

Increasing Society Awareness about Climate Change Impacts and Adaptation and Mitigation Strategies in Rural Areas

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Abstract: This integrated scheme community service activity focuses on increasing society's awareness of climate change, its impacts, and mitigation and adaptation efforts that need to be carried out. This theme was chosen because climate change has become a global problem and needs to be addressed on the international, national, and local levels. Therefore, this community service activity is carried out to increase society's awareness about climate change. The activity will take place on August 6, 2023, at the Semambu Island Hall, North Indralaya district, Ogan Ilir Regency, South Sumatra. The target audience is comprised of residents of Semambu island, both men and women and a total of 30 people. The method of activity is empowerment, which provides material on the concept of climate change, the impact of climate change, mitigation efforts, and adaptation to climate change through counseling and mentoring methods. The results of this activity show that activities to increase society's awareness about climate change, its impacts, and mitigation and adaptation efforts that need to be carried out provide benefits in the form of increasing understanding and awareness of participants as target audiences. The understanding and awareness of activity participants increased by 26%. These results are obtained by comparing the pretest and posttest, carried out before and after the activity is carried out. Pretest and posttest are carried out by providing several questions in the form of questionnaires related to climate change material, the impact of climate change, mitigation, and adaptation to climate change. Thus, this activity is able and successful in contributing to increasing society's awareness about climate change in accordance with the objectives and benefits of the expected activities. The advice is that activities to increase society's awareness of climate change need to be continuously socialized to help the earth's safety. Related parties can follow up through programs related to saving the environment.

Keywords: climate change; mitigation; adaptation; rural; PROKLIM

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INTRODUCTION

The Ministry of Environment and Forestry manages the Climate Village

Program, also known as *Program Kampung Iklim* (ProKlim), which aims to promote community involvement in

climate change adaptation and mitigation efforts while also reducing greenhouse gas emissions. Permen LHK No. P.84/MenLHK-Setjen/Kum.1/11/2016 governs the Climate Village Program. PROKLIM is intended to raise awareness of climate change control among communities at both the village and non-administrative levels, such as campus areas, environmentalist community groups, Islamic boarding schools, and other types of communities (<http://ditjenppi.menlhk.go.id/kcpi/index.php>).

PROKLIM is a policy designed to anticipate climate change. Climate change has become a global issue, and it is included in the Sustainable Development Goals (SDGs), which must be anticipated and addressed by all countries worldwide. Climate change is a worldwide issue since it affects all life in the universe. Indonesia has implemented a variety of climate change initiatives, including green economy policies, blue economy policies, and climate village projects. *Kampung Iklim Program* is a national movement to combat climate change through community-based efforts (Puspitaningtyas et al., 2023; Setiadi, 2023; Sri et al., 2022; Wahyuningsih et al., 2024).

South Sumatra's Ogan Ilir Regency has identified ten rural areas to participate in the climate village program in 2022 to help the national movement. The Ogan Ilir District Environment and Land Office collaborates with the South Sumatra Province PKK to implement Proklam in the district. Semambu Island, in the Indralaya Utara sub-district, is one of ten rural areas selected to participate in the climate village program in 2022. Pertamina Patra Niaga Integrated Terminal Palembang supported the implementation of pro-climate measures in Semambu island by signing a joint commitment and launching a mobile waste bank car (Pertamina Eco Run

annual program) to support the climate village program in Semambu island.

Semambu Island was named the first champion of the Proklam competition at the Ogan Ilir district level in 2022. This achievement is possible owing to the cooperation and participation of the whole Semambu Island community, as well as the efforts of other parties who support the execution and success of the climate village program in this village.

This achievement should be appreciated and expected to be sustained so that efforts to mitigate and adapt to climate change can go smoothly. However, it is well known that many development projects are project-based, therefore their long-term viability is uncertain. As a result, this integrated community service activity aims to sustain the continuity of learning and application and awareness of the effects of climate change and its mitigation and adaptation activities.

This community service activity was carried out by integrating the research of a competitive superior scheme lecturer entitled "Community-Based Climate Change Adaptation and Mitigation through the Climate Village Program (Proklam) in Semambu Island, North Indralaya District, Ogan Ilir Regency, South Sumatra" with the practical activities of Sociology students majoring in Community Empowerment Practice. Thus, science and technology are transferred from the Unsri campus to the Semambu Island community, which serves as a RING region of the Sriwijaya University campus. Problems associated with climate change on Semambu Island include: 1). Semambu Island's victory as the first ProKlim winner at the Ogan Ilir district level is a source of pride and should be celebrated. However, this success must be strengthened so that it is sustainable, and knowledge of climate change mitigation and adaptation measures grows. This is done in light of the fact that many rural development

programs are project-based, which means that when the project is ended, so are the community's activities. 2). The government addresses global climate change at the central, provincial, district, and even village levels. Semambu Island needs to prepare social institutions for climate change. 3). To develop institutions on Semambu Island, there is a need to increase awareness about climate change, its effects, mitigation, and adaptation strategies.

The following problem-solving framework will be used to address the three identified climate change issues on Semambu Island, Indralaya Utara Sub-district, and Ogan Ilir District. 1). This community service activity will be combined with student practice activities in the Community Empowerment Practice course, as well as research by a team of sociology lecturers on "Community-Based Climate Change Adaptation and Mitigation through the Climate Village Program (Proklim) in Semambu Island, North Indralaya District, Ogan Ilir Regency, South Sumatra". This connection will collect data on Semambu Island's opportunities and potential for climate change mitigation and adaptation. It is introducing and developing the climate change mitigation and adaptation concept to reduce acts that cause global warming.

The objectives of this service activity are to 1) integrate lecturer research activities and lecturer community service (Lidya et al., 2022) so that Tri Dharma PT activities work together and have a beneficial impact on the community surrounding the campus. 2) Introducing and developing the notion of climate change, as well as its effects, mitigation initiatives, and adaptation strategies. 3). Raise public understanding of climate change, its effects, adaptation, and mitigation options, which may be quantified by comparing pre-and post-activity test results.

METHOD

This integrated community service activity was implemented through empowerment, which involved delivering material about the notion of climate change, its impact, mitigation actions, and adaptation to climate change through counseling and mentoring. Counseling was conducted using the instructional technique, while mentoring was conducted using simulations. The stages of the activities that were carried out are as follows: (1). Coordination with the Head of Semambu Island regarding licensing, activity planning, activity implementation, and determining the target audience for activities to increase society's awareness about the impacts of climate change and forms of adaptation and mitigation in Semambu Island, North Indralaya sub-district, Ogan Ilir Regency, and (2). Preparation of service facilities and infrastructure. The preparation of facilities and infrastructure carried out included: Preparation of brochures on climate change mitigation and adaptation, searching for concepts and materials on climate change mitigation and adaptation, and making examples of activities for simulating climate change mitigation and adaptation. 3) Implementation of activities to increase society's awareness about the impact of climate change and forms of adaptation and mitigation: involve students, all members of the community service team, and the activity's target audience. 4). Activity monitoring: Monitoring activities for the activities delivered will be carried out periodically by looking at the success rate of increasing awareness of climate change and the mitigation and adaptation needed. 5) Internal evaluation: evaluation of the implementation of activities by the service implementation team; recommendations for the service implementation team. 6). Prepare service activity reports, making Sinta 4 service journal articles.

The target audience of this activity is the community of Semambu Island that was involved in the activities of the climate village program. Participants who took part in the activity were targeted at 25 people.

Pre- and post-tests were administered before and after the activity to assess the success of its implementation. The test material used to evaluate it dealt with climate change, its effects, mitigation, and adaptation. The questionnaire was completed by a total of 25 participants throughout the pre-test and post-test. The question was closed with a Likert scale. There were four options: strongly agree, agree, disagree, and strongly disagree.

RESULT AND DISCUSSION

Climate change, as defined by the Environmental Protection Agency (EPA), is a significant change in climate that occurs throughout time. Climate change can also be characterized as significant changes in temperature, rainfall, wind patterns, and so on. Global warming is primarily caused by the release of greenhouse gases (GHG) such as carbon dioxide, methane, and other gases from various sources. These released gases raise the global temperature. Scientists have clearly connected climate change to wildfires, claiming that it has increased the number of days with high-fire weather and resulted in longer and more severe fire waves (Bednarek et al., 2022).

In addition, UNEP and UNFCCC (2002) mention that human activities are the main cause of GHG emissions, and the main human activities that contribute to global warming include the use of fossil fuels, logging, and burning trees in the forest. Global warming that results in climate change will adversely affect the existence of mankind. Dyer (2011) mentions that one of the most visible adverse impacts of climate change is a permanent crisis in food supply. Some of the other adverse climate changes include

seasonal changes that affect ecosystems, many unfavorable weather events such as storms, floods, and others, as well as sea level rise due to melting ice in the polar regions (Ahmad & Hossain, 2015).

Climate change has become an international issue and an intriguing subject for academics from all fields. Research was done in Papua New Guinea to assess national commitment to climate change mitigation and adaptation measures. According to the findings, Papua New Guinea was the first to submit the notion of reducing emissions from deforestation (RED) to the UNFCCC in 2005 to provide economic opportunities to impoverished countries by commodifying carbon trapped in trees. In addition to actively participating in climate negotiations, PNG has taken national action to meet its mitigation and adaptation commitments, such as establishing the Climate Change and Development Authority (CCDA) and a national climate change policy and strategy. (Pascoe, Brincat, & Croucher, 2019).

A research analysis of Swiss state climate policy found that climate change discourse is fragmented between pro-economic coalitions and divided into numerous factions that choose different policy measures and beliefs about Swiss climate policy (Kammerer & Ingold, 2021). Research on climate change perspectives demonstrates how event characteristics and short-term sociopolitical circumstances can influence the lens through which climate change is viewed (Roxburgh et al., 2019). Hajer's discourse approach (1995; 2006) is used to investigate climate change as a global discourse via the lens of language use and the social production of reality. Markard et al. (2021) define discourse as "an ensemble of ideas, concepts, and categorizations, through which meanings are assigned to social and physical phenomena and which are produced and

reproduced in a series of identifiable practices."

Research on global warming mitigation strategies discovered four approaches to combat global warming: directly by lowering greenhouse gas emissions or indirectly by increasing employment. Renewable energy, increased energy efficiency, or various climate policies (Omoregbe, Mustapha, Steinberger-Wilckens, El-Kharouf, & Onyeaka, 2022)

Research on the role of the media in highlighting climate change issues was also reviewed, and the findings revealed clear evidence that discourse on climate change and economic development is present in news articles in the US Virgin Islands and that reporting on these issues continues to rise as policies addressing the issue follow similar patterns. Policymakers and other key stakeholders may create informed solutions that solve knowledge gaps and take bold action in well-supported areas by studying how the media portrays these issues and public perceptions of them. The looming effects of climate change must be addressed in a sensible, sustainable, and equitable manner, particularly in the United States (Rudge, 2021).

Climate change (CC) consequences on the environment, particularly in agroforestry and rural sectors, have been extensively explored and investigated from various perspectives during the previous few decades. The scientific literature has examined the three elements of sustainability (social, environmental, and economic) in various situations and techniques (Sacchelli et al., 2016).

The preceding explanation serves as the conceptual foundation for actions aimed at increasing society's awareness of climate change. This integrated scheme of community service activity was carried out to increase society's awareness of climate change and its effects on life.

The method of implementing activities was empowerment by delivering material through counseling, simulations, examples, and discussions. The activity took place on Sunday, August 6, 2023, at the village hall of Semambu Island, North Indralaya sub-district, Ogan Ilir district, South Sumatra.

A total of 30 participants, including housewives, family heads, and village officials, attended this activity. Participants listened carefully and were active in the discussion. Before the material was delivered, participants were given a number of questions as a pre-test, and after the activity, a post-test was conducted.

The material presented included the concept of climate change, the characteristics of climate change (global temperature rise, sea level rise, high rainfall rates, desert expansion), and the impacts of climate change (disrupting food security, increasing temperatures and sea levels, damaging ecosystems, and causing extreme weather). The following are photos documenting the delivery of the material, are listed in Figure 1.



Figure 1 Material delivery

Other topics covered were the greenhouse effect mechanism, the molecules, and elements that cause global warming, such as increasing carbon dioxide (CO₂), methane gas (CH₄), and nitric oxide (N₂O), as well as various solutions for mitigating and adapting to climate change. It was also stated that climate change is a global challenge that all countries must address

through policy, research, studies, stakeholder networks, and synergy. The following is a photo of the material presented in Figure 2.



Figure 2 Material delivery

Semambu Island officials also attended the community service program, thanking the team for sharing knowledge with the island's residents. The event ended with the community service team delivering souvenirs to Semambu Island. The Figure 3 photo shows the presence of village officials and the community service activity team.



Figure 3 Village officials and community service team

Before the activity ended, a post-test was conducted to measure the understanding of the participants after being given material for this activity. The post-test results will be a benchmark for the success of community service activities.

Based on the results of the pre-test, the community's understanding of the concept of climate change, its impacts,

and mitigation and adaptation efforts can be observed in the following Figure 4.

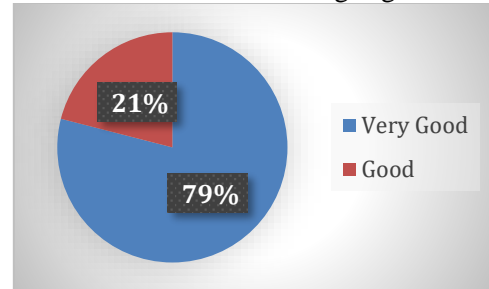


Figure 4 Pre-test results

The data in Figure 4 shows that before the delivery of the material, the participants had an understanding of climate change of 53% in the very good category, and 47% had a good understanding. This shows that the residents of Semambu Island, especially those who participated in the activity, are familiar with the concept of climate change, its impacts, and mitigation and adaptation efforts. This understanding is because Semambu Island has and participates in the climate village program (proklim) from the Ministry of Environment, so more or less has been exposed to the concept of climate change.

After the material was delivered, a post-test was conducted to measure whether there was an increase in the understanding of the participants. The post-test results showed the following in Figure 5.

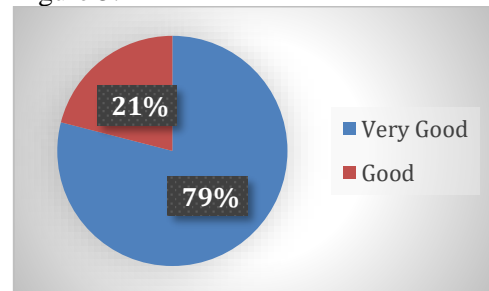


Figure 5 Post-test results

Based on the post-test results, there was an indication of an increase in the understanding of participants who understood climate change issues from

53% to 79% in the category of understanding very good. There was an increase of 26% in this category. Thus, this community service activity could provide benefits to the target audience.

The increase in society's awareness of the impacts of climate change on Semambu Island is in line with research conducted in Bangladesh on the discourse around 'climate resilient development', and the result is that strengthening the discourse that continues to increase results in effective disaster preparedness. People's exposure to hazards and how they understand climate change and its hazard consequences directly shape and influence their responses and actions during disasters. (Zaman, 2021).

CONCLUSION

Based on the description above, it is concluded that activities to increase society's awareness about climate change, its impacts, and mitigation and adaptation efforts that should be carried out provide benefits in the form of increased understanding and awareness of participants as the target audience. The understanding and awareness of activity participants increased by 26%. Thus, this activity was able to contribute to increasing public awareness of climate change in accordance with the objectives and benefits of the expected activities.

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