



Q&A: Risks of Brazil's downturn in science funding

Copyright: Senado Federal

Brazil held a prominent 23rd position in Nature's 2015 Index (http://www.nature.com/nature/journal/v522/n7556_supp/fig_tab/522S34a_T1.html), which ranks the world's 100 countries leading in high-quality science. But Brazilian science is now at a critical juncture.

The science budget has been reduced drastically: 4.6 billion reais (US\$1.4 billion) were allocated to the sector this year (<http://www.sbpnet.org.br/site/noticias/materias/detalhe.php?id=5230>), equivalent to half the budget in 2013. The Science ministry now also shares its funding (<http://www.scidev.net/global/enterprise/funding/>) with the Ministry of Communications.

The sector's status has also been reduced through a symbolic move by the government, to terminate the Ministry of Science, Technology and Innovation which was created in 1985.

In this interview with *SciDev.Net*, Luiz Davidovich, president of the Brazilian Academy of Sciences, offered his insights about today's science landscape in Brazil and what he envisions for the future of scientific research in the country.

Brazil had been advancing in science in the last decade, even in periods of global economic crisis (2008-2009). How do you explain this?

It was due to an increasing investment in research and development (R&D) (<http://www.scidev.net/global/enterprise/rd/>) by the government, which channelled substantial resources to research agencies. Brazil also boosted what we call 'sectoral funds', which were set up in 1999. Those funds come from the payment of royalties by different industries such as oil, energy (<http://www.scidev.net/global/environment/energy/>) and private health (<http://www.scidev.net/global/health/>) care. Those sectoral funds increased as a larger percentage of royalties was allocated during the government of Lula da Silva (2003-2010), which enabled greater support to research. Da Silva's office also created a set of laws to stimulate innovation (<http://www.scidev.net/global/enterprise/innovation/>).

The new government formed after Brazil's Senate voted to remove President Dilma Rousseff from office (August 31, 2016) set new guidelines for public spending. How do you see today's scientific landscape in Brazil?

The funding of science in Brazil faces a crisis of serious proportions. The Ministry of Science, Technology and Innovation's budget for this year is US\$1.46 billion, far below the 2013 budget which reached US\$3 billion [the largest amount in history]. The budget will now be shared among the science and communications ministries, something that did not happen in 2013. Brazilian science has less than half the resources it had available three years ago, despite the expansion of the scientific community and the increasing number of scholars.

Is there a lack of resources to keep research institutions running?

Projects that are important for the country are paralysed, research networks are deactivated, grants are reduced and youngsters are demotivated to pursue a scientific career. The loss to the country's future is immense.

“In today's world, knowledge is power. Instead of surrendering to the economic crisis, Brazilian science should take advantage of this window of opportunity to position itself in the international arena.”

Luiz Davidovich

The National Council for Scientific and Technological Development (CNPq) will be particularly affected by the funding cuts. More than US\$160 million of this year's budget is contingent on increasing the surplus. A research institution spends 63% less than it was spending in 2010 (when Brazilian funding reached its peak, at US\$853 million or 1.5 billion reais with the exchange rates at that year). As a result of the limited resources, 98.5% of CNPq's spending in the first half of 2016 was used for paying out grants, leaving only 1.5% for science investment.

The Brazilian government is proposing a Constitutional Amendment (known as PEC241) that restricts the growth of public spending according to the inflation rate for the next 20 years, including in health, education (<http://www.scidev.net/global/communication/education/>) and science. In your view, what will be the impacts for the Brazilian scientific and technological development if this proposal is approved?

The proposal of a Constitutional Amendment happens at a time when the budget for science is particularly low, and this will damage the advancement of the sector. R&D is a necessary condition to take the country out of its current economic crisis and to contribute to the GDP (gross domestic product) growth. At a time when we have few resources available, the battle for allocating funding in science and technology (S&T) will be hard.

What do you envision for the future of scientific research with the combined Ministries of Science and Communications?

Both ministries are run differently. The former Ministry of Science was split into two secretariats under the new merged ministry. This move is contrary to what countries that prioritise science and technological innovation do — they usually put the coordination of S&T policy close to the centre of power. Brazil's federal government argued that the new ministry would gain importance and leverage resources as a result of the merger. We see that this did not happen. Not only has the new Ministry received half the resources it had three years ago, this budget will have to be split in two.

To what extent will the disinvestment affect Brazilian scientific development?

The crisis will continue and become even more severe. Research institutions' reserves are being depleted. We may see a major setback in the development of science and technological innovation. What worries me in particular is the effect this crisis might have on the future

generations of researchers, adding to the brain drain that sends them towards countries that, despite the global financial crisis, are scaling up their investments in ST&I.

Brazil spends less than 1.5% of its GDP in R&D. What is the ideal amount?

The National Conference on ST&I for Sustainable Development, which in 2010 convened participants from several social sectors, pointed at the need to invest 2–2.5% of GDP in R&D by 2020. Current indicators show that we are under the 1.5%, behind countries like China (that invests nearly 2.1%), the United States (2.8%), South Korea and Israel (both around 4%). China expects to reach 2.5% and the European Union 3% by 2020.

In today's world, knowledge is power. Instead of surrendering to the economic crisis, Brazilian science should take advantage of this window of opportunity to position itself in the international arena.

How will Brazilian science suffer from the budget cuts?

In times of crisis, the mainstream discourse is that all sectors should sacrifice. This is not true. What should be done is the opposite. It is crucial to increase investment in ST&I. This is what lifts the country out of the crisis in a sustainable way. Investments in such areas are broadly offset by the benefits as the country recovers. We need more economists who understand the essential role of S&T in Brazil's economic development.

You might also like

- [Brazil downgrades science ministry \(/global/policy/news/brazil-downgrades-science-ministry.html? src=related articles\)](#)
- [Brazil's budget cut dismays scientists \(/global/funding/news/brazil-s-budget-cut-dismays-scientists.html? src=related articles\)](#)
- [Big chance for Brazil's scientists \(/global/opinion/big-chance-for-brazils-scientists.html? src=related articles\)](#)
- [Brazil prioritises science popularisation \(/global/communication/news/brazil-prioritises-science-popularisation.html? src=related articles\)](#)

Investing in science sometimes does not bring immediate practical benefits, but it can lead to disruptive technologies in the future. How can we do this if we reduce support for research? How can we withstand such a budget cut when we have important projects to develop for the country's future?

In 2010, Brazil had 710 scientists for every million inhabitants, compared with the OECD average of 7,600 scientists per million people. It is very low for a country with such challenges and opportunities. It is our duty to increase the number of researchers by attracting youngsters to science. It is a matter of urgency to resume, consolidate and expand funding in R&D, in both academies and in enterprises. That is the key for sustainable economic development in the contemporary world.

How can we build resilience mechanisms for Brazilian science in order to avoid the funding fluctuations the sector is facing?

There are two possible mechanisms. One is to guarantee a stable funding to R&D by reviving and consolidating sectorial funds, in order to ensure a continuous source of funding.

Another is to increase how much private companies spend on R&D, which is still at a low level in Brazil.

This piece was produced by SciDev.Net's Latin America and Caribbean edition. (<http://www.scidev.net/america-latina/financiamiento/especial/riesgos-por-bajo-presupuesto-de-ciencia-brasilena.html>)

This article is part of a series on the future of research funding in low and middle income countries supported by the International Development Research Centre

We encourage you to republish this article online and in print, it's free under our creative commons attribution license, but please follow some simple guidelines:

1. You have to credit our authors.
2. You have to credit SciDev.Net—where possible include our logo (<http://www.scidev.net/global/content/follow-us.html#Link%20to%20us>) with a link back to the original article.
3. You can simply run the first few lines of the article and then add: “Read the full article on SciDev.Net” containing a link back to the original article.
4. If you want to also take images published in this story you will need to confirm with the original source if you're licensed to use them.
5. The easiest way to get the article on your site is to embed the code below.

For more information view our media page and republishing guidelines (<http://www.scidev.net/global/content/media.html#Using%20SciDev.Net%20material>).

The full article is available here as HTML.

Press Ctrl-C to copy

```
<div class="article-wrap">
<div id="article-introduction">
<h1>Q&A: Risks of Brazil's downturn in science funding</h1>
<h4>By Fabíola Ortiz</h4>
</div>
<br />
<br />
<div id="article-body">Brazil held a prominent 23<sup>rd</sup> position in <a
href="http://www.nature.com/nature/journal/v522/n7556_supp/fig_tab/522S34a_T1.html">Natur
e's 2015 Index</a>, which ranks the world's 100 countries leading in high-quality science. But
Brazilian science is now at a critical juncture.<br />
<br />
The science budget has been reduced drastically: <a
href="http://www.sbpnet.org.br/site/noticias/materias/detalhe.php?id=5230">4.6 billion reais
(US$1.4 billion) were allocated to the sector this year</a>, equivalent to half the budget in
```

Related topics:

Funding (</global/enterprise/funding/>)

Governance (</global/governance/>)

Policy (</global/governance/policy/>)

R&D (</global/enterprise/rd/>)

14/11/16

Fabíola Ortiz

(</global/author.fab-ola-ortiz.html>)