

WHERE WE STAND AND WHERE WE ARE HEADING

The recently published UNESCO report on the state of science in the world (*Unesco Science Report: Towards 2030*; https://en.unesco.org/unesco_science_report; 820 pp.) is a document of mandatory analysis for all interested in the matter. For those who frighten at its length, the chapter under the suggestive subtitle 'A world in search of an effective growth strategy' is an excellent executive summary, available at <http://unesdoc.unesco.org/images/0023/002354/235407e.pdf>.

In its picture of world science, this edition of the five year report reveals as the main orientations the environmental crisis and energy issues. For our region, it emphasizes as outstanding themes, the dilemma between public good science and science to drive commerce, as well as the need to understand and promote the role of the local and indigenous knowledge and its possible application for the benefit of the people.

Through tables and graphics the report underlines the tendencies that can be observed in the different factors relating to scientific and technological development along the last decade. It is worthy to note that in many instances figures of interest are absent, due to the lack of information from official entities; however, it is possible to arrive to relevant observations, both for the region in general as well as particular ones for different countries.

Of the world's researchers, 3.5% (490 per million inhabitants) work in Latin America, Brazil being where they are more numerous (2%), followed by Argentina and México (0.7 and 0.6, respectively). These researchers produce 5.1% of the indexed papers, with an important increase of 30% since 2008. Over half of them (close to 3%) originate in Brazil. In all the countries of the region there is a tendency to increase the number of yearly publications, with the exception of Venezuela, where a significant decrease of 28% is recorded for the decade, at the same time that the largest increase rate in the number of researchers is reported. This discrepancy could be related to the observation that the country has the lowest indices of political stability and government effectiveness in the whole region.

Education, an aspect closely related to productivity in science, is the subject of specialized reports from Unesco. However, among other aspects, in this report the overwhelming and highly stable predominance of social sciences graduates from higher education is highlighted. They more than duplicate the cumulative amount of those graduated from natural, medical and agricultural sciences, engineering and humanities. The number of doctorates granted in the natural sciences, which dropped abruptly a decade ago, has not yet recovered.

Economic aspects occupy an important space. The governmental investment in STI remains very low in Latin America, while that of the productive sector is extremely low, there being only few countries that show a growing tendency. The total expenditure in R+D has been increasing in all of the region to reach 0.7% of the GDP and only in Brazil has it reached over 1%, while the world average is 1.7%, that of the G20 countries is 2% and in those of the OECD it reaches 2.4%, whereas in Korea and Israel it is above 4% of the GDP. Business funded research has remained close to half of the total R+D expenditure in Brazil, about a third in Mexico, Colombia and Chile, and has decreased in the rest of the region, continuing at about 0.2% of the GDP. The world average is somewhat above 1%.

The parameters related to technological development remain relatively stagnant, revealing a noticeable weakening in the zeal for technology-driven competitiveness. The number of patent requests remains very low and only Brazil has an R&D intensity comparable to that of dynamic emerging market economies. The percentage of the population utilizing internet almost doubled in Latin America in recent years and, although it is higher than the average world population that does so, it does still does not reach that of the OECD member countries.

Interestingly, the report being commented recommends to instill greater stability in long-term STI policy-making and to prevent a proliferation of strategies and initiatives.

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