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EDITORIAL

For some years now, the National System of Science, Technology, and Innovation (SNCTI) has been changing how sciences and scientific knowledge are recognized as public policy tools to achieve social objectives such as, for example, economic development or, recently, sustainable development [1, 2]. In this sense, the National Planning Department (DNP), through policy CONPES 4069 of 2021, determines SNCTI as having a low contribution to the development of the country and, consequently, promotes a public policy that increases the contribution of the SNCTI to the cultural changes required by a knowledge society. In this context, the new public management has developed a methodology for calculating academic growth that prioritizes and classifies university work [3], from both, people (professors, researchers) and research groups, institutions, countries, etc., for the sake of assumed efficiency, productivity, and quality of academic work. Publindex, a national index part of the SNCTI, has sought to standardize national quality and visibility criteria, aiming to improve the competitiveness of national journals with respect to the international context. To this end, a model for measuring and classifying journals allowed, just before 2016, to improve editorial policies and practices, as well as the qualification of editorial teams and committees. Since the inclusion of the impact factor (IF) in call 768 of 2016, Publindex limited the quality of editorial projects to the position in any of the quartiles of the Journal Citation Report (JCR) or the SCImago Journal Report (SJR), or the Google Scholar H5 quartile.

At the end of 2022, the Science Directorate of the Ministry of Science, Technology, and Innovation (Minciencias) presented the technical adjustments to the Classification Model of Colombian Scientific Journals, with the intention of updating them pointing to the most recent conceptual and methodological developments to assess the impact of national scientific production. This presentation called for a public consultation on the implications and changes of this Journal Classification Model, seeking to collect contributions that would enrich the proposal and, thus, achieve a model that would promote the quality of scientific journals through a classification system.

Despite the various calls to rethink the relevance of including the impact factor in the journal classification model, Minciencias aims to maintain a criterion technically renamed as "impact by combination of metrics" (ICM) by thematic categories, under the pretext of i) expanding the realm of citation sources, ii) reducing limitations of classical indexes (JCR and SJR) and iii) maintaining a level of rigor to increase the quality, visibility, and impact of Colombian journals. Knowledge, education, and technological developments encompass the processes of a set of human and technical resources, access to information and, above all, the policies that a State implements to organize such resources. In an increasingly globalized world, the gap in scientific and technological capabilities between countries is one of the most reliable indicators of underdevelopment and development according to the importance and progress given to them.

It is clear that investing in science and technology and efficiency in said investment is essential for a society to respond to the comprehension of the environment, and, above all, to base development and dynamize social change. Aware of this reality, countries like the United States have formulated very ambitious 20-year programs that will provide resources for both the calculation and the experimentation of super calculators, super intelligent networks, biotechnology, nanotechnologies, and robotics, among others, with joint work scheme between scientists and industry, who would oversee creating and launching the products and the knowledge that is generated. Thus, "a perfect assembly" is generated between scientific and technological research plus productive activity, which feeds back into the system to unsuspected levels.

Regarding global investment in Research and Development, Figure 1 presents data between 1996 and 2021 of this investment per year globally for all countries in the world, reflecting in 2021 an investment of 2.55% of GDP in the world while Colombia for that year presented an investment of 0.29% [4]. According to a study by The Global Technology Revolution 2021, by the RAND National Security Research Division of the US, Colombia is located in the group of "scientific developing countries"; along with Brazil, Chile, Mexico, Turkey, South Africa and Indonesia. That is the third category of CLJatro, in which the last belongs to the "scientifically lagging countries", the second "scientifically competent" and the first, the "scientifically advanced". Such a position of Colombia would correspond, on the one hand, to the volatility of the allocation of resources, and on the other hand, the resources assigned to research and development are used simultaneously for the training and development of researchers, as well as for the research itself, which decreases its potential.

In turn, factors such as poverty, precariousness in public services, political instability, and the few economic resources that characterize most Latin American countries are barriers to achievements in the use of science and

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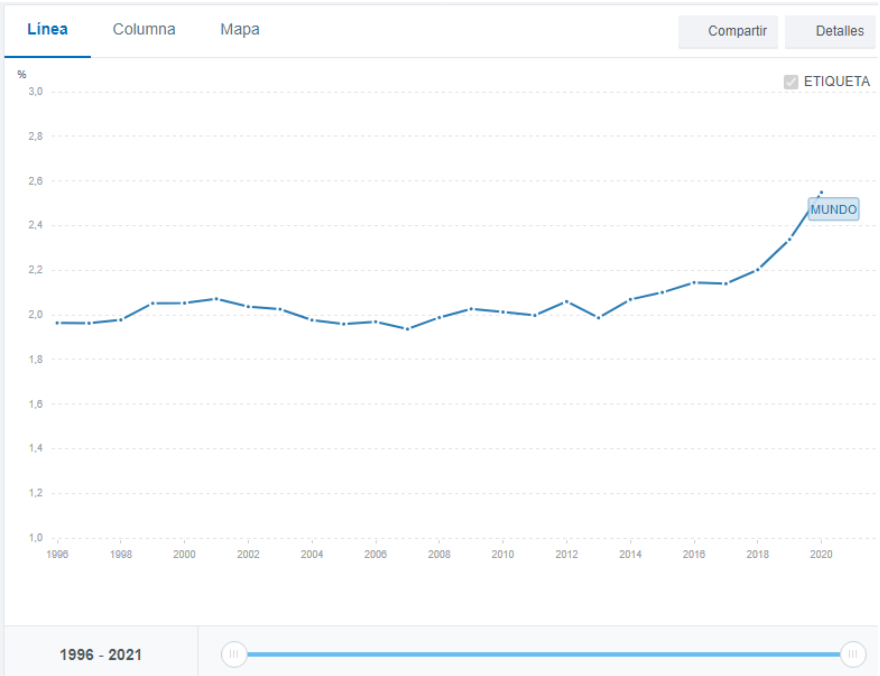

Figure 1 Investment in Research and Development (% of GDP)

technology described by the RAND reports, including the areas of biotechnology, nanotechnology, materials, and information technologies. In order to determine such barriers, the study calculated in terms of percentages both the barriers to uses and the driving forces behind them, where "scientifically advanced" countries such as Germany and Canada have 30% barriers and 100% driving forces. Meanwhile, the United States has 40% barriers and 100% forces. Likewise, Australia, Japan and Korea, with 30% and 90%. Finally, Israel, which has 40% barriers and 90% driving forces. A special case in this perspective is China, which, despite having 70% barriers, has more than 50% opportunities. The study shows that the barriers in Colombia are at 70% while the driving forces are at 10% [5].

To understand the reason for this situation, in a historical review, in Colombia, in 1990, the National System of Science and Technology was institutionalized where the central body was Colciencias, acting as Technical Secretariat. In its investment budget, Colciencias accumulated an investment of $299,877.3 million in Colombian pesos between 2001 and 2004, and $87,266 million for 2005. Additionally, the first PhD was granted in the country in 1994, and it was only until 2005 when there were more than 160 PhD-degree holders. However, the increase was slow, because to match the pace of the most developed countries, 5,000 PhD-degree holders per year were required. It is clear that if the Colombian State does not decide to bet on Science and Technology as one of its priorities, the country will continue to be behind and in the shadow of world development, far below the standards of countries such as Brazil, Mexico, Chile, Venezuela, and Cuba.

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