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Formulation of Precautionary Principles in the Policy of in the Field of Agricultural

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Abstract
This study is the research result on the formulation of precautionary principles in the policy of in the field of agricultural. Based on the research, the formulation of the regulatory policy of Minister of Agriculture No. 61/ Permentan/ OT.140/ 10/2011 on Testing, Assessment, Release and Withdrawal varieties in environmental protection and management in Indonesia, has to do with the precautionary principle. It has been regulated in Article 2 f of UUPPLH (Environmental Protection and Management Law) and Article 3 of PP (Goverrnment Regulation) No. 21 of 2005. The two articles are the implementation of the precautionary principle before conducting Testing, Assessment, Release and Withdrawal of varieties should have passed AMDAL (EIA), Environmental Permits and Environmental Risk Analysis, it is important to do so in these activities no damage an environmental pollution.
Keywords: *Precautionary Principle, Policy, Field, Agricultural*

1. Introduction

The 1945 Constitution of the Republic of Indonesia, hereinafter referred to UUD NRI 1945, mandates the government, employers, and all elements of society must conduct environmental protection and management in the implementation of sustainable development and with environmental concept.[1]

The provisions of Article 28, paragraph H (1) and Article 33 paragraph (1-5) of the 1945 Constitution are the basic norms of environmental protection and management in Indonesia. [2] The state authority in the 1945 Constitution as the highest legal basis has the virtue, which is mentioned in the preambule: On a blessing grace of Allah Almighty and encouraged by the noble desire in order to live in free nationality, to promote general welfare, to educate the life of the nation, and to participate in the world's order absed on national independence everlasting peace and social justice.

As the constitutional basis of the Republic of Indonesia, the 1945 Constitution further says that the natural resources are used to the maximum prosperity of the people. The prosperity must be enjoyed both by the present generation and future generation. The 1945 Constitution stipulates that development is not just the pursuit of physical prosperity or spiritual satisfaction alone but also the balance between the two. Environmental protection and management of the environment requires a balance of a system with integration as its main characteristic. This means that it is necessary to have a national policy for comprehensive protection and management to the environment.

The right to control the natural resources and environment is emphasized in Article 2 of Law No. 5 of 1960 on Basic Regulation of Agrarian (State Gazette of the Republic of Indonesia No. 104, Supplement to State Gazette of the Republic of Indonesia No. 2034) hereinafter referred to as UUPA (Agrarian Basic Law). [3] As the implementation of the the state's right to control the environment, Law No. 32 of 2009 on Environmental Protection and Management (State Gazette of the Republic of Indonesia No. 140, Supplement to State Gazette of the Republic of Indonesia No. 5059) was then enacted, which is hereinafter referred to UUPPLH (Environmental

[1]Helmi, *Hukum Perizinan Lingkungan Hidup*, (Jakarta: Sinar Grafika, 2012), p.. 1.
[2]Article 28 A (1) of Indonesian Constitution states: Anyone has the right to live physically and spiritually welfare, reside, and get a good and healthy living environment and receive medical care. Article 33 (1-5) of the 1945 Constitution states; "(1) Economy is structured as a joint effort based on the principle of kinship. (2) The divisions of production which are important for the state and cover the welfare of many people are controlled by the state. (3) Earth and water and natural resources contained therein shall be controlled by the state and utilized for the welfare of the people. (4) National economy is organized based on economic democracy with the principle of togetherness, equitable efficiency, and sustainable, environmentally sound, independence and balancing economic progress and national unity. (5) Further provisions on the implementation of this article are set in the Law.
[3]Article 2 of Basic Agrarian Law (UUPA): Earth, water, and sky including the natural resources therein shall be controlled by the state and it is given the authority to: (1) manage and maintain the provision, use, supply and maintenance of earth, water and sky. (2) determine and regulate the legal relations between the people and the earth, water, and sky. (3) determine and regulate the legal relations between the peoople and legal regulations of the earth, water, and sky.

Protection and Management Law). As the implementation of UUPPLH, the government of the Republic of Indonesia issued Government Regulation of the Republic of Indonesia No. 27 of 2012 on Environmental Permit, (State Gazette of the Republic of Indonesia No. 48 of 2012). UUPPLH sets the environment as the whole, but the Government Regulation (PP) No. 27 of 2012 specifically sets environmental permits. The regulation of AMDAL (the EIA) is set out in Article 3 paragraph 1 and 2 of PP No. 27 of 2012 which states:

(1) Every business and/ or activities which has important impacts on the environment shall have EIA.
(2) Every business and/ or activities which are not included in the EIA mandatory criteria referred to in paragraph (1) shall have the UKL-UPL.

As the operation of the Government Regulation No. 27 of 2012, the Ministry of Environment issued the Regulation of the Minister of Environment of the Republic of Indonesia No. 05 of 2012 on Types of Business Plan and/ or Activities Requiring Environmental Impact Assessment, (State Gazette of the Republic of Indonesia of 2012 No. 408). Article 2 paragraph (1 and 2) of the Regulation of the Minister of Environment No. 5 of 2012 states: (1) Every Business and/ or activities with important impacts on the environment shall have EIA. (2) Type of Business plans and/ or activities which are required to have EIA as described in paragraph (1) are listed in Appendix I as the integral part of this Minister Regulation.

Environmental protection and management including agriculture needs to be conducted early so that the development can be implemented more aggressively to ensure the preservation of the environment. Without early environmental protection and management with environmental concept and sustainable, pollution and/ or destruction of the environment, environmental conflicts or disputes between environment and development, between human and environment, and between man and another man due to lack of natural resources available will easily occur. [1]

As the implementation of the State's right to control in the protection and management of environment including in agriculture and genetically modified products currently has the precautionary principle or early preventive principle. The precautionary or early preventif principle aims to anticipate and take early precautions against the impact of particular activities performed by humans. The activities are related to pollution prevention instruments and/ or environmental destruction in Environmental Protection and Management such as; Protection Plan and Environmental Management (RPPLH), Strategic Environmental Assessment (SEA), Environmental Quality Standard, Standard Criteria of Environmental Damage, Environment Impact Assessment (EIA)/ UKL-UPL, Environmental Permits, Environmental Audit, Economic Instruments of Environment and Environmental Risk Analysis.

In addition to the Environmental Protection and Management Law (UUPPLH), the precautionary principle regarding the protection and management of environment, especially genetically modified products, is regulated in the Indonesian Government Regulation No. 21 of 2005 on the Biosafety Products of Genetically Modified Products (State Gazette of 2005 No. 44, Supplement to State Gazette No. 4498). Article 3 and the explanation set on the precautionary approach. Article 3 of the Regulation No. 21 of 2005 states: The setting applied in this government regulation uses the precautionary approach in order to achieve environmental security, food safety and/ or feed based on valid scientific method and considering the rules of religion, ethics, social culture, and aesthetics.

The precautionary principle, other than those set forth in Article 2 letter f of the Environmental Protection and Management Law (UUPPLH) and its explanation, Article 3 of the Government Regulation No. 21 of 2005 and its explanation, is also arranged in various international agreements, such as in Principle 15 of the 1992 United Nations Conference on Environment and Development (Rio Declaration of 1992), as follows: "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation".

The precautionary principle is also adopted in the 2000 Cartagena Protocol on Biosafety, as the guidance for decision making related to genetically modified organisms (GMOs). Article 11 paragraph 8 of the Cartagena Protocol states: "*Lack of scientific certainty due to insufficient relevant scientific information and knowledge regarding the extent of the potential adverse effects of a living modified organism on the conservation and sustainable puse of biological diversity in the Party of import, taking also into account risks to human health, shall not prevent that Party from taking a decision, as appropriate, with regard to the import of that living modified organism intended for direct use as food or feed, or for processing, in order to avoid or minimise such potential adverse effects*" .

Furthermore, the precautionary principle is set out in Article 5 of the French Environmental Charter which states: *"Lorsque la réalisation d'un dommage, bien qu'incertaine en l'etat des connaissances scientifiques, pourrait affecter de manière grave et irreversible l'environnement, les autorités publiques veillent, par application du principe de précaution et dans leurs domaines d'attributions, à la mise en oeuvre de procedures d'evaluation des*

[1]Herry Suoryono, *Pengelolaan Konflik Dan Penyelesaian Sengketa Lingkungan (Enviromental Dispute Setlement)* Paper, 2006, p. 5.

risques et à l'adoption de mesures provisoires et proportionnées afin de parer à la réalisation du dommage".
As a stepping stone on the precautionary principle in addition to those stated above both the settings at national and international level in this paper, the authors also cited several expert opinions in the field of law, i.e.:
1) M. Geistfeld, argues that: *"In this case, the precautionary principle is considered too have a big role to change the direction of policy in the face of serious danger, but it is still uncertain. If, during this time, policy makers are often reluctant to take precautions against such danger, then with the precautionary principle, the potential danger can not be ignored simply on the grounds that the danger is still uncertain and overwhelmed by scientific uncertainty.*"[1]
2) Mas Achmad Santosa argues: *"That in applying the precautionary principle, decision making should be based on: (1) serious evaluation to optimally prevent environmental damage that can not be recovered, (2) assessment by performing risk analysis using various options.*" [2]
3) Jimly Asshiddiqie states that the precautionary principle is used in an effort to anticipate and respond the concerns that arise as a result of possible harmful effects of technologies that pollute or harm the environment. [3]
4) Andri G. Wibisana said: *"In short, the precauntionary principle stems from growing concem for environmental protection, which in turn urges states to take measures to prevent environmental degradation even if the deterious effects of this degradation remain unprove"*.[4]
Based on the background mentioned above, the problem can be formulated as follows: How is the formulation policy which is responsive and accommodating to the precautionary principle in the Regulation of the Minister of Agriculture No. 61 / Permentan / Ot.140/ 10/ 2011 on testing, assessment, release and withdrawal of varieties.

2. Research Method

This research was a normative research, which is the research of the principles of law, legal norms in terms of value (norm) of concrete legal rules and legal systems. [5] This research used several approaches, such as: philosophical approach, statute approach, comparative approach[6], historical approach, and conceptual approach.[7]

3. Theoretical Framework

In this research, the authors used the theory as the analysis knife which includes: Theory of Welfare State as the Grand Theory, supported by the Science of Law as the Middle Range Theory, and The Green Political Theory and Constitution of the Green Contitution as the Applied Theory.

3.1. The Theory of Welfare State

In the theory of the welfare state, the purpose of the state is seen as an instrument to achieve a common goal, namely prosperity and social justice for all Indonesian people. [8] The theory of Welfare State is an integration between the concept of state and the welfare state. The theory of Welfare State is used with the argument that government as the power holder has a duty and responsibility for the welfare and fulfillment of basic rights of citizens which can not be achieved themselves. The concept of the welfare state requires the state role to extend its responsibilities to socio-economic problems faced by many people.[9]
The birth of the welfare state was as a reaction to the failure of the concept of classical state of law and socialist state of law. Both the concept and the type of state of law have different basis and forms of state control over economic resources. Theoretically the difference was motivated and influenced by the ideologies or principles espoused. In classical liberal state of law, it was influenced by the ideology of liberalism or classical state of law, while the socialist state of law was influenced by Marxism. [10] In the context of the formulation of precautionary principle, a state is obligated to set legislations in favor of environmental protection and management in accordance with the constitution of the Republic of Indonesia in Article 28.

3.2. The Science of Legislation

The use of second theory in this research was the science of legislation. The science of legislation is the science learning everything associated with a set of laws examined regarding legal technique, content material,

[1]M. Geistfeld, as quoted by Andri G. Wibisana, *Konstitusi Hijau Prancis; Komentar Atas Asas Kehati-Hatian Dalam Piagam Lingkungan Prancis*, Jurnal Konstitusi Vol 8 Number 3, 2011, p. 241.
[2]Mas Achmad Santosa, *Good Governance dan Hukum Lingkungan*, (Jakarta, 2001) p. 166.
[3]J. Asshiddiqie, Asshiddiqie, J. *Green Constitution: Nuansa Hijau Undang-undang Dasar Negara Republik Indonesia Tahun 1945*. Jakarta: Rajawali Press, 2009, p. 65.
[4]Wibisana, G. Andri, *Theree Principles of environmental law: The Polluter-Pays Principle, The Principle of Prevention, and the Precautionary Principle*, dalan Michael & Nicole Niessen (udited) *environmental law in Development*, Lesson from the Indonesia Experince, Cheltenham UK-Nothampon, MA, USA: Edward Elgar Publishing, Inc, 2006, p. 41.
[5]Sudikno Mertokusumo, *Penemuan Hukum*, (Yogyakarta: Liberty, 2009), p. 29.
[6]Theory Hutchinson, *Reseaching and Writing in Law*, Lawbook Co, Pyrmon NST 2009 Australia, 2002, p. 55.
[7]Peter Mahmud Marzuki, *Penelitian Hukum*, (Jakarta: Kencana Prenada Media Group, 2008), p. 93.
[8]CST Kansil dan Chiristine ST. Kansil, *Hukum Tata Negara Republik Indonesia (1)* (Jakarta: Rineka Cipta, 1977), p. 20.
[9]Jimly Asshiddiqie, (1994), *Gagasan Kedaulatan Rakyat dalam Konstitusi dan Pelaksanaannya di Indonesia*, Jakarta: Ichtiar Baru Van Hoeve, hlm 223.
[10]Abrar Saleng, *Hukum Pertambangan* (Yogyakarta: UII Press, 2004) (Anggota IKAPI) p. 9.

principles, language to the drafting of legislation because the real object of the science of legislation is a part of the science of constitutional law in a general sense. Therefore, the method and approach are not much different from the method and approach to constitutional law.

According to B. Hestu Cipto Handoyo, the Science of Legislation is a sub-division of science of law in which the object of study is researching on the symptoms of regulatory legislation, namely any written decision issued by a competent authority to regulate human behavior which is generally binding and valid. In other words, the science of legislation is oriented to perform the act, in this case, of forming of regulatory and normative legislation. The science of legislation is divided into: a. The process of legislation (*gezetsgebungsverfahren*); it includes several stages in the making of legislation such as the phases of preparation, establishment, implementation, assessment and re-integration of finished product. b. The method of legislation (*gezetsgebungsmethode*); the study of the making of a regular type of legal norms to achieve its target. It refers to the matters relating to the formulation of the elements and structure of the provision in a norm, such as the object, subject, operator and condition of norms. c. The technique of legislation (*gezetsgebungstechnic*); it reviews the matters relating to the text of a law including the forms of outer, inside, and language variety of legislation.

The theory of legislation in this research was used as the analysis by arguing that a good legislation or policy should reflect good alignment of lawmakers to environmental protection and management. The reason for using the theory of the science of legislation as the Middle Range Theory is based on an understanding that in the formulation of the precautionary principle formulation in the regulatory policies of Maluku provincial government in order to get good results and be maximized.

3.3. The Theory of The Green Political dan Green Constitution

The term "green constitution" in the cross-border of constitutional development of countries in the world in specific is not something new. It can not be denied that in the context of Indonesian affairs, the discourse of "green constitution" as a term is not too long ago introduced. Nevertheless, for those who are active and get along with various developments related to the dynamics of legal thought and constitutional practices in the contemporary world, both through scientific journals and many new books, as well as through the Internet, is certainly not going to feel unfamiliar with the term "green constitution". In the Indonesian context, the provisions regarding green constitution can be seen in Article 28 paragraph H (1)[1] and Article 33 paragraph (4) NRI of the 1945 Constitution, which states the right to obtain a good and healthy living environment as well as good health care as a human right. Therefore, the 1945 Constitution is clearly highly pro-environment, so it can be referred to as the green constitution.

In constitution, the discourse surrounding the concept of green constitution, constitutional ecology and ecocracy can be said to be reflected in the notion of power and human rights as well as the concept of economic democracy in the 1945 Constitution. It means , the country also embraces the concept of green constitution with the assumption; when supreme power or sovereignty is in the hands of people as reflected in the concept of the human right to good and healthy environment as stated in Article 28 paragraph H (1) of the 1945 Constitution, and it is also reflected in the concept of democracy related to the principle of sustainable development and environmentally sound, as affirmed in Article 33 paragraph (4) of the 1945 Constitution. It is the proof that the concept has been accommodated in the provisions of Indonesian constitution.

Green politic movement in Indonesia began with the awareness spurred by Indonesian national condition in which there was a variety of environmental damage caused by the development which was oriented too much on growth and exploitative development strategies so that it threatened environmental sustainability. According to Emir Salim, the essence of development is to strive for life sustainability).[2]

4. Research Result and Discussion

4.1. The Concept of Formulation Policy.

Talking about the concept of formulation policy, it is derived from two words; "policy" and "formulation". According to Webster's New World College Dictionary, "policy" is "a principle, plan, or couse of action, as pursued by a government organization, individual, etc".[3] Meanwhile, the word "formula" in *Kamus Besar Bahasa Indonesia* (Indonesian Dictionary) is defined as a formulation, composition or form.[4] Therefore, when the two words are combined into one word and meaning, the meaning of formulation policy is principle, plan, or action taken by government organizations, individuals and others in accordance with a defined formula.

According to Harold D. Lasswell and Abraham Kaplan, the definition of formulation policy is a program to

[1]See the provisions of the 1945 Constitution in article 28H ayat (1) “Anyone has the right to live physically and spiritually welfare, reside, and get a good and healthy living environment and receive medical care.”

[2]Emil Salim, “Membangun Paradigma Pembangunan” dalam makalah *Peluncuran Buku dan Forum Diskusi Mengenai Hasil-Hasil dan Tindak Lanjut KTT Pembangunan Berkelanjutan*, Jakarta: April 11, 2003.

[3]Simon and Schuster , (1997), *Webster's New World College Dictionary* , Macmillan, Inc, Cleveland, Ohio, p. 1045, p. 1045.

[4]Ministry of Education and Culture,(1989) *Kamus Besar Bahasa Indonesia,* Jakarta*:* Balai Pustaka, p. 1021.

achieve directed goals, values and practices. [1] Carl J. Friedrick defines formulation policy as the proposed series of action of individual, group or government in a particular environment by showing a series of obstacles and opportunities for the implementation of the proposed policy to achieve certain goals. [2] Formulation policy, according to Jame E. Enderson, is a series of actions that has a particular purpose, followed and implemented by a person or a group of actors to solve a particular problem. [3] Furthermore, the concept of formulation policy, according to Barda Nawawi Arief, is a plan or program of lawmakers about what will be done in the face of certain problems and ways how to do or accomplish something that has been planned or programmed. [4]

Based on such understanding, the components of formulation policy include: a) planned or programmed series of actions; b) a particular purpose and; c) solving a particular problem. Formulation policy must consider the value system of mutual agreement which is, in the context of Indonesia, the Pancasila values.[5] Formulation policy of precautionary principle in environmental protection and management in agriculture for the variety excellence of genetically modified products should also be guided by the shared value system of Indonesian people, namely Pancasila so that it can provide a sense of justice and legal certainty in accordance with the constitutional rights of every citizen.

4.2. The Concept of Environmentally Sound Sustainable Development

Environmentally sound sustainable development essentially reflects the meaning full of hopes to integrate environment into development process in order to guarantee the ability, welfare and quality of life of the present and future generation. This principle is the philosophical foundation of national development although the reality shows that the intensity of pollution and environmental degradation persists and threatens people's lives and the environment itself. [6]

In a juridical perspective, the principle of environmentally sound sustainable development is a well-planned and conscious effort which combines the aspects of environment, social, and economic in development strategies to ensure the needs of the environment as well as the safety, ability, welfare, and quality of the life of future and present generations. In addition, environmental protection and management are implemented by the principle of: state responsibility, sustainability and preservation, preservation and balance, integration, benefit, precautionary, justice, ecoregions, biodiversity, paying pollution, participatory, local wisdom, good governance, and regional autonomy aimed to realize environmentally sound sustainable development in order to complete Indonesian human development and the development of the whole Indonesian society who have the faith and obedience to God Almighty. [7]

In line with these provisions, Emil Salim said: "environmental element is dissolved in development. Environmental elements are not seen separated from development as the separation of sugar from tea water, but it dissolves in sustainable development such as dissolved sugar in sweet tea". [8] Thus, the philosophy of environment and development related to the application of the principles of environmentally sound sustainable development, in addition to emphasize the aspects of welfare and quality of life of present and future generations, it is also concerned about the carrying capacity of environment in sustaining human life and other living things.

Environmentally sound sustainable development is one of the principles of environmental law in which, at empirical or operational level, it can be utilized in order to prevent the existence of environment of any threat of pollution and damage because the principles of thought underlying the philosophy integrates the needs of present and future generations for good and healthy environment and strives the environmental quality to be well-maintained from any negative impacts caused by national development.

It is inevitable that the negative consequences or impacts of development are pollution and environmental

[1] M Irfan Islamy, (2002) *Prinsip-prinsip Perumusan Kebijaksanaan Negara*, Jakarta: Bumi Aksara, hlm 15.
[2] *Ibid*., p. 17
[3] *Ibid*,.
[4] Barda Nawawi Arief, (2001), *Masalah Penegakan Hukum dan Kebijakan Penanggulangan Kejahatan*, Bandung: Citra Aditya Bakti, p. 75
[5] *Ibid*., 121).
[6] Environmental pollution and destruction occurred until recently in Indonesia, for example: 1). hot mud spurt of Lapindo Brantas in East Java (2006), 2). The occurrence of forest fires in Riau (2003- to present), 3). Pollution in Buyat Gulf in North Sulawesi by PT Newmont Minahasa Raya (2004), 4). The forest fires in West Kalimantan (2005), 5). Illegal logging in Kalimantan, 6). Pollution of Surabaya rivers (1995-2005), 7). The Function Transfer of Protected Forest into urban areas in Riau (2007), 8). The forest damage in East Kalimantan (2004-2008), according to the research conducted by the Forum for the Environment (WALHI) in 2008, represented the culmination of environmental damage in East Kalimantan. It is said no less than 900,000 hectares (ha) of forest in the province were damaged or changing their functions. The conversion of forest area has been out of control, not for the wood alone, but other industrial sectors even use them more frequently. The WALHI Research is not much different from the data owned by the Forest Service in East Kalimantan. It shows that the damaged forest area has increased every year. In 2000-2004, the average damage reached 500,000 hectares of forest per year. While in the period of 2004-2008, the destruction of forests reached 900,000 ha.
[7] See in the Provision of Article 1 Number 3 dan Chapter II Article 2 of UUPPLH.
[8] Emil Salim, *Pembangunan Berwawasan Lingkungan*, (Jakarta: LP3ES, Sixth Edition, 1993), p. 9

damage although such legal instruments as UUPPLH have been applied as preventive and repressive efforts against the environmental sustainability of the threats and disturbances by public or businesses. In implementing progressive changes to the legal instrument in the form of UUPPLH, it is expected to minimize ecological risk caused by the impacts arising from development which does not consider the aspects of environmental sustainability. Furthermore, it should also be accompanied by the serious efforts of the state in the conduct of law enforcement against businesses causing environmental pollution and destruction. [1]

Various kinds of impacts are caused by development to the existence of environment. Then, the question is; can the legal instrument (UUPPLH) control the environmental problems in Indonesia? The answer to this question, in the viewpoint of Jawahir Thontowi, is that: [2] "set of laws is not enough if it is not accompanied by the government's political will as well as the problem of poverty".

Therefore, it can be concluded that environmentally sound sustainable development is one of the principles of environmental law in the context of national development, and the fundamental foundation and references which are essential in the effort to prevent pollution and environmental damage caused by the activities in the field of environmental management.

4.3. The Concept of Genetical Modification

Biotechnology has been known by mankind since thousands of years ago by using biological systems, living organisms or their derivatives to make or modify products or processes for specific purposes. Biotechnology is often used by farmers, namely modifying plants and animals through crossbreeding to obtain derivatives with the desired properties. In addition, biotechnology is also applied to fermentation technique in making bread, beer, and cheese. Biotechnology is performed with the hope to increase production and enhance food quality to meet the needs of human life.

Biotechnology develops along with the advance of human's sciences especially in the field of molecular biology. In the 1950s, scientists discovered the structure of DNA (deoxyribonucleic-acid) contained in the genes of every living creature / organism. Within this DNA, it contains genetic information which is the specific characteristics of an organism. This discovery opens up the possibility of modifiable genetic code of an organism to produce certain traits that cannot be produced by conventional breeding techniques. The modifications were done by cutting the strands of DNA from one organism and then attached into other organisms. This technique is called genetical modification. Scissors-and-stick technique is performed from one organism to another organism which are not even in one family, e.g. a fish into a tomato, men into pigs, bacteria into cotton and so on, which then produces a new organism which does not previously exist.[3] The organism resulted from this technique is known as Living Modified Organisms (LMOs) / Genetically Modified Organisms (GMOs). In Indonesian, it is called *Organisme Hasil Rekayasa Genetika* (OHRG), or more popularly referred to as transgenic. [4]

Many experts believe that the application of genetically modification is helpful in meeting the needs of human life, including providing future food needs with better quality; alternative renewable energy sources, such as biomass and biofuels that can replace conventional energy sources; better health care; more effective drugs; better agricultural efficiency and relatively less use of chemical pesticides. [5]

4.4. The Formulation of the Policy Regulation of the Minister of Agriculture No. 61/ Permentan/ OT.140/ 10/ 2011 on Testing, Assessment, Release and Withdrawal of the Varieties Which Are Responsive and Accommodative to Precautionary Principle in Environmental Protection and Management in Indonesia

The provisions of Article 28 paragraph H (1) and Article 33 paragraph (1-5) of the 1945 Constitution are the basic norms of environmental protection and management in Indonesia. Article 28 H paragraph (1) of the 1945 Constitution states: Anyone has the right to physically and spiritually prosperous living, residing, and get a good and healthy living environment and receive medical care, then Article 33 paragraph (1-5) of the 1945 Constitution states: *"(1) Economy is structured as a joint effort based on the principle of kinship. (2) The divisions of production which are important for the state and cover the welfare of many people are controlled by*

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[1]Sri Hastuti Puspitasari, *Pembangunan, Risiko Ekologis dan Perspektif Jender,* in Erman Rajagukguk and Ridwan Khairandy (Editor), *Hukum dan Lingkungan Hidup Indonesia,* Post-Graduate Program, Faculty of Law, University of Indonesia, Jakarta, 2001, p. 28.

[2]Jawahir Thontowi, *Krisis Lingkungan Sebagai Tantangan Global: Analisis Perbandingan Aturan Hukum Barat dan Hukum Islam,* in Erman Rajagukguk and Ridwan Khairandy (Editor), *Hukum dan Lingkungan Hidup Indonesia,* Post-Graduate Program, Faculty of Law, University of Indones, Jakarta, 2001, p. 75.

[3]For example, to get the tomatoes resistant to cold, it is conducted by cutting the anti-freeze gene in flounder fish, the fish is able to survive in the icy waters of the Arctic, and attaching them into the DNA of a tomato. The new breeds and tomatoes produced are able to withstand the freezing conditions and it means it has a longer growing season. See, YLKI, *Amankah? Yang Perlu Anda Ketahui tentang Makanan Rekayasa Genetika,* Jakarta, 2002, p. 12.

[4]Some people called it *Organisme Hasil Modifikasi Genetika* (OHMG).

[5]See, Ruth Mackenzie, et.al., *An Explanatory Guide to the Cartagena Protocol on Biosafety*, IUCN, Gland, Switzerland and Cambridge, UK, 2003, p. 8-10.

the state. (3) Earth and water and natural resources contained therein shall be controlled by the state and utilized for the welfare of the people. (4) National economy is organized based on economic democracy with the principle of togetherness, equitable efficiency, and sustainable, environmentally sound, independence and balancing economic progress and national unity. (5) Further provisions on the implementation of this article are set in the Law.

As the constitutional basis of the Republic of Indonesia, the 1945 Constitution NRI further states that natural resources are used to the maximum prosperity of the people. The prosperity must be utilized both by the present and future generations. the 1945 Constitution stipulates that development is not only the pursuit of outward prosperity or inward satisfaction alone but also the balance between the two. Environmental protection and management requires a balance of the system with integration as its main characteristic. This means that it is necessary to have a national policy for comprehensive environmental protection and management.

The Government of the Republic of Indonesia with the approval of the House of Representative enacted UUPPLH No. 32 of 2009. In UUPPLH, the arrangements regarding the precautionary principle can be found in Article 2 f of UUPPLH and its explanation. As the implementation of Article 2 f of UUPPLH on the precautionary principle, UUPPLH then set the obligations to implement the provisions of the EIA. Every business and/ or activities that impact on environment is regulated in Article 22 paragraph (1 and 2), Article 23 paragraph (1 and 2) of Article 24, 25, 26, 27, 28, 29, 30, 31 and 32 of UUPPLH . Article 22 paragraph (1 and 2) states: (1) every business and/ or activities that have an important impact on environment must have EIA. (2) The significant impacts are determined based on the following criteria: a. the number of residents who will be affected by a business plan and/ or activity; b. the width of affected area; c. intensity and duration of the impact; d. The number of other environmental components that will be affected; e. The cumulative nature of the impacts; f. reversibility or irreversibility of the impacts; and/ or g. other criteria in accordance with the development of science and technology.

Regarding the criteria of businesses and/ or activities having important impacts requiring the EIA, it is governed in Article 23 paragraph (1and 2). Article 23 paragraph (1and 2) states: (1) the criteria of businesses and/ or activities having important impacts with the obligation to be equipped with the EIA consist of: a. the transformation of the land shape and landscape; b. natural resources exploitation, both the renewable or unrenewable ones; c. the process and activities which potentially can cause pollution and/ or environmental damage and natural resources inefficiency and degradation in the utilization; d. the process and activities with the process that can influence environment, artificial environment, and social and cultural environment; f. the process and activities with the results that will influence the preservation of natural resource conservation area and/ or the protection of cultural conservation; g. the introduction of kinds of plants, animals, and microorganism; h. the making and the utilization of biological and non-biological materials; h. high risk activities and/ or influencing state defence; and/ or; i. the application of technology estimated to have great potential to influence environment. (2) Further provisions on the type of businesses and/ or activities with the obligation to be equipped by the EIA as stated in paragraph (1) is regulated in a Minister Regulation.

Article 24 of the EIA documents referred to in Article 22 is the basis for determining the environmental feasibility decision. Article 25 of EIA documents include: a. the study on the impact of business and/ or activity; b. evaluation to activities around the location of the business plan and/ or activity; c. feedback and public response to the business and/ or activity; d. estimation of the important scale and nature of the impact that occurs when a business plan and/ or the activity is carried out; e. holistic evaluation of the impact occurring to determine eligibility or ineligibility of the environment; and f. environmental management and monitoring plan.

In Article 26 paragraph (1), EIA documents referred to in Article 22 is prepared by the proponent for community involvement. In Paragraph (2), Community Involvement should be based on the principle of transparent and complete information and be notified before the project is implemented. In Paragraph (3), the Community as referred to in paragraph (1) shall include: a. the impacted one; b. environmentalists; and/ or c. affected for any kinds; d. decision in the EIA process. In Paragraph (4), the Communities as referred to in paragraph (1) may appeal to the EIA document. In Article 27, in preparing the EIA document, the proponent referred to in Article 26 paragraph (1) may request assistance to other party. In article 28 paragraph (1), the author of EIA as referred to in Article 26 paragraph (1) and Article 27 shall have a certificate of competence as EIA author. In Paragraph (2), the criteria for obtaining a certificate of competency as EIA author as described in paragraph (1) shall include: a. mastery of the methodology of the preparation of environmental impact analysis; b. ability to perform scoping, estimation, and impact evaluation as well as decision making; and c. ability to plan environmental management and monitoring. In Paragraph (2), the Certificate of EIA author competence as described in paragraph (1) shall be issued by the certification institution of EIA author competence determined by the Minister in accordance with the provisions of laws and regulations. (3) Further provisions on certification and competency criteria of EIA author are set by Minister Regulation.

In article 29 paragraph (1), EIA Documents are assessed by EIA Audit Commission established by the Minister, governor or regent/ mayor in accordance with their authority. (2) EIA Audit Commission is required to have a

license from minister, governor or regent / mayor in accordance with their authority. (3) The requirements and procedures of the license referred to in paragraph (2) are regulated by Minister Regulation. In article 30 paragraph (1), the membership of EIA Audit Commission as referred to in Article 29 shall consist of the representatives of the following elements: a. environmental agencies; b. relevant technical agencies; c. experts in the sciences related to the type of business and/ or activity being studied; d. experts in the sciences related to the impact of a business and/ or activity being studied; e. representatives of potentially affected communities; and f. environmental organizations. (2) In performing its duties, EIA Audit Commission is assisted by a technical team of independent experts who conduct technical studies and a secretariat is established for it. (3) independent experts and the secretariat referred to in paragraph (3) shall be determined by minister, governor or regent/ mayor in accordance with their authority.

Based on the assessment results of EIA Audit Commission, the Minister, governor or regent/ mayor establish an environmental eligibility or ineligibility decision in accordance with their authority. In Article 32 paragraph (1), Government and local authorities assists the preparation of environmental impact analysis for business and/ or activity for economically weak groups that have an important impact on the environment. (2) The support of EIA preparation as described in paragraph (1) is in the form of facilitation, costs, and/ or EIA preparation. (3) The criteria concerning economically weak business and/ or activity is regulated by law. In article 33, further provisions on EIA as referred to in Article 22 to Article 32 are stipulated in Government Regulation. The regulation of Article 22-32 of UUPPLH is an implementation of precautionary principle in environmental protection and management based on article 2f of UUPPLH.

Furthermore, in the field of environment, the Government issued the Government Regulation (PP) No. 27 of 2012 which particularly regulates the environmental permits. In PP No. 27 of 2012, the regulation on EIA is under Article 3 paragraph (1 and 2) of the Government Regulation (PP) No. 27 of 2012 which states: (1) Every business and/ or activities that have an important impact on the environment shall have the EIA, (2) Every business and/ or activity excluded in the EIA mandatory criteria referred to in paragraph (1) shall have the UKL-UPL.

As the operation of PP No. 27 of 2012, the Minister of Environment issued a Regulation of the Minister of Environment of the Republic of Indonesia No. 05 of 2012 on the Types of Business and/ or Activities Required to Have Environmental Impact Assessment, (State Gazette of the Republic of Indonesia No. 408 of 2012). Article 2 paragraph (1 and 2) of the Regulation of the Minister of Environment No. 5 of 2012 states: (1) Every Business and/ or activities that have an important impact on the environment shall have EIA. (2) the type of business plans and/ or activities required to have EIA as described in paragraph (1) are listed in Appendix I and an integral part of the Minister Regulation.

Furthermore, in the field of genetically modified products, the Indonesian Government issued the Government Regulation of the Republic of Indonesia No. 21 of 2005 on Biosafety Products of Genetically Modified Products. Article 3 and the explanation set the precautionary approach.

Moving on from the regulations regarding the precautionary principle in the Indonesian national law in Article 2 f of UUPPLH No. 32 of 2009 and the explanation, Article 3 and PP No. 21 of 2005 and the explanation, PP No. 27 of 2012 and the Regulation of the Minister of Environment of the Republic of Indonesia No. 05 of 2012, thet authors stands on the formulation of the precautionary principle in Permentan No. 61/ Permentan/ OT.140/ 10 /2011, UUPPLH No. 32 of 2009 and PP No. 21 of 2005, PP No. 27 of 2012 and the Regulation of the Minister of Environment of the Republic of Indonesia No. 05 of 2012 as follows:

1) In Chapter II of the General Provisions, Article 2 of Permentan No. 61/ Permentan/ OT.140/ 10/ 2011 states: *"This regulation is intended as a basis for the testing, evaluation, release and withdrawal of varieties, with the aim to provide protection and certainty for the excellence of varieties which do not harm the public, and/ or damage the environment".*

The author conducted a formulation of the provision by adding the word “based on precautionary principle” so that the formula turns into: *"This regulation is intended as a basis for the testing, evaluation, release and withdrawal of varieties, based on precautionary principle with the aim to provide protection and certainty for the excellence of varieties that do not harm the public, and / or damage the environment".*

2) The next formulation was to add the provisions of Article which did not previously exist, namely the addition of the formulation to the article governing the obligation of EIA, Environmental Risk Analysis, and environmental permits,

as follows: *"Prior to the implementation of testing, assessment, release and withdrawal of varieties, with the aim to provide protection and certainty for the excellence of varieties which do not harm the public, and/ or damage the environment, then previously it is ascertained that the activity in question has passed from the EIA, Environmental Risk Analysis, and environmental permit"*

3) The formulation added in Chapter IV of the RELEASE in Article 13 paragraph (3) g, is: “*The future varieties referred to in paragraph (1) may be released if they meet the following requirements: a. The plant pedigree includes the origin, name of parents, region of origin, name of the owner or inventor, the estimated age for*

annual crops or duration of spreading for the crops which have been developed in a community (local variety) and the breeding methods used; b. availability of obvious and complete description, to accurately identify and recognize the varieties; c. demonstrating the superiority to the comparison varieties; d. unique, uniform and stable; e. statement from the owner that the breeder seed is available both in sufficient quantity and quality for further propagation; and f. equipped with field test results across the locations and/ or laboratory.

The author added Article 13 paragraph (3) letter g with the formulation: "*g. has passed from the EIA, environmental risk analysis and environmental permit formulation*" so that the formulation is:*"The future varieties referred to in paragraph (1) may be released if they meet the following requirements: a. the plant pedigree includes the origin, name of parents, region of origin, name of the owner or inventor, the estimated age for annual crops or duration of spreading for the crops that have been developed in a community (local variety) and the breeding methods used; b. availability of obvious and complete description, to accurately identify and recognize the varieties; c. demonstrating the superiority of the comparison varieties; d. unique, uniform and stable; e. statement from the owner that the breeder seed is available both in sufficient quantity and quality for further propagation; f. Equipped with field test data across the locations and/ or laboratory; and g. has passed from the EIA, environmental risk analysis and environmental permits.*

4) In Chapter IV on the RELEASE, Article 13 paragraph (4) of Permentan, it says: "(4) For the introduced variety in addition to the requirements referred to in paragraph (3), it shall attach the permission of the owner of the variety". The author adde thed formulation of Article (4) which did not previously exist regulating the obligation to attach the EIA pass, Environmental Risk Analysis, and environmental permits, as follows: "For the introduced variety in addition to the requirements referred to in paragraph (3) it shall attach the permission from the owner of the variety, the EIA pass, Environmental permits and Environmental Risk Analysis, and the permission of the variety owner". Therefore, the formula is as follows: *"(3) The future varieties referred to in paragraph (1) may be released if they meet the following requirements a. the plant pedigree includes the origin, name of parents, region of origin, name of the owner or inventor, the estimated age for annual crops or duration of spreading for the crops that have been developed in a community (local variety) and the breeding methods used;1) availability of obvious and complete description, to accurately identify and recognize the varieties; 2) The comparison shows the superiority of the varieties; 3) unique, uniform and stable; 4) statement from the owner that the breeder seed is available both in sufficient quantity and quality for further propagation;5) Equipped with field test data across the locations and/ or laboratory; and 6) has passed from the EIA, environmental risk analysis and environmental permits. (4) For the introduced variety in addition to the requirements referred to in paragraph (3) it shall attach the permission from the owner of the variety, the EIA pass, Environmental permits and Environmental Risk Analysis, and the permission of the variety owner. (5) For the hybrid, in addition the requirements referred to in paragraph (3), the description of the parents must be attached ".*

The formulations of the articles above are expected to provide concrete solutions for the development of policies for the environmental protection and management in agriculture for variety excellence of genetically modified products which are responsive and accommodating to precautionary principle.

5. Conclusion

The formulation of the regulatory policy of the Minister of Agriculture No. 61/ Permentan/ OT.140/ 10/ 2011 on Testing, Assessment, Release and Withdrawal of responsive and accommodating varieties in environmental protection and management in Indonesia was carried out by considering the precautionary principle as set out in Article 2 f of UUPPLH and its explanation, and Article 3 of the Government Regulation (PP) No. 21 of 2005 and its explanation, as the implementation of the precautionary principle before conducting the activities of Assessment, Release and Withdrawal to the varieties which should have passed the EIA, Environmental Permits and Environmental Risk Analysis.

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