

LAW OF RESEARCH DEVELOPMENT AND UTILIZATION OF FOOD RESOURCES IN THE FRAMEWORK OF STRENGTHENING FOOD SECURITY

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Abstract

Food security is a multidimensional problem that covers economic, social and legal aspects. This economic problem arises from the existence of commodity aspects in food resources that correlate with the social conditions of the community related to research and use of food, also to the law which becomes the guiding rule in its function to protect the constitutional rights of research and use of food. In this paper, the research covers food availability and affordability, while utilization covers production to food consumption. Availability and affordability of food needs have been done through food diversification, among others by genetic engineering, which then at the utilization level will result in acceleration of the food security program. The interdisciplinary approach results a humanist legal concept of research and utilization by not leaving human aspects and the survival of biological resources, so that in the research and utilization of food resources the existence of life values cannot be reduced by commodity factors. The strengthening of research regulations and the utilization of food resources is carried out by constructing legislation at the level of applicable Government Regulations with the revitalization of the Food Security Institution at the regional level that performs the function of controlling and evaluating research and food resources in the regions within the frame of humanity and justice.

Keywords: endurance; food; natural resources

Abstrak

Ketahanan pangan adalah masalah multidimensi yang mencakup aspek ekonomi, sosial dan hukum. Masalah ekonomi ini muncul dari adanya aspek komoditas dalam sumber daya pangan yang berkorelasi dengan kondisi sosial masyarakat terkait dengan penelitian dan penggunaan pangan, juga hukum yang menjadi pedoman aturan dalam fungsinya untuk melindungi hak-hak konstitusional penelitian dan menggunakan makanan. Dalam makalah ini, penelitian mencakup ketersediaan dan keterjangkauan pangan, sedangkan pemanfaatan mencakup produksi untuk konsumsi makanan. Ketersediaan dan keterjangkauan kebutuhan pangan telah dilakukan melalui diversifikasi pangan, antara lain oleh rekayasa genetika, yang kemudian pada tingkat pemanfaatan akan menghasilkan percepatan program ketahanan pangan. Pendekatan interdisipliner menghasilkan konsep hukum humanis penelitian dan pemanfaatan dengan tidak meninggalkan aspek manusia dan kelangsungan hidup sumber daya hayati, sehingga dalam penelitian dan pemanfaatan sumber daya makanan keberadaan nilai-nilai kehidupan tidak dapat dikurangi oleh faktor-faktor komoditas. Penguatan peraturan penelitian dan pemanfaatan sumber daya makanan dilakukan dengan membangun undang-undang di tingkat Peraturan Pemerintah yang berlaku dengan revitalisasi Lembaga Ketahanan Pangan di tingkat daerah yang melakukan fungsi mengendalikan dan mengevaluasi penelitian dan sumber daya makanan di wilayah dalam bingkai kemanusiaan dan keadilan.

Kata kunci: ketahanan; pangan; sumber daya alam

Introduction

The essence of food security in Law 18/2019 on Food is a condition of adequate food for all people and countries, which can be seen in adequate food supply, both in quantity and quality, safe, diverse, sufficient nutrition, and affordable, as well as halal, and in accordance with the culture of the community, for a healthy, active and productive sustainable life. The terminology about food security includes elements of need and justice for life. Food security is a condition where food needs are fulfilled up to the individual level.

Related elements of the state's needs to individuals shows that food has a commodity value, there is always an element of supply and demand that has implications for economic growth that is in line with the development of food needs themselves. In the element of quantity and quality, it is closely correlated with food availability, food sovereignty, and

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standardization of food products. While justice has implications for the necessity of regulation in favor of the wider community, so that it brings benefits by referring to social justice for all Indonesian people.

The problem is that the typology of land in Indonesia is not the same between one region and another, even though in the mind set of people even in foreign countries, Indonesia is an agrarian country with abundant biological resources. This issue is inseparable from the increasing need for land to meet various development needs, which correlate with the conversion of agricultural land to be converted to other purposes. In Java, every year hundreds of thousands to millions of hectares of productive agricultural land are lost every year to fulfill development needs. Almost certainly big cities like Jakarta, Surabaya, almost certainly can not be found agricultural land.

The data in this paper is taken from a literature study on food security in East Kalimantan, especially the city of Samarinda, with the consideration that East Kalimantan is a vast province and has food resources in the form of biological resources. Samarinda City Food Security Index in 2018 was 82.56%, meaning that Samarinda was sufficient in terms of food security with the IKP indicators including: a) the results of a review of the global food security index, b) the level of sensitivity in measuring the situation of food and nutrition security), c) representation of 3 pillars of food security, d) availability of data has been available routinely for a certain period covering all districts of the city.

Corrugated natural topography with altitudes up to 1500 meters above sea level. Low areas are generally found in areas along rivers, while hilly and mountainous areas have slopes of up to 30%. This condition affects the potential of agricultural cultivation, but with its slope also triggers the possibility of erosion.² The development of agriculture, forestry husbandry and fisheries until 2013 experienced an expansion of 0.93%. The growth of the agricultural sector is also supported by lowland rice, dry field rice, and tubers. In the plantation sector, the production of Fresh Fruit Bunches and palm oil, which were previously the main commodities of East Kalimantan has slowed compared to the previous period.

Samarinda City Government has a commitment to support the policies of the Central Government and the Government of the Province of East Kalimantan in realizing the availability, affordability, and fulfillment of sufficient food needs, guaranteed safety, quality, and has balanced nutrition.³ The availability and affordability of food needs has been done through food diversification. Food diversification is an effort to reduce the need for rice and is replaced by non-rice food followed by the addition of food ingredients outside of rice. Diversification of food needs does not only involve basic food needs, in this case rice, but also types of food outside of rice, because in principle diversification is an effort to improve the quality of community nutrition in terms of quantity and quality, in the context of efforts to improve the quality of human resources.

Diversification is also implemented with a movement to switch to substitute (substitute) for staple foods. For example, because the land for rice farming is small, rice consumption can be replaced by cassava, sweet potatoes, corn, and others. The other side of this diversification effort is carried out in line with current technological trends, namely

² BPS Kalimantan Timur, 2013.

³ Renstra Dinas Ketahanan Pangan Samarinda 2016-2021.

genetic engineering, the purpose of which is utilization of biological breeding which will accelerate the food security program.⁴

Based on BPS data, the area of paddy fields in East Kalimantan in 2016 reached 62,062 hectares. Of this amount, an area of 13,225 hectares is irrigated rice fields, while the remaining 48,837 hectares are non-irrigated rice fields. The need for rice in the new capital can actually be met from South Kalimantan. But it is not expected to be able to meet the needs.⁵ The agricultural sector in the broad sense of East Kalimantan continues to be developed in order to strengthen food security, including food diversification through the development of agricultural commodities other than rice. Based on 2012 East Kalimantan BPS data, presentation of corn supply 46.67%, soybean 4.67%, peanut 10.97%, green beans 8.68%, cassava 147.87%, sweet potato 73.85%, vegetables 60, 08%, and fruits 83.01%. This BPS data shows the potential for horticulture that needs to be developed.

Samarinda City actually has potential food sources that can be developed, including: livestock, fish and mines. Meanwhile, there are also superior potentials that can predominantly support the city's economy, namely the services and trade sectors, the agricultural sector, and the plantation sector (in this case oil palm and other types of crops), industry, coal mining and so on.⁶

Food as a basic human need is actually the responsibility of the state to be required to realize the availability, affordability and fulfillment of sufficient, safe and quality food needs by utilizing local resources and culture. Human civilization is inseparable from the development of science and technology in various fields. Inadequate food needs due to changes in land use, both due to natural factors of the natural environment, as well as consideration of development, economic and geopolitical priorities, require regulation that is integral to one another, especially in terms of research and utilization of food resources.

Research Method

This research was conducted with a research method of juridical empirical approach, which is where the authors search, explore, and find facts and facts that exist in society by looking at the situation and conditions that occur. As well as integrating with the rules and legal norms in accordance with the issues raised by the author.⁷

Research Results And Discussion

Wiretrapping As A Criminal Act

Food Security is a multidimensional problem that covers economic, social and legal aspects. This economic problem arises due to the existence of commodity aspects in food resources which correlate with the social conditions of the community related to research and utilization of food, as well as to the law which becomes the guiding rule in its function of protecting the constitutional rights of research and utilization of food.

⁴ Bani Indonesia, 2013.

⁵ 'Pengamat Minta Pemerintah Pikirkan Ketahanan Pangan Di Ibu Kota Baru', *Katadata.Co.Id* <<https://katadata.co.id/berita/2020/01/15/pengamat-minta-pemerintah-pikirkan-ketahanan-pangan-di-ibu-kota-baru>>.

⁶ <<https://www.samarindakota.go.id/website/>> [accessed 10 February 2019].

⁷ Astra Yuli Satyarini Sukendar, Amanda Raissa, Tomy Michael, Pengurangan Pekerja Anak Perempuan Di Lingkungan Pondok Pesantren, Mizan: Jurnal Ilmu Hukum, Volume 8 Nomor 2, Desember 2019 ISSN : 2301-7295 e-ISSN : 2657-2494.

The central issue in this paper is about the law of research development and utilization of food resources. In this context, research development includes efforts to availability and affordability of food, while utilization, including production to food consumption. Law made justice. The justice of the law in the context of the law always subjected to refraction meaning.⁸ The perspective used is a legal perspective in the form of legal audits (regulations), related to research and utilization regulations, which examines what structures or bodies are needed to achieve the goal of increasing food security by referring to the humanist and just legal aspects. Because of the limitations and change of land functions not only in East Kalimantan, especially Samarinda City but also in various regions of Indonesia, alternative solutions to the problem of availability and affordability of food needs are carried out through food diversification, among others by genetic engineering, which then at the utilization level will produce acceleration of the food security program. In this case, the applicable law is expected to provide protection (social control instruments) as well as community renewal (social engineering) in responding to food security.

Based on the background explanation of the problem and restrictions related to the problems of developing food research and utilizing food resources, the problem is formulated as: What is the urgency of developing food research and utilizing food resources, especially in Samarinda, in order to fulfill food security?

Food Research

Terminology Research in this paper is a study that describes the results of an investigation of a phenomenon carried out systematically to produce a critical, logical, and scientific interpretation. Food research covers food availability and affordability efforts. Food availability and affordability as mandated in Act Number 18 of 2012 concerning Food is carried out by developing food production potential,⁹ by utilizing human, natural, scientific and technological resources. Legal protection as a constitutional right is guaranteed for the empowerment of farmers, fishermen, fish farmers, food producers.¹⁰ On the principle of availability, food diversification is the first choice, given that East Kalimantan has the potential to develop local food sources that are sourced from plants (vegetable) and animal. Samarinda has local biological resources that have the potential to be developed.

Food diversification is an attempt to support the availability of diverse food based on sources and culture,¹¹ a) stipulating norms for food diversity, b) optimizing food, c) Developing technology with incentive models for local food management businesses, d) introducing new food products, especially those that have not yet been empowered, e) developing diversification of agricultural and fisheries businesses, f) increasing seed accessibility and plant seeds, livestock, and fish, g) optimization in utilizing land, and especially in the plots of land, h) strengthening micro-economic, small-scale and medium-sized businesses, and i) developing all food-based sectors.¹²

Implementation of this Food Law, listed in the Strategic Targets of the Ministry of Agriculture with planned achievements in the 2015-2019 period is:

⁸ Tomy Michael, 'Humanity In The Enforcement Of Anti-Corruption Laws', *Jurnal Hukum Bisnis Bonum Commune*, 2.2 (2019), 211.

⁹ Article 16.

¹⁰ Article 17.

¹¹ Article 41.

¹² Article 42.

1. Fulfill the needs of rice, corn and soybeans, and increase meat and sugar production.
2. Increase food diversity.
3. Increase commodities by increasing value, competitiveness in meeting the needs of substitute export and import markets.
4. Provide the needs of bioindustry and bioenergy raw materials.
5. Increase the income of farmers and their families.
6. Improve the performance of government officials in an accountable manner.

In line with the development of food technology, the basis for developing food diversity is genetic engineering, a process related to the transfer of genes (carrier traits) from one species to another, or the same to obtain new species that can produce food products superior. Genetic engineering is an opportunity to make changes. Genetic engineering as a result of biotechnology is one of the strategic steps that can be taken to achieve food security, especially in agriculture, assembling seeds to produce optimal production. Basically, genetic engineering is a process in which a species of living species whose genetic material has been manipulated through a genetic engineering laboratory is referred to as a GMO or genetically modified organism (GMO) which has advantages compared to before. Genetic engineering is the transplantation of one gene into another gene, and can be carried out between genes and across genes in order to obtain products that are useful for the life of other creatures. At first, genetic engineering was carried out on plants to fulfill world food needs, in its development also applied to animals, then evolved in humans and other types of living things. Genetic engineering will produce Genetically Modified Food. Along with economic development and global industrial expansion into the country, food has diversified in a good form. Good in terms of accelerating harvest time, increasing the number of agricultural products, resistant to pests. Genetic engineering was initially applied to commercial plants that are much in demand, such as soybeans, corn, canola, and cotton. This engineering aims to be able to defend against pathogenic bacteria and herbicides and to obtain better nutrition. These engineered cattle have been developed, but until November 2013, no GMO cattle were sold on the market.¹³ Even though Indonesia has succeeded in genetic engineering, it still imports staples that are known to also be the result of genetic engineering from other countries, for example, chicken, cassava and potatoes.¹⁴

There is a scientific consensus that food derived from GMO crops actually poses no greater risk to human health than food that is normally consumed, but genetically engineered foods need to be tested before they are consumed by the public. Because maybe the public is still in doubt with the GMO food safety. With regard to these engineered foods, each country has different rules, there are countries that prohibit or limit their distribution, while other countries allow with different requirements between one country and another.

Some experts and certain community groups, indeed there are opinions that are pros and cons to the GMO. Those who agree that these foodstuffs are suitable for consumption with several reasons and propaganda, that there is unlimited potential in genetic engineering to reduce the use of pesticides, overcome food shortages, and produce more nutritious foods and medicines. Meanwhile, those who oppose or refuse are based on the reason that they are

¹³ Consumer FDA. 2009-03-06.

¹⁴ BPS, 2013.

generally not sure of the safety of the foodstuff for consumption because there are still negative impacts on health and the environment.¹⁵

Food research and development aims to ensure the availability of food, storage, processing and distribution of food in order to obtain quality food that is suitable for public consumption, namely by: a) making food products that have competitiveness, b) realization of breeding and assembly of superior varieties derived from plants, livestock and fish that are tolerant of biotic and abiotic stresses, are resistant to plant-disturbing organisms and animal disease outbreaks and are additive to climate change, c) engineering and technological innovation and biological systems (plants, animals and fish), d) post-harvest technology and institutional innovation engineering, processing and marketing, food business development and enrichment of nutrient composition of food that is safe for consumption.¹⁶

Genetic engineering can also be used to prevent the threat of food production caused by climate change, the attack of organisms that can interfere with biological resources in the form of plants and animals, tackling plant and animal diseases, degradation of resources and water, land use change, even disincentives the economy. Substantially the rules on Research in the Food Law provide general constitutional rights that still need special regulation, especially at the regional level of regulation considering the different topography, socio-economic conditions, geo-strategy and geopolitics.

The use of genetic engineering in plants and animals intended for humans, should pay attention to the humanist aspect, meaning that in any research that uses human research subjects must first prioritize human safety in every trial. Human safety includes: the value of human life both biologically and socially Biologically meaning to protect humans from illness and instrumentalization of organs, humans are free from impaired physiological functions of the body and soul as a whole, can overcome the effects of side effects of trials. Sociologically, it means that humans experience an increase in the quality of life to be prosperous. In their DNA. If food products are to be consumed, they should be tested on humans. Simply put, starch flour can be further modified to make modified starch.¹⁷ Making also aims to fulfill certain commodities, including the manufacture of sugar in processed foods. For example: Maltodextrin, a mildly hydrolyzed starch product that functions as a soft filler and thickener, glucose syrup, also called corn syrup in the US, thick solution is used as a sweetener and thickener in various types of processed foods. Dextrose, commercial glucose, high fructose syrup, sugar alcohols, such as maltitol, erythritol, sorbitol, mannitol and are sweeteners made by reducing sugars but by genetic engineering methods. Likewise, genetically modified livestock.¹⁸

This research certainly requires a long time. While the food industry requires the shortest amount of time for product utilization. Responding to this, as in the Ministry of Health Regulation 66 years. 2013 on Organizing Clinical Research Registration, all research

¹⁵ Dano E, 'Potential Socio- Economic, Cultural and Ethical Impacts of GMOs: Prospects for Socio-Economic Impact Assessment', *TWN (ISBN: 978-983-2729-23-5), 3th World Network, Penang Malaysia, 2007*, 32.

¹⁶ Article 118.

¹⁷ K. F. Gotlieb and A. Capelle, *Starch Derivatization: Fascinating and Unique Industrial Opportunities*, Wageningen Academic Publishers, 2005.

¹⁸ 'Adoption of Genetically Engineered Crops in the U.S.', *Economic Research Service, USDA*.

involving humans must have ethical clearance. But related to the diversification of traditional food preparations that are done simply, but the results are consumed by the community, there is still a legal vacuum, so it needs to be set forth in the form of local regulations, bearing in mind that in each district/city there is a great deal of biodiversity that is usually processed and valued for commodities. Samarinda has biological resources such as Langsat Water, Lai, Lahung, Melati. In the animal sector there are Pesut and Nunukan Chicken. This species is a commodity that must also be guarded, maintained and preveilege with biological breeding. This means that this species should be developed with new technology without leaving the purity of biological seeds.

Genetic research food is actually appropriate if done for areas that require food availability continues to increase, while the addition of food ingredients through extensification is not possible given the limited availability of land. As in cities outside of Java, such as Kalimantan, especially Samarinda, it is impossible to pay attention to the topography of the city of Samarinda in meeting food needs in order to maintain food security through expansion of agricultural resistance or extension of agricultural land. Because with a slope of land that reaches 30 degrees it seems impossible to plant rice, if forced to plant rice it would not produce maximum rice. In addition, the average agriculture on the island of Kalimantan, especially in the city of Samarinda, agricultural land uses irrigation with a rain-fed system. So that the planting period and the harvest period can only be done in the rainy season. For this reason, the development of food research in obtaining food diversification through Genetically Engineered Food, may be worth considering, in order to obtain quality food ingredients in adequate quantities, and can accelerate the fulfillment of their needs. Because with Genetically Engineered Food, it is very possible to obtain a diversity of new types of food that are good to both quality, quantity, and shorter planting periods. Of course it must be understood that food research requires support from the central government and local governments, both the support of infrastructure, experts, laboratories, experimental land, as well as in terms of funding. Because without the support of these needs it is impossible for this food research to produce food diversification as expected. In addition, food research also requires institutional support and regulatory support is needed in order to provide guarantees for the protection of the results of research and food development and the utilization of biological natural resources. The importance of legal protection for food research including its results is very necessary to avoid and prevent claims from other parties on the results of food research. Protection of the results of food research is at the same time a form of appreciation for the labors of researchers with substantial financial support and research facilities. In addition, this regulation is also in the context of appreciation for researchers who have contributed their energy and thoughts to the interests of the community, nation and state.

Research development should be able to protect, facilitate, and provide facilities and infrastructure to improve the quality of human life, especially after the research is conducted. To supervise the results of genetically engineered food products, the Genetic Engineering Product Biosafety Commission was formed based on the Republic of Indonesia's Presidential Regulation Number 39 Year 2010 concerning the Biosafety Safety Commission for Genetically Engineered Products. Rules as the implementation of Law Number 21 Year

2004 concerning Ratification of the Cartagena Protocol on Biosafety to the Convention on Biological Diversity. KKH PRG is an independent institution based in Jakarta. The existence of KKG PRG seems to need to be reviewed, especially to form organs in the area, so that local processed products are not simply lost by the current of the times. The formation of KKG PRG is based on the consideration that local food has the potential to develop in accordance with local wisdom.

Food Utilization

Food utilization includes production to food consumption with the aim of accelerating the food security program. The law provides protection for the stabilization of supplies and prices of basic food to protect people's income and purchasing power. Efforts are made through a) fixing food prices at producer level, b) fixing food prices at the consumer level, c) regulating distribution, d) regulating exports and imports of food ingredients, e) making Local Food Products that can substitute Staple Food with vitamin content and other substances in it, f) optimize the utilization of land, water, climate and genetic substances, g) produce recommendations for national development policies.¹⁹

At the consumption level, there are anticipatory measures, namely: a) promotion of diversity of food ingredients, b) increasing the knowledge and awareness of consumers to consume a variety of foods with the principle of balanced nutrition, c) increasing local food processing skills, and d) developing and disseminating appropriate technology for local food processing.²⁰ Improved biotechnology will provide opportunities in the development of food production and commodities in Samarinda City.

Food research and development can involve international organizations both independently and in collaboration²¹ managed by the government and the private sector. Foreigners and biological researchers for commercial purposes are required to provide royalties.²² This rule is very important for its application so as to prevent a monopoly on research projects and the use of genetic engineering. Collaboration with companies at the downstream level should also be based on environmental maintenance. The humanist (justice) side and justice should be heeded with management oriented to biological breeding and guarding against exploitation.

Furthermore, the Government facilitates and provides protection for intellectual property against the results of research and development of food, especially for superior local food.²³ Globalization has broken down boundaries between countries, so that the possibility of sharing products, sharing profits, exchanging local food products can occur. So the effort that can be done is by giving Intellectual Property Rights to researchers and food products. The controlling model is regulated in articles 108 to 112 of Law Number. 18/2012 by the government, but the Law does not yet stipulate the oversight function is specifically accounted for by local government organs. There is a Food Information System Regulation (Articles 113-116) used for planning, monitoring evaluation, stabilizing supply and prices, as well as an early warning system for food problems and food and nutrition insecurity.²⁴

¹⁹ Article 56.

²⁰ Article 62.

²¹ Article 120.

²² Article 123.

²³ Article 124.

²⁴ Article 114.

This control (controlling model) is the focus of efforts in the field of food utilization. Cultural regulations, lifestyle are influenced by many external factors, given that economically and geopolitically, Samarinda City as the capital of East Kalimantan Province with an area of 718.23 KM² covers 10 Districts in the priority of development programs in the service sector (especially retail services), property and processing industry. This position absorbs food culture from various regions and influences the orientation towards food. Especially the consumptive culture and food hedonism by global business actors who often neglect traditional food in their various products.

On the other hand, food security is also supported by a growing awareness that traditional food has the wisdom value that is worthy of being confirmed as Indonesian food. This has the consequence of the existence of Intellectual Property Rights from researchers and feed processors from upstream to downstream, from raw materials, raw materials, to packaging products. White Paper The Direction of Samarinda City Development Policy 2016-2021, the direction of Samarinda City's vision as: The realization of Samarinda City as a Metropolitan City that is competitive and environmentally friendly. The oversight function of research development and resource utilization is at least in line with nutrition and food quality standards. In the processing to food distribution, it always takes into account the sustainable impact on the environment (ecological environment) both on biological and non-biological sustainability.

At the level of research development, ethical clearance is required, which contains recommendations for research feasibility and environmental sustainability. At the level of utilization, it requires the Food Management Information System, the protection of biodiversity, especially for superior local resources. In the context of protecting this biodiversity law, Law Number 29 of 2000 concerning Protection of Plant Varieties (PVP), guarantees the protection of plant varieties for beginners. Furthermore, to provide protection for the research and utilization of food resources, at the regional level, it is necessary to have an independent institution as a supervisor, namely the Regional Genetic Engineering Product Safety Commission, which is authorized to provide input and integrate with the Regional Food Security Agency in overseeing the utilization of food resources, resulting in an increase in quality that supports the availability, affordability, and increasing food security. The membership and authority of the Commission in this area is based on Regional Regulations.

Conclusion

Food security is a multidimensional problem, which is closely related to East Kalimantan being the choice of the State Capital Transfer Plan. Land limitations and land use change are not reasons for degradation of food security, because alternatives to food diversification and use of biotechnology can support food security at the regional and national levels. There are economic and social implications is a natural thing, because food research related to biological resources basically has a commodity value. There needs to be a controlling model with an integrated system between the Department of Food Security, the Department of Health, the Department of Industry and the Department of the Environment, particularly in the field of genetic engineering, to anticipate the misuse of biological resources, (ecological environment), so that the whole can further enhance resilience

Indonesian food. This was realized through the establishment of the Regional Institute for Biosafety of Genetically Engineered Products, the revitalization of the function of the Regional Food Security Institution as an extension of the Central Government and the spearhead of food product supervision. Technically, the Regional Food Security Institution conducts supervision and provides action on recommendations from the Regional Biodiversity Commission. The existence and authority are regulated in a Regional Regulation.

Regulation on research development and utilization of food resources has reached the point of urgency to be immediately implemented at the level of Regional Regulations. For the needs of efficiency, effectiveness, neutrality and quality control (supervision) Quality control, there needs to be a revitalization of the functions of the Biodiversity Monitoring Commission in the area of Genetic Engineering and Utilization at the regional level. This commission is independent in nature which has the authority to provide recommendations to the Regional Defense Institution in matters: a) recommendations for the feasibility of food research in the regions, b) issuing certificates of safety research results for food research and the impact of environmental industries, c) recommendations for the use of genetically modified food products. These three things will be followed up in synergy by the Health Office (Center for Drug and Food Control) and the Department of Industry in terms of issuing food product safety certification. The next suggestion is that the development of food research should not eliminate the potential of local food products, which instead become superior food products.

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