

## BALANCE BETWEEN THE ECONOMY AND THE ENVIRONMENT

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### Abstract

Economy and environment are variables contained in the principles of sustainable development which underlie legal regulations related to the environment in various countries in the world. Nevertheless, there is still environmental pollution and damage that occurs, such as air pollution caused by industrial activities from fertilizer factories that produce ammonia-based fertilizer which pollutes the air in residential areas around the factory, which shows an imbalance between the economy and the environment. On the one hand, this economic activity is an effort aimed at creating community welfare, but on the other hand, this activity causes disruption to the community in obtaining a good living environment. The results of this research show that ammonia gas is a compound produced from the fertilizer industry process which is toxic and pollutes the environment. Ammonia is a poisonous gas, colorless and has a distinctive odor which can cause problems with human health and even death. However, the ammonia gas that spreads to residential areas around the factory is caused by wind blowing towards the settlement and this is not dangerous, because the wind blows the levels of ammonia gas to decrease. However, the presence of an ammonia-based fertilizer factory does not necessarily mean that society is free from the threat of this gas, because there have been several incidents of ammonia gas leaks in various parts of the world which have caused material losses and claimed many lives.

**Keywords:** Economy, Environment, Pollution

## INTRODUCTION

Indonesia is one of the countries in the world that adheres to a mixed economic system, which is harmonized with Pancasila as the basic norm and the 1945 Constitution as the constitution or the highest source of law applicable in the Republic of Indonesia, in which in this economic system power and freedom go hand in hand but at different levels, depending on the power in power. The role of the state in the economy is not only to act as a supervisor, but also to participate as a business actor in economic activities. The role of the state as a business actor boils down to Article 33 paragraph 2 of the 1945 Constitution which mandates that the branch of production that is not only important for the state, but also related to the interests of people's lives is quasi-controlled by the state. Based on these provisions, the state through the government can act as a legal subject carrying out economic activities by forming a business entity called a State-Owned Enterprise, and henceforth called a state-owned enterprise.

SOEs are a company, either wholly or wholly owned by the state, which has two forms that can be distinguished based on their objectives whose provisions are regulated in Law Number 19 of 2003 concerning State-Owned Enterprises. SOEs that aim to provide goods and services for the public interest are in the form of Public Companies (PERUM) while SOEs that aim to pursue profits are in the form of Sero Companies (PERSERO). In addition to the goals mentioned earlier, SOEs have other objectives, namely to contribute to the national economy in general and specifically as one of the sources of state revenue, to become pioneers of business activities that have not been touched by the private sector, and to foster small businesses and cooperatives.

PT. Pupuk Kujang Cikampek (Persero) is a state-owned enterprise which is one of the subsidiaries of PT. Pupuk Indonesia, which is engaged in the production of chemical fertilizers in Indonesia, is located in Cikampek District, Karawang Regency, West Java Province. PT. Kujang Cikampek Fertilizer is a fertilizer producer that markets its products to farmers with marketing areas, especially West Java Province in fulfilling Public Service Obligation (PSO) obligations for subsidized fertilizer products and other customers for non-subsistence products. PT. Pupuk Kujang Cikampek has an important role in the Indonesian economy in terms of supporting the national food security and sovereignty program, so that PT. Kujang Cikampek Fertilizer is designated as a National Vital Object based on the Decree of the Minister of Industry of the Republic of Indonesia Number 466/M-IND/Kep/12/2014 concerning Amendments to the Decree of the Minister of Industry Number 620/M-IND/Kep/12/2012 concerning National Vital Objects of the Industrial Sector.

The decision of the Minister of Industry shows that the presence of PT. Kujang Cikampek fertilizer has a positive impact on the Indonesian economy, especially in supporting the food sector, by producing fertilizers that are needed and affordable in terms of price by farmers, especially in the West Java Province area. But on the other hand, the presence of PT. Kujang Cikampek Fertilizer has a negative impact in terms of environmental pollution, which is felt by the people of Central Dawuan Village, Cikampek District, Karawang Regency, who live adjacent to the PT. Kujang Fertilizer. They complained about air pollution, in the form of the smell of ammonia gas produced by the factory, as a result of the production of ammonia-based fertilizers. Often people complain about the smell that is very annoying, but this situation is still felt by the people living around the factory, without any solution either from the company, or from the local Environmental Agency.

The above problem illustrates the occurrence of an imbalance between the government's efforts through SOEs in improving the country's economy for the welfare of the community, but on the other hand these efforts have a negative impact on the community, namely the occurrence of air pollution due to these efforts. So it is interesting for us (the author), to study and analyze these environmental problems to be reviewed from the perspective of environmental law with the title Balance Between the Economy and the Environment Linked to Law No. 32 of 2009 concerning Environmental Protection and Management.

## RESEARCH METHOD

This research is located in Central Dawuan Village, Cikampek District, Karawang Regency and is a qualitative research with an empirical juridical approach method. The reason the author uses this method is because the main data used is primary data, namely data obtained based on field studies, through interviews with PT. Pupuk Kujang Cikampek and the community who live close to the location of the PT. Pupuk Kujang Cikampek and its supporting data are secondary data, namely in the form of data obtained based on literature studies. Meanwhile, the specifications in this study are descriptive analytical which aims to provide a detailed, systematic and thorough overview of the problems discussed and analyze the data obtained to answer problems related to the Balance Between the Economy and the Environment linked to Law No. 32 of 2009 concerning Environmental Protection and Management.

## RESULTS AND DISCUSSION

According to Musselman, Economics as quoted by Irma Nilasari and Sri Wiludjeng is a study related to efforts to meet unlimited human needs by using limited resources. Meanwhile, M. Manulang in Abdul Manan defines the economy as a study of people's efforts to obtain welfare. Where welfare is a state of the needs of goods and services that human beings need have been met. Based on these two definitions, it can be concluded that economic activities are activities related to the fulfillment of goods and services for the community with the aim of creating welfare. This is in accordance with the goal of the Indonesian nation as stated in the preamble to the Constitution of the Republic of Indonesia in 1945, which is to promote public welfare. Economic activities in Indonesia are sourced from the provisions of Article 33 of the Constitution of the Republic of Indonesia of 1945 and in the provisions of paragraph 4 of the Article as described in the previous introduction that Indonesia adheres to a mixed economic system which means that in the economic system the state participates as a private joint business actor on the other hand in the fulfillment of goods and services for the community through various business sectors such as industry, services, trade by forming SOEs as an extension of the government based on the principle of togetherness.

Indonesia's economic activities in national development efforts are not enough to be realized only through the principle of togetherness, but there are several other principles that are no less important such as the principle of environmental insight. In the context of national development, there needs to be synchronization between development and environmental insight in order to create a balance between economic activities and the environment, because in every development activity, of course, it not only has a positive impact, but also a negative impact on the environment, so this is important to be realized for the realization of sustainable development. Sustainable development is a concept that became a topic of discussion at the United Nations Conference on the Environment held on June 5-16 in 1972 in Stockholm, Sweden, which suggested that development be carried out with consideration for environmental factors. This conference places the theme of sustainable development as a fundamental issue in facing future development challenges.

The concept of sustainable development became increasingly popular in the 1980s in the World Conservation strategy which is associated with the issue of natural resource conservation and its implications in environmental management and human rights. The concept of sustainable development was then studied in depth at the UN summit attended by 154 member countries in Rio de Janeiro, Brazil on June 3-14, 1992, which outlined fundamental principles about the environment and development. According to Koesnadi Hadjasoemantri, two main results were obtained from the Rio Conference, namely: first, the Rio Conference has very accurately linked two key meanings, namely the development of the entire earth and environmental protection. Second, the path traveled has now been illuminated by a new light, namely the spirit of Rio which includes three dimensions, namely the intellectual dimension, the economic dimension and the political dimension.

In Indonesia, the term sustainable development was officially first published in Article 1 number 3 of Law No. 23 of 1997 concerning Environmental Management, which states that "sustainable development is a conscious and planned effort that integrates environmental, social, and economic aspects into development strategies to ensure the integrity of the environment as well as the safety, capability, welfare, and quality of life of current and future generations". In 2009, the law related to the environment underwent changes with the promulgation of Law No. 32 of 2009 concerning Environmental Protection and Management as well as repealing Law No. 23 of 1997 but did not change the meaning of sustainable development.

Sustainable development is a principled development process that meets the needs of the present without sacrificing the fulfillment of the needs of future generations. Nowadays, the issue of sustainable development has been made an important issue that needs to be continuously socialized in the community. Emil Salim argues that sustainable development aims to improve people's welfare, to meet human needs and aspirations. Sustainable development is essentially aimed at seeking equitable development between generations in the present and future. According to the Ministry of Environment, development, which is basically more economically oriented, can be measured in terms of sustainability based on three criteria. Namely: (1) There is no waste of natural resources or depletion of natural resources; (2) No pollution and other environmental impacts; (3) The activity must be able to increase usable resources or replaceable resources.

Although the concept of sustainable development has become an agreement and one of the principles that underlie laws and regulations related to the environment in various countries around the world, in practice, pollution and environmental damage still continue to this day. The occurrence of pollution and environmental damage certainly brings various negative impacts on the environment itself and also of course for people whose environment is polluted. According to Takdir Rahmadi, there are at least 4 (four) factors that cause environmental problems, including: (1) Development and

application of technology in various sectors such as industry, agriculture, transportation, communication and others; (2) Population Growth that causes continuous land clearing; (3) Economic motives as a driving force for human behavior related to the use of common property; (4) The prevailing value system places man at the center of everything in the universe.

Nowadays, one of the forms of environmental destruction that generally occurs is air pollution due to industrial sector activities. Air pollution according to Article 1 number 49 of Government Regulation No. 20 of 2021 concerning the Implementation of Environmental Protection and Management is defined as the entry or inclusion of substances, energy, and/or other components into the Ambient Air by human activities so that it exceeds the Ambient Air Quality Standards that have been set. As well as air pollution that is often complained about by residents of Central Dawuan Village, Cikampek District, Karawang Regency, who live around or near the PT. Kujang fertilizer is in the form of an ammonia gas aroma produced by the factory, as a result of the production of ammonia-based fertilizer. Based on the results of a survey through an interview method on March 22, 2024, with one of the residents of Central Dawuan Village named Rizky Satria, he stated that he often smelled the smell of ammonia gas sourced from a very strong fertilizer factory, making it difficult to breathe, making his eyes feel sore, and even feeling nauseous.

Ammonia is one of the compounds produced from the fertilizer industry process which is toxic and pollutes the environment. Ammonia is a toxic, colorless, and odorous gas. There are effects that can be caused by exposure to ammonia gas that varies, depending on the level, which can be seen from the following table:

**Table 1. Impact of Ammonia Gas on Human Health in General**

<b>Ammonia Content (ppm)</b>	<b>Effects on Humans</b>
0.5-1.0 ppm	The smell began to smell
25-50 ppm	Odors can be marked, generally slightly impactful
50-100 ppm	Resulting in mild irritation of the eyes, nose and throat, tolerance can occur in 1-2 weeks without any impact
140 ppm	Causes moderate irritation to the eyes, does not cause more severe effects for less than 2 hours
400 ppm	Causes intermediate irritation of the throat
500 ppm	It is a level that has a direct harmful impact on health
700 ppm	Intermediate level of harm to the eyes
1000 ppm	Direct impact on the respiratory tract
1700 ppm	Causes laryngo spasm
2500- 5000 ppm	Resulting in necrosis and tissue damage to the surface tissues of the respiratory tract, pain in the chest, pulmonary edema and bronchospasm
5000 ppm	Fatal, can result in sudden death

Ammonia is a dangerous, colorless, sharp-smelling gas, and can be detected at low concentrations of 1-5 ppm. Its composition in clean air is  $1 \times 10^{-6}\%$ . Ammonia enters the human body through inhalation, oral, skin and/or eyes. The respiratory tract, especially the upper part, can be damaged due to inhalation from ammonia gas, resulting in respiratory problems. In low concentrations, ammonia is already very toxic. The toxicity of ammonia that can cause death is  $>500$  ppm. Ammonia that enters through breathing will be absorbed by the lungs. Then ammonia will bind to the blood in the lungs. Small gases and particles will enter the lungs then the circulatory system will absorb and distribute throughout the body while large particles will survive in the upper respiratory tract. Swelling will arise in the respiratory tract affected by ammonia until it narrows. This causes disruption of human breathing. Mucociliaries and the body's immune cells cannot excrete all exposure to inhaled harmful gases so that it will cause a reaction in the respiratory system and damage to the

mucociliary clearance mechanism. If the mucous tract is aroused with ammonia, it will secrete. The secretion will inhibit breathing and cause shortness of breath. Bleeding in the respiratory tract can occur if the arousal tissue is damaged and blood can come out with the cough. The gas can also cause cardiopulmonary resuscitation, difficulty breathing and difficulty getting oxygen.

Exposure to ammonia in high concentrations can cause effects such as burning on the skin, eyes, throat, and respiratory distress complaints. Meanwhile, chronic effects, at >350 ppm levels can cause kidney damage, lung damage, reduced brain growth and dysfunction as well as decreased blood values, where decreased blood values can interfere with human physiological processes. Complaints of respiratory disorders can be in the form of: coughing, coughing up phlegm, wheezing or wheezing, shortness of breath, chest pain, flu and cough accompanied by flu. Generally, respiratory distress begins with respiratory complaints and mild symptoms. In the course of the disease, the symptoms may become more severe, as they get worse, it can cause respiratory failure until death. The most common symptom felt is coughing. Small foreign objects such as dust, smoke, and gas are the most common causes of coughing. Shortness of breath is a condition where a person has a rapid breathing frequency because they feel like they cannot breathe air freely. Chest pain or chest pain is a pain, ache or pressure that attacks the chest can be felt from the shoulder to the ribs. Wheezing breath is a sound produced when air flows through a narrowed airway. This narrowing can be caused by mucus secretion that is trapped inside the airway or narrowed airway muscles or tightening around the airways.

Based on an interview on March 25, 2024 with one of the staff or employees of PT. Kujang Fertilizer in the K3 section named X, he stated that the average level of ammonia gas at the PT. Kujang Fertilizer is only 65 ppm with the threshold being no more than 125 ppm. Furthermore, he explained that the ammonia gas that spreads to the residential area around the factory is caused by wind gusts that lead to settlements and this is not dangerous, because the wind gusts make the levels of the ammonia gas decrease and so far there have been no complaints from the surrounding community who complain of chronic diseases due to exposure to the ammonia gas. This is in accordance with the results of research conducted by Dinda Dwi Firmansyah that wind speed also affects the distribution of Ammonia gas (NH<sub>3</sub>), the concentration or level of Ammonia gas (NH<sub>3</sub>) will decrease if the wind is strong. Strong wind speeds will carry pollutants everywhere and will distribute pollutants horizontally and perpendicularly.

However, this does not mean that PT. Kujang Fertilizer as a fertilizer producer made of ammonia gas is free from the threat of ammonia gas leakage. As well as incidents of leaking ammonia storage tanks have occurred in various parts of the world and have resulted in material losses and even fatalities. In 1989 in the United States, 22.5 tons of ammonia escaped from a frozen pizza factory causing a cloud of steam along 24 city blocks to evacuate more than 50 residents to hospitals with respiratory problems. In 2013, there was also an explosion of a fertilizer factory in western Texas that released dangerous ammonia gas along 80 km that hit population centers and schools with more than 100 people sick. In 2016, in Bangladesh, there was an explosion of a 500-ton ammonia tank due to overpressure at a Di-ammonium Phosphate Factory Limited (DAP-1) plant on the south bank of the Karnaphuli River. This explosion caused a cloud of toxic ammonia vapor to spread up to several kilometers carried by the wind, causing about 250 people to experience respiratory problems and 50 people to experience dizziness and eye irritation. In 2019, there was also an explosion in Egypt from a storage tank full of ammonia with a capacity of about 400,000 tons at the Ain el Shokha fertilizer plant. In this incident, it was reported that 10 workers died and 5 people were rushed home, 2 of whom died of respiratory distress.

## CONCLUSION

The balance between the economy and the environment is a variable contained in the principles of sustainable development which aims to ensure the safety, ability and welfare and quality of life of current and future generations. Although the concept of sustainable development has become an agreement and one of the principles that underlie laws and regulations related to the environment in various countries around the world, in practice, pollution and environmental damage still continue to this day. As is the case with air pollution that occurs as a result of the use of technology by companies that produce fertilizers to support a country's food security and sovereignty program. Nevertheless, the pollution is still tolerable if reviewed from both a legal and health point of view and all efforts will certainly continue to be made by the company to be able to reduce the negative impact of the presence of an industry in line with the development of knowledge and technology, as a form of responsibility from the company.

**REFERENCES**

- Abdul Manan, Peran Hukum Dalam Pembangunan Ekonomi, Prenadamedia Group, Jakarta, 2014.
- Abdulkadir Muhammad, Hukum Perusahaan Indonesia, PT. Citra Aditya Bakti, Bandung, 2010.
- Aldillah Herlambang, et.al, Analisis Risiko Kuantitatif Akibat Terjadinya Kebocoran Tangki Penyimpanan Amonia Pabrik PUSRI IIB, *Journal of Science, Technology and Visual Culture*, Volume 3, No. 2, 2023.
- Andinni Aurelia Justiani, Hubungan Paparan Gas Ammonia Terhadap Gangguan Pernapasan Pada Pekerja Peternakan Ayam, *Jurnal Medika Utama*, Volume 2, No. 2, Januari, 2021.
- Dinda Dwi Firmansyah, et.al, Analisis Risiko Pajanan Gas Ammonia (NH<sub>3</sub>) Pada Pekerja Pabrik Ammonia Di Pt. Petrokimia Gresik, *Gema Lingkungan Kesehatan*, Volume 18, No. 1, 2020.
- Dinny Kartika, Analisis Kandungan Amoniak Dalam Limbah Outlet KPPL PT. Pupuk Iskandar Muda (PIM) Lhokseumawe, *Quimica: Jurnal Kimia Sains Dan Terapan*, Volume 1, No. 2, Oktober, 2019: 6-11.
- Gatot P. Soemartono, Hukum Lingkungan Indonesia, Sinar Grafika, Jakarta, 2004.
- <https://bappeda.bulelengkab.go.id/informasi/detail/artikel/pembangunan-ekonomi-dalam-konsep-pembangunan-berkelanjutan-68>.
- <https://bappeda.bulelengkab.go.id/informasi/detail/artikel/pembangunan-berkelanjutan-1>.
- <https://unnes.ac.id/feb/menciptakan-pembangunan-ekonomi-yang-berwawasan-lingkungan/>
- <https://www.liputan6.com/hot/read/5170478/profil-pt-pupuk-kujang-salah-satu-anak-perusahaan-pupuk-indonesia>.
- Irma Nilasari dan Sri Wiludjeng, Pengantar Binis, Graha Ilmu, Yogyakarta, 2006.
- Keputusan Menteri Perindustrian Republik Indonesia Nomor 466/M-IND/Kep/12/2014 Tentang Perubahan Atas Keputusan Menteri Perindustrian Nomor 620/M-IND/Kep/12/2012 Tentang Objek Vital Nasional Sektor Industri.
- Morais Barakati, Perspektif Konsep Hukum Hak Asasi Manusia Dalam Mewujudkan Pembangunan Lingkungan Hidup Yang Berkelanjutan, *Lex Et Societati*, Volume 3, No. 8, September, 2015.
- Muhamad Said Is, Hukum Persaingan Usaha Di Indonesia, Setara Press, Malang, 2016.
- Nurhayani Lubis, Tesis: Analisis Risiko Kesehatan Lingkungan Paparan Gas Amoniak (NH<sub>3</sub>) Terhadap Gangguan Infeksi Saluran Pernapasan Akut (ISPA) Disekitar Tempat Pembuangan Akhir (TPA) Kecamatan Medan Marelan Kota Medan Tahun 2018, Fakultas Kesehatan Masyarakat, Universitas Sumatera Utara Medan, 2018.
- Peraturan Pemerintah No. 20 Tahun 2021 Tentang Penyelenggaraan Perlindungan Dan Pengelolaan Lingkungan Hidup.
- Suardi, Problematika Penerapan Prinsip Sustainable Development Dalam Pengelolaan Lingkungan Hidup Dan Implikasinya Terhadap Pemenuhan HAM, *Fiat Justisia Jurnal Ilmu Hukum*, Volume 8, No. 4, Oktober-Desember, 2014.
- Takdir Rahmadi, Hukum Lingkungan Di Indonesia, PT. Rajagrafindo Persada, Depok, 2018.
- Undang-Undang Dasar Negara Republik Indonesia Tahun 1945.
- Undang-Undang No. 23 Tahun 1997 tentang Pengelolaan Lingkungan Hidup.
- Undang-Undang No. 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup.