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# The Development of International Law on Agricultural Biotechnology

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## Abstract

Agricultural biotechnology legislation is not based on globally agreed international legal principles for the protection of public health and the environment from the risks of using agricultural biotechnology. The renewal of agricultural biotechnology legislation based on international law refers to parts of international law related to the economic use of agricultural biotechnology, aspects of trade in agricultural biotechnology products, and aspects of environmental protection and public health from the use of agricultural biotechnology. This study sets out three formulations of the problem: (1) why the renewal of legislation on agricultural biotechnology must be based on international law?; (2) what are the principles of international law as a source of renewal of legislation on agricultural biotechnology?; and (3) how is the implementation of international legal principles in agricultural biotechnology legislation? In this research using the type of normative legal research with a statute legal approach and a conceptual approach, three answers were obtained. First, international law is material for updating agricultural biotechnology legislation because of its strong influence on developing national law both now and in the future. Second, the principle of international law as a source of renewal of agricultural biotechnology legislation includes the principle of state sovereignty, the principle of prevention, the principle of prudence, the principle of polluters paying, the principle of cooperation, the principle of equal responsibility with different obligations, the principle of sustainable development, and the principle of participation public. Third, the implementation of the principles of international law is not carried out comprehensively but sporadically and is placed in the chapter on the principles, objectives, and scope of the law in question, not formulated in the form of a norm that has the legal force to be implemented. Relevant international legal principles must be applied comprehensively in a normalized manner in agricultural biotechnology laws that they have normative power to be complied with and implemented, not only placed in one chapter

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on the principles, objectives, and scope of law governing agriculture biotechnology.

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## 1. Introduction

The research "Utilization of Biotechnology for Food Based on Health Principles" found that legal instruments for the use of food biotechnology based on the principles of the right to health care sectoral in nature, spread out in various types of laws and regulations ranging from constitutions, law, and delegation regulations. These laws and regulations regulate several aspects of the use of food biotechnology based on the principles of the right to health which include the development of plants with biotechnology, the protection of food consumers resulting from the use of biotechnology, the human right to utilize science and technology regarding biotechnology, the right to food, the right to health, and biotechnology for plantation animals and plants.<sup>1</sup>

In the next research, "Prospects for Application of the Precautionary Principle in Utilization Agricultural Biotechnology" it was found that the regulation of agricultural biotechnology uses a sectoral approach. Agricultural biotechnology is not regulated in one specific law but is spread across several rules and regulations, including directions, delegation regulations, and autonomous regulations.<sup>2</sup> Agricultural biotechnology legislation based on such a sectoral approach has weak points, both substance, and practice. A large number of laws and regulations with the same regulatory object is difficult to avoid causing a conflict of rules with each other, and the implication is that it makes it challenging to implement these laws and regulations in the field.

Another substantive deficiency in the agricultural biotechnology legislation is that it has not applied the legal principles in international law that have been globally agreed upon, such as the principle of sustainable development, the principle of prevention, the principle of prudence, the principle of polluters paying, the principle of responsibility. state, and other principles. The implementation of these principles is very important, for example the principle of prevention and the precautionary principle to protect public health and the environment from the risks and potential risks of using agricultural biotechnology.

Moving on to the problem of agricultural biotechnology legislation, focusing on its substance which is not based on international legal principles, legal reforms are needed based on international law. International law is an essential source for the renewal of agricultural biotechnology legislation, considering that international law currently directly influences national law, especially international law, which has been accepted as part of federal law.<sup>3</sup> Michael Faure and Nicole Niessen stated that it would be very beneficial to incorporate the principles of international law into national legislation. It serves as a guide for policymakers and legislators when setting norms for the protection

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<sup>1</sup> A'an Efendi, Dyah Ochtorina Susanti, and Nuzulia Kumala Sari. (2020). Utilization of Biotechnology for Food Based on Health Principle, *International Journal of Creative Research and Studies*, Vol. 4, Issue 3, 37-44, p. 41.

<sup>2</sup> A'an Efendi, Dyah Ochtorina Susanti, dan Nuzulia Kumala Sari. (2021). Prospects for Application of the Precautionary Principle in Utilization Agricultural Biotechnology, *International Journal of Creative Research and Studies* Vol. 5, Issue 3, 17-24, p. 20.

<sup>3</sup> Sunaryati Hartono. (1991). *Politik Hukum Menuju Satu Sistem Hukum Nasional*. Bandung: Alumni. h. 24.



of health and the environment.<sup>4</sup> According to Carl Burch, international law has a role in national law, establishing federal laws and regulations and providing information for national court decisions.<sup>5</sup> The benefits of implementing international legal principles in national laws include: (1) increasing the normative power for government organs or officials to consider aspects of health and environmental protection when they make decisions or policies that have an impact on health or the environment; (2) Judges can use it as a guide to examine government decisions or policies to encourage consistency, coherence, and harmonization of laws; and (3) Promote international compliance and obligations.<sup>6</sup>

Based on previous research, this research focuses on three issues, namely: (1) why the legislation on agricultural biotechnology must be based on international law?; (2) what as international law that can be used a source of legislation on agricultural biotechnology? (3) how is the implementation of international legal principles in law and regulations related to agricultural biotechnology?

## 2. Research methods

This research uses a type of normative legal research (doctrinal research). Doctrinal legal study analyzes authoritative texts (with binding legal force) and readers whose power is persuasive (strengthening). Texts that have binding legal force are primary legal materials that include laws and regulations relevant to the research issues.<sup>7</sup> Related to this, considering that this normative legal research analyzes legal rules, the objects studied are in the form of documents of statutory regulations and library materials.<sup>8</sup> In this regard, the object of this research is in the form of rules or literature related to the development of International law on agricultural biotechnology.

In the implementation of this research, the authors use several approaches to examine a field of science so that research focuses on problem-solving following a predetermined scope. This approach consists of a statute legal approach and a conceptual approach. The statute legal approach is carried out by examining laws and regulations.<sup>9</sup> This statute legal approach is used to examine statutory regulations or regulations relating to the International law on agricultural biotechnology. About the conceptual approach, it is done based on legal principles obtained in the view of legal scholars or other legal doctrines by not departing from existing regulations this approach is necessary because no rules are governing it.<sup>10</sup> So it needs to be traced from the viewpoint of scholars and

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<sup>4</sup> Maichel Faure and Nicole Niessen. *Toward Effective Environmental Legislation in Indonesia?*, dalam Michael Faure and Nicole Niessen (Eds). (2006) *Environmental Law in Development Lesson from Indonesian Experience*. Cheltenham: Edward Elgar, 274.

<sup>5</sup> Carl Bruch. (2006). Is International Environmental Law Really "Law"?: An Analysis of Application in Domestic Court. *Pace Environmental Law*, 23(2), 3.

<sup>6</sup> Takdir Rahmadi. (2008). *Penegakan Hukum Lingkungan di Indonesia: Hambatan dan Beberapa Saran Pembaharuan*, dalam Departemen Hukum Tata Negara FH Universitas Airlangga. *Dinamika Perkembangan Hukum Tata Negara dan Hukum Lingkungan*. Edisi Khusus Kumpulan Tulisan dalam Rangka Purnabakti Prof. Dr. Siti Sundari Rangkuti, S.H. Surabaya: Airlangga University Press. 357.

<sup>7</sup> Dyah Ochtorina Susanti and A'an Efendi. (2014). *Penelitian Hukum (Legal Research)*. Jakarta: Sinar Grafika, 11.

<sup>8</sup> *Ibid.*

<sup>9</sup> *Ibid.*, 10.

<sup>10</sup> *Ibid.*, 15.

legal doctrine as referred to above. The application of the conceptual approach is to find the definition of legal reform, agricultural biotechnology, international law, and other information, which is available in law books, and other legal journals.

### 3. Result and Discussion

#### 3.1. The Basis for Using International Law as Material for Renewing Agricultural Biotechnology Legislation

The basis for the binding power of international law can be seen from two theories. *First*, the theory of natural law; and *second*, the theory of positive law. According to the theory of natural law, laws are not made by humans, but are derived from principles that are universally applicable, timeless, and can be found with common sense.<sup>11</sup> The natural law theory states that there is no independent international law based on the general agreement between nations, but international law is part of natural law that applies universally.<sup>12</sup> The natural law theory states that there is no independent international law based on the general agreement between nations, but international law is part of natural law that applies universally.<sup>13</sup> Customary rules that apply in relations between nations are only binding if they are in harmony with natural law. In essence, the binding force of international law is based on or sourced from natural law.<sup>14</sup> In the classical period of international law, the question of why states obeyed international law in general was related to the normative question of why international law must be regarded, usually answered "semi-theologically," which refers to the principle of "supreme law-natural law," which states that International law is part of a higher law, namely natural law.<sup>15</sup> According to Vattel, international law is nothing but natural law applied to states.

For Vattel, international law is binding because international law is the law of nature that applies to states. International law is part of natural law and can be discovered by reason.<sup>16</sup> States are subject to international law in their relations with each other because international law is part of a higher law, namely natural law.<sup>17</sup> In contrast to the theory of natural law, which states that law is not manufactured, positive law theory states that the laws governing inter-states are laws made by states and at the will of the states themselves.<sup>18</sup> The basis for binding international law is a mutual agreement between countries which is embodied in international treaties and customs.<sup>19</sup> According to Jean Bodin, the state gave rise to the modern concept of sovereignty which became the driving

<sup>11</sup> Boer Mauna. (2011). *Hukum Internasional: Pengertian, Peranan dan Fungsi dalam Era Dinamika Global* Bandung: Alumni, 6.

<sup>12</sup> Arthur Nussbaum. (1970). *Sejarah Hukum Internasional*, Terjemahan Sam Suhaedi Admawiria Bandung: Binatjpta, 29.

<sup>13</sup> *Ibid.*

<sup>14</sup> *Ibid.*

<sup>15</sup> Harold Hongju Koh. (1997). Why Do Nations Obey International Law?. *The Yale Law Journal*, 106(8), 2599-2659, p. 2604.

<sup>16</sup> J.J. Von Schmid. (1998). *Ahli-Ahli Pikir Besar tentang Negara dan Hukum (Dari Plato sampai Kant)*, terjemahan R. Wiratno et.al. Jakarta: Pembangunan, 141.

<sup>17</sup> Mochtar Kusumaatmadja. (1999). *Pengantar Hukum Internasional*. Bandung: Putra Abardin, 33; J.G. Starke. (1989). *Pengantar Hukum Internasional 1*, Edisi Kesembilan Jakarta: Aksara Persada Indonesia, 20-21.

<sup>18</sup> Boer Mauna. *Loc.Cit.*

<sup>19</sup> *Ibid.*

force in international law. So, international law does not come from natural law but is based on the will of sovereign states.<sup>20</sup> Francisco Suarez stated that international law stems from customary international practices.<sup>21</sup>

The Dutch scholar, Hugo Grotius who is considered the "father of international law" is the person who first wrote that international law is not only part of natural law derived from "right reason", but international law is a consequence of acts of violence.<sup>22</sup> According to Grotius, international law is a law whose coercive power comes from the will of all countries or many countries.<sup>23</sup> In Grotius' perspective, international law derives from the international community's participation in the global relations system. Italian writer Alberico Gentili was the first to distinguish between international law and theology and ethics and treat international law as part of jurisprudence.<sup>24</sup> The relationship between international law and national law can also be seen from the theory. The first theory is known as monism theory, and the second is dualism theory. The theory of monism explains that international law and national law are part of the same legal system. If there is a conflict between international law and national environmental law, the monism theory states that who should enforce international law without doubt.<sup>25</sup> For countries that adhere to the monism theory, international law will automatically become part of its national law without any requirements in the form of a firm statement from the legislature.<sup>26</sup>

The dualism theory explains that international law and national law are two different legal systems. International law will become part of national environmental law if the legislative body expressly states it.<sup>27</sup> A statement of acceptance is an essential requirement for international law to become national law. In Indonesia, international law will become national law and have binding legal force upon ratification. Based on the results of research entitled "Prospects for Application of the Precautionary Principle in Utilization Agricultural Biotechnology" it was found that the regulation of agricultural biotechnology at this time is sectoral or scattered in various laws and regulations consisting of twelve laws, five government regulations, two presidential regulations, two ministerial regulations, and five non-ministerial agency regulations. The sectoral model of biotechnology legislation with many different laws and regulations has several weaknesses. *First*, conflicting norms between laws and regulations. *Second*, due to the first weakness, it makes it difficult for competent authorities to implement laws and regulations. *Third*, it causes difficulties for farmers or entrepreneurs who use biotechnology for their agricultural or business activities. *Fourth*, consumers of agricultural biotechnology products have a problem in filing claims for compensation. *Fifth*, complicate the work of law enforcers if there are cases of violations of agricultural biotechnology. In addition to the sectoral regulatory model with various weaknesses, environmental laws and regulations are also not based on internationally agreed international legal principles such as the principle of prevention, the principle of

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<sup>20</sup> Harold Hongju Koh. *Op.Cit*,2605.

<sup>21</sup> *Ibid*.

<sup>22</sup> *Ibid*.

<sup>23</sup> *Ibid*.

<sup>24</sup> *Ibid*.

<sup>25</sup> Rebecca M.M. Wallace. (2002). *International Law*, Fourth Edition London: Thomson Sweet & Maxwell, 35.

<sup>26</sup> *Ibid*, 36.

<sup>27</sup> *Ibid*.



sustainable development, the principle of prudence, the principle of polluter pays, the principle of state responsibility, and public participation. The principle of information disclosure, and others. The incorporation of international legal principles in agricultural biotechnology legislation so that these legal principles have binding normative powers to be implemented in the context of protecting public health and the environment from the potential risks of using agricultural biotechnology.

The basis for updating agricultural biotechnology legislation using international legal sources is Sunaryati Hartono's idea that national law reform can use various existing legal sources. Materials for national law reform can be sourced from customary law, Islamic law, even foreign law (law of other countries), and law as long as it does not conflict with the philosophy of the nation and state as well as the principles and legal philosophies mentioned or implied in the 1945 Constitution of Indonesia, especially the Preamble to the 1945 Indonesian Constitution, and including Pancasila.<sup>28</sup> International law as a source for national law reform based on the consideration that international law will more directly affect national law than in the past so that new fields of law arise, which contain many aspects of international law, for example environmental law, international environmental law, and international law of the sea.<sup>29</sup> Thus, at present, it is unavoidable that there is a need for national law from international law. Daud Silalahi stated that international law (international treaties) has an essential role in reforming national law. The principles contained in international law can advance the development of national law, especially in developing countries.<sup>30</sup>

Renewal of agricultural biotechnology legislation based on international environmental law that has relevance to aspects of the use of agricultural biotechnology, trading of agricultural biotechnology products, and environmental protection and public health from the use of agricultural biotechnology. International environmental law in the form of international conventions has the main objective of protecting the environment and global health from the risks of the use of biotechnology across rapidly developing countries and influencing national legal policies. International conventions on the use of biotechnology can be referred to for updating agricultural biotechnology legislation.

### 3.2. Principles of International Law as a Source for Reforming Agricultural Biotechnology Legislations

Thoughts on the principles of international law for legal material for the renewal of national laws (regulations and legislation on agricultural biotechnology) were put forward by many experts in international law and international environmental law. Alexandre Kiss stated that the principles of international law include the principle of state sovereignty, the principle of cooperation, the principle of preservation and environmental protection, the principle of prevention, the precautionary principle, the

<sup>28</sup> Sunaryati Hartono.(2006). *Bhineka Tunggal Ika Sebagai Asas Hukum bagi Pembangunan Hukum Nasional* Bandung: Citra Aditya Bakti, 21.

<sup>29</sup> Sunaryati Hartono. *Op.Cit*, 24.

<sup>30</sup> Daud Silalahi. (2006). *The Implication of International Conventions for the Development of the Environmental Management Act. Dalam Michael Faure and Nicole Niessen (Eds). Environmental Law in Development Lesson from Indonesian Experience*. Cheltenham & Northampton, Edward Elgar, 77, 79.

principle of polluter pays, the principle of information and emergency assistance to the environment, the principle of information and consultation in cross-border relations state, and the principle of individual rights which consists of the right to information, community participation, and access to justice.<sup>31</sup> Alexandre Kiss and Denah Shelton in their book, *Guide to International Environmental Law*, divides the principles of international law into 3 (three) kinds, namely substantive principles, procedural principles, and fairness principles. The substantive principles include the principle of prevention, the precautionary principle, the polluter pays principle and the development principle. The procedural codes consist of the obligation to give, the obligation to provide information and consultation, and community participation.

The principles of fairness include fairness between generations, the principle of equal responsibility and different obligations, and the principle of a common use of natural resources in a fair manner.<sup>32</sup> According to Menno T Kamminga, the general principles of international law, namely the polluter pays principle, the principle of non-discrimination, the principle of prudence, the principle of responsibility equals different obligations, and the principle of justice between generations.<sup>33</sup> Elli Louka in *Environmental Law: Fairness, Effectiveness, and World Order*, put forward the principles of international law, which include the principle of state sovereignty over all of its natural resources, the principle of the obligation not to cause harm, the principle of precaution and prudence, the principle of polluters paying and sharing costs fairly, the principle of sustainable development, the principle of fair use, the principle of responsibility equals different obligations, and the principle of human rights.<sup>34</sup> Philippe Sand stated that the general principles of international law consist of the principle of state sovereignty over all its natural resources and the responsibility not to cause harm to the environment of other countries or areas outside the jurisdiction of the state, the principle of precautionary measures, the principle of development, the principle of prudence, the polluter pays principle, and the principle of responsibility equals different obligations.<sup>35</sup>

Furthermore, David Wilkinson put forward five principles in international law, namely the principle of prevention, the principle of prudence, the principle of polluter pays, the principle of proximity, and the principle of development.<sup>36</sup> Lal Kurukulasuriya and Nicholas A. Robinson put forward eleven principles and concepts in international law, which include:

1. The principles of sustainable development and integration, integration and interdependence.
2. The principle of justice within one generation and equity between generations.

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<sup>31</sup> Alexandre Kiss. (2005). *Course 1 Introduction To International Environmental Law*. Geneva: The United Nations Institute for Training and Research Palais des Nations, 70-79.

<sup>32</sup> Alexandre Kiss and Denah Shelton. (2007). *Guide to International Environmental Law*. Leiden/Boston: Martinus Nijhoff Publishers, 90-108.

<sup>33</sup> Menno T Kamminga. (2003). *Principles of International Environmental Law*, dalam Pieter Glasbergen and Andre Blowers (Eds), *Environmental Policy in an International Context: Perspective on Environmental Problems* Oxford: Butterworth Heinemann, 126.

<sup>34</sup> Elli Louka. (2006). *International Environmental Law: Fairness, Effectiveness, and World Order* (Cambridge: Cambridge University Press, 49-56.

<sup>35</sup> Philippe Sands. (2003). *Principles of International Environmental Law*, Second Edition. Cambridge: Cambridge University Press, 235-285.

<sup>36</sup> David Wilkinson. (2002). *Environmental and Law: Routledge Introductions to Environment Series*. London and New York: Routledge. 104.



3. The principle of liability for transboundary pollution.
4. The principle of transparency.
5. The principle of public participation and access to information and compensation.
6. The principle of cooperation and responsibility is the same and the obligations are different.
7. The principle of prudence.
8. The precautionary principle.
9. The polluter pays principle.
10. The principle of gaining access and sharing of benefits regarding natural resources.
11. The principle of the common heritage of humanity and good governance.<sup>37</sup>

Based on the presentation of various thoughts on the principles of international law above, the principles of international law that are the source of the renewal of legislation on agricultural biotechnology include the principle of state sovereignty, the principle of prevention, the principle of prudence, the principle of polluter pays, the principle of cooperation, the principle of responsibility, the principle of equal responsibility with different obligations, the principle of sustainable development, and the principle of community participation.

### 3.3. The Implementation of International Legal Principles in Agricultural Biotechnology Legislations

From the results of research by the Biotech Law Research Group, Faculty of Law, University of Jember in 2020 entitled "Prospects for the Application of Prudential Principles in the Utilization of Agricultural Biotechnology," it was found that the laws and regulations governing agricultural biotechnology are as follows:

1. Laws
  - a. Law Number 12 of 1992 concerning Plant Cultivation System
  - b. Law Number 8 of 1999 concerning Consumer Protection
  - c. Law Number 39 of 1999 concerning Human Rights
  - d. Law Number 41 of 1999 concerning Forestry
  - e. Law Number 29 of 2000 concerning Plant Variety Protection.
  - f. Law Number 31 of 2004 concerning Fisheries as amended by Law Number 45 of 2009 concerning Amendments to Law Number 31 of 2004 concerning Fisheries
  - g. Law Number 4 of 2006 concerning Ratification of the International Treaty On Plant Genetic Resources For Food And Agriculture.
  - h. Law Number 18 of 2009 concerning Husbandry and Animal Health.
  - i. Law Number 32 of 2009 concerning Protection and Management of The Environment.
  - j. Law Number 36 of 2009 concerning Health.
  - k. Law Number 13 of 2010 concerning Horticulture.
  - l. Law Number 18 of 2012 concerning Food.
  - m. Law Number 39 of 2014 concerning Plantation.
2. Government Regulations
  - a. Government Regulation Number 69 of 1999 concerning Labeling and Advertising of Food.

<sup>37</sup> Lal Kurukulasuriya and Nicholas A. Robinson. (Tanpa Tahun Terbit). *Training Manual on International Environmental Law* Nairobi: United Nations Environment Programme, 24-25.

- b. Government Regulation Number 102 of 2000 concerning National Standardization.
  - c. Government Regulation Number 28 of 2004 concerning Food Safety, Quality and Nutrition.
  - d. Government Regulation Number 21 of 2005 concerning Biosafety of Genetically Modified.
  - e. Government Regulation Number 17 of 2015 concerning Food and Nutrition Security.
3. Presidential Regulations
    - a. Presidential Regulation Number 39 of 2010 concerning Biosafety Commission of Genetically Modified Product.
    - b. Presidential Regulation Number 83 of 2017 concerning Strategic Policies on Food and Nutrition
  4. Ministerial Regulations
    - a. Regulation of the Minister of Agriculture of the Republic of Indonesia Number 37/Permentan/OT.140/7/2011 concerning The Preservation and Utilization of Plant Genetic Resources
    - b. Regulation of the Minister of Agriculture of the Republic of Indonesia Number 19/Permentan/OT.140/3/2012 concerning Quality Requirements for Seeds, Livestock Seeds, and Animal Genetic Resources
  5. Regulations of Non-Ministerial Government Institutions
    - a. Head of BPOM Regulation Number HK.03.1.23.03.12.1563 of 2012 concerning Guidelines for the Assessment of Food Safety of Genetically Engineered Products.
    - b. Head of BPOM Regulation Number HK.03.1.23.03.12.1564 of 2012 concerning Supervision of Food Labeling of Genetically Engineered Products.
    - c. Head of BPOM Regulation Number 16 of 2016 concerning Microbiological Criteria in Processed Food.
    - d. Head of BPOM Regulation Number 19 of 2016 concerning amendment to the Regulation of the Head of the Food and Drug Supervisory Agency Number Hk.03.1.23.03.12.1563 of 2012 concerning Guidelines for the Assessment of Food Safety of Genetically Engineered Products.
    - e. Head of BPOM Regulation Number 6 of 2018 concerning Food Control of Genetically Engineered Products.

From the various laws and regulations governing agricultural biotechnology, a search was carried out to find the implementation of the principle of state sovereignty, the principle of prevention, the principle of prudence, the principle of polluter pays, the principle of cooperation, the principle of equal responsibility with different obligations, the principle of sustainable development, and the principle of community participation. The principle of state sovereignty is found in Law no. 18 of 2012 concerning Food. Based on this law, the state is sovereign to determine food policies in order to ensure the fulfillment of the people's right to food.

The principle of prevention is implemented in Law Number 12 of 1992 concerning Plant Cultivation Systems (UU SDBT), Law Number 31 of 2004 concerning Fisheries as amended by Law Number 45 of 2009 concerning Amendments to Law Number 31 of 2004 concerning Fisheries (Fisheries Law), Government Regulation Number 28 of 2004 concerning Food Safety, Quality and Nutrition (PP KMGP), and Government Regulation Number 21 of 2005 concerning Biosafety of Genetically Engineered Products (PP

KHPRG). Based on the UU SDBT, the principle of prevention is applied to plant growing media for plant cultivation. The use of plant media for plant cultivation must be done by preventing environmental pollution. The Fisheries Law determines that fisheries management must be carried out to avoid damage to fish resources. Based on Article 14 paragraph (1) of PP KMGP, genetically engineered food production must first be checked for food safety. According to Article 10 *jo.* Article 67 PP KHPRG, research, and development of genetically engineered food must be carried out by preventing and overcoming its adverse impacts on health and the environment.

The Implementation of the precautionary principle of Law No. 18 of 2009 concerning Livestock and Animal Health (UUPKH) and Law No. 32 of 2009 concerning Environmental Protection and Management (UUPPLH). Based on UUPKH, the application of modern biotechnology to livestock must be carried out without harming biodiversity, human health, the environment, society, and animals. According to UUPPLH, the precautionary principle is applied in environmental management where the uncertainty of the risk of an activity to the environment due to limited scientific evidence is not a reason to prevent environmental pollution. The precautionary principle is also applied in PERKABPOM Number HK.03.1.23.03.12.1563 of 2012 Guidelines for the Assessment of Food Safety of Genetically Engineered Products, where genetically engineered food is sold to the public must first be assessed for its safety aspects.

In addition to the precautionary principle, the UUPPLH also found the polluter principle. According to UUPPLH, every activity actor that causes environmental pollution impacts must bear the costs of ecological restoration. The principle of polluter pays. This principle was formulated incorrectly in the explanation of Article 87 of the UUPPLH because it is interpreted in a repressive manner, where after environmental pollution occurs, the perpetrator is required to pay compensation. The polluter pays principle itself means prevention where business actors are required to provide a certain amount of money to finance the prevention and control of pollution from the implementation of their business. The principle of sustainable development is implemented in Law Number 4 of 2006 concerning the Ratification of the International Treaty On Plant Genetic Resources For Food And Agriculture. Based on this law, the use of food genetic resources is carried out sustainably. The principle of community participation is contained in Law no. 39 of 2004 concerning Plantations (Plantation Law). Participation is done by providing suggestions, responses, submitting objections, submitting requests for improvement, or providing assistance. Participation is carried out in various ways, such as the planning stage, plantation area development, monitoring the implementation of plantations, and so on.

#### **4. Conclusion**

International law is the basis or source for updating agricultural biotechnology legislation based on the consideration that at present and in the future, the growth of international law is very influential on national law, and has even created new disciplines that are part of international law, for example international environmental law, international law of the sea, international economic law, and others. The principles of international law that are the source of the renewal of agricultural biotechnology legislation include the principle of state sovereignty, the principle of prevention, the principle of prudence, the principle of polluters paying, the principle of cooperation, the principle of equal responsibility with different obligations, the principle of sustainable



development, and the principle of the role of society. Implementation of the principles of international law in agricultural biotechnology legislation is done sporadically. One particular principle is contained in one particular statutory regulation, while other principles can be found in other statutory regulations. In addition, the principles of international law are sometimes only placed in the chapter on the principles, objectives, and scope of the law in question and are not formulated in the form of norms that have legal force to be obeyed and implemented.

The renewal of agricultural biotechnology legislation based on international law refers to parts of international law related to the economical use of agricultural biotechnology, aspects of trade in agricultural biotechnology products, and aspects of environmental protection and public health from agricultural biotechnology. The principle of state sovereignty, the principle of prevention, the principle of prudence, the principle of polluter pays, the principle of cooperation, the principle of equal responsibility with different obligations, the principle of sustainable development, and the principle of community participation must become guidelines in updating agricultural biotechnology legislation at the same time will come. These principles must be implemented comprehensively in a manner that is normalized in the agricultural biotechnology legislation so that it has normative power to be complied with and implemented, not just placed in the chapter on the principles, objectives, and scope of the laws governing agricultural biotechnology.

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