



# **Study on National Research Systems**

## **A Meta-Review**

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**Compiled by Roland Waast**  
**Contributions by**

Jacques Gaillard, Sari Hanafi, A.  
alHuzban, Hocine Khelfaoui, Mina  
Kleiche, Pénélope Larzillière.

Special thanks to R. Arvanitis & ESTIME Project.



## The countries dealt with

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- **Maghreb: Algeria, Morocco and Tunisia**
- **Machreq: Lebanon, Jordan and Syria ; Bahrain, Kuwait,**
- **Gulf: Saudi A., Oman, Qatar and United Arab Emirates.**
- **less extent Egypt and Sudan**



# Introduction

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- an important S&T potential,
- little tapped for research.
- Consequently brain drain takes a heavy toll



# Research indicators

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- **GERD as % of GDP** : between 0.1 and 0.3%; against 0,4-0,6 in Latin America and 0,8 to 1 in developed countries
- Nb researchers per million of pop: very little 29 in Syria; 1700 in Jordan; Tunisia 1400.



# Feminization

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- Often half of the graduates are women. This rate increase in Gulf areas



# HUMAN RESOURCES: PROFESSION

## *Remuneration of Academics in Jordan*

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- **Number of credit hours that each staff member should teach per week:**
  - Lecturer 15 credit hours
  - Full Lecturer 12 credit hours
  - Assistant Professor 12 credit hours
  - Associate Professor 12 credit hours
  - Full Professor 9 credit hours



# Rate of salaries in the public universities in Jordan

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- Lecturer \$ 750-850
- Full Lecturer \$ 1000-1150
- Assistant Professor \$ 1200-1400
- Associate Professor \$ 1500-1850
- Full Professor \$ 1900-2300



## Research: a subordinate function

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- Institutions were created for specific missions:
  - Universities for training civil servants
  - Institutes and Centres for monitoring sensitive spheres (such as agriculture, mines, marine life and fishing, energies, etc.).





# INCENTIVES TO RESEARCH

## AUB

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- publish or perish
- *staff member who succeeds in attracting substantial research funding can **"buy" part of his/her teaching time off.***
- *the University Research Board (URB) and the Office of Grants and Contracts (OGC).*
- The role of the URB is to foster and improve the AUB research environment.
- URB supports the AUB faculty by providing
  - Short- and long-term development grants primarily for short-term travel to conferences and workshops and long-term visits to research facilities
  - research grants for regular research in individual, group or collaborative research projects, and "seed grants".
- *US\$1,000,000.*



## INCENTIVES TO RESEARCH

### *Structuring Research: the Tunisian Government*

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- The policy law relative to scientific research and technological development allowed the restructuring of the national system of R&D
- setting-up of 139 research laboratories and 624 research units in the Public research & Public health establishments, and the Higher Education.
- Financial incentives: budget for grants to 3d cycle students was doubled in 3 years.



# International cooperation

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- Bibliometric studies
  - a large proportion of articles are co-authored with foreign researchers
  - roughly half of them in the Gulf countries and Machreq, and two thirds in Maghreb



# General description of the S&T systems

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- Type of governance:
  - Maghreb: Centralized
  - Machreq: Grassroots
  - Gulf: commercial



# Algerian case: Centralized Governance

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- State centered
- Challenge: “a real research activity is linked to the emergence of a scientific community, and results of a professional rather than an institutional development”



# Machreq Countries: Grassroots Model

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- **Performers** are free of their initiatives
- **“Authorities”** provide specific capabilities existing in the few establishments interested by research.
- The **asset** is not always in line with the expectations of a coherent Plan
- the strategy: launch **open calls for tenders** to find out the potential or/and to test it through pragmatic projects.
- Through this process, national authorities **“enter a market”**: they experiment the competition with other donors
- **Social sciences**: “commercial Centres” and research NGOs
- **Experimental sciences**: As equipment is needed this is more difficult.
- **Challenge**: developing a national research strategy is not an easy task for authorities.



# Gulf countries: extreme case

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- Strategy: no aim to building on a national science base, but to *localizing on their territory the best foreign capabilities*, and innovative R&D firms.
- **Qatar**: Carnegie Mellon, Texas A&M, Weill Cornell
- **Qatari Science park**: EADS, ExxonMobil, GE, Microsoft, Shell and Total.
- “By bringing research and business together, QSTP is delivering Qatar's vision for a knowledge economy”.
- **Dubai Academic City**: marketed as ‘a *new global fully integrated academic destination*’



# Gulf: What Kind of Strategy?

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- Lack of conducive environment
- Closed to migrants and non-nationals
- compete with the best old Universities in the region (AUB...) and elsewhere.
- They are supposed to attract a number of rich and brilliant students;
- their assessment: much more in terms of profitability than of substantial contribution to education and knowledge.
- The same is true for R&D firms: no substantive industrial strategy is yet linked to their arrival.





# Gulf:

## Parachuting Universities?

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- 4 possibilities
  - Farce
  - Autonomy
  - Offshore in the Global market of R&D
  - Regional pole



## Structuring research: Is there a “research system” fitting a specific *function*?

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- There are organs for research (Universities, Centers, and sometimes an overabundance of governing bodies) but they don't make a system.
- *Structuring of research: exceeds probably the prerogative of establishments.*
- system is fragmented or there is no system



# Scarcity of the research production

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- *Universities: research is not on the agenda of the most recent and private ones.*
- Among public establishments, only a few practice researches;
- within the “research oriented” ones a small portion of the academics is regularly producing results.
- This is well documented through bibliometric studies.



# ***Research is part of professional role models***

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- Fortunately, there are other motivations to do research.
- They stem from professional models and internalized academic *norms and values*.
- *Young academics and researchers have been trained within demanding laboratories (often abroad).*
- While spending some time in Diaspora or through cooperative projects, they always remain in contact with international standards.
- Within specific professions (medical practitioners and engineer) research is part of the ***role model***



# Impediments

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- Career advantages linked to research achievements are poor, when compared to the financial benefits one may gain from *consulting activities and services he could practise instead*
- This is why it is difficult to come across “total scientific communities”, within which there is a full devotion to the activity