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Knowledge and Attitude of Village Communities towards Climate Change Adaptation and Mitigation Activities

Mithen Lullulangi[1], Mohammad Ahsan Saeruddin Mandra[2], Faizal Amir[3], Bakhrani Abdul Rauf[4], Rahmansah[5]
[1,4,5]Department of Civil Engineering Education and Planning, Universitas Negeri Makassar, Indonesia
[2,3]Department of Automotive Engineering Education, Universitas Negeri Makassar, Indonesia

Abstract. The aim of this research is to determine the knowledge and attitudes of village communities towards climate change adaptation and mitigation activities to support the climate village program. The type of research is qualitative research, taking place in Laikang village, Takalar Regency. The study population was 6774 people. A sample of 200 people was determined using the side purposive method. The research instruments were questionnaires, Focus Group Discussion (FGD) sheets, and observation sheets. The data analysis technique used in this research is descriptive analysis. The research results show that (1) the level of respondents' knowledge regarding adaptation and mitigation activities is in the medium category; (2) respondents' attitudes towards adaptation and mitigation activities are in the medium category.

Keywords: Knowledge, Attitude, Adaptation, Mitigation, Society

Introduction

As human civilization develops, it can have a positive impact on life and can also have a negative impact, and can even cause problems for life and civilization. The central issue currently being faced is global warming caused by greenhouse gas emissions which are increasingly thickening in the atmosphere, which results in climate change on Earth and causes various kinds of losses, disasters and diseases (Julismin, 2013). The impact of climate change results in increases and changes in temperature and reduces natural resources (Lestari, 2012). The problem of climate change cannot be solved by a few parties, but all individuals must participate and become actors of change in development that cares about the environment and is sustainable. Society must improve attitudes and behavior that care about the environment and play an active role in maintaining environmental balance. One of the efforts to deal with climate change is that people need to have knowledge and skills and participate in supporting environmental conservation programs (Rahmah, 2022) and (Higde et al., 2017). One of the environmental conservation programs in facing climate change is the climate village program which is a strategy carried out by the Indonesian Government to encourage community participation to carry out real action in facing climate change (Ainurrahmah, 2022).

Research Methods

This research will be carried out starting in April 2023, in Laikang village, Takalar Regency. The aim of this research is to determine the knowledge and attitudes of village communities towards climate change adaptation and mitigation activities to support the climate village program as one of the Government's programs to overcome global warming. The type of research is qualitative research. The study population was 6774 people. A sample of 200 people was determined using the side purposive method. The research instruments were questionnaires, Focus Group Discussion (FGD) sheets, and observation sheets. The data

analysis technique used in this research is descriptive analysis as a basis for drawing conclusions.

Theoretical Review

Law of the Republic of Indonesia Number 32 of 2009 concerning the environment, explains that the environment is a unity of space with all objects, forces, conditions and living creatures, which influence nature itself, the continuity of life, and the welfare of humans and other living creatures. The existence of a living environment is greatly influenced by the activities that occur within it. Ahira (2011) divides the living environment into two parts, namely: (1) the natural living environment or the living environment that exists in nature without any human intervention or modification, (2) the built living environment, namely the living environment that is formed, modified, managed and determined by humans in order to meet their living needs. Windarni (2018) stated that forests are decreasing in area so they are unable to absorb concentrations of carbon dioxide in the atmosphere. The next impact is that there is a greenhouse gas effect as CO2 increases so that the temperature on earth increases and ultimately has an effect on climate change. For this reason, environmental knowledge for the community is very important so that they can participate directly in climate change adaptation and mitigation efforts. Ahmad (2018) said, Environmental knowledge is a science that studies everything about the environment, both living and non-living. Furthermore, Khafsoh (2016) said that environmental knowledge is an impression in the human mind as a result of human perception regarding the unity of space with all objects and conditions of living creatures, including humans, and behavior that supports the life and welfare of humans and other living creatures.

According to Damiati et al. (2017), attitude is an expression of a person's feelings that reflects his or her likes or dislikes towards an object. Johnson, and Manoli (2011) put forward the theory of ecological attitudes, saying: "The Theory of Ecological Attitudes posits that people who have strong Preservation (biocentric) attitudes do not necessarily have weak Utilization (anthropocentric) attitudes." Debra (2012) said: "Most of the research that has attempted to trace the paths of influence between attitudes and behavior has been guided by the Theory of Planned Behavior". Thapa (2010) said: "Environmental attitudes were operationalized with revised new ecological paradigm (NEP) scale, in which the scale is a general set of beliefs or attitudes toward the environment". Furthermore, Fadli (2020) explained that: The community environment is a place to socialize with other people. If the surrounding environment is well managed by the local community, it will be an effective vehicle for forming people who care about the environment. The village community, especially the village head and village officials, are obliged to organize monitoring of environmental cleanliness in the village, so that the community can be empowered to work together to maintain the cleanliness of the environment in the village. This can directly familiarize the community and instill an attitude of care and love for environmental cleanliness. An environmentally caring attitude will create a comfortable, peaceful atmosphere, free from environmental damage. A caring attitude towards the environment can be shown by having a positive attitude towards the environment, such as maintaining environmental balance, understanding the importance of keeping the environment clean, cleanliness of the surrounding environment can be done by throwing rubbish in its place.

Merton (1938) said: Rebellion is this pattern of adaptation, where people no longer recognize the existing social structure and try to create another social structure. Existing cultural goals are perceived as obstacles to desired goals. Wilsie (1992) said that the definition of adaptation is defined as a feature of an organism that has survival value under the existing conditions of its habitat. The definition of climate change is a change in the physical conditions of the earth's atmosphere, including temperature and rainfall distribution, which has a broad

impact on various sectors of human life (Ministry of the Environment, 2004). LAPAN (2002) defines climate change as a change in the average of one or more weather elements in a certain area.

Based on several theories, it is explained that climate change is caused by: 1) The effect of greenhouse gases, 2) Global Warming, 3) Damage to the ozone layer, 4) Damage to forest function, 5) Uncontrolled use of Chlorine Carbon (CFC), and 6) Industrial exhaust gas. Facing a situation like this, it is hoped that society will be able to mitigate and adapt. Mitigation can be done by managing waste and waste, especially reducing methane gas emissions. As well as energy efficient building and environmental management. The Ministry of the Environment of the Republic of Indonesia released that: "Adaptation" and "mitigation" efforts are needed to anticipate the impacts of climate change. Adaptation activities that can be carried out include planting trees to avoid landslides and air pollution as well as building absorption wells. Apart from that, efforts to mitigate or reduce the effects of greenhouse gases can be done by saving energy, not being consumptive, managing waste and using transportation efficiently. (Ministry of Environment and Forestry Republic of Indonesia, 2015).

Research Results and Discussion

Research Results

Based on the results of research conducted by researchers on the community with a total of 200 respondents, it shows that the variable level of knowledge of respondents regarding adaptation and mitigation activities to anticipate the impacts of climate change can be seen in Table 1.

Table 1. Descriptive Analysis of Laikang Village Community Knowledge of Adaptation and Mitigation Activities

No	Category	Intervals	Frequency
1	Low	0-5	23
2	Moderate	6-10	121
3	High	11-15	56
	Amount		200

Source: Data Analysis, 2023

Based on the results of the descriptive statistical analysis presented in table 1 above, it can be seen that the level of knowledge of the community in Laikang village regarding activities and adaptation and mitigation to anticipate the impacts of climate change, low category interval 0 – 5 = 23 people, medium category interval 6 – 10 = 121 people, and the high category interval 11 – 15 = 56 people. Thus, it can be concluded that the knowledge of the Laikang Village community regarding adaptation and mitigation activities to anticipate the impacts of climate change is in the medium category.

Furthermore, the results of research conducted by researchers on the community with a total of 200 respondents showed that the respondents' attitude variables towards adaptation and mitigation activities anticipating the impact of climate change can be seen in Table 2.

Table 2. Descriptive Analysis of Laikang Village Community Attitudes towards Adaptation and Mitigation Activities

No	Category	Intervals	Frequency
1	Low	15-30	13
2	Moderate	31-45	134

3	High	46-60	53
	Amount		200

Source: Data Analysis, 2023

Based on the results of the descriptive statistical analysis presented in table 2 above, it can be seen that the attitude of the people in Laikang village towards activities and adaptation and mitigation anticipating the impact of climate change, low category interval 15 – 30 = 13 people, medium category interval 31 – 45 = 134 people, and the high category interval 46 – 60 = 55 people. Thus, it can be concluded that the attitude of the Laikang Village community towards adaptation and mitigation activities to anticipate the impacts of climate change is in the medium category.

From the research results obtained, researchers got an idea of the knowledge and attitudes of the Laikang village community towards activities and adaptation and mitigation anticipating the impact of climate change in the medium category. Then, researchers continued this activity by holding initial training for the community to increase their knowledge and attitudes in implementing climate change adaptation and mitigation. An overview of the implementation and obstacles faced can be presented in Table 3 below.

Table 3. Analysis of the Implementation of Adaptation and Mitigation in Laikang Village

Implementation of Adaptation and Mitigation	Obstacles to Implementing Adaptation and Mitigation
• Individual: Carried out on a limited scale and individually by several families • Community: • The formation of several communities but lack of coordination in carrying out activities. • Involvement of supporting elements and availability of facilities and infrastructure. • Fulfillment of extension resources • Government outreach to the community	• Society does not have enough knowledge, attitudes and skills. • Implementation of adaptation and mitigation practices is carried out independently • The provision of facilities and infrastructure is very minimal • Activities are not yet market oriented • Low productivity • Formation of groups only to meet activity targets or receive assistance. • Lack of group managerial skills • Limitations in terms of group facilities and infrastructure • Assistance activities by stakeholders are less effective • Lack of personnel and competence of extension workers in group assistance • There is no standard model for counseling or training • Limited budget for coaching activities

Source: Data Analysis, 2023

Based on Table 3 which shows an overview and several obstacles in implementing the adaptation and mitigation program, the problems underlying the implementation of adaptation and mitigation in Laikang Village are the lack of knowledge, attitudes and skills and the lack of optimal institutions (groups) that can become a means for the community as a place for learning, gaining information, increasing managerial abilities, entrepreneurship and so on.

For this reason, one of the efforts made to overcome this is to propose group empowerment activities through outreach activities, to help the community to improve their knowledge, attitudes and skills in adaptation and mitigation activities, so that the community

has better competence. This is a recommendation from research results that is proposed to the relevant agencies for implementation, so that in the future, society is better prepared to face adaptation and mitigation to climate change, which is increasingly increasing in the current era.

Discussion

The research results show that the level of knowledge of respondents regarding adaptation and mitigation activities for climate change is in the medium category. 2) Respondents' attitudes towards adaptation and mitigation activities for climate change are in the medium category. Then, the researchers continued by holding initial training for the community to improve their knowledge and attitudes in implementing climate change adaptation and mitigation, but experienced many obstacles as depicted in table 3 above.

The same research was also carried out by Rahmayanti et al. (2022), using a one group pre test post test design method, namely measuring community knowledge of climate change adaptation and mitigation. The results of the pre test knowledge were 43.8 with a maximum score of 62 and after being given counseling it increased to 56.4 with a maximum score of 80. Then the same research was carried out by Zukmadini et al. (2023), also using the one group pre test post test design method, towards students of SMP Negeri 11 Bengkulu. The pre-test knowledge results averaged 74.14 and after being given education using documentary films it increased to 78.64. The conclusion of this research is that education with documentary films can increase students' knowledge of mitigation and adaptation to climate change. And other research conducted by Purwanto et al. (2012), explained that the Napu Community developed an adaptation strategy by developing cropping patterns, cropping systems (mixed cultivation and intercropping), changing types of cultivated plants, cultivation techniques and other businesses. Disclosure of local knowledge about climate elements is the basis for developing adaptation and mitigation strategies in managing biological natural resources as an effort to reduce poverty.

From several studies above as a comparison, including the results of this research, it was found that in each community group, the average knowledge and attitude of the community towards adaptation and mitigation of climate change needs to be improved, by providing education about the need for adaptation and mitigation of climate change. Why does this need to be done, considering that in the future climate change will increase as a result of environmentally unfriendly behavior in society, as well as an increasingly growing population that requires exploitation of nature as a source of life. Therefore, it is necessary to carry out studies and research to explore the potential of the community, especially their local wisdom, which is related to nature and the environment so that public awareness increases about the need to protect the environment.

Conclusion

Based on the results of the research and discussion above, it can be concluded that: 1) The level of knowledge of respondents regarding adaptation and mitigation activities for climate change is in the medium category. 2) Respondents' attitudes towards adaptation and mitigation activities for climate change are in the medium category. Research recommendations, proposed to relevant agencies for implementation, so that in the future, society is better prepared to face adaptation and mitigation to climate change, which is increasingly increasing in the current era.

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