THE UNITED NATIONS COMMISSION ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT

15TH SESSION

21–25 May 2012
Geneva

Contribution by

UNCTAD

Science, Technology and Innovation Policy Review of Peru: Main Findings and Recommendations

Mr. Angel Gonzalez Sanz
Officer-in-Charge
Policy Review Section
Science, Technology, and ICT Branch

MAIN FINDINGS AND RECOMMENDATIONS

Outline

- Process, stakeholders, issues, approach
- Major findings
- Main recommendations

The STIP Review process

- National counterparts
- Team
- Over 70 in-depth interviews, 8 round tables, Lima and the regions
- Broad scope of stakeholders involved
- A neutral, professional and independent assessment

Issues covered

- General background of STI activity
- Diagnosis of the national system of innovation
- Studies of STI activity in three sectors:
  - ICTs
  - Biotechnology
  - Nanotechnology
- Conclusions and recommendations

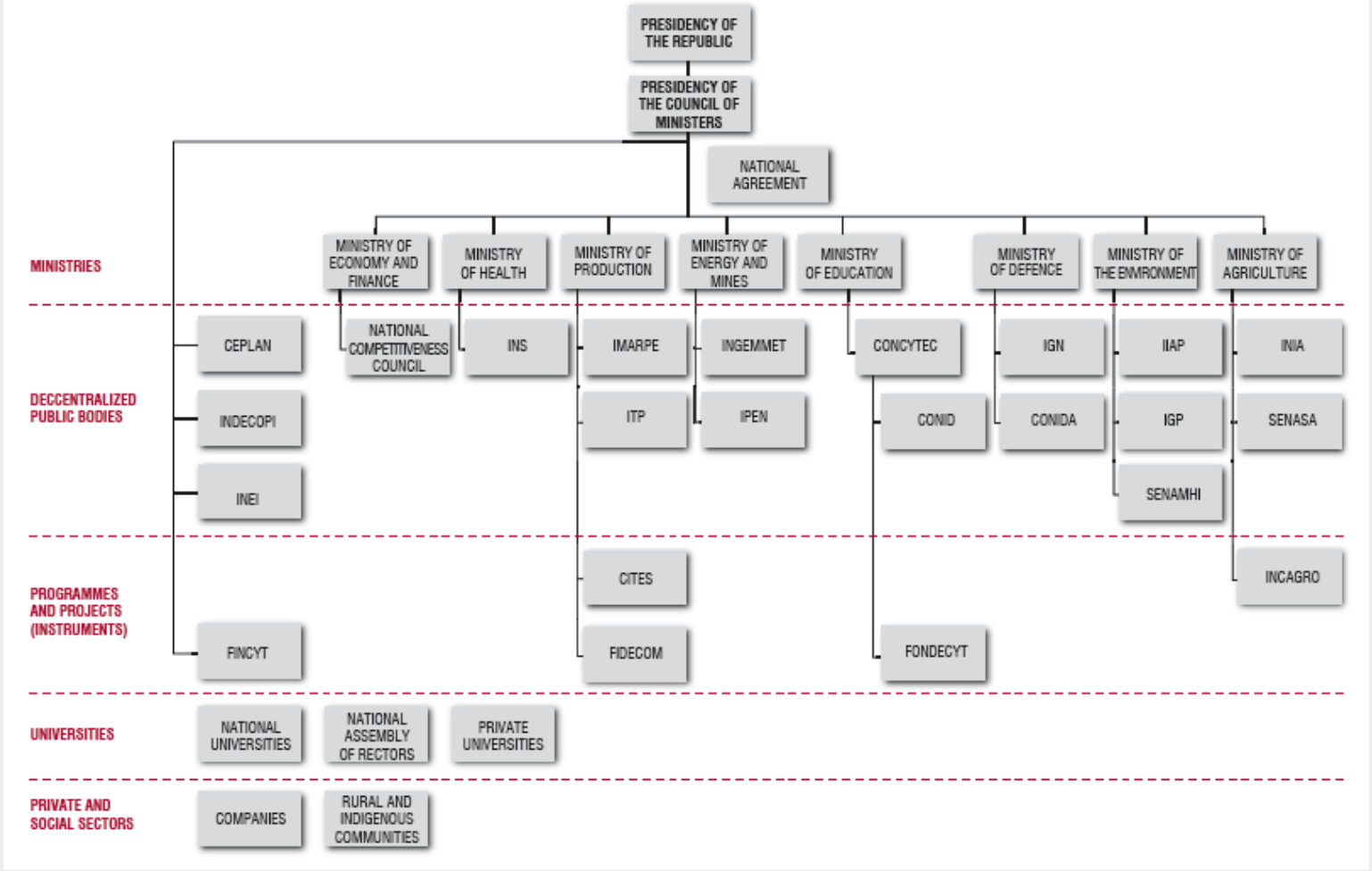
Methodological approach

The National System of Innovation, not as a normative concept but as a reference frame to represent and explain a complex reality.

Overall assessment

Peru's STI situation does not match its achievements in macroeconomic and trade performance, and overall development

- **Low private and public investment in R&D**
- **Poor education performance**
- **Weaknesses in technological learning in the private sector**
- **Lack of consensus**


PRESIDENCY OF THE REPUBLIC
PRESIDENCY OF THE COUNCIL OF MINISTERS
NATIONAL AGREEMENT
MINISTRIES
MINISTRY OF ECONOMY AND FINANCE
MINISTRY OF HEALTH
MINISTRY OF PRODUCTION
MINISTRY OF ENERGY AND MINES
MINISTRY OF EDUCATION
MINISTRY OF DEFENCE
MINISTRY OF THE ENVIRONMENT
MINISTRY OF AGRICULTURE
DECCENTRALIZED PUBLIC BODIES
CEPLAN
INDECOPI
INEI
NATIONAL COMPETITIVENESS COUNCIL
INS
IMARPE
ITP
INGEMMET
IPEN
CONCYTEC
CONID
IGN
CONIDA
IIAP
IGP
SENAMHI
INIA
SENASA
PROGRAMMES AND PROJECTS (INSTRUMENTS)
FINCYT
CITES
FIDECOM
FONDECYT
INCAGRO
UNIVERSITIES
NATIONAL UNIVERSITIES
NATIONAL ASSEMBLY OF RECTORS
PRIVATE UNIVERSITIES
PRIVATE AND SOCIAL SECTORS
COMPANIES
RURAL AND INDIGENOUS COMMUNITIES

Policy instruments

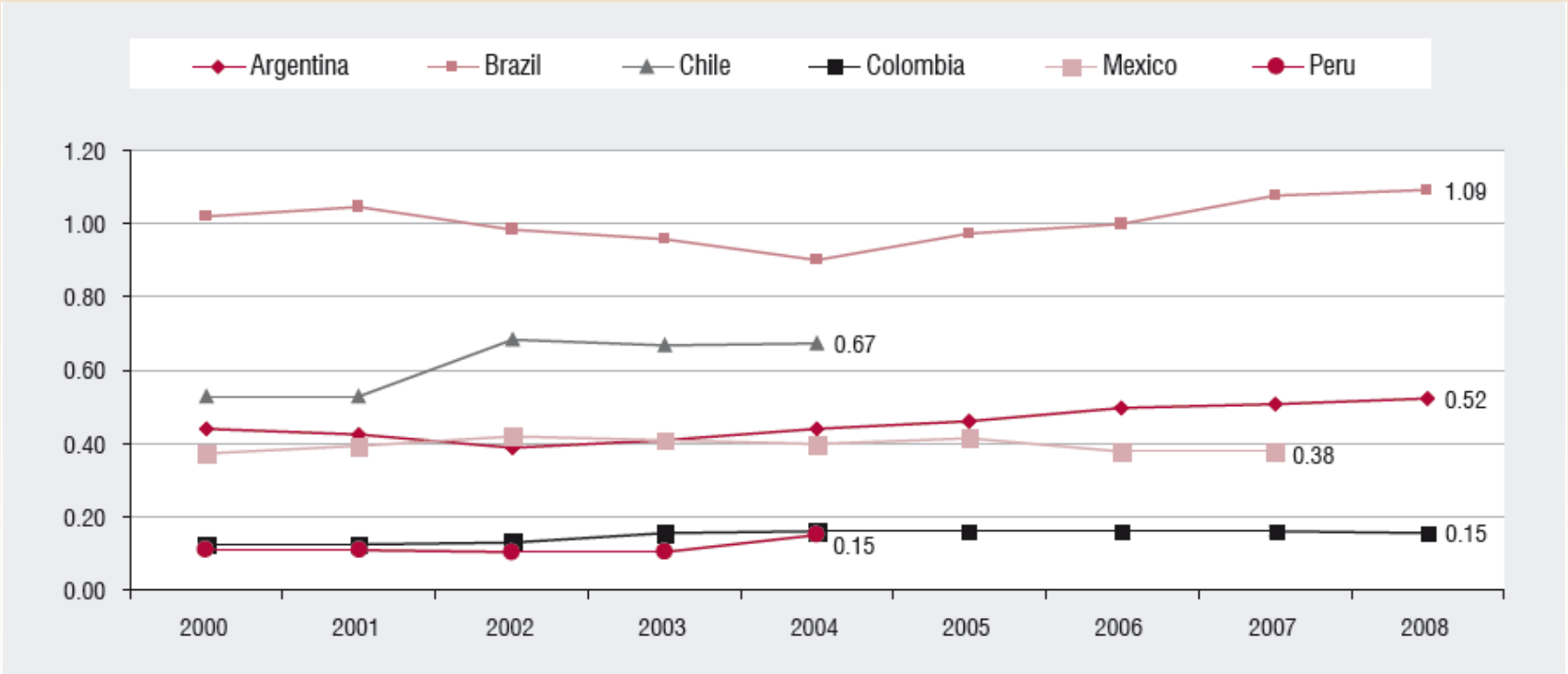
- Direct funding instruments
- Indirect STI support/regulation
- Catalytic financial instruments
- Mixed instruments

Diagnosis of the NSI: Weaknesses

- Low levels of investment, private and public
- Poor educational performance at all levels
- Scant private involvement in sti activity
- Lack of a critical mass of research
- Some weaknesses in STI infrastructure
- STI regulatory framework in place, but problematic in its operation

Low investment in S&T

R&D expenditure (as a share of GDP) selected Latin American countries



Source: Latin American Network of Science and Technology Indicators

Education

- Limited quality control and evaluation
- Insufficient attention to STI issues
- Few doctoral courses
- Needs of productive sectors not reflected in curricula
- Limited opportunities for career development for STI professionals

Private sector involvement

- Concentration in low added value activities
- Difficulties to identify technological needs: limited demand for productive knowledge
- Risk-averse business culture
- Financing of innovation fairly underdeveloped

Research resources

- Funding of public research institutions
- Lack of generational renewal in research teams
- No professional recognition of researchers
- Little collaboration
- Universities do not differentiate their research from their teaching function

STI infrastructure

- Basic infrastructure is in place, but...
- Equipment and accreditation deficiencies
- Technology parks, incubators are embrionary
- Need of a better quality system and internationally accredited laboratories

STI policy and regulatory framework

- A well developed legal framework, but…
- Past pro-innovation discourse was not matched by priority in resources
- Theoretical leadership of NIS (CONCYTEC) placed at a low hierarchical position
- Some overlap of functions

Weakness in STI governance…

- Proactive STI policy was not perceived as a key factor in national development
- Economic policy did not integrate STI considerations

…Resulted in a disjointed NSI

- Little collaboration, lack of monitoring and evaluation, limited foresight and priority-setting
- Limited exploitation of STI support instruments

Diagnosis of the NSI: Strengths

- Basic research infrastructure
- Several nuclei of research excellence
- Successful experiences in STI policy instruments (funding)
- Technology dissemination experiences
- Regulatory framework (IP, ICT…)

Diagnosis of the NSI: Threats

- Structural imbalances: large informal, small modern sectors
- Concentration in sectors intensive in natural resources
- Trade competitiveness in the absence of technological upgrading
- Risks in commodity markets

Diagnosis of the NSI: Opportunities

- Macroeconomic stability and growth
- Openness to trade and investment
- Access to financing
- Regional and international collaboration
- STI diaspora

General recommendations

- Build an **institutional framework** and organizational, human and financial structures able to lead STI development in the country
- Promote a **mix of policies and programmes** to strengthen general STI capacities and STI development in strategic sectors and technologies: infrastructures, financing of innovation, technological extension services …
- **Invest in human capital development,** promote scientific studies, encourage research
- **Promote interaction among STI actors,** particularly private sector participation: cooperation with universities and research centres, among firms, public-private partnerships…

Institutional framework

Issues to consider:

- Innovation as a multi-factor, cross-cutting process
- Who should be involved?
- Dimension of STI activity:
  - R&D
  - Innovation
- Resources invested in R&D
- Institutional culture and history

Proposed institutional framework

Two major bodies proposed, both linked to top policy-making:

- *National innovation council*
- *'Peruvian Innovation Agency'*

Policies

- A policy mix integrated in overall economic policy
- Based on identified strategic priorities
- Gradual increase of funding for R&D and innovation
- Indicators for STI policy to be developed: national innovation survey

Implementation

- Improve programme implementation
- Bring together financing and management
- Relax conditions for the use of funds from the mining canon for STI activities

Human capital development

- Improve quality of education at all levels, establish credible accreditation and evaluation systems.
- Establish a career path for researchers, with periodic evaluation mechanisms.
- Raise STI awareness among population

Private R&D and innovation

- Bring down the cost of, and bureaucratic barriers to innovation
- Promote venture capital financing
- Strengthen cooperation between academy and industry
- Encourage participation of the private sector in policy formulation

FOLLOW UP

Supporting the implementation of the recommendations, central to the STIP process

Focus on:

- National priorities
- UNCTAD's added value

UNCTAD

PROSPERITY FOR ALL

www.unctad.org

UNITED NATIONS
UNCTAD