

Artículo de investigación

**LEGAL ASPECTS OF THE BRAZILIAN GOVERNMENT IN
STIMULATING THE GENERATION AND IMPLEMENTATION OF
SCIENTIFIC INFORMATION AS INNOVATIONS**ASPECTOS LEGALES DEL GOBIERNO DE BRASIL PARA ESTIMULAR LA GENERACIÓN Y
LA IMPLEMENTACIÓN DE INFORMACIÓN CIENTÍFICA COMO INNOVACIONESASPECTOS LEGAIS DO GOVERNO DO BRASIL PARA ESTIMULAR LA GENERACIÓN E A
IMPLEMENTAÇÃO DA INFORMACIÓN CIENTÍFICA COMO INOVACIONES

Recibido: 17 de mayo de 2019. Aceptado: 31 de mayo de 2019

Written by:
Ksenia Michailovna Belikova²⁹**Abstract**

This article is devoted to surveying the legal regulation of the production and dissemination of scientific and technical information in Brazil with a considerable focus on protection of intellectual property (IP) rights. The author examines the institutional element of the system of innovations in Brazil and analyzes the legal aspects of the ways in which the government stimulates the generation and implementation of scientific information as innovations. For this purpose, the author considers the provisions of laws No. 13.243 of January 11, 2016, "On the civil and legal basis for the regulation of science, technology and innovation," No. 10.973 of December 2, 2004, "Incentive to innovation and scientific and technological research in production," and No. 9.610 of February 19, 1998, "On copyright and related rights" and concludes Brazil at present is paying more attention to the modernization of approaches that can legally regulate the development of science and innovation.

Keywords: Brazil, Science, Intellectual rights, Scientific information, Innovations, Legal regulation.

Resumen

Este artículo está dedicado a examinar la regulación legal de la producción y difusión de información científica y técnica en Brasil con un enfoque considerable en la protección de los derechos de propiedad intelectual (PI). El autor examina el elemento institucional del sistema de innovaciones en Brasil y analiza los aspectos legales de las formas en que el gobierno estimula la generación e implementación de información científica como innovaciones. Para este propósito, el autor considera las disposiciones de las leyes No. 13.243 del 11 de enero de 2016, "Sobre la base civil y legal para la regulación de la ciencia, la tecnología y la innovación", No. 10.973 del 2 de diciembre de 2004, "Incentivo a innovación e investigación científica y tecnológica en producción", y No. 9.610 del 19 de febrero de 1998, "Sobre derechos de autor y derechos afines" y concluye que Brasil actualmente está prestando más atención a la modernización de los enfoques que pueden regular legalmente el desarrollo de la ciencia y la ciencia. innovación.

Palabras claves: Brasil, Ciencia, Derechos intelectuales, Información científica, Innovaciones, Regulación legal.

Resumo

Este artigo é dedicado ao levantamento da regulamentação legal da produção e divulgação de informações científicas e técnicas no Brasil, com um foco considerável na proteção dos direitos de propriedade intelectual (PI). O autor examina o elemento institucional do sistema de inovações no Brasil e analisa os

²⁹ Department of Civil Law and Proceedings and International Private Law, Peoples' Friendship University of Russia (RUDN University), Moscow, Russia, ksenia.belikova@yahoo.com

aspectos legais das maneiras pelas quais o governo estimula a geração e implementação de informações científicas como inovações. Para esse fim, o autor considera as disposições da Lei nº 13.243 de 11 de janeiro de 2016, “Sobre a base civil e legal para a regulamentação da ciência, tecnologia e inovação”, nº 10.973, de 2 de dezembro de 2004, “Incentivo à inovação e pesquisa científica e tecnológica em produção” e nº 9.610, de 19 de fevereiro de 1998, “Sobre direito autoral e direitos conexos” e conclui que o Brasil está dando mais atenção à modernização de abordagens que podem regular legalmente o desenvolvimento da ciência e inovação.

Palavras-chave: Brasil, Ciência, Direitos intelectuais, Informação científica, Inovações, Regulação legal.

Introduction

Nature and scope of the problem. Science and scientific knowledge are the main drivers of economic progress, the latter signifying the accumulation of the obtained results, building up true knowledge, where information is considered the key element while scientific information defines scientific knowledge. The latter serves as the base for areas of further scientific research (development) and innovation, which can potentially be introduced in the field of production. Therefore, legislators need to focus on legally supporting activities connected with scientific research and the legal protection of the results of such activities, Brazil being no exception. However, today, the Brazilian Civil Code of 2002 (2002 CC) does not consider information as an item of property rights when defining various types of property (Bens, Book II, General Part of 2002 CC) or real rights, including property (O direito das coisas, Book III, Particular Part of 2002 CC) (Dudin et al., 2016). Science helps to solve this problem and names, among others, the following types of scientific information: dictionaries, encyclopedias, manuals and reference books, candidate and doctoral dissertations, journal publications, electronic databases and reference systems, etc., where one can find information, including scientific one, which is either protected or not protected as such by law.

In this regard the objective of the study consists in reviewing and analyzing legal regulations in the field under study. Thus, the scope of the research is limited to the provisions of laws No. 13.243 of January 11, 2016, “On the civil and legal basis for the regulation of science, technology and innovation,” No. 10.973 of December 2, 2004, “Incentive to innovation and scientific and technological research in production,” and No. 9.610 of February 19, 1998, “On copyright and related rights”. The author also examines the institutional element of the system of innovations in Brazil and analyzes the legal aspects of the ways in which the government stimulates the generation and implementation of scientific information as

innovations. Since then, the article enhances awareness of application of the aforementioned regulations in Brazil.

Procedures used to conduct the study based on materialist dialectics and consist of collecting data through analysis of the aforementioned legal acts and descriptive approach to the legal regulations in the field under study likewise reflective practice.

Result obtained during the study and the undertaken analysis shows determination and serious intentions of Brazil concerning the modernization of its approaches to the legal regulation of science and the further development of innovations. The example of Brazil confirms that the creation of a modern system of interacting institutions of support and development of innovation aimed at the elimination of gaps in the innovation cycle correlates with the need to enhance analytical, coordination, consulting and financial functions in the field of innovation. At the same time, it is demonstrated that the issues of interaction of participants of innovative processes and the development of the system of supporting institutions, that is, communicative and institutional aspects of innovative development, are the determining factors for the successful development of innovation.

So, let's take a closer look below at the legal framework of scientific information in Brazilian law.

Literature review

The issue of scientific progress and legal framework of scientific information in Brazil has been and is becoming an object of attention both of domestic and foreign scientists. Among them can be named: Claudia Iziq. Marco legal da inovação estreita relação entre instituições científicas e empresas (02 de março de 2018). URL: <http://agencia.fapesp.br/marco-legal-da-inovacao-estreita-relacao-entre-instituicoes->

cientificas-e-empresas/27239/ (accessed: 08.03.2019)); Carlos Alberto Gonçalves, Eptácio Macário, Olgaíses Maués, Wanderley Padilha. Marco legal de ciência, tecnologia e inovação (lei 13.243/16). Riscos e consequências para as universidades e a produção científica no Brasil (Março de 2017. Brasília (DF). Sindicato Nacional dos Docentes das Instituições de Ensino Superior. – 34 p. URL: <http://portal.andes.org.br/imprensa/documentos/imp-doc-1508946885.pdf> (accessed: 16.03.2019)); Marco Legal de Ciência, Tecnologia e Inovação (LEINº 13.243) – Análise Parte I (Ed. por Instituto STELA. 27 de janeiro de 2016. URL: <http://blog.stela.org.br/2016/01/27/lei13-243/> (accessed: 08.03.2019)); Ricardo Camargo Mendes, Claudia Mancini. Fomento de la innovación en el Brasil (Septiembre de 2010. URL: https://www.wipo.int/wipo_magazine/es/2010/05/article_0005.html (accessed: 08.03.2019)); André Alves Pereira de Melo. Lei nº 13.243, de 11 de Janeiro de 2016. Marco civil da ciência, tecnologia e inovação (URL: <http://www.andifes.org.br/wp-content/uploads/2016/02/Lei-13243-Andre-Alves.pdf> (accessed: 16.03.2019)); Pedro Anan, Thais Abreu de Azevedo Silva. Breves Comentários sobre a Lei nº 11.196/05. 03/2006.

URL:http://www.fiscosoft.com.br/main_online_frame.php?page=/index.php?PID=142310&key=2893649 (accessed: 08.03.2019)), etc.

Methodology

The author in this paper proceeds from the objectively subjective assignment of any phenomena and processes of the external world and applied general scientific and special research methods, such as formal and dialectical logic combined with induction and deduction, hypothesis and analogy, analysis and synthesis, systemic analysis. Thus, the method of systematic analysis, along with such operations as induction and deduction, is used in the course of consideration of the provisions of Brazilian legislation in the field under study to clarify its key provisions and the relationship with other regulations; methods of formal and dialectical logic help to understand the relationship between science and technology and innovation; the materialistic view of the processes and phenomena of the external world as a whole makes the study proceed from the fact that the transformation of Sciences directly into productive forces due to the fact that natural Sciences will be able to carry out research and

experiments with the help of material means created by capitalist production - is a new reality.

Results and Discussion

The study allowed to establish that the innovative institutional infrastructure is a set of institutions and institutional relations arising in the process of their functioning, contributing to the production of innovative knowledge, commercialization of research results, realization of the interests of the owners of the resource “knowledge”, aimed at ensuring the continuity of the innovation process, i.e. the process of development, production and commercial implementation of innovations, as well as improving its efficiency. Time will show the practical implications of the innovation system described in this paper. However, it can already be concluded that the organizational structure of scientific research for the creation of Brazilian innovations, based on network interconnected principles, is mobile, characterized by developed feedback, has the ability to reproduce itself, grow and evolve.

Article 7 of Brazil’s Law No. 9.610 of February 19, 1998, “On copyright and related rights” (as amended by Law No. 12.853 of August 14, 2013, hereinafter referred to as the Law of 1998), excludes database materials and information from the list of protected intellectual property, which consists of thirteen items. Article 8 emphasizes that the ideas contained in the works and their use (industrial or commercial) are not subject to copyright protection, nor are similar mathematical projects, concepts, methods, diagrams, and forms (including instructions) for storing information of any kind (scientific or other), as well as public data (calendars, registers, and records). In science (like in other areas), the law protects the form of works (literary or artistic), but this does not refer to their content (scientific or technical).

Thus, to be protected by copyright, scientific or technical knowledge should be included in the author’s scientific paper, which, according to Art. 10 of the Law of 1998, should not be the same as the title of another work of a similar genre created earlier by another author (as it should be original) (Belikova, 2018). This protection given to authors in the cases provided for by the Law of 1998 also refers to legal entities.

According to the Law of 1998, authors have the right to exclusively and independently use, benefit from, and dispose of their scientific work

(Art. 28). If other persons want to use the findings, they first need to obtain the author's consent expressed in direct or indirect form (Art. 29). The law names various ways of possible use of works that (the ways) at the same time can be recognized as illegal actions of third parties regarding these works. It also establishes the duration of property copyright for scientific works which is, as a rule, 70 years from 1 January of the year after the death of the author (Art. 41).

At the same time, the law does not consider the following as copyright infringement: the use of scientific works as evidence in administrative or judicial procedures; lectures recorded by students in educational institutions; quoting scientific materials in the media, if the names of the cited authors are indicated (Art. 46).

The Law states that the rights of authors can be transferred to third parties (Art. 49-52). The possibility of transferring copyright to scientific works by authors, their successors, or representatives in a manner permitted by law (assignment of rights, license agreement, etc.) is enshrined in Art. 49.

At present, it is generally accepted that the number of applications for patents and inventions filed in the Patent Office is the main indicator of the country's scientific and technological progress. Over the past twenty years, Brazil showed some positive dynamics regarding the number of applications submitted to the National Institute of Industrial Property (INPI) of Brazil (from 16,022 to 22,686, respectively, in 2002 and 2011) (Inpi.gov.br).

Certain measures underlie this achievement. The first of these were the targeted government actions to improve the institutional structure of scientific and technological research and development (Brasileiro.ru). The second included the Brazilian government's increasing of imports in IT and the reform of the national patent law in 1996. After this, a new legal patenting regime prohibited parallel imports of the patented products (Ryan, 2007), and the government later passed several laws regulating scientific research, the creation of innovations, their financing, etc.

These include Law No. 10.973 of December 2, 2004, "On promoting the creation of innovations and scientific and technological research in production" (hereinafter, the Law of 2004). It was amended by the Law No. 13.243 of January 11, 2016 (MLCTI, hereinafter the Law of 2016). It formed the basis for the legal regulation of

science, technology, and innovation in Brazil, which operates in the interpretation stated in the provisions of Decree No 9.283 of February 7, 2018. For example, the Law of 2004 implied creating:

- 1) Development agencies (agência de fomento) – public or private bodies and institutions, which are aimed at financing the actions stimulating and promoting the development of science, technology, and innovation (para.1 Art. 2);
- 2) Scientific and technological institutions (Instituição Científica e Tecnológica, ICT) – public administration bodies aimed at conducting fundamental and applied research in science and technology (para. 1, Art. 2);
- 3) Groups for the development of technological innovations (núcleo de inovação tecnológica, NIT) – bodies consisting of one or several ICTs for managing their innovation policy (para. 6, Art. 2);
- 4) Support institutions (instituição de apoio) – funds established to support research and training projects aimed at expanding the institutional objectives of IFES and other ICTs (para. 7, Art. 2) (Mendes and Mancini, 2010).

The Law of 2016 made various changes in the field of science, technology, and innovation, for instance, it altered the understanding of the ICT concept. Now ICT is a public administration body (institution) of direct or indirect subordination or a legal entity regulated by private law which is not profit-oriented and established according to Brazilian legislation for basic and applied scientific and technical research for the purpose of creating new products, services or processes.

This law also changed the understanding of the concept of "public researcher" (pesquisador público, PP). Currently, PP is a person who holds a valid public position in civil or military service, or a person with public authority or in public office who is in charge of carrying out research and developing innovations.

Apart from enshrining the new rules for regulating relations in science, technology, and innovation, the Law of 2016 changed (in order to eliminate inconsistencies) the provisions of the current 1988 Constitution, i.e. that the state should promote the development of innovations by encouraging and stimulating research in science and technology to ensure the industrial

independence of the country (Gonçalves et al., 2017). It also made some changes in a number of laws (“On encouraging the creation of innovations and scientific and technological research in production”, No 10.973 of 2004; “On the legal status of foreigners in Brazil”, No 6.815 of 1980; “On procurements and contracts”, No 8.666 of 1993; “On differentiated employment”, No 12.462 of 2011; “On fixed-time employment”, No 8.745 of 1993; “On support funds”, No 8.958 of 1994; “On the import of goods intended for scientific and technological research”, No 8.010 of 1990; “On exemption from or reduction of the import tax”, No 8.032 of 1990, and others).

This Law also changed the content, as well as supplemented and expanded the list of principles currently serving as the basis for the development of science, technology and innovation in the country. These include:

1. The principle of assistance, which implies the need for state support for research in science and technology as the strategic basis for successful economic and social development with the following requirements:

- a) Continuous development of science, technology, and innovation with appropriate human and financial resources;
- b) Elimination of regional inequalities;
- c) Decentralization of science and technology.

2. The principle of incentives, which means the state should:

- a) Support institutions operating in the field of science, technology, and innovation (Instituições Científica, Tecnológica e de Inovação, ICTs), to attract existing and to create from scratch new research and development innovation centers, technology parks, and technology pools (parques e polos tecnológicos) of the country;
- b) Create favorable conditions for innovation and technology transfer;
- c) Stimulate development, continuous updating, and improvement of incentive and credit facilities.

3. The principle of cooperation and equality, which is aimed at:

- a) Reducing regional inequalities by decentralizing the responsibilities of all federal organizations and institutions in

scientific, technical and innovation spheres;

- b) Promoting interaction between state institutions, enterprises, public and private sector;
- c) Increasing operational, administrative, technological, and scientific competencies of ICTs;
- d) Simplifying management and establishing control not over the process, but the results of scientific, technological, and innovation activities;

4. The principle of support, which implies:

- a) Using the purchasing power of the state as a means of supporting innovation;
- b) Encouraging independent inventors and engaging them in the work of ICTs and production development.

ICTs and other institutional units listed in the Law of 2004 implement a state innovation policy, each within the limits of its competence and purpose:

- 1) ICTs of public law are responsible for technology transfer and creating an innovative environment in production in the areas recognized as priorities of the state policy.

As part of such policies, these ICTs should develop guidelines and objectives for the institutionalization of NIT, after which the latter will work for public ICTs, supporting them in their activities.

- 2) NIT is a structure created by one or several ICTs (either in the form of a legal entity or not), and it manages the institutional innovation policy with minimal legitimate responsibilities (representing an ICT at negotiations or, when concluding agreements, promoting and controlling ICTs interactions with enterprises, etc.). NITs, which are legal entities, are not aimed at making profit and may act, for example, as support agencies.
- 3) Support institutions (instituição de apoio, usually foundations –fundação) are created to raise the educational level of employees, to carry out research, and to stimulate innovation. Public ICTs can delegate the right to receive, manage, and use revenues earmarked for ICT to these institutions under a treaty.

The above changes were made in the period when the development of science and technology in Brazil was at a high level and when applied and fundamental research was mainly carried out in public institutions (institutes, universities, centers) using the budget funds. This approach evolved due to the fact that Brazil has few private national enterprises that can compete in the high-tech market and conduct their own research (Belikova et al., 2019).

That is why the government adopted another law (Lei 11.196, 2005) regarding innovation and research. This law ensures tax incentives for legal entities engaged in the development of these areas and is to encourage private sector investment in innovation to establish closer connections between research universities, institutes, and enterprises (Anan et al., 2006).

Conclusions

Information and innovations both have direct and indirect relation in many ways. Right information transfer cycle today directly depends on several technological facets like information centres & systems, documentation centres & digital repositories (i.e. SSRN), organizational information networks, etc. In this regard institutional element of the system of innovations based on such a right information is of no alternative in the process of formation of post-industrial society, so the solution of the issue of intensification of the process of building an innovative economy and its integration into the world post-industrial system becomes very important for the further successful development of any country. That's why scientific progress, legal status of scientific information, substantive and procedural provisions of law governing its circulation, distribution, use, protection have been and remain the focus of scientists (lawyers, economists, sociologists, etc.). One study cannot exhaust the wide range of issues that arise in this area. Therefore, the author leaves their study for the future in her and her colleagues' researches.

Acknowledgment

The reported study was funded by RFBR according to the research project n°18-29-15030 mk on the theme "Scientific information in the orbit of the content, forms and problems of intellectual property rights protection (comparison with regard to the experience of BRICS countries)" (Grantee – Dr. of Sciences, Prof. Ksenia M. Belikova, Peoples' Friendship University of Russia (RUDN University), www.rudn.ru).

References

- Anan, P., Silva, T., & de Azevedo. (2006). Breves Comentários sobre a Lei No 11.196/05. Retrieved from [fiscosoft.com.br: http://www.fiscosoft.com.br/main_online_frame.php?page=/index.php?PID=142310&key=2893649](http://www.fiscosoft.com.br: http://www.fiscosoft.com.br/main_online_frame.php?page=/index.php?PID=142310&key=2893649)
- Belikova, K. (2018). Monetization of morality as a legal way to protect intellectual property. *Law and Politics*, 12, 1-11.
- Belikova, K., Badaeva, N., & Akhmadova, M. (2019). Economization of Information and Scientific Data: A Common Approach. *International Journal of Economics and Business Administration*, 7(1), 153-161.
- Código Civil do Brasil. (2018). Decreto No 9.283, de 7 de fevereiro de 2018, Regulamenta a Lei No 10.973, de 2 de dezembro de 2004, a Lei n° 13.243, de 11 de janeiro de 2016, etc. DOU de 8.2.2018. Retrieved from [planalto.gov.br: http://www.planalto.gov.br/ccivil_03/_ato2015-2018/2018/decreto/D9283.htm](http://www.planalto.gov.br: http://www.planalto.gov.br/ccivil_03/_ato2015-2018/2018/decreto/D9283.htm)
- Código Civil do Brasil. (2002). Lei No 10.406, de 10 de Janeiro de 2002. Retrieved from [planalto.gov.br: http://www.planalto.gov.br/ccivil_03/Leis/2002/L10406.htm](http://www.planalto.gov.br: http://www.planalto.gov.br/ccivil_03/Leis/2002/L10406.htm)
- Código Civil do Brasil. (2004). Lei No 10.973, de 2 de dezembro de 2004, dispõe sobre incentivos à inovação e à pesquisa científica e regulamentação tecnológica no ambiente produtivo e dá outras providências. DOU de 3.12.2004. Retrieved from [planalto.gov.br: http://www.planalto.gov.br/CCIVIL_03/_ATO2004-2006/2004/Lei/L10.973.htm](http://www.planalto.gov.br: http://www.planalto.gov.br/CCIVIL_03/_ATO2004-2006/2004/Lei/L10.973.htm)
- Código Civil do Brasil. (2016). Lei No 13.243, de 11 de janeiro de 2016, Dispõe sobre estímulo ao desenvolvimento científico, à pesquisa, à capacitação científica e tecnológica e à inovação. DOU de 12.1.2016. Retrieved from [planalto.gov.br: http://www.planalto.gov.br/CciVil_03/_Ato2015-2018/2016/Lei/L13243.htm](http://www.planalto.gov.br: http://www.planalto.gov.br/CciVil_03/_Ato2015-2018/2016/Lei/L13243.htm)
- Dudin, M., Frolova, E., Belikova, M., & Badaeva, N. (2016). Particularities of legal regulation and harmonization of proprietary rights legislation in the RSA, Brazil and China. *Journal of Advanced Research in Law and Economics*, 7(5), 1026-1036.
- Gonçalves, C., Macário, E., Maués, O., & Padilha, W. (2017). Marco legal de ciência, tecnologia e inovação (lei 13.243/16). Riscos e consequências para as universidades e a produção científica no Brasil. Março de 2017. Brasília (DF). Sindicato Nacional dos Docentes das Instituições de Ensino Superior. Retrieved from portal.andes.org.br: portal.andes.org.br

<http://portal.andes.org.br/imprensa/documentos/imp-doc-1508946885.pdf>
Mendes, R., & Mancini, C. (2010). Fomento de la innovación en el Brasil. Septiembre de 2010. Retrieved from wipo.int: https://www.wipo.int/wipo_magazine/es/2010/05/article_0005.html
presrepublica.jusbrasil.com.br. (2005). Lei No 11.196, de 21 de novembro de 2005, Institui o Regime Especial de Tributação para a Plataforma de Exportação de Serviços de Tecnologia da Informação - REPES, o Regime Especial de Aquisição de Bens de Capital para Empresas Exportadoras. Retrieved from presrepublica.jusbrasil.com.br: <https://presrepublica.jusbrasil.com.br/legislacao/96277/lei-11196-05>

Ryan, M. (2007). *Brasil cosecha la riqueza de sus selvas tropicales*. Abril de 2007. Retrieved from wipo.int: https://www.wipo.int/wipo_magazine/es/2007/02/article_0004.html
wipolex.wipo.int. (2013). Lei No 9.610 de 19 de fevereiro de 1998, dos Direitos Autorais e dos Direitos Conexos, alterada pela Lei No 12.853, de 14 de agosto de 2013. Retrieved from wipolex.wipo.int: <https://wipolex.wipo.int/es/text/505105>
www.brasileiro.ru. (n.d.). Science of Brazil. Retrieved from [www.brasileiro.ru](http://www.brasileiro.ru/science_brazil/sciencebrasil.html): http://www.brasileiro.ru/science_brazil/sciencebrasil.html