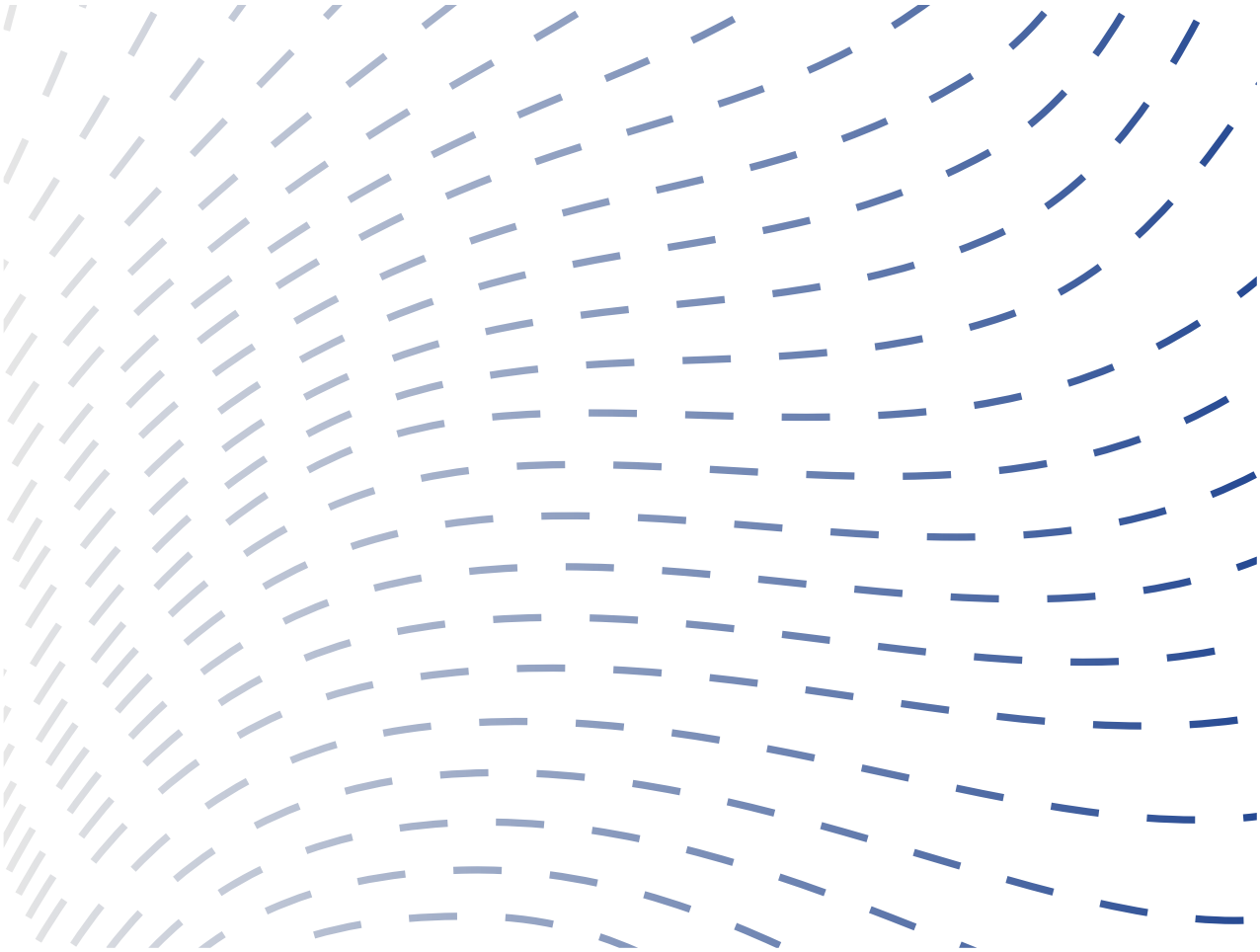
IPPP: Public Procurement for Innovative Purposes

PPI4MED

White Paper

Technology Transfer and Commercialization of Public Research Results through IPPP in the Mediterranean Region

The Case of Tunisia.



THE PROJECT ACRONYM	PPI4MED
REFERENCE	B_A.2.1.0136
PROJECT TITLE	Technology Transfer and Commercialization of Public Research Results through IPPP in the Mediterranean Region
THEMATIC OBJECTIVE	A.2 Support for Education, Research, Technological Development, and Innovation
PRIORITY	A.2.1 Technology Transfer and Commercialization of Research Results
COUNTRIES	ESpain, Italy, Tunisie, Egypt, Jordan
PROJECT END DATE	October 31, 2023

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LISTE DES ABRÉVIATIONS

NAPSR	National Agency for the Promotion of Scientific Research
APII	Agency for the Promotion of Industry and Innovation
TTO	Technology Transfer Office
IEV	Instrument Européen de Voisinage
CT	Coopération transfrontalière
NRC	National Research Centers
EEE	Enterprise Europe Network
ENI	European Neighborhood Instrument
NISIP	National Institute for Standardization and Industrial Property
NLL	National Living Laboratory
CBL	Cross-Border Laboratory
MR	Mediterranean Region
MHESR	Ministry of Higher Education and Scientific Research
PPI	Public Procurements for Innovation
OECD	Organization for Economic Coperation and Development
GDP	Gross Domestic Product
GDP	Groupe de Décideurs Politiques
NRIP	National Research and Innovation Program
PIP	Public Innovation Procurement
IPPMR	Innovation Public Procurement for the Mediterranean Region
PPP	Public-Private Partnership
RBSO	Research Based Spin-Off
R&D	Research & Development
EU	European Union
RVD	Research Valorization Device
ISWW	Innovation Single Window Web

Introduction

The PPI4MED project titled "Technology Transfer and Commercialization of Public Research Results through IPPP in the Mediterranean Region" is currently in the execution phase in five countries, namely Spain, Italy, Tunisia, Egypt, and Jordan. It receives financial support from the European Union (EU) under the ENI-CBCMED program and covers various sectors, including food security, water, and energy.

Its main objective is to transfer the progress resulting from research and development (R&D) generated by national research centers (CNR) to the public sphere using the model of public procurement for innovation (PPI).

Currently, national research centers (CNRs) play a central role as major contributors of research and development (R&D) results in the Mediterranean region, and this observation applies to Tunisia as well. It is noteworthy that despite the existence of various instruments for transferring these results to society, Innovative Public Procurement (IPP) does not yet have a structured organization. This situation is intriguing because Tunisian public procurement represents a significant component of public expenditures, estimated to constitute about 17% of the Gross Domestic Product (GDP). Similarly, this observation holds true for most Mediterranean countries.

In this regard, the PPI4MED project aims to propose a model for transferring CNR results to public buyers, industry, small and medium-sized enterprises (SMEs), and individuals through collaboration to design solutions in five national living labs (LVN) and one cross-border lab (LT). Furthermore, twelve concrete IPP processes will be implemented to raise awareness among policymakers about the importance of incorporating IPP as strategic instruments for transferring results within the framework of national science policies.

Subsequently, IPPs reveal significant potential for transforming science policy and R&D results. The pilot projects planned in these five countries aim to demonstrate the ability of IPPs to address the major challenges facing our societies.

As the organization responsible for implementing this pilot project in Tunisia, the National Agency for the Promotion of Scientific Research (ANPR) organized six meetings during the month of October (2023), in which a group of decision-makers, known as the "Policy Makers Group (PMG)" within this project, actively participated. During these meetings, the decision-makers conducted an analysis of the current legal framework, identified the strengths, weaknesses, opportunities, and threats in the market for innovative scientific research, and formulated their recommendations and guidance on the use of the IPP instrument. They also reviewed and validated all components of this white paper defining the PPI model.

Presented to the Prime Minister as a roadmap, this white paper primarily aims to facilitate the systematic and holistic implementation of IPPs as a strategic tool for transferring results from CNRs within the context of Tunisia's science policy.

Current Situation

In recent decades, Tunisia has made continuous efforts to strengthen its national research and innovation system, with the aim of fostering an economy open to new ideas and the latest technological advancements. As innovation and R&D have become key drivers for growth, job creation, and addressing contemporary societal challenges, it is advantageous for the Tunisian public sector to actively participate in this dynamic of opportunities. In this context, public procurement for innovation has proven to be a critical strategic lever to promote technological progress, enhance the efficiency of public services, and support Tunisia's economic fabric.

The purpose of this current assessment is to deeply examine the present state of the public market for innovation, identify the opportunities and obstacles it faces, and explore the current trends and challenges shaping this evolving field. We aim to understand how public procurement for innovation can contribute to the country's economic and technological transformation while addressing governance, regulatory, and coordination issues associated with it.

This analysis seeks to provide an informed view of the public market for innovation to guide and align future policies and actions. It is a crucial step to highlight the benefits of innovation, promote transparency, and create an environment conducive to the emergence of innovative solutions for the public good.

Current Situation

Definition and Terminology :

First, we examined how Tunisian legal texts define public procurement of innovation and the terminology used. According to Decree-Law No. 2022-68 of October 19, 2022, establishing special provisions for improving the efficiency of the implementation of public and private projects, we find the following definitions that are specific to key concepts related to innovation:

Public Organizations : Any organization that has been defined in accordance with the provisions of Article 3 of Law No. 2019-47 of May 29, 2019, regarding the improvement of the investment climate.

Public Projects : Projects carried out by public entities or on their behalf, funded by them, or through the state budget, or through external loans or grants, or as part of public-private partnerships.

Innovation Procurement : Calls for tenders related to innovative technical solutions that meet the needs of the public buyer and do not exist on the market, allowing them to stand out, innovate, and develop content and services.

Economic Actor : Any natural or legal person who engages in an economic activity that enables them to meet public demands.

Current Situation

The public innovation market in the post-revolution period:

Following the revolution, our country went through several years characterized by a decrease in productive resources and innovation, a lack of openness, and a decline in competitiveness in the markets. The decrease in productivity and growth weakened the Tunisian economy, leading to a reduction in its economic potential.

Previously, numerous mobilizing research projects had been established and funded with the aim of addressing socio-economic needs and national priorities. Concrete measures to promote innovation within companies had been implemented, such as Federated Research Programs (PRF), the Research Results Valorization Program (VRR), the R&D Investment Premium (PIRD), and in 2011, the creation of the National Program for Research and Innovation (PNRI).

In 2014, the World Bank expressed concern about economic protectionism that had contributed to the poor performance of businesses and investment incentives that had failed to attract sectors generating numerous high-value-added jobs. In this context, it advocated for a comprehensive overhaul of investment policies aimed at simplifying the system and promoting both investment and job creation.

Current Situation

The current situation of the public innovation market

Despite the abundance of available literature, it is observed that several collaboration initiatives between academic institutions and industry experience failures. This situation can be mainly explained by notable distinctions in the objectives and motivations of the two parties involved.

University researchers are often driven by the pursuit of recognition within the scientific community, primarily focusing on fundamental research and the publication of scientific papers. These elements are essential criteria for their academic advancement and progression in the university hierarchy. In contrast, industry actors are more oriented toward applied research. Their predominant motivation lies in the commercialization of innovative products and the realization of significant financial profits.

It is important to note that, outside of crisis situations such as the COVID-19 pandemic period, the analysis of innovative offers does not allow the Tunisian public buyer to choose the most qualitatively advantageous offer but only the cheapest offer.

Despite the implementation of a set of incentives, it is observed that their impact on the process of transferring research results to the private sector and the establishment of new enterprises through the commercialization of research results remains limited.

SWOT Analysis

Strengths:

- High-level scientific expertise
- Large number of researchers and publications
- Diversity in scientific research areas
- Gaining the trust of funders
- Organization of various innovation-promotion events
- Tunisia's participation in international fairs and events
- National technology transfer days
- International success stories
- Regulations for knowledge transfer from scientific research environments to the productive world, such as Research Results Valorization (VRR), researcher mobility from the public to the private sector, and the economic exploitation of intellectual property rights held by public scientific research organizations
- Support for public research centers by the National Research and Innovation Program (PNRI) to fund innovation projects with short-term tangible impacts (2 years)
- Establishment of pilot units by BuTT implemented by ANPR as a management unit of the Research and Innovation Support Program.

SWOT Analysis

Weaknesses:

- Coordination issues among support structures
- Administrative procedure complexity and those of public procurement consultations
- Lack of information sharing on collaborations with foreign entities
- Absence of a platform that brings together all National Research Centers (CNR) and non-operational digitization
- Lack of communication regarding the strategic visions of support structures
- Insufficient collaboration between scientific research centers and the private sector
- Limited encouragement and support for teaching researchers in terms of international mobility, remuneration, support, logistics, labs, and research units
- Segmentation among public structures working toward similar objectives (e.g., co-supervision structures)
- Inadequate valorization of scientific research results
- Absence of consolidated databases and research work in a single platform
- A small number of commercialized patents and Research-Based Spin-Offs (RBSO) from public research units in incubators, technoparks, and competitiveness clusters An insufficient industrial fabric unable to absorb the large number of engineers
- Lack of a one-stop-shop or platform for sharing information on laws, opportunities, programs, etc.

SWOT Analysis

Opportunities:

- Tunisia's membership in the Enterprise Europe Network (EEN)
- Development of the Single Innovation Window web platform
- Availability of a variety of strategic studies and guidance
- Authorization for public entities to engage in innovative procurement up to 10% of their purchasing volume
- Existence of laws encouraging scientific researchers to work on innovation projects with the possibility of negotiating patent purchases while receiving a salary for two years, renewable once
- Existence of an industrial and innovation strategy by 2035 to enhance the competitiveness of Tunisian industrial companies based on innovation and technology (Ministry of Industry - APII)
- Ease of access and transparency in public procurement through the creation of the TUNEPS platform
- Developed ecosystem of scientific research and innovation

SWOT Analysis

Threats:

- Lack of public funding for scientific research
- Outdated regulatory laws and absence of an appropriate legislative framework
- Limited exploitation of the innovation ecosystem
- Weak interaction among all actors in the innovation ecosystem
- Non-institutionalization of some structures, such as BuTT
- Lack of sustainability and capitalization of innovation projects
- Insufficient funding for innovation projects
- Absence of a risk-friendly environment regarding the procurement of innovation projects with potentially inconclusive results
- Increased emigration of scientific researchers and engineers abroad
- Insufficient communication regarding the needs of public structures that could be subjects of innovative scientific research
- Lack of communication for the purpose of valorizing the results of scientific research
- Climate change hindering the exploitation of innovative research results in the field of agriculture
- Inappropriate governance mode for managing innovation projects

The recommendations:

On the legislative level:

- Enact legislation that strengthens coverage against the risk of innovation failure.
- Establish investment incentives and undertake structural reforms to stimulate economic recovery by eliminating all legal barriers.
- Improve excessive centralization in the procurement and oversight of public contracts in Tunisia.
- Promulgate regulations for public procurement that ensure greater transparency and accountability of public buyers or economic actors.
- Reduce excessive centralization in contract oversight.
- Regulatory reform of public procurement to further promote sustainable and innovative economic development through more efficient and responsible public procurement.
- Legislative texts promoting greater transparency and accountability to enhance the trust of economic actors in the system.
- Modify the composition of evaluation committees specified in Article 51 of Decree No. 2014-1039, which stipulates a minimum of four members for committees, including the chairman, to an odd number.
- Mandate Tunisian beneficiaries who are partners or lead participants (public or private) in cross-border cooperation projects to cooperate through the PPI platform.
- Simplify customs duties and controls on the nature of imported goods.
- Institutionalize all structures involved in the field of innovation.

The recommendations:

On the strategic level:

- Develop a national strategy to prioritize research themes based on the country's needs, such as addressing climate change and national and international investment in Tunisia.
- Create a national strategy focused on motivating and raising awareness among researchers about the importance of securing the results of their research through national and international patents and utilizing them in the industrial sector.
- Design an incentive policy for fundamental research that can enable the monetization of knowledge.
- Identify the key actors involved in innovation for each domain.
- Establish a shared vision of the innovation actors mapped out in advance.
- Foster strong relationships with international partners to enhance capacities and competencies in strategic areas.
- Increase the budget allocated to scientific research.
- Ensure monitoring of progress made within national and cross-border living labs.
- Sustain and capitalize on previously completed innovation projects.
- Highlight economic opportunities, social and environmental benefits, as well as past successes related to innovation.
- Create, within each sector, pools of experts consisting of industry representatives, SMEs, relevant stakeholders, and researchers to ensure structured governance.
- Simplify administrative procedures to facilitate organized mobility of scientific researchers.

The recommandations

On an operational level:

- Establish a National Platform for connecting National Research Centers (CNR) with public innovation buyers.
- Create a database and statistics regarding the needs of public entities, innovation projects, expected results, project outputs, and innovation impact.
- Define national performance indicators for research, forming a dashboard and monitoring tool.
- Launch calls for co-creation project proposals among research centers and select the most promising projects.
- Implement agreements concluded between entities operating in the innovation field in line with a framework agreement.
- Foster cooperation among stakeholders involved in solution development.
- Enhance international collaboration with organizations to promote Tunisian innovation.
- Define and regularly update specific areas of expertise for each laboratory.
- Promote research in open innovation tailored to public sector needs.
- Continuously monitor the progress of innovation projects to stimulate the development of the public innovation market.
- Analyze the outcomes of completed innovation projects to identify results that can be transferred to public buyers.
- Encourage partnerships and investments in priority innovation projects.

The recommandations

On the resource level:

Human resources :

- Enhance the scientific expertise of our researchers
- Utilize the expertise of Tunisians working abroad in the field of research and development
- Train and raise awareness among the personnel responsible for managing and implementing the MPVI.

Intellectual resources :

- Promote copyright protection
- Improve patent conditions and procedures
- Enhance collaboration with INNORPI

Technical resources:

- Transform laboratories into research infrastructure equipped with technical equipment, databases, and advanced software.
- Encourage the adoption of emerging technologies to optimize the innovation process.
- Prioritize the modernization and development of our research labs working on strategic priority areas.

Financial resources: :

- Allocate significant budget resources to stimulate innovation within the National Research Centers (CNR).
- Include startups in public sector innovation projects led by National Research Centers (CNR).
- Diversify the sources of funding for public sector innovation projects led by CNRs by leveraging public-private partnerships (PPPs).

List of Decision Makers

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List of Decision Makers

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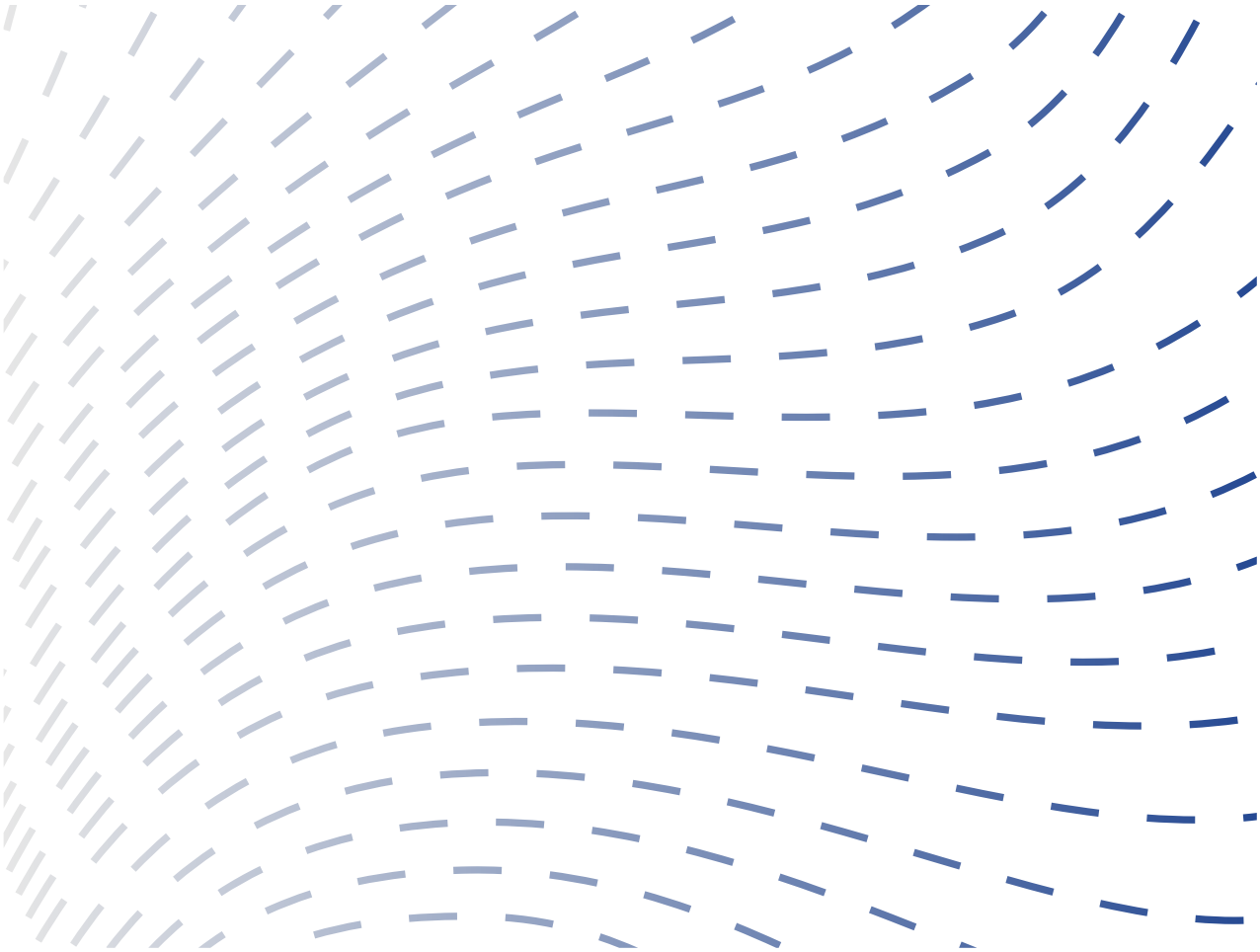

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