



INCT/PPED

Instituto Nacional de Ciência e Tecnologia em
Políticas Públicas, Estratégias e Desenvolvimento

1. Definition of state capacity:

- “the set of tools and institutions the State disposes to establish goals, transform them into policies and implement them”;
- rule of the game” that govern political, societal, and economic behavior: the political party system, executive-legislative relations, channels for mediation of interests, conflict resolution; public policies – institutions and strategies that influence decisions on policy, their development, and execution, mapping the mechanisms of intra-governmental coordination or executive coordination.

- Peter Evans (1993), the State's capacity for action.
- Karo and Kattel (2013): "Policy capacity - three interlinked policy choices: nature and sources of technical change and innovation; financing economic growth; public management to deliver and implement policy choices. It is not a continuum of abilities but rather a variety of modes of making policy.

Pressupostos:

- The role of the entrepreneurial state : Weiss, 2014; Mazzucato, 2013; Block & Keller, 2011; Primi, 2014). Consensus about the role of innovation in catching-up and leap-frogging processes
- Industrial policy and innovation policy: the key to surpass the threshold of development (**inclusive** policies and respect of **sustainability**). (...) “the number of non-western countries which have become developed is less than ten: Japan, Russia, Taiwan, South Korea, Hong Kong, Singapore, Israel. (Wade, 2014).
- Countries that crossed the threshold arrived to the technological frontier and, moreover, define the technological frontier in these sectors
- But before this they can be caught in middle-income countries’ technological traps. The position of sectors/companies as suppliers (“subcontractors”) in the global value chain; sectors/companies with the capacity to equip and leap-frog the frontier; intermediate position – Brazil and China – some sectors are at the frontier (low-emissions tropical agriculture, deep water oil exploration, small and medium aircraft manufacturing), while other sectors are not competitive.

- Coriat e Wallerstein (2006)¹, technological paradigm strongly based on science (“science based 2”), the financial (capital markets) and intellectual property (the relevance of patents and the intellectual property system) dimensions are interwoven and are part of the new paradigm..
- Secondary innovation. Wu, Ma e Chu (2010). The technological trajectory is not entirely defined in one sector, countries can advance through alternative paths. They tend to come up against limits related to their technical capacity, crisis in the development process. When these limits are overcome, the country has a competitive advantage with which to forge ahead.
- Innovation, and the national innovation system of which it is a part, seems to be the ace in the hole that would allow the country to reach the technological frontier in the sectors where the country could have comparative institutional advantages.

- This ace in the hole seems probable when a **structuring of consensus** is plausible – on which sectors the entrepreneurial State should promote and incentivize, on where the frontier is located, and whether these countries find themselves there, can reach it, or define the innovation frontier.
- The process of structuring consensus depends on: the existence of a rearguard of institutions capable of undertaking prospective (and retrospective) studies that are effectively considered in the decision-making process; the continuous exercise of foresight or technological foresight, subject to processes of periodic revision; the capacity to take account of conflicts of interest, but equally to neutralize them when building structured consensus; and finally to count on a well-established but effective financial innovation system. What is at issue is not a continuous set of abilities or expertise but a variety of decision-making processes on long-term strategy and coordination in the development and implementation of political technologies.

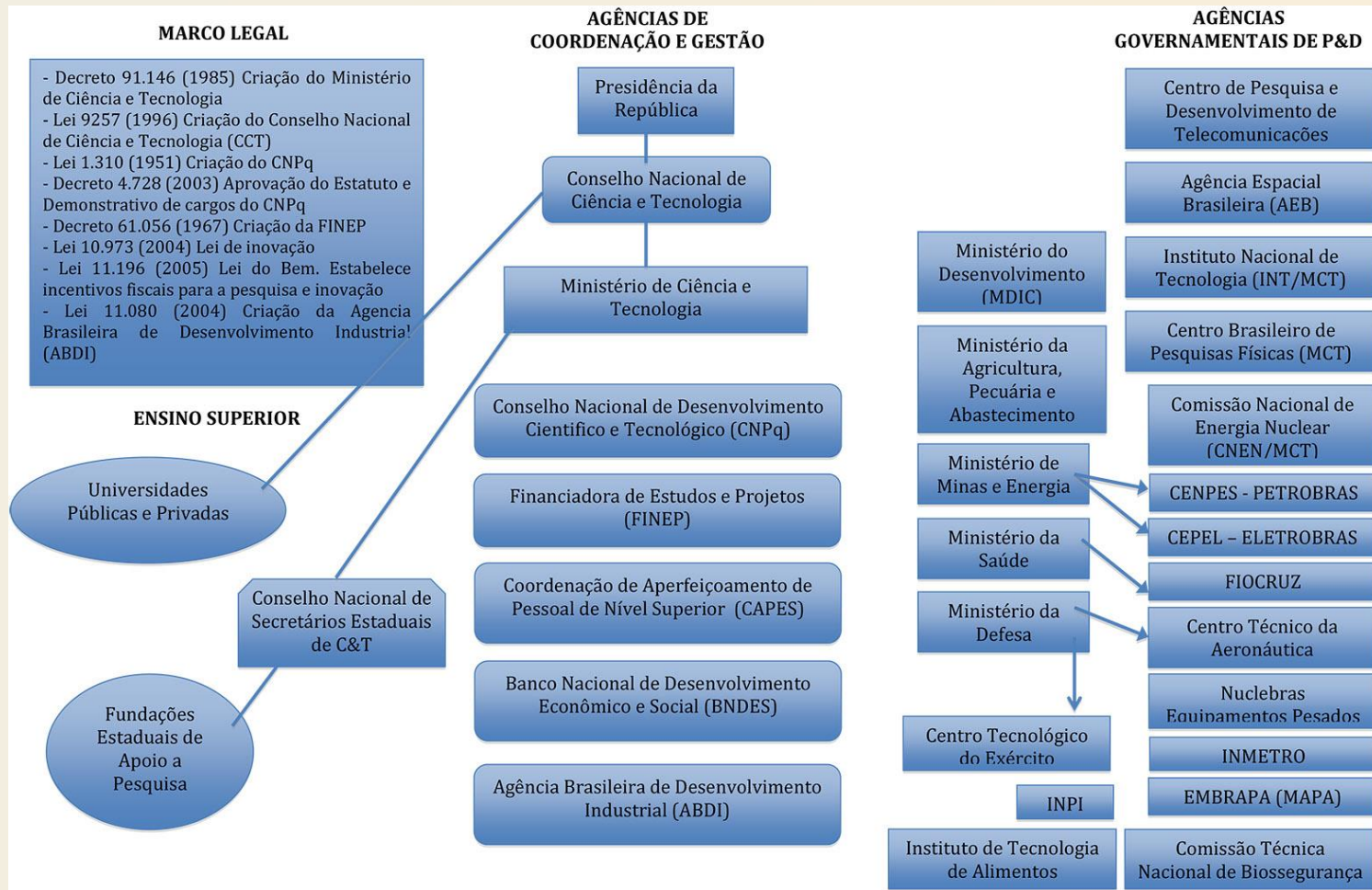
Research Outcomes

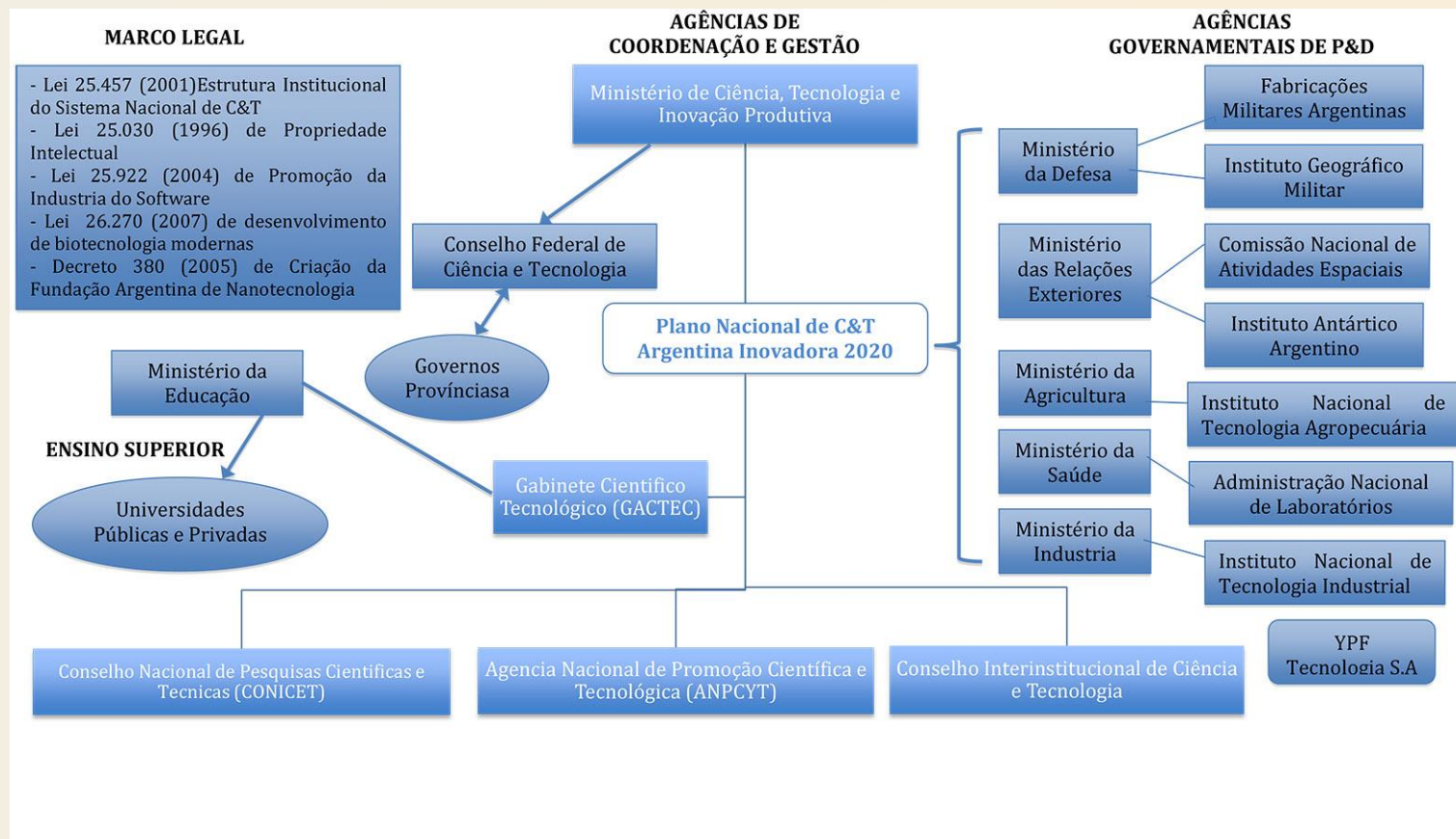
- The configuration of the Brazilian NIS seeks to integrate the education, research, and innovation financing systems (BNDES, FINEP, Sectorial Funds). In the Chinese case, financing does not appear in the organization charters of the Innovation System, it happens directly through the banking system. The proximity of agencies with companies, on national, sectorial, and regional levels, assures financing, once companies (all of them) have been evaluated positively in terms of their (effective) contribution to technological and industrial development in China. This is, without a doubt, a difference to be emphasized.
- In the Brazilian context, there is a solid legal framework, institutionality of innovation financing, available resources, investment policies. But the needed flexibility to attend to companies does not exist, much less the intersection between supply and demand for funding for innovation. There are many requirements, legal frameworks, and controls, especially on the part of the Federal Court of Accounts, while there is a lack of new companies capable of delivering what they promised.

- In the Chinese case, MOST's coordinating role through CASTED and CASS act as think tanks: **integrating foresight activities under the same strategic, long-term vision. Greater coordination.**

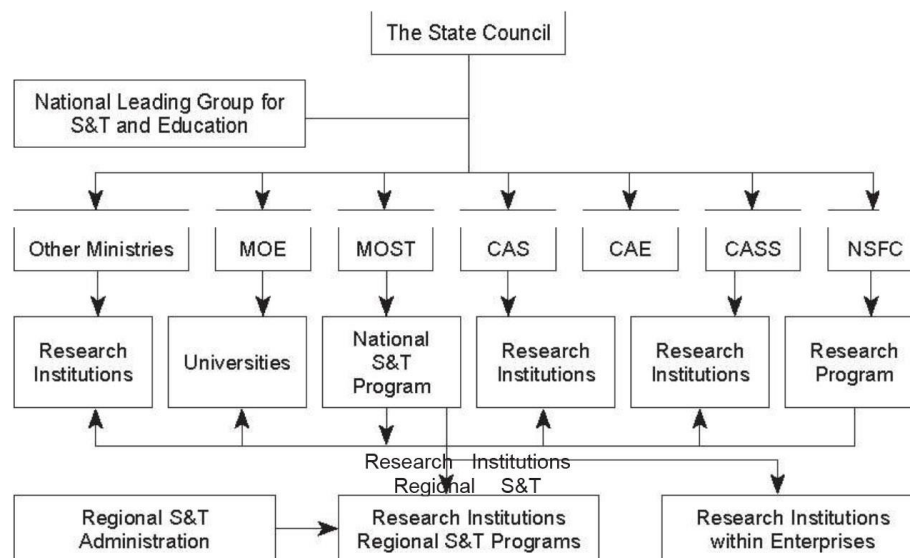
- The Chinese case: comparative institutional advantages. The architecture of the Chinese innovation system inverts, or subverts, the structure that characterizes the Brazilian and Argentinian systems.

The technological innovation that emerges from the actual economic system is at the top of the innovation system and not at its base. Private and public research is not the finish line, but the starting line. The second layer of the system is the advisory apparatus for strategic decisions, performed by research institutes, think tanks, universities, and so forth. The Chinese innovation system is the result of a consensus, a collective process of creating structural consensus.





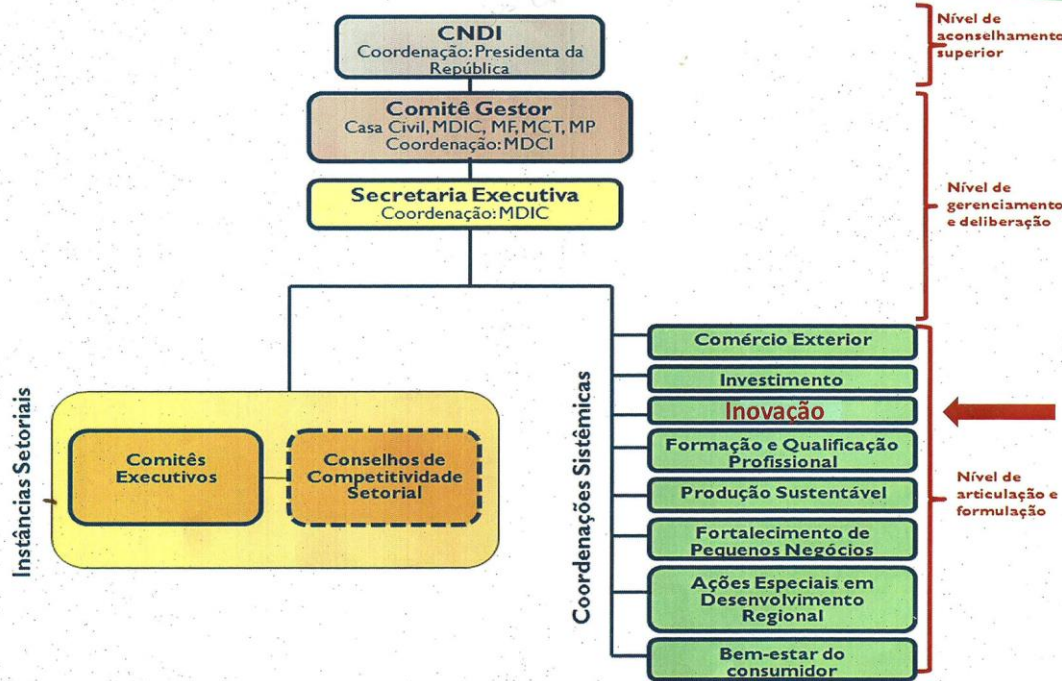
Governance Structure of China's Science and Technology System



KEY	
CAS Chinese Academy of Sciences	MOE Ministry of Education
CASS Chinese Academy of Social Sciences	MOST Ministry of Science and Technology
CAE Chinese Academy of Engineering	
NSFC National Natural Science Foundation of China	

Source: Rongping Mu, "Development of Science and Technology Policy in China," 2004 http://www.nistep.go.jp/IC/ic040913/pdf/30_04ftx.pdf.

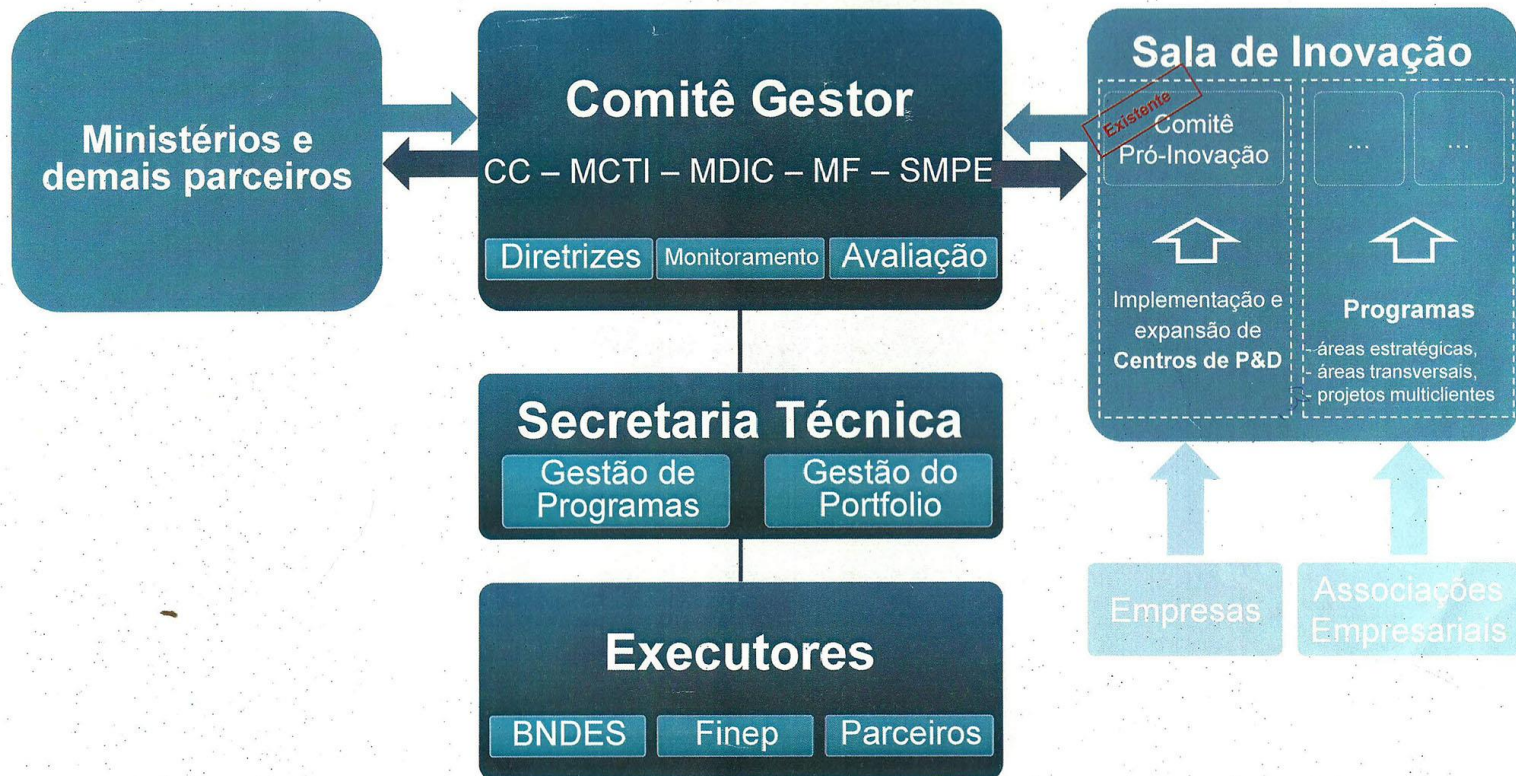
Estrutura de Governança



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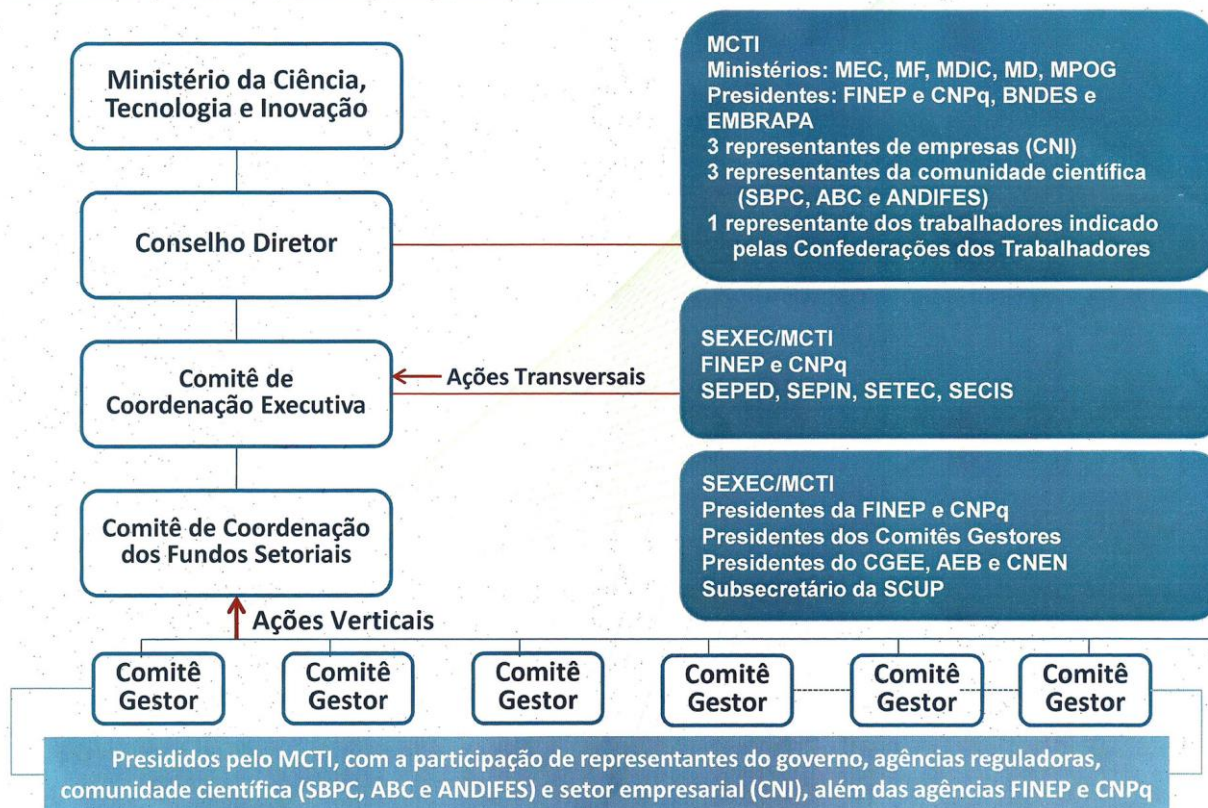
Governança



Linhas do FNDCT



Governança do FNDCT

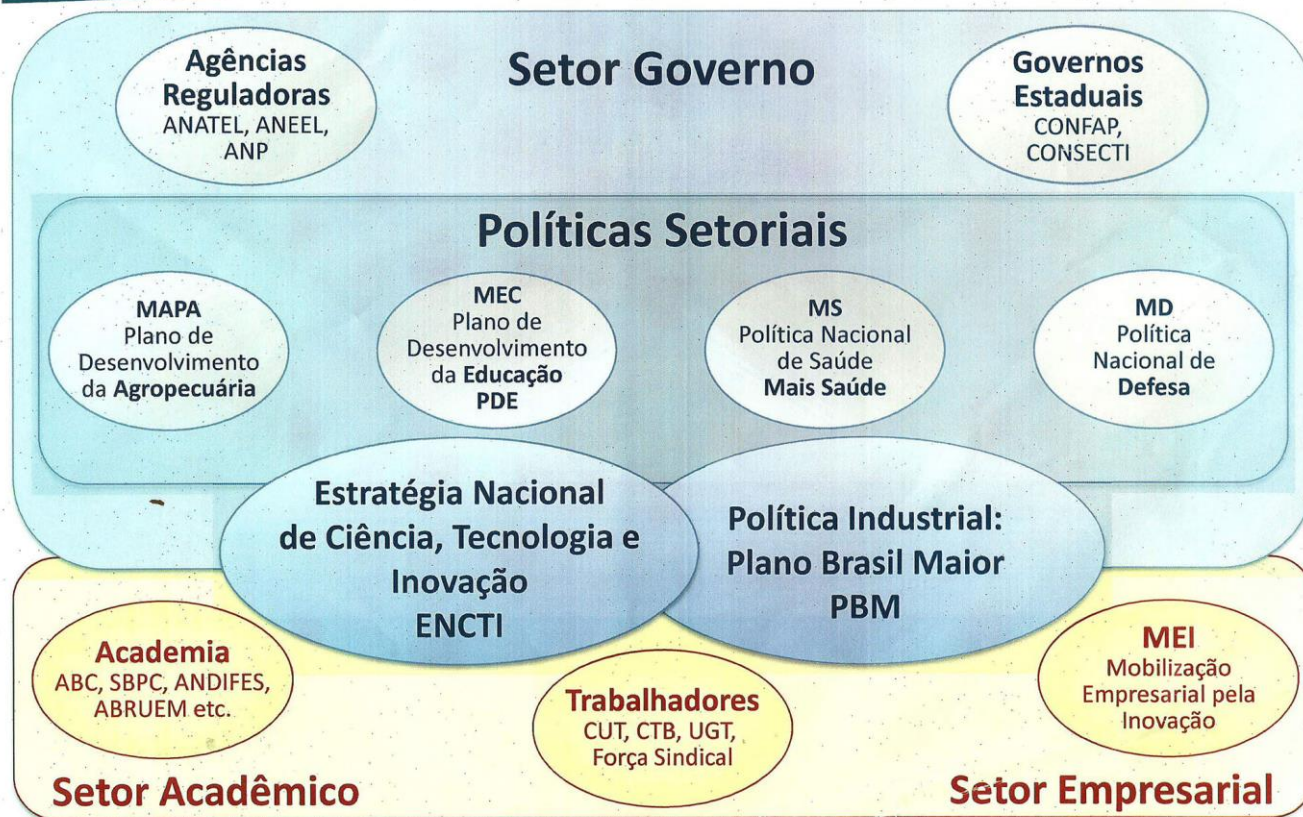


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