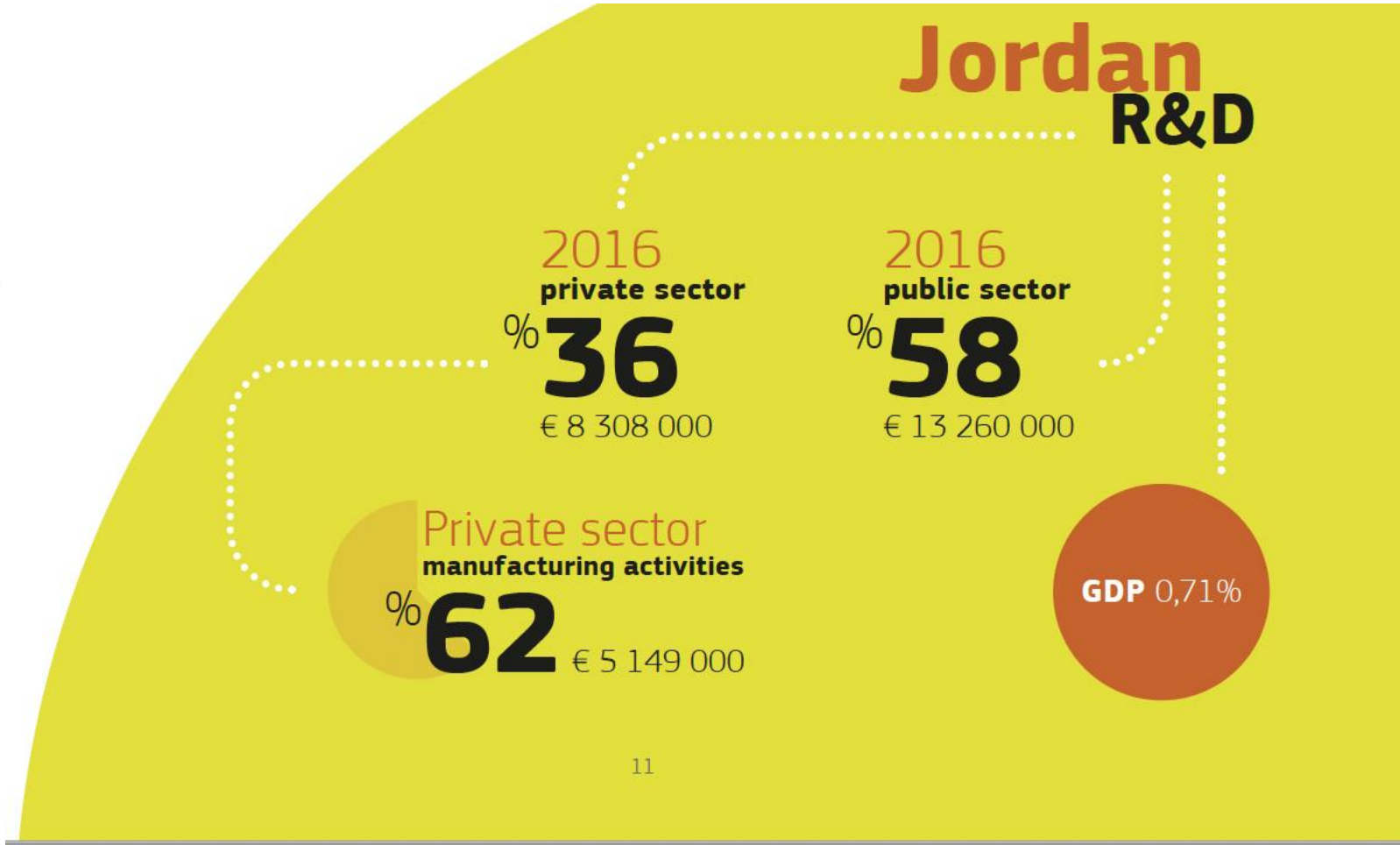
Technology transfer in Jordan 2019-2020

Country profile

- Inhabitants: 10.2 million (34% under 15 yrs)
- GDP per capita: 4,282 USD (2020)
- GDP % service sector: 61.8%
- Universities: 30 (10 public & 20 private)
- R&D Institutions: 24 (10 affiliated to Univ.'s)
- GERD: 0.71% of GDP (2016)
  - 58% public sector
  - 36% private sector



General findings:

Government

Relation of TT with National Economic Strategy

- **Service economy** (ICT, tourism, medical services, pharmaceuticals, biotechnology and the renewable energy)
- **Economic development strategy:** Education (esp. HE), Research & culture of Innovation & Entrepreneurship
- **STI Policies :** 2006–2015 National Policy Agenda - 2013-2017 National Policy and Strategy for STI & National ICT Strategy – Reach 2025)
- **Institutions & Structures:**
  - Ministry of **Planning**, Ministry of **Higher Education and Scientific Research** (MHESR), Ministry of **Industry and Trade** (MIT), Ministry of **Digital Economy and Entrepreneurship** (MoDEE)
  - **HCST**
  - **SRSF**
  - **NCI**

General findings:

Government

Relation of TT with National Regulatory Framework of IP

- **Patent Office under MIT**
- **200-250 applications per year until 2018**
- **On the rise since Jordan joined the PCT in March 2017**
- Pharmaceuticals (60-70%), Renewable Energy and ICT
- Recently joined TISC of WIPO to strengthen the patent capabilities
- **IPCO** under RSS helps Universities draft IP policies

Relation of TT with National IP and Innovation strategy

- **Four government bodies are involved in formulating R&D/innovation policies**
  - **Ministry** of Planning - funding of the Industrial Research and Development Fund (IRDF) and the National Fund for Enterprise Support (NAFES)
  - **MHESR -** through funding and administration of the SRSF
  - **HCST** develops national Science & Technology (S&T) strategies
  - **NCI** recently established structure closely affiliated with the HCST and it was created to reduce the redundancy in the innovation ecosystem

General findings:

Universities and Research organisations

- Private universities depending on tuition fees geared mainly towards **education**
  - **Heavy teaching load, research mostly for promotion purposes**
- Public universities "in the absence of an IP policy, patent law does not clearly apply to public universities because researchers are not employed to invent".
- More than half established **TTOs** at one point, but **mostly inactive**
  - very little, or absent, TT and commercialisation activities
- **Contract Research**:

Isolated cases of licensing, also with international companies. Generally, these have been related to joint project activities and are based on personal contacts, rather than a structured policy.

- **Spin offs:**
  - JUST has both an active TTO and a functional IP policy; they have an equity approach and had several instances of spin-offs from the university.
  - PSUT established a centre of excellence on cybersecurity in conjunction with an enterprise
- **Research Expenditure**
  - 4% of the university's budget should be allocated to R&D activities (not implemented)

General findings:

Industry

- The majority of enterprises in Jordan (≈ 90%) are SMEs and private companies are not generally considered innovative nor likely to undertake significant levels of R&D (except ICT sector, where there are several success stories)
- The **Jordanian Enterprise Development Corporation** (JEDCO)
  - supports SMEs to secure export markets;
  - export support programme with competitive grants up to Jordanian Dinar (JOD) 50,000 (EUR 60,000) to build manufacturing capabilities;
  - acceleration programme providing TA & CB to the business sector;
  - promotes Faculty for Factory (3F) Programme (funded by HCST) to the industry.

Support organisations

- **iPARK in RSS**
  - established as an ICT incubator in 2003, currently has 5 locations around Jordan
  - hosted more than 120 companies
  - patent support services through IPCO
- **Oasis 500**
  - VC focused on ICT, supported over 100 start-ups
  - offers entrepreneurship training, mentorship and guidance, business incubation and acceleration, and follow-up on investment and funding

General findings:

Challenges

Challenges facing innovation and TT in the private sector in Jordan

- Lack of support for manufacturing and especially creative industries
- Deficient assessment of the level of innovation and technology readiness level (TRL)
- Insufficient financial support to enhance exports and limit imports
- Absence of tax incentives for R&D and manufacturing industries
- Difficulties in starting businesses and resolving insolvency issues
- Absence of mentoring and coaching programmes for entrepreneurs

Key points of TT activity in Jordan

- **Technology Transfer Network**
  - Created by HCST through the EU-funded SRTD programme in 2008. Fourteen TTOs were established by SRTD followed by another six by SRTD II.
  - **A task, not a function** as TT officers work part-time and this task is supplementary to their functions at the institutions. They meet once a year, usually along other events, but they do not work cooperatively

Obstacles to Technology Transfer in Jordan

- Scarcely applied research and innovation base with researchers prioritising academic promotion, hence focusing on publications rather than commercialisation;
- Faculty members overburdened with the teaching workload, with little time for conducting research;
- Existing gap and lack of trust between academia and industry (due to different cultures, lack of awareness about common benefits from linkages, etc.);
- Limited funds for TT but also for cooperative research;
- Lack of IP regulations and policies at universities;
- Lack of staff to support TT at universities;
- Lack of coordination between the HCST and the Ministry of Higher Education and Scientific Research.

Gaps and Recommendations:

Innovation Ecosystem

Although the Jordanian STI ecosystem has most, if not all, of the required components, there is weak interaction among them

- Develop an inclusive i**nnovation/TT strategy** that is clearly communicated and co-owned by all stakeholders
- Improve **coordination** between HCST and MHESR
- Empower the newly established **NCI** to act as the main coordinator of the ecosystem

Gaps and Recommendations:

Innovation & TT Culture in Academia

Private universities depend solely on tuition fees, as such their main focus is teaching and not research. In addition, university faculty is burdened with teaching duties, which leaves them no time to perform research.

- Balancing research & teaching activities allowing more research to be performed
- Restructure university faculty promotion laws and regulations to encourage research and innovation that can lead to effective TT
- Introduce regulations to allow universities to establish spin-offs
- Implement the national regulation of allocating 4% of university budgets to R&D
- Support universities to develop and implement IP policies.

Gaps and Recommendations:

National Technology Transfer Network

The national TT network is fragmented and suffers from a lack of financial and human resources. TT officers are not dedicated to this task, as they are faculty members who are mostly carrying out TT in addition to their already busy schedule

- Allocate financial resources and appropriate infrastructure for the TTOs at universities
- Hire dedicated, skilled TT officers and equip them with operational tools and a regulatory framework
- Foster and defragment the network by enhancing coordination and cooperation between the different TTOs
- Provide capacity building to TT officers, particularly in areas related to commercialisation activities
- Promote good practices and success stories.

Gaps and Recommendations:

Intermediary and support structures

Jordan suffers from a lack of efficient enabling structures and absence of effective coordination and synergies among the existing ones.

- Invest in establishing business incubators and accelerators in other fields than ICT, building upon the success of Oasis 500.
- Develop and implement capacity-building programmes for tech transfer managers and professionals to run these structures.
- Coordination and synergies among the different Business Support Organisations (BSOs).

Gaps and Recommendations:

Regulatory and Legislative Issues

The industry & business sectors have low absorptive capacity for innovation and TT

- Tax incentives for industries
- Reduce administrative obstacles for start-ups
- Legislation to facilitate insolvency and bankruptcy
- Carry out an assessment of manufacturing industries with a view to limiting imports and encouraging innovation
- Valorise research outputs through the adoption of a value chain approach to support SMEs
- Support locally produced technologies
- Introduce programmes/instruments to support “soft landing” for businesses.

Gaps and Recommendations:

IP Strategy & IP Policies

Lack of awareness on IP issues in universities. Limited number of industrial design registrations. The main applications for IPR are for trademarks.

Develop and implement a national IP strategy and policy, with a view to encouraging TT Amend legislation concerning competition law, utility models and industrial design in order to join the the Hague Agreement for Industrial Design Protection

Thanks !!!

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