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DANIEL VILLAVICENCIO, UAM
MEXICO

vcdh3758@correo.xoc.uam.mx

From the 90s to 2005

Which have been the main changes of the S&T+I systems (and policy) in the L. American countries ?

Some general features

- Institutional setting
- Dynamics & Governance
- Objectives & Goals
- Instruments & programs

All countries show:

Heterogeneity of conditions & mechanisms,
funds and means

All countries share the same general trend:
continuity of instability (macro economy,
government changes, objectives ...)

S&T policies have been in a permanent
redesigning : programs, goals, instruments,
even institutions (crisis or innovation?)

During 90s

- Lack of institutional coordination
- Duplicity of functions, instruments, goals
- Lack of priorities, besides human resources, transfer of technology, infrastructure...

S&T policy generally meant to offer subsidies to universities and research centers (strong or privileged actors)

Since 2000...

New statements:

The complexity of the innovation process (knowledge creation-absorption, multi-level, multi-actor)

Awareness of globalization: uncertainty, competition, and also new partners/conditions for access to knowledge, new forms of knowledge production, internationalization of R&D investments, access to international funds, etc.

The necessity to integrate a National System : coordination by a main institution, with new forms of governance, including public/private linking institutions, involve different public/private actors...

The necessity to define general priorities (sectoral, regional) with specific programs and instruments

S&T policy entails subsidies considering the diversity of agents and their different capabilities. Also competition for grants and evaluation by expert committees.

a more pro-active policy...?

Promoting:

- public/private R&D
- Consortia and research networks of excellence
- Promoting private investment in S&T activities
- University-enterprise linkages
- Innovation and Competitiveness
- Intellectual Property
- Strategic sectors,
- Applied research

2005	Applied Research (sectors and thematic priorities)	Research in strategic issues
ARGENTINA	Scientific and Technological Research Fund (FONCyT)	Integral and Transversal Program
COLOMBIA	XX	Programs of Sectoral Research Centers
CUBA	National Scientific & Technical Programs	XX
CHILE	Promotion for Scientific & Technological Development Fund (FONDEF) Scientific & Technological Development National Fund (FONDECYT)	Applied Research Fund in priority fields (FONDAP) National Fund for Research & Development in Health (FONIS)
MEXICO	Sectoral Funds (18) CONACYT y Secretarias	Programs of Sectoral Research Centers (petroleum, water, health, energy, agriculture, etc.,)
PERU	Subsidies for S&T Research Projects (PROCYT) & CONCYTEC Programs	Sub-programs of CONCYTEC S&T Program
URUGUAY	Program for the Development of Basic Sciences (PEDCIBA) Scientific & Technological Fund Prof. Clemente Estable (FCE)	Fund for the Promotion of Agricultural Technology
VENEZUELA	National Fund for Science, Technology and Innovation	National Fund for Agricultural Research, Research and Development Fund for Telecommunications.

2005	Strengthening S&T in Regions
ARGENTINA	XX
COLOMBIA	Regional Agendas in S&T
CUBA	Regional S&T Programs
CHILE	Program of Regional Units for Scientific and Technological Development
MEXICO	29 Mixed Funds (CONACYT & State Governments)
PERU	S&T Decentralization Program

2005	Innovation in firms	Private R&D	Fiscal Incentives
ARGENTINA	Argentina Technology Fund (FONTAR)	Integral & Transversal Program (PROTIS)	Argentina Technology Fund (FONTAR)
COLOMBIA	Sectoral Technological Development Centers (Food, plastics, textile, biotechnology, telecommunications, etc.)		
CHILE	Innovation & Development Fund (FDI) National Fund for Technology and Production Development CHILE INNOVA Associative Promotion Projects (PROFO)	Technical Assistance Fund (FAT)	XX
MEXICO	High Value Added Program (AVANCE) with entrepreneurship and commercialization subprograms	Innovation Fund	Fiscal Incentives Program
PERU	Funds to innovation and competitive projects (PROCOM) Innovation and Technological Foresight Program		
URUGUAY	Technological Development Program (PDT)		
VENEZUELA	National Fund for Science, Technology and Innovation		

2005	Promoting networks for innovation	International cooperation	Brain Drain
ARGENTINA		XX EU- office	Program for Professionals, Scientists and Technicians abroad
COLOMBIA			Caldas Network
CHILE	Associative Promotion Projefts (PROFO)	CIAM Program, Bicentenary of Science & Technology Program EU-office	
MEXICO	Consortia and Networks of Innovation Programs	Cooperation Programs with USA, Canada, Chile and European Union	Programs: retention, repatriation, & networks of Mexicans abroad
PERU		Cooperation Programs with the Inter-American Development Bank	
URUGUAY		ECOS Programs	
VENEZUELA		Cooperation Programs with USA, Canada, Chile and European Union	

2005	Intellectual Property Protection	Difusión of S&T
ARGENTINA	Argentina Technology Fund (FONTAR)	
COLOMBIA		Colombian Observatory of S&T (private)
CUBA	XX	Industrial Information Network of Cuba
MEXICO	Mexican Institute for Intellectual Property (IMPI)	
PERU	National Institute for Competitiveness Protection and Intellectual Property Protection	S&T and Innovation Information System
URUGUAY		Uruguay Society for the S&T Progress (SUPCYT)
VENEZUELA	XX	

To conclude

- Sometimes policies are not defined from the country's "state of the art" and the actors' capabilities and performances, but from desires...
- The pressure of international organizations (funds), the globalizations and the needs of competitiveness, the pressure of scientific communities, etc. entail **controversies** between: mode & necessity, capability & possibility
- In many cases policy remains administration of funds rather than strengthening S&T capabilities
- Difficulty to understand the place of ST(R+I) policy among national priorities (i.e. budget allocation, contribution to development and economic growth)
- The permanent **tensions** between forces bottom-up (scientific communities, enterprises) and the principle of a "government decision-making" for S&T issues (national policy)

To conclude

Although we observe efforts to redesign S&T programs and plans, and to improve of S&T output figures...

We we can still observe:

- Absence of implementation of programs (funds?)
- Lack of redefinition of ST+I indicators, according to new measure and assessment **needs** and **means**
- Discontinuity entails under qualified staff
- Lack of systemic and qualitative evaluation (beyond fund allocations and # outputs)
- No foresight exercises
- What challenges for the future: aging of sc. communities, diasporas of young researchers, new international conditions for production and use of knowledge...