.9	19
	5.4. Quality of math and science education	5.6	6
<b>7. Labor Market Efficiency</b>		<b>3.8</b>	<b>109</b>
	7.8. Country capacity to retain talent	2.6	122
	7.9. Country capacity to attract talent	2.4	127
<b>12. Innovation</b>		<b>3.1</b>	<b>95</b>

<sup>39</sup> World Economic Forum (WEF). (2015). *The Global Competitiveness Report 2015-2016*. Geneva, Switzerland

	<i>12.1. Capacity for innovation</i>	<i>4.3</i>	<i>45</i>
	<i>12.2. Quality of scientific research institutions</i>	<i>3.3</i>	<i>98</i>
	<i>12.3. Company spending on R&amp;D</i>	<i>2.9</i>	<i>103</i>
	<i>12.4. University-industry collaboration in R&amp;D</i>	<i>2.9</i>	<i>118</i>
	<i>12.5. Government procurement of advanced tech products</i>	<i>2.6</i>	<i>132</i>
	<i>12.6. Availability of scientists and engineers</i>	<i>4.8</i>	<i>27</i>
	<i>12.7. PCT patents, applications/million pop*</i>	<i>1.7</i>	<i>59</i>

The mismatch between the underperformance of the R&D system and the potential of Lebanese creativity and talent is further emphasized in the above table, whereby availability of scientists and engineers scores high (4.8 out of 7) but is met with low scores for company spending on R&D (2.9 out of 7) and more importantly, low university-industry collaboration in R&D (2.9 out of 7). Furthermore, the need for Diaspora to collaborate is also apparent with low capacity to attract and retain talent in the country.

Therefore, the GII 2016 and GCI 2015-2016 results are key driving tools towards the enhancement of the knowledge productivity in Lebanon, leading to the following set of policy measures.

## 7.6. Policy Measures to Enhance KGTP

The objective of the policies listed below is to enhance the overall knowledge and technology generation capabilities.

In Lebanon, R&D is conducted in universities. It has been shown from different indicators that the performance of these universities remains extremely weak. In this section, a certain number of policies aiming to enhance the innovative research capabilities of the Lebanese universities are suggested.

### 7.6.1. KTG Policies at the Level of the Government: The Role of MoEHE and CNRS

The CNRS, one of the most important Lebanese agencies in designing, implementing and funding science and technology strategies, should be involved in the process of controlling the enactment of this law. This will assist in monitoring and evaluating the real allocation of these budgets to research.

**Practically, a council formed of representatives of the universities and including members of CNRS , MoEHE and external experts should be formed to follow up this matter, provide advice for universities and recommend sanctions when or if necessary . This council should reports to MoEHE.**

Besides this governance-like measure, it is important to find the right mechanisms to assist the universities in promoting innovative research. In the section below, a set of policies and measures that ought to help universities achieve this goal is specified.

### 7.6.2. Strengthening the Pivotal Role of CNRS

Additional measures can be taken by CNRS to enhance Lebanon's capabilities in terms of innovative research. CNRS is clearly the pillar of research activities. Its role should be strengthened and extended. Adequate financial means and the required workforce should be

allocated to it. More precisely, the research, development and innovation landscape is changing very quickly due to the transition of the world from an industrial era to a knowledge era.

Accordingly CNRS needs to adapt itself to this major transformation. One of the most important changes emerging is that research is not performed in universities alone anymore, but it is taking on a more collaborative effort involving a variety of actors including not only universities but also, for example, private firms and independent research centers. Hence, the mandate of CNRS in supporting university research mainly should be extended to cover a wider range of organizations involved directly in conducting research. Below is a list of measures CNRS may take to increase the quality and scope of research in Lebanon:

- **Promoting national collaboration.** ARUs initiated in 2010 are a very important instrument to encourage collaboration among Lebanese universities. Higher budgets could be allocated to ARUs and streamlining the procedures in receiving and spending funds could be useful.
- **Promoting regional collaboration with MENA countries.** MENA countries are a big reservoir of competencies and talents that could be very useful in mobilizing a critical mass of researchers around a new research project. They constitute a huge market to absorb research, with high potential for commercialization. One example of such collaboration could be toward the creation of an Arab Specialized Research Fund focusing on a specific domain, such as the Computational Arabic Language.
- **Promoting collaboration with Diaspora.** Diaspora can play a pivotal role in supporting the LNIS. In terms of strengthening the KGTP, a **Portal is suggesting, having in its core a database of all Lebanese scientists around the world, allowing connectivity and access to competencies and international collaboration.** CNRS can host such portal.
- **Promoting collaboration with a wide range of international organizations.** CNRS and MoEHE have been very active in creating strong bonds with organizations such as AUF, ESCWA, World Bank, and the EU. It is crucial to develop these relations and extend it to Asiatic and American countries.

### 7.6.3. KGTP Policies at the Level of Universities

- **Promoting research and innovation** by considering two types of professors, 1) the education-oriented, and 2) the education-and research-orientated. For the second type, they should be released from a certain number of credits allowing them to dedicate more of their time to research. Most of the Lebanese universities assign 12 credits for teaching to a full time professor. This is clearly a heavy load. Reducing this load to 6 for research-oriented professors would be an important step forward in supporting the research and innovation capabilities of the university.
- **Academic promotion rules.** The promotion rules should be adapted to encourage research-and education-professors by taking into consideration their innovative research output.

This consideration would look at indicators like patents, research collaboration, projects with other universities or with the industrial sector. In the current situation, the main criteria looked at with regards to the promotion of professors is the number and quality of publications and the satisfaction of the students. This approach does not encourage collaboration with other researches or with the industry and other sectors of the economy. It leads to an individualistic approach to research which is not efficient and, for this reason, is no longer practiced anywhere in the developed world.

- **Extending the function of university laboratories.** Laboratories in the Lebanese universities are mainly used for teaching purposes. Besides this important activity, new labs with clear innovative research orientation should be established. This requires access to funds and human resources. The universities themselves could fund these laboratories, but a new mechanism of funding should be introduced through either private or public funding agencies or a combination of both.

The CNRS can play an instrumental role in this respect. For example, the CNRS can channel funds not only to individual researchers or teams of researchers but also for setting up laboratories. This can contribute to better control over university spending on research and integrate these expenses into the global national strategy designed by CNRS. In this light, this equipment should be tax free.

- **New careers opportunities for professional researchers and research technicians at the university.** Concerning human resources, it is important that universities consider other types of hiring than professors and administrators. It is crucial to have new functions such as researchers with its specific carrier path in addition to technicians helping and supporting the research activities within the labs. The position of researcher is another means to reverse brain drain and anchor researchers in Lebanon that will serve and enhance the performance of the LNIS. Technicians are crucial for conducting innovative research. Taking care, maintaining and using sophisticated equipment needs highly qualified technicians. They are also essential in the fabrication process of new prototypes. One important and non-negligible side effect of such a measure would be in improving attractiveness of technician careers. Another positive side effect is contributing to reversing brain drain by providing job opportunities for researchers.
- **Launching challenging innovative research programs.** Based on priorities or opportunities identified by researchers, entrepreneurs, universities, industries or government, new research programs can be launched within the universities, across them or on a collaborative level with different actors or stakeholders involved with the objective of such research program.
- **Research centers.** In Lebanon, there are 7 research centers. It is important to increase the numbers of such centers, which are places in which researchers from diverse universities and different horizons can collaborate and produce innovations. The current problem of mobilizing a critical mass of researchers and focusing their effort on specific types of innovations is a very important drawback in the LNIS. Establishing more of such centers can therefore help overcome these challenges.

#### 7.6.4. Policies to Enhance the Ecosystem Supporting KGTP

In order to improve the efficiency of the research and innovation generation, the ecosystem interacting directly with it should also be supported. Below is a list of policies that can help nurture this ecosystem.

- **Encouraging the culture of innovation and creativity in schools.** The Lebanese educational system follows a very conventional approach, in which creativity is not encouraged. It is of critical importance to overhaul the educational system so that the creativity of pupils can be enhanced. This is a long term policy that could be implemented gradually and iteratively in some schools after a period of maturing concepts and ideas.
- **Encouraging associations and foundations to support Ph.D. students.** Many associations are supporting students in getting their Ph.D. It is recommended to increase the number of students benefiting from such support and hence indirectly supporting the Ph.D. scholarship programs managed by CNRS.
- **Providing training courses and certificates in managing research programs.** Managing collaborative research programs is becoming more and more specialized and sophisticated and because of this it requires advanced skills. Providing the opportunity for future lab directors or research program directors with the opportunity of acquiring these skills through well-defined curriculum prepared by universities or CNRS is crucial for support at the managerial level research and development in Lebanon.

### 8. Strengthening the Business Climate - Support of the Innovation Demand Side

Unless innovations are translated into goods and services they remain useless and disconnected from the economic and societal needs with no impact on growth and prosperity. The sustainability of innovation production is strongly linked to the market unmet or latent demands.

In this section, we will examine the role of the key agencies involved in supporting the growth of the private sector, or regulating its activities. We will focus on IDAL, Lebanese Petroleum Administration (LPA) and LIBNOR. Then we will discuss the legal framework focusing on tax regulations. We will examine tax incentives measures as a mean to boost demand for innovation and engage the SMEs in the process of innovation. We will expose some international practices showing the variations in this respect before recommending for Lebanon what seems to be the most adequate set of policies to support the Innovation demand side.

#### 8.1. The Business Climate and Access to Finance: Are the SMEs the Main Innovation Driver?

**Structure of the Lebanese Private Sector.** According to World Bank, the “private sector in Lebanon is dominated by small firms where more than 99 percent of all private enterprises have fewer than 50 employees, of which 93 percent have fewer than 5 employees. Lebanon has also established itself as a creative hub for the MENA region. In 2011, services accounted for 79.7 percent of GDP and 70 percent of the labor force” (World Bank, 2014).

Relative to other countries in the MENA region, Lebanon does well in terms of lending to SMEs. These results are largely due to the multiple incentive programs and support to SME lending provided by the government of Lebanon and BDL since 2000. These initiatives include subsidizing interest payments of SME borrowers, extending special guarantees to SMEs, and granting exemptions on compulsory reserves of creditors. Initially focusing on projects in agriculture and industry, these schemes were gradually expanded to include other sectors such as information and communication technology, environment and energy-efficient projects, and tourism and housing industries. According to the same World Bank report (ibid), the current financial environment leaves three substantial gaps in Lebanon's innovation system. **The first gap is funding at the early concept stage where entrepreneurs need to develop their ideas into a viable concept and product; the second and third gaps are related to the absence of seed and early stage venture finance, respectively.**

**Strong Vitality of the Industry.** Despite the weak support from the government, and tough business condition, manufacturers are able to compete internationally. A study conducted by Atallah and Srour in 2013 shows the following:

- Exports per capita doubled between 2000 and 2007, from \$600 million to \$1.25 billion
- Exports as a percentage of GDP rose from 14 percent in 2000 to 25 percent in 2007
- Lebanese industrialists manufactured 103 new products between 2000 and 2008, of which 40 were highly sophisticated. These include ceramics, glass pigments, self-adhesive plates, paper board, and glasses for spectacles, watches, spoons, forks, clock cases, and watches, among other goods
- The overall level of export sophistication witnessed a substantial increase of 36% from 2000 to 2008

These observations confirm the necessity to consider innovation as a main driver for Lebanese enterprises to compete internationally and hence the importance for the government to support innovation more directly in the industrial sector to sustain such success.

## 8.2. Entrepreneurship as a New Economic Sector

In the world today, innovation has become the forefront of economic development and competitive markets in countries. The main driver of innovation is without a doubt the multi-faceted human factor that incorporates actors such as schools, institutions, industry, R&D, funding, markets and government. These actors are collectively essential for providing knowledge and promoting entrepreneurship in specific (Idlebi, 2014). The latter has gradually become a new economic sector to watch out for. Entrepreneurship essentially creates new businesses, which in turn adds to national income.

New employment is created as a result of new goods and services, which add to further economic development. Given that entrepreneurial ventures generate wealth, increased employment and higher earnings contribute to improved national income. In turn, higher revenues generated can be used to invest in other sectors that may be considered lagging, such as human capital.

Entrepreneurship also creates social change and enhances community development. New goods and services that move away from tradition and enhance creative and innovative freedom allow

for a reduction in the use of obsolete systems and technologies which overall result in a better quality of life, better morale and economic prosperity (Shobhit, 2016). Furthermore, entrepreneurship is tied to supporting community projects and providing support financially to charities and organizations.

On the other hand, key challenges to the emerging market for entrepreneurs is the 1) high cost of failure, 2) lack of role models and mentors, 3) limited management expertise, 4) lack of trust and 5) limited access to smart capital (Endeavor Lebanon, 2016).

### **8.3. The National Authorities and their Potential Role: The Central Role of IDAL**

In 2001 a law on the promotion of investments in Lebanon, Law No. 360, was promulgated establishing the National Administration for the promotion of investments, named the **Investment Development Authority of Lebanon (IDAL)**. In Article 6, paragraph 12 of the Law No. 360, it is stated that the IDAL is responsible for “participating in the capital of joint-stock companies for the establishment and management of incubators to support innovators in the field of technology, information technology, communication, and other sectors” (IDAL, 2001).

More recently, IDAL had announced in 2011 that amendments were to be made to the Investment Law No. 360, in order to align current legal frameworks with national and international needs. IDAL stated that given Lebanon’s technological advances in industry since 2001, the law would have to be amended to focus on investments that are dominated by “technology-oriented industries and by industries with higher use of technologies and innovation” (Economy and Ecology Online, 2011). In fact, in the period between 2003 and 2010, IDAL had created 4,760 jobs, with projects within the industry sector accounting for 17% of the total investments made during this period (Economy and Ecology Online, 2011).

There are no tax schemes or direct measures to promote business R&D in Lebanon. However, there are other existing incentives applicable to investment projects that are dictated by the Investment Law of Lebanon. **Law No. 360 dated August 16, 2001**, last amended in 2011, divides Lebanon into three investment zones, with each zone eligible to receive different incentives (Article 10 of Law No, 360). Areas falling within Zone A (coastal area), B (center) and C (north and south) benefit from the exemptions, reductions and facilities that are mentioned in Article 11, 12, 13 of the Law No. 36, respectively (OECD MENA, 2007; IDAL, 2001).

Furthermore, the **Association of Lebanese Industrialists (ALI)** has played a key role in the promotion of innovative SMEs and other enterprises by coordinating with a number of financial organizations and entities to support industrialists. One such example is the cooperation of ALI with the Lebanese American University Continuing Education Program (LAU-CEP), which is working on setting up programs to help industrialists/enterprises develop skills, knowledge and abilities that are needed for them to compete in local and international markets. Additionally, the ALI is cooperating with BLOM Bank to offer businesses financial support in order to encourage a thriving and productive sector (ALI, 2012).

Over the years, particularly after 2005, attention shifted in Lebanon towards SMEs and more considerably towards entrepreneurship. The role of Lebanon’s different ministries involved in

the support and promotion of innovative SMEs has been significantly highlighted. One such ministry is the Ministry of Economy and Trade (MoET).

The MoET coordinates with a number of organizations and programs, such as the following:

- **Lebanese Industrial Research Achievements Program (LIRA)** – provides networking and R&D services targeted to all SMEs that seek R&D to advance their industry, within the industrial and technological sector
- **Center for Innovation and Technology (CIT)** – established to secure sustained support and innovation to manufacturing industries. Main services include networking in terms of matching academia with industrial SMEs, training, and access to funding for research. All sectors are targeted with focus on local industrial SMEs and universities as well as individual researchers and research institutes (MoET, 2015b).

### **The Lebanon Petroleum Administration (LPA)**

The LPA, established in 2012, is in charge of managing the petroleum sector in Lebanon with the main objective of creating the best possible “value for the economy and society resulting from the activities undertaken in the oil and gas industry while protecting the environment” (LPA, 2014a). The functions of the authority are performed in coordination with international organizations, academic and civil societies as well as other government entities. Through a transparent and sustainable process, the LPA is responsible for the following tasks:

- Preparing studies promoting the potential petroleum resources in Lebanon
- Reporting to the Minister of Energy and Water on the evaluation results of the qualifications and capabilities of bidders seeking to obtain petroleum rights
- Preparing the invitations to bid, the specifications, the relevant permits and the agreements related to the Offshore Petroleum Law
- Supporting the Minister of Energy and Water in the negotiation of the terms of the exploration and production agreements with the companies and presenting the results of the reports to the Minister of Energy and Water to support in final decision making at the Council of Ministers
- Managing, following up, supervising, and monitoring all petroleum activities, ensuring proper implementation of the licenses and agreements, and reporting the results regularly through quarterly reports for approval by the Minister of Energy and Water
- Evaluating plans for field development, petroleum transportation, decommissioning, and removal of facilities
- Managing the data associated with the petroleum activities
- Handling and managing the petroleum register

There are six main technical departments within the LPA:

1. Strategic Planning
2. Technical and Engineering
3. Geology and Geophysics
4. Legal Affairs
5. Economic and Financial
6. Quality, Health, Safety and Environment



The Law 132 of 2010, known as The Offshore Petroleum Resources Law (OPRL) applies to “petroleum activities within territorial waters and waters of the Exclusive Economic Zone (EEZ) in connection with Hydrocarbons subject to Republic of Lebanon jurisdiction”. Moreover, the Petroleum Activities Regulation is present within the decrees of the OPRL, which essentially regulates “the legal representation of the right holder, the management system, the general duties of the operator and the right holder, the strategic environmental assessment, the exploration and production rights, the petroleum production and transportation, and the cessation of petroleum activities and decommissioning”, among other activities (LPA, 2014b).

### **8.3.1. Regulatory Authorities in Lebanon**

#### **LIBNOR**

LIBNOR, the Lebanese Standards Institution, was established in 1962 and is a public institution attached to the Ministry of Industry. LIBNOR is entrusted to prepare, publish and amend national standards by means of its appointed technical committee. Even though Lebanese standards are considered voluntary by nature, some may be made mandatory by a decree from the Council of Ministers, given public health, safety and national interest purposes. LIBNOR is a member of the International Organization for Standardization (ISO), as well as a number of other international organizations (ex. the Arab Industrial Development and Mining Organization (AIDMO), the Association Réseau Normalisation et Francophonie (RNF), an Affiliate Member of the European Committee for Standardization (CEN), as well as the Codex Alimentarius Contact Point in Lebanon (LIBNOR, 2014c).

LIBNOR’s main mission is to 1) improve the quality and safety of products, services and organizations, 2) protect the environment and the well-being of society in Lebanon, and 3) enhance economic development and business competitiveness, by developing and promoting consensus based standards, training programs and conformity assessment schemes (LIBNOR, 2014a).

Examples of decrees governing the institution are seen below (LIBNOR, 2015):

- **Decree No. 14293 (2005)** – Requirements for General Safety in Buildings, Facilities, Elevator Equipment, Fire and Earthquake Prevention
- **Decree No. 5412 (2010)** – LIBNOR Employees
- **Decree No. 5382 (2010)** – Mandatory Construction Standards
- **Decree No. 10155 (2013)** – Mandatory Medical Devices Standards
- **Decree No. 11404 (2014)** – Mandatory Concrete Standards

LIBNOR functions under a firm Quality Policy (Quality Management System), whose key role is to enhance, by means of standardization, the quality and safety of products and services with an aim to ensure their competitiveness in domestic and international markets, while satisfying consumer needs and ensuring their health and safety (LIBNOR, 2014b).

## 8.4. The Legal Framework to Support SMEs

In Lebanon, the main taxation scheme is related to income taxes, divided among three categories, 1) corporate tax on profits, 2) tax on wages and salaries (payroll taxes) and 3) tax on income from moveable capital.

In terms of tax incentives offered, developing countries such as Lebanon tend to offer more tax holidays and import-duty exemptions and drawbacks after reduced base income tax rates, as opposed to developed countries, as discussed in the previous section.

This is particularly the case for Lebanon, where tax holidays are the common form of tax incentives that exists in the country. By definition, tax holidays are temporary exemptions or elimination of tax for a certain period of time. The tax holiday in Lebanon is set at 10 years with only a reduced corporate income tax specific to certain locations.

In the Lebanese context, the value-added tax (VAT) applies to imports and the supply of goods and services carried out by a taxable person. The rate is 10% with several goods and services exempted from the tax (IDAL, n.d.).

Within the Lebanese context, the enterprises that can benefit the most out of promoting innovation through R&D stimulation are the SMEs. Unfortunately, at the moment, there are no specific aid schemes or tax incentives, as enjoyed in other developed countries, aimed at encouraging R&D in SME's.

However, there are certain tax exemptions applicable to SMEs that can be beneficial, but do not fall under the umbrella of tax incentives for innovation. For example, small businesses with turnover below 165,000 USD per year are exempt from paying the VAT (value-added tax). Still, there has been increasing support for innovative SME's on behalf of governmental and non-governmental entities.

### 8.4.1. Customs in Lebanon

Keeping in line with the legal framework that supports SMEs in Lebanon, custom proceedings and laws are relevant to the R&D context in regards to the import and export of good and services (equipment, technical utilities, etc.). The Lebanese Customs Administration is the entity “responsible for ensuring that all goods and persons entering and exiting Lebanon are in accordance with relevant laws and regulations. The Customs Administration collects and protects a major component of government revenue” and is in charge of the following main tasks:

1. Collection of Customs duties, Excise taxes, and Value Added Tax in a fair and accurate manner
2. Prevention of smuggling and detection of fraudulent practices against Customs and related laws
3. Clearance of persons, their baggage, cargo, and mail
4. Protection of the general welfare of Lebanon by enforcing import and export restrictions and prohibitions
5. Provision of accurate international trade statistics for the public and trading community

(Source: *Lebanese Customs webpage*  
[http://www.customs.gov.lb/customs/laws\\_regulations/Customs\\_law.asp](http://www.customs.gov.lb/customs/laws_regulations/Customs_law.asp) )

As is observed in multiple sectors, customs in Lebanon are not immune to the debilitating effect of corruption that is exercised by the Lebanese government. As is described by Wickberg (2012), “the Lebanese administration is burdensome and ineffective due to corruption and lack of resources” and the inefficient bureaucracy of the government has scored as the second most important obstacle for doing business in the country, which encourages the use of bribery to speed up or “grease” processes, according to the WEF Global Competitiveness Index.

Moreover, the customs authority in Lebanon was reported as the institution that demands the most ‘petty’ bribes, which documented customs transactions as a widespread problem. Customs procedures rank among the poorest scores, as stated by the WEF Global Competitiveness Index. In fact, more than “one out of three citizens admits having paid a bribe in the previous year, with customs” as well as with the registry and permit service, the police and the judiciary system, as reported by the Transparency International’s Global Corruption Barometer 2011 (ibid).

Overall, the customs proceedings in Lebanon are a taxing issue faced by many industries and businesses, as seen for documentation, time to import and export and cost.

**Documentation.** Under import proceedings, the number of documents needed goes up to 7, if not more, taking into account certificates of origin used for applying preferential tariff rates, as compared to 5 documents needed in the UAE, for instance. This is the same with export proceedings, whereby 4 documents are needed as compared to 3 in the UAE. Very often these reporting requirements are time-consuming, confusing and overlapping for traders.

**Time to Import and Export.** Exceeding the worldwide average number of days to import (24.2 days) and export (21.8 days), Lebanon is considered one the highest time-consuming import-export country, with 30-day imports and 22-day exports, as compared to 5-day imports in Cyprus and 7-day exports in the UAE.

**Costs.** Import and export costs<sup>40</sup> are also high in Lebanon (import costs equal 1,365 USD; export costs equal 1,080 USD) but do not exceed those reported for the world average (import costs equal 1,823 USD; export costs equal 1,515 USD).

However, these costs do not factor in bribes (to and among customs officials), which means that the cost to import and export is in reality much higher in Lebanon than the figures reported by the World Bank. Still, to some extent, bribing may have a “positive impact on reducing the time to trade by speeding up documentation procedures and administrative controls and may also reduce costs associated with inspection charges and storage fees at ports”.

(Source: *Nouayhid, 2014*)

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<sup>40</sup> Import and exports costs to the United States

#### 8.4.2. Exemptions within Customs Proceedings

The Customs Law, Decree No. 645 of 1999 (Ministry of Finance) covers the temporary suspension of customs duties imposed on imported goods used in production for the purpose of re-export.

Specific entities that are exempted from the custom fees include the imports of machinery and equipment, spare parts and building materials used who are subject to the establishment of new industrial enterprises in Lebanon for the customs tax increase of 3%, as well as imported equipment and products for development projects wholly or partially funded by foreign sources. Similar exemptions apply to imports falling under the classification of "temporary entry", "industrial warehouses" and the classification of "free zones".

#### 8.5. Intentions to Boost Private Demand for Innovation: The Tax Incentives Draft Law

Tax incentives have become a popular policy instrument to boost research and experimental development (R&D) activities of businesses. They offer a reduction to a firm's tax burden depending on the volume, or increase, of the expenditure the firm devoted to R&D. The popularity of this instrument arises from the fact that it is rather simple to implement through the existing system of corporate taxation, implying low additional administrative costs both at the side of authorities and firms. While increasing the volume of R&D activities is the primary objective of R&D tax incentives, Governments also often expect impacts on the competitiveness of their industry, and regard fiscal incentives as a tool to improve the international attractiveness of their country as a location for innovation. The policies mentioned in the annex are mainly fiscal in nature, providing subsidies and import protection. The objective of such policies is to increase investment in the industrial sector, improve the quality of goods and overall competitiveness. These measures have an indirect impact on R&D and innovation. One Draft Law (No. 144) mentions directly R&D and could be considered as a direct incentive to encourage Lebanese enterprises investing in R&D. These measures were strongly criticized for not addressing the real problems of the industrial sector such as high electricity costs, poor infrastructure, and inadequate monopolized market structure.

**It seems to be the opinion of industry experts that the announced measures are unlikely to solve the Lebanese industry's problems. It is pointed out that these measures:**

- Address isolated issues, in an ad hoc manner, favor more influential players,
- Do not face the infrastructural problems challenging the industry growth such as cost of transportation, energy
- Fail to link fiscal and trade support to the performance outcomes of firms.

R&D tax incentives aim to encourage firms to perform R&D by reducing its costs. Compared with direct subsidies, R&D tax incentives allow firms to decide the nature and orientation of their R&D activities, on the assumption that the business sector is best placed to identify research areas that lead to business outcomes. R&D tax incentives are market-friendly instruments that are by nature more neutral than direct support instruments.

But for the government, supporting and creating the environment for innovation is for sure a win-win situation, because the long term fiscal gains resulting from tech- advance pay off from the short term expenditures, provided that the government and the ministry of finance develop long term views.

### 8.6. International Best Practices to Stimulate Demand for Innovation

One has to distinguish two types of innovation demand in order to design efficiently a set of policies in this area:

- Triggered demand, where consumers, industries or government formulate a specific need and ask for new products , improved services or societal challenges
- Responsive demand, which corresponds to adopting, diffusing and integrating usages of existing innovations such as smart phones

According to many studies the most popular demand side policy instruments fall under the following categories:

- **Policies stimulating demand in general.** These policies may include national industry protection, import substitution, export promotion to satisfy global demand
- **Governmental procurement.** Public procurement of innovation can stimulate innovation in certain areas. Pre-commercial procurement and market lead measures are among the powerful tools encouraging the adoption of new technologies in strategic areas
- **Direct Support to private demand.** It may include direct subsidies to purchase innovative technologies and tax incentives, a measure we will discuss in details in the following section
- **Indirect support for private demand** such as information campaigns, awareness raising measures

Innovation is an effective tool that is used to improve national competitiveness and maintain jobs. Research and Development (R&D) is a key component of a country's innovative advancements. The growth performance of countries and the intensity of their R&D sector are dependent on the amount of funding given to business research (Zeting, 2013). Various policy instruments are used to show support for innovation, such as targeted funding, tax incentives, government loans, and the creation of proper infrastructure for innovation.

In reality, tax incentives, essentially defined as “ways of reducing taxes for businesses and individuals in exchange for specific desirable actions or investments” (Community Tool Box, 2015), play an important role in promoting innovation through R&D stimulation and have become widely adopted by multiple countries. Given as tax incentives are an indirect form of governmental support to boost R&D activities, several countries have exhibited that indirect support through tax incentives exceeded direct funding (i.e. governmental loans and grants) (Liakhovets, 2014).

Tax incentives are dependent on the volume of the expenditure for R&D activities in a given firm and offer a reduction to a firm's tax burden (Kohler, Laredo and Rammer, 2012). Thus, tax

incentives for R&D are especially important for developing countries due to the fact that 1) they are simple to implement through the existing system of corporate taxation, 2) R&D tax incentives do not burden the budget of research ministries, and 3) they can easily be altered in size and scope without much change in the resources used to run a specific R&D activity (Kohler *et al.*, 2012).

### 8.6.1. Types of Tax Incentives

As significant as tax incentives are to the propulsion of innovation, there are limitations to the extent of which tax incentives are used. For example, tax incentives tend to potentially incur very high costs for governments, to the extent where costs are difficult to determine in advance. As stated by Kohler *et al.* (2012), this is “particularly true for volume based tax incentives that offer tax reduction for any amount of R&D spending”, but also add that “governments can limit these costs by opting for an incremental tax incentive that provides tax reduction only for the amount of R&D expenditure that exceeds a certain baseline”.

Effectively, there are **other forms of tax incentives** that may act as better alternatives in comparison.

According to Palazzi (2011), the majority of countries implements “R&D tax credits or special allowances for R&D expenditure or accelerated tax depreciation allowances”. Other more generous forms exist as “additional deduction, in excess of the immediate expensing of the invested amounts, as a percentage of the actual R&D investment expenses”. Moreover, countries have also reduced the labor taxes on “gross earnings of employees involved in the creation of intangibles, for instance by levying reduced employer social security contributions” (Kohler *et al.*, 2012).

### 8.6.2. Controversies Related to Tax Incentives

Even though tax incentives are in general advantageous to encourage investment in innovation for both emerging and established enterprises, they are met with a number of controversies and skepticism. The main point of controversy lies in the very definition of R&D and the related expenses that would qualify for tax benefits (Kuhn and Dolder, n.d.).

Controversy also surrounds the identification and measurement of tax expenditures (Reynolds and Steuerle, 2009). As such, some consider that tax incentives, which are in other words a form of tax expenditures, are spending items that should not belong in the tax code or tax scheme of a country. Other opinions state that they are a way of reducing taxes. Given this, tax incentives can therefore be viewed positively or negatively, depending whether or not they are serving a legitimate public purpose in the best way possible (*ibid*).

The size of the tax benefit is too often linked to the taxpayer’s marginal tax bracket, and thus in some cases, the larger the expenditure dedicated for R&D, the higher the tax benefits, which creates skepticism regarding where the funds/benefits are actually being directed and if they are truly being used for R&D and or under false pretenses.

Tax incentives work through deductions or other approaches that link the size of the tax break to an enterprise’s marginal tax bracket. This indicates that higher-income taxpayers receive higher incentives than lower-income payers. While such an approach is useful in deductions for

business expenses, it misses an important opportunity to increase efficiency and economic growth, by excluding the category of businesses and individuals with lower-incomes. Therein lies a major controversy whereby the provision of larger incentives to higher-income firms is considered economically inefficient, unless policy makers and governments have a means to determine that such firms are responsive to the incentive or that the provisions are indeed stimulating behavior and action that generates larger benefits for innovation (Batchelder, Goldberg, and Orszarg, 2006; Batchelder *et al.*, 2006).

Thus, a better alternative to this problem would be to set the default for all tax incentives intended to promote socially-beneficial behavior (i.e. promote innovation) as a **uniform refundable tax credit**. Unlike tax incentives, which link the size of tax break to a marginal tax bracket and fail to reach the increasingly significant share of low and moderate-income taxpayers, refundable tax credits represent a different approach.

Stemming from the premise that they are a credit governed by a dollar-to-dollar approach, tax credits do not depend on a marginal tax bracket. For example, if there is a tax credit of 1 USD, then the reduction of the tax is by 1 USD, regardless of the tax bracket. Moreover, given the fact that they are a uniform refundable tax credit, the benefits are applicable to all levels of taxpayers. Thus, this increases the range of which tax credits can be applied to, especially in the industrial sector, where there is a multitude of small to medium to large scale industries and enterprises.

Knowing this, there is a continuing concern in regards to R&D tax incentives concerning the possibility of tax evasion or fraud by companies. Therefore, as a method of avoiding spending R&D investments in non-R&D activities, countries should undertake provisions and adopt rules for separating expenditure designated for R&D from other normal annual spending. This ultimately helps countries to prevent firms from evading or avoiding taxes by claiming unwarranted R&D tax relief (OECD, 2002).

To summarize the various forms of tax incentives that exist, a comparative table of the advantages and disadvantages of the general forms of tax incentives is seen below.

Table 12: Comparative table of common forms of tax incentives with examples of implementing countries

Form of Tax Incentive	Description	Advantage(s)	Disadvantage(s)	Examples of Implementing Countries <sup>41</sup>
Tax Credit or Special R&D Allowances	<ul style="list-style-type: none"> <li>- Amount of money that a <u>taxpayer</u> is able to subtract from the amount of tax that they owe to the government<sup>42</sup></li> <li>-Exists in 2 types: refundable and non-refundable<sup>43</sup></li> <li>- Currently the most widespread form</li> </ul>	<ul style="list-style-type: none"> <li>- Provides transparency and certainty (investor and government)<sup>44</sup></li> <li>- It is a fixed sum and thus does not provide any bias to capital-intensive investments</li> </ul>	<ul style="list-style-type: none"> <li>- Generally fall under the non-refundable type, which creates a distortion between the investment of new and established businesses, as only the latter will have profits against which to set the credit<sup>45</sup></li> </ul>	<ul style="list-style-type: none"> <li>France</li> <li>Australia</li> <li>Austria</li> <li>Belgium</li> <li>Ireland</li> <li>Italy</li> <li>Japan</li> <li>South Korea</li> <li>Spain</li> <li>Portugal</li> <li>United States of America</li> </ul>
Special Exemption of Wage and/or Social Taxes	<ul style="list-style-type: none"> <li>- Exemption from the employer's percent share of social security tax on all wages paid to qualified employees</li> <li>- Applies to wages paid to a qualified employee performing services in the</li> </ul>	<ul style="list-style-type: none"> <li>- Allows deduction on R&amp;D labor costs</li> <li>- Beneficial for startup companies and small scale enterprises</li> </ul>	<ul style="list-style-type: none"> <li>- Incurs costs to firms and government</li> <li>- Is not applicable to all employees</li> </ul>	<ul style="list-style-type: none"> <li>The Netherlands</li> <li>Belgium</li> <li>France</li> <li>Hungary</li> <li>Spain</li> </ul>

<sup>41</sup> Deloitte. (2014). *2014 Global survey of R&D tax incentives*. Retrieved on December 8, 2015 from <http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-global-rd-survey-aug-2014.pdf>

<sup>42</sup> Investopedia. *Tax credits*. Retrieved on December 7, 2015 from <http://www.investopedia.com/terms/t/taxcredit.asp>

<sup>43</sup> Refundable Tax Credit indicates that if the credit exceeds the amount of taxes owed, the excess is returned to the taxpayer, whereas non-refundable tax credits, which are the most common form, are only used to the point at which no more taxes are owed

<sup>44</sup> Easson, A. and Zolt, E. M. (2002). *Tax incentives*. World Bank Institute. Retrieved on December 8, 2015 from <http://siteresources.worldbank.org/INTTPA/Resources/EassonZoltPaper.pdf>

<sup>45</sup> Klemm, A. (2009). *Causes, benefits, and risks of business tax incentives*. IMF Working Paper 21, p. 1-28



	employer's trade or business or in activities in furtherance of a tax-exempt organization's exempt purpose <sup>46</sup>		- Can result in tax competition	
Accelerated Depreciation	<p>- Generally refers to any depreciation scheme that provides for writing off the cost of an asset, for tax purposes, at a rate faster than the true economic depreciation<sup>47</sup></p> <p>- Applicable for investments (machinery, equipment, buildings, intangibles) used for R&amp;D activities<sup>48</sup></p>	- Less costly than tax credits or allowances which beneficial for businesses already established who wish to increase investments, since it is the timing of the tax that is affected and not the amount of tax <sup>49</sup>	- Presents no benefit to new investments, where profits may not be made for a number of years	Belgium France Lithuania Russia South Africa

<sup>46</sup> Internal Revenue Service (IRS). (2015). *FAQs about the payroll tax exemption and qualified employers*. Retrieved on December 8, 2015 from <https://www.irs.gov/Businesses/Small-Businesses-&-Self-Employed/FAQs-About-the-Payroll-Tax-Exemption-and-Qualified-Employers>

<sup>47</sup> Easson, A. and Zolt, E. M. (2002). *Tax incentives*. World Bank Institute. Retrieved on December 8, 2015 from <http://siteresources.worldbank.org/INTTPA/Resources/EassonZoltPaper.pdf>

<sup>48</sup> Kohler, C., Laredo, P., and Rammer, C. (2012). *The Impact and effectiveness of fiscal incentives for R&D*. University of Manchester

<sup>49</sup> Easson, A. and Zolt, E. M. (2002). *Tax incentives*. World Bank Institute. Retrieved on December 8, 2015 from <http://siteresources.worldbank.org/INTTPA/Resources/EassonZoltPaper.pdf>

### 8.6.3. Examples of Tax Incentive Implementation

#### *France – Tax Credits*

According to a study conducted by Deloitte in 2014, France offers an R&D tax credit that is volume-based and can be carried forward for 3 years. In the event where the credit is not used within the 3 year period, the taxpayer is eligible for a refund. An example of the French government's support for a knowledge-based economy is the amount of research tax credit that increased from 1.4 billion Euros in 2006 to approximately 3 billion Euros in 2008 (Solignac, 2008).

At the beginning of 2013, France had implemented a new tax incentive called the "Innovation Tax Credit" for downstream activities, such as expenditures for new prototypes or pilot assets. This incentive was made available to Small and Medium sized enterprise (SMEs<sup>50</sup>). The tax credit rate is 20% and the amount of qualifying expenses is capped at 400,000 Euros a year (Deloitte, 2014).

#### ➤ *Hypothetical Practical Example of the Application of Tax Credit in France (Solignac, 2008)*

A company undertakes new R&D activities and incurs the following expenditures:

- ➔ Salaries and social security contributions for qualified employees<sup>51</sup>: 500,000 Euros
- ➔ Salaries and social security contributions of other research staff members: 3,000,000 Euros
- ➔ Subcontracting costs:
  - Invoiced by companies within the group: 1,000,000 Euros
  - Invoiced by public research organizations: 800,000 Euros
- ➔ Depreciation of R&D equipment: 50,000 Euros
- ➔ Other costs: 30,000 Euros

The total direct R&D expenditures therefore sum up to a total of: 5,380,000 Euros

By calculating 200% of salaries and social security contributions for qualified employees for a period of 24 months, the total expenditure for the salaries and social security contribution for qualified employees is  $500,000 * 200\% = 1,000,000$  Euros.

Moreover, by calculating 200% of subcontracting costs that are invoiced by public research organizations, the total expenditure would then amount to  $800,000 * 200\% = 1,600,000$  Euros.

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<sup>50</sup> Companies with less than 250 employees and sales less than €50M (applicable to France)

<sup>51</sup> Example of a qualified employee is a research doctorate holder or the equivalent

The following table summarizes the total expenditures and indicates the final amount of research tax credit.

**Table 13: Example of the application of tax incentives in France**

	<b>Example Year: 2010 (Euros)</b>
Total R&D Expenditure	<b>5,380,000</b>
<b>200% of salaries and social security contributions for qualified employees</b>	1,000,000
<b>Salaries and social security contributions of other research staff members</b>	3,000,000
<b>Subcontracting costs invoiced by companies within the group</b>	1,000,000
<b>200% of subcontracting costs invoiced by public research organizations</b>	1,600,000
<b>Depreciation of R&amp;D equipment</b>	50,000
<b>Other costs</b>	30,000
Total Expenditure Eligible for Tax Credit	<b>6,680,000</b>
<b>Rate</b>	30%
Amount of Research Tax Credit	<b>2,004,000</b>

***The Netherlands – Special Exemption of Wage Tax***

The WBSO (R&D tax credit) of the Ministry of Economic Affairs in The Netherlands is intended to provide entrepreneurs with an incentive to invest in research. The tax credit consists of a deduction from the payroll tax companies are required to pay on the wage costs of employees working in R&D.

In 2015, this is what is referred to as the ‘R&D withholding tax credit’ which amounts to 38% of the first 200,000 Euros of the R&D wage costs and 14% for the wage costs above 200,000 Euros. Start-up entrepreneurs can deduct 50% from the first 250,000 Euros of the R&D wage costs (Netherlands Enterprise Agency, 2015).

➤ ***Hypothetical Practical Example of the WBSO in The Netherlands (Netherlands Enterprise Agency, 2014)***

The number of hours worked in R&D and the hourly wage for R&D is taken into consideration when applying for an R&D tax credit. Below is a simplified example of how it works:

Table 14: Example of the application of tax incentives in the Netherlands

Hourly Wage = 20 Euros Allocated R&D tax credit = 35%			
	Allocated R&D Hours	Allocated R&D Wages (Euro)	Allocated Tax Credit (Euro)
R&D Declaration 1	850	17,000*	5,950*
R&D Declaration 2	950	19,000	6,650
R&D Declaration 3	500	10,000	3,500
Total Allocated Tax Credit			<b>16,100</b>

\*Example of wage calculation: 20 Euros hourly wage x 850 R&D hours worked = 17,000 Euros in R&D wages

\*\* Example of allocated tax credit calculation: Allocated R&D wages of 17,000 Euros x 35% Allocated R&D tax credit = 5,950 Euros

### ***South Africa – Accelerated Depreciation***

In South Africa, any capital expenditure that is incurred to develop or construct assets used to conduct qualifying R&D activities is considered qualified for favorable accelerated depreciation. As of October 2012, distinctions were made between new and established plants or industries. For example, for new or unused plant or machinery, reductions of 40% are made in the year that the asset is brought into use for the first time by the taxpayer and 20% in each of the three succeeding years of assessment, as opposed to 20% in the year that the second hand asset is brought into use, and 20% in each of the four succeeding years of assessment, for used plant or machinery (Deloitte, 2014).

### **8.7. Rationales of Demand - Side Innovation Policies in Lebanon**

We have listed below the most important arguments in favor of adopting demand side innovation measures in Lebanon:

- There is a deep gap between public policy and the needs of private actors. Policies and initiatives adopted such BDL circular are not specifically geared towards innovation although they have an indirect impact on it. Strengthening the linkages and synergies requires a better involvement of the private actors through specific measures encouraging them to ask and adopt innovations.
- Policy making in Lebanon has been, during the last decades, strongly biased towards academic research leading to poor performance and low impact on the real economy. An exploration of demand side innovation is needed to bridge this gap and create synergies in areas with high innovation potential
- We have seen previously that sophisticated offer for the domestic and regional market of the Lebanese industry has a distinctive specificity that one needs to consider in designing national policies. Sustaining such sophistication and reducing its production costs requires serious investments in innovation. This requires the right mix of policies that take into consideration industry demand and supply capacity.
- Lebanon is facing many crucial challenges such as energy supply, water resources management, waste management, humanitarian demining, population health, security. All these challenges are potential source of innovation demand. At the same time they require intensive technology

development with long term commitment and high level of uncertainty. Private sector players including bankers, investors and industrialists are clearly reluctant to finance this type of activities. Government can play a critical role in compensating this type of market failures by providing incentives, encouraging collaboration and enabling the different actors to increase and support their demand for innovation.

- In spite of the weakness of the Lebanese government, the public sector remains an important demand generator for services and products. Procurement decisions can influence to a large extent the innovation landscape provided a clear strategy considering innovation as an important factor of growth and prosperity is devised. Public procurement is at the center of demand-side innovation policy initiatives. The purchasing power of government can still pull demand for innovation.
- Lebanon cannot rely only on donations and external funds to finance its R&D activities and supply side innovation. In the long run this policy is not sustainable and to a certain degree may not serve the national interest and reduce the sovereignty of the nation. A better and wiser approach would be to build proper means to address the challenges and to count on Lebanese potential in developing competitive private sector and innovative research.

## 8.8. Key instruments for Supporting Innovation Demand

- **Policies Stimulating Private Demand for Innovation**
  - **New Tax Incentive Policy.** One method of expanding support for early stage investments would be to introduce tax incentives. However, given the controversies regarding the effectiveness of tax incentives in some cases, tax credits have been increasingly favored in lieu of tax deductions and other forms of tax reductions. Therefore, one recommendation in the context of Lebanon would be the implementation of tax credits versus tax deductions given the important differences between the two. **Applying a refundable tax credit is more highly recommended** given that businesses have an incentive to write off as many of their capital costs as possible. As such, in the context of developing countries, refundability is important in cases where the credibility of the government is questionable or suspect, as is the case in Lebanon. It has been well documented over the years that governance in Lebanon is significantly lacking, as is highlighted by the state's failure to implement its own policy provisions not to mention failures in enforcing the rule of law and regulation and the lack of cooperation between the government's own legal entities. Furthermore, there is a dominant socio-cultural constraint that Lebanon faces in regards to its capital-driven nature, whereby few individuals and firms are courageous or daring enough to take risks and form the grand visions essential to support and promote innovation in the country.

In such cases, uncertainty about future government actions will drive firms to discount funds received in the future from the government, as opposed to those received up front. Therefore the recommendation to implement refundable tax

credits is more appealing and valuable to firms than any equivalent present value of funds received through future tax reductions (Boadway and Shah, 1992).

- **Policies Stimulating Public Demand for Innovation**

Policies for innovation public procurement should be adopted basically through the National Authorities and Institutions most importantly:

- Measure for the Lebanese Petroleum Administration; a new industry is emerging.
- Measures for the Lebanese Army

## **9. The Linkages between the Innovation Supply and Demand Sides: Knowledge and Technology Transfer (KTT)**

KTT can generate important benefits for economic development. These benefits are embodied in knowledge spillovers and are realized through industry-science collaboration and technology transactions that can range from simple technical consultancy all the way to licensing of intellectual property. In general, by improving the process of knowledge transfer countries can foster innovation and thereby raise productivity, create better job opportunities, and address societal challenges. Unfortunately this component in the LNIS is completely neglected. We will explore in some details best practices in the world. Then we will examine some burgeoning initiative such as the AUB Technology Transfer Unit. We consider that a proper IPR regulation can help greatly and contribute strongly to building trust between universities and firms. Therefore we will discuss in this section the current IPR practice in Lebanon and how we can improve it. Finally we suggest some additional recommendations to strengthen this critical function.

### **9.1. How Technology Transfer is Practiced Internationally**

According to the University of Rochester Ventures (2015), the definition of technology transfer or “the process of commercialization”, in the academic setting, is stated as “bringing technologies to the marketplace”. Technology Transfer (TT) has now become mandated by governments for institutions that receive national funding for their R&D activities. In the context of universities, TT involves transferring knowledge and discoveries to the public by means of publications, educated students entering the workforce, conference exchanges, and relationships undertaken with industries.

The process of TT is accomplished by licensing IP to third parties (i.e. new or existing companies) that have the financial and technological resources to further develop and produce the various technological innovations that arise from such academic or research institutions for specific applications. As part of the licensing agreements, universities receive financial payments, as cash fees and/or as equity and/or as royalties on earned revenues, for the products or services that are licensed. The income thus received is distributed among the inventors and the staff members within the university departments and administration, all within a mechanism that works to channel income back into further research programs undertaken by the university (URV, 2015; AUB).

## 9.2. Why is TT Important for the NIS?

The importance of TT for the NIS of a country is embedded in the very definition of a NIS, which is essentially, the flow of technology and information among individuals, enterprises and institutions, which are all key players in the innovation process on a national scale. Therefore, the concept of a NIS rests on the idea that it is the links among those key players involved in innovation that is essential to improving technological performance. Thus, the importance of a NIS lies in the web of interaction between these players which is basically encompassed in the actual process of TT (Djamal, 2010). Each key player in the innovation process should feel the need to participate in the TT process in order to 1) enhance the prosperity and advancement of a nation, 2) make a positive impact on society, 3) achieve recognition and financial rewards, and 4) create educational opportunities for students and career opportunities for researchers and innovators.

## 9.3. What are the Enabling Conditions for Universities to Engage in TT?

The process of TT is dynamic, multi-faceted and involves the interaction of multiple actors. In order to achieve commercialization, there are key conditions or prerequisites that help universities be engaged in the process of TT. Such prerequisites include the following (World Bank and OECD, 2013a, d, e):

### 1. *The availability of infrastructure and skills*

The process of TT is not only dependent on the various hum and financial resources devoted to research, but also on the existence of physical and supporting infrastructure. This refers to the multiple facilities, tools, scientific instruments utilized by the scientific and technological communities as well as the host locations for emerging startup companies and other organizations involved in the process. Efficient communication and connection among the individual components of this infrastructure or ecosystem should exist and at the lowest costs possible in order produce the best results needed.

The establishment of Technology Transfer Units (TTU) is an example of infrastructure needed to foster the process of TT. This will be further discussed in a section below.

### 2. *The conditions, orientation, norms and incentives relevant to research*

One enabling condition for universities to engage in TT concerns the conditions, orientation, norms and incentives relevant to research. These include 1) **the patterns of researchers' contracts** (temporary vs. permanent positions, full vs. part time), 2) **the levels of salaries** (annual earnings, benefits, health insurance schemes, incentives), 3) **the working conditions** (distribution between research, teaching, and administrative work), and 4) **the available career progression and development opportunities** (early career research positions, level of responsibility, degree of independence and creative freedom, training schemes).

The above mentioned features relevant to research are important in the process of TT and in turn to innovation, given that “the combination of higher opportunities for career progression and research, a higher salary, and better working conditions

increase interest in research careers and facilitate the recruitment and attraction of talented or promising researchers, which should in turn increase the quality of research outcomes” (World Bank and OECD, 2013c).

### 3. *The availability of funds*

Financing TT and commercialization not only encompasses financing the processes and infrastructure (TTUs, proof of concept centers, early stage R&D support, licensing IP and prototype development, among others), but also financing the results such as supporting joint R&D with industries and investment in spin-off firms.

Financing of this nature usually falls within the following categories (World Bank and OECD, 2013b):

*Grants* – publicly funded vs. matching private sector funds with public funds

*Loans* – micro-financing vs. large scale loans

*Equity Investments* – venture/seed/angel funds

*Guarantees* – government guarantees for the initial investment amounts (reduces risk for private sector investors in high risk cases).

### 4. *The existence of a clear IPR system*

Intellectual Property is the basis of any innovation process, thus it is only natural that there should be a clear IPR system in place as a precondition in the engagement of universities in TT.

An efficient IPR system is a main pillar in the TT process in universities given that TT targets “require that universities are legally authorized to own IP created from publicly funded research (subject to certain government rights); to own spinoff companies; select independently their co-investors; procure goods and services according to good commercial practices rather than more stringent public procurement rules; and, hire and fire competitively and according to business needs” (Ibid).

This, however, is a sensitive issue given that most investments are funded by taxpayers and thus clear and transparent regulation is vital.

## **9.4. Technology Transfer Units in Lebanon: The AUB Case**

As mentioned previously, establishing TT Offices or Units (TTO or TTU) is a main mechanism for promoting TT and commercialization of IP. In Lebanon, this is currently being applied at AUB with the establishment of the Technology Transfer Unit (TTU) at the Office of Grants and Contracts (OGC). TTU is responsible for managing invention disclosures and inventions from all Faculties on AUB campus.

The main mission of the TTU is 1) to encourage and assist technological development at AUB, 2) to facilitate the transfer of IP to businesses and industries, 3) to bring inventions and technologies to the marketplace in an effort to generate benefits for both AUB and the community.



The functions of the TTU at AUB coincide with those set for the Office of Technology Commercialization (OCT) seen at Texas A&M, as mentioned earlier. The main functions revolved around providing guidance to faculty members, staff, and students, protecting IP and helping market IP resulting from scholarly activities, and enhance national economic development by building strong ties between public/private sectors, without compromising academic integrity and principles (AUB OGC).

At the moment, there are two specialists in licensing, and transferring technologies from the physical sciences, life sciences, and information and computer sciences. TTU also has a legal IP advisor and business specialists and consultants.

In an interview conducted by Outlook, the official student newspaper for AUB, with the university Provost, it was shown that AUB is still new to the concept of TT and commercialization. This is apparently a new frontier for regional universities and has proven to be challenging. There was also mention of building incubators in the future but no further information was provided (Shehab, 2014).

Therefore, AUB is lagging behind in the race to commercialize innovation and monetize IP, in comparison to other international universities, such as the University of North Carolina (voted to have the best TTU in the U.S<sup>52</sup>) which way back in 2009 had already launched the Carolina Express License Agreement to simplify the startup process of new companies based on technology licensed from the university.

## 9.5. The IPR Situation in Lebanon. To What Extent is The Rule of Law Protecting Intellectual Properties?

**IPR Rationales.** The importance of protecting IP is highlighted by the both a socio-cultural and economic rationale.

### *Socio-cultural Rationale*

From a socio-cultural perspective, there is a **natural right and moral rationale** behind the protection of IPR that stems from the moral right to claim IP and in turn receive appropriate compensation and reward. This fosters the underlying assumptions that IPR ensure that the inventor is sufficiently rewarded not only for his/her creative energy and input but also the invested financial capital made by them.

Putting in place effective IPR protection will increase the incentive for businesses to invest in R&D by removing the risk of rapid imitation. Such protection therefore avoids infringements and litigations.

### *Economic Rationale*

On another note, the use of patents, as a method of protecting IP, can serve to obtain financing for R&D. To do this, the government will need to revise IPR guidelines pertaining to government-funded research, joint public/private and academic/private research, and in-house

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<sup>52</sup> *IP Advocate.org* commemorated the best university TT Offices in the United States. <http://www.ipadvocate.org/forum/topic.cfm?TopicID=146> (December 29, 2015)

research by firms. Government can encourage use of the IP system by enhancing knowledge of all its elements – not only patents, but also trademarks, geographical indications, industrial designs, utility models, trade secrets, copyright and related rights, and new varieties of plants, non-original databases, and relevant aspects of unfair competition law.

**Types of IPR.** The above paragraphs bring forth the discussion of the different types of IPR. Below are the main types of IPR.

- **Trademarks.** According to the WIPO (1999), a trademark is “a distinctive sign that identifies certain goods or services as those produced or provided by a specific person or enterprise”. Trademarks help consumer identify with a product and service and therefore encourages purchasing power. Trademarks offer protection to the owner of the innovation by making sure that he/she has the exclusive right to use it and provides them with the right to authorize others to use it in return for payment. Usually trademarks operate on a time frame but may be renewed indefinitely (ibid). Ultimately, trademarks serve the purpose of protecting against infringement and unfair competition. Letters, numerals, drawings, symbols, shapes and even audible sounds and music are all examples of the different forms of trademarks.
- **Industrial Designs.** The ornamental and aesthetic appearance of an article defines it as an industrial design. They can consist of two-dimensional or three-dimensional shapes with specific patterns, lines, and colors. The range of industrial designs extends from products of industry and handicraft, to technical and medical instruments to watches, jewelry and other luxury items, household ware and electrical appliances to vehicles and architectural structures and from textile designs to leisure goods. Protecting industrial designs comes with the premise of aesthetics indicating that the design needs to be appealing to the eye, adding to its commercial and marketable value. Given this, unauthorized use by others or imitations of the design is prohibited and are thus protected in an absolute sense, as patents are protected against unauthorized use by others. The duration of protection varies from country to country and may be as long as 25 years, as seen in the European Union.
- **Utility Models.** Inventions that do not meet all the requirements of a patent but possess industrial use are defined as utility models. Utility models essentially nurture the rapid evolution of original innovations and are particularly relevant to small and medium scale enterprises as well as private individuals.
- **Trade Secrets.** Research, business, commerce or industry may use trade secrets which consist of confidential data, information or compilations. This is applicable to universities, R&D institutions, government agencies and businesses and may include secretive scientific and technical data that should not be publicly disclosed in order to maintain competitive advantages. Only under confidentiality agreements would trade secrets be revealed. Not only can trade secrets have considerable value independently, but may also be used in conjunction with other forms of intellectual property, such as patented inventions. Examples of a trade secret include formulas used in the food and beverage industry.
- **Copyright.** IPR covering literary and artistic works are protected under copyright rights. The works covered by copyrights include novels, poems, plays, reference works, newspapers, computer programs, databases, films, musical compositions and choreography, artistic works such as paintings, drawings, photographs and sculpture, architectural works, advertisements, maps and technical drawings. Similar to the previous

types of IPR, copyrights give the creators the exclusive right to either authorize others to use the work or not, based on agreed terms.  
(Source: WIPO, 1997)

**Perception of IPR.** In 2009, the Arab Center for Development of the Rule of Law and Integrity (ACRLI) conducted a study<sup>53</sup> that assessed the perceptions of respondents on the state of IPR in Lebanon. The following points highlight the main findings of the study (ACRLI, 2009).

- 94.5% of respondents claimed that IPR is important for promoting investment and growth in Lebanon. There was an indication in the level of agreement among the different age groups, which showed that lower age bracket groups had higher agreement rates than higher age bracket groups. This could be a reflection of an increased awareness on the importance of IPR among educated Lebanese youth.
- 58% of respondents reported being « quite familiar » or « strongly familiar » with IPR laws and regulations in the country
- 45% of respondents reported feeling “often” or “always” resistant to the enforcement of IPR protection and anti-piracy efforts. This is particularly highlighted in the entertainment industry in Lebanon.

#### **9.5.1. Software Piracy and IPR in Lebanon**

Software piracy is extremely common in Lebanon and is in complete violation of IPR. According to an article featured in The Daily Star in 2009, “the US-based Business Software Alliance (BSA), an industry group representing the world's leading computer software developers, ranked Lebanon in 36th place worldwide and fifth in the Middle East and North Africa region (MENA) in terms of piracy rate in 2008”. Losses incurred by piracy were reported to reach 49 million USD in 2008.

The piracy phenomenon in Lebanon extends to reach all forms of media (cable and pay TV, movies, entertainment, and music), software (business software, games, and unlicensed computer programs), literary (books and academic textbooks), and technology (mobile downloads, internet-based piracy) IP (IIPA, 2013).

The Lebanese government (Ministry of Finance) issued in 2000 the Custom Law (described below) which prohibits the exportation, importation and stocking of counterfeit works or any other goods considered as an infringement of copyright. However, the situation on the ground shows it is difficult to practically implement such protective measures, since counterfeiters introduce pirated products, including counterfeit movies, music CDs and computer programs to the Lebanese market through illegal land or sea crossings that are not covered by customs officers or local authorities (Halawi, 2009).

**IPR laws in Lebanon.** There are a number of laws, resolutions and regulations on IPR. The police, the public prosecutor, the judiciary, customs officials, and employees of the Intellectual Property Protection Office (IPPO) at the MOET are the authorities responsible for enforcing the copyright law and combating piracy in Lebanon (UNESCO, 2009).

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<sup>53</sup> The study consisted of a sample size of 165 respondents (107 males, 58 females, age of 25-54 years old)

Below is a brief sample of some of the existing IPR laws and regulations in Lebanon (MoET, 2015a; WIPO, 2015).

- **Resolution No. 2385/1924 issued on January 17, 1924**, amended by the law of 31/1/1946 on **“Industrial Drawings and Designs”**
  - o **“Trademarks and Brand Names”** are covered in Articles 105-110
  - o **“Industrial Designs”** are covered in Articles 111-114
- **Law No. 240/2000 of 2000 on “Patents”**. It covers enforcement of IP and related laws, industrial property, IP regulatory body, layout designs of integrated circuits, inventions, plant variety protection, transfer of technology and trade secrets
- **Law No. 75/1999, Articles 89, 91 and 92 on “Protection of Literary and Artistic Property”**. It covers the copyright law
- **Law No. 69/20 of May 23, 1969 on “Rights of Creators of Musical Works”**
- **Circular No. A/1/4 of May 25, 2006 on “Protection of Computer Programs and Fight against Piracy”**
- **Circular No. A/1/5 of May 25, 2006 on “Protection of Literary, Artistic, and Scientific Works”**

Despite the sound regulatory framework, the IPR system in Lebanon remains largely unused by entrepreneurs and academics, due in part to the costs and complexity of the patenting processes. Because of real and perceived barriers in using the system, SMEs often use alternative means to protect their innovations, including secrecy, exploitation of lead-time advantages, moving rapidly up the learning curve, use of complementary sales and service capabilities, technical complexity, as well as ongoing innovation relationships based on trust and use of trademarks to differentiate their products from those of imitators. Even universities and public R&D institutes, which have the resources to produce valuable intellectual property, lack the framework and experience to properly control and manage their innovations. Formal rules are, however, beginning to be adopted.

MOET has been deploying huge effort in the last few years to disseminate a culture of IP through a variety of initiatives and activities including seminars, conferences, and campaigns on IP for entrepreneurs and SMEs; guides on various aspects of IP for entrepreneurs and SMEs.

**Despite these efforts the following evidence has been collected:**

According to a study consisting of a survey of 475 industrial enterprises conducted by the CNRS in collaboration with the World Bank between 2012 and 2013:

- 4% managed to register patents with specialized Lebanese agencies during 2010-2011
- Around 3% were reported as having applied to register patents covering their own innovations with authorities outside Lebanon
- 5% of the enterprises taking part in the survey were reported as having licensed the right of utilizing innovations they had produced to other enterprises

The number of SMES in Lebanon is estimated at 170,000, among them only 291 patents were filed in 2012 and 304 in 2011. These numbers are very low confirming the results of the survey mentioned above. Knowing this, there clearly are a number of hindrances to patenting, and ultimately the progress of innovation. Such factors are cited below.

- Perception that acquiring and maintaining IP to be too costly and burdensome
- Lack of awareness on behalf of creators on the intellectual value of their ideas or products and underestimation of the benefits of registered rights
- High costs for monitoring and enforcing IP rights
- Lack of trust in the enforcement of rights and in the legal system
- Reliance on informal methods such as trust and limited information
- Lack of creativity in the production due to limited innovative capacity
- High levels of informal enterprises

**Lebanese SMEs** are clearly reluctant to engage in a process of patent registration. A variety of reasons were exposed. The most important reason is the adamant determination of firms to preserve themselves from competition and protect their distinctive technologies, knowhow and products from competitors. However, in the new era of knowledge economy competition among nations and firms is driven by the generation of new knowledge, and innovative technologies. The generation of knowledge and sophisticated technologies require huge investments affordable only by large firms such as multinational pharmaceuticals. Smaller firms have no choice but to collaborate with other source of new knowledge such as universities and research centers. The problem is that researchers and entrepreneurs as well as their institutions and organization most of the time do not share the same values, the same culture or even the same vocabulary. Bringing them together, bridging the gaps between the cultures and connecting the dots between the two worlds is quite a complex task that cannot occur naturally or automatically but needs to be arranged, prepared, planned and constantly promoted, preserved and fostered. This is the role of KTT achieved through a series of processes involving a variety of actors and participants where IPR is playing a central role

These observations highlight the dilemma of IPR in Lebanon. On one side protection is needed to encourage businesses investing in innovation on the other side research and development is by nature open to cooperation and keen to make discoveries and innovation diffused.

### **9.6. Policy Measures to Foster KTT Function**

Knowledge and Technology Transfer (KTT) remains the weakest point of the LNIS. We will discuss below the role of IPR in in facilitating KTT and what policies should be adopted in this respect. The second point is the Technology Transfers units at the university level and office at the national level. The third point is related to funding early stage R&D and the establishment of fast prototyping and innovation experimentation labs.

**Rationales for a Set of Policies to Support KTT.** More concretely, the key functions to be performed so as to achieve an efficient transfer of technology between the knowledge generators and the market users are the following:

- Initiating efficient communication between the two sides through 1) discussion forums, 2) information exchange platforms, 3) seminars and conferences. These activities help increasing the opportunities to meet and create friendly or professional connections and relationships. It is part of the informal type of initiative that remains instrumental in putting in place strong sustainable bonds.
- Promoting collaboration through 1) associations including researchers and entrepreneurs 2) awarding successful collaboration 3) matching funds to initiate seed projects allowing both side to learn how to collaborate and build joint teams
- Building trust through formal agreements and protective measures such as 1) facilitated patenting procedures 2) non-disclosure agreements 3) simplified legal contracts 4) clear licensing schemas. These elements are very important to put in place especially in a country such as Lebanon or any developing country lacking the culture and tradition of strong collaboration between universities and industries, researchers and entrepreneurs.

These elements are the preliminary conditions to establish fruitful efficient and sustainable relationships between the two sides of the NIS namely the supply and demand side.

**Technology Transfer Units and the National Office.** We have seen that AUB has just started the implementation and experimentation of a Transfer Technology Unit. This measure should be generalized to other universities. These units should be coordinated by a national office. Such coordination is instrumental given the scarce resources in Lebanon and the necessity of joining forces among the different R&D providers namely the universities and research centers and reaching critical masses of researchers.

#### **9.6.1. National Technology Transfer Office (NTTO) in Lebanon**

ESCWA, in partnership with the CNRS, launched a project (2015-2017) to strengthen the capacity of selected ESCWA countries, including Lebanon (Morocco, Egypt, Oman and Tunisia) and to create an enabling policy environment for R&D and the commercialization of research results. This encompasses the establishment of an NTTO in each of the five selected countries.

ESCWA has identified a number of problem areas that call for the creation of such an office. At the core, the absence of institutional development and innovation awareness and strategies and the lack of enabling environments and incentives for universities (private sector collaboration), feed into a lack of policies that promote R&D and modernization as well as the broken cycle between universities, research and industries. This, combined with non-competitive production sectors (industry, agriculture, healthcare, technology, etc.), harbor the overarching problem of the increase in the number of deprived and underutilized youth in those Arab regions.

It is for these reasons that required steps need to take place in order to boost competitive production economies to ultimately “dignify lives through decent employment for Arab youth”. This is achieved by 1) establishing NTTOs with their related systems and enabling policies and

2) establishing university and research centers that work to integrate IP and TT policies into their staff and faculty evaluation and promotion proceedings (ESCWA, 2015).

According to the Innovation Policy Platform, the common role that the NTTTO should play is to bridge the gap between research and innovation by assisting universities and public research organizations in managing their IP. This main role feeds into more specific functions as stated below, with their corresponding channels of knowledge and activities.

- Establishing relationships with firms and community actors – **Contract Research**
- Generating new funding support from sponsored research or consulting opportunities - **Consultancy**
- Providing assistance on all areas related to entrepreneurship and IP – **Incubator Facilities**
- Facilitating the formation of university-connected companies utilizing public research organizations' technology (start-up) and/or university people (spin-off) to enhance prospects of further development – **Spin-off and Startup Companies**
- Generating net royalties for the public research organizations and collaborating partners – **Licensing and Patenting**

*(Innovation Policy Platform, Technology Transfer Offices, Policy Brief, no date available)*

**Supporting Policy Instruments.** The NTTTO cannot achieve alone its mission. Its activities should be supported by measures at different levels such as:

- **For Universities:** creating incentives for researchers to collaborate with private firms. These can include both financial rewards and institutional changes promoting careers of those scientists who choose to work on knowledge transfer tasks.
- **For CNRS and MoEHE.** Introducing a new type of PhDs called industrial PhDs conducted in collaboration between a university or research institute and the industry. It should allow the possibility for industries to innovate at a reduced cost and risk and prepare the ground for Post Docs to find a job. This type of PhDs can also contribute to support innovative research at the early stages where investors are totally reluctant to intervene. This is practiced elsewhere in the world. In France for example the program CIFRE<sup>54</sup> was implemented in the eighties.
- **For Government,** establishing legal and regulatory frameworks that allow scientists to collaborate with industry and to transfer knowledge gained in publicly or university funded projects.
- **For BDL,** creating collaborative research centers. Collaborative research centers have been named as one of the effective ways of providing shared facilities to publicly funded research organizations and private firms, in these centers research can work together and gain critical learning experience. This could be a way to support financially the early stages of the innovation chain. BDL has been supporting indirectly the entrepreneurship and startups ecosystem through the establishment of entities such as the UK Lebanon Tech Hub, it can

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<sup>54</sup> CIFRE stands for Industrial Agreement of Training through Research, it is a doctorate fellowships program in France for foreign students ([http://www.anrt.asso.fr/fr/espace\\_cifre/pdf/cifre-en.pdf](http://www.anrt.asso.fr/fr/espace_cifre/pdf/cifre-en.pdf), retrieved on February 16, 2016)

similarly support vehicles and instruments to assist the research and innovation centers such as fast prototyping labs, specialized labs, to enhance the university-industry collaboration.

## **10. Access to Finance: Financial Instruments in Lebanon**

### **10.1. BDL and the New Circular 331**

The most important law issued by Banque du Liban is the Circular 331 and its amendment. Circular No. 331 was issued on Aug. 22, 2013. Its objective is engage Lebanon the knowledge economy, boost start-ups and entrepreneurship and create the right ecosystem to sustain their activities. BDL cannot intervene directly. Its policy is channeled through the Lebanese banking system.

According to the circular, the total participation of any bank in start-ups may not exceed 3% of the bank's capital, provided the participation of any bank in a single start-up does not exceed 10% of the aforementioned 3%. Thus, commercial banks must invest in at least 10 start-ups if they want to benefit from all the facilities provided to them by BDL. The equivalent of up to \$400 million will be injected in this sector in the coming 7 years.

Banks wishing to finance such companies will benefit from interest-free loans from BDL guaranteeing up to 75% of banks' investment for a maximum period of 7 years.

Banks can own up to 80% of the company's capital (not exceeding 80%) for the entire duration of the loan. The company should be a Lebanese joint stock company with nominal shares. The bank should liquidate all the shares it owns by the end of the maximum loan period (7 years).

According to some experts, the main obstacle is that Lebanese banks are not accustomed to this type of transaction. Banks are not yet qualified to deal with the entrepreneurs or with this kind of investment. This is different from these banks' current activity, including investments in financial assets, particularly in Treasury bonds and the administration of loans, imposing an approach that contradicts with the principle of initiative and risk-taking (Nader, 2014).

Another obstacle is that banks avoid small investments, given their cost and trouble making it not worth the effort. This contradicts the spirit of Circular No. 331 that aims at encouraging start-ups and the entrepreneurial spirit.

However, the incentives offered by BDL were enough to push the banks to find appropriate means to overcome obstacles by creating specialized investment funds to seize the opportunity.



Below is a table showing the most important financial instruments in Lebanon and their main characteristics.

**Table 15: List of major financial instruments in Lebanon with description of business model, investment amounts, targeted sector/industry, number of supported startups and covered stage of development**

VENTURE CAPITALS / FUNDS				
Name	Description/Business Model	Total Investment Amount (USD)	Sector/Type of Industry Targeted	Number of Supported Startups/ Covered Stage of Development
1. B&Y Venture Partners	Follows the classic VC model Take stakes in tech startups in exchange for cash 20% equity scheme	500K (given range of 100K-600K)	Technology	8  Covers Seed and Early growth stage for startups in Lebanon  Later stage for startups outside Lebanon (Dubai, Madrid, US)
	<b>B&amp;Y Division One<sup>55</sup> (Fund)</b> <b>Status: New</b> Release Date: September 2016  Local Investment (70%) Foreign Investment (30%)  Joint venture with Broadgate Advisers - Hybrid investment tool → raises capital from banks and private investors  Under BDL Circular 331	50M	ICT	10  Local Investment for Seed Stage Foreign Investment for Growth Stage
2. Berytech Fund II	Open Door Meeting approach 10-45% equity scheme Follows the Circular 331 exclusively Applies co-investment	<b>Up to 70M</b>  Give startups 300K-3M (depending on the case)	ICT, digital content, fashion, renewable energy, industrial design, life sciences and medical technology	12 <sup>56</sup>  1. Instabeat → 4M (equity investment) 2. Loop → 2.5M 3. CCC → 2M

<sup>55</sup> Business News Lebanon. (2016). *Yafi and Jisr to raise \$50 million for ICT VC fund*. 03 August, 2016. Retrieved on September 5, 2016 from <http://www.businessnews.com.lb/cms/Story/StoryDetails.aspx?ItemID=5610>

<sup>56</sup> Business News Lebanon. (2015). *Berytech Fund invests \$20 million*. Shikrallah Nakhoul, December 14, 2015. Retrieved on September 26, 2016 from <http://www.businessnews.com.lb/cms/Story/StoryDetails.aspx?ItemID=5275>

				<p>4. Et3arraff → 2M 5. Ounousa → 2M</p> <p><u>Startups with less than 2M Investment:</u></p> <p>6. Mobinets 7. Cinemoz 8. Element^n/Scriptr 9. Slighter 10. Atbaki 11. Appdater 12. Yalla Play</p> <p>Accelerator stage (above Seed Stage and above Series A) → startups that are already in operation</p>
<b>3. Insure and Match Capital (IM Capital)</b>	<p>2-3% up to 20% equity scheme</p> <p>Supports Qualified Early Stage Businesses and Investments</p> <p><b>Core components:</b></p> <ul style="list-style-type: none"> <li>- <b>Matching Capital</b> → match investors with businesses and funds</li> <li>- <b>Guarantee Equity</b> → provide insurance for the investment made by the investors</li> <li>- <b>Support Programs &amp; Technical Assistance</b> → capacity building for the ecosystem</li> </ul> <p><b>Backed up by USAID and funded by Berytech</b></p> <p>Not specific to BDL Circular 331 regulations</p>		Non-industry specific	<p>Matching Capital: 6</p> <ol style="list-style-type: none"> <li>1. Fantascope Productions</li> <li>2. Speed@BDD</li> <li>3. MEACOR</li> <li>4. ScoopCity.com</li> <li>5. Element^n</li> <li>6. L'Atelier du Miel</li> </ol> <p>Equity Guarantee: 1</p> <ul style="list-style-type: none"> <li>- <b>Seeders Masterclass for Business Angels (MBA)<sup>57</sup></b></li> <li>→ <b>Status: New</b></li> <li>→ One year program for Early Stage startups</li> <li>→ Investment in 2-3 micro and SMEs</li> <li>→ <b>50K-100K USD investment</b> (50% guaranteed by IM Capital)</li> </ul>
<b>4. Middle East Venture</b>	<b>4 mains funds:</b>	<b>Approx. 120M</b>	Software and ICT	28

<sup>57</sup> Berytech. (2016). *Towards a network of qualified Lebanese Business Angels: Seeders MBA*. Retrieved on September 5, 2016 from <http://berlytech.org/towards-a-network-of-qualified-lebanese-business-angels-seeders-mba/>

<b>Partners (MEVP)</b>	<b>2 local:</b> Building Block Equity Fund (BBEF) and <b>IMPACT Fund</b> <b>2 regional:</b> Middle East Venture Fund (MEVF) and MEVF II  10-30% equity scheme	MEVF=10M MEVF I =32M BBEF=15M <b>IMPACT Fund = 70M</b>		<b>Including for the year 2016, MENA Startups</b> <ul style="list-style-type: none"> <li>- The Luxury Closet → 7.8M, Series B</li> <li>- Klangoo → 2.5M, Venture</li> <li>- Scriptr.io → 4M, Series A (Lead)</li> <li>- Volt → 225K, Seed</li> </ul> Early Stage and Growth Investments  Series A and Series B <sup>58</sup> Stages  <b>Note:</b> Rare cases with Seed Stage depending on interest in the startup and its potential
<b>5. Cedrus Ventures</b>	VC and Private Equity  Seeks IRR (Internal Rate of Return) of 15-25%	50K-500K	Non-industry specific	Growth Stage start-ups or established businesses with high potential  <b>Description of other services:</b> Business assistance and coaching. In some cases, technical assistance and coaching
<b>6. Leap Ventures</b>	Founded in 2014 Growth Fund  15 to 40% equity  Invests in Growth Stage startups	Investments reach between <b>2.5M and 10M Up to 12M through partnerships</b>  Round 1 Closing at: <b>71M</b> Expected Round 2 Closing: <b>80M</b>	Innovation and Technology	47 Including: <ul style="list-style-type: none"> <li>- InMobiles</li> <li>- U-Turn → 10M, Series B</li> <li>- Keeward</li> <li>- Energy24</li> </ul> Series B stage startups
<b>7. Cedar Ventures</b>	Financial advisory/consulting and investment banking firm	150M-200M	Healthcare Services Life Sciences and Information Services	Invests in funds (including early stage focused funds) and not Startups

<sup>58</sup> Series B Stage: Series B is second round of financing by private equity investors or venture capitalists

	Raises debt and equity capital for companies	100M (early stage)	Technology Life Sciences (medical devices, drugs, healthcare information technology) Healthcare Services	
		2M (Private Equity)	Manufacturing Consumer Products Recurring Revenue Service Businesses Professional Services High-value distribution businesses	
<b>8. MedSecurities Investment</b>	Brokerage Product Development Debt and Equity Private Placements  Under BankMed			
	<b>Azure Fund</b> <sup>59</sup>	30M	Fashion Design Technology	
<b>9. Middle East and North Africa Investment Initiative II (MENA II)</b>	Funder: USAID Fund Managing Partners: IM Capital Covered Countries: Lebanon and the region (ex. Jordan)	Total Fund: 225M  First 5 years (out of 20-year program): 15M	Non-industry specific	Early Stage
<b>10. Phoenician Fund I</b>	Seed investments	50M	Fintech Healthcare e-government	
<b>11. Lebanon Seed Fund</b>		Target Size: 20M Ticket Size: 200K-500K		
<b>12. Fonds d’amorçage de réalisation et d’orientation (FARO Loan)</b>	Financial support fund (bridges financing gaps)  Established by the CCIA-BML <sup>60</sup> ,	Starting Budget: 500K  Maximum Loan to	Not specified?	SMEs  <b>Eligibility:</b> FARO supports entrepreneurs who plan

<sup>59</sup> Executive Magazine. (2015). The 411 on 331: While there have been few investments to date, there’s plenty more in the pipeline. Retrieved on September 5, 2016 from <http://www.executive-magazine.com/special-report/the-411-on-331>

	with the support of Berytech, and other groups Provides subsidized technical support for business development and financial expertise	SMEs: 20K Max. 1% interest		to introduce or have: - an innovative product or service - an innovative way to deliver a product or service - an innovative business model - at least one European or Mediterranean partner to realize the project
<b>13. Wamda Capital Fund</b>	VC Firm  Dubai-based	2M-5M	Technology Technology-enabled companies in the MENA region	10 <sup>61</sup> (none in Lebanon)  Early stage, growth-stage, and startup investments
<b>BANKS / FINANCIAL COMPANIES</b>				
<b>Name</b>	<b>Description/Business Model</b>	<b>Total Amount Financed (USD, unless indicated otherwise)</b>	<b>Sector/Type of Industry Targeted</b>	<b>Supported Entities</b>
<b>1. Al-Mawarid Bank</b>	Lebanese joint-stock company with nominal shares, operating in the 'Knowledge Economy' sector  <b>YOUTHinc. Initiative</b> - Investment in emerging startups and young entrepreneurs	Target Size: 400M	Not specified	SMEs, young entrepreneurs
<b>2. Bank Audi – SME Banking</b>	<b>2 Types of Products under SME Banking:</b>  <b>1. TransAct Packages</b> Non-lending category; allows clients to manage day to day banking transactions; benefits from preferential conditions and generous reward program  <b>2. Finance Package</b> - Power Cards	Amounts dependent on type of product taken	Not specified	SMEs and businesses

<sup>60</sup> CCIA-BML: Chamber of Commerce, Industry and Agriculture of Beirut and Mount Lebanon

<sup>61</sup> Wamda Capital Fund funded startups:

In the UAE: Carma, Compareit4me.com, Arabia Weather, ShopGo, The Luxury Closet, Careem, Mumzworld, Kharabeesh

In the USA: Little Bits

In Jordan: Jamalou

	<ul style="list-style-type: none"> <li>- POS Cash Assistance</li> <li>- Empower Card</li> <li>- Premises Loan</li> <li>- Business Loan</li> <li>- Kafalat Loan (discussed below)</li> </ul> <p><b>Examples of Services Provided:</b> Expanding or renovating premises, purchasing equipment and machinery, buying goods and raw materials, investing in future plans, buying a franchise or license, executing payments, paying salaries and settling rents</p>			
<b>3. Kafalat SAL</b>	<p>Financial company</p> <p>Gives access to commercial bank funding to SMEs</p> <p>Provides loan guarantees to SMEs</p> <p>75% is owned by the National Institute for Guarantee of Deposits 25% is owned by 50 Lebanese banks</p> <p>Any commercial bank<sup>62</sup> operating in Lebanon can be approached to apply for a Kafalat loan guarantee.</p> <p><b>Programs under Kafalat:</b></p> <ul style="list-style-type: none"> <li>- Kafalat Basic</li> <li>- Kafalat Plus</li> <li>- Kafalat Innovative</li> <li>- Kafalat Startups and Innovation</li> <li>- Kafalat Agriculture</li> <li>- Kafalat Energy</li> <li>- Kafalat iSME</li> </ul>	<p>Amount dependent on the type of loan program</p> <p><b>Example:</b> <i>Kafalat Startups and Innovation Program</i> → to finance Fixed Assets and Working Capital Needs → 650M LBP → Up to 7 years loan duration</p>	<p>Industry</p> <p>Agriculture</p> <p>Tourism</p> <p>Traditional Crafts</p> <p>High Technology</p>	SMEs
<b>4. BLC Invest</b>	Private Equity	6M	Food and Beverage, Services, Technology,	8 (Names not specified; includes video-on-

<sup>62</sup> Examples of banks that provide a Kafalat loan guarantee: Bank Audi, Bank of Beirut, Banque Libano-Française, BLOM Bank, Fransabank, Jammal Trust Bank, BLC Bank, Lebanon and Gulf Bank, SGBL, Lebanese Swiss Bank, Credit Bank, Credit Libanais, among many more.

			Light Industry and Utilities	demand, augmented reality, software development, applications, healthcare, e-commerce, and services)  Growth Stage
<b>5. International Finance Corporation (IFC) – Agence Française de Développement (AFD) – BLC Bank<sup>63</sup></b>	Joint guarantee, through a risk-sharing facility (MENA SME Risk Sharing Facility)  Loans granted by BLC Bank	5M	About 20% of the loans will be earmarked for <b>women-owned SMEs.</b>	Not applicable

<sup>63</sup> Business News. (2016). *BLC gets IFC and AFD support for SME lending*. Shikrallah Nakhoul, September 30, 2016. Retrieved on October 3, 2016 from <http://www.businessnews.com.lb/cms/Story/StoryDetails.aspx?ItemID=5701>

**World Bank Initiatives.** In mid-2011, the World Bank Middle East and North Africa Finance and Private Sector Unit, jointly with the government of Lebanon, launched the preparation of the **Supporting Innovation in Small and Medium Enterprise (iSME) in Lebanon Project**. The Capital Markets Practice and the Entrepreneurship, Technology, and Innovation Practice provided technical assistance and support designing the project. The project will be launched at the end of 2012 by the government of Lebanon; the World Bank MENA region; the Capital Markets Practice; and the Entrepreneurship, Technology, and Innovation Practice

The **objective is to encourage the equity investment market to increase the supply of early stage investment finance for financially viable, new, and existing innovative firms**. This, in turn, will generate a more robust risk-taking culture, stimulate entrepreneurship, and, over time, enhance the potential for additional private sector jobs.

The project funding will **finance the following two components**:

- **The iSME funding program** that will have two project subcomponents providing two types of financing to enterprises:
  - Development grants to stimulate ideas generation and concept development (total US\$2.5 million)
  - Equity investment to support the early stage growth of a firm (total US\$25 million)
- **Project management and implementation** that will include outreach, training activities, and establishing a project implementation unit (total US\$2.5 million)

*(Source: World Bank, 2015)*

## **10.2. The Asymmetric Funding and Financial Instruments across the Innovation Value Chain**

In this section we will analyse the different gaps preventing Lebanon from taking full advantage of its strengths and optimally deploying its resources and talents.

We have listed in Annex I, almost exhaustively, all actors involved in the Lebanese innovation landscape and we have organized them into three tables:

1. Financing options across stage of growth: Who are the actors involved in providing funds at which stage of the innovation chain, and under which form?
2. National innovation network: this concerns how the main public agencies are linked and connected together. This will give an idea about the level of collaboration and linkages among the various involved entities
3. Innovation actors and policy instruments: Which policy is being implemented by which actor?



Table 16: Financial instruments and actors across the innovation chain

	Basic Research and Development	Experimental Prototype	Commercial Prototype	Growth Companies	Mature Business
<b>Grants</b>	CNRS IDEAL <sup>64</sup> Universities	iSME World Bank	Competitions and Awards		
<b>Crowdfunding</b>		Zoomaal Aflamnah	Zoomaal Aflamnah		
<b>Guarantees</b>			Kafalat ESFD	Kafalat	Kafalat
<b>Equity Financing</b>		Lebanese Business Angels IDAL Speed@BDD MENA II	Commercial Banks B&Y Division One Fund Berytech Fund II IDAL Speed@BDD MENA II	iSME World Bank B&Y Venture Partners IM Capital MEVP Cedrus Ventures Leap Ventures Abraj Capital	iSME World Bank Riyada Abraj Capital
<b>Debts</b>				Commercial Banks (subsidized loans)	Commercial Banks (subsidized loans)

<sup>64</sup> IDEAL: Innovation and Development of Academic-Industry Partnerships through Efficient Research Administration in Lebanon

The table shows a clear lack of support for innovation in its early stages.

The most important support for basic research and innovation development projects remains the CNRS. A very important change in policy occurred a few years ago when CNRS moved from a 'science centric mode of operation' to be driven now by 'mission based' research. During the last few years the entrepreneurship and start-up communities in Lebanon have become more vibrant. A variety of prizes and competitions have emerged, some sponsored by certain Lebanese investors and others by members of the Lebanese diaspora as well as broader international community. However, these interventions are largely on the level of 'businesses plan' competitions with less comprehensive cover for early stage research.

At the market uptake stage Kafalat is providing more than \$100 million dollars of guaranteed loans. The cumulative amount of loans issued guaranteed is 1.45 billion USD for an average amount of loan for 100,000 USD. The innovative SME World Bank project aims at promoting and investing in innovation, encouraging equity financing and sharing the risk with venture capitalists but is yet to be approved by the parliament. This project should provide a small proportion of the total amount of the fund; namely, 8% is devoted to the early stages of concept development grants. The remainder being dedicated mostly for the demonstration and commercialization stages.

In sum, this table identifies failures of governance and failures of coordination. There is an evident breakdown of coordination between market and academia. This has led to a capital flow concentration into the upper stages of the innovation process and bottlenecks in early stage research.

### **10.3. Policy Recommendations**

The World Bank confirms the analysis above by saying: the current financial environment leaves three substantial gaps in Lebanon's innovation system. The first gap is funding at the early concept stage where entrepreneurs need to develop their ideas into a viable concept and product; the second and third gaps are related to the absence of seed and early stage venture finance, respectively. Hence the most important recommendation in this respect is to put in place the right financial instruments to support early stage innovation. Funds similar to the one proposed by the World Bank iSME should be put in place.

## **11. Infrastructure: Telecommunications, ICT Commission**

ICT is a critical area to serve the whole national economy or to promote innovative products and services. In this section we will focus on ICT infrastructure as major enablers of the NIS. Competitiveness relies on capacity to innovate and quality of ICT infrastructure as well. In Lebanon one of the most important entities dealing with this aspect from a strategic, planning and evaluation perspective is the National ICT Strategy Coordination Office located at the Presidency of the Council of Ministers.

### **11.1. ICT Policy Measures**

In spite of its efforts to provide recommendations on measuring the digital economy and other strategic recommendations, the bottleneck of this area remains the inability to secure telecommunications services at an international standard level and at a reasonable cost. All studies and all practitioners have highlighted this problem for many

years with no apparent possibility in sight to solve it. Unless this issue is properly tackled any ICT industry in Lebanon will have no chance to emerge and likewise a NIS will remain at risk.

The National ICT Strategy Coordination Office at the Office of Prime Minister in 2011 had prepared a statement of Policy for the development of the ICT sector. The most important ones are listed below. The implementation of the recommended measures remains critical for a strong LNIS (Yamout, 2011). We are listing below the main recommendations suggested by this report.

The government acknowledges that the required development of the knowledge based society and economy based on a digital environment cannot be achieved unless the various ministries and government entities who have related mandates act within a well-orchestrated National Agenda that consists, in particular, of the following:

- 1- Telecommunications service supply is restructured so as to deliver high quality fixed and mobile broadband and other services at affordable prices, covering most households, businesses, and educational establishments in Lebanon
- 2- Ample links to the Global economy are provided
- 3- Entrepreneurs and innovators are able to create applications, services and products that serve markets both within Lebanon, and beyond its borders
- 4- National education adequately reflects the needs of, and opportunities within, the digital economy; the ICT sector provides the enabling services and capabilities for the provision of such education

Liberalization of telecommunication sector is very important. The desired outcomes of the policy are that:

- Lebanon transitions to a knowledge-based society and economy, in which entrepreneurs and well educated young people are provided with adequate opportunities both to stay within Lebanon, and contribute to the wealth of the nation.
- Lebanon overcomes its perceived lack of competitiveness, arising from inadequate infrastructure and institutions, and low productivity, and once again becomes an attractive center for regional and Global trade, commerce, and tourism, and is able to attract investments.

## **12. Systemic Measures: An Innovation Policy Mix for Lebanon**

### **12.1. The Concept of Policy Mix and the System Approach**

Policy mix is concerned with the right composition of policies and with how they might interact to mutually increase the overall effectiveness of the system. Interactivity among policies is the key point in the policy mix concept. This interactivity may be of different natures. It may take the following forms:

- Excitatory, where the presence of two policies in the policy mix can together increase the effectiveness while the presence of a single instrument may be of no effect.
- Inhibitory, where two instruments may attenuate eliminate or even harm the system. This means the two instruments are incompatible.

- Environment/Context sensitive

For example, demand-side innovation policies need to be matched and combined with adequate supply-side policies and measures (OECD, 2011). This is an important example justifying the necessity of a policy mix and a coherent set of measures. But this requires specific mechanisms to enhance coordination among the various actors especially the government, the involvement of the stakeholders and the participation of the end-users.

As we have seen in the previous sections, the LNIS suffers from a number of institutional gaps, mismatching and barriers. The objective of a policy mix is to mitigate these gaps. In the Lebanese context, intervention is not restricted to the government. The right balance between a *laissez-faire* attitude and a heavy governmental intervention needs to be found. All stakeholders should be involved in the process of enhancing the overall LNIS. Therefore the policies suggested below for the three main components of the system the kit and the ds will be considered at different levels namely the government and its institutions the key actors such as universities and firms without neglecting the individual initiatives and the community engagement.

Ultimately the policy mix should work to satisfy the enabling conditions and the setting up of a conducive environment for an efficient LNIS.

## 12.2. The Disconnected Network across the Innovation Stakeholders

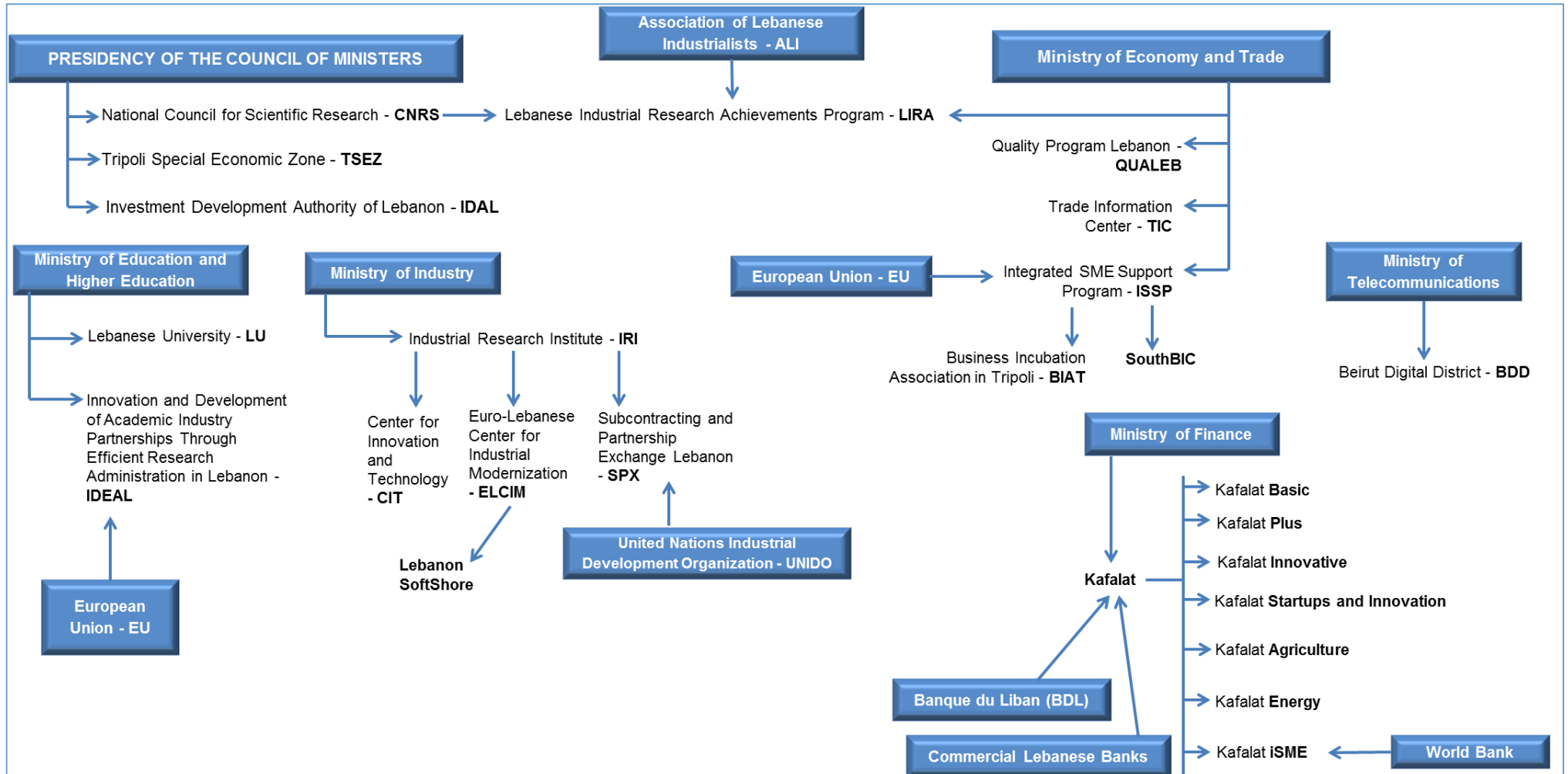


Figure 11: The disconnected network across the innovation stakeholders

The network analysis chart reveals two critical points. First the evident disconnect between government agencies, bodies and ministries and the central importance of international institutions endeavoring to work through this disconnect. These institutions provide and promote support for activities of government agencies and bodies. The overall picture is one of inefficiency and poor communication.

We have in these sub-section two tables, one for the public sector actors and the second for the private sector actors. The reason for splitting actors into these two categories is only to make the results more readable.

Table 17: Matrix featuring financial instruments and public and private institutions

Financial Instruments and Public Institutions											
No.	Instruments Innovation Actors	R&D	Research Enabler/ Provider	Venture Incubator	Proof of Concept Labs	Mobile Applications Labs	Innovation Booster	Innovation Vouchers	Business Development/ Entrepreneur	Market Access and Export	Diaspora Collaboration Program
1.	The Centre for Innovation & Technology (CIT)					x	x			x	
2.	Lebanese Industrial Research Achievements Program - LIRA					x					
3.	IDAL								x	x	
4.	ELCIM							x	x	x	
5.	Lebanon SoftShore								x		
6.	Trade Information Center								x		
7.	SPX								x		
8.	CNRS	x									
9.	KAFALAT								x		
10.	QUALEB								x		
11.	AUB, LU, LAU, AU	x									

<b>Financial Instruments and Private Institutions</b>											
No.	Instruments Innovation Actors	R&D	Research Enabler/ Provider	Venture Incubator	Proof of Concept Labs	Mobile Applications Labs	Innovation Booster	Innovation Vouchers	Business Development/ Entrepreneur	Market Access and Export	Diaspora Collaboration Program
1.	BCC- Beirut Creative Cluster							<i>x</i>	<i>x</i>		
2.	Berytech	<i>x</i>					<i>x</i>	<i>x</i>	<i>x</i>		
3.	AltCity			<i>x</i>			<i>x</i>				
4.	SouthBIC	<i>x</i>					<i>x</i>	<i>x</i>	<i>x</i>		
5.	ESFD						<i>x</i>		<i>x</i>		
6.	Beirut Digital District	<i>x</i>					<i>x</i>				
7.	Cloud5	<i>x</i>					<i>x</i>				
8.	Cartier Women's Initiative Awards						<i>x</i>	<i>x</i>	<i>x</i>		
9.	NGO-Endeavor Lebanon						<i>x</i>		<i>x</i>		
10.	AMIDEAST						<i>x</i>				
11.	BIAT	<i>x</i>					<i>x</i>		<i>x</i>		
12.	Exeed						<i>x</i>				
13.	SME ToolKit						<i>x</i>		<i>x</i>		
14.	Center For Entrepreneurship	<i>x</i>					<i>x</i>				
15.	eClub						<i>x</i>				
16.	Mowgli										



	Foundation						<b>x</b>				
17.	Maurice Fadel Prize						<b>x</b>	<b>x</b>			
18.	Enterprise Forum	<b>x</b>					<b>x</b>				
19.	Lebanon Business Network						<b>x</b>				
20.	STANDUP!						<b>x</b>				
21.	The Agenda						<b>x</b>				
22.	BuBleik SAL						<b>x</b>				
23.	Neopreneur						<b>x</b>				
24.	Entrepreneurs Lebanon						<b>x</b>				
25.	Servcorp						<b>x</b>				
26.	Institut Européenne de Coopération et de Développement						<b>x</b>				
27.	IDEAL						<b>x</b>				

The most important thing to note is the clustering of interventions within business development and entrepreneurship, and the absence of intervention taking real advantage of the Lebanese diaspora or facilitating the fabrication step in the early stage of the innovation process and enhancing collaboration and linkages between supply and demand sides through intermediate professional bodies.

### 12.3. Governance Monitoring and Evaluation

Although this aspect Monitoring and Evaluation is critical for the success of any NIS, it remains to a certain extent neglected and not integrated into a full process of continuous evaluation of policies, quality and performance of the LNIS. International organizations conduct studies in this respect and provide a wealth of information, evaluation and ranking of Lebanese innovation system.

However, the CNRS is actively planning to put in place a Lebanese Science Technology and Innovation Observatory (LORDI). Its objectives are:

- Produce reliable statistics on resources and production of S&T
- Maintain an inventory of the R&D resources and Skills in academia and business sectors
- Conduct analysis of the R&D system in Lebanon upon request. It is another initiative of the CNRS with support of ESCWA and EU to facilitate R&D activities in Lebanon.

Should this observatory be established, it will be an important tool of assessing the R&D activities in Lebanon and an important component of the LNIS.

Given the main weakness of the LNIS which is the lack of coordination and vision it is advisable to establish a National Innovation Agency to:

- Use monitoring and evaluation as a policy tool to track performance, determine the impact of interventions, and provide feedback to improve implemented policies.
- Strengthen institutional capacity for M&E, and integrate M&E into every stage of the innovation process, from strategy design through implementation (measurement of intermediate outputs) and final evaluation report
- Introduce an M&E framework to evaluate the performance of each implemented program and to enable evidence based policy reforms.
- Develop an M&E framework with clear and measurable indicators for every program and intervention
- Design and implement innovation policy instruments
- Provide regular feedback to the stakeholders about what works and does not work, to inform future policy decisions

However, in the absence of such agency, **a close collaboration between CNRS, IDAL and BDL the pivots of the LNIS as we have seen previously through a National Innovation Board (or advisory council) can be considered, to:**

- Coordinate policymaking across sectors
- Monitor and evaluate innovation policies and strategies
- Provide specific knowledge and guidance to NIS
- Develop and refine coordination mechanisms among governance agencies, sector ministries, research institutions, industry

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## ii. ANNEX

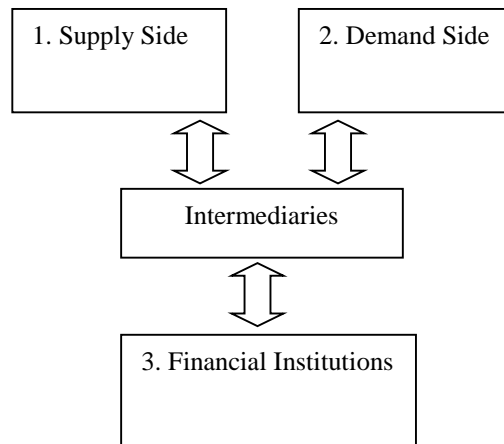
Annex 1 – List of Innovation Actors in Lebanon

Annex 2 – Laws and Policies

### ANNEX 1

#### *List of Innovation Actors in Lebanon*

Framework for the categorization of the innovation actors



Supply Side No.	Name	Description	Product/Service	Domain Details	Additional Details
1.	The Centre for Innovation and Technology (CIT)	<p>The Centre for Innovation and Technology (CIT) is a dynamic division of the Industrial Research Institute (IRI), established to secure sustained support and innovation to the manufacturing industry.</p> <p>In February 2012 the CIT was awarded a grant from the European Union for 200,000 Euros for the implementation of the action entitled: “Innovation Vouchers”, with the Presidency of the Council of Ministers as the Contracting Authority.</p>	<p><b>Networking:</b> Matching academia with industrial SMEs</p> <p><b>Training / Funding:</b> Access to research funding</p>	<p><b>Targeted Group :</b> Local Industrial SMEs; Universities; Individual researchers and research institutions</p> <p><b>Targeted Sector :</b> All sectors</p> <p><b>Conditions &amp; Eligibility Criteria:</b> Projects have to be already researched, proven to be valid and respond to the criteria of a new product/process development or new business model development.</p> <p><b>Cost of Service:</b> Free of charge at the abstract presentation phase. A fee of 200 USD will be applied should the project pass the first screening phase and enter the full application evaluation phase.</p>	<p>Mr. Naji Abi Zeid</p> <p>00 961 5 467 831</p> <p>www.cit-lb.org</p>

2.	Lebanese Industrial Research Achievements Program – LIRA	LIRA is a national program aiming at building effective cooperation between industry, academia, and research centers to address the research and development needs of the Lebanese industry, empower the industrial sector with innovations leading to the promotion and competitiveness and productivity, and achieving a transition from a welfare economy to a knowledge-based economy.	Networking R&D	<p><b>Targeted Group:</b> All SMEs that seek R&amp;D to advance their industry</p> <p><b>Targeted Sector:</b> Industry/Technology Conditions and Eligibility Criteria: SMEs with research needs</p> <p><b>Cost of Service:</b> Funding the project</p>	<p>Mr. Said K. Hamadeh</p> <p>00 961 1 427 146 00 961 03 607 678</p> <p><a href="mailto:said@liraprogram.com">said@liraprogram.com</a></p> <p><a href="http://www.liraprogram.com">www.liraprogram.com</a></p>
3.	National Council for Scientific Research (CNRS)	<p>Established in 1962, CNRS is a central science policy-making public institution that maintains administrative and financial autonomy under the authority of the Prime Minister.</p> <p>It has three major functions:</p> <ol style="list-style-type: none"> <li>1. Advisory Function</li> <li>2. Programmatic and Implementation Function</li> <li>3. Research Production Function</li> </ol>	R&D	<p><b>Targeted Group:</b> Local industrial SMEs, universities, individual researchers</p> <p><b>Targeted Sector:</b> Academia, Industry</p>	<a href="http://www.cnrs.edu.lb">www.cnrs.edu.lb</a>

Demand Side No.	Name	Description	Product/Service	Domain Details	Additional Details
1.	IDAL	IDAL is the national investment agency entrusted with promoting investments to Lebanon in growth promising sectors through providing a set of incentives and services. IDAL is also entrusted with export promotion services.	<ol style="list-style-type: none"> <li>1. Equity</li> <li>2. Financial Exemptions</li> <li>3. Networking</li> <li>4. Cash Subsidies</li> </ol>	<p><b>1. Targeted Group:</b> Incubators/Employees</p> <p><b>Targeted Sector:</b> Information Technology</p> <p><b>Conditions &amp; Eligibility Criteria:</b> Incubator to be registered as JSC</p>	<a href="http://www.idal.com.lb">www.idal.com.lb</a>

				<p><b>2. Targeted Group:</b> &lt;50 &lt;60 &lt;100 &lt;25</p> <p><b>3. Targeted Sector:</b> Agriculture, Agro-Industry, Telecommunication</p> <p><b>4. Targeted Sector:</b> All sectors</p> <p><b>Targeted Sector:</b> Agriculture</p> <p><b>Conditions &amp; Eligibility Criteria:</b> To be registered in the AgriPlus program and to be exporting.</p>	
2.	ELCIM	<p>ELCIM is an industrial center established at the Industrial Research Institute, possessing a pool of local and international experts in various fields; the activities are demand driven and address industrial requirements from various sectors covering all aspects of the manufacturing and marketing activities.</p> <p>The methodology relies on visiting beneficiaries and preparing a full technical specs of the action agreed upon including timeframe, type and number of experts and budget.</p>	<p>Business development management re-organization Business plans Access to market Production optimization Process development Energy management funding Access to loans Training</p>	<p><b>Targeted group:</b> ELCIM targets mainly local industrial SMEs</p> <p><b>Targeted sector:</b> All sectors</p> <p><b>Conditions &amp; Eligibility Criteria :</b> None</p> <p><b>Cost of Service:</b> Case by case</p>	<p>Mr. Naji Abi Zeid 00 961 5 467 831 www.elcimlb.org</p>
3.	Lebanon SoftShore	<p>Lebanon SoftShore is a cluster that has the objective to promote the Lebanese software industry internationally. Managed by the Industrial Research Institute (IRI) and the Euro-Lebanese</p>	<p>Export promotion Networking Training Seminars</p>	<p><b>Targeted Group:</b> Companies in the software industry (solution and service</p>	<p><b>Mr. Naji Abi Zeid</b> 00 961 5 467 831 www.lebanonsofts</p>

		Centre For Industrial Modernization (ELCIM).		providers) <b>Targeted Sector : ICT</b> <b>Conditions &amp; Eligibility Criteria:</b> Established company with an interest to expand internationally <b>Cost of Service:</b> Membership fee	hore.com
4.	Trade Information Center	The Trade Information Center provides trade statistics, import and export regulations, tariffs, company search, outsourcing opportunities. It is embedded at the Ministry of Economy and Trade	Networking Business to Business events  Match making	<b>Targeted Group :</b> Individual traders Chambers of Commerce and Industry Embassies  <b>Targeted Sector : All sectors</b> <b>Cost of Service:</b> Free of charge	<a href="http://www.economy.gov.lb/">http://www.economy.gov.lb/</a>
5.	QUALEB	QUALEB is the Quality Program launched by EU in 2004 and since then, two phases have been successfully implemented. Those two phases successfully developed and improved the Lebanese quality infrastructure in order to increase competitiveness of Lebanese products on international markets. To ensure the sustainability and continuity of the programs results a third phase has recently been launched  Phase III that aims to support the process of further strengthening of the Lebanese quality infrastructure.	Access to Market Lebanese Excellence Award Enhancing Export Potential Improving Traceability of Food Products Quality Awareness Conformity Assessment	<b>Targeted Group : NA</b>  <b>Targeted Sector :</b> Public sector, large enterprises, SMEs, and NGOs , Agro-industries, Syndicate of Lebanese Food Industrialists, Quality Stakeholders, Laboratories  <b>Conditions &amp; Eligibility Criteria:</b>	<b>Dr. Ali Berro</b>  00 961 1 982 360  <a href="http://www.economy.gov.lb/">http://www.economy.gov.lb/</a>



				Small to medium size food business Management commitment  <b>Cost of Service:</b> Free of charge	
6.	SouthBIC	<p>SouthBIC is a standalone business development center located in Saida, Chamber of Commerce building with two outreach locations in Nabatiyeh and Tyre.</p> <p>SouthBIC offers intensive incubation services to both startups and existing MSMEs. It offers physical incubation where the company resides in the incubation and provides remote incubation to companies not able to reside within SouthBIC. Through both mechanisms, SouthBIC avails a host of services that will help improve the competitiveness of enterprises.</p>	<p>Incubation Access to market Funding Networking Mentoring Training</p>	<p><b>Targeted Group :</b> Entrepreneurs, Startups, MSMEs</p> <p><b>Targeted Sector :</b> Agribusiness/ ICT/Manufacturing</p> <p><b>Conditions &amp; Eligibility Criteria :</b> Existing operations or an available and feasible business idea</p> <p>Enterprises &gt; 40 employees and &gt;\$2million turnover</p> <p><b>Cost of Service:</b> Max 20% of cost of service</p>	<p><b>Mr. Andraous Bacha</b></p> <p>00 961 7 725 948</p> <p><a href="http://www.southbic.org/">http://www.southbic.org/</a></p>
7.	Beirut Digital District (BDD)	<p>Beirut Digital District is a project aiming to create a hub for the digital industry in Lebanon and the region. The project will be the center for Incubator/Accelerator Parks designed to host ICT startups and for Commercial Parks as sites for established ICT companies, aiming to create the right ecosystem of IT infrastructure coupled with state-of- the-art services where ICT companies can</p>	<p>Incubation Networking Training</p>	<p><b>Targeted Group:</b> Startups and entrepreneurs, Medium to large enterprises/Accelerators, Retail tenants related to creative and digital sectors, Educational</p>	<p><b>Ms. Christelle Abou Jaoude</b></p> <p>00 961 1 660 941 <a href="http://www.zre.com.lb">www.zre.com.lb</a></p>

		<p>increase their productivity and competitiveness and thus grow.</p> <p>Beirut Digital District (BDD) was launched in September 2012 in the historical Bachoura district of Beirut as a government facilitated project established between ZRE s.a.l.; a private company whose sole aim is to develop communities that bond, interact, and flourish within their neighborhoods.</p> <p>Berytech is an incubator accelerator for the development of startups in the ICT field, and The Ministry of Telecommunications; acting as a facilitator and providing broadband internet and telephone infrastructure at preferential rates. Beirut Digital District (BDD) will represent a community focused urbanized hub for the creative companies and talents. The project aims to become an all-inclusive zone dedicated to improving the digital industry in Lebanon through providing state-of-the-art infrastructure and superior support services for businesses and the healthiest living environment for the young and dynamic workforce; all at competitive and affordable rates.</p>		<p>Institutions, Organizations providing support for entrepreneurs</p> <p><b>Targeted Sector:</b> Digital publishing or content, software companies, Digital media</p> <p>Mobile operators/Music and TV post- production</p> <p><b>Conditions &amp; Eligibility Criteria :</b> NA</p> <p><b>Cost of Service:</b> Medium to large companies: core and shell spaces for \$215 per square meter per year</p> <p>Startups: ready to use, fully equipped, and managed spaces for \$250 per square meter per year</p> <p>Rental of desks in shared working spaces for \$20 per day, \$ 80 per week, &amp; \$250 per month</p>	
8.	Cloud5	Cloud 5 is a workspace for startups and entrepreneurs in the heart of Downtown Beirut that will allow	Incubation	<b>Targeted Group :</b> Start-up and SMEs in the ICT	<b>Ms. Rana Dinnawi</b>

		<p>budding businesses to have access to high-speed Internet, just footsteps away from the city's major banks and private equity firms. Co-working space for startup companies, VC companies and Accelerator which can accommodate up to 50 professionals. Cloud5 is approximately 500 square meters.</p>		<p>Field</p> <p>Companies usually up to 10 people each</p> <p><b>Targeted Sector:</b> ICT Mobile applications Technology</p> <p><b>Conditions &amp; Eligibility Criteria :</b> Start-up companies or space for incubators and accelerators</p> <p><b>Cost of Service:</b> \$300 per month per desk with offices priced as either 3 or 4 desks per office depending on size</p>	<p>00 961 1 957 000 ext. 3090</p> <p>00 961 71 479 556</p> <p><a href="http://www.cloud5.solider.com">www.cloud5.solider.com</a></p>
9.	AMIDEAST	<p>AMIDEAST is a leading American non-profit organization engaged in international education, training and development activities in the Middle East and North Africa.</p> <p>Founded in 1951, AMIDEAST in its early years focused on promoting U.S. study to students in the MENA region and managing U.S. scholarships and exchanges such as the flagship Fulbright Foreign Student Program.</p> <p>Also, AMIDEAST had partnered with <i>Cisco</i> to create the Cisco Entrepreneur Institute, which transitioned to the AMIDEAST Entrepreneur Institute in the spring of 2014.</p> <p>The Institute serves as a platform that offers</p>	<p>Training Networking Mentoring Business Development Services</p>	<p><b>Targeted Group:</b> University students, young professionals, entrepreneurs</p> <p>Or anyone who wants to open or grow a business</p> <p><b>Targeted Sector:</b> All sectors related to business</p> <p><b>Conditions &amp; Eligibility Criteria:</b> NA</p> <p><b>Cost of Service:</b> Depends on service</p>	<p><b>Ms. Chantal Souaid Mchantaf</b></p> <p>00961 1 989 901 ext. 236</p> <p><a href="http://www.amideast.org/lebanon">http://www.amideast.org/lebanon</a></p>

		training, networking, and individual support for growing businesses.			
10.	Exeed	<p>Exeed is a specialized business institute and a Talent Development Consultancy for executives and entrepreneurs in the MENA region. It also has a unique program for potential future managers and entrepreneurs.</p> <p>Exeed Business Institute is set up to cover the Middle East, North Africa and the Gulf through a specialized business knowledge transfer.</p>	Mentoring Training	<p><b>Targeted Group:</b> Senior staff, Organization leaders Family business owners Managers and directors</p> <p><b>Targeted Sector :</b> All sectors</p> <p><b>Conditions &amp; Eligibility Criteria:</b> Intention to start a business or already started a business</p> <p><b>Cost of Service:</b> Starting \$87 to 272\$ per month depending on the program</p>	<p><b>Ms. Amal Dahouk</b></p> <p>amal@exeed.me http://www.exeed.me/</p>
11.	Center For Entrepreneurship (CFE)	The Center For Entrepreneurship (CFE) at Beirut Arab University is an academic incubator aiming to promote the culture of Entrepreneurship through identifying the individuals with entrepreneurial potential, providing them with a lot of relevant input, expanding their repertoires, and equipping them with skills relevant to entrepreneurship implementation in an integrated manner.	Networking	<p><b>Targeted group:</b> Students</p> <p>The community at large including: Youth</p> <p>Youth with Disabilities</p> <p>Women</p> <p>The Retired</p> <p><b>Targeted sector:</b> All sectors</p> <p><b>Conditions &amp; Eligibility Criteria:</b> Established 2 years ago</p> <p><b>Cost of Service:</b> Fees</p>	<p><b>Dr. Leila Abboud</b></p> <p>00 961 1 300 110 ext. 2609 http://cfe.bau.edu.lb</p>

				upon service	
12.	eClub	eClub is a non-profit organization that aims at raising awareness about entrepreneurship and supporting young entrepreneurs to develop their products and raise funds for their projects in an initiative-driven, fun and interactive way.	Networking	<p><b>Targeted Group:</b> Young entrepreneurs &lt;30 years old</p> <p><b>Targeted Sector:</b> High-tech</p> <p><b>Conditions &amp; Eligibility Criteria:</b> Established 2 years ago</p> <p><b>Cost of Service:</b> Free of charge</p>	<p>00 961 70 807 940</p> <p>info@oureclub.com</p> <p>http://oureclub.com/</p>
13.	Mowgli Foundation	<p>The Mowgli Foundation is an award winning, UK-headquartered mentoring organization, established in 2008 by successful serial entrepreneur Tony Bury, in response to the need for job creation and sustainable economic and societal development in the MENA region as well as in UK communities.</p> <p>Mowgli serve and provide entrepreneurs and leaders from micro, small and medium sized, large corporate and family enterprises with solid and unparalleled mentoring relationships that significantly increase the chances of sustainable growth and success.</p>	Networking Mentoring Training	<p><b>Targeted Group:</b> MSMEs, Second &amp; third generation family businesses, Corporate executives/leaders</p> <p><b>Targeted Sector:</b> Services Technology, Health, and Tourism</p> <p><b>Conditions &amp; Eligibility Criteria:</b> Established 5 years ago</p> <p>Registered charity under the laws of the United Kingdom; registration number (1127087)</p> <p><b>Cost of Service:</b> Approximately \$2500 per mentoring</p>	<p>00 961 1 612 500</p> <p>http://www.berytech.org/</p>

				relationship, finalized upon submission of proposal against needs	
14.	Maurice Fadel	The Maurice Fadel prize for the best business plan in Northern Lebanon is a non-for-profit organization that aims at promoting entrepreneurship and establishing businesses in Northern Lebanon. The main objective of the prize is to develop and nurture a culture of entrepreneurship by providing the necessary opportunities to new as well as seasoned entrepreneurs to learn, hone their skills, network with all relevant business constituencies, and interact with the global entrepreneurship culture.	Competition Training Networking Mentoring Access to market	<p><b>Targeted Group:</b> Tripoli – Akkar, Menyeh, Dennyeh Koura, Zgharta, Bcharri, Batroun</p> <p><b>Targeted Sector:</b> All sectors</p> <p><b>Conditions &amp; Eligibility Criteria :</b> Be a citizen of Lebanon</p> <p>Have a project which will be implemented in Northern Lebanon</p> <p>Innovative/Expandable /Scalable Having a positive Social Impact</p> <p><b>Cost of Service:</b> Free of Charge</p>	<p>Ms. Sarah Al Charif</p> <p>00 961 3 198 516</p> <p>sarah.alcharif@mauricefadel-prize.com</p> <p><a href="http://www.mauricefadel-prize.com/">http://www.mauricefadel-prize.com/</a></p>
15.	Enterprise Forum	The MIT Enterprise Forum Pan Arab is a not for profit organization. Founded in 2005. MITEF is one of the 11 international chapters of the MIT Enterprise Forum Global, an avid promoter of entrepreneurship and innovation worldwide. It has a proven record in promoting MIT-style entrepreneurship by organizing each year the MIT Enterprise Forum Arab Startup Competition, in partnership with Abdul Latif Jameel Community Initiatives, targeting 21 countries of the Arab World and bringing in more than 5,000 applications each year.	Training Networking Mentoring Incubation Target Group Ideas Startups Established businesses	<p><b>Targeted group:</b> Startups/ Established businesses</p> <p><b>Targeted Sector:</b> All sectors</p> <p><b>Conditions &amp; Eligibility Criteria:</b> Established in one of the Arab world countries</p>	<p><a href="http://www.mitarabcompetition.com/">http://www.mitarabcompetition.com/</a></p>

				<b>Cost of Service:</b> Free of charge	
16.	Lebanon Business Network	Lebanon Business Network is a business online portal dedicated to enhancing economic growth and job creation in Lebanon. LBN virtual business community facilitates business matchmaking through lead identification and information exchange between Lebanese entrepreneurs and businesses worldwide.	Networking	<b>Targeted Group:</b> Lebanese worldwide including entrepreneurs and businesses  <b>Targeted Sector:</b> All Industries  <b>Conditions &amp; Eligibility Criteria:</b> NA  <b>Cost of Service:</b> Free of Charge	info@lbn.com.lb  <a href="http://www.lbn.com.lb/">http://www.lbn.com.lb/</a>
17.	STANDUP!	STANDUP! provides training and consulting services in the core communication competencies of Public Speaking, Copywriting, and Branding.  Services are designed to eager individuals, leading companies and ambitious startups. In addition, STANDUP! provides PR, Soft Skills training, and Business Advisory consulting services.	Training Consulting	<b>Targeted group:</b> Individuals Companies/ Startups  <b>Targeted Sector:</b> All sectors  <b>Conditions &amp; Eligibility Criteria:</b> NA  <b>Cost of Service:</b> Available upon request	Mr. Rabih El Khodr  00 961 71 906 722  <a href="http://www.standupcomm.me/">http://www.standupcomm.me/</a>
18.	Agenda Beirut	The Agenda Beirut is a non-formal education group, offering a setup of short programs replicating all the basics required to meet the needs of different diligences under the umbrella of Arts, Lifestyle, Luxury and Society.	Training Networking	<b>Targeted Group:</b> Precollege youth, Young professionals, Hobbyists, Industry group  <b>Targeted Sector:</b> Open to different sectors but more oriented into arts	<b>Mr. Tony Abou Ghazaly</b>  00 961 70 928 926  info@theagendabeirut.com  <a href="http://www.theagendabeirut.co">http://www.theagendabeirut.co</a>

				and leisure <b>Conditions &amp; Eligibility Criteria:</b> NA <b>Cost of service:</b> 700\$ per certificate	m/
19.	BuBleik SAL	BuBleik SAL is a business frame delivering basic office services at Below Budget. BuBleik facilitates virtual office services and remote secretariat support, suitable entrepreneurs, freelancers and small business owners, by complementing their mission with a good business framework.	Networking Mentoring Workshops Virtual Office Services	<b>Targeted Group:</b> Entrepreneurs, Freelancers, Small Business Owners  <b>Targeted Sector:</b> All sectors  <b>Conditions and Eligibility Criteria:</b> NA  <b>Cost of Service:</b> 120\$/month for the Virtual Office Bundle, including a prestigious city business address for mail/courier collection and two dedicated telephone line numbers: one answered by a dedicated operator and the second fax2mail.  BuBleik also provides a complementary y 1 hour meeting room access and 1 invoice submission/ collection per month.	Mr. Roger Khater  00 961 1 411 200  <a href="http://www.bubleik.com">www.bubleik.com</a>
20.	Neopreneur	Neopreneur is a support entity based in Byblos, designed for startups, Entrepreneurs, SMEs and Freelancers; together from the idea phase and through all the growth stages, with a range of	Training Networking Mentoring Working Spaces	<b>Targeted Group:</b> Startups/ SMEs, Freelancers, Organizations	Mr. Tarek Matar  neopreneurlb@gmail.com



		<p>formal and informal help for both businesses and nonprofits.</p> <p>Neopreneur is a cultural barriers' free workspace to promote sharing of ideas, questions, and passions. Neopreneur provides also Business Services (meeting room, secretarial services, private offices, etc.) to the public.</p>	Private Offices	<p><b>Targeted Sector:</b> All sectors</p> <p><b>Conditions &amp; Eligibility Criteria:</b> Negotiable</p> <p><b>Cost of Service:</b> Variable depending of product or service provided</p>	www.neopreneur.me
21.	Servcorp	<p>Servcorp is the world leader in Serviced and Virtual Offices and IT service. It is recognized as a nursery for entrepreneurial small businesses and a home for International Corporations expanding into or investigating new markets.</p> <p>It operates an international network of approximately 140 prime city locations throughout Australia, New Zealand, Japan, China, South-East Asia, India, Europe, the Middle East, United Kingdom, and United States. Servcorp's office and IT solutions enable companies of any size to operate with the corporate presence, IT, infrastructure and support t of a multi-national organization, without having the associated overheads normally required to do so.</p>	<p>Serviced Offices Virtual Offices Address Packages Meeting Facilities Communications Packages IT Services Video Conferencing Administrative Support International Exposure</p>	<p><b>Targeted Group:</b> Entrepreneurs/ Local and Foreign companies startups and SMEs Freelancers, University students, Lawyers, Engineers, Press</p> <p><b>Targeted Sector:</b> All sectors</p> <p><b>Conditions &amp; Eligibility Criteria:</b> Servcorp provides small to medium enterprises access to the best locations, facilities, technologies and people at the lowest possible cost.</p> <p><b>Cost of Service:</b> The cost is customized based on the business requirements.</p>	<p>Mr. Roger Azar</p> <p>00961 1 957 700</p> <p><a href="http://www.servcorp.com.lb">www.servcorp.com.lb</a></p>
24.	Institut Européenne de Coopération et de Développement	The Institut Européenne de Coopération et de Développement (IECD) is a development organization established in 1988 and operating in	<p>Basic Management Training Advanced Management</p>	<b>Targeted Group:</b> Micro and small enterprises (1-10 employees)	<b>Mr. Ramy El Khoury</b>

	(IECD)	<p>16 countries.</p> <p>IECD aspires to provide beneficiaries with the necessary know-how to improve their lives, become responsible actors in their country and contribute to a fairer society. The Support to MSEs Program gives small and micro entrepreneurs the skills to strengthen their enterprise in order to boost local economy and improve living standards.</p>	<p>Training Field Follow-up Club of Entrepreneurs Membership</p>	<p><b>Targeted Sector:</b> All sectors</p> <p><b>Conditions &amp; Eligibility Criteria:</b> None</p> <p><b>Cost of Service:</b> Case by case</p>	<p>00 961 3 798782</p> <p><a href="mailto:Ramy.el-khoury@iecd.po-org">Ramy.el-khoury@iecd.po-org</a></p> <p><a href="http://www.iecd.org/en/">http://www.iecd.org/en/</a></p>
25.	ArabNet	<p>ArabNet is a leading reference for digital businesses in the Middle East. The website includes news, expert advice, and hosts a Startup Database that comprises a vast data registry for digital startups in the MENA. At the moment there more than 1000 registered startups from 19 countries.</p>	<p>Digital Media E-commerce Industry Games Hardware Applications</p>	<p><b>Targeted Group:</b> Entrepreneurs and SMEs</p> <p><b>Targeted Sector:</b> All sectors</p>	<p><a href="mailto:info@arabnet.me">info@arabnet.me</a></p> <p>00 961 1 658 444</p>
26.	Wamda	<p>With offices in Beirut, UAE and Jordan, Wamda is a platform of programs and networks that supports entrepreneurs and the ecosystems that surrounds them, across the MENA.</p> <p>Wamda has established the Wamda Research Lab (WRL) in 2014. Since then, it has worked in conducting applied research on the different aspects of the entrepreneurial ecosystem.</p>	<p>Development Media Research Advisory Services Mentoring</p>	<p><b>Targeted Group:</b> Entrepreneurs and SMEs</p> <p><b>Targeted Sector:</b> All sectors</p>	<p><a href="http://www.wamda.com">www.wamda.com</a></p>
27.	Global Entrepreneurship Week (GEW) – Lebanon	<p>Launched in 2008 and spanning 125 countries, the GEW Lebanon is an annual gathering that goes on for a week, and is aimed at promoting innovation and entrepreneurship.</p> <p>With activities ranging from intimate to large-scale events and competitions, GEW Lebanon has proved to be a solid platform where inventors, collaborators, mentors and investors come together to share in new opportunities for innovation and development.</p> <p>Top partners include Berytech, Bader, Skillz, and</p>	<p>Seminars Workshops</p>	<p><b>Targeted Group:</b> Anyone who is interested in innovation, entrepreneurs, SMEs</p> <p><b>Targeted Sector:</b> All sectors</p>	<p>lb.gew.co</p>

		INJAZ Lebanon			
28.	Women Empowerment (We) Initiative	<p>Established by BLC Bank in Lebanon, the We-Initiative is a platform focused on connecting women among other women through forums and discussions. It is designed to inspire and empower women.</p> <p>The We-Initiative includes the SME ToolKit also established by BLC bank for startups and entrepreneurs.</p>	Mentoring Business Tools and Services Career and Networking	<p><b>Targeted Group:</b> All women</p> <p><b>Targeted Sector:</b> All sectors</p>	<a href="http://www.we-initiative.com">www.we-initiative.com</a>
29.	Grow My Business - Competition	<p>Established as a joint venture between the Beirut Traders Association, MIT Enterprise Forum – Pan Arab Region and Bank Audi, Grow My Business is a competition with the main aim of taking SMEs to the next business level and adding value to their companies.</p> <p>It serves as a platform for startups and SMEs to build on their business and expand through mergers, exports and acquisitions.</p> <p>The winner for this year was <i>Kitchen Confidential</i>, a restaurant establishment.</p>	Mentoring Business Services	<p><b>Conditions &amp; Eligibility Criteria:</b> participants must be Lebanese, own an enterprise that has a commercial registry in Lebanon, and intend to expand their current business</p> <p><b>Selection Criteria:</b> the idea must have the following:</p> <ul style="list-style-type: none"> <li>- Added value to the economy and create jobs</li> <li>- Show innovation and creativity</li> <li>- Scalable with potential to expand to international markets</li> <li>- Have positive long term impact on Lebanon</li> </ul>	<a href="http://www.growmybusiness.me">www.growmybusiness.me</a>
30.	Digihive - Berytech	As part of Berytech’s hosting services, Digihive is a share co-working space where entrepreneurs and freelancers can share in an open and productive working environment. It is an ideal networking hub for emerging startups and creative talents.	Hosting services Business Development Services Creative Support	<p><b>Targeted Group:</b> Entrepreneurs, Freelancers, Creative Talents</p> <p><b>Targeted Sector:</b> All sectors</p> <p><b>Cost of Service:</b> Spaces are</p>	<p><a href="http://berytch.org/berytech-digihive/">http://berytch.org/berytech-digihive/</a></p> <p>00 961 1 649 555</p>

				booked at 80 USD per week and 250 USD per month	
31.	Coworking+961	Coworking+961 is a shared working environment for startups and entrepreneurs. It includes a Startup Support program that was initiated by Enterprise Forum – Pan-Arab Region and Bader.	Internet Access Workshops Mentoring Networking Office Supplies Access to Food and Beverage	<p><b>Targeted Group:</b> Entrepreneurs, Freelancers, Creative Talents</p> <p><b>Targeted Sector:</b> All sectors</p> <p><b>Cost of Service:</b> Spaces are booked at 20 USD per day and 300 USD per month</p>	<p><a href="http://www.coworking961.com/">http://www.coworking961.com/</a></p> <p>00 961 1 201 519</p>
32.	Nabad	<p>Established by <i>arcenciel</i> and considered one of the first social entrepreneurship incubators in the Middle East, Nabad is an innovative program that is targeted towards providing resources and expertise for entrepreneurs to launch enterprises that socially sustainable.</p> <p>The Nabad Competition was started to encourage young men and women with a desire to establish socially sustainable businesses.</p>	Training Networking Business Development Services	<p><b>Targeted Group:</b> Young social entrepreneurial men and women</p> <p><b>Targeted Sector:</b> Education, Health, Technology for Development, Human Rights, Culture, Arts, Justice, Agriculture, Environment, Energy</p> <p><b>Conditions &amp; Eligibility Criteria:</b> The projects should:</p> <ul style="list-style-type: none"> <li>- Have an impact on marginalized populations</li> <li>- Be socially innovative</li> <li>- Generate income sustainably</li> </ul>	<p><a href="http://www.nabad-arcenciel.org/">http://www.nabad-arcenciel.org/</a></p> <p><a href="mailto:nabad@arcenciel.org">nabad@arcenciel.org</a></p> <p>00 961 1 495 561/5 961 1 512 107</p>

<b>Financial Institutions No.</b>	<b>Name</b>	<b>Description</b>	<b>Product/Service</b>	<b>Domain Details</b>	<b>Additional Details</b>
1.	ESDF	<p>ESFD provides Business Advisory Services, in addition to a wide network of branches available at partner banks, though advisors who are located throughout the Lebanese territory.</p> <p>These advisors seek potential borrowers and assist them in completing a comprehensive loan application which is then submitted to one of the ESFD partner banks for processing.</p>	<p>Business loans to SMEs through the network established with the five commercial banks.</p> <p>To note that the ESFD guarantees 50% of the bank risk in case of default.</p>	<p><b>Targeted Group:</b> Please refer to ESFD section in guarantee funds</p> <p><b>Targeted Sector:</b> Agriculture, Trade, Services, Industry</p> <p><b>Conditions &amp; Eligibility Criteria:</b> Viable business plan and solid cash flow</p> <p>Loan can be used against working capital and/or fixed assets (no commodities, securities, speculation, personal use, private/passenger cars)</p> <p>The ESFD targets both startup and existing enterprises</p> <p>Registration at the commercial registry is not mandatory.</p> <p><b>Cost of Service:</b> Approximately US</p>	<p>Ms. Racha Chahine</p> <p>00 961 1 373 460/1/2</p> <p>www.esfd.cdr.gov.lb</p>

				\$250	
2.	Endeavor Lebanon	<p>Endeavor is a Non-Profit Organization established in 1997. Its mission is to lead the global movement to catalyze long-term economic growth by selecting, mentoring, and accelerating the best High-Impact Entrepreneurs around the world.</p> <p>Endeavor helps entrepreneurs overcome barriers to growth by providing the key ingredients to success.</p> <p>Guided by Endeavor, these entrepreneurs generate sustainable economic growth and jobs, become self-made role models, and help nurture a culture of entrepreneurship which spurs investment and encourages people to think big.</p>	<p>Networking Mentoring Access to Finance Customized Programs</p>	<p><b>Targeted Group:</b> Companies with revenues between US\$1million and US\$15million (exceptions can be made for technology companies on a case by case basis)</p> <p><b>Targeted Sector :</b> All sectors</p> <p><b>Conditions &amp; Eligibility Criteria:</b> High- Impact Entrepreneurs that will drive innovation and produce role models. Scalable businesses with high future revenue growth and high job creation</p> <p><b>Cost of Service:</b> \$10,000 per year and discretionary y equity contribution in case of exit</p>	<p>Ms. Christina Chehade</p> <p>00 961 1 216 534</p> <p><a href="http://endeavorlebanon.org/">http://endeavorlebanon.org/</a></p>
3.	SME Toolkit	<p>The SME Toolkit is the International Finance Corporation (IFC) program, consisting of a platform to guide SMEs from establishment to fruition.</p> <p>To make this program available in Lebanon IFC partnered with BLC Bank as a local partner. In order to realize this promising initiative, BLC Bank picked</p>	Online Platform	<p><b>Targeted Group:</b> Entrepreneurs Star ups</p> <p><b>Targeted Sector:</b> All sectors</p> <p><b>Conditions &amp;</b></p>	<p><a href="http://lebanon.smetoolkit.org/lebanon/en">http://lebanon.smetoolkit.org/lebanon/en</a></p>

		<p>its sources and filtered a vast amount of content in order to encapsulate financial advice, guidance, tips and business development tools and to extend several products and services favoring SME activity in Lebanon in one single platform.</p> <p>The Toolkit is regarded as a reference in the SME sector.</p>		<p><b>Eligibility Criteria:</b> NA</p> <p><b>Cost of Service:</b> Free of charge</p>	
4.	Entrepreneurs Lebanon	<p>Entrepreneurs Lebanon is a central online platform initiated by the Central Bank of Lebanon and supported by key stakeholders in the Lebanon entrepreneurship ecosystem.</p> <p>Entrepreneurs Lebanon provides entrepreneurs with one address to connect and collaborate with other entrepreneurs, investors and funders; this platform will also contribute to developing entrepreneurs business ideas; find information on support organizations and the services they offer; access valuable resources; and view a calendar listing local and regional entrepreneurship focused events.</p>	Online Platform	<p><b>Targeted Group:</b> Entrepreneurs, Startups</p> <p><b>Targeted Sector:</b> All sectors</p> <p><b>Conditions &amp; Eligibility Criteria:</b> NA</p> <p><b>Cost of service:</b> Free of charge</p>	<p>Ms. Karyl Akilian</p> <p>00 961 1 387 000 ext: 1803</p> <p><a href="http://lebanon.smetoolkit.org/lebanon/en">http://lebanon.smetoolkit.org/lebanon/en</a></p>
5.	Kafalat S.A.L	<p>Kafalat is a Lebanese financial company providing SMEs with access to commercial bank funding. Kafalat also provides SMEs with loans based on business plan and/or feasibility studies.</p> <p>Programs under Kafalat:</p> <ul style="list-style-type: none"> <li>- Kafalat Basic</li> <li>- Kafalat Plus</li> <li>- Kafalat Innovative</li> <li>- Kafalat Startups and Innovation</li> <li>- Kafalat Agriculture</li> <li>- Kafalat Energy</li> <li>- Kafalat iSME</li> </ul>	Access to Finance and Loans	<p><b>Targeted Group:</b> Entrepreneurs, SMEs</p> <p><b>Targeted Sector:</b> Agriculture Tourism Traditional Crafts High Technology</p> <p><b>Conditions &amp; Eligibility Criteria:</b> Specific to each type of Kafalat Program</p> <p><b>Cost of Service:</b> Specific to each loan given within each Kafalat Program</p>	<a href="http://www.kafalat.com.lb/">http://www.kafalat.com.lb/</a>
6.	Supporting Innovation	As part of <i>Kafalat</i> , the iSME Program is a 30 million	Access to finance:	<b>Targeted Group:</b>	<a href="http://www.kafalat.com.lb/">http://www.kafalat.com.lb/</a>

	in Small and Medium Enterprises (iSME) - Kafalat	<p>USD initiative funded by the Government of Lebanon and the World Bank. The aim is to promote equity investment in order to boost early stage investment finance for financially viable, new, and existing innovative businesses.</p> <p>iSME operates under two main components:</p> <ul style="list-style-type: none"> <li>- iSME Funding Program</li> <li>- Project Management and Implementation</li> </ul>	<ol style="list-style-type: none"> <li>1. Concept Development Grants (CDG)</li> <li>2. Equity Co-investments</li> </ol>	<p>Entrepreneurs, Startups</p> <p><b>Targeted Sector:</b> All sectors</p> <p><b>Conditions &amp; Eligibility Criteria:</b></p> <ol style="list-style-type: none"> <li>1. <b>For Grants:</b> Legal Lebanese residents by law, companies incorporated in Lebanon within one year from the date of application</li> <li>2. <b>For Equity Co-investments,</b> companies should: <ul style="list-style-type: none"> <li>- Be registered legally Lebanon</li> <li>- Operate in Lebanon with the intention of expanding and creating new employment opportunities</li> <li>- Not have any ownership or participation in public entities</li> </ul> </li> </ol> <p><b>Cost of service</b> for Grant applications: non-refundable handling fee of 50 USD</p>	<a href="http://atisme.com.lb/">atisme.com.lb/</a>
7.	Berytech Fund II	Berytech Fund II is a 50 million US Dollars Beirut - based Venture Capital Fund. The funds were received from major banks in Lebanon, to invest in Lebanese businesses, in the knowledge economy sector, under Circular 331 issued by the Central Bank, an initiative that has played a massive role in the activation of the entrepreneurial ecosystem in Lebanon.	Investment in technology	<p><b>Targeted Sectors:</b> Information and Communication Technologies (ICT), Digital Content/Movies/Music, Renewable</p>	<a href="http://berytchfund.org/contact-us">http://berytchfund.org/contact-us</a>



		<p>This fund comes following the extensive support provided by Berytech in the successful building, promotion and management of an ecosystem for startups and entrepreneurial companies over many years.</p> <p>The fund's objective is to invest in small and medium-sized Lebanese enterprises with high growth potential and active in knowledge industries with high human value-added. These enterprises will be chiefly maturing startups, active in a number of knowledge industries, including the historical base of the wider Information &amp; Communication Technology and Digital Content domains.</p>		<p>Energies, Industrial Design, Life Sciences, Design (Fashion, Jewelry)</p> <p><b>Target Groups:</b> Designed to empower start-ups and SMEs, the fund provides the tools and resources needed for early entrepreneurs to realize their full potential through an all-inclusive ecosystem of support.</p>	
8.	Middle East Venture Partners (MEVP)	MEVP is a Middle East-focused Venture Capital firm that invests in the early and growth stages of innovative companies run by talented entrepreneurs primarily, but not exclusively, in Lebanon, Jordan and the UAE.	Consumer technology, Consumer products and services, Internet, Mobile Industry, Venture Capital and Private Equity	<p><b>Target Sectors:</b> Software/ICT</p>	<p><a href="http://www.mevp.com">http://www.mevp.com</a></p> <p>info@mevp.com</p> <p>Headquarters: Ring Bldg, 6th Flr Fouad Chehab Av Beirut, Beirut Lebanon</p>
9.	IM Capital	<p>IM Capital is a newly established support program in Lebanon, and provides Matching Capital, Equity Guarantee as well as Technical Assistance and Support to a broad range of Qualified Early Stage Businesses (QESBs).</p> <p>This initiative funded by USAID and operated by Berytech, aims to improve access to finance, competitiveness and revenue growth for startups and</p>	Provides investment tools and support directly to companies (QESBs), or indirectly through Qualified Early Stage Investors (QESIs) that include angel investors, venture capital funds,	<p><b>Targeted Group:</b> Startups and developing companies</p>	<p>Berytech BDD, Bldg. # 1294 Bechara El Khoury St., Beirut Digital District</p> <p>nrouhana@im-capital.com</p>

		developing companies.	as well as incubators and accelerators.		00 961 1 649 555 <a href="http://berYTEC.h.org/insure-match-capital-holding-s-a-l/">http://berYTEC.h.org/insure-match-capital-holding-s-a-l/</a>
10.	Lebanon Growth Capital Fund, Riyadh Enterprise Development (RED)	<p>Riyada Enterprise Development is a pan-MENA platform with teams operating in Lebanon, Jordan, Palestine, Egypt, Dubai, Tunis, Morocco and Algeria.</p> <p>Description of financial services:</p> <p>Participation at the board level provides for strategic and financial planning hands-on guidance, business development, market development in the MENA region and beyond, organizational scaling as well as mentorship of the CEO and managing directors.</p> <p>Local team of highly experienced investment professionals. Local team is composed of highly competent investment professionals with prior international experience in private equity funding, entrepreneurship, financial planning, strategic modeling and operational excellence.</p> <p>Description of other services: Riyadh Enterprise Development is a pan-MENA platform with teams operating in Lebanon, Jordan, Palestine, Egypt, Dubai, Tunis, Morocco and Algeria. This geographical footprint allows for portfolio companies to cooperate with each other and create market synergies valuable to their growth and market development.</p>	<p>Private Equity</p> <p>Type of financing: Equity</p> <p>Funding amount: Above USD 2 Million</p> <p>Funding for: Growth companies with international reach - funding amounts from USD 1 Million- 7 Million</p>	<b>Industry:</b> Industry agnostic with emphasis on growth markets	<a href="http://www.riyada.com">http://www.riyada.com</a>
11.	B&Y Ventures	<p>B&amp;Y is a venture capital firm that invests at the seed and early growth stage in technology companies, with a special focus on MENA and Lebanon.</p> <p>B&amp;Y Ventures is currently managing the Division One</p>	<p>Funding</p> <p>Private Equity</p>	<b>Targeted Group:</b> Early stage businesses, for-profit startups	NA
				<b>Targeted Sector:</b>	

		Fund.		Technology	
12.	Zoomaal	Zoomaal is an online crowd funding platform targeted at Arab innovators. It was established as a result of the partnership of MEVP, Hivos, Wamda, Cairo Angels, Sawari Ventures, and National Net Ventures.	Access to finance	<p><b>Targeted Group:</b> Arab creative and innovators</p> <p><b>Targeted Sector:</b> Any sector</p> <p><b>Cost of Service:</b> Depends on success of the project  - Successful Projects: 5% for Zoomaal and 2.9% + 0.3 USD per contribution for Third Parties  - Non-successful Projects: No fee for Zoomaal and is a varied fee for Third Parties</p>	<a href="http://www.zoomaal.com">www.zoomaal.com</a>
13.	Cedrus Ventures	Cedrus Ventures is a venture capital and private equity firm that focuses on Lebanese businesses, with investments in long-term risky businesses.	Access to finance Private Equity	<p><b>Targeted Group:</b> Lebanese companies</p> <p><b>Targeted Sector:</b> Not specified</p> <p><b>Conditions &amp; Eligibility Criteria:</b>  Companies should have:  - Competitive advantage  - Demonstrated customer base  - Transparency  - Return on investments</p>	<a href="http://www.cedrusventures.com/">http://www.cedrusventures.com/</a>
14.	Fond d'Amorçage de Réalisation et d'Orientation (FARO)	FARO is an initiative established by the CCIA-BML with the aim of supporting Lebanese innovative entrepreneurs who are working with at least one European or Mediterranean partner. FARO loans can reach up to 20,000 USD at a 1% interest rate maximum.	Access to finance Technical Support Services Financial Support Services	<p><b>Targeted Group:</b> Companies, individuals, and associations</p> <p><b>Targeted Sector:</b> All sectors</p>	<a href="http://www.ccib.org.lb/">http://www.ccib.org.lb/</a>

				<b>Conditions &amp; Eligibility Criteria:</b> Companies/Individuals should: - Work with at least one European or Mediterranean partner - Plan to introduce and deliver an innovative product, service, or business model	
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<b>Intermediaries No.</b>	<b>Name</b>	<b>Description</b>	<b>Product/Service</b>	<b>Domain Details</b>	<b>Additional Details</b>
1.	Beirut Creative Cluster	<p>BCC, the Beirut Creative Cluster, is a not-for-profit, sectorial business association.</p> <p>Its members are firms based in Lebanon that create and distribute digital content, media products and services, design and marketing solutions.</p>	Training Networking Mentoring Access to Finance Access to Market	<p><b>Targeted Group:</b> Companies that operate in the creative industries</p> <p><b>Targeted Sector :</b> Creative Industries which include Media Design, Architecture, and ICT</p> <p><b>Conditions &amp; Eligibility Criteria:</b> Displays a spirit of collaboration and a desire to be active within the organization</p> <p><b>Cost of Service:</b> To be determined</p>	Mr. Salim Tannous  salim.tannous@beirutcreative-cluster.org  www.beirutcreativecluster.org/
2.	Berytech	Berytech is an Incubator and Business development center offering the right and adapted environment for the creation and development of innovative startups and	Incubation Training Networking Mentoring	<p><b>Targeted Group:</b> Project holders, Aspiring entrepreneurs, Innovative startups and SMEs, and</p>	Ms. Krystel Khalil  00 961 1 612

		<p>SMEs.</p> <p>Berytech supports entrepreneurs, through incubation, business support, hosting in high-tech infrastructure, mentoring, networking, funding, trainings, innovation management, access to international markets, adapted programs and competitions.</p> <p>Berytech currently manages three business development centers located in Mar Roukoz, Mathaf and Beirut Digital District with more than 70 hosted companies, as well as a media cluster empowering creative industries in Lebanon.</p> <p>Berytech closed the first venture capital fund with 16 investments in technology startups and SME and will launch the second VC Fund in 2014, opening up new financial opportunities for aspiring entrepreneurs.</p> <p>Berytech is member of the European Business Network and was the first in the region to receive the accreditation as a Business Innovation Center (BIC), opening up access to its companies to international networks.</p>	<p>Access to markets Innovation management VC funding</p>	<p>University students</p> <p><b>Targeted Sector:</b> ICT /Media/Health/ Design Innovation</p> <p><b>Conditions &amp; Eligibility Criteria:</b> Innovative idea Quality and commitment of team Technology component, Viability of the project</p> <p><b>Cost of Service:</b> NA</p>	<p>000</p> <p><a href="http://www.berytch.org">www.berytch.org</a></p>
3.	AltCity	<p>AltCity is a community space and startup support space that was designed from the bottom up to help facilitate, mobilize, encourage, and support high impact entrepreneurship and innovation in Lebanon and the WANAMed region.</p> <p>Their particular areas of work are around web/mobile app development, gaming, education, and new/creative media</p>	<p><b>Pre-Startup Activities:</b> Training, ideation, momentum/energy building, team building.</p> <p><b>Startup Boot Camps and Competitions:</b> Intensive idea and business development to the point of pitching to seed/angel investors; chance for pre-seed funding</p>	<p><b>Targeted Group:</b> University students, Young Professionals, Design, Technology</p> <p><b>Targeted Sector:</b> Media, Design, Technology</p> <p><b>Conditions &amp; Eligibility Criteria:</b> Innovative, scalable, socially relevant</p> <p><b>Cost of Service:</b> Check website</p>	<p>Mr. Samer Azar</p> <p>00 961 1 742 582</p> <p><a href="http://www.altcity.me/">http://www.altcity.me/</a></p>

			<p><b>Business Development:</b> From idea to launch, initial funding, and early client acquisition.</p> <p><b>Growth:</b> Helping a startup grow, reach new clients/ markets, and attract downstream funds.</p> <p>AltCity is a physical space that includes co-working/office spaces, meeting and workshop rooms, an event space, business facilities, and a public/open cafe that includes new media tools.</p>		
4.	Cartier Women's Initiative Awards	<p>The Cartier Women's Initiative Awards is an international business plan competition created in 2006 by Cartier, the Women's Forum, McKinsey &amp; Company and INSEAD Business School to accompany and guide initiatives by women entrepreneurs.</p> <p>It aims at supporting creative, financially sustainable and responsible women-led companies, in all countries and industries.</p>	<p>Funding Mentoring Access to market Networking</p>	<p><b>Targeted Group:</b> Women-led start-ups</p> <p><b>Targeted Sector:</b> All sectors</p> <p><b>Conditions &amp; Eligibility Criteria:</b> An original for-profit business creation</p> <p><b>In the startup phase:</b> Between one and three years of operation The main leadership position must be filled</p>	<p><a href="http://www.cartierwomeninitiative.com">http://www.cartierwomeninitiative.com</a></p>

				by a woman <b>Cost of Service:</b> Free of charge	
5.	BIAT	<p>BIAT is not-for-profit organization, established with the assistance and back up of the Integrated SME support program, an EU funded project at the Ministry of Economy and Trade of Lebanon.</p> <p>This Incubator/ Business Development Centers mission is to identify, incubate, host, network, train, and support value added business opportunities. BIAT is committed to assisting and promoting growth potential sectors in North Lebanon.</p> <p>The team at BIAT is ready to assist clients with their financial, technical, marketing, legal, accounting, exporting and training issues along with relevant authorities' connection.</p>	Funding Incubation Mentoring Training	<p><b>Targeted Group:</b> Startups, SMES, And Micro businesses</p> <p><b>Targeted Sector:</b> Tourism/Agriculture/IT/Crafts/Industry</p> <p><b>Conditions &amp; Eligibility Criteria:</b> Related Background, Commitment, Entrepreneurial Experience, Financial Viability, Growth Potential</p> <p>Preferably from Targeted Sectors</p> <p><b>Cost of Service:</b> Subsidized fees. Depends on the service required</p>	<p>Mr. Nasri Moawad</p> <p>00 961 6 400 401</p> <p><a href="http://www.biatcenter.org/">http://www.biatcenter.org/</a></p>
6.	IDEAL (Innovation & Development of Academic- Industry)	<p>The project “Innovation and Development of Academic- Industry Partnerships through Efficient Research Administration in Lebanon” (IDEAL) was officially launched at American University of Beirut in December 2012 and it will finish in October 2015.</p> <p>The main goal of the project is to increase capacity and capability for research, development and innovation at Lebanese institutions of higher education.</p> <p>IDEAL aims to develop systems capable of supporting</p>	RD&I Research Support systems Training on research administration Networking Entrepreneurship mentoring for business startup	<p><b>Targeted Group:</b> Researchers, Academics, Higher education Institutes</p> <p><b>Targeted Sector:</b> Academic industry</p>	<a href="http://www.ideal4lebanon.org/">http://www.ideal4lebanon.org/</a>

		<p>and promoting relevant research at Lebanese universities, create networks to transfer innovation from academia to industry and establish partnerships, and establish professional structures between government academia, and industry for the long-term management of research for Lebanon.</p> <p>The project is comprised of a consortium of 15 partners from Lebanon and Europe. The participating Lebanese institutions represent over two-thirds of the Lebanese landscape of higher education.</p> <p>The target beneficiaries of this project are Lebanese researchers, students, non-profit organizations, and society at-large who will benefit from improved systems for research, development and innovation (RD&amp;I) designed to grow Lebanon's economic strength and global competitiveness.</p> <p>The Project Coordinator Institution is the American University of Beirut that has been awarded a grant from the European Union Tempus Program to implement this three year project that supports academic research while promoting innovation and enhancing partnerships with industries.</p> <p>The EU Tempus IV Program supports modernization of higher education systems and creation of an area of co-operation between the EU and its neighborhood countries.</p> <p>Established in 1990, its scheme now covers 26 partner countries in the Western Balkans, Eastern Europe and Central Asia, North Africa and the Middle East.</p>			
7.	Speed@BDD	Speed@BDD is a collaborative effort between prominent regional investors and leading Lebanese entrepreneur organizations. Their main mission is to boost the	Primarily focused on software, digital media, web and mobile	<b>Startup Money:</b> Accelerated startups receive a \$30,000	info@speedlebanon.com  00 961 1 649



		<p>Lebanese ecosystem by investing in high potential technology startups at the idea and seed stage.</p>	<p>applications</p> <p>Serves a large global market Innovative and strongly differentiated from competitors</p> <p>Scalable business model that offers strong growth potential</p>	<p>cash injection, excluding in-kind services</p> <p><b>Duration:</b> The acceleration lasts for 3 months, and startups will reside at the cutting-edge Beirut Digital District (BDD)</p> <p><b>Equity:</b> Speed@BDD will take 10% equity from accelerated startups</p> <p><b>Services Offered:</b> Extensive access to top mentors, experts, and industry connections</p> <p><b>Follow-On Mentorship:</b> Top teams will benefit from follow-on immersion in Silicon Valley</p>	<p>555 ext. 6020-6021</p> <p><a href="http://speedlebanon.com/">http://speedlebanon.com/</a></p>
8.	<p>Bader – Young Entrepreneurs Program</p> <p>Lebanese Business Angels (LBA)</p>	<p>Bader is an organization that promotes entrepreneurship in Lebanon by offering prominent entrepreneurs the right tools for success.</p> <p>Bader also provides facilitated access to finance through capital for startups and SMEs as well as the development of finance-driven projects. As well, Bader provides vast networking services that taps into Lebanese and international human capital for the development of such startups and SMEs.</p> <p>Among Bader’s first initiatives, was The Building Block Equity Fund and has raised 7.5 million USD to support SMEs. Furthermore, it is managed by MEVP. Funded</p>	<p>Education Access to Finance Networking</p>	<p><b>Targeted Group:</b> Project holders, Aspiring entrepreneurs, Innovative startups and SMEs, and University students</p> <p><b>Targeted Sector:</b> All sectors</p>	<p><a href="http://www.baderlebanon.com">www.baderlebanon.com</a></p> <p>00 961 1 201 519</p> <p>00 961 3 198 989</p>

		<p>startups under this initiative include <i>Shawarmanji</i>, <i>Shahiya</i> and <i>Bookwitty</i>.</p> <p>In 2009, the Bader Business Angels (LBA) was established to introduce entrepreneurs to investors for their development.</p>		<p><b>Conditions &amp; Eligibility Criteria:</b> Lebanese-based, Early stage development, high added value with an innovative/creative products/service, with potential for regional and international access</p> <p><b>Cost of Service:</b> NA</p>	
9.	Lebanon Science and Technology Park (LSTP)	<p>Located in Tripoli, The Lebanon Science and Technology Park (LSTP) is an area of innovation combining science, technology and research aimed at fostering economic development in the country.</p> <p>Working as an incubator and accelerator for the growth of SMEs, the LSTP serves to facilitate the creation of new innovative businesses.</p>	<p>Access to finance/funding Training Coaching</p>	<p><b>Targeted Group:</b> Entrepreneurs and SMEs</p> <p><b>Targeted Sector:</b> 1. Information and Communication Technology (ICT) 2. Biotechnology and Healthcare 3. Renewable energy</p>	<p><a href="mailto:info@lebanonstp.com">info@lebanonstp.com</a></p> <p><a href="http://www.lebanonstp.com">www.lebanonstp.com</a></p> <p>00 961 6 448 602</p>
10.	Chamber of Commerce Industry and Agriculture – Beirut and Mount Lebanon (CCIA-BML)	<p>The CCIA-BML is a non-profit private organization working for benefit of the public, with a main goal of motivating all economic sectors and activities in an effort to enable them to add to the development of a national economy that is strong and competitive.</p> <p>Among one of the services provided by this Chamber is access to the Credit Guarantee Fund (CGF), partly managed by <i>Kafalat</i>. The CGF was established in order to support businesses financially with a vision for innovation, expansion, and job creation.</p>	<p>Access to funding Membership and Certifications Training Agriculture Services Development Projects Networking and Promotion</p>	<p><b>Targeted Group:</b> Entrepreneurs, SMEs</p> <p><b>Targeted Sector:</b> Agriculture, Industry and Commerce</p> <p><b>Conditions &amp; Eligibility Criteria:</b> For the CGF – businesses must be members of the CCIA-BML for 3 years and have &lt; 40 employees</p>	<p><a href="http://www.ccib.org.lb/en/">http://www.ccib.org.lb/en/</a></p> <p>Call Center: 1314</p>

				<b>Cost of Service:</b> Depends on the service itself	
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## ANNEX 2

### *Laws and Policies*

#### **Intellectual Property (IP) Laws**

No.	Title	Description	Source	Date	Comments
1.	Decree No. 918	Copyright and Related Rights (Neighboring Rights), Enforcement of IP and Related Laws, IP Regulatory Body	Ministry of Economy & Trade	<b>Date of Text (Issued):</b> November 15, 2007  <b>Year of Version:</b> 2007	
2.	Circular No. A/1/4	Copyright and Related Rights (Neighboring Rights)	Ministry of Economy & Trade	<b>Date of Text (Issued):</b> May 25, 2006  <b>Year of Version:</b> 2006	
3.	Circular No. A/1/5	Copyright and Related Rights (Neighboring	Ministry of Economy & Trade	<b>Date of Text (Issued):</b> May 25, 2006	
4.	Circular No. A/1/6	Copyright and Related Rights (Neighboring	Ministry of Economy & Trade	<b>Date of Text (Issued):</b> May 25, 2006	
5.	Law No. 707	Copyright and Related Rights (Neighboring Rights), Trademarks	Ministry of Economy & Trade	<b>Date of Text (Enacted):</b> December 9, 2005  <b>Year of Version:</b> 2005	Law No. 707 of December 9, 2005, amending Article 3 of Law No. 14/87 of April 5, 1987 and Article 10 of Law No. 89 of July 9, 1991

6.	Law No. 659/2005	Competition, Enforcement of IP and Related Laws, Other, Trade Names, Trademarks	Ministry of Economy & Trade	<p><b>Date of Last Amendment:</b> April 15, 2014</p> <p><b>Date of Entry into Force:</b> February 10, 2005 Date of Text (Enacted): February 4, 2005</p>	
7.	Decree No. 9423	Protocol on Cooperation in Science and Technology of Industrial Property between the Ministry of Economy and Trade of the Republic of Lebanon and the Ministry of Industry and Trade of Hashemite Kingdom of Jordan	Ministry of Economy & Trade	<p><b>Date of Entry into Force:</b> January 22, 2003</p>	
8.	Resolution No. 2002/16	Copyright and Related Rights (Neighboring Rights)	Ministry of Economy & Trade	<p><b>Date of Text (Issued):</b> July 1, 2002</p>	
9.	Decree No. 4461	IP-related Laws: enacted by the Legislature	Ministry of Economy & Trade	<p><b>Date of Entry into Force:</b> December 2000</p> <p><b>Date of Text (Enacted):</b> 2000</p>	

<b>No.</b>	<b>Title</b>	<b>Description</b>	<b>Source</b>	<b>Date</b>	<b>Comments</b>
10.	Law No. 240/2000	Enforcement of IP and Related Laws, Industrial Property, IP Regulatory Body, Layout Designs of Integrated Circuits, Patents (Inventions), Plant Variety Protection, Transfer of Technology, Undisclosed Information (Trade Secrets)	Ministry of Economy & Trade	<b>Date of Entry into Force:</b> August 14, 2000  <b>Date of Text (Enacted):</b> August 7, 2000	
11.	Law No. 75 of 1999	Copyright and Related Rights (Neighboring Rights), Enforcement of IP and Related Laws, IP Regulatory Body	Ministry of Economy & Trade	<b>Date of Entry into Force:</b> June 13, 1999  <b>Date of Text (Enacted):</b> April 3, 1999	
12.	Law No. 585	Authorizing the Government to conclude the Rome Convention for the Protection of the Artists.  Copyright and Related Rights, Neighboring Rights	Ministry of Economy & Trade	<b>Date of Text:</b> July 24, 1996 (signed in Rome on October 26, 1961)  <b>Type of Text:</b> Treaty Approvals	
13.	Law No. 89	Copyright and Related Rights (Neighboring Rights), Industrial Designs, Industrial Property, Patents (Inventions)	Ministry of Economy & Trade	<b>Year of Version:</b> 2005  <b>Date of Text (Enacted):</b> September 7, 1991	

14.	Law No. 14/87	Industrial Designs, Patents (Inventions), Trademarks. (on Duties and Fees due for the Publication of Trademarks and Patents in the Official Gazette)	Ministry of Economy & Trade	<b>Year of Version:</b> 2005 <b>Date of Text (Enacted):</b> May 4, 1987	
15.	Law No. 69/20	Copyright and Related Rights (Neighboring Rights)	Ministry of Economy & Trade	<b>Year of Version:</b> 1969 <b>Date of Text (Enacted):</b> May 23, 1969	
16.	Publications Laws	IP Laws: Issued by the Executive	Ministry of Economy & Trade	<b>Date of Text (Issued):</b> July 14, 1962 <b>Date of Entry into Force:</b> 1962	
17.	Resolution No. 83	Trademarks	Ministry of Economy & Trade	<b>Date of Text (Issued):</b> December 29, 1960	
18.	Resolution No. 392	Trade Names, Trademarks	Ministry of Economy & Trade	<b>Date of Text (Issued):</b> July 7, 1960	
19.	Law of December 14, 1959	The Authorization to ratify the Nice Agreement concerning the International Classification of Goods and Services for Purposes of the Registration of Marks. (Industrial Property, Trademarks)	Ministry of Economy & Trade	<b>Date of Text:</b> December 14, 1959	
20.	Law of August 10, 1955	License agreement between Lebanon and Germany on industrial property (Industrial Property)	Ministry of Economy & Trade	<b>Date of Text:</b> August 10, 1955	

21.	Law of 10 December 1946	Industrial Property	Ministry of Economy & Trade	<b>Year of Version:</b> 1946 <b>Date of Text (Enacted):</b> December 10, 1946	
22.	Legislative Decree No. 340	Copyright and Related Rights (Neighboring Rights), Domain Names, Enforcement of IP and Related Laws, Industrial Designs, Industrial Property, Patents (Inventions), Trade Names, Trademarks, Undisclosed Information (Trade Secrets)	Ministry of Economy & Trade	<b>Date of Entry into Force:</b> March 1, 1943 <b>Date of Text (Issued):</b> March 1, 1943 <b>Year of Version:</b> 2010	
23.	Resolution 185	Copyright and Related Rights (Neighboring Rights)	Ministry of Economy & Trade	<b>Date of Text (Issued):</b> April 16, 1943	
24.	Resolution No. 177 of 1942	The increase of duties and fees to the Bureau of Protection of Commercial and Industrial Property (Industrial Designs, IP Regulatory Body, Patents (Inventions), Trademarks)		<b>Date of Text (Issued):</b> March 23, 1942	
25.	Resolution No. 152/ LR of 1939	The application of the Paris convention for the protection of industrial property and the Madrid Agreement for the repression of false or deception indications of source on goods in Syria and Lebanon. (Enforcement of IP and Related Laws, Geographical Indications, Industrial Designs, Layout Designs of Integrated Circuits, Patents (Inventions), Trademarks, Utility Models)	Ministry of Economy & Trade	<b>Date of Text (Issued):</b> July 19, 1939	

26.	Resolution No. 170 of 1937	The Determination of tariff of fees, tolls and revenues of the bureau of protection of commercial industrial. (Industrial Designs, IP Regulatory Body)	Ministry of Economy & Trade	<b>Date of Text (Issued):</b> December 6, 1937	
27.	Resolution No. 24/LR	The exemption from legalization of proxies, required for registration under resolution No. 2385/1924. (Industrial Property, IP Regulatory Body)	Ministry of Economy & Trade	<b>Date of Text (Issued):</b> January 27, 1936	
28.	Resolution No. 141/LR of 1934	Application of the Berne Convention to Eastern Countries under the French Mandated Authority.  (Copyright and Related Rights (Neighboring Rights), Enforcement of IP and Related Laws)	Ministry of Economy & Trade	<b>Date of Text:</b> June 28, 1934	
29.	Resolution No. 2385	Competition, Copyright and Related Rights (Neighboring Rights), Enforcement of IP and Related Laws, Industrial Designs, Industrial Property, IP Regulatory Body, Trade Names, Trademarks	Ministry of Economy & Trade	<b>Date of Text (Issued):</b> January 17, 1924	



التشريع قيد واللوائح والمراسيم القوانين

The laws, decrees and regulations under legislation

No. رقم	Title عنوان	Description وصف		Source مصدر	Date تاريخ	Comments تعليقات
1.	الإعفاءات الضريبية في المناطق الحرة  Tax exemptions in the free zones	الشركات الواقعة في هذه المناطق تستفيد من الإعفاء الضريبي لمدة 10 سنوات  تعفى هذه الشركات من تسجيل موظفيها لدى الضمان الاجتماعي شرط أن يحصلوا على تقديرات مماثلة أو أفضل	Companies located in these areas will benefit from tax exemption for 10 years.  These companies are exempt from registering their employees with social security on the condition that they can get similar or better benefits	وزارة المالية  Ministry of Finance		
2.	قانون الجمارك مرسوم رقم 645  Customs Law: Decree No. 645	تعليق مؤقت للرسوم الجمركية المفروضة على السلع المستوردة المستخدمة في الإنتاج بغرض إعادة تصديرها  مثلاً، المستوردات التي تندرج تحت نظام "الادخال المؤقت" ونظام "المستدعاة الصناعية" ونظام "المناطق الحرة" حيث تحظى الصناعات الموجهة نحو التصدير بإعفاء تم من الرسوم الجمركية	Temporary suspension of customs duties imposed on imported goods used in production for the purpose of re-export.  For example, imports that fall under the classification of "temporary entry" and "industrial warehouses" and the classification of "free zones" where the oriented industries have been excluded from the exemption of customs duties	وزارة المالية  Ministry of Finance	١٧/٥/١٩٩٩  17/5/1999	

3.	<p>ضريبة قانون رقم الدخل 144</p> <p>Income Tax Law No. 144</p>	<p>• لا تخضع أرباح المؤسسات الصناعية التي أنشئت في لبنان بعد عام 1980 لضريبة الدخل المفروضة على الشركات، وذلك لمدة 10 سنوات، اعتباراً من أول يوم تبدأ فيه الإنتاج.</p> <p>• يشمل الإعفاء الشركات التي تصنع منتجات غير منتجة محلياً سابقاً وأن تقوم في مناطق ترغب الدولة في إيمانها وأن لا تقل أصولها المالية عن 500 ل.ل. ولا ينبغي لمجمل الأرباح المعفاة من ضريبة الدخل أن تتخطى قيمة الأصول الثابتة قبل الاستهلاك.</p> <p>• تحظى المؤسسات الصناعية الوطنية بإعفاءات مالية إذا خصصت جزءاً من أرباحها للاستثمار في لبنان.</p>	<ul style="list-style-type: none"> <li>• The profits of industrial enterprises established in Lebanon in 1980 are not subject to the income tax imposed on companies, and for a period of 10 years, starting from the first day of production.</li> <li>• Exemption covers companies that do not produce any products manufactured previously, locally and in the regions where the state is interested in development and financial assets should not be less than 500 LL. The overall profits exempted from income tax should not go beyond the value of fixed assets before depreciation.</li> <li>• National industrial enterprises received financial exemptions if they set a part of their profits to invest in Lebanon.</li> </ul>	وزارة المالية Ministry of Finance	١٢/٦/١٩٩٩ 12/6/1999	
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4	مرسوم إشتراعي رقم 127  Legislative decree No.127	•إنعاش الريف ونشر الصناعات في كافة المناطق - إعفاء كل مصنع يقام في كل قرية من ضريبة الدخل لمدة 6 سنوات  - إعفاء المصانع القائمة في المناطق الصناعية والساحلية إذا انتقلت إلى منطقة ريفية، من ضريبة الدخل لمدة 6 سنوات	Revitalize the rural regions and spread industries in all areas:  - An exemption for each factory will be held in every village from income tax for a period of 6 years  -A 6 year income tax exemption of existing factories in industrial and coastal areas if they will move to a rural area	وزارة المالية  Ministry of Finance	١٦/٩/١٩٨٣  16/9/1983	
5.	مرسوم إشتراعي رقم 3018  Constitutional Law No. 3018	تحديد أصول منح الإعفاءات الضريبية لأغراض الإنماء الصناعي	Identify the assets of granting tax exemptions for the purposes of the Industrial Development	وزارة المالية  Ministry of Finance	٢٥/٣/١٩٧٢  25/3/1972	
6.	مرسوم إشتراعي رقم 2023  Legislative decree No. 2023	تحديد المناطق التي تستفيد المشاريع الصناعية الجديدة القائمة ضمنها من إعفاء من ضريبة الدخل تزيد عن الست سنوات.	Identifies areas that can take advantage of new or existing industrial projects including the list of exemption from income tax for more than six years.	وزارة المالية  Ministry of Finance	١٠/٥/١٩٧٩  10/5/1979	
7.	مرسوم إشتراعي رقم 3360  Legislative decrees No. 3360	إحالة مشروع قانون إلى مجلس النواب يرمي إلى منح إعفاءات ضريبية لأغراض الإنماء الصناعي في المناطق المحررة.	Refers to the draft law to Parliament that aims to grant tax exemptions for the purposes of industrial development in the liberated areas.	وزارة المالية  Ministry of Finance	٠٦/٠٧/٢٠٠٠  6/7/2000	

8.	<p>منح التراخيص الصناعية للشركات الأجنبية</p> <p>Granting industrial licenses to foreign companies</p>	<p>لا يستدعي الحصول على أي ترخيص استثنائي من الإدارة الحكومية وتشجع العقود التي تنطوي على نقل التقنيات الحديثة.</p>	<p>Remove the requirements for access to any extraordinary license from the administration of the government and encourages contracts that involve the transfer of modern technologies.</p>	<p>وزارة الاقتصاد والتجارة</p> <p>Ministry of Economy and Commerce</p>		
9.	<p>إعفاءات أو تخفيضات جمركية</p> <p>Reduction or tariff exemptions</p>	<p>• تخضع مستوردات الآلات والمعدات وقطع الغيار ومواد البناء المستخدمة في إنشاء مؤسسات صناعية جديدة في لبنان لضريبة جمركية نسبتها 3%</p> <p>• المعدات والمنتجات المستوردة لمشاريع تنموية والممولة كلياً أو جزئياً من مصادر أجنبية معفاة من الرسوم الجمركية.</p>	<ul style="list-style-type: none"> <li>Imports of machinery and equipment, spare parts and building materials used who are subject to the establishment of new industrial enterprises in Lebanon for the customs tax increase of 3%.</li> <li>Imported equipment and products for development projects wholly or partially funded by foreign sources are exempted from the customs fees</li> </ul>	<p>وزارة الاقتصاد والتجارة</p> <p>Ministry of Economy and Commerce</p>		

<p>10.</p>	<p>قانون تنمية الاستثمار في لبنان صادر عن مجلس النواب رقم 360</p> <p>Investment Promotion Law in Lebanon issued by the Parliament No. 360</p>	<p>تستفيد من هذا القانون جميع القطاعات الاقتصادية ومن ضمنها قطاع الصناعة. يشمل ما يلي:</p> <ul style="list-style-type: none"> <li>- تحضير الدراسات والبحوث والملفات و الإحصاءات والاقتراحات عن المناخ الاستثماري في لبنان وعن فرص الاستثمار في مختلف القطاعات الاقتصادية.</li> <li>- تأمين المعلومات الاقتصادية والتجارية والصناعية للمستثمرين.</li> <li>- إعداد مسح ودراسات عن فرص الاستثمار في لبنان</li> <li>- تطوير قاعدة المعلومات وتنظيم حملات تسويقية لجذب المستثمرين الأجانب؛</li> <li>- تقديم المساعدة في عمليات تسويق السلع والمنتجات اللبنانية</li> <li>- الإشتراك في رأس مال الشركات المساهمة كلما سححت الفرصة لذلك</li> <li>- تقديم المساعدة المالية أو المساهمة في رأس مال الشركات المنظمة لمعارض في لبنان وخارجه بهدف تسويق الصناعة والزراعة والسياحة اللبنانية إلخ</li> <li>- المساهمة في تنظيم الدورات التدريبية لكوادر وموظفي وعمال الشركات اللبنانية</li> <li>- المساهمة في رأس مال الشركات المساهمة لإنشاء وإدارة الحاضنات في حقل التكنولوجيا والاتصالات وغيرها من القطاعات الاقتصادية</li> <li>- تصنيف المناطق اللبنانية إلى ثلاث مناطق استثمارية:</li> <li>1. المنطقة "أ" - تستفيد المشاريع الاستثمارية الواقعة في هذه المنطقة من تسهيلات في التراخيص ومن إعفاءات ضريبية لحد أقصاه 40% لمدة سنتين وذلك من تاريخ طرح الأسهم في بورصة بيروت؛</li> <li>2. المنطقة "ب" - بالإضافة إلى الإعفاءات المخصصة للمنطقة "أ"، تتمتع المشاريع الإستثمارية في المنطقة "ب" من تخفيض 50% على ضريبة الدخل لمدة 5 سنوات؛</li> <li>3. المنطقة "ث" - بالإضافة إلى الإعفاءات المخصصة للمنطقة "أ"، تتمتع المشاريع الاستثمارية في المنطقة "ث" من الإعفاء 50% من ضريبة الدخل ومن الضريبة على الأرباح لمدة 10</li> </ul>	<p>All economic sectors, including the industrial sector will benefit. Including the following:</p> <ul style="list-style-type: none"> <li>- The preparation of studies and research, files and statistics and suggestions about the investment climate in Lebanon and the investment opportunities in various economic sectors</li> <li>- Ensure economic, trade and industrial information for investors</li> <li>-Preparation of survey and studies on investment opportunities in Lebanon</li> <li>- Database development and regulation of marketing campaigns to attract foreign investors</li> <li>- To assist in the marketing of goods and products for Lebanese operations</li> <li>- To participate in the capital of joint stock companies whenever opportunities arise; Providing financial assistance or to contribute to the organization in the capital of companies for exhibitions in Lebanon and abroad with a view to marketing industry, agriculture, tourism, Lebanese, etc.</li> <li>- Contribute to the organization of cadres and staff workers and Lebanese companies training courses;</li> <li>- To contribute to the capital of joint stock companies to create and manage incubators in</li> </ul>	<p>وزارة الاقتصاد والتجارة</p> <p>Ministry of Economy and Commerce</p>	<p>١٦/٨/٢٠٠١</p> <p>16/8/2001</p>	
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		سنوات.	<p>technology and communications and other sectors of the economy.</p> <p>- Classification of areas of Lebanon into three investment zones:</p> <p>1. Region "A" - located in this area of the facility in the licensing and tax exemptions limit to 40% for two investment projects benefiting from the date of offering shares on the BSE</p> <p>2. Zone "B" - in addition to the special exemptions of area "A, "B" also enjoys investment projects in the region, including the 50% reduction on income tax for a period of 5 years</p> <p>3. Region, "W" - in addition to the exemption of customs in area "A", "W" has investment projects in the region, "W" enjoys a 50% exemption from income tax and the tax on profits for 10 years</p>			
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11.	سياسات مختلفة	سياسات تجارية تشجّع الإنتاج الصناعي مساعدة الحكومة للصناعات النامية عبر إيجاد أسواق لصادراتها  - إلغاء قرار احتكار إمدادات زيت الوقود المستخدم في الإنتاج الصناعي، وبات باستطاعة الصناعيين استيراد الوقود لحسابهم الخاص لاستخدامه في إنتاجهم الصناعي	Trade policies that encourage industrial production  Government assistance for developing industries by creating markets for exports  -The decision to cancel the monopoly of the supply of fuel oil used in industrial production, now able to import industrial fuel on self-employed basis as to be used in industrial production			
12.	مرسوم إشتراعي رقم 11991	اعتبار مناطق صناعية، مناطق ريفية ومناطق ترغب الحكومة في تنميتها .	Industrial areas and rural areas are areas that the government wants to develop	وزارة الصناعة  Ministry of Industry	٢٠/٣/١٩٩٨  20/3/1998	
13.	مرسوم إشتراعي رقم 3361  Legislative Decree No. 3361	اعتبار المناطق المحررة، مناطق ريفية ومناطق ترغب الحكومة في تنميتها	Liberated areas and rural areas are that the government wants to develop	وزارة الصناعة  Ministry of Industry	٧/٧/٢٠٠٠  7/7/2000	
14.	مرسوم إشتراعي رقم 7781  Legislative Decree No. 7781	اعتبار منطقة مكسي في البقاع، مناطق ريفية ومناطق ترغب الحكومة في تنميتها	The MEKSI region in the Bekaa and the rural areas are areas that the government wants to develop.	وزارة الصناعة  Ministry of industry	١٥/٠٤/٢٠٠٢  15/04/2002	
15.	مرسوم إشتراعي رقم 341  Legislative Decree No. 341	شروط منح المساعدات لتحسين إنتاجية الصناعة عن طريق شراء معدات وآلات جديدة .	The conditions for granting aid to improve the productivity of the industry by buying new equipment and machines.	وزارة الصناعة  Ministry of Industry	٤/٣/١٩٨٣  4/3/1983	

16.	<p>دعم سعر الفائدة</p> <p>Support the rate of interest</p>	<p>كتيب التمويل الصناعي :</p> <ul style="list-style-type: none"> <li>• يمنح الدعم للقروض حتى 15 مليارات ل.ل بدلاً من 5 مليارات ل.ل. أو ما يعادلها بالعملة الأجنبية؛</li> <li>• دعم سعر الفائدة بنسبة 7% بدلاً من 5% على القروض المعطاة للقطاع الصناعي حتى 5 مليارات ل.ل. أو ما يعادلها بالعملة الأجنبية؛ .</li> </ul>	<p>Industrial Finance Booklet:</p> <ul style="list-style-type: none"> <li>• Provide support for loans up to 15 billion LL instead of 5 billion LL or the equivalent in foreign currencies;</li> <li>• Support the interest rate of 7% instead of 5% on loans given to the industrial sector up to 5 billion LL or the equivalent in foreign currency</li> </ul>	<p>مصرف لبنان</p> <p>Bank of Lebanon</p>	<p>يجرى مفعول هنا البرنامج على القروض الصناعية بعد تاريخ المعقودة 04/10/1997</p> <p>(انتهى الاستفادة من هذا التسهيل في 31/12/2001)</p> <p>The industrial loans held after the date of 04/10/1997 will be effected by this program (The advantage of this facility has ended in 31/12/2001)</p>	
17.	<p>الامتياز الوطني</p> <p>National Franchise</p>	<p>المشتريات الحكومية للمشاريع العامة تفضل السلع المنتجة محلياً حتى ولو تخطى سعرها سعر السلع المماثلة غير المحلية بنسبة قد تصل إلى 10%</p>	<p>Government Procurement for public projects with a preference for the local products even though their price exceeds those similar non- local goods by up to 10%.</p>	<p>مصرف لبنان</p> <p>Bank of Lebanon</p>		



18.	تمويل الدين والأسهم  The financing of the stock and the debt	• يوفر 96 مصرفاً محلياً وأجنبياً مصدراً لتمويل الدين؛ • توفر مؤسسة التمويل الدولية (IFC) تمويل الأسهم وتمويل الدين في القطاع الصناعي	96 local and foreign banks provide source for the financing of debt  The International Finance Corporation (IFC) provides the finance of stocks and the finance of debt in the industrial sector	مصرف لبنان  Bank of Lebanon		
19.	رقم قرار 3773  Resolution No. 3773	هبة مالية بقيمة 11 مليون يورو مقدمة من قبل الإتحاد الأوروبي لتطوير الصناعة في لبنان	A financial donation of 11 million euros provided by the European Union to develop industry in Lebanon	مجلس الوزراء  وزارة الصناعة  Council of Ministers  Ministry of Industry	31/8/2000	

20.	<p>Loan Guarantees <i>Kafalat</i></p> <p>ضمان القروض كفالات</p>	<p>المستفيدون: الشركات الصغيرة والمتوسطة الحجم التي لا يتجاوز عدد العاملين فيها 20 موظفاً؛</p> <p>• شروط الاستفادة :</p> <p>- حجم الكفالة 75% من قيمة القرض مع الفوائد؛</p> <p>- لمصارف المقرضة: المصارف العاملة في لبنان؛</p> <p>1 - مبلغ القرض 300 مليون ل.ل. كحد أقصى، أو ما يعادل هذا المبلغ بالعملة الأجنبية؛</p> <p>- تستفيد من هذا البرنامج كل صناعة تحتاج الى تطوير أعمالها شرط الا يستعمل القرض لتسديد ديون سابقة .</p> <p>• سيطور هذا البرنامج بالعناصر التالية :</p> <p>- يعدل سقف القروض الممكن كفالتها من 100 مليون الى 300 مليون ل.ل.؛</p> <p>- يمكن للمؤسسات التي توظف 40 مستخدماً كحد أقصى ان تستفيد من البرنامج.</p>	<p>The beneficiaries: Small and medium companies whose number of workers does not exceed 20 employees;</p> <p>Size of the warranty: 75% of the loan amount with interest</p> <p>- The lender banks : operating banks in Lebanon</p> <p>Loan amount: 300 million LL maximum, or its equivalent in foreign currencies</p> <p>- Every industry that needs to develop its business benefits from this program, under the condition that the loan is not used to pay off previous debts.</p> <p>• This program will develop the following elements:</p> <p>- Adjusts the ceiling so that credit can be guaranteed by the loans from 100 million to 300 million LL</p> <p>- Institutions that employ a maximum of 40 users can benefit from the program.</p>	<p>مجلس الوزراء</p> <p>وزارة الصناعة</p> <p>Council of Ministers</p> <p>Ministry of Industry</p>		
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21.	وسائل تمويل أخرى Other ways of funding	• قروض مصرفية مدورة • قروض طويلة الأجل	Banks loans rounded Long-terms loans	مجلس الوزراء وزارة الصناعة Council of Ministers Ministry of Industry		
22.	قرار رقم 160 تنظيم عمليات الإيجار التمويلي Resolution Law No. 160 to organize funding rental operations	• التأجير التمويلي : - تنظيم لسجل هجائي مركزي وتحفيزات ضرائبية تشجع عمليات الإيجار التمويلي	Financial lease: Organizing an alphabetical centralized record and tax incentives encourage lease operations	مجلس النواب Parliament	6/12/1959	

23.	<p>تعميم رقم 1880</p> <p>قرار رقم 7743</p> <p>Circular No. 1880</p> <p>Resolution No. 7743</p>	<p>قرار رقم 7743 بتاريخ 2/1/2001</p> <p>• تعميم مصرف لبنان يدعم الفوائد الناتجة من عمليات الإيجار التمويلي بالنسب نفسها الممنوحة للقروض الصناعية أي :</p> <p>7% إلى حد أقصى 5 مليارات ل.ل؛</p> <p>5% للشطر ما بين 5 مليارات و 15 مليار ل.ل؛</p> <p>- مع التطبيق للعقود المبرمة ما بين 10/4/1997 و 8/9/2000</p> <p>• عمليات شراء صكوك المدينيات؛ بورصة بيروت؛</p> <p>• الصندوق الاستثماري " ليبانون هولدينغز "؛</p> <p>• البنك الإسلامي للتنمية) تمويل عمليات التصدير والاستيراد</p>	<p>• The circulation of the Bank of Lebanon that supports the benefits resulting from lease operations proportions itself granted to any industrial loans:</p> <p>- 7% to a maximum of 5 billion LL</p> <p>- 5% for the split between 5 billion and 15 billion LL</p> <p>- With the application of the contracts concluded between 04/10/1997 and 08/09/2000</p> <p>• Buy instruments from Credit owners; Beirut Stock Exchange</p> <p>• Investment Fund "to Lebanon Holdings"</p> <p>• Islamic Development Bank (finance export and import operations)</p>	مصرف لبنان Central Bank	1/2/2001	
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24.	<p>اعفاء من الضريبة على النفقات المخصصة لارباح مشروع بحوث صناعي و تطوير</p> <p>مرسوم اشتراعي رقم 144 باضافة بند قانون</p> <p>Exemption from the tax on the expenses allocated to industrial research and development profits</p> <p>Draft law to add an article from the legislative decree No. 144</p>	<p>•مشروع قانون باضافة نبذة - د -للبند 1 من المادة 5 مكرر من المرسوم الاشتراعي) 59/144 ضريبة الدخل(، يرمي إلى الإجازة للمؤسسات الصناعية أن تغطي بجزء معين من أرباحها المبالغ التي تخصصها للبحوث والتطوير في مجال الصناعي من الإعفاء من الضريبة وفق شروط محددة</p>	<p>Draft law to add a section d- a bill adding Brief - (d) in the Article 5 bis/repeated of the Legislative Decree 59/144 (income tax), intended to license the industrial enterprises to cover a certain portion of the profits, the amounts allocated for research and development in the industrial area, of the exemption from tax under the terms of specific</p>	<p>مجلس الوزراء وزارة الصناعة Council of Ministers Ministry of industry</p>	6/12/1959	
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24.	<p>اعفاء من الصادرات الصناعية بنسبة 50% ضريبة الدخل</p> <p>Exemption from the industrial exports by 50% for income tax</p>	<p>مشروع قانون يرمي إلى إضافة فقرة إلى نص المادة 5 من قانون ضريبة الدخل؛</p> <p>•إعفاء كافة الصادرات الصناعية اللبنانية المنشأ بنسبة 50% من ضريبة الدخل؛</p> <p>•تعتمد شهادة المنشأ المصدقة حسب الأصول والبيانات الجمركية وبيانات مديرية الواردات لإثبات منشأ الصادرات، قيمتها الصناعية ولتحديد الأرباح على التوالي؛</p> <p>•تلتزم كافة وحدات وزارة المالية المعنية تسليم أصحاب العلاقة المستفيدين من أحكام هذا القانون البيانات الأنف ذكرها، كما تلتزم الجهة المستفيدة من الإعفاء تضمين حسابات أرباحها المقدمة إلى مديرية الواردات هذه البيانات .</p>	<p>A draft law to add paragraph to the text of Article 5 of the Income Tax Act:</p> <ul style="list-style-type: none"> <li>•Exempt all Lebanese industrial exports of origin of 50% of income tax</li> <li>•Relying on Certificate of Origin certified, the data of customs and the data of the Directorate of imports to prove the origin of exports, their industrial value and to determine the profits respectively</li> <li>•All units of the Ministry of Finance are committed to delivering the relevant stakeholders and beneficiaries of the provisions of this data as mentioned by the law, also the beneficiary of the exemption is committed to include the accounts of their profit in the data submitted to the Directorate of imports</li> </ul>	<p>مجلس الوزراء</p> <p>وزارة الصناعة</p> <p>Council of Ministers</p> <p>Ministry of Industry</p>		
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25.	<p>اعفاء الآليات المعدة للصناعة والمواد الأولية من رسوم المرفأ</p> <p>Exemption from the industrial machines and primary materials intended for manufacture of the port fees</p>	<p>• اقتراح قانون يرمي إلى إعفاء الآلات الصناعية الجديدة والمستعملة والمواد الأولية المعدة للصناعة من رسم المرفأ الذي يدفعه المستورد مباشرة إلى المرفأ لدى الاستيراد.</p>	<p>Propose a law to exempt new and used industrial machines and primary materials intended for manufacture from the fees of the port that the importer pay directly to the port of import.</p>			
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26.	<p>للتعاون تفاهم مذكرة حكومة بين الصناعي الليبنانية الجمهورية الكويت دولة وحكومة رقم مرسوم 5218</p> <p>A memorandum of agreement for industrial cooperation between the Government of the Republic of Lebanon and the Government of the State of Kuwait</p> <p>Decree No.5218</p>	<p>•إحالة مشروع قانون إلى مجلس النواب يرمي إلى الإجازة للحكومة إبرام مذكرة تفاهم لتعزيز التعاون على أصعدة مختلفة (علمية، تقنية، تكنولوجية، إدارية، تشريعية، فنية... الخ (في القطاع الصناعي وتطويره على أساس المصلحة المشتركة والى تنمية التبادل التجاري بين حكومة الجمهورية اللبنانية وحكومة دولة الكويت، الموقعة في مدينة الكويت بتاريخ 7/3/2010 وتعتبر هذه المذكرة سارية لمدة خمس سنوات و تتجدد تلقائيا لمدة أو لمدد مماثلة ما لم يرغب أحد الطرفين بعدمالتجديد ويبلغ الطرف الأخر بذلك؛اتفق الطرفان المتعاقدان على :</p> <p>– المشاركة في الدورات التدريبية وورش العمل والندوات والمؤتمرات ذات العلاقة؛</p> <p>– تبادل زيارة الوفود للاطلاع على الخبرات والمستجدات المتعلقة بالتطور الصناعي .</p>	<p>Refers to a draft law to the Parliament who gives the license to the government to conclude a memorandum of agreement to strengthen the cooperation on different levels (scientific, technical, technological, administrative, legislative, technical, etc.) in the industrial sector and develop it on the basis of mutual interest and the development of trade between the Government of the Republic of Lebanon and the Government of the State of Kuwait, signed in Kuwait City on 7/3/2010.</p> <p>This note is valid for five years and is renewed automatically for similar period or periods unless one of the parties wishes of non-renewal and has to tell the other party</p> <p>Contracting Parties agreed to:</p> <ul style="list-style-type: none"> <li>- Participation in related workshops, seminars, conferences, and training courses</li> <li>- Exchange of visit of delegations to get informed of the experience and developments related to industrial development</li> </ul>	<p>مجلس الوزراء وزارة الصناعة</p> <p>Council of Ministers</p> <p>Ministry of Industry</p>	21/9/2010	
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