

CRIMINAL ACTS IN THE FIELD OF SCIENCE AND TECHNOLOGY

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Article	Abstract
Keywords: Penalty, Crime, Science and Technology. DOI: 10.28946/scls.v1i2.3083	<p>Law Number 11 of 2019 on the National System of Science and Technology (UU Sisnas Iptek) is a law that is fundamental in the field of science and technology as well as monumental because it replaces Law Number 18 of 2002 on the National System for Research, Development, and Application of Science Knowledge and Technology that has been valid for 17 (seventeen) years amid very dynamic and unstoppable developments in science and technology. The replacement of the law contains consequences for changes in content material, including regulations regarding criminal acts regulated therein. The National System and Technology Law provides arrangements regarding criminal sanctions. It also regulates actions that are classified as criminal offenses. This research uses normative legal research methods and legal comparison methods with a statute approach. This article intends to describe the development of the regulation of sanctions and analyze the construction of criminal acts and the sanctions that surround them as regulated in the Science and Technology National System Law and the laws that were previously in effect. Based on the research conducted, it can be concluded that there has been a development of criminal acts in the field of science and technology, namely the addition of types of offenses, additional types of additional punishments, and ballast punishments. This development is a change for the better because it provides clarity and certainty for dangerous and potentially harmful actions.</p>

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A. INTRODUCTION

In mid-August 2019, President Joko Widodo passed Law Number 11 of 2019 on the National System of Science and Technology (UU Sisnas Iptek). This law revokes effectiveness and replaces Law Number 18 of 2002 on the National System for Research, Development, and Application of Science and Technology (P3 Science and Technology Law). This total change of law is a reflection that the regulation regarding the national system of science and technology (science and technology) in the P3 Science and Technology Law has lagged far behind the development of the needs of society, especially the nature of science and technology itself which

is very dynamic and rapidly developing along with the times.¹ The development of science and technology as a legal event that is growing faster than the P3 Science and Technology Law has been predicted for a long time, as stated in the adage *het recht hink achter de feiten aan*.

Science and technology have a dominant role in life. For developing countries, the development of science and technology, which is marked by the shift in the production of people's needs from traditional ways to industrialization, is believed to be a way to achieve better social welfare.² About law, Bertram Turner and Melanie G. Wiber suggested that newcomers intervene in the routine process of social practice, create new norms and influence laws.³ This statement can be seen in practice in Indonesia, for example, in the formation of Law 11 of 2008 on Information and Electronic Transactions as cyber law, the first⁴ whose background cannot be separated from legal cases involving electronic technology.⁵

Changing or replacing the P3 Science and Technology Law with the Science and Technology National System Law is the government's strategic step to promote science and technology as mandated in the Indonesian constitution. Through law reform in the field of science and technology, the ideals of Article 28C paragraph (1) and Article 31 paragraph (5) of the 1945 Constitution of the Republic of Indonesia will manifest more clearly and, at the same time, accommodate the accumulation of legal developments that have taken place since the P3 Science and Technology Law was ratified.

As a law that replaces the previous law, there are certainly differences between the National System of Science and Technology Law and the P3 Science and Technology Law. The initial identification of the formulators of the amendments to the P3 Science and Technology Law, as stated in the Academic Paper, revealed several weaknesses in the Science and Technology Law, including weak coordination at the planning and implementation level of science and technology, unclear development of the science and technology research and development system, and the absence of arrangements regarding unique and strategic matters that have a significant impact on the national system and technology development (role and position of science and technology, technology clearing, technology audit, mandatory storage, Material Transfer Agreement (MTA), and financing as well as the weak regulation of administrative sanctions and criminal sanctions.⁶

Specifically related to sanctions (both administrative and criminal), significant changes have been accommodated by the National System of Science and Technology Law in its development. As a general description, initially in the P3 Science and Technology Law, the provisions on sanctions were only found in 2 (two) articles, consisting of one article providing administrative sanctions and 1 (one) article providing criminal provisions with 2 (two) norms of criminal sanctions for 2 (two) acts criminal. It is pretty different and develops when compared with the National System of Science and Technology Law, which contains 6 (six) articles related to sanctions, which are divided into 2 (two) articles on administrative sanctions and 4 (four) articles on criminal provisions with more diverse criminal acts. The development of the

¹ Munsharif Abdul Chalim, "Pengaruh Perkembangan Iptek Terhadap Permasalahan Haki," *Jurnal Dinamika Hukum* 11, no. Edsus (2011): 47-58, <https://doi.org/10.20884/1.jdh.2011.11.edsus.261>.

² Dong Un Park, *The Role of Science, Technology, and Innovation Policies in the Industrialization of Developing Countries: Lessons from East Asian Countries* (Korea: United Nations Industrial Development Organization (UNIDO) and the Science and Technology Policy Institute (STEPI) of the Republic of Korea, 2021), 16.

³ Bertram Turner and Melanie G. Wiber, *Law, Science, and Technologies* (England: Oxford University Press, 2020), p. 12.

⁴ Atikah Mardhiya Rohmy, Teguh Suratman, and Arini Indah Nihayaty, "UU ITE Dalam Perspektif Perkembangan Teknologi Informasi Dan Komunikasi," *Dakwatuna: Jurnal Dakwah Dan Komunikasi Islam* 7, no. 2 (2021): 309, <https://doi.org/10.54471/dakwatuna.v7i2.1202>.

⁵ *Ibid.*

⁶ Kemendikbudristek, *Naskah Akademik Rancangan Undang-Undang Tentang Sistem Nasional Ilmu Pengetahuan Dan Teknologi* (Jakarta: Kementerian Riset, Teknologi, dan Pendidikan Tinggi, 2017), 24.

construction of these sanctions can imply that there have also been developments regarding actions considered crimes in science and technology.

Specifically, this article intends to photograph and describe the issue regarding developments in the form of a comparison of regulations regarding what is prohibited in the P3 Science and Technology Law and the National Science and Technology Law, which in this article is termed "science and technology crimes" and the development of the construction of sanctions that accompanies it.

Studies in the form of comparisons of a law that was once in effect with a new law that replaced it have been carried out quite often,⁷ for example an article Comparison of Law Number 3 of 1997 on Juvenile Courts with Law Number 11 of 2012 on the Juvenile Criminal Justice System In Examination of Juvenile Cases at Juvenile Court (2014), Doddy Poernamadjaja and Hufron Hufron's article on Comparison between Law Number 13 of 2003 on Employment and Law Number 11 of 2020 on Job Creation in Termination of Employment for Certain Time Contract Workers on Contract Period (2022). However, studies related to science and technology crime, as stipulated in the P3 Science and Technology Law and the National System of Science and Technology Law, are rarely carried out, so this article is expected to become a literature enrichment.

B. RESEARCH METHODS

This article uses legal research methods with a regulatory approach (statute approach) and legal comparisons. The regulatory approach is used by reviewing and examining statutory regulations, in this case, the P3 Science and Technology Law and the National System of Science and Technology Law, in this case, specific to the articles whose content is related to crimes and the sanctions surrounding them, as well as other laws that are complementary and support arguments. At the same time, the comparative legal approach used in this article is to look for and signal differences and similarities by providing explanations and examining how the law functions, the juridical solution in practice, and the non-legal factors that influence it.⁸

C. ANALYSIS AND DISCUSSION

1. Status of Law Number 11 of 2019

Before making further comparisons regarding the construction between the P3 Science and Technology Law and the National System of Science and Technology Law, it is necessary to describe the status of the National System of Science and Technology Law that is currently in effect so that it can be justified that the law as the object of analysis in this article is indeed positive law, what changes have been made? It occurred in its development, as well as whether the changes are related to the discussion in this article. In this way, the location of the norms that become the object of analysis will be found.

Law Number 11 of 2019 on the National System of Science and Technology is a law that is currently still valid and placed in the 2019 State Gazette of the Republic of Indonesia Number 148 and the Supplement to the State Gazette of the Republic of Indonesia Number 6374. This law replaces and revokes the validity of Law Number 18 2002 on P3 Science and Technology, which has been in force for approximately 17 (seventeen) years.

⁷ A comparison using a text (legal) approach is used between the old P3 Science and Technology Law and the National Science and Technology Law to obtain the similarities and differences between the two laws (UU). This normative-textual approach is the approach most often used in comparative legal studies. More details in Ratno Lukito, "Compare But Not to Compare": *Kajian Perbandingan Hukum Di Indonesia, Undang: Jurnal Hukum* 5, no. 2 (2022): 257-291, <https://doi.org/10.22437/ujh.5.2.257-291>.

⁸ Sunaryati Hartono, *Kapita Selekta Perbandingan Hukum* (Bandung: Citra Aditya Bakti, 1988), 54.

In its development, the National System of Science and Technology Law has become one of the laws affected in structuring legislation in Law Number 11 of 2020 on Job Creation. The effect of the Job Creation Law on the National System of Science and Technology Law is changes to the articles in the National System of Science and Technology Law. The Job Creation Law includes material from the National System of Science and Technology Law in the Research and Innovation Support cluster. The changes are to Article 48 of the National System of Science and Technology Law, which in essence mandates the establishment of bodies that carry out research, development, study, and application, as well as inventions and innovations integrated into the regions by the Regional Government.

The Job Creation Law, in this case, does not change the provisions of sanctions in the National Science and Technology Law, so the point of analysis for the construction of science and technology crimes and their sanctions in this article is still based on the provisions in the National System of Science and Technology Law which will be compared with the constructions in the P3 Science and Technology Law which the Law has repealed on National System of Science and Technology.

2. Construction of Criminal Acts in the Field of Science and Technology

As previously mentioned, the P3 Law on Science and Technology and the National System of Science and Technology System contain several prohibitions against certain actions accompanied by sanctions as instruments of law enforcement against ignoring these prohibitions. In legal studies, ignoring legal norms that are prohibited in nature can be classified into 2 (two), namely violations (*wetsdelicten*) and crime (*rechterdelicten*).⁹ Criminal law identifies both of these as offenses.¹⁰ As for the context of normalization in laws and regulations, the sanctions imposed on violations are administrative, while the sanctions imposed on crimes are criminal.

Based on this approach, it can be narrowly stated that actions that meet the parameters of violations and crimes regulated in the National System of Science and Technology Law are crimes in science and technology. From a broader perspective, it can be stated that every law and regulation (not just the National System of Science and Technology Law, say, for example, Law Number 10 of 1997 on Nuclear Forces and Law Number 21 of 2013 on Space) which intersects with science and technology and contains prohibition provisions, violations, and crimes, constitutes a discourse on criminal acts in the field of science and technology. However, this article uses the first approach, which is a narrow approach, with a more specific discussion rationalization and facilitates conclusion. This is also based contextually on the fact that the National System of Science and Technology Law is the main law in the field of science and technology, as well as the National System of Science and Technology Law, which is a newer law (*lex posterior*) compared to the Nuclear Law and the Space Law (the former law) as well as other laws that may contain elements of regulatory material in the field of science and technology. This means that provisions regarding prohibitions, violations, and crimes that

⁹ There are principal differences regarding these two things. Crime (*rechterdelicten*), in principle, is prohibited because the act is contrary to the legal order without having to look at whether there is a written law that prohibits it. This crime is identified with actions that are not in accordance with societal norms, for example murder or rape. Meanwhile, a violation (*wetsdelicten*) is an act whose unlawful nature can only be known after there is a wet/written law/legislative regulation that determines this. An example of a violation is an action without proper permission. More details in Erwin Ubwarin, "KEBIJAKAN FORMULASI HUKUM PIDANA DALAM PENANGGULANGAN TINDAK PIDANA PERJUDIAN MELALUI INTERNET (INTERNET GAMBLING)," *SASI* 21, no. 1 (2015): 48–56.

¹⁰ The terms criminal act and offense are the equivalent of *strafbaarfeit* which has been used in the Criminal Code/*Wetboek van Straftrecht* (KUHP WvS) which has been in effect since the Dutch colonial era. However, the WvS Criminal Code does not provide a definition of what a criminal offense is. However, in simple terms, using a terminology approach (*strafbaarfeit*), a criminal act is an event that can be punished or an act that can be punished. More details in Fitri Wahyuni, *Dasar-Dasar Hukum Pidana Di Indonesia* (Jakarta: Nusantara Persada Utama, 2017), 36.

intersect with science and technology in the Nuclear Law, the Space Law, and other intersecting laws are seen as discourses on sectoral criminal acts in accordance with their respective laws.

In such conditions, it can be formulated that the criminal offense provisions stipulated in the National Science and Technology Law constitute a discourse on criminal acts in the field of science and technology. Associated with criminal discourse in general, criminal acts in technology are offenses outside the Criminal Code.¹¹

3. Criminal Acts in the P3 Science and Technology Law and the National Science and Technology Law

In the earlier part, it was stated that one of the material changes from the P3 Science and Technology Law to the Science and Technology National System Law was developments in regulated criminal acts and the threat of sanctions attached to them. The addition of the number of articles relating to the sanction from the original number of 2 (two) articles to 6 (six) articles is an indicator that there has been an increase in the types of actions that are considered criminal acts, with the formula as in the table below.

Table 1: Criminal Provisions in the P3 Science and Technology Law and the National System of Science and Technology Law

P3 Science and Technology Law	National System of Science and Technology Law
CHAPTER VII SANCTION PROVISIONS	CHAPTER XI ADMINISTRATIVE SANCTION
First Part Administrative Sanctions	Pasal 91
Article 29 Violations of licensing provisions, as referred to in Article 22 paragraph (2), are subject to administrative sanctions ranging from warnings, warnings, and temporary suspension of activities to cancellation or revocation of permits by the licensing agency.	(1) Violations of the provisions referred to in Article 21, Article 40 paragraph (2), Article 76 letters b to g, and Article 82 paragraph (3) are subject to administrative sanctions. (2) Administrative sanctions for violations, as referred to in paragraph (1), are in the form of : a. written warning; b. stoppage of construction; c. administrative fines; d. inclusion of violators in the blocklist of Research, Development, Assessment, and Application violations; and/or e. license revocation. (3) A Government Regulation shall regulate further provisions regarding the procedures for imposing administrative sanctions as referred to in paragraph (2). Reference to Article 91 paragraph (1):

¹¹ The addition of offenses outside the Criminal Code through each new law containing criminal provisions is natural and cannot be avoided because it is the resultant of changes in society. In Salman Luthan, "Asas Dan Kriteria Kriminalisasi," *Jurnal Hukum Ius Quia Iustum* 16, no. 1 (2009): 1-17, <https://doi.org/10.20885/iustum.vol16.iss1.art1>.

- Obligation to publish and disseminate research and development results by human resources or science and technology institutions unless stated otherwise by laws and regulations (Article 21)
 - Obligation to carry out mandatory submission and mandatory storage of all primary data and output of Research, Development, Assessment, and Application results by funders, Science and Technology Human Resources, and Science and Technology Institutions (Article 40) paragraph 2.
 - Obligations for foreign science and technology and/or foreigners and Indonesians who carry out Research, Development, Assessment, and Application with funds sourced from foreign financing for (Article 76):
 - Produce output that benefits the Indonesia nation;
 - Involve Indonesian Science and Technology human resources with equal scientific capacity as partners;
 - Include the name of the human resource in Science and technology in every output produced in joint activities;
 - Perform Technology Transfer;
 - Submit primary data on Research, Development, Assessment, and Application activities;
 - Provide proportional profit sharing following the agreement of the parties concerned.
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Article 92

Every foreigner who conducts Research, Development, Study, and Application of Science and Technology in Indonesia without a permit, as referred to in Article 75 paragraph (2), is subject to administrative sanctions in the form of inclusion on the blacklist of foreigners who carry out Research, Development, Study activities, and Application of Science and Technology in Indonesia.

Article 92 reference:

	Obligation for foreign Science and Technology Institutions and/or foreigners to obtain permits to carry out Research, Development, Study, and Application (<i>litbangjirap</i> ¹² /research) (Article 75 paragraph (2))
The Second Part Criminal Sanctions	CHAPTER XII CRIMINAL PROVISIONS
<p style="text-align: center;">Article 30</p> <p>(1) Anyone carrying out the activities referred to in Article 22 paragraph (2) without obtaining a permit is subject to a maximum fine of Rp. 50,000,000.00 (fifty million rupiahs) and/or imprisonment for a maximum of 6 (six) months.</p> <p>(2) Everyone who carries out activities as referred to in Article 22 paragraph (2) which result in danger to human safety, public health, preservation of environmental functions, social harmony, national safety, and is detrimental to the state shall be subject to imprisonment and/or fines by the regulations.</p> <p>References to Article 29 and Article 30: High-risk and dangerous science and technology research, development, and application (<i>litbangjirap</i>/research) activities (Article 22 paragraph (2))</p>	<p style="text-align: center;">Article 93</p> <p>(1) Suppose a foreigner, as referred to in Article 92 again commits an offense of carrying out Research, Development, Assessment, and Application of Science and Technology in Indonesia without a permit. In that case, he shall be punished with a maximum fine of Rp. 4,000,000,000.00 (four billion rupiahs).</p> <p>(2) In addition to the main punishment referred to in the paragraph, the offender may be subject to additional punishment in the form of a ban on obtaining a Research permit in the territory of the Republic of Indonesia for a maximum period of 5 (five) years.</p>
	<p style="text-align: center;">Article 94</p> <p>(1) Any person who unlawfully or unlawfully transfers local Indonesian specimens abroad, both physically and/or digitally, without being accompanied by a material transfer agreement as referred to in Article 77 paragraph (2), shall be punished with imprisonment for a maximum of 2 (two) years or a maximum fine of Rp. 2,000,000,000.00 (two billion rupiah).</p> <p>(2) In addition to the main punishment referred to in paragraph (1), the offender may be subject to additional punishment in the form of a ban on obtaining a</p>

¹² The terminology "*litbangjirap*" as an extension of *penelitian* (research), *pengembangan* (development), *assessment* (pengkajian) and *application* (penerapan) is a phrase that is equated with the phrase *riset* "research". This can be seen in Article 48 of the National Science and Technology Law which states that to carry out research, development, study and application, as well as integrated inventions and innovations, a national research and innovation agency was formed. This shows that there is attention to equating/aligning the phrase *litbangjirap* and research

research permit within the territory of the Unitary State of the Republic of Indonesia within a certain period.

Article 95

- (1) Anyone who carries out the activities referred to in Article 85 paragraph (3) without a permit shall be imprisoned for a maximum of 1 (one) year or a fine of up to Rp. 2,000,000,000.00 (two billion rupiahs).
- (2) If the act referred to in paragraph (1) results in damage to goods or objects, the offender shall be imprisoned for a maximum of 3 (three) years or a fine of up to Rp. 3,000,000,000 (three billion rupiahs).
- (3) If the act as referred to in paragraph results in serious injury to a person, the offender shall be subject to imprisonment for a maximum of 4 (four) years or a maximum fine of Rp. 4,000,000,000 (four billion rupiahs).
- (4) If the act as referred to in paragraph results in the death of a person, the offender shall be subject to imprisonment for a maximum of 7 (seven) years or a maximum fine of Rp. 7,000,000,000 (seven billion rupiah).

Reference to Article 95, paragraph (1)

The obligation to carry out research, development, assessment, and application activities as well as high-risk and dangerous inventions and innovations to obtain permission from the central government.

This article does not specify the subject of implementing the said activity, so both foreigners and Indonesians carrying out Research, Development, Assessment, and Application (research) activities and high-risk and dangerous Inventions and Innovations must comply with this provision.

Article 96

- (1) If the criminal acts referred to in Article 93, Article 94, and Article 95 are committed by a Business Entity, charges and criminal convictions are made against the Business Entity and/or its management.
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- (2) The principal sentence that can be imposed on a Business Entity is only a fine, with the maximum sentence as referred to in Article 93, Article 94, and Article 95 each plus 1/3 (one-third).
 - (3) In addition to fines, as referred to in the paragraph, Business Entities can be subject to additional penalties in the form of license revocation.
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Source: Processed from Law Number 18 of 2002 on the National System for Research, Development, and Application of Science and Technology and Law Number 11 of 2019 on the National System of Science and Technology.

Regarding similarities, the two laws provide constructions of violation offenses (law offenses) and criminal offenses (legal offenses). Violation offenses in the two laws also have the same object related to permits. The similarity in the regulation of violations and crimes is also contained in the standardization/writing method, which is regulated separately in a separate chapter.

Regarding technical writing (drafting), the National System of Science and Technology Law was passed after Law Number 12 of 2011 on the Formation of Legislation (P3 Science and Technology Law). In P3 Science and Technology Law, the writing technique for administrative sanctions is placed in one part with the norms that provide for administrative sanctions *a quo*.¹³ Thus, the formulation of administrative sanctions in the National System of Science and Technology Law is not by the technical provisions for preparing statutory regulations as stipulated in P3 Science and Technology Law. This is certainly different from the P3 Science and Technology Law, which was passed at a time when no law regulated in detail the formation of laws and regulations and techniques for formulating norms in laws and regulations.¹⁴

Nonetheless, a deviation from the technical drafting does not have a significant impact on the implementation of the substance of the norms because they are only different in terms of the placement of the norms/articles, not changing, deleting, or adding to the norms. Norms and administrative sanctions are more important because they relate to the effectiveness of implementing laws and regulations.¹⁵

The framework for administrative sanctions in the P3 Science and Technology Law and the National System of Science and Technology Law are principally criminal acts of administrative violations in science and technology, so the sanctions applied are administrative. In the National System of Science and Technology Law, there has been development in terms of actions that can be subject to sanctions, which include 1) the obligation to publish/dissemination R&D results; 2) implementation of mandatory delivery and mandatory storage; 3) implementation of the principles regarding *litbangjirap* by foreign science and technology institutions and/or foreigners and Indonesians with funds sourced from foreign financing, and 4) the obligation to submit data and information on science and technology implementation and ensure its truth and accuracy. The types of administrative sanctions are also written more strictly in tabular

¹³ Provision number 64 Appendix II of Law Number 12 of 2011 on the Formation of Legislative Regulations.

¹⁴ At that time, there was actually Law Number 2 of 1950 on Establishing an Emergency Law on the Publication of the State Gazette and State Gazette R.I.S. and regarding Issuing, Promulgating and Entering into Force of Federal Laws and Government Announcements, however the regulation of this Law is very narrow, namely specific to the procedures for issuing the Law of the Republic of the United States of Indonesia, so it does not regulate clearly and in detail regarding the technical drafting including regarding the writing of the sanctions chapter.

¹⁵ Wicipto Setiadi, "Sanksi Administratif Sebagai Salah Satu Instrumen Penegakan Hukum Dalam Peraturan Perundang-Undangan," *Jurnal Legislasi Indonesia* 6, no. 4 (2009): 603–14.

form to make it easier to read the elements or options of administrative sanctions that can be imposed, which include :

- a. Written warning;
- b. Stoppage of construction;
- c. Administrative fines;
- d. Inclusion of violators in the blocklist of *litbangjirap* violations (*blacklist*); and/or
- e. License revocation.

Concerning the development of criminal offense content material, it is clear that there has been an addition to norms classified as science and technology crimes. In the P3 Science and Technology Law, criminal sanctions are only imposed on one offense, namely the crime of not completing research activity permits, high-risk and dangerous *litbangjirap* and its aggravation when the *litbangjirap* activities result in danger to human safety, public health, preservation of environmental functions, social harmony, the safety of the nation, and harm the country. As for the National System of Science and Technology Law, there has been a significant addition to the types of criminal acts with the following reviews:

1. Repeat offenses for foreigners who carry out science and technology research and development in Indonesia without permission after previously being subject to administrative sanctions in the form of inclusion in the blocklist.
2. The penalty is a maximum fine of Rp. 4,000,000,000.00 (four billion rupiah), with an additional criminal option in the form of a ban on obtaining research permits in Indonesian territory for a maximum period of 5 (five) years. If you look at the construction, this action is an offense of violation.

When looking at the framework in this law, the subject of the perpetrator "foreigner" referred to in this nature of the offense is a foreigner in the sense of an individual (person), not a legal entity, because the use of the term foreigner in this law is often used in tandem with foreign science and technology institutions which refer to legal entities.¹⁶ Additional criminal options in this norm do not specifically explain the reasons for adding sanctions as a ban on obtaining permits, so the application of additional sanctions will depend on the judge's judgment.

3. Transfer of local Indonesian specimens abroad, both physically and/or digitally, without being accompanied by a material transfer agreement by any person without rights or against the law.

The penalty is imprisonment for a maximum of 2 (two) years or a fine of up to Rp. 2,000,000,000.00 (two billion rupiahs), with additional punishment in the form of a ban on obtaining research permits in Indonesian territory for a certain period.

The principal sentence that is threatened is optional, in the sense that the judge needs to choose between imprisonment or a fine in his sentence. The additional punishment can be applied to any form of main sanction so that a maximum of 2 (two) sanctions can be given, including the additional punishment. This article does not specify a maximum prohibition on obtaining a permit regarding additional penalties. Consequently, the judge evaluates the negative impact arising from the offense and may impose a ban on obtaining research permits for more than 5 (five) years as stipulated in the *litbangjirap* offense by foreigners without permission.

¹⁶ Article 1 number 19 of the National Science and Technology Law, science and technology institutions are defined as "entities that form relationships between organizations and/or groups of people to work together in Research, Development, Study and/or Application of Science and Technology activities". From the perspective of a legal subject, this science and technology institution is not an individual or an attribute of a position, so it falls under the definition of a legal entity. More details in Wahyu Sasongko, *Dasar-Dasar Ilmu Hukum* (Bandar Lampung: Universitas Lampung, 2013), p.8.

4. Implementation of *litbangjirap* activities as well as high-risk and dangerous inventions and innovations without permission. These sanctions and offenses are the adoption of the criminal provisions previously regulated in the Law on P3 Science and Technology, with the addition of the maximum nominal sanction and the maximum length of imprisonment.

Litbangjirap activities are at high risk and dangerous based on this penal provision. The context is different from *litbangjirap* by foreigners without permission in Article 93. The implementation of *litbangjirap* is at high risk and dangerous. The subject of the offense is everyone, without giving an address to whether the person in question is an Indonesian or a foreigner.

Similar to the provisions in the P3 Science and Technology Law, there are weighty sanctions for perpetrators, namely in the following conditions:

- a. Causing damage to goods or objects, with a maximum imprisonment of 3 (three) years or a maximum fine of Rp. 3,000,000,000 (three billion rupiahs);
- b. Causing serious injury to a person, with a maximum imprisonment of 4 (four) years or a maximum fine of Rp. 4,000,000,000 (four billion rupiahs);
- c. Resulting in the death of a person, with a maximum imprisonment of 7 (seven) years or a maximum fine of Rp. 7,000,000,000 (seven billion rupiah).

The subjects of the perpetrators regulated in the three criminal offenses above are persons, not legal entities. Provisions regarding legal entities as subject actors are controlled separately in Article 96. The legal entities referred to in Article 96 use the term business entity. If a business entity is a criminal offender, demands and criminal convictions are made against the Business Entity and/or its management, and the maximum fine is added 1/3 (one-third). In addition, an additional criminal option is also given in the form of license revocation. Concerning the status of a business entity, the permit in question will refer to the business license issued so that if this additional penalty is applied, it can stop the business operations of the business entity subject to license revocation.

D. CONCLUSION

There has been a development in regulations regarding criminal acts in the field of science and technology as stipulated in the National System of Science and Technology Law which is a refinement of the P3 Science and Technology Law. Criminal acts in the field of science and technology as regulated in the National System of Science and Technology cannot be separated from the provisions of administrative sanctions. Administrative sanctions are given for violations of provisions regarding 1) the obligation to publish and disseminate research results by researchers, 2) the obligation to submit and store primary data and research output, 3) the obligation to comply with research regulations with funds originating from foreign funding, 4) the obligation of science and technology institutions to convey data and information on the Implementation of Science and Technology and ensure its truth and accuracy. The criminal provisions in the field of science and technology that are currently regulated are 1) foreigners carrying out research in Indonesian territory without permission, 2) transferring local Indonesian specimens abroad, both physical and/or digital, without being accompanied by a material transfer agreement 3) Carrying out research activities and Inventions and innovations that are high risk and dangerous without a permit with weights if there is damage to goods or objects, serious injury to people, and result in people dying.

The intended developments include an increase in the types of criminal acts, both concerning administrative and criminal offenses themselves, as well as reasons for aggravating punishment and additional penalties that can be given. This development, even though differences were found in the context of legal drafting, has progressed in a better direction because it has improved the construction of criminal acts from the P3 Science and Technology Law which was previously regulated simply. In addition, the provision of sanctions as an implication of a crime in the field of science and technology is also in accordance with the principles adopted in the National System of Science and Technology Law, especially on the principle of security and safety which was previously not regulated in detail regarding sanctions for the consequences arising from violations.

REFERENCES

- Chalim, Munsharif Abdul. "Pengaruh Perkembangan Iptek Terhadap Permasalahan Haki." *Jurnal Dinamika Hukum* 11, no. Edsus (2011): 47-58. <https://doi.org/10.20884/1.jdh.2011.11.edsus.261>.
- Hartono, Sunaryati. *Kapita Selekta Perbandingan Hukum*. Bandung: Citra Aditya Bakti, 1988.
- Kemendikbudristek. *Naskah Akademik Rancangan Undang-Undang Tentang Sistem Nasional Ilmu Pengetahuan Dan Teknologi*. Jakarta: Kementerian Riset, Teknologi, dan Pendidikan Tinggi, 2017.
- Lukito, Ratno. "Compare But Not to Compare": *Kajian Perbandingan Hukum Di Indonesia*. *Undang: Jurnal Hukum*. Vol. 5, 2022. <https://doi.org/10.22437/ujh.5.2.257-291>.
- Luthan, Salman. "Asas Dan Kriteria Kriminalisasi." *Jurnal Hukum Ius Quia Iustum* 16, no. 1 (2009): 1-17. <https://doi.org/10.20885/iustum.vol16.iss1.art1>.
- Park, Dong Un. *The Role of Science, Technology, and Innovation Policies in the Industrialization of Developing Countries: Lessons from East Asian Countries*. Korea: United Nations Industrial Development Organization (UNIDO) and the Science and Technology Policy Institute (STEPI) of the Republic of Korea, 2021.
- Rohmy, Atikah Mardhiya, Teguh Suratman, and Arini Indah Nihayaty. "UU ITE Dalam Perspektif Perkembangan Teknologi Informasi Dan Komunikasi." *Dakwatuna: Jurnal Dakwah Dan Komunikasi Islam* 7, no. 2 (2021): 309. <https://doi.org/10.54471/dakwatuna.v7i2.1202>.
- Sasongko, Wahyu. *Dasar-Dasar Ilmu Hukum*. Bandar Lampung: Universitas Lampung, 2013.
- Setiadi, Wicipto. "Sanksi Administratif Sebagai Salah Satu Instrumen Penegakan Hukum Dalam Peraturan Perundang-Undangan." *Jurnal Legislasi Indonesia* 6, no. 4 (2009): 603-14.
- Turner, Bertram, and Melanie G. Wiber. *Law, Science, and Technologies*. England: Oxford University Press, 2020.
- Ubwarin, Erwin. "KEBIJAKAN FORMULASI HUKUM PIDANA DALAM PENANGGULANGAN TINDAK PIDANA PERJUDIAN MELALUI INTERNET (INTERNET GAMBLING)." *SASI* 21, no. 1 (2015): 48-56.
- Wahyuni, Fitri. *Dasar-Dasar Hukum Pidana Di Indonesia*. Jakarta: Nusantara Persada Utama, 2017.