

## Thematic Session 1

### **Biotechnology innovation: main challenges for public policy and for business strategies**

Since the 1980s biotechnology has been considered as a strategic area of Brazilian scientific and technological policies. This view is in line with the growth of biotechnology activities and the orientation of policies around the world over the past three decades.

The available Brazilian data shows a significant growth in the generation of scientific knowledge since the 1980s in the area. However, that growth has not been accompanied by a corresponding increase in the creation of new biotech firms and in the number of patents generated. Although some specific companies present encouraging results and the number of linkages between research centers and firms has increased, the ability to create value from modern biotech activities fell short of the expectation generated by scientific research and boosted by the public policies.

Although some interpret such a trend as a paradox one could argue that Brazilian biotech performance is the expectable result of the Brazilian productive and technological trajectory. The scientific capabilities available are the result of the systematic investment on training high qualified human resources and supporting research activities. Meanwhile, the problems related to the development of innovation activities embedded in different value-chains, depend on a series of complex factors. It depends on the country's strategy of productive specialization, of private agents which receive the necessary incentives and, more important, of policies focused on promoting systemic linkages among agents. Besides, it should be taken into account that there are differences among the different productive areas.

According to the research findings, one of the main challenges is related to the coordination of policies. Specifically, the articulation of supply side policy tools devoted to promote R&D activities with demand led policies, like the public procurement. It is only possible to understand the problems of policy coordination through a systemic vision that combines academic, entrepreneurial and policy visions.

The thematic session **Innovation in biotechnology, business strategies and public policy** aims at discussing the major challenges for biotechnology development and to identify what are the requirements for the area to achieve the expected results and have a real impact on the transformation of productive capacities in different value chains.

## Guiding Questions:

1. Is it a Brazilian specificity the gap between the scientific production and the innovation capabilities in biotechnology?
2. What is the Brazilian biotech main challenge? Is it a technical or economical challenge?
3. What public policies can do about it?
4. Could innovation processes in biotechnology be benefited by public policies that aim social inclusion, such as health? How?