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Communicating Social Capitals of Local Communities for A Sustainable *Proklim* in Aceh

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Abstract *Program Kampung Iklim* (*Proklim*) is a national mitigation and adaptation program to climate change in Indonesia. Like other areas across the country, several districts in Aceh Province are designated Climate Village Program (*Proklim*). However, as an innovative government-led initiative, the program's efficacy in Aceh has not been well-documented. This study explores the potential challenges and opportunities of *Proklim* implementation in Aceh. Even though Proklim is a significant initiative for adapting to the impact of climate change, poor community involvement in the planning and implementation stages led to the program's unsustainability. Lack of public participation correlates with their limited understanding of the program's benefits. Moreover, people's poor understanding is influenced by how the program is communicated. Drawing from previous research on public participation in implementing *Prokli*m in three areas in Aceh Besar districts, this study analyzes the internal and external factors identified as strengths, weaknesses, opportunities, and threats of the climate change programs. The study argues that exploring and communicating the social capitals of local communities allows for more public involvement and participation in developing sustainable *Proklim* in the area.

Keywords: Aceh, Communication, Climate Change, SWOT Analysis

Abstrak *Program Kampung Iklim (Proklim) merupakan program nasional mitigasi dan adaptasi perubahan iklim di Indonesia. Seperti daerah lain di tanah air, beberapa kabupaten di Provinsi Aceh ditetapkan sebagai Program Desa Iklim (Proklim). Namun, sebagai inisiatif inovatif yang dipimpin oleh pemerintah, keberhasilan program di Aceh belum didokumentasikan dengan baik. Kajian ini mengeksplorasi potensi tantangan dan peluang implementasi Proklim di Aceh. Meskipun Proklim merupakan inisiatif yang signifikan untuk beradaptasi dengan dampak perubahan iklim, masih rendahnya keterlibatan masyarakat dalam tahap perencanaan dan pelaksanaan menyebabkan program initidak berkelanjutan. Kurangnya partisipasi masyarakat berkorelasi dengan pemahaman mereka yang terbatas tentang manfaat program. Selain itu, pemahaman masyarakat yang rendah dipengaruhi oleh bagaimana program dikomunikasikan. Berangkat dari penelitian sebelumnya tentang partisipasi masyarakat dalam pelaksanaan Proklim di tiga wilayah di Kabupaten Aceh Besar, penelitian ini menganalisis faktor internal dan eksternal yang diidentifikasi sebagai kekuatan, kelemahan, peluang, dan ancaman dari program perubahan iklim. Studi ini berpendapat bahwa mengeksplorasi dan mengkomunikasikan modal sosial masyarakat lokal memberikan peluang bagi keterlibatan dan partisipasi publik dalam mengembangkan Proklim berkelanjutan di daerah tersebut.*

Kata Kunci: *Aceh, Analisis SWOT, Komunikasi, Perubahan Iklim, Proklim*

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INTRODUCTION

Geographically, Indonesia is one of the vulnerable countries to the impacts of climate change because most of the people rely on climate-related sectors such as agriculture, forestry, and fisheries to earn their livelihoods (UNDP, 2009). Moreover, several studies predicted that in 2100, direct and indirect economic losses due to climate change reach up to 2,5% of the Gross Domestic Product (GDP), approximately four times of globally average GDP loss due to climate change (Bappenas, 2012). To prevent negative impacts of climate change on the economy, the government needs to increase community awareness to protect the environment and build community resilience through climate change mitigation and adaptation initiatives.

Climate change mitigation aims to prevent the impacts of climate change by reducing greenhouse gas (GHG) emission levels as a causing factor to global warming (Murdiyarso, 2007). Indonesia has committed to reducing GHG emissions unconditionally by 29% and 41% conditionally by international assistance in 2030. This target is achieved through GHG emission reduction in the forestry sector by 17,2%, energy (11%), agriculture (0,32%), industry (0,10%), and waste (0,38%), which is a part of commitments toward NDC (Nationally Determined Contributions — NDC) document (Forestry, 2016). Each member country and related parties have an obligation to convey regular reports of their emission levels and state their national policy implementation efforts (UNFCCC, 2015). This obligation is part of Indonesian commitments after being involved in the ratification of the Kyoto Protocol.

Climate change is a global issue. Adaptation program is one solution to overcome the impact of climate change at the local level. Adaptation is a part of the self-adjustment process toward the social, economic, and environmental changes in anticipating potential damages caused by climate change or to take advantage of opportunities associated with climate change.

The agreement to implement alternative approaches toward climate change adaptation has been a strong commitment of the related countries, including Indonesia, which was started in the CoP 13 of the United Nations Framework Convention on Climate Change (UNFCCC), in which the meeting was held in Bali, Indonesia on December 2007 (Park, Gallagher, & Galley, 2010). The importance of adaptation also becomes an issue discussed in the CoP 26, conducted in Glasgow, Scotland, UK, from 31 October to 12 November 2021 (UNFCCC, 2021).

Adaptation can be done by increasing community resilience to adjust to climate change, including various climatic conditions and extreme weather events. Thus, the potential damages due to climate change could be minimized. Also, any other potential opportunities could be utilized, and the consequences could be prevented (UNFCCC, 2014). However, although adaptation programs have been recognized as a solution to prevent climate change at regional levels, the implementation-related policy focuses more on mitigation activities.

Adaptation commitment is carried out to increase economic resilience, social security and livelihoods, and ecosystem and landscape resilience. In other words, Indonesia's commitment to climate change is the result of developing a comprehensive climate change adaptation and mitigation strategy and a comprehensive disaster risk reduction strategy to strengthen resilience at the local (provincial) level. Indonesia has released the mitigation and adaptation of climate change policy in Indonesia. The Ministry of Environment and Forestry manages an initiative, so-called the Climate Village Program or *Program Kampung Iklim* (*Proklim*), through the regulation P.84/ MENLHK-SETJEN/KIM.1/11/2016.

Proklim is one instrument to encourage adaptation and mitigation of climate change impacts at the local level and strengthen multi-stakeholder partnerships in dealing with climate change. The program aims to increase the involvement of community members and policymakers to strengthen adaptation capacity on climate change and greenhouse gas emission and to provide a recognition toward adaptation and mitigation to achieve community welfare at regional levels based on the area conditions. *Proklim* is in the lowest administration levels or the area as the same level as *rukun*

warga (*dusun*), or the higher administrative area as the same level as *kelurahan* (sub-district) or village, or in the area in which the community has done continuous adaptation and mitigation efforts toward climate change (Kehutanan, 2016).

THEORETICAL FRAMEWORK

As a growing field of study in communication, climate change communication talks about multi-factors that impact and are impacted by how people communicate about climate change. Climate change communication explores through many perspectives and research approaches, ranging from humanistic-rhetorical analyses, qualitative interpretive studies, and social-scientific quantitative surveys and experiments. Amy F. Chadwick (2017) states that much of the research in climate change communication focuses on public understanding of climate change, factors that affect public understanding, media coverage and framing, media effects, and risk perceptions, while at the same time, civic engagement and public participation become necessary to affect attitudes, beliefs, and behaviours related to the climate (Chadwick, 2017).

According to Amy F. Chadwick, assessing public understanding of climate change can guide public communication messages. Some areas of public understanding that researchers have examined are levels of belief in and concern about climate change. People's beliefs and knowledge about climate change and its impacts on humans vary and correlate with the scientific consensus about climate change itself. Moreover, Chadwick argues that understanding what people know about climate change provides insight into the effectiveness of public communication and education about climate change and insight into what information is necessary for future communication (Chadwick, 2017) (2017). However, other studies suggest that people generally have limited knowledge of the causes, consequences of, and solutions to climate change (Leiserowitz, Smith, & Marlon, 2011; Lorenzoni, Nicholson-Cole, & Whitmarsh, 2007).

Furthermore, some population-related research carried out by the Indonesian Institute of Sciences or *Lembaga Ilmu Pengetahuan Indonesia* (LIPI) shows a lack of public understanding of the impacts and correlations of climate change in health, agriculture, and fisheries sectors. For example, people do not understand the correlation of climate change which increases the temperature of the water can accelerate the breeding of mosquitoes increased dengue outbreaks. In addition, population and climate change issues correlate with how communities adapt to environmental conditions (LIPI, 2015).

Estaswara et al (2020) argues that people-based management is necessary for people to achieve goals because strategic climate change communication requires a multi-stakeholder involvement—whether directly or indirectly—as prominent actors that determine the success of any program (Estaswara, 2021; Estaswara et al, 2020).

Aceh Province is one of the provinces committed to addressing the impacts of climate change. One is because Aceh has two forest ecosystem areas: the *Leuser* Ecosystem or *Kawasan Ekosistem Leuser* (KEL) and the *Ulu Masen* Ecosystem. KEL has been defined in the national spatial pattern as a national strategic area, especially with a protected function. Meanwhile, *Ulu Masen* Ecosystem was proposed as a provincial strategic area in the spatial plan of the Aceh Province spatial plan. These two forest ecosystem areas are one of Indonesia's hopes to meet the emission reduction target as a national commitment in the NDC Nationally Determined Contributions.

Aceh Province has also received the '*Proklim* Award' for three villages—Umelah Village, Blang Pegayon District, Gayo Lues Regency. Three certificates are awarded for *Gampong Rukoen Damee, Babahrot District, Southwest Aceh District, Gampong Lhok Bengkuang Timur, Tapaktuan District,* and *Gampong Kampung Padang District Central Kluet of South Aceh Regency*. In addition, a token of appreciation for the best supervisor was given to the head of Southwest Aceh District (D. Aceh, 2021). The achievement indicates the positive efforts taken by the government of Aceh in climate change mitigation and adaptation process.

However, the mitigation and adaptation to climate change requires behaviour change and

sustainable solutions at every level (local, national, and global) and involve many stakeholders, individuals, communities, businesses, scientists, governments, non-government organizations (NGOs), and relevant stakeholders, such as media and communication. The multisector involvement is also the spirit of the Indonesian national program, *Proklim.* The role of media and communication studies is to understand public perceptions of climate change and inform the development of effective risk communication and policy messages to the public through various media channels. Climate change communication depends not only on how the climate issue is disseminated but also on how significant the issue is to the people's needs and interests.

Media plays an important role in communicating about the benefit of *Proklim*. For example, as findings of the study about media coverage on Aceh's green issue, media is encouraged to cover efficacy information about the environment that can raise people's awareness and knowledge to carry out concrete action on the issues (Rosemary & Evensen, 2020), including *Proklim*.

There have been many studies examining the effectiveness of this national program after the launching of *Proklim*. Like how the community responds to the mandate from *Proklim* and finds solutions to deal with climate change and environmental damage (Faedlulloh, 2019; Gunawati & Rejekiningsih, 2020; Kumalawati, Yuliarti, & Rajiani, 2020). A current study shows that three prominent national media (Tempo.co, Republika.co.id, and Tiro.id) framed *Proklim* issues as merely the government's top-down approach. Although *Proklim* is conceptually significant as a program of mitigation and adaptation toward climate change and environmental destruction, the coverage on *Proklim* has not become the three news portals' priority compared to general environmental issues or other recent essential issues, such as health, politics, and religion (Rosemary, 2021).

Similarly, another study specifically about *Proklim* in Aceh found that the program applied a top-down approach and was not initiated by the community. The community as primary beneficiaries participated but was not actively involved in the program. As a result, the mitigation programs sargued is better developed than the adaptation programs. The study argues the need for a community engagement mechanism. The existence of community groups and community leaders and the availability of supporting tools are essential factors in creating the sustainability of *Proklim*. This program expects to increase public understanding of climate change and its impacts so that lifestyle changes can adapt to it (Safrina & Roesa, 2020).

However, no study found identifying internal and external factors that may influence the implementation of*Proklim.*One way toidentify the program's effectiveness is by exploring its shortcomings, strengths, threats, and opportunities. Therefore, this study aims to identify challenges in the implementation of *Proklim*, in Aceh province to identify the practical communication approach to better implementing the program.

METHOD

The study applies the SWOT (Strength, Weakness, Opportunities, and Threats) analysis approach enables researchers to analyze the environmental strengths, weaknesses, opportunities, and threats that affect the functioning of any organization (Dyson, 2004). Many scholars agree that the SWOT analysis proves a complete understanding of the variables that may help or hinder an organization from reaching its objectives (Helms & Nixon, 2010; Houben, Lenie, & Vanhoof, 1999). Other scholars show that the analysis process represents a natural start to developing a strategic plan to help individuals and organizations identify the complex and dynamic environment. In the context of this study, *Proklim* is a well-formulated government-led initiative; however, challenges are found in how the program is delivered and implemented.

The SWOT analysis helps to understand the internal and external factors as key strengths, weaknesses, opportunities, and threats. For example, politics, policy, the economy, other agencies such as media, and the organization's environment may influence how the program is communicated. The SWOT analysis allows communication scholars and practitioners to better understand the internal and ex-

ternal factors that can affect communicating climate-related information. Many studies have used SWOT analysis in climate change research, including exploring strategic communication to address issues of climate change (Goffetti et al, 2018; Kiwanuka-Tondo & Pettiway, 2017).

The data used for this research derived from a case study approach examining the initial initiation of the *Proklim* implementation in Aceh Besar District, Aceh Province, in 2018. The study by Safrina and Nelly was carried out in *Gampong Ule Lheue*, Banda Aceh City, and *Lamteh* in Aceh Besar District; mountainous regions, namely *Dusun Blang Baro Gampong Saree*, Aceh Besar District; and coastal areas, *Gampong Iboih* in Sabang City. These study settings represent urban areas and are known as *Proklim* pilot areas.

Proklim in Aceh began in 2016 by establishing seven target areas, namely *Lamteh and Ule Lheu* villages in Banda Aceh, *Dusun Blang Baro, Saree* village in Aceh Besar, and *Iboih* village in Sabang. Stages in identifying the climate change vulnerability and risk are: (1) survey the typological characteristics of the vulnerable areas, and (2) promote the program to the community. Iboih is the only village carrying out regional vulnerability and risk analysis. The result of the analysis is needed to arrange community-based adaptation and mitigation measures at regional levels.

The selection of *Proklim* areas is determined by community participation to overcome climate change impact in the area. The study draws from Sherry R. Arnstein's stages of public participation and found that the implementation of *Proklim* is not a community-based initiative and lacks community involvement in the program (Safrina & Roesa, 2020). Besides data from the study mentioned above, the analysis is drawn from relevant documents related to the government's climate change programs.

RESULTS AND DISCUSSION

Aceh province is located at the northern tip of Sumatra Island and is the western-most province of Indonesia, with Banda Aceh being its capital city. The total population of this province is 4,500,000 with an area of 5.795.600 ha (57.956 km2) (B. P. Aceh, 2021). Research shows that around 62% of villages in Aceh province are vulnerable to climate change impacts. It is predicted that some villages in coastal areas will experience a long dry season that might affect agricultural sectors and are vulnerable to the sea-level rise. Meanwhile, the villages located in mountainous areas where illegal logging takes place are prone to floods and landslides caused by uncertain rainfall change (Bakri, 2016).

Through SWOT analysis, the study identifies internal and external factors that have impact on the program implementation. The internal factor is the Aceh communities, while the external factor is *Proklim,* the government-led initiative.

Picture 1. SWOT Analysis of *Proklim* in Aceh

A Significant Government-Led Initiative

In the SWOT analysis process, our study identifies "Strengths" as *Proklim* implementation in Aceh to be conceptually significant mitigation and adaptation program to climate change. The Regulation P.84/MENLHK-SETJEN/KIM.1/11/201 provides acomprehensive foundation on the emergence of multi-sector involvement to strengthen adaptation capacity on climate change.

The emphasis of this regulation is on community participation in the program. The purpose of*Proklim*is to increase public understanding of climate change and its impacts, thereby encouraging the implementation of concrete actions that can strengthen community resilience in the face of climate change and contribute to reducing greenhouse gas (GHG) emissions. The realization of community resilience can be carried out through adaptation activities, including: (1) controlling drought, flooding, and landslides; (2) increasing food security; (2) increasing food security; (3) handling or anticipating sea level rise, rob, seawater intrusion, abrasion, abrasion, and high waves;

(4) control of climate-related diseases; and (5) other activities related to efforts to increase adaptation to climate change.

Learning from the best practice of *Proklim* implementation in Surakarta Municipal, there is a need to apply ecological aspects to achieve the potential sustainability of the government program. Such as rainwater harvesting, water infiltration, spring protection, water-saving, integrated agriculture, control of disease vectors, sanitation, Clean Healthy Life Behavior, solid waste management, agricultural cultivation, liquid waste management, increased vegetation cover, food security, adaptive design, energy conservation, environmental benefits.

Besides ecological aspects, villages in Surakarta acknowledge social aspects of the community, for instance, gender roles, funding sources, institutions, environmental management projects, policy support, *Proklim* expert local human resources, capacity building, community training, *Proklim* working groups, *Proklim* assistance, *Proklim* development. Furthermore, the *Proklim* in Surakarta encourages economic resilience and benefits (Dewi, Maryono, & Warsito, 2019).

Poor Community Involvement

Moreover, the key "Weakness" in this study refers to the lack of community involvement in the climate change program. From the study understanding the *Proklim* in three Aceh Besar districts, it is found that communities at the three areas do not understand well *Proklim as* an effort to adapt to the impacts of climate change.

The study on public participationin *Proklim*in Aceh shows that the community has been involved in the preparation and socialization stage of the program by identifying the impact of vulnerability on the area used as a climate village and participating in green activities, such as tree planting, biopori making, and other activities assigned by the government.

However, research shows that the community has not been actively involved in the planning and implementation process of *Proklim*. Community participation is still at the informing level or quasi-participation, while the program is delivered top-down. The government only provides information to the community regarding the activities to be carried out even though the community does not have the power/authority to be actively involved in the planning and implementation process activities.

Meanwhile, the success of *Proklim* is influenced by the availability of supporting factors for the implementation of climate change control at the local level, including (1) the existence of community groups in charge of activities; (2) the existence of policy support; (3) the level of community self-reliance, self-financing system, and gender participation; (4) community capacity in carrying out *Proklim* activities; (5) the existence of support from external parties such as the government, the business world, Non-Governmental Organizations (NGOs), universities, and other parties as partners that could guide and assist the community directly in the *Proklim* implementation; (6) development of *Proklim* activities; and (7) social, economic, environmental, and climate-related disaster risk reduction benefits by implementing various climate change adaptation and mitigation activities.

Communities are the most vulnerable to the impacts of disasters caused by climate change. Thus, community involvement is an important component that can increase the effectiveness and efficiency of implementing adaptation and mitigation policies related to climate change.

Jati Village, East Jakarta, carries out the example of good community involvement in Proklim. The program has successfully strengthened the community through applying concrete actions, for instance, providing physical and social facilities that the community can use. In addition, Jati village has implemented a bottom-up approach, enabling people to actively participate in determining the application of climate change mitigation and adaptation interventions in the community (Faedlulloh, Prasetyanti, & Irawan, 2019).

Public Resistance Led to Unsustainable Initiative

Furthermore, identified as a "threat" of this program is regarding sustainability. Based on a previous study, the communities of the *Pro-*

klim targeted areas have a limited understanding of the program due to the lack of community participation which may lead to public resistance to the program. Therefore, there is an urgent need that reassures the community to play a more active role through *Proklim* to achieve sustainability of the program in the future.

Public resistance occurs due to the uncertainty implied in the government-led initiative, such as *Proklim*. Uncertainty is the difference between information delivered by the government about *Proklim* and information needed by the people or the public in the field (Thalib & Alkatiri, 2021). Therefore, the government needs to reduce uncertainty by ensuring two-ways communication with the public.

There are three important components for climate change mitigation and adaptation activities that allow local institutions and collaborative networks to strengthen the sustainability of *Proklim* implementation—i.e., community, government, and stakeholders. *A community* is a group of people living in the location and as the implementer of *Proklim*. Therefore, the role of the community becomes most significant as they are key actors in the program implementation. Consequently, the three components complement each other to run the *Proklim* and are expected to optimize their planning, implementation, and evaluation roles. Moreover, the government should provide mechanisms for engaging the community at different levels, developing institutions at the local level, and developing collaborative networks to strengthen the implementation of *Proklim* on an ongoing basis.

The three driving components can complement each other to run the climate village program. However, the role of the community becomes very significant because they are the main actors in the implementation of the program, so it is hoped that their role can be maximized starting from the planning, implementation, and evaluation stages. Therefore, as the person in charge, the government must provide mechanisms for community involvement in various stages, not only as beneficiaries but can be actively involved in the program.

Communicating Social Capitals of Local Communities

Regarding ‘opportunities', our study found that exploring the social capital from the community is a crucial point. Aceh's Long-Term Development Plan (2005-2025) establishes Aceh as a dignified, prosperous, just, and independent province based on the Aceh Government Law or *Undang-UndangPemerintah Aceh* (UU-PA) as mandated by the Helsinki Agreement in 2015. To achieve the goals, the Aceh government formulated Aceh's development mission. One of the targets is to increase the community's adaptation and mitigation capacity to disasters and quality environmental management.

The *Proklim* initiative reflects a top-down approach, resulting in the absence of community involvement and social capital exploration. The limited public participation in the program is caused by their insufficient knowledge of climate change, leading to low motivation in *Proklim*. However, the issue of climate change is faced with uncertainty, especially related to the impacts, so that the solution to climate change requires a local approach.

Educating and motivating the community to engage in *Proklim* actively require a comprehensive regulation to implement the program. Effective strategic communication is necessary to deliver key information about *Proklim* to the community and encourage them to implement it in their daily activities. Supporting public behaviours on a new program needs an effective and efficient strategy involving local public institutions, such as a traditional Aceh fishery institution, the so-called *Panglima Laot*, to communicate climate change impacts through local languages and wisdom. For instance, *Panglima Laot* (a traditional Aceh fishery institution) plays a role to preserve marine ecosystems. To enforce the customary law of the sea, *Panglima Laot* prevents the exploitation of marine resources and prohibits destruction of marine ecosystems and fishing activities on a particular day affecting sustainability of marine ecosystems (Abdullah, 2010; Salim, Mahdi, & Rosemary, 2014).

Another example of acknowledging the community's social capital is based on the study carried out in Joyotakan village, Surakar-

ta. The study examines four aspects of social capital: (1) the quality or capacity of human resources, (2) social interaction platform, (3) leadership, and (4) good-governance, particularly on managing their local waste. The study found that the four social capital supported the community in implementing Proklim to achieve sustainable waste management(Mukaromah & Kusumastuti, 2021).

The local wisdom and social capital within the community are believed to be a success story of a community in maintaining environmental sustainability and stimulating the community to conduct real actions to strengthen community resilience in dealing with climate change and contribute to the reduction of greenhouses gas emissions.

CONCLUSION

Community participation can be achieved through mitigation and adaptation programs. The program's success is greatly influenced by the community's understanding of the impacts of climate change that affect their lives. The top-down approach will not be effective if public participation and aspirations are ignored. Factors contributing to a successful adaptation program are public participation since they are the most vulnerable groups to direct and indirect impacts of climate change. As such, the involvement of a multi-level community is a must.

The government should design a program that involves the community as the main actors that actively involve and participate in the process and implementation of *Proklim.* The government needs to explore communities' social capital to address the impacts of environmental changes and involve local institutions, such as traditional fishery institutions and forestry institutions. Therefore, exploring and communicating the significance of the social capital of local communities allows public involvement and a practical approach to developing sustainable *Proklim,* particularly in Aceh.

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