





# The Effect of Using Handbooks on Increasing Community Knowledge About the Program Kampung Iklim (ProKlim)

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**Abstract.** Currently, global warming has caused global climate change. Uncontrolled climate change has resulted in the emergence of various health and environmental problems. The world responds to this situation by making the prevention of climate change through the Sustainable Development Goals (SDGs). To realize the goals of the SDGs, Indonesia launched the *Program Kampung Iklim (ProKlim)*. This program has been implemented in Batu City since 2013. Although it has been running for quite a while, the implementation of the ProKlim in Batu City has not run optimally because the person in charge of the program in the field finds it difficult to provide an understanding to the community about the importance of this program. One of the educational media that can be used to overcome these obstacles is through a handbook. A handbook that is prepared with light, easy to understand and interesting explanations to read will make it easier for people to understand the ProKlim. This study aims to determine the effect of using handbooks to increase public knowledge about the ProKlim in RW 13 Ngaglik Village, Batu City. Type of this research is quasi Experiment with pre-test and post-test one group design. The sample of this research is the community of RW 13, Ngaklik Village, Batu City, totaling 20 people using primary data. Knowledge measurement was carried out using a questionnaire before and after reading the ProKlim Handbook. Data analysis using Paired Sample T-Test. There is an increase in knowledge about the ProKlim in the community of RW 13 Ngaklik Village Batu City from 45% of respondents who have less knowledge, 40% of respondents who have sufficient knowledge and 15% of respondents have good knowledge, to 20% have sufficient knowledge and 80% of respondents have good knowledge after reading the ProKlim Handbook. Statistical test results obtained p-value 0.000 ( $<0.05$ ). This means that there is a difference in the knowledge of the community before and after reading the ProKlim Handbook, so the ProKlim Handbook has an influence on the knowledge of the community in RW 13 Ngaglik Village, Batu City about the ProKlim.

**Keywords:** climate change · guidebooks · kampung iklim · knowledge · ProKlim

## 1 Introduction

The current global warming has been in an alarming situation due to its impact on humans and the environment. According to the IPCC report, since the mid-20th century, the global average surface temperature was observed to have warmed by 0.85 °C between 1880 and 2012. Many regions of the world have experienced greater regional-scale warming, with 20–40% of the global population has experienced warming of more than 1.5 °C in at least one season [1]. Global warming has also occurred in Indonesia. Based on data from the Meteorology, Climatology and Geophysics Agency (BMKG) shows that Indonesia's average temperature in 2016 was 1.2 °C higher than normal, namely based on the 1981–2000 average temperature. This exceeds the 2015 average temperature anomaly, which is 1 °C compared to normal [2].

Various human activities also contribute greatly to global warming which then causes climate change. Based on several studies of extreme changes since 1950, scientists detected trends in the intensity and frequency of several climate and weather extremes at the same time that the temperature increased by about 0.5 °C. In addition, regional climate change is assessed to have occurred as well, with temperature increases of up to 1.5 °C compared to pre-industrial levels, including warming of extreme temperatures in many areas, increases in the frequency, intensity, and/or amount of heavy rainfall in some areas, and increasing drought intensity or frequency in some areas [1]. Climate change is now a threat to the environment and human life. According to Gulzar et al., rising levels of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and atmospheric temperature, rising seawater temperatures, melting of mountain glaciers and snow, rising sea levels, shifting rainfall trends, the occurrence of floods, droughts, and earthquakes, and uncertainty of wind periods monsoons are physical evidence that global warming and climate change are real [3].

Indonesia together with other countries in the world has committed to holding the global average temperature increase to no more than 2 °C, above pre-industrial levels, with further ambitions to reduce temperature increases by 1.5 °C such as contained in the Paris Agreement, which was ratified in Paris in 2015 [2]. In addition, as a response to addressing climate change caused by global warming, Indonesia and other countries in the world have put climate change management into action as part of the Sustainable Development Goals (SDGs) [4]. These various agreements were then translated by the Government of Indonesia through the Program Kampung Iklim, hereinafter referred to as the ProKlim.

The ProKlim is an activity that combines climate change adaptation and mitigation efforts by involving the active participation of the community and various supporting parties such as the government and local governments, the business world, universities, and non-government institutions. The ProKlim is a national-wide program, managed by the Ministry of Environment and Forestry, to increase the involvement of the community and other stakeholders to strengthen adaptation capacity to the impacts of climate change and reduce greenhouse gas emissions as well as to provide acknowledgment of climate change adaptation and mitigation efforts that have been carried out. Which can improve welfare at the local level following the conditions in each region [2].

The ProKlim has been going on for a decade since it was launched in 2012. By 2021, 3270 locations have been registered as climate villages in various regions in Indonesia [5]. Batu City is one of the areas that has started to run ProKlim since 2013. Currently,

several areas in Batu City have been verified in ProKlim with the main categories. These areas include Toyomerto Village in 2015, RW 06 Temas Village in 2019, and RW 02 Dadaprejo Village, RW 13 Ngaglik Village, RW 08 Temas Village in 2022.

The ProKlim is based on the concept of community-based development, where activities are carried out by the community and its institutions in mobilizing and managing human and natural resources to strengthen adaptation and mitigation efforts to the impacts of climate change [2]. Although the implementation stage went quite well, community participation in this program was not as expected. Some research results show that community participation in contributing ideas, making decisions, and carrying out documentation and supervision is still very low, so all decisions depend on the ProKlim officer in charge of the region [6–8]. The lack of community participation is thought to be the result of the community's lack of knowledge about the importance of their participation in the success of this program.

Strengthening community participation in the implementation of the ProKlim is an important thing to do. Education finally becomes necessary to provide an understanding of the community about the importance of their role, as well as the importance of the ProKlim for the community itself. Field findings in Batu City showed that the ProKlim officers had difficulty providing understanding to the community due to the absence of interesting and easy-to-understand educational media. So that one thing that can be done to overcome these obstacles is to make a handbook that contains information about the ProKlim that is interesting and easy to understand by the community.

The use of books of various kinds is believed to be effective as a medium to increase knowledge in various layers of society. According to Wibowo & Suryani, the method of health promotion using pocketbook media affects increasing knowledge of the use of MSG in housewives [9]. The research results of Putri et al., revealed that education using booklet media affected preconception nutrition knowledge, attitudes, and macronutrient intake in premarital women [10]. In line with that, Caesar & Dewi proved that the provision of pocketbook media interventions had a very significant effect on the sanitation knowledge of village health cadres [11].

Although there have been many studies that show the effectiveness of using books as an effective medium to increase community knowledge. However, so far no research has been conducted on the effectiveness of the guidebook in increasing community knowledge about the ProKlim. Therefore, this study wanted to find out the effectiveness of using the ProKlim handbook to increase community knowledge about the ProKlim.

## 2 Method

This type of research is a quasi-experimental design with one group pre and post-intervention design. In this design, changes that occur after the intervention are recorded and compared with the previous situation. The research was started by distributing questionnaires to measure the community's knowledge about ProKlim (Pre-Test). The post-test was carried out after the intervention was carried out by distributing questionnaires similar to the pre-test. The intervention was to distribute the ProKlim Handbook to residents to read [12].

This research was conducted in August 2022 in RW 13 Ngaglik Village, Batu City. The population in this study were residents of RW 13 Ngaglik Village, Batu City who

**Table 1.** Distribution of respondent characteristics

Characteristics		n	%
Sex	Male	8	40
	Female	12	60
Total		20	100
Age	19–30 y.o	6	30
	31–40 y.o	8	40
	41–50 y.o	4	20
	51–60 y.o	2	10
Total		20	100

were present at the ProKlim verification activity. The sample in this study were residents of RW 13 Ngaglik Village, Batu City who were present at the time of ProKlim verification. Sampling in this study uses total sampling. The number of samples in this study was 20 people, consisting of 8 men and 12 women.

The results of the measurement of the variables studied were collected and processed to be presented in tabular form and then described. Data analysis was carried out by using the Paired Sample T-test with a 95% confidence level and  $\alpha = 0.05$ .

### 3 Results

#### 3.1 Respondents Characteristics

Based on the Table 1, the characteristics of the respondents by sex, most of the respondents are female with a total of 12 respondents (60%) while the respondents are male respondents amounting to 8 respondents (40%). Characteristics of respondents based on age showed that most of the respondents were in the age range of 31–40 years old with a total of 8 respondents (40%).

#### 3.2 Pre-test and Post-test Results

Based on Table 2, shows that some respondents have less knowledge about ProKlim, namely 9 respondents (45%), and 8 respondents (40%), with sufficient knowledge, while a small proportion of respondents have good knowledge, namely 3 respondents (15%). After being given the ProKlim handbook, the knowledge of respondents increased, as many as 16 respondents (80%) had good knowledge.

#### 3.3 Bivariate Analysis

The analysis used in this research is Paired Sample T-test with a 95% confidence level and  $\alpha = 0.05$ . This analysis aims to see whether there are differences in the population

**Table 2.** Pre-test and post-test results

Knowledge	Pre-test		Post-test	
	n	%	n	%
Good	3	15	16	80
Sufficient	8	40	4	20
Less	9	45	0	0
Total	20	100	20	100

**Table 3.** The effect of using the ProKlim handbook on community's knowledge

Knowledge	Mean	Std. Deviation	p-value
Pre-test	5.60	2.349	0.000
Post-test	9.70	1.174	

observed twice. The difference observed in this study is the difference in knowledge of the community in RW 13 Ngaglik Village, Batu City by making observations, namely before and after being given the ProKlim handbook.

Based on Table 3, it is shown that the provision of handbooks can increase knowledge by 5.60, turning up to 9.70. The results of the T-test obtained p-value = 0.000 (<0.05) meaning that statistically there is a significant difference in knowledge before and after giving the ProKlim handbook.

## 4 Discussion

This research shows that the provision of handbooks can increase knowledge by 5.60, turning up to 9.70. The results of the T-test obtained p-value = 0.000 (<0.05) meaning that statistically there is a significant difference in knowledge before and after giving the ProKlim handbook. The results of this study are in line with the results of research conducted by Wibowo & Suryani, which states that the use of book media as a method of health promotion affects increasing knowledge of the use of MSG in housewives [9]. Putri et al.'s research revealed that education using booklet media affected preconception nutrition knowledge, attitudes, and macronutrient intake in premarital women [10]. Caesar & Dewi's research proves that the provision of pocketbook media interventions has a very significant effect on the sanitation knowledge of village health cadres [11]. While the research of Wahyuni et al. stated that although there were differences in adolescent knowledge about HIV/AIDS before and after giving pocketbooks, counseling was more effective than giving pocketbooks [13]. Therefore, increasing knowledge by using book media can be accompanied by counseling.

Knowledge is the result of human sensing either through the eyes, ears, nose, tongue, or the sense of touch. Increasing knowledge can be done through various interventions

on the senses using various media. The use of intervention media to carry out health promotion must meet several aspects so that the intervention media is easily accepted and understood by the target group. Print media as an intervention medium used, among others, must generate interest in the target group to read the messages contained in it [9]. Therefore, the manual used must be attractive and easily understood by the public.

Increasing knowledge through the ProKlim guidebook will certainly be very useful in implementing ProKlim in the future. It is hoped that with the increase in public knowledge, the active participation of the community in the implementation of ProKlim will also strengthen. This is based on the results of previous studies which show that community participation in contributing ideas, making decisions, and carrying out documentation and supervision is still very low, which causes all decisions to depend on the officers in charge of ProKlim in the region [6–8]. The lack of community participation is thought to be the result of the community's lack of knowledge about the importance of their participation in the success of this program.

## 5 Conclusion

Based on the results of research that has been carried out on the effect of using handbooks on increasing community knowledge about the *Program Kampung Iklim* (ProKlim), it can be concluded that there are significant differences in community knowledge about ProKlim before and after the handbook is given.

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