

REVITALIZATION POLICY TO OVERCOME THE CLIMATE CRISIS POST COVID PANDEMIC-19

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ABSTRACT

The climate crisis due to carbon emissions contributes greatly to the loss of human life expectancy. Restrictions on industrial and transportation activities during the pandemic covid-19 period have had an effect on reducing levels of emissions in the air, because industry and transportation are contributors to global emissions. Post-pandemic, the world is again faced with a climate crisis. Mitigation and adaptation policies to the effects of the climate crisis must be carried out continuously. This paper reflects the policies in Indonesia in overcoming the impact of the climate crisis before the co-19 pandemic and the revitalization of post-pandemic policies, which are currently forgotten for a moment. Revitalization of the policy is focused on land-based mitigation and renewable energy. Climate change adaptation is done through strengthening the capacity of local communities and institutions. The community is not only involved in supporting formality, but directly involved in reducing the climate crisis.

Keywords: Revitalization, Policy, Climate Crisis.

INTRODUCTION

The corona virus pandemic (covid-19) has a large impact on the economy, but has a positive effect on the environment, which is a positive influence on global air pollution. The amount of carbon emissions decreases dramatically in the air, when the industry is not operating and transportation is not running, due to a policy that requires people to work and live at home during the pandemic to break the virus transmission chain. In the early 2020s, which began the pandemic, BBC Future reported that “air pollution levels were reduced in New York by 50 percent, in China emissions were reduced by 25 percent. Compared to 2019, in 337 cities in China air quality rose by 11.4, percent because factories close and coal usage in China's six largest power plants has dropped by 40 percent”.

Astronomers using the Tropomi instrument in shooting ground surfaces from the Copernicus Sentinel-5P satellite, between January 1 and March 11, 2020, showed a decrease in nitrogen dioxide emissions (exhaust emissions from motor vehicles and industrial fumes) in the European sky. Clause Zehner said “although there may be variations in data due to cloud cover and weather changes, it is believed that emissions reductions occur simultaneously with lockdowns in Italy. Likewise, satellite imagery shows pollution levels that dropped dramatically when China declared lockdown due to the spread of the corona virus.” This is confirmed by research by Marshall Burke (Stanford University), who did some calculations regarding the reduction of air pollution in several regions in China. Kimberly Nicholas (Lund University in Sweden) analyzed that the policy of limiting the movement of its citizens, the carbon emission number decreased, because transportation as a contributor to 23 percent of total global carbon emissions. Land and air transportation are the main contributors to emissions of around 72 percent, while greenhouse gases and gas emissions contribute 11 percent.

In Indonesia, the National Aeronautics and Space Administration compares air quality conditions in western Indonesia. The results were published that “the western regions of Indonesia such as Sumatra, Kalimantan and Java look cleaner in 2020 compared to the previous year. There is a change in air quality (PM10 particulate matter) in the West Indonesia Region during the corona virus pandemic” (Lia Hutasoit, 2019). Whereas in Jakarta, a study conducted by the Leaded Petrol Elimination Committee, from March 16 to 25, 2020, in general, air quality was categorized as unhealthy with a concentration of PM2.5 (an average of 44.55 $\mu\text{g}/\text{m}^3$). Air pollution could not be lowered yet. The concentration, despite the policy of the Provincial Government of DKI Jakarta to conduct physical distancing to suppress the corona virus pandemic for more than one week.

The corona virus, which first broke out in Wuhan, Hubei Province, China in December 2019, killed thousands of people. When this article was compiled, the death toll from covid-19 continued to increase worldwide. Based on research, when compared to deaths due to pandemics, deaths due to air pollution allow for deaths in greater numbers. Burke argues, that “conservatively, it is very likely that lives saved locally from reducing pollution will outweigh deaths due to covid-19. Given the large amount of evidence that breathing dirty air contributes greatly to premature death. Burke believes that reducing pollution has saved the lives of 4,000 children under 5 years and 73,000 adults over 70 years in China. That's significantly more than the current number of global deaths from the corona virus”. Research shows that “air pollution costs three years, out of the average global life expectancy. The number of deaths and loss of life expectancy from air pollution rivals the effects of smoking tobacco and is far higher than other causes of death”.

Among other Asian countries, Indonesia has a high level of pollutants, the main cause of which is the excessive use of petroleum fuels. Based on the report of the Secretariat of the Head of the Jakarta National Climate Change Council, a study was produced that “during the 1990s, vehicle fuel consumption was estimated to produce more than three-quarters of sulfur dioxide and nitrogen dioxide, 90 percent of carbon monoxide and two-thirds of particulate emissions. In 1998, for Jakarta, the economic cost of outdoor air pollution was estimated at around 181 billion dollars. In 2006, the results of a study estimated health costs due to air pollution to reach 1.2 percent of GDP, or around 3.4 billion dollars per year due to environmental damage”. Learning from this experience, in 2006, Indonesia adopted a policy of eliminating lead content from gasoline. Lead has a negative impact on health, especially affecting the development of children. In Indonesia, forest/land use and increasing use of fossil fuels are relatively large emitters of greenhouse gases. Land is one of the most essential aspects of human needs, etc., as stated in the 1945 Constitution article 33 paragraph (3) states that the State controls the earth, water and natural resources (Natasha Marcella Geovanny, 2019). The main emission contributor to fossil fuels is oil. Likewise, emissions from the use of coal for electricity generation have increased most rapidly. It is understood that over-reliance on fossil fuel energy resources has a negative impact on the environment. Therefore policies are directed at sectors which include transportation, land/forest use, power generation and manufacturing.

Throughout history, even before the industrial era, like the pandemic in December 2019, such as the black plague in Europe in the 14th century and the smallpox epidemic in South America in the 16th century, these events affected the levels of carbon dioxide in the atmosphere. Where at the time of the pandemic, emission levels were reduced. This is due to reduced industrial activity, as a contributor to carbon emissions, which has an effect equivalent to transportation activities. So that when combined, emissions from industrial processes,

manufacturing and construction accounted for 18.4 percent of global emissions originating from human activities. Likewise when the economic crisis occurred in 2008-2009, there was a decrease in emission levels of up to 1.3 percent, but when the economy recovered In 2010, emissions figures rebounded, reaching even the highest in history. Pongratz believes “there are signs that the current corona virus pandemic will result in the same thing. This is because demand for products made from oil, iron and metals has decreased, but at the same time, the stock of raw materials is still very high, so production can immediately follow”.

Various pandemics cause complex global problems and have long-term impacts on environmental sustainability. Environment is a combination of physical conditions that include the state of natural resources such as land, water, solar energy, minerals, and flora and fauna that grow on land and in the ocean, with institutions that include policies in managing the physical environment (La Ode Angga & Hasan Suat, 2019). The crisis happened because of the paralysis of all industrial and economic activities, but it has a good effect on the climate. One of climate problem is climate change. Climate change is a global phenomenon caused by natural variability or as a result of human activities such as fossil fuel use in large scale (coal, oil and natural gas), land use change (clearing land for logging, farming and agriculture), activity over land uses and forestry, and consumerism (Shinta Wahyu Purnama Sari & Widya Krulinasari, 2015)

Pandemics cause humans to forget for a moment about the climate crisis. Nowadays humans are busy thinking about how to save their lives. After the covid-19 pandemic, the climate crisis is still a problem that has not ended. Some of the policies that have been carried out before the pandemic have to be revitalized. Need to revive important policies that have been ignored for a moment.

Indonesia has been working through policies to reduce the climate crisis, but until now the policy has not been able to balance and harmonize development in the economic field while reducing the environmental crisis. There are other things that have been forgotten to reduce the climate crisis. There are aspects of modern life that are absolutely necessary or sidelined to reduce the climate crisis together. The purpose of writing this article is to explore the Indonesian government's policies in dealing with the effects of the climate crisis and provide an overview of policies that must be carried out after the co-19 pandemic.

RESEARCH METHODS

This research used secondary data. Secondary data were obtained from literature, journals, some regulations, articles on the website related to the discussion of this paper. Data were analyzed by content analysis method. This analysis method was undertaken to examine documents in text form to understand their meaning, significance and relevance.

DISCUSSION

Policies to Reduce the Impact of Climate Change in Indonesia

Indonesia has implemented various policies to address the rate of global warming. After the 13th party conference of the United Nations Framework Convention on Climate Change (UNFCCC) in Bali in December 2007, a high-level meeting on climate change, a study was prepared to determine low carbon development policies without ignoring development goals.

There are two main aspects to dealing with the issue of climate change. When referring to the Convention on Climate Change, these two aspects are mitigation and adaptation to climate

change. Mitigation is “various active actions to prevent or slow down climate change or global warming and reduce the impact of climate change or global warming.” Adaptation is “defined as an effort to adapt to a changing climate system, by reducing the impact or risk of climate change.” Indonesia is one of the countries that has felt the effects of climate change, since the early stages of government policy directed to take mitigation and adaptation measures.

In Indonesia, the transportation sector is the largest user of petroleum and the largest source of greenhouse gas (GHG) emissions. It is calculated that GHG emissions will increase if there is no significant action. Based on the Secretariat Report of the Head of the National Council on Climate Change, that “the government is faced with various options for mitigating GHG from the transportation sector. Further efforts are directed at improving vehicle technology by applying stricter standards on vehicles and fuel”. Strategies are carried out in an integrated manner which includes tightening vehicle standards and emissions, improving technology and improving fiscal costs. Reducing greenhouse gases can enhance fuel savings from motor vehicles.

Several policies were carried out, hoping to be an effective way to improve energy security and also improve the welfare of the people of Indonesia. The policies are:

- a. A simple way to reduce air pollution is to decline the use of fuels that can cause greenhouse gas emissions. For this reason, a policy on emission standards and fuel specifications is used.
- b. Consumers are encouraged to support the reduction of vehicle emissions used. Therefore a policy was established through the restructuring of the taxation system for vehicles, through the provision of incentives based on the level of emissions or consumption of fuel used on consumer vehicles.
- c. Motorized vehicles sold in Indonesia must use the CO₂ emission label, so consumers who will buy a vehicle can consider their decision. d. Policies for managing public transportation in the form of fast bus transportation (ie TransJakarta Busway or buses with other names in several major cities in Indonesia), expanded rail transportation services, the use of non-motorized transportation, and the use of alternative fuels.

A number of policies are also regulated in the form of legislation, with the aim of providing binding norms and solving the complexity of problems arising from the modern transportation system. In the regulation, an exemption is made namely “tax exemption for vehicles for special purposes such as public vehicles, hospitals, fire departments, state protocols, military and motorcycles with engine sizes up to 250 cc. Rates vary according to class, weight and size of vehicle engine”.

At the regional level, an effort to overcome the increase in motorized vehicles is the provincial government determining levies on annual vehicle registration. Annual vehicle fees are calculated based on the sale value of the vehicle, vehicle class and engine size. This policy is the main source of regional income, which on average accounts for 25 percent of provincial tax revenue. The area also imposes a progressive vehicle ownership tax. Progressive vehicle ownership tax is imposed by levying a higher tax on second and third vehicles owned by the same person.

In general, the tax system that has been implemented has not solved the problem of environmentally friendly transportation. The imposition of new vehicle tariffs when produced, is not based on emissions certification or the level of vehicle fuel consumption. In addition it is necessary to apply vehicle use tax, if you want to reduce emissions. More and more fuel is used, if the distance goes further. The distance traveled will affect the emissions produced. Since 2003, emissions control programs have been associated with European standards, namely “The Euro 2 standard requires that gasoline be free of lead-containing additives because lead destroys

catalytic converters (exhaust filters that reduce exhaust emissions by up to 90 percent).” starting January 1, 2005, based on the Decree of the Minister of Environment No. 141 of 2003, requires that “all new vehicles sold in Indonesia must meet Euro 2 standards. On January 1, 2007, lead-containing gasoline is gradually abolished throughout Indonesia. In 2006, 24 percent of new petrol vehicles sold in Indonesia met Euro 2 standards, and in 2007, all new petrol vehicles sold in Indonesia complied with Euro 2 standards according to the decision of the Chairman of the Gaikindo (Association of Indonesian Automotive Industries) (Abdurahman, 2008).

The transportation policy framework considers the efficiency and sustainability of its energy policies, where there is a balance between the environment, economy and social. The National Development Planning Agency (Bappenas) (National Development Planning Agency, 2009) explained that “the importance of fossil fuels and minerals in Indonesia's development while taking into account the risks of sustainable growth in Indonesia. The relatively low energy consumption per capita and high energy intensity shows that in Indonesia the level of welfare is still low and the use of energy is inefficient.” The policy is also directed at reducing health problems due to air pollution. Funds for reducing health costs due to the effects of air pollution can be used for other activities.

So far the policy has been focused on the efficiency of fuel use and reducing emissions by maintaining fuel quality, but the results have not been maximized. There are several causes of obstruction in increasing vehicle efficiency from time to time, so the policies that have been rolled out are still considered unsuccessful. In Indonesia, there is a fleet of vehicles growing rapidly and low prices of fuel oil products for transportation. The growth of the vehicle fleet is due to people's lifestyle and the ease in which people own motorized vehicles with credit schemes. Low fuel prices due to government subsidies.

Based on the description above, Indonesia has applied a policy to reduce air pollution, but so far the efforts made have not been enough to reduce the climate crisis. Mattias Finger (Finger, 2006) believes that “the environmental crisis that occurred was at least caused by a number of things, among other things because the policy undertaken failed. or inappropriate, inefficient and destructive application of technology, low political commitment, ideology and ideas from the government towards environmental crises, deviant actions and behavior from state actors, a lifestyle of consumerism and individualism, and individuals who are not guided well”.

Policies to reduce the climate crisis in general try to balance between the implementation of economic development and reduce the impact of economic activities. From a number of opinions Mattias, humans as individuals or communities have a primary role to reduce the impact of climate change.

Reducing the impact of climate change is not only strengthened by regulations or a set of mechanisms, but human awareness is needed as the main actor in climate change (Deni Bram, 2011) Deni cites Kaplow and Shavell's opinion that “in discussing issues which concern law and economics, it is questionable whether a regulation affects a person's behavior? and whether the influence is in accordance with what is desired by the regulations? So it needs to be reformulated the process of formulating provisions that can provide efficient results and simplify the implementation process by relying on economic assumptions.” Several studies have shown that human awareness or commitment as the main actor can reduce air pollution. Satoshi Fuji (Kyoto University of Japan) found that in 2001 a government policy was implemented to close the private lane. This situation has forced people to use public transportation. Sometime later, the private car lane was reopened, but people were accustomed to using public transportation, and abandoned the use of private vehicles. In 2018, the Swiss Government implemented a policy

requiring people to use bicycles with access to e-bikes and prohibit them from driving private cars. Corinne Moser (Swiss University of Zurich Applied Sciences) found that after the policy was canceled, they were comfortable cycling and used their private cars less often.

Covid-19 Post Pandemic Environmental Policy

Based on records from the United Nations Environment Program (UNEP), there are seven focuses the world must take to reduce the impact of climate change, namely agriculture and food, building and urban development, energy, energy financing, forests and land use, transportation. The seven focuses that can reduce the impacts of climate change are summarized as follows:

1. Global food transformation is needed, starting with a healthy lifestyle and reducing food waste. Food availability and fair food distribution will be realized with agricultural governance. Therefore there needs to be incentives for agriculture.
2. Population growth in an area caused by migration, environmentally friendly buildings and construction are needed, because currently available buildings and constructions contribute 39 percent of carbon dioxide emissions.
3. Education is important for women to the highest level, because educated women will program their fertile period to have fewer children, be healthier, increase global access, and run family planning.
4. Stop the development of coal-fired power plants and invest in renewable energy and create jobs in renewable energy. Energy efficiency standards are needed for electrical equipment and the transition to electrical equipment labeled efficiency.
5. Assistance for poor countries to adapt to climate change. Renewable energy and energy efficiency projects in developing countries can significantly reduce emissions, if industrialized countries are willing to mobilize climate funding worth US \$ 100 billion per year.
6. Tropical forests must be protected and restored from damage. Efforts that can be made are planting one trillion trees. To do this, it is necessary to increase investments that halve tropical deforestation by 2020, stop deforestation by 2030 globally. Need to plant more trees on agricultural land and pastures, as well as peatland restoration.
7. Carbon dioxide emissions from motor vehicles are responsible for about a quarter of all carbon dioxide emissions. It is estimated that by 2050 it will enhance to one third.

Policies need to reduce emissions significantly, for example applying vehicle efficiency standards, incentives for non-emission transportation and investing in non-motorized mobility, and prioritizing policies that help divert goods from road to rail. In line with UNEP's record of reducing the impacts of climate change, Indonesia through Bappenas is implementing a low carbon development plan. This plan aims to realize economic growth while maintaining environmental quality. The program is carried out through the Indonesia Climate Change Trust Fund (ICCTF), which is land-based mitigation, energy-based mitigation and strengthening the capacity of residents and local institutions to adapt to climate change. Land-based mitigation needs to be undertaken because there has been a change in land use and land use changes. Forest cover has been declined in size, for example research in Merangin District, Jambi Province. Deforestation and forest degradation occur along with various types of land use that are more economically oriented. Mitigation carried out in the National Park, has the largest impact on reducing emissions by around 33 percent of the reference level, with a possible 6 percent (Deni Bramv et al., 2014) reduction in the economic impact of land use.

Forest cover will also be reduced if there is a forest fire due to negligence or willfulness, such as on peatlands in West Kalimantan. To overcome this, communities are included in forest management, through community-based forest management, through the Village Forest and

Community Forest, or Customary Forest schemes. The acceleration of the addition of carbon stocks is carried out in the area of Community Forests, Village Forests, Community Forests and Community Plantation Forests. Based on its function, forests are classified into three types, namely Conservation Forests, Protection Forests, and Production Forests (Deni Bram, 2018).

The village was included as a village assisted by the Village Forest (Padu Banjar Village, Penjataan, Nipah Kuning, Pemangkat, Kumbang Island in Simpang Hilir District, Kayong Utara Regency, West Kalimantan). The community manages peatlands to be more productive, and directly plays an active role in combating forest fires and more specifically peatlands.

Legal norms (local laws and regulations) as part of land-based mitigation, are prepared to provide legal certainty and justice for the community. Government policies to encourage investment in Indonesia, cause problems, for example Government Regulation No.104 of 2015 concerning Procedures for Changing the Purpose and Function of Forest Areas, where companies engaged in plantations are allowed to use forest areas with conservation and/or protection functions for plantations during a cycle of staple crops.

This regulation was issued to legalize the licensing and activities of plantations in forest areas with production functions, subsequently extended to forest areas for conservation and protection functions.

Energy based mitigation is undertaken through the use of renewable energy. Utilization of renewable energy is still relatively small and the amount of funding needed, it is necessary to develop massively.

Local communities and institutions are reinforced so they can adapt to climate change. The regional government has accelerated the establishment or confirmation of forest areas. Strengthening village institutions starting from the Village Government, Village Representative Body, Village Owned Enterprises in supporting the protection and restoration of forest and peat areas through green village development planning and village spatial planning that has a climate change perspective or Climate Village Program.

Customary law communities are established along with their customary management areas, such as in East Kalimantan. The Provincial Government of East Kalimantan conducts identification, verification and validation, as well as the establishment of customary law communities, along with their customary management areas. This was confirmed by the drafting of the East Kalimantan Regional Regulation No. 1 of 2015 concerning the Guidelines on the Recognition and Protection of Indigenous and Tribal Peoples in East Kalimantan. Pemerintah daerah memiliki kewenangan penetapan tanah wilayah, berdasarkan wilayah kewenangannya, serta melakukan peningkatan kapasitas masyarakat hukum adat, kearifan lokal dan pengetahuan tradisional. Strengthening local communities and their institutions, in the form of training. Training activities in the context of providing skills for residents of Wonoasri village, which is a buffer village of Meru Betiri National Park. The training on making silage or fermented animal feed is based on the fact that many residents of Wonoasri Village have a livestock business, besides farming and gardening. The existence of this training is expected to prevent farmers from finding food from the Meru Betiri National Park area. Empowering communities around the forest. By providing skills for the residents of Wonosari Village so that they no longer encroach Meru Betiri National Park such as the cultivation of the angkrang ant, making silage, making batik with natural dyes and other skills.

CONCLUSION

Revitalization of policies to reduce the impact of the climate crisis in Indonesia is carried out through schemes to decline the conversion of forest and land functions, use renewable energy and involve the community in social forestry schemes. Communities including indigenous peoples are given reinforcement either individually, in groups or institutions to adapt to climate change. The compilation of legal norms for implementing policies must be based on ecological justice, so that no laws and regulations are found that ignore environmental sustainability only for economic purposes.

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