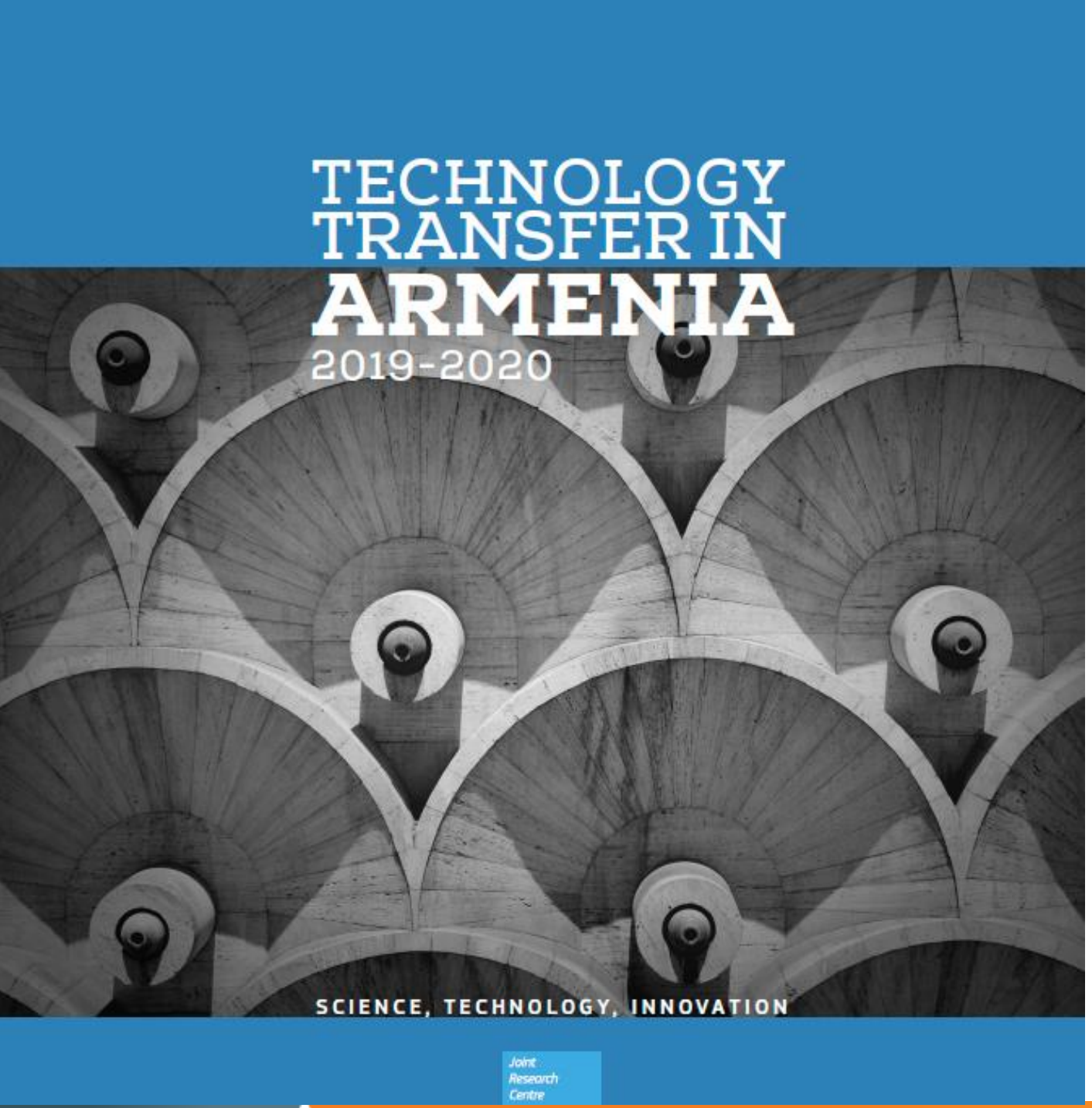


Technology Transfer
in the EU's Eastern neighbourhood

# Armenia

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Andrea Di Anselmo

- **Started January 2019**
- **Country visit in May 2019**
- **The expert team: Andrea Di Anselmo (META Group), Alena Shuba (AplusA Consult), Stephen Taylor (Area Science Park)**

**Armenia** is a **small country** with **little budget for R&D and Innovation** with a relatively **young Technology Transfer (TT) infrastructure**.

The TT **support system** is **neither inter-connected nor complete**. Those few cases that proved to bring results into use are based on **personal connections and informal networking**.

Focus on the "**from lab to market**" value chain – invest in **prototyping** and **proof of concept**. Reward R&D teams focusing on **R&D results**, Support Universities and PROs **investing in TT**.

# Overview

## The Government

The Government clearly indicates the intention to **make Armenia a high-tech, industrial country**.

## Universities and research organisations

Armenia has a **well-established tertiary education system** with 63 universities Several branches of foreign universities are also located in Armenia. Teaching is a priority

Research institutes and the government mainly focus on strategies "science push" for innovation, underestimating the importance of use of **R&D results** for innovation to take up.

## Industry

There is no structured and clear data on the companies' expenditure on R&D. However, it seems that most R&D is **performed by foreign multinational companies.** Multinational enterprises are the most, if not the only, effective players in establishing links between universities and industry

## Support organisations

There are a number of technology centres and centres of excellence nevertheless, the Armenian innovation system appears **fragmented** with a strong **dependence on external funding** and **weak linkages with businesses.**

A key contribution is given by the **Diaspora**

## EC

Armenia signed a Partnership and Cooperation Agreement with the EU in April 1996. **8 out of the 27 projects funded during 2011-2012 were coordinated by Armenian HEIs.**

There has been a large **increase** in the number of Armenian **students furthering their education abroad** on various long-term programmes

# Key Challenges for TT

## Ecosystem

- **Fragmentation** with a lack of a common strategy among public actors (NAS RA and universities).
- A **reactive** rather than proactive **approach** (waiting for directions instead of building collaborations)
- **TT offices "transplanted"** into organisations with a top-down process **without a structural integration and an overall collaboration framework** at both within the institution and at the level of ministries (for the public side).
- A support chain to go from "knowledge to market" that is **not complete nor inter-connected.**

## IP

- **Patenting** is "**signposting**" more than a step in the TT process – It is more the **response to a policy request** than an **aware decision** within a commercialization activity.

## Capacities

- Challenge in **accessing the needed skills for R&D.** Age distribution of researchers is concentrated around two age groups (age 30-39 and 65-69) with very little in the middle).
- **Lack of motivations** at the PROs level (success stories are needed for the researchers)
- TT Personnel involved in PROs shows a **good theoretical/academic background** but a **lack of operational experience.**
- **Absence** of facilities for **small scale production** (limited evidence of capability for prototyping innovation).

## Funds

- The **equity funds** available so far are designed for mature companies, this resulting in **insufficient funding for early stages (to go from TRL 4-5 to TRL 9)**, the most critical phase for TT).
- Lack of a **funding** instrument **for start-ups/innovative companies** to establish and **consolidate** in the **country** before scaling up.
- Inefficient access to external donor funds. **Absence of a structured, operational presence close to donors** (Brussels for the European Commission - NAS RA has a group working on this matter but does not have a presence in Brussels).

# RECOMMENDATIONS

## Ecosystem

- **Focus** resources and support to **bridge** the **developing gap of innovation** observed in the country (going from TRL 4, technology validated in lab, to TRL 8, system complete and qualified) to build **relationships** among the relevant **stakeholders** and promote a more effective **use of R&D results.**
- Provide manufacturing facilities for **small scale productions** with state-of-the-art equipment for **prototyping**
- Support market validation of novel solutions, provide **Proof of Concept funds**
- **Coordinate actions between the Ministry of Education and Science and the nascent Ministry of High-Tech Industry** to promote the importance of the **application of R&D results and their further use**
- Create an **association between R&D public performers and private ones** with the mission to support applications to international funding schemes (like APRE Agenzia per la Promozione della Ricerca Europea)
- Invest in setting up an operational presence – **representative office - close to donors** (Brussels for the European Commission) with a focus on R&D (with a staff of at least three people
- **Involve the Diaspora members** to open up collaboration opportunities abroad

## TT support

- Grants to **reward young researchers** that introduced the results of their activities into the market
- **Follow-up funds and services** to further **implement innovative solutions with the creation of a spin-off**
- Involve **Diaspora** members (with the needed background) to serve as **mentors/coaches for the professionals involved in the TT operations** and work side by side for at least two years.
- Promote the creation of **a co-investment early-stage risk capital fund to have public money invested alongside private investors** and/ or business angels, alone or in syndication
- Launch **national challenges, linked to the country's strategic priorities for students/researchers rewarding the winners with funds to demonstrate the viability of the proposed solutions**

a.dianselmo@meta-group.com
www.meta-group.com

META
knowledge to market