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THE ROLE OF UNFCCC ON GLOBAL CLIMATE CHANGE ISSUES AND THEIR EFFECTS ON MARINE CONSERVATION IN INDONESIA: A Review

Ratu Balqist Priesty Higina Satriawan

[1] Post Graduate Program Marine Conservation, Faculty of Fisheries and Marine Sciences, Padjadjaran University,

Bandung - Sumedang KM.21 Jatinangor 45363, Indonesia

E-mail address: ratu21012@mail.unpad.ac.id

ABSTRACT

Climate change is a global phenomenon that occurs due to human activities. Aware of the importance of environmental issues, especially the impact of climate change, the United Nations has formed multilateral cooperation, namely the UNFCCC (United Nations Framework Convention on Climate Change) to stabilize the concentration of greenhouse gases that trigger global warming. In its development, the UNFCCC succeeded in producing a new protocol and agreement that became an integral part of the UNFCCC, namely the Kyoto Protocol and the Paris Agreement. In Indonesia, efforts to mitigate the impact of climate change are to maintain mangrove and seagrass ecosystems on the coast through the development of Marine Protected Areas that can prevent the impact of problems due to climate change and coastal pollution, as well as maintain marine biota and coastal fishery areas.

***Keywords*:**
Agreement, Climate, Indonesia, Protocol, UNFCCC

1. INTRODUCTION

Climate change is currently the most serious environmental problem in recent years. Climate change is a global phenomenon that occurs due to human activities. The dominant cause of this phenomenon is the use of fossil fuels and land clearing efforts which are ultimately carried out through deforestation or forest fires that damage natural sustainability. These activities result in the accumulation of gases in the atmosphere which has properties such as glass which transmits short wave radiation or sunlight but also absorbs and reflects longwave radiation or radiation produced by the earth which is hot so that the earth's temperature increases. The gases that surround the Earth's atmosphere include Carbon Dioxide (CO^2), Methane (CH^4), and Nitrous Oxide (N^2O). This situation raises problems for

countries around the world, this results in the presence of various threats to various sectors of human life.

Some examples of impacts that occur are the occurrence of the sea-level rise where the increase in the 20th century was 0.17 meters. Geological observations indicate that the sea level rise in the previous 2000 years was much less than the sea level rise in the 20th century. In addition, there is a phenomenon of inequality in water availability where water conditions are increasing but the distribution is not evenly distributed as well as the phenomenon of melting glaciers and an increase in the average temperature. on the arctic continent

Aware of the importance of environmental issues, especially the impact of climate change or commonly called Climate Change, on May 9, 1992, the United Nations (United Nations) held a High-Level Conference in Rio de Janeiro, Brazil. Through the conference, multilateral cooperation was formed, namely the UNFCCC (United Nations Framework Convention on Climate Change) to stabilize the concentration of greenhouse gases that trigger global warming.

The purpose of writing this review journal is to provide readers with an overview of the role of the UNFCCC on the issue of global climate change and its impact on marine conservation in Indonesia.

2. CLIMATE CHANGE

Climate change is defined as a change in climate patterns caused primarily by greenhouse gas emissions. Greenhouse gas emissions cause heat to be trapped by the Earth's atmosphere, and this has been the main driving force behind global warming. The main sources of these emissions are natural systems and human activities. Natural systems include forest fires, earthquakes, oceans, wetlands, mud volcanoes, and volcanoes (Yue and Gao 2018), while human activities are mostly related to energy production, industrial activities, and those related to forestry, land use, and land-use change. (Edenhofer et al. 2015).

Climate change is a global phenomenon that has a serious impact on marine ecosystems. Climate change can pose major risks to human health, global food security, and economic development. Actions to reduce emissions are very important and urgent to take to avoid the dangers of climate change.

Sea level rise related to climate change occurs due to two main causes, namely an increase in average temperature due to warmer and expanding seawater volumes, and the melting of glaciers and land-covered ice in Antarctica and Greenland. In addition, the hydrological cycle on land due to climate diversity and anthropogenic factors also has an impact on the rise and fall of run-off, thus affecting changes in sea level.

Climate change will result in a decrease in water availability, changes in crop productivity, loss of biodiversity which is an invaluable asset owned by Indonesia. Climate change will have an impact on health, mortality, food security, migration patterns, natural ecosystems, and economic well-being, both at local, national, and international levels.

Adaptation is very important to do to face the risks of climate change. The degree of adaptation required depends on the success of mitigation activities. Communities can adapt by preparing for some of the risks of climate change, but this alone is not enough. The main mitigation of climate change is the reduction of greenhouse gas emissions which is carried out simultaneously by all countries in the world.

3. UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)

The UNFCCC creates an overall framework for meeting the challenges of climate change. The target of the convention is to stabilize GHG concentrations at a level that can avoid damage to the climate system.

Since the enactment of the United Nations Framework Convention on Climate Change (UNFCCC) in 1994, the position of the UNFCCC as framework treaties allows for other complementary legal instruments that cannot be separated such as protocols, attachments, and other forms of agreements to negotiate, add to or revise the initial agreement. . The set of agreements resulted in a climate change regime. With the entry into force of the Climate Change Convention, the Conferences of the Parties (COP) begins, which functions to bring together parties who have agreed on various UNFCCC commitments and follow-ups.

In its development, the UNFCCC succeeded in producing a new protocol and agreement that became an integral part of the UNFCCC, namely the Kyoto Protocol and the Paris Agreement.

3.1 UNFCCC 1992

In 1992 the Earth Summit Conference was held in Rio de Janeiro Brazil 3-14 June, this conference was attended by 117 countries and 2400 representatives from various NGOs and INGOs. This conference aims to invite all parties to work together to build and realize sustainable clean development because they can no longer depend only on developed countries who are required to care. There were several big points discussed in this conference such as controlling fuel use, reducing excessive use of resources, fighting environmental destruction (over-logging, pollution, forest burning), developing biotechnology, protecting animals and flora, fighting poverty, and maintaining and improving the quality of life. live the world. Based on long research on the influence of human activities on the environment, Earth Summit shows the scientific facts of environmental damage in various parts of the world. The existence of research supported by these facts is expected to be able to open the eyes of triggering a sense of concern for the environment for all parties participating in the Earth Summit.

The UNFCCC seeks to reduce the effects of climate change by reducing greenhouse gas levels. The UNFCCC can ask ratifying countries to collect and distribute information on greenhouse gases, make laws to reduce greenhouse gas production, and cooperate with other countries to prepare for the effects of climate change. So that the UNFCCC can also ask developed countries to help developing countries in the form of finance, research, and technology to develop related to reducing the effects of climate change. The UNFCCC is active and started working in 1994 after 197 ratifications.

3.2 Kyoto Protocol 1997

In 1997 the third Conference of Parties (COP) was held in Kyoto, Japan where the Kyoto Protocol was born, the Kyoto Protocol is an extension or continuation of the UNFCCC, both of which have the same basic goal of reducing emission levels and reducing the effects of climate change. The Kyoto Protocol targets to reduce the world's emission levels by 5% below the emission standard in 1990 and decrease the earth's temperature by 0.28º-0.53°, this effort will start from 2008-2012.

There are 3 categories of countries that are divided by the rules and mechanisms of the 1997 Kyoto Protocol, namely:

a) Annex I or the category of developed industrialized countries (America, Japan, Russia, European Union, Turkey, and 37 other countries) with a total of 43 countries, Annex I countries are obliged to reduce emission or GHG production by 5%.

b) Annex II, namely developed countries that are members of international economic organizations that are obliged to pay or help financially to developing countries in environmental and emission issues, there are 24 countries included in annex II and I (European Union, Japan, Turkey, Australia, America, and 20 other countries).

c) non-Annex countries, namely developing countries or third world countries, the category of non-Annex countries will receive financial assistance from Annex II category countries in dealing with environmental and emission issues.

To help industrialized countries achieve their targets and promote sustainable development in developing countries, the Kyoto Protocol adopted 3 innovation mechanisms, namely Clean Development Mechanism, Joint Implementation, and Emissions Trading.

The Kyoto Protocol became active in February 2005 after Russia agreed to ratify it in November 2004, Russia's ratification marked the fulfillment of the minimum 55% requirement of participants so that the protocol could enter into force.

3.3 Paris Agreement 2015

The 1992 UNFCCC objective was to stabilize greenhouse gases to a level that would not harm the global climate system. To achieve the goals of the 1992 UNFCCC, it is necessary to follow up through legally binding instruments in the form of amendments and protocols. Some of the tools achieved to implement the UNFCCC include the 1997 Kyoto Protocol, the 2012 Doha Amendment, and the 2015 Paris Agreement.

The 2015 Paris Agreement has been successfully adopted by more than 156 countries. The results achieved at least have succeeded in showing the most important directions for future development, especially in the framework of low-carbon sustainable development. The successful adoption of the 2015 Paris Agreement is important to follow up on the 1997 Kyoto Protocol with a different approach, namely the application of the principle of "application for all". Compared to the 1997 Kyoto Protocol, the 2015 Paris Agreement reflects wider participation and guarantees developed countries to remain committed to reducing emissions by 2030 so that they are not more than 2 degrees Celsius and maintain an average of 1.5 degrees Celsius Earth's temperature.

Although the 1997 Kyoto Protocol in its implementation, especially the Commitment II period (2013-2020) has been abandoned by several countries such as Russia, Japan, and Canada, optimism for the future climate change regime is maintained with the 2015 Paris Agreement as a result of the 21st UNFCCC COP.

The 2015 Paris Agreement is one of the most possible solutions in the future to deal with the impacts of climate change due to the firmness of including to hold global temperatures below 2 degrees Celsius. On the other hand, the 2015 Paris Agreement is not the only solution in solving climate change because many other alternative solutions must be developed by all parties.

4. THE EFFECT OF UNFCCC ON MARINE CONSERVATION IN INDONESIA

So far, marine issues have not been seriously discussed in various climate change conferences. The discussion focuses more on causes and impacts on land. However, this began to change after the 2015 COP-21 which resulted in the Paris Agreement where the

issue of the sea began to be taken into account as part of handling the impacts of climate change.

As a country that lies on the equator, Indonesia is a country that is vulnerable to the impacts of climate change. According to Matthew Huelsenbeck (2012), Indonesia is ranked 9th out of 10 countries most vulnerable to food security threats due to the impact of climate change on fisheries. Indonesia is also ranked 23 out of the 50 countries most vulnerable to food security threats from the impacts of climate change and ocean acidification on the availability of marine products.

One of the impacts that occur as a result of climate change in the sea is the phenomenon of ocean acidification which will cause a decrease in the production of fisheries and other marine products which are a source of food as well as an important livelihood, especially for coastal communities.

Another thing that needs attention is the extreme waves caused by tropical cyclones. The direct impact of tropical cyclones is an increase in wave intensity in Indonesian waters which are directly adjacent to the Indian Ocean, Pacific Ocean, South China Sea, and Australian waters. Some of the tropical cyclones that occur in Indonesia are cyclone Cempaka and cyclone dahlia.

Efforts to adapt to climate change have been carried out in Indonesia, especially related to the resilience of coastal communities such as fishermen, marine tourism, and the use of hybrid solutions for coastal protection. Coastal ecosystems have widely recognized mitigation potential with the added benefit of adaptation. Although the potential of this coastal ecosystem is large, the potential for releasing emissions will also be large if mangroves and seagrasses are degraded.

Protection of coastal ecosystems (mangroves, seagrass beds, and coral reefs) local mitigation such as the development of Marine Protected Areas (MPAs). It is estimated that the protection of mangrove ecosystems in Indonesia can reduce carbon emissions from land sources by 10-31% (Murdiyarso et al., 2015). Healthy mangrove and seagrass ecosystems can absorb carbon, and store it in sediments.

The development of MPAs is one of the appropriate forms of mitigation to reduce the impact of changes in marine ecology in Indonesia, where problems such as global warming, exploitation of fishery resources, and coastal pollution often occur.

5. CONCLUSIONS

The UNFCCC creates an overall framework for meeting the challenges of climate change. In its development, the UNFCCC has succeeded in producing a new protocol and agreement, namely the 1997 Kyoto Protocol and the 2015 Paris Agreement. In the 2015 COP-21 which resulted in the Paris Agreement, the impact of climate change on ocean conditions began to be taken into account. In Indonesia, efforts to mitigate the impact of climate change are to maintain mangrove and seagrass ecosystems on the coast through the development of Marine Protected Areas that can prevent the impact of problems due to climate change and coastal pollution, as well as maintain marine biota and coastal fishery areas.

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