

Innovation and development: the strategic relevance of new promotion and evaluation policies

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STI Policies and Impact's Evaluation: an Academic Perspective

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Five main results of the evaluation of the
Brazilian policies for the promotion of
innovation and production in the 21st century

- 1 - Despite the advances in the understanding of innovation in the last 3 decades - *as a cumulative, contextualized and systemic process* - most policy frameworks and models have not been entirely capable of assimilating them (Lastres et al., 2014)

Limited and outdated notion of *innovation* and its analytical and policy backgrounds and possibilities

- bias towards radical innovations occurring only in high-tech sectors, as a result of R&D performed by big firms in MDCs
- confusion between *knowledge and information*; innovation, technology and equipment and between transference and acquisition of technologies
- importation of technologies as a means to "catch-up" or "leap-frog"
- dissociation of innovation and the promotion of social and territorial development

Main results of the evaluation of innovation policies in the 21st century

Acquisition of knowledge, equipment and technology developed abroad can never replace the need to create and foster local and national capacity-building opportunities

Selection, purchase, copying, incorporation and use require considerable capabilities

Underdeveloped countries import a kind of technology conceived by leading economies according to a constellation of resources that is totally different from ours (Tavares, 1972)

The indiscriminate import of technologies developed for entirely different markets ... may have disastrous employment and other social effects in weak poor countries (Freeman 1982)

Trap of increasing dependency, distortions and exclusions

A crucial learning dimension relates to putting into practice the knowledge and technologies acquired

- the capacity to generate and internalize new knowledge depends directly on use

Main results of the evaluation of innovation policies in the 21st century

2 - Lack of coordination, continuity and adherence of innovation and production policies with a broader national development plan

Different problems derive from the failure to anchor, give coherence and sustain innovation policies, including:

- the support of cases whose outcomes are evaluated as positives, at the same time that are very questionable from the development point of view. Eg: support to starts-up that end up being bought (and closed) by big TNCs

In Brazil, from the 1980s on-wards:

- waste and loss of long-term and integrated national planning policies
- lack of systemic vision and fragmentation of the indivisible development dimensions
- emphasis on the financial dimension, budget

3 - Negative consequences of the increasing financialization and financial crises on the **whole economy** and especially on the **productive and innovative structure** of the different countries and territories

Financial logic is contrary to risk and long term

- its impacts are particularly negative for the generation of knowledge and innovation
- it tends to reinforce "spurious competitions" (Fajnzylber, 1988): precarious working conditions and unsustainable ways to produce and use natural resources
- the struggle is first of all to survive and continue to produce

Main results of the evaluation of innovation policies in the 21st century

Short termism, risk aversion, *rentier* logics and primacy of recessionary austerity policies have

- contributed to the loss of production capabilities and to reinforce "regressive industrialization" and stagnation
- increased instability, inequality and precarization of work and living conditions
- led to the erosion of economic and political space of governments

"The liberalization of capital movements, in the last quarter of the twentieth century, has rendered almost every country more vulnerable to the instability and shocks which can be propagated throughout the system, however well local innovation systems may have been performing in a narrower sphere ... political regulation is essential" (Freeman, 2003)

4 - Decontextualization

The production and innovation capacity of a country or region reflects historical, territorial, political, economic socio-cultural and environmental conditions

Different contexts - with particular cognitive and regulatory systems and means of articulation and learning - lead to

- different ways of generating, assimilating, using and accumulating knowledge
- specific policy requirements

"History and specific territorial conditions are essential to explain how production and innovation capabilities are acquired, used and developed. Analytical models, taxonomies and policy prescriptions that disregard these parameters put their usefulness seriously in risk" (Lastres & Cassiolato, 2005)

Use of inadequate theories and methodologies that exclude activities, agents and territories both from the research and the policy agendas

- “invisible exclusion” by concepts, methodologies and instruments that encapsulate political decisions and eliminate them by definition
 - Eg: policies targeting the increase of R&D and patents and instruments such as fiscal incentives and most of the financing schemes

Lack of adequacy

- reinforces inequalities and distortions
- has negative impacts in the case of large-scale and less developed countries and regions
 - Eg: Mexico (Dutrenit and Ramos, 2012) and Brazil (Cassiolato and Matos, 2012)

Contextualizing analytical and policy frameworks

- Need to address the strategic development priorities of the different local, regional and national contexts
 - ✓ Innovation policies can and should contribute to reduce regional and social inequalities and exclusion (Freeman, 2003; Cassiolato, Lastres, Maciel, 2003; Arocena, Sutz, 2003; Joseph et al., 2010; Soares, Scerri, Maharajh, 2014; Dutrenit, Sutz, 2014, Lastres, et al., 2016)
 - important hints signaling new sustainable forms of development
 - Finep has accumulated important experience and knowledge
- Need to take into account the type of insertion of a country or region within the wider geopolitical context and the role of:
 - ✓ "implicit policies" (Herrera, 1975), which do not contribute to fostering internal technological development but, most importantly, inhibit them (Sagasti, 1978; Erber 1983; Katz, 1985)
 - ✓ "malign macroeconomic regimes" (Coutinho, 2003)
 - ✓ the different "development conventions" (Erber, 2011)

Decontextualization and the threat of alienation of economic theory

All over the world, different authors have pointed to the limitations of quantitative analyses based on abstract models, stress the advantages of *reasoned history methods* and join Schumpeter in quoting one of his main alerts:

"It is absurd to think that we can derive the contour lines of our phenomena from our statistical material only. ... General history (social, political and cultural) economic history and industrial history are not only indispensable, but really the most important contributors to the understanding of our problem. All other materials and methods statistical and theoretical are only subservient to them and worthless without them"

(Schumpeter, 1939; Freeman, 1982; Lundvall, 2006)

5 - Production and innovation efforts are not limited to economic development nor to the activities of particular companies, sectors and regions

"Narrow definitions" are of limited relevance and "misleading when it comes to inform innovation policy strategy everywhere"

Strategic character of the policies fostering local production and innovation systems, today and in the future
E.g. for the provision of food, health, education, housing (with sanitation and access to water and electricity), culture and other essential public infrastructure and services aiming at promoting development
And not only in underdeveloped regions

Reductionism can lead to serious negative consequences

- in the analytical dimension, a failure to perceive and understand local and national conditions
 - an enormous percentage of our economic, work and knowledge activities remain invisible and excluded ("below the radar") both in terms of the research and the policy agenda
 - reinforcement of inequalities, distortions and chasms
 - supposed "paradoxes"
- in the policy dimension - adding up to this massive exclusion of important activities, agents and territories - a trend to submit local conditions to inappropriate models and to blame/punish them not to conform to these models

Contextualization of analytical and policy frameworks

Opportunities to incorporate social inclusion and sustainable development in research and policy agendas

Revision of research emphasis

- ✓ from copying MDC's theories, methodologies, indicators and policy models, as well as their development agenda
- ✓ to developing and using proper and contextualized concepts, indicators, methodologies and policy models

Revision of policy emphasis

- ✓ from imitating and implementing top-down exogenous models
- ✓ to implementing adequate policies, capable of stimulating the formulation of contextualized solutions for development from the micro to the macro level and vice-versa - bottom-up and top-down

Focus on the different production and innovation systems as well as their territories, instead of a restrict (and biased) view on firms and projects

Importance of articulating, instead of fragmenting and antagonizing, the goals of economic, social, environmental, political and institutional development

Revision of policy emphasis

- from technology imports
- to promoting capabilities and solid, interactive and dynamic local and national production and innovation structures

Need to implement policies capable of:

- stimulating the capacity of generating, assimilating, using, accumulating and diffusing knowledge
- fostering interactions and synergies among actors performing different functions within one or more **local innovation and production systems** - LIPSs

Need to implement policies capable of:

- breaking territorial and social (**gender and racial**) invisibilities and exclusions of:
 - traditional communities and informal agents and activities
- **focusing on the promotion of inclusive, cohesive and sustained development**

Example: an education system usually involves:

- ✓ buildings, furniture and other facilities
- ✓ information and communication technologies and systems
- ✓ a vast array of services
- ✓ means of transport: buses, bikes, boats, etc.
- ✓ clothing and shoes
- ✓ food and beverage - law in Brazil granting the provision of 30% of the school meals by family agriculture exemplifies the relevance of procurement policies

Granting acquisition of goods and services - as a powerful policy to foster production and innovation

Existing experiences reveal important lessons of inclusive, systemic and sustainable development

Eg: public education LIPSs in the Amazon

The role of teaching and research efforts in revealing and exploring these opportunities

Eg. case studies on culture LIPSs in Brazil and of health LIPSs in Brazil, India, South Africa, China and Uruguay

Strategic importance of new pro-active promotion and evaluation innovation policies

- Besides addressing and articulating the development priorities of the country or region in focus there is the need to move forward in overcoming policies based on monitoring and evaluation models and methodologies that:
 - focus on the most developed groups of agents, activities and territories
 - center on disbursement and requisites for financial sustainability as their main - if not the only - element
 - emphasize the short term, traditional support and "more of the same" actions
 - reinforce economic, social, political and territorial exclusions and inequalities

Opportunities to significantly improve innovation policies

Role of the academic work in revealing and shading light to the importance of including the different agents, activities and regions that are often ignored and marginalized in the teaching, research and policy agenda

- some of them provide relevant lessons of already experimented inclusive and sustainable means of producing goods and services and, therefore, are taken as indicators of new avenues for the future

Strategic relevance of both academic and pragmatic policy knowledge and experience

Role and responsibility of researchers, professors and policy-makers

Opportunities (and urgent need) to choose and use concepts, indicators and policy models that:

- Recognize and mobilize national and local potentialities and capabilities
- Associate the **inseparable dimensions** of development and contribute to
 - overcome invisibilities and exclusions and
 - cut down inequalities
- Emphasize the capacity to acquire and use all sort of knowledge - formal, informal, traditional, scientific etc. - and of promoting their integration
- Are really capable of addressing and promoting **cohesive and sustainable development within a contextualized and collective vision of future**

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Many thanks!!!!

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RedeSist - 20 years developing, using and improving new conceptual, analytical and policy frameworks for innovation and production development in Brazil



Advantages of the local innovation and production system - LIPS approach developed and used by RedeSist in Brazil (Cassiolato, Lastres, Maciel, 2003; Scerri, Lastres, 2013)

- A focusing device with the ability to address
 - diverse conditions,
 - formal and informal activities and actors, "which remain invisible to the mainstream research and policy gaze"
 - social, economic and political spheres
- Powerful concepts and useful tools
 - to analyze and mobilize the means of acquiring, using and disseminating knowledge in production spheres
 - which are broader, more flexible and advanced than those concepts based on individual organizations, sectors, industrial complexes, production chains and agglomerations

Importance of perceiving and exploring these advantages

RedeSist Lips Studies

