



## Promotion and Support for Technology Management and Transfer

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# Priority Objectives and Guidelines of the National Science, Technology, and Innovation Policy

OP.01	Strengthen the institutional framework at the strategic, implementation, and execution levels of SINACTI*.	01.01. Develop a regulatory framework for the governance of SINACTI.
		01.02. Strengthen the institutional capacities of the SINACTI Governing Body and the SINACTI institutions.
		01.03. Develop ST&i management mechanisms for regional actors.
		01.04. Generate coordination mechanisms among SINACTI actors.
		01.05. Implement a monitoring and evaluation system for ST&i activities carried out at SINACTI.
OP.02	Increase the social appropriation of ST&i in society in general.	02.01. Increase the value of ST&i in society.
		02.02. Strengthen the SINACTI actors' capacities in the dissemination of ST&i.

\* SINACTI or SINACYT are the name of Peruvian National System of Science, Technology and Innovation

# Priority Objectives and Guidelines of the National Science, Technology, and Innovation Policy

OP.03	Increase the high-level human capital of SINACTI actors.	03.01. Strengthen the scientific vocation at the level of regular basic education.
		03.02. Strengthen technical and professional careers in ST&i for students at the undergraduate level.
		03.03. Consolidate specialization programs in ST&i with global standards, for students at the postgraduate level.
		03.04. Generate mechanisms for the incorporation of human resources in ST&i.
OP.04	According to the country's priorities, improve the generation of scientific and technological knowledge of SINACTI.	04.01. Establish collaboration protocols in the use of infrastructure and equipment for ST&i.
		04.02. Develop mechanisms to modernize infrastructure and equipment for SINACTI actors.
		04.03. Implement ST&i data governance in SINACTI.
		04.04. Strengthen the scientific and technological production mechanisms of the SINACTI actors.

# Priority Objectives and Guidelines of the National Science, Technology, and Innovation Policy

OP.05	Increase innovation in SINACTI.	05.01. Implement innovation instruments in strategic areas of the country.
		05.02. Improve the academy-industry link for the development of innovation in the SINACTI actors.
OP.06	Generate financing mechanisms oriented to the development of ST&i in SINACTI actors.	06.01. Generate financing mechanisms oriented to the development of CTI in SINACTI actors.

# CONCYTEC ACTIONS



## 1. Human Resources

A critical mass of researchers, engineers, and technicians



## 2. Technology Transfer (TT)

Link knowledge and production effectively



## 3. Financing

Leverage new resources



## 4. Institutional and policy framework

- ✓ Role of the state as facilitator and promoter
- ✓ Institutionalize competitive funds
- ✓ Promotion of a culture favorable to innovation

Peru's commercial exchange with countries with a free trade agreement - FTA exceeded US\$ 54 billion in the first half of 2022.

## 22 FTA AGREEMENTS



# CURRENT ST&i AGREEMENTS FROM CONCYTEC

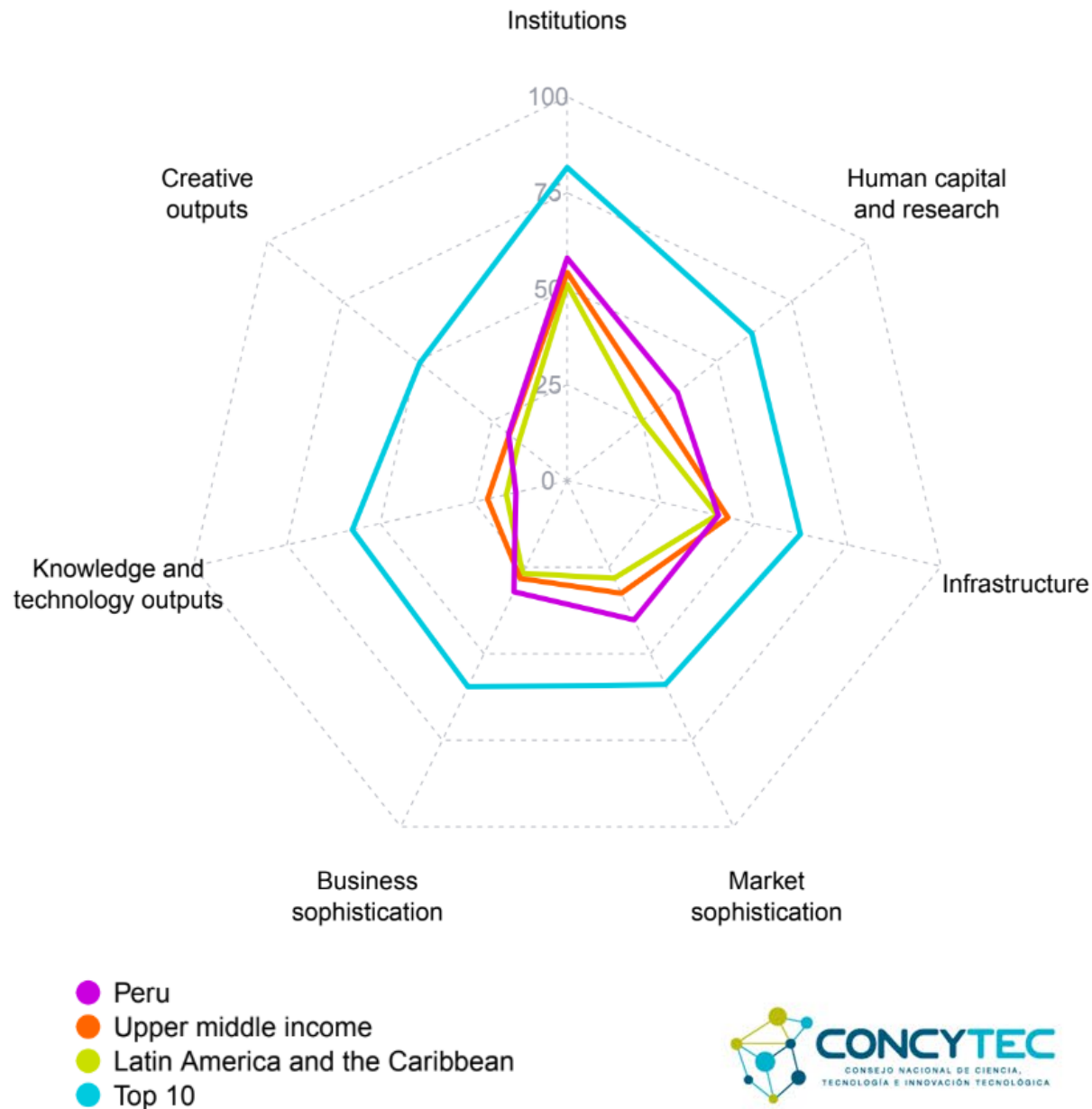


# Global Innovation Index 2022

## Rankings for Peru (2020–2022)

GIYR	GII	Innovation inputs	Innovation outputs
2020	76	55	98
2021	70	52	82
2022	65	52	81

- ✓ **65th** Peru ranks 65th among the 132 economies featured in the GII 2022.
- ✓ **16th** Peru ranks 16th among the 36 upper-middle-income group economies.
- ✓ **6th** Peru ranks 6th among the 18 economies in Latin America and the Caribbean.



# Global Innovation Index 2022

## INNOVATION STRENGTHS AND WEAKNESSES

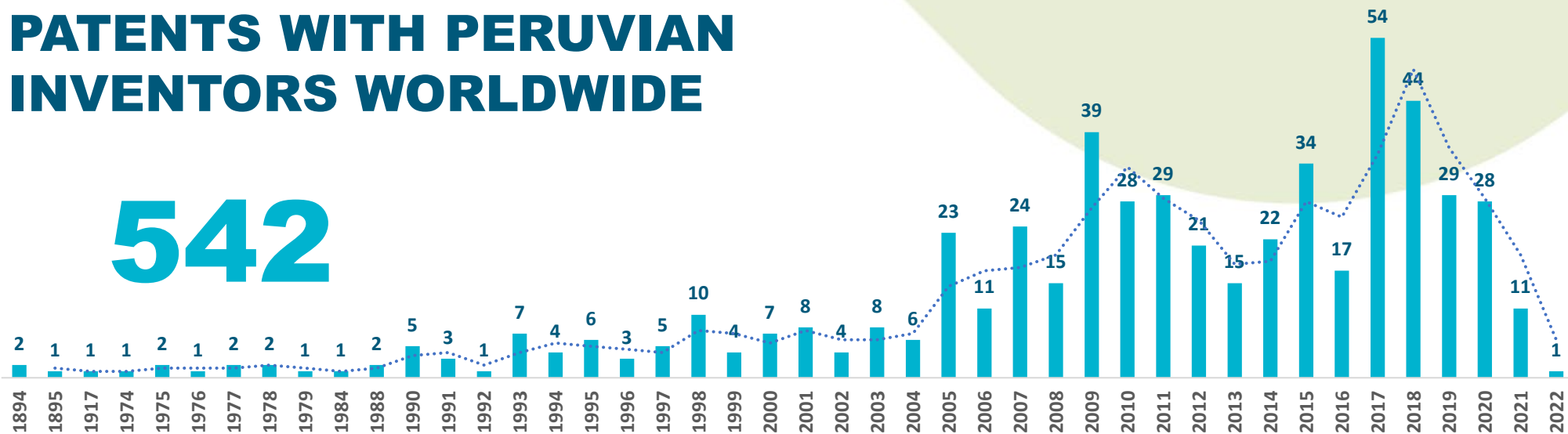
- The table below gives an overview of Peru's indicator strengths and weaknesses in the GII 2022.

Strengths			Weaknesses		
Code	Indicator name	Rank	Code	Indicator name	Rank
1.2.3	Cost of redundancy dismissal	37	2.1.4	PISA scales in reading, maths and science	66
2.2.1	Tertiary enrolment, % gross	32	2.3.3	Global corporate R&D investors, top 3, mn USD	38
2.2.2	Graduates in science and engineering, %	18	4.2.2	Venture capital investors, deals/bn PPP\$ GDP	90
3.3.1	GDP/unit of energy use	23	4.2.3	Venture capital recipients, deals/bn PPP\$ GDP	101
4.1.3	Loans from microfinance institutions, % GDP	1	5.2.1	University-industry R&D collaboration	109
4.3.1	Applied tariff rate, weighted avg., %	6	5.2.4	Joint venture/strategic alliance deals/bn PPP\$ GDP	125
5.1.2	Firms offering formal training, %	6	6.1.4	Scientific and technical articles/bn PPP\$ GDP	108
6.1.3	Utility models by origin/bn PPP\$ GDP	22	6.3.4	ICT services exports, % total trade	112
7.1.2	Trademarks by origin/bn PPP\$ GDP	35	7.1.4	Industrial designs by origin/bn PPP\$ GDP	102
7.2.4	Printing and other media, % manufacturing	14	7.2.2	National feature films/mn pop. 15–69	76



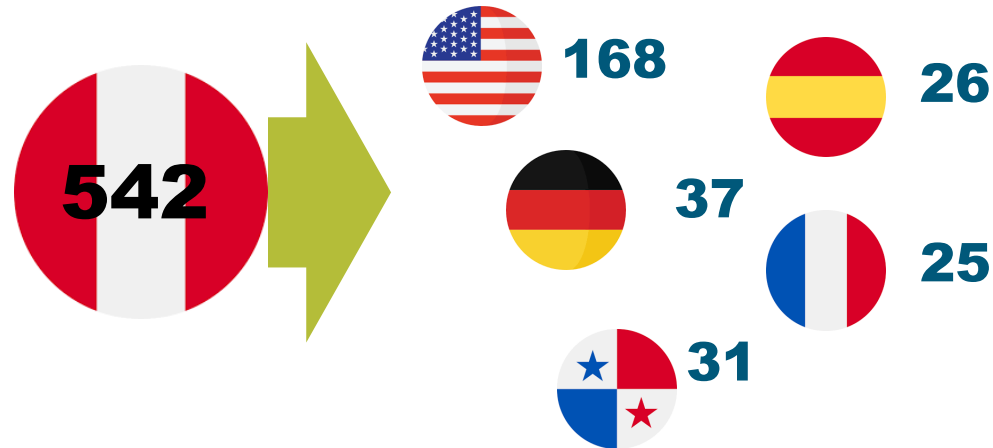
# PATENTS WITH PERUVIAN INVENTORS WORLDWIDE

# 542



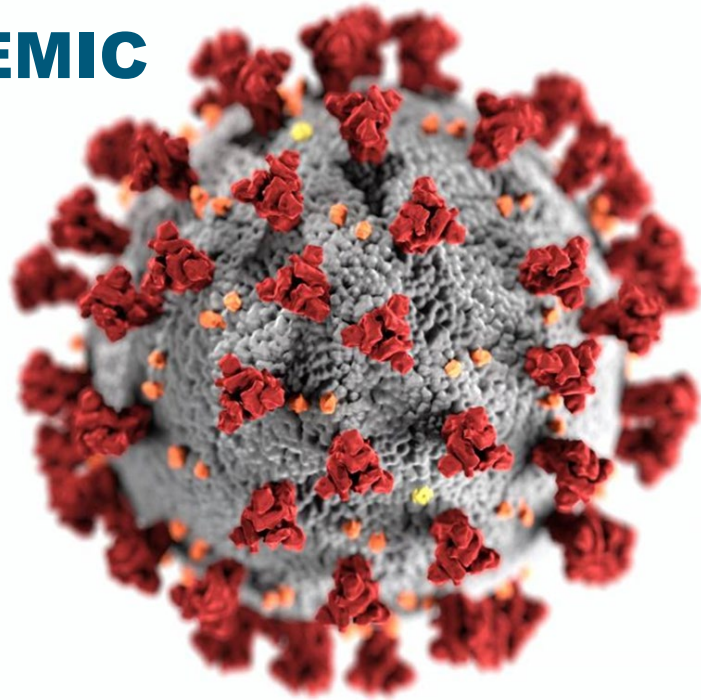
Intellectual Property allows the assignment of ownership and rights, which is one of the cornerstones of a technology transfer process.

You can only transfer what belongs to you or what you have a way of proving belongs to you and is the basis of a successful negotiation.



# CONTEXT

## PANDEMIC

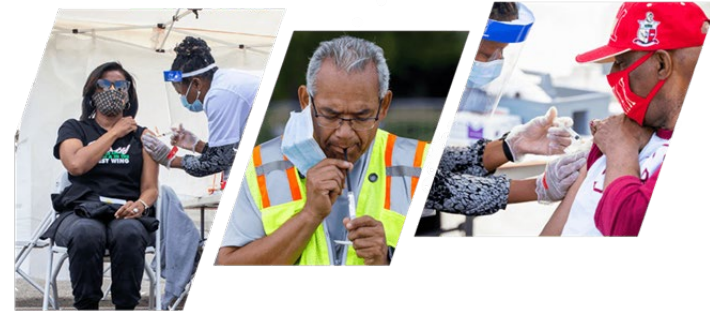


## SARS COV 2

Peru has the world's highest COVID-19 death rate

## Global technological response

- Vaccines
- Diagnostic tests
- Respirators



The global technological response is unprecedented. It was possible to develop vaccines in less than 2 years (Usually it is done in 8-10 years), as well as, in different countries, technologies for the diagnosis and control of the disease were developed as **local responses**.

# PERUVIAN RESPONSE

Peruvian universities proposed various technology development projects to address the pandemic, but few of them were implemented.



MASI  
Respirator

PUCP



SAMAYCO  
Diagnosis

UCH



CavBio  
Diagnosis

UNMSM-BTS

## DESCRIPTION OF TECHNOLOGIES

Name	Technology	Institution
SamayCoV	Digital stethoscope	University of Sciences and Humanities
MASI	Mechanical fan	Pontifical Catholic University of Peru
CavBIO	Diagnostic kit	BTS consultores & CITBM - Universidad Nacional Mayor de San Marcos
Rapid Molecular Test	RFLP diagnostic test	Peruvian University Cayetano Heredia
Rapid Molecular Test	CRISPR diagnostic test	Peruvian University of Applied Sciences
PHOENIX	Mechanical fan	National University of Engineering

# BARRIER CLASSIFICATION

## SYSTEMIC

Included in the national ST&i system, referring to the relationship of actors, regulatory documents, infrastructure, incentives, etc.

## ORGANIZATIONAL

Specific to each institution: vision, mission, culture, policies, planning, internal regulations, etc. that directly influence technology transfer processes and the academy-industry relationship.

## TECHNICAL

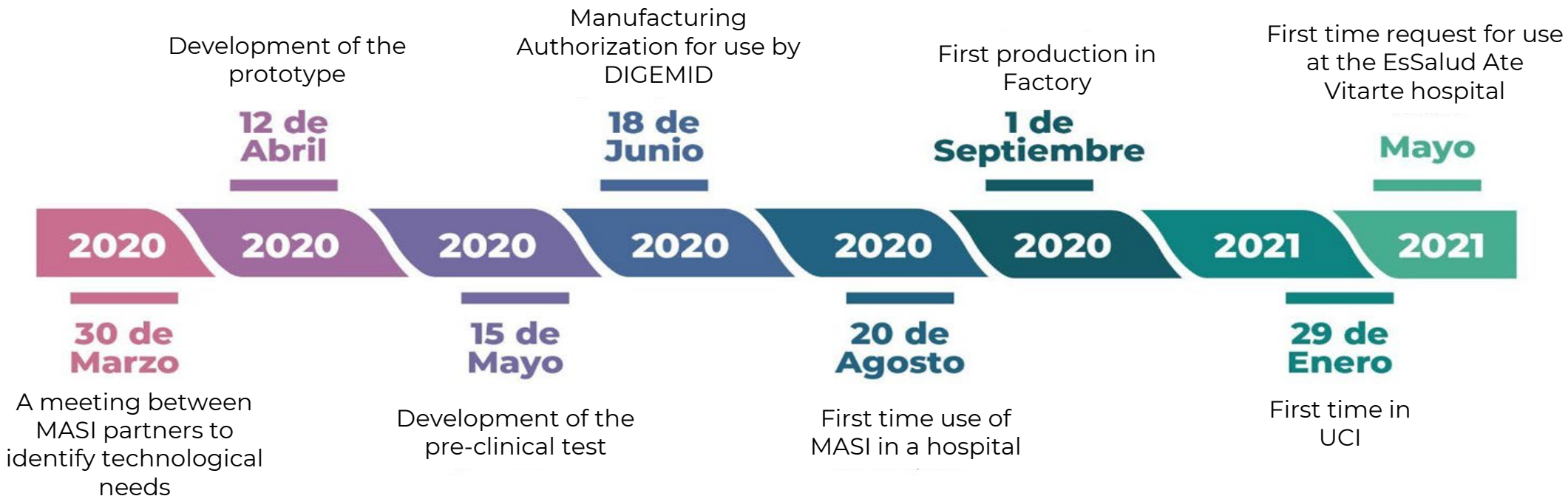
Related to the capacities of human resources and the degree of knowledge required to produce, transfer and adopt the technology.



INDICATOR	POPULAR ACTION LEVEL
1. Suitable partners	Organizational
2. Lack of resources	Organizational
3. Inconsistent rules and regulations	Systemic
4. Cultural differences between academia and companies	Systematic
5. Process complexity	Technical
6. Lack of national references	Systematic

With the support of the IBEROAMERICAN PROGRAM FOR STRENGTHENING - PIFCSS, South-South Cooperation; Concytec identified 24 most common barrier indicators: Systemic (10), Organizational (11), and Technical (3).

# MASI RESPIRATORS



① Lack of partners

② Lack of resources

④ Cultural differences

⑤ Process complexity

⑥ Lack of national reference

③ Regulations

# PERUVIAN RESPONSE



- Use of the Technology Readiness Levels methodology – TRL, for financial and technical instruments.

DIRECTIVE N° 001-2022 CONCYTEC-P

- VINCULATE ONLINE PLATFORM for support and training in a massive way technology managers

DIRECTIVE N° 001-2022 CONCYTEC-P

- Financial support and specific instruments for COVID-19 emergency

TWO NATIONAL PRIZES FOR GOOD PRACTICES IN PUBLIC SECTOR

# CONCLUSIONS

Peru is a country with an innovation system that does not allow and strong and autonomous technological response mainly due to 6 barriers: 1) Search for appropriate partners, 2) Access to resources 3) Inconsistent rules and regulations, 4) Cultural differences between academia and companies, 5) Complexity of the process, 6) Lack of National references.

The capacities of the 93 Peruvian universities are highly heterogeneous. However, the efforts from the academy were supported by the government. They achieved a few successful cases that allowed us to learn and implement tools for a more efficient technology transfer.

CONCYTEC, Through policies, and technical and financial instruments, has been strengthening the capacities of the ST&i system so that they can carry out technology transfer and overcome the identified barriers.

**Thank you very much for your attention**

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