



Government Collaboration and Resilience Movement of Rural Communities in Tackling Global Climate Change

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Abstract. This research aims to examine the dynamics of discourse surrounding global climate change programs. Using an explanatory qualitative approach, the study presents findings based on online media analysis. The research falls under the category of normative or library research, as it involves reviewing library materials and secondary data from sources such as online media, social media, and journals. The focus is on exploring government collaboration and rural community resilience movements in addressing global climate change. The findings reveal that the government's efforts to mitigate the risks of climate change are guided by the Regulation of the Minister of Environment and Forestry No. 84 of 2016 on Climate Change. Collaboration between the government and rural communities is carried out through the Climate Village Program (PROKLIM), which fosters multi-stakeholder partnerships to enhance climate change adaptation and mitigation efforts at the community level.

Keywords: Government Collaboration, Rural Communities, Global Climate Change.

1 Introduction

Climate change is a global phenomenon that has a significant impact on people's lives in various aspects. This change has made people more vulnerable to multidimensional disasters, such as floods, landslides, coastal erosion, droughts, storms, and various other natural disasters that often occur periodically or incidentally [1]. Climate change refers to long-term changes in weather patterns and extreme weather phenomena [2]. Its impacts exacerbate threats to health and the environment, including crises such as droughts, floods and ozone layer depletion. While climate change can also be triggered by natural phenomena such as volcanic eruptions and the movement of continental plates, the main factors contributing to environmental degradation over the past two centuries have been industrialization and greenhouse gas emissions generated by human activities [3]. Fossil fuel use, deforestation and unsustainable industrial activities have accelerated environmental degradation.

Humanity is faced with a crucial choice to slow the ongoing damage and take corrective measures through coordinated policies at the domestic, national and global levels [4]. If not, the survival of human life on earth will be threatened. Current climate change is characterized by drastic changes in global climate patterns, resulting in increasingly unpredictable weather phenomena [5]. One of the main factors contributing to this change is the increase in the concentration of greenhouse gases such as methane (CH₄) and nitrous oxide (N₂O), which causes an increase in global

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temperature, melting of polar ice caps, sea level rise, and changes in rainfall patterns [6]. Archipelagic countries, such as Indonesia, located in the tropics, are particularly vulnerable to the impacts of climate change. The geographical condition of Indonesia, which consists of many islands, makes it more at risk of being affected by rising sea levels and extreme climate change.

The impacts of climate change are not limited to changes in the rainy and dry seasons and sea level rise, but also affect various sectors of life, including the economy, health, food security, and environmental damage [7]. The agricultural sector, especially the food crops and horticulture subsectors, is particularly vulnerable to erratic changes in rainfall patterns, as crops require stable weather patterns to grow properly. In addition, the marine fisheries sector is also highly affected by climate change, as fishermen's catches are highly influenced by sea conditions that are directly related to climate.

Climate change is a complex phenomenon that is difficult for the general public to identify and accurately assess, especially when based solely on personal experience[8]. Many people do not realize that unpredictable weather changes are a manifestation of larger global climate change. To face this challenge, community resilience is needed to reduce the risks caused by climate change, both through adaptation and mitigation strategies. Adaptation is the act of adjusting natural and social systems to deal with the negative impacts of climate change[1]. Meanwhile, mitigation is an effort to reduce the source of greenhouse gas emissions or increase the ability to absorb these gases, so as to minimize the adverse effects caused by climate change. The implementation of these two strategies requires cross-sectoral cooperation and a sustainable approach in order to reduce vulnerability and increase community resilience to climate change.

Climate change is also closely related to poverty and other social problems, such as prostitution in coastal areas [1]. At some point, climate change occurs. Vulnerable people become more susceptible both socially, economically and environmentally [2]. In the context of development, climate change can become a significant obstacle or even cause national development efforts to stagnate or even experience setbacks due to the high risks and consequences that the state and the public must bear [3].

As a result of climate change, the possibility of climate-related disasters such as drought, floods, landslides, crop failure, and other similar calamities is increasing. Climate change is a fundamental change in important climate parameters such as rainfall, temperature, humidity, wind, cloud cover, and evaporation across the planet. [4]. Communities, based on their local knowledge, have the ability to analyze environmental changes and degradation even before ecological degradation occurs, so they make new adaptations. The issue of peatland management is in the spotlight amidst the increasingly worsening impacts of climate change and various environmental disasters that are closely related to peatland degradation, such as smoke disasters and flooding. High economic dependence on the agricultural sector often makes rural areas also vulnerable to commodity price fluctuations and climate change.

Increasing disease outbreaks in the face of climate change, all parties, including society, need to take adaptation actions to adjust to the impacts that occur and carry out mitigation in carrying out daily activities such as saving electricity consumption and maximizing the use of renewable energy. By carrying out adaptation efforts for vulnerable communities, especially poor communities, to the impacts of climate change, it is hoped that community resilience will increase so that possible risks can be minimized [5].

According to Climate Watch (2020), carbon emissions increased significantly from 1990, which reached 20 million kilotons, to 2019, reaching 3 million kilotons. The temperature of the Earth is gradually and persistently increasing because of pollution that is caused by humans. The equilibrium of the environment is disrupted because of this, particularly regarding the biodiversity. In a more practical context, the high temperature of the planet causes several plants, which are the main raw materials in the food industry, to experience a decrease in productivity [6]. Coastal communities are in danger of losing their resilience as a result of climate change, which has an effect not only on land commodities but also on fisheries commodities [9]. If left unchecked, this will certainly threaten global food security. Not only that, climate change has a close relationship with human infectious diseases such as cholera and malaria because the longer the pathogen lives, the weaker the defense systems of humans and other potential hosts become, and the more it supports the transmission of viruses and bacteria. Climate change is also closely linked to poverty and other social problems, such as prostitution in coastal areas. At a certain point, climate change makes vulnerable communities even more susceptible socially, economically and environmentally [7]. In the context of development, climate change can become a significant obstacle or even cause national development efforts to stagnate or even experience setbacks due to the high risks and consequences that must be borne by both the state and society.

According to the World Bank, in 2019, Indonesia's per capita carbon emissions were ranked fourth lowest within ASEAN. However, Indonesia and Cambodia are two mutually exclusive ASEAN countries that consistently experience an increase in emissions per capita per year. This means that both countries need more effort to reduce emissions that have the potential to cause climate change. Low-carbon development has been launched by the Government of the Republic of Indonesia through the RPJMN (Medium et al. Plan) for the period 2020 to 2024. This effort is a concrete action related to the Government's commitment to reduce emissions by 29% by 2030 through domestic programs and policies. As well as 41% with the support of international projects and institutions [8].

Climate change is specifically addressed in a number of laws, such as Law No. 6 of 1994 on the United Nations Framework Convention on Climate Change, Law No. 41 of 1999 on Forestry, Law No. 32 of 2009 on Environmental Protection and Management, Law No. 16 of 2016 on the Paris Agreement to the United Nations Framework Convention on Climate Change, and Law No. 11 of 2020 on Job Creation. These laws pertain to the creation of jobs. Additionally, there are eight Government Regulations, four Presidential Regulations, one Presidential Decree,

eighteen Minister of Environment and Forestry Regulations, and twenty Director General of Climate Change Regulations that support the implementation of climate change action, adaptation, and mitigation efforts. These regulations are in addition to the laws that have been mentioned above. In light of this, the research is centered on investigating the Discourse Dynamics of the Global Climate Change Program, and it makes use of the NVivo12 tool in order to conduct an updated analysis

2 Literatur Review

2.1. Government Collaboration

The Government does not solely depend on its internal resources for implementing policies and programs [10]. The government attempts to collaborate with a wide variety of stakeholders, including other government bodies, the private sector, and civil society, to accomplish the goals of its policies and programs. This is because the government has limited capacities, resources, and networks. Collaborative Governance involves engaging multiple relevant parties to align their interests and work towards common goals [11].

Government collaboration aims to address specific problems or issues collectively [12]. This approach includes not just government and non-governmental organizations but also civil society, reflecting principles of good governance where civil society participates in decision-making processes. Collaboration helps overcome the constraints of each party's resources and capabilities by uniting and complementing their efforts to achieve shared objectives. In this process, each party has equal standing, with decision-making authority based on mutual agreements [13].

Public entities and non-state stakeholders engage in a formal, consensus-oriented decision-making process as part of government collaboration, which ultimately results in the creation or execution of public policies or the administration of public programs. Public entities, at different governmental levels, as well as the public, commercial, and non-profit sectors engage in collaborative governance to accomplish public objectives that would be impossible to accomplish on an individual basis.

Government collaboration refers to a governance model in which one or more public entities engage directly with non-state stakeholders through a structured, consensus-driven decision-making process. This approach leads to the development or execution of public policies or the management of public programs and assets. This definition is widely referenced in discussions about collaborative governance. It involves a process and framework for making public policy decisions that includes community involvement. This collaborative approach integrates public bodies, different levels of government, and the public, private, and civil sectors to achieve public objectives that would be challenging to accomplish individually [14].

Government is a system composed of values, policies, and institutions that manage economic, social, and political matters through interactions among society, the government, and the private sector. It encompasses three main domains: the state

(government), the private sector (business world), and society, which interact and perform their respective roles. Governance reflects the distribution of authority from a single entity to multiple actors. Consequently, in the governance model, public affairs that were once solely managed by the government are now handled collaboratively with the private sector and community. This shift reduces the government's dominance and fosters a more democratic approach to managing public and governmental affairs. [14].

Agranoff and McGuire suggest that government collaboration operates within a broader framework of overall government administration [15]. In this context, collaborative governance emphasizes the voluntary nature of participation by each actor involved. This voluntary engagement allows participants to work effectively towards the goals of the collaboration, making programs and policies more impactful due to the involvement of various organizational or institutional relationships [16].

Collaboration is essential in contemporary government practices for several reasons. According to Junaidi, government cooperation developed over time due to initiatives from various parties that promoted collaboration and coordination in addressing societal issues. Government collaboration emerged as a solution to challenges such as implementation failures, high costs, and the politicization of regulations. Additionally, it is argued that collaborative efforts stem from the advancement of institutional knowledge and capacity [11].

The above perspective suggests that government collaboration does not occur spontaneously but is driven by various factors [10]. One factor is the necessity for institutions to work together due to their individual limitations in executing their activities. Additionally, collaboration arises from budget constraints within individual institutions; by working together, multiple institutions can pool their resources, rather than relying on a single entity for funding [11]. Furthermore, collaboration is a key aspect of evolving government practices, particularly with the rise of governance concepts that highlight the involvement of various actors, including the government, private sector, and society, in administration [12]. Collaboration also serves as a solution for engaging interest groups and addressing failures in institutional management. The increasing complexity of governance creates interdependencies between institutions, heightening the need for cooperative efforts.

2.2. Climate change

Climate change is a critical worldwide concern that has garnered substantial international interest. The most significant public policy challenge at present. The United States Global Climate Change Program characterizes climate change as significant responses to meteorological events that adversely affect agricultural resources, water availability, human health, the ozone layer, flora, and soil, resulting in elevated carbon dioxide levels in ecosystems. Ecosystems are critical in maintaining Earth's temperature by absorbing and emitting greenhouse gases such as CO₂. Forests, grasslands, peat bogs, and other terrestrial ecosystems collectively accumulate more carbon than exists in the atmosphere. These ecosystems buffer

climate change by sequestering carbon in wood, biomass, and soil, so trapping CO₂ from the atmosphere [17].

The climate undergoes alterations periodically due to both natural phenomena and anthropogenic actions. Wikipedia defines climate change as a substantial alteration in weather patterns assessed by statistical data over periods ranging from decades to centuries. Simultaneously, the Environmental Protection Agency (EPA) reports that substantial climate changes have transpired over a specific duration. Climate change can be defined as significant alterations in temperature, precipitation, wind patterns, and related phenomena. Law No. 31 of 2009 characterizes climate change as a process, either directly or indirectly influenced by human activities, leading to alterations in the composition of the global atmosphere and variations in natural climate patterns observable over a specific duration and subject to comparison.

The effects of climate change are currently apparent, characterized by increasing global temperatures and alterations in weather patterns. Numerous places are encountering modified precipitation patterns, resulting in exacerbated floods, droughts, strong rainfall, recurrent heatwaves, and perilous extreme weather phenomena. Moreover, alterations in sea glaciers are evident, encompassing elevated sea temperatures, ocean acidity, the melting of ice caps, and increasing sea levels, all of which contribute to the vanishing and submersion of certain islands.

Climate change is influenced by both intrinsic and extrinsic forces. Internal variables pertain to natural interactions among atmospheric gases, whereas external factors arise from anthropogenic activities that emit gases, hence disturbing atmospheric equilibrium. Human activities are a major contributor to climate change, with much of the environmental and natural damage attributed to these actions. Over the centuries, human activities have significantly increased carbon dioxide (CO₂) levels, a key greenhouse gas. Most greenhouse gases result from burning fossil fuels for energy.

Human actions also release other greenhouse gases like methane (CH₄), nitrogen oxides (NO₂), and chlorofluorocarbons (CFCs), contributing to global warming. Additionally, economic development and rapid industrialization have exacerbated the impact on the global climate. Natural climate processes, such as variations in solar radiation and volcanic eruptions, also play a role.

Specifically, an increase in the concentration of specific gases in Earth's atmosphere is responsible for the general warming of the planet. Ozone (O₃), hydrogen (H₂), krypton (Kr), methane (CH₄), xenon (Xe), argon (Ar), carbon dioxide (CO₂), helium (He), neon (Ne), and oxygen (O₂) make up the Earth's atmosphere, a protective layer of air on our planet. Certain gases, collectively known as Greenhouse Gases (GHG), interact in Earth's atmosphere to keep the planet at a constant temperature.

Mudiayarso (2003), human activities that emit greenhouse gases (GHGs) cause long-term changes in climatic factors, lasting 50 to 100 years.. The climate change scenario, according to Pamungkas et al. (2017), with effective reforestation in the short term minimizes community vulnerability to flooding while rebuilding flood

infrastructure is less effective for future adaptation but good for current conditions. According to research by Widiyanti and Dittmann (2014), climate adaptation is needed to protect their water sources in order to save water for the long dry season, and it is necessary to plant drought-resistant cultivars (cassava, corn, soybeans and peanuts) or implement drought-resistant systems. Intercrop the cultivar.

Based on the opinion of Francis (2014), climate change is a change in the statistical properties of the climate system in the form of changes in the Earth's weather, including changes in temperature and wind. Climate change has a direct negative impact on humans and the surrounding environment, so climate change is a concern for all parties to overcome it. The UN Convention on Environment and Development states that global environmental damage is getting worse. In severe cases, ozone depletion causes an increase in the titration of ultraviolet rays to the Earth, which is detrimental to humans, and more and more flora and fauna become extinct due to global warming and climate change. Greenhouse gases (GHG) are a type of emission that has a direct impact on the environment. The increase in the concentration of greenhouse gases in the atmosphere triggers the greenhouse gas effect, namely increasing the global temperature of the Earth (global warming) and driving the phenomenon of climate change. To overcome the problem of climate change. This then created an international agreement in the environmental sector. This international agreement was the Kyoto Protocol Agreement.

The Kyoto Protocol is a reflection of the desire of the world community to reduce greenhouse gases that occur in the atmosphere, which are increasing day by day. The Kyoto Protocol aims to ensure that participants in this agreement regulate their greenhouse gas (GHG) emissions so as to reduce them by at least 5% in the period 2008-2012. The massive and extensive impacts of the Greenhouse Effect (ERK) include increasing temperatures, unpredictable seasonal changes, crop failure, the emergence of new types of diseases, decreased biodiversity, rising sea levels and so on. It is concluded that ERK, due to increased GHG, has a negative or even significant detrimental impact on human life and the sustainability of the Earth. Government intervention is the main problem of climate change in urban areas, and the division between mitigation and adaptation of potential conflicts emerges as the most appropriate dialogue [17].

3 Method

This research falls under the category of normative or library research, which involves analyzing secondary data from sources such as online media, social media, and academic journals. The study focuses on analyzing the dynamics of global climate change program discourse. The literature review is conducted by examining relevant journals related to the topic [7]. Data analysis is performed using NVivo 12 Plus, a computer-assisted qualitative analysis tool. This software facilitates the processing of text, exploring word frequencies, attributes, and cases within large datasets. It also helps in categorizing factors or sub-factors relevant to the research topic [16].

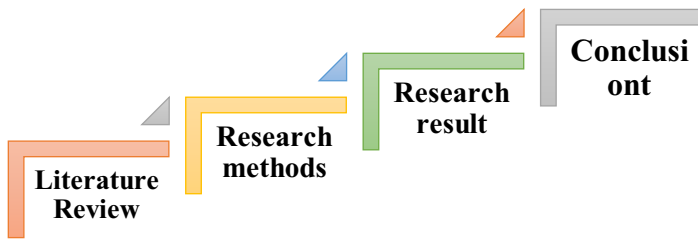


Figure 1. Research Framework

4 Results and Discussion

Climate change refers to long-term changes in weather conditions and patterns of extreme weather events. Climate change multiplies health threats and environmental crises such as drought, floods, and ozone layer depletion [1]. Although climate change can be caused by natural phenomena such as volcanic eruptions and the movement of continental plates, industrialization and greenhouse gas emissions due to human activities, have been the main causes of environmental degradation in the last two hundred years. Humanity has no choice but to slow down the damage or make improvements through various policies on a domestic, national and global scale if it still wants to survive [2].

In facing climate change, all parties, including society, need to take adaptation actions to adapt to the impacts that occur and carry out mitigation in carrying out daily activities such as saving electricity consumption and maximizing the use of renewable energy. It is anticipated that community resilience will increase as a result of efforts to acclimate vulnerable communities, particularly impoverished communities, to the effects of climate change, leading to the reduction of potential risks [3].

To address and mitigate the risks of climate change, the government has introduced a program in line with the Regulation of the Minister of Environment and Forestry of the Republic of Indonesia No. 84 of 2016. This initiative involves collaboration between the government and rural communities through the creation of the Village Program (PROKLIM). The goal of PROKLIM is to foster multi-stakeholder collaboration to enhance community-level adaptation and mitigation efforts against climate change [5]

The Ministry of Environment and Forestry administers this national initiative, which seeks to enhance community and stakeholder engagement in adapting to climate change effects, diminishing greenhouse gas emissions, and acknowledging efforts in climate adaptation and mitigation. The program is designed to improve local welfare according to regional conditions and has a significant focus on Sustainable Development, impacting social, economic, and environmental aspects [4].

PROKLIM employs a community empowerment approach, where local activities and resource management are directed towards enhancing adaptation and mitigation efforts. The program encourages community-based climate change management by addressing future risks and building an understanding of vulnerability, potential impacts, and climate projections. This helps communities choose appropriate adaptation actions to increase resilience against climate change. [6].

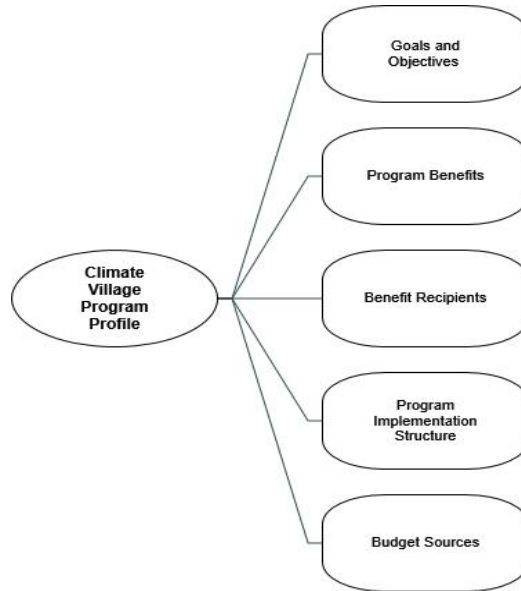


Figure 2. Climate Village Program Profile

Source:(Author Analyze ,2023), Modified with Nvivo 12 Plus

Figure 2 explain the Climate Village Program's profile, which represents a collaboration between the government and rural communities to address global climate change. The program includes:

1. **Aims and Objectives:** PROKLIM seeks to augment community engagement in strengthening their adaptive capacities to climate change effects and in mitigating greenhouse gas emissions. It aims to acknowledge local initiatives in climate adaptation and mitigation. The initiative aims to enhance resilience, adaptation, and mitigation efficacy in response to climate change threats, as outlined in the Minister of Environment and Forestry Regulation Number 39 of 2015.

2. **Benefits:** The PROKLIM program provides social, economic, and environmental advantages by addressing climate risks sustainably. It strengthens climate change data control, community development, and local capacity to confront climate change. The program's activities include identifying vulnerabilities and risks related to climate change, determining sources of greenhouse gas emissions and their absorption, developing and enhancing community capabilities and institutions, preparing local climate adaptation and mitigation plans, implementing these plans at the community level, and improving access to funding and technology. It also involves monitoring and evaluating the progress of these efforts, all through activities such as outreach, counseling, capacity building, mentoring, technical assistance, facilitation, and maintaining a PROKLIM data bank.
3. **Beneficiaries:** The beneficiaries of this program include vulnerable communities, those severely affected by climate change, and impoverished individuals residing in areas such as river basins, coastal zones, peatlands, and barren mountains. The program also promotes the establishment of driving groups at targeted locations and ensures the availability of various support mechanisms to sustain local climate change adaptation and mitigation activities. Conceptually, a climate village is envisioned as a community and environment resilient to moderate climate change, aiming to enhance resilience and minimize climate impacts while reducing greenhouse gas emissions on a broader scale.
4. **Program Implementation Structure:** The implementation structure of PROKLIM involves various elements. The program is managed by a group of residents in the Climate Village area, with support from both the Central Government and local governments. Additional supporters include the business sector, universities, research and development institutions, community organizations, NGOs, and development partners. Institutions involved in the program span from local site-level entities to district, city, and provincial levels (Environmental Service), and up to the central government (KLHK), including technical units directly responsible for PROKLIM.
5. **Funding Sources:** Funding for PROKLIM comes from the State Revenue and Expenditure Budget (APBN), Regional Expenditure Budget (APBD), and other sources in accordance with legal provisions.

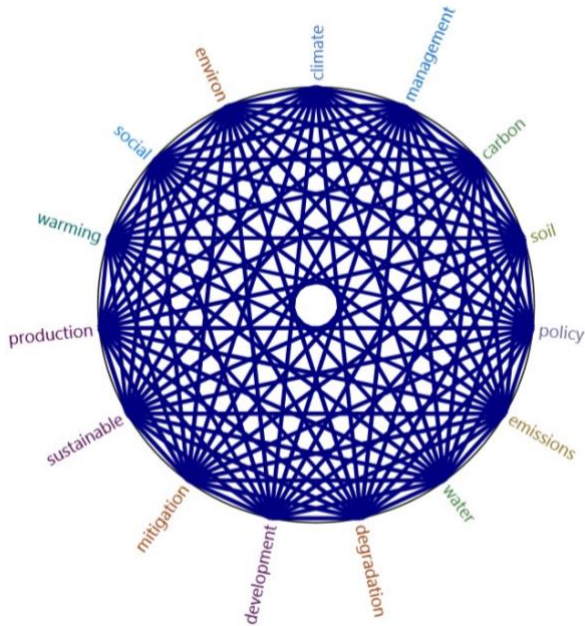


Figure 4. Climate Change Issues Global Cluster Analysis

Source: Modified with Nvivo 12 Plus

Figure 4. highlights the impact of the connection between global climate change issues and government approaches. In the realm of climate change adaptation governance, the primary goal is to enhance adaptive capacity or resilience. Resilience generally refers to a system's ability to absorb shocks, recover, and adapt to unforeseen changes. Specifically, resilience to climate change denotes the ability of individuals, communities, or institutions to effectively respond to evolving climate conditions and maintain their functions by creating, adjusting, and implementing various adaptive strategies. Essentially, resilience involves the capacity to withstand and recover from the effects of climate change, and it is crucial for individuals, communities, and institutions to develop this capability.



Figure 5: Global Climate Change Issue Theme Autocode.

Source: Source: Modified with Nvivo 12 Plus

Figure 5. This Autocode result was generated by researchers through an analysis conducted with Nvivo 12 Plus software; the Wordcloud results illustrate the correlation between the Global Climate Change Issue Theme and the Government sector Movement method. Climate change, which will continue to occur, cannot be avoided; sooner or later, we will be able to feel the impact. However, this does not imply that one should give up and do nothing. Together with other nations, Indonesia can contribute to the reduction of the effects of climate change. Together with other nations, Indonesia can make a contribution to the reduction of the effects of climate change.

This effort can be carried out with a national or international approach [1]. On an international scale, a high level of commitment is required for Indonesia to participate in and ratify international instruments because this will have consequences for the implementation of these instruments and their formulation in national policies. Apart from that, Indonesia needs consistency and courage in facing the impacts of climate change nationally. Both in terms of statutory regulations, imposition of sanctions, and law enforcement. However, until now Indonesia does not have specific laws regulating climate change, only implementing regulations [2].

5 Conclusion

The analysis of the Global Climate Change Program discourse indicates that the Government has launched a program addressing the effects of climate change, as stipulated by the Regulation of the Minister of Environment and Forestry of the

Republic of Indonesia No. 84 of 2016 on Climate Change. The Village Program (PROKLIM) seeks to enhance cooperation between the Government and Rural Communities in tackling global climate change. PROKLIM aims to foster multi-stakeholder collaboration to improve climate change adaptation and mitigation within communities.

PROKLIM employs a community empowerment strategy, emphasizing community-centric development. The process entails the mobilization and management of human and environmental resources, both locally and externally, to enhance initiatives aimed at adapting to and alleviating the impacts of climate change. Moreover, the initiative promotes the establishment of community-oriented climate change management, including prospective risks and effects linked to climate change.

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