

Relationship between adaptation and mitigation of climate change with the climate village program (ProKlim) In Paser Regency

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ABSTRACT

This study aims to understand the relationship between the Climate Village Program (ProKlim) success rate and climate change adaptation and mitigation actions in Paser Regency. The results of the analysis showed that simultaneously climate change adaptation actions had a real effect on the success rate of ProKlim in Paser Regency by 81.45% with a significance level of 0.00054 (less than $\alpha = 0.05$), while climate change mitigation actions have a real effect on the success rate of ProKlim in Paser Regency by 83.66% with a significance level of 0.0052 (less than $\alpha = 0.05$). Meanwhile, the relationship of adaptation actions to the success rate of the ProKlim in Paser Regency is partially influenced by the efforts of control of climate change-related diseases with a significant level of 0.0305 (less than $\alpha=0.05$). Meanwhile, climate change mitigation actions, it is partially influenced by low-emission agricultural cultivation efforts with a significant level of 0.0305 (less than $\alpha=0.05$). Thus, the efforts to achieve the success of ProKlim cannot be done partially but must be carried out comprehensively because the impact of climate change has been felt in all aspects so that it is necessary to apply all variables of climate change adaptation and mitigation sustainably.

ABSTRAK

Penelitian ini bertujuan untuk memahami hubungan tingkat keberhasilan Program Desa Iklim (ProKlim) dengan aksi adaptasi dan mitigasi perubahan iklim di Kabupaten Paser. Hasil analisis menunjukkan bahwa secara simultan aksi adaptasi perubahan iklim berpengaruh nyata terhadap tingkat keberhasilan ProKlim di Kabupaten Paser sebesar 81,45% dengan tingkat signifikansi 0,00054 (kurang dari $\alpha = 0,05$), sedangkan aksi mitigasi perubahan iklim mempunyai pengaruh nyata terhadap keberhasilan ProKlim di Kabupaten Paser. berpengaruh terhadap tingkat keberhasilan ProKlim di Kabupaten Paser sebesar 83,66% dengan tingkat signifikansi 0,0052 (kurang dari $\alpha = 0,05$). Sedangkan hubungan tindakan adaptasi terhadap tingkat keberhasilan ProKlim di Kabupaten Paser sebagian dipengaruhi oleh upaya pengendalian penyakit terkait perubahan iklim dengan tingkat signifikansi sebesar 0,0305 (kurang dari $\alpha=0,05$). Sedangkan tindakan mitigasi perubahan iklim, sebagian dipengaruhi oleh upaya budidaya pertanian rendah emisi dengan tingkat signifikan sebesar 0,0305 (kurang dari $\alpha=0,05$). Dengan demikian, upaya untuk mencapai keberhasilan ProKlim tidak dapat dilakukan secara parsial melainkan harus dilakukan secara komprehensif karena dampak perubahan iklim sudah terasa di seluruh aspek sehingga perlu diterapkannya seluruh variabel adaptasi dan mitigasi perubahan iklim secara berkelanjutan.

Keywords: *adaptation, climate change, climate village, mitigation, Paser regency*

INTRODUCTION

Indonesia is currently faced with tremendous challenges including climate change, biodiversity loss, and broader social and economic change (Monk & Priatna, 2022). Changing climate conditions are currently a phenomenon where the impact has significantly affected various sectors. The changes that can be felt are changes in temperature, weather changes, rainy season patterns and rainfall itself. Although this is a natural occurrence that occurs in the universe, starting in the 1800s, human activities are the main trigger for climate change, especially the use of energy sources derived from fuels such as petroleum, natural gas and coal (Ismiartha et al., 2022). Very significant changes occur in the climate will have a very drastic impact on human life and other living things. The form of impact that arises is in the form of many natural disasters and

various kinds of changes related to vital sectors such as food security, safety and health (Ismiartha et al., 2022). Climate change control is one of the sustainable development goals so that environmental issues are targeted by both central and regional governments. Ideally, planning and funding these issues requires top-down and bottom-up harmonization and implementation (Pambudi, 2023). Climate change will cause global warming where the condition of increasing the earth's surface temperature from year to year caused by the impact of greenhouse gases which is a continuation of CO₂, CH₄, NO₂, O₃ and CFC gas emissions which are then trapped in the earth's atmosphere (IPCC, 2007).

The National Climate Village Program (ProKlim) has been running in several regions of Indonesia which is expected to spur policymakers to strengthen capacity in

an effort to deal with climate change through adaptation and mitigation actions tailored to regional conditions (Ismiartha et al., 2022). With the implementation of this program, the government gives appreciation to the community in this case at the level of RWs, hamlets, villages and villages that have actively applied adaptation and mitigation actions in their scope. The level of their ability to carry out adaptation and mitigation actions is divided into four categories, namely Pratama, Madya, Utama and Lestari in accordance with the Regulation of the Director General of Climate Change No P.4 of 2021 concerning Guidelines for the Implementation of the Climate Village Program, where it is explained that if the assessment percentage reaches 50%, it is categorized as ProKlim Pratama, 50% - 81% is included in the Intermediate level, 81% and above as the Main level while the Sustainable category if the ProKlim location has reached the Main level and built several new climate villages. So it is necessary to analyze the factors that can increase the success of the community in the administrative area to be included in the main and Sustainable levels.

Since the launch of the Climate Village Program, Paser Regency, East Kalimantan Province, has had several areas, especially at the village community level, which are registered as Climate Villages in the National Registration System of the Directorate General of Climate Change Control (Ditjen PPI, 2023). The Climate Village Program is a site or local level in question is the most basic location starting from the level of Rukun Masyarakat or Dusun to a slightly higher level, namely Village or Kelurahan to make efforts to raise strength and ability in climate change adaptation and mitigation actions with the intention of being able to improve the welfare of life even though they have to face the phenomenon of climate change (Furqan, 2020).

The previous research explained the partial climate change adaptation and mitigation efforts as conducted by Gebre (2023) which identified the determinants of success of farmers in Kenya in efforts to select climate change adaptation strategies in the food security sector, Rinaldy, et al (2017) by conducting research on community development in building waste banks in an effort to mitigate climate change. Meanwhile, research related to strengthening and developing community institutional capacity in efforts to adapt and climate change was carried out by Dannevig, et al (2022) which produced findings in the form of developing cooperation from various parties in climate change adaptation and mitigation actions, Bohensky et al (2016) revealed that community participation has a role in climate change adaptation and mitigation action efforts as shown by the participation of the community in responding to the top three challenges in identifying problems that arise in climate change. Furthermore, Afni (2021) found that Tobekgadong Village opened up to the Climate Village

Program so that it could provide individual understanding in efforts to control climate change. The research to be carried out emphasizes comprehensive climate change adaptation and mitigation action efforts, including institutional strengthening and analyzing strategies for developing climate change control efforts through the Climate Village Program in Paser Regency.

Climate Change Adaptation

Action in an effort to adjust or adapt that has been done by humans due to environmental phenomena that occur is not something new. Countries in regions that have four seasons will adjust to natural conditions according to the seasons that occur. In winter they will use clothes adapted to the conditions of the season at that time. Likewise with the people of Indonesia. Those who live in mountainous areas will use thick clothes to give a warm feeling to the body, while those who live in coastal areas will use thin clothes and easy to absorb sweat because of the hot beach atmosphere. Aldrian et al. (2011) explained that adaptation is defined as an effort to adapt to a changing climate system. So that efforts to reduce the impact or risk of climate change, such as disaster management, are included in climate change adaptation efforts because these actions include efforts to adapt to natural conditions, which experience climate change.

Indonesia is known as an island country so it is very vulnerable to the phenomenon of climate change. In addition, as a developing country, Indonesia's capacity in implementing climate change adaptation actions is not yet on par with developed countries. So it is feared that the implementation of development can be constrained because of this phenomenon. Those who have a very high vulnerability to the impact of climate change are people who are still classified as poor, and also those who feel the most impact from the constraints on the implementation of national development. So that the implementation of climate change adaptation also includes poverty alleviation programs.

Climate Change Mitigation

Without realizing it, most people have taken action to mitigate climate change in various ways, even though it is done without realizing it. For example, some communities that have a penchant for greening various kinds of vegetation, have unwittingly mitigated climate change. Planting trees can provide benefits such as providing shade from the scorching sun, as protection from the wind, lowering the ambient temperature in addition to its benefits which have the ability to absorb greenhouse gas (GHG) emissions. Similarly, those who ride bicycles for transportation, consciously or unconsciously they have implemented climate change mitigation actions. Bicycles are environmentally friendly

vehicles because they do not produce gases from burning fuel into the air, unlike other vehicles that use fossil fuels which have become the largest contributor as a source of greenhouse gas emissions. Based on the description of the examples above, it can be defined that mitigation is various actions or efforts that are actively in preventing climate change or global warming by reducing GHG emissions and / or increasing GHG absorption. It is well known that global warming and climate change are difficult problems to deal with in the future so that mitigation actions are sought to minimize the causes.

In this study, several variables will be used in the Climate Village Program which refers to the National Climate Change Registration System (Ditjen PPI, 2023) as follows:

1. Climate Change Adaptation
 - a) Control of droughts, floods and landslides
 - b) Improved food security
 - c) Control of climate-related diseases
2. Climate Change Mitigation
 - a) Waste management, liquid and liquid waste
 - b) Use of new renewable energy, conservation and energy saving
 - c) Low greenhouse gas emission agricultural cultivation
 - d) Improvement or effort to maintain vegetation cover
 - e) Forest and land fire prevention and control
3. Institutional Capacity Strengthening
 - a) Community institutions
 - b) Policy support related to climate change control
 - c) Community participation
 - d) Community capacity
 - e) Support external resources
 - f) Development of activities
 - g) Action data management

The aim to be achieved in this study is to analyze the relationship between the success rate of climate villages with climate change adaptation and mitigation actions at the site level, in this case climate villages in Paser Regency with a choice of 14 (fourteen) locations. The villages that have received the title as climate villages as well as being used as the basis for problem formulation in analyzing the factors that are used as a basis for improving climate change adaptation and mitigation actions in Paser Regency are as follows:

1. Klempang Sari Village, Kuaro District (Madya)
2. Damit Village, Pasir Belengkong District (Pratama)
3. Padang Pengrapat Village, Tanah Grogot District (Main)
4. Sungai Terik Village, Batu Sopang District (Main)
5. Padang Jaya Village, Kuaro District (Madya)

6. Kertabumi Village, Kuaro District (Madya)
7. Petangis Village, Batu Engau District (Pratama)
8. Modang Village, Kuaro District (Madya)
9. Sebakung Makmur Village, Long Kali District (Madya)
10. Sebakung Taka Village, Long Kali District (Madya)
11. Kendarom Village, Kuaro District (Main)
12. Muser Village, Muara Samu District (Main Thropy)
13. Tajur Village, Long Ikis District (Madya)
14. Laburan Village, Pasir Belengkong District (Madya)

METHODS

Location of Research

The research conducted is quantitative research. Quantitative design is used to analyze activities that have a correlation in determining the success of climate change adaptation and mitigation actions in Paser Regency. The quantitative data comes from locations that have become Climate Villages in the National Registration System of the Directorate of Climate Change Control of the Ministry of Environment and Forestry of the Republic of Indonesia. These adaptation and mitigation action activities are quantified using the Likert scale for each action data obtained. The results of quantitative are then carried out by statistical analysis of multiple regression. Then from the test results, what activities can be applied to illustrate the success rate of the Climate Village Program in Paser Regency.

Data Sources

The determination of data sources for interviewees is carried out purposively, which is chosen with the consideration that only locations that have been registered as Climate Villages under the guidance of the Paser Regency Government but can be applied to other social administrative communities that have not been registered as Climate Villages, especially in Paser Regency if the social conditions have similarities or similarities with the socio-administrative conditions used as research locations. The analysis will be divided into two, namely adaptation actions and climate change mitigation actions. As for climate change adaptation actions, the dependent variable is the success rate of ProKlim with its independent variables, namely: drought, flood and landslide control buildings (X1'1), food security (X1'2), and climate disease control (X1'3). Meanwhile, climate change mitigation actions as dependent variables are the success rate of ProKlim and its independent variables, namely waste and liquid waste management (X2'1), the use of renewable energy, energy conservation and saving (X2'2), low-GHG emission agricultural cultivation (X2'3), increasing and/or

maintaining vegetation cover (X2'4), and preventing and combating forest and land fires (X2'5).

Data Collection

Data collection techniques to be used are interviews, observations and secondary data. For the measurement of each variable parameter independent of adaptation action and climate change mitigation using the Likert system with 4 criteria, namely S = all (100); SB = mostly (67); SK = small part (33); TA = none (0) (Sugiyono, 2013). While the independent variable is based on the ProKlim value of each location listed in the National Registration System of the Directorate of Climate Change Control of the Ministry of Environment and Forestry of the Republic of Indonesia. Data analysis technique is an inferential data analysis technique that is a correlation using multiple regression equations. The regression equation is written as follows:

1. Climate change adaptation action

$$Y = \beta_0 + \beta_1'1 X1'1 + \beta_1'2 X1'2 + \beta_1'3 X1'3$$

Where:

- B1'n = coefficient for variable X1'n
- X1'1 = drought, flood and landslide control buildings
- X1'2 = food security
- X1'3 = climate disease control

2. Climate change mitigation actions

$$Y = \beta_0 + \beta_2'1 X2'1 + \beta_2'2 X2'2 + \beta_2'3 X2'3 + \beta_2'4 X2'4 + \beta_2'5 X2'5$$

Where:

- $\beta_2'n$ = coefficient for variable X2'n
- X2'1 = waste and liquid waste management
- X2'2 = renewable energy use, energy conservation and utilization
- X2'3 = low-GHG emission agricultural cultivation
- X2'4 = increase and/or maintain vegetation cover
- X2'5 = preventing and suppressing forest and/or land fires

RESULTS AND DISCUSSIONS

Taking into account the situation as described above, it is necessary to analyze the relationship between variables of adaptation action and climate change mitigation with the success rate of ProKlim implementation in Paser Regency, East Kalimantan Province.

Climate Change Adaptation Action

By using multiple regression in the excel program, processed data is obtained as follows:

Table 1. Results of multiple regression calculation of climate change adaptation action through ProKlim in Paser Regency.

Regression Statistics	
Multiple R	0.902477529
R Square	0.814465691
Adjusted R Square	0.758805398
Standard Error	7.289755889
Observations	14

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	3	2332.784027	777.5946755	14.63279564	0.000547131
Residual	10	531.4054092	53.14054092		
Total	13	2864.189436			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	2.3276	14.2394	0.1635	0.8734	-29.3998	34.0550
(X1'1)	0.1736	0.1550	1.1199	0.2889	-0.1718	0.5190
(X1'2)	0.3138	0.1735	1.8086	0.1006	-0.0728	0.7004
(X1'3)	0.3584	0.1424	2.5172	0.0305	0.0412	0.6757

Based on Table 1, the regression equation $Y = 2.3276 + 0.1736 X1'1 + 0.3138 X1'2 + 0.3584 X1'3 + e$. In this equation, a regression coefficient of 2.3276 is obtained where each independent variable has a positive and unidirectional effect on the dependent variable, which means that the increase in the independent variable.

1) Sign and magnitude calculation

a) Increase in drought, flood and landslide control buildings (X1'1) by 0.1736 where if every one point X1'1 then the success of climate change adaptation will also increase by 0.1736 provided that the value of other independent variables in fixed conditions;

b) Food security (X1'2) of 0.3138 which means that every point X1'2 then the value of food security will increase by 0.3138 provided that the value of other variables is fixed;

c) Control of climate change-related diseases (X1'3) of 0.3584 which means that every point X1'3 then the value of the level of control against climate change-related diseases will increase by 0.3584 provided that the values of other variables are fixed. Meanwhile, the biggest influence on the success of adaptation actions through ProKlim is efforts to control diseases related to climate change.

2) Overall test calculation results (Test F)

Based on Table 1. F calculate is 14.6328 with a significance of 0.000547 (below 0.05) which means that drought, flood and landslide control, food security and climate disease control buildings simultaneously have a real influence on the success of climate change adaptation actions through the Climate Village Program in Paser Regency.

3) Partial test calculation results (Test t)

a) The results of the analysis show that the increase in drought, flood and landslide control buildings has a calculated value of 1.1199 with a significance value of 0.2889. The significance value of 0.2889 is more than 0.05 which can be concluded that the presence of drought, flood and landslide control buildings partially does not have a significant effect on the success of the Climate Village Program.

b) The results of the analysis show that food security has a calculated value of 1.1199 with a significance value of 1.8086. The significance value of 0.1006 is more than 0.05 which can be concluded that food security efforts have no significant effect on the

success of the Climate Village Program.

c) The results of the analysis show that control of climate change-related diseases has a calculated value of 2.5172 with a significance value of 0.0305. The significance value of 0.0305 is less than 0.05 which can be concluded that efforts to control climate change-related diseases partially have a significant effect on the success of the Climate Village Program.

4) Coefficient of determination

The regression test results showed that R2 was 0.8145 (81.45%). This shows that 81.45% of the success of climate change adaptation actions through the Climate Village Program can be explained by building variables of drought, flood and landslide control, food security and climate disease control simultaneously while the remaining 18.55% is influenced by other variables that have not been included in the equation.

Climate Change Mitigation Action

By using multiple regression in the excel program, processed data is obtained as follows:

Table 2. Results of multiple regression calculations for climate change mitigation action.

Regression Statistics	
Multiple R	0.914669
R Square	0.836620
Adjusted R Square	0.734507
Standard Error	7.648138
Observations	14

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	5	2396.2373	479.2475	8.1931	0.0052
Residual	8	467.9522	58.4940		
Total	13	2864.1894			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	11.3362	9.8667	1.1489	0.2838	-11.4165	34.0889
(X2'1)	0.3524	0.2221	1.5869	0.1512	-0.1597	0.8645
(X2'2)	-0.2228	0.1896	-1.1748	0.2739	-0.6600	0.2145
(X2'3)	0.4751	0.1383	3.4097	0.0092	0.1526	0.7904
(X2'4)	0.1883	0.1433	1.3141	0.2252	-0.1422	0.5188
(X2'5)	0.1254	0.1467	0.8547	0.4176	-0.2129	0.4637

Based on Table 2, the regression equation $Y = 11.3362 + 0.3524 X_2^1 - 0.2228 X_2^2 + 0.4715 X_2^3 + 0.1883 X_2^4 + 0.1254 X_2^5 + e$. In this equation, a regression coefficient of 11.3362 is obtained where each independent variable has a positive and unidirectional effect on the dependent variable except for the use of renewable energy, conservation and energy harvesting which shows a negative or opposite influence to the success rate of climate change adaptation with ProKlim.

1) Sign and magnitude calculation

a) Waste and liquid waste management (X_2^1) of 0.3524 where if every one point X_2^1 then the success of climate change mitigation will also increase by 0.3524 provided that the value of other independent variables in fixed conditions;

b) Agricultural cultivation with low GHG emissions (X_2^3) of 0.4715 where if every one point X_2^3 then the success of climate change mitigation will also increase by 0.4715 provided that the value of other independent variables under fixed conditions;

c) Increase and/or maintain vegetation cover (X_2^4) by 0.1883 where if every one point X_2^4 then the success of climate change mitigation will also increase by 0.1883 provided that the value of other independent variables under fixed conditions;

d) Prevention and control of forest and/or land fires (X_2^5) of 0.1254 where if every one point X_2^5 then the success of climate change mitigation will also increase by 0.1254 provided that the value of other independent variables in fixed conditions. Meanwhile, the biggest influence on the success of mitigation actions through ProKlim is low-GHG emission agricultural cultivation.

2) Overall test calculation results (Test F)

Based on Table 2. F calculate obtained 8.1931 with a significance of 0.0052 (below 0.05) which means that waste and liquid waste management, the use of renewable energy, conservation and energy saving, agricultural cultivation are low GHG emissions, increasing and/or maintaining vegetation cover, preventing and combating forest and/or land fires simultaneously have a significant influence on the success of climate change mitigation actions through the Climate Village Program in Paser Regency.

3) Partial test calculation results (Test t)

a) The results of the analysis show that waste and liquid waste management has a calculated value of 1.5869 with a significance value of 0.1512. The significance value of 0.1512 is more than 0.05 which can be concluded that partial waste and liquid waste

management does not have a significant effect on the success of mitigation actions for the Climate Village Program in Paser Regency.

b) The results of the analysis showed that the use of renewable energy, conservation and energy saving was calculated at -1.1748 with a significance value of 0.2739. The significance value of 0.2739 is more than 0.05 which can be concluded that partially the use of renewable energy, energy conservation and saving does not have a significant effect on the success of mitigation actions of the Climate Village Program in Paser Regency.

c) The results of the analysis showed that low-emission agricultural cultivation was calculated at -3.4097 with a significance value of 0.0092. The significance value of 0.0092 is less than 0.05 which can be concluded that partially low-emission agricultural cultivation has a significant effect on the success of mitigation actions of the Climate Village Program in Paser Regency.

d) The results of the analysis show that increasing and/or maintaining vegetation cover has a calculated value of 1.3141 with a significance value of 0.2252. The significance value of 0.2252 is more than 0.05 which can be concluded that partially increasing and/or maintaining vegetation cover does not significantly affect the success of mitigation actions of the Climate Village Program in Paser Regency.

e) The results of the analysis show that efforts to prevent and overcome forest and/or land fires have a calculated value of 0.8547 with a significance value of 0.4176. The significance value of 0.2252 is more than 0.05 which can be concluded that partially increasing and/or maintaining vegetation cover does not significantly affect the success of mitigation actions of the Climate Village Program in Paser Regency.

4) Coefficient of determination

The regression test results showed that R^2 was 0.8366 (83.66%). This shows that 83.66% of the success of climate change mitigation actions through the Climate Village Program in Paser Regency can be explained by waste and liquid waste management efforts, the use of renewable energy, energy conservation and saving, Low-emission agricultural cultivation, increasing and/or maintaining vegetation cover, efforts to prevent and control forest and/or land fires, simultaneously while the remaining 16.34% is influenced by other variables that have not been included in the equation.

CONCLUSION

Based on the results of research and discussion, the following can be concluded:

1. There is a positive and significant relationship between the level of the ProKlim in Paser Regency and climate change adaptation actions in the form of efforts to develop drought, flood and landslide control, food security efforts and climate disease control efforts simultaneously, which is shown by an R² value of 0.8145 which means that the variable of climate change adaptation action has a real effect on the success rate of ProKlim in Paser Regency by 81.45% with a significance of 0.00054 (less than $\alpha = 0.05$), while the remaining 18.55 is influenced by other factors that are not contained in the equation model.

2. The relationship between the success rate of climate change adaptation actions through ProKlim in Paser Regency and with partial climate change adaptation efforts is marked by a partial significance value, namely the increase in drought, flood and landslide control buildings has a significance value of 0.2889 (greater than $\alpha = 0.05$); food security efforts with a significance value of 1.8086 (more than $\alpha = 0.05$); while control of climate change-related diseases has an influence on the success of ProKlim which is indicated by a significance value of 0.0305 (less than $\alpha = 0.05$).

3. There is a positive and significant relationship between the success rate of the ProKlim in Paser Regency and climate change mitigation actions in the form of waste and liquid waste management efforts; use of renewable energy; energy conservation and saving; low-emission agricultural cultivation; increase and/or maintain vegetation cover; efforts to prevent and forest and/or land fire management; simultaneously, which is shown by an R² value of 0.8366 which means that the variable of climate change mitigation action has a real effect on the success rate of ProKlim in Paser Regency by 83.66% with a significance of 0.0052 (less than $\alpha = 0.05$), while the remaining 18.55 is influenced by other factors that are not contained in the equation model.

4. The relationship between the success rate of climate change mitigation actions through ProKlim in Paser Regency and partial climate change mitigation efforts shows that waste and liquid waste management has a significance value of 0.1512 (more than $\alpha=0.05$); the use of renewable energy, conservation and saving has a significance of 0.2739 (more than $\alpha=0.05$); low-emission agricultural cultivation significance value of 0.0092 (less than $\alpha=0.05$); increasing and/or maintaining vegetation cover has a significance value of 0.2252 (more than $\alpha=0.05$); Efforts to prevent and

overcome forest and/or land fires have a significance of 0.4176 ((more than $\alpha=0.05$).

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