FIRE FIGHTING AND RESCUE STRATEGY IN FIRE DISASTER HANDLING IN BANTUL REGENCY

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ABSTRACT

Fire is one of the most frequent disasters in Bantul Regency. The increase and decrease in the number of fire disasters require fast and precise handling by the Fire and Rescue Department. This study analyzes various strategies and efforts that have been made by the Fire and Rescue Department of Bantul Regency in dealing with fire disasters in Bantul Regency. In this research, a qualitative approach was used. The data collection techniques were interviews, observations, and documentation. The results showed the Fire and Rescue Department have integrated three main aspects in their strategies, namely objectives, policies, and programs. The formulated objectives formulated have met the criteria that are clear, measurable, have a time limit, and are relevant to the formulation of the strategy. In addition, existing policies have supported the strategies while providing limitations on operational actions. The designed programs have also been aligned with the established strategies. However, several policies and programs have not been able to be implemented optimally due to budget constraints and lack of personnel.

Keywords: Strategy, Disaster Management, Fire, Fire And Rescue, Bantul Regency.

ABSTRAK

Kebakaran merupakan salah satu bencana yang paling sering terjadi di Kabupaten Bantul. Peningkatan dan penurunan jumlah bencana kebakaran memerlukan penanganan yang cepat dan tepat oleh Pemadam Kebakaran dan Penyelamatan (Damkarmat). Penelitian ini menganalisis berbagai strategi serta upaya yang telah dilakukan untuk peningkatan strategi oleh Pemadam Kebakaran dan Penyelamatan Kabupaten Bantul dalam penanggulangan bencana kebakaran di Kabupaten Bantul. Penelitian ini menggunakan pendekatan kualitatif. Teknik pengumpulan data menggunakan wawancara, observasi, dan dokumentasi.

Hasil penelitian menunjukkan bahwa strategi yang diterapkan oleh Pemadam Kebakaran dan Penyelamatan (Damkarmat) telah mengintegrasikan tiga aspek utama, yaitu tujuan, kebijakan, dan program. Tujuan yang dirumuskan oleh Damkarmat telah memenuhi kriteria yang jelas, terukur, memiliki batas waktu, dan relevan dengan perumusan strategi. Selain itu, kebijakan yang ada telah mendukung strategi yang disusun sekaligus memberikan batasan pada tindakan operasional. Program-program yang dirancang pun telah diselaraskan dengan strategi yang ditetapkan. Namun demikian, beberapa kebijakan dan program belum dapat diimplementasikan secara optimal karena keterbatasan anggaran dan kurangnya jumlah personel.

Kata Kunci: Strategi, Penanggulangan Bencana, Kebakaran, Pemadam Kebakaran dan Penyelamatan, Kabupaten Bantul.

INTRODUCTION

The Special Region of Yogyakarta Province is one of the provinces in Indonesia that has threats and potential for disasters. Yogyakarta Province has four regencies namely Sleman, Kulon Progo, Gunung Kidul, and Bantul, and one city, namely Yogyakarta City. According to the 2022 Disaster Risk Index data, the disasters that potentially occur in the Special Region of Yogyakarta include volcanic eruptions, earthquakes, floods, droughts, landslides, extreme waves/abrasion, extreme weather, and fires. Figure 1 is a diagram of the Disaster Risk Index values of the Special Region of Yogyakarta Province throughout 2021 to 2022.
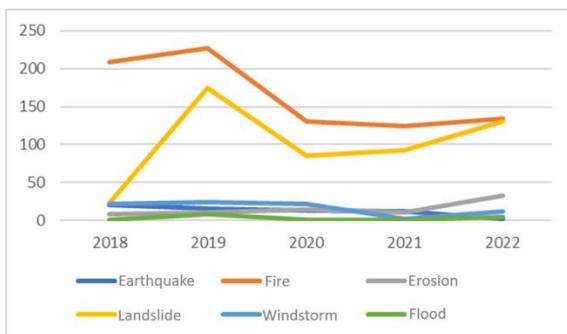

Source: Indonesian Disaster Risk Index 2022 (Badan Nasional Penanggulangan Bencana, 2023)

Figure 1. Disaster Risk Index of the Special Region of Yogyakarta Province

The data in Figure 1 shows that disaster vulnerability is still quite high in several areas such as Bantul Regency, Kulon Progo Regency, and Gunung Kidul Regency. However, all people must remain vigilant against the threat of disasters that may occur in their respective areas.

The Disaster Risk Index shows that Bantul is the regency with the second highest level of disaster vulnerability after Kulon Progo in 2021-2022. However, in 2022, Bantul Regency was the regency with the highest level of disaster

vulnerability compared to other regencies/cities. Figure 2 presents the number of disasters that occurred in Bantul Regency from 2018 to 2022.

Source: Indonesian Disaster Risk Index Book 2022 (Badan Nasional Penanggulangan Bencana, 2023)
Figure 2. Number of Disasters in Bantul Regency

Based on the Figure 2, it can be seen that there are several types of disasters that occur in Bantul Regency. The data shows that the most frequent disaster in Bantul Regency is fire. Fire is a disaster that occurs due to uncontrolled and unwanted fire and can cause damage and loss. The cause of the fire can come from human actions, either intentionally or unintentionally, or due to natural factors (Lembaga Penelitian dan Pembangunan Sosial, 2001).

Human negligence is one of the main factors in the fire in Bantul Regency (*Badan Penanggulangan Bencana Daerah Kabupaten Bantul*, 2022a). The high number of fire incidents that occur in Bantul Regency needs to be handled properly and quickly by the Fire and Rescue Department in Bantul Regency. Fire and Rescue is one of three fields under the auspices of the Bantul Regency Regional Disaster Management Agency which is tasked with dealing with disasters, especially fires as an extension of the Bantul Regency Regent. The main tasks of the Fire and Rescue Department are to prevent fires, extinguish fires, and rescue victims of fires and other disasters.

The Fire and Rescue Department also plays a role in preventing and handling fire disasters and maintaining public safety such as property and objects from fire. An effective firefighting strategy has a significant impact on reducing the risk of fire disasters. In addition to designing the right strategy, policies and support from the local government are needed to implement fire prevention programs in accordance with the established strategy.

The study conducted by Hidayah et al. (2020) regarding firefighting strategies in Samarinda City showed that the Samarinda City Fire Department had made maximum efforts to handle fire disasters. However, support from the government was still lacking, such as the absence of procurement of new firefighting equipment or vehicles, and minimal attention to the welfare of the

firefighter personnel. Furthermore, a study by Bacas and Zahran (2022) regarding the strategy of the Bekasi City Fire Department showed that overall, the prevention strategy had been running well with changes in environmental aspects, but there were obstacles of the availability of facilities and infrastructure which caused the strategy to be less than optimal in reducing fire disasters. Based on the results of previous studies, appropriate policies and support are needed in implementing programs, so that the set strategies can have a significant impact on reducing the risk and overcoming fire disasters.

The Fire and Rescue Department needs to formulate various strategies for overcoming fire disasters. However, policies in overcoming these disasters must also be adjusted to strategies that are designed and managed effectively and involve the active role of the private sector and the community. Based on these problems, this study discusses the strategies that have been implemented by Bantul Regency Fire and Rescue Department, especially those related to three aspects, namely objectives, policies, and programs.

THEORETICAL REVIEW

1. Strategies

Effective strategies require teamwork, theme selection to identify supporting factors, and the application of rational idea implementation principles, funding effectiveness, and strategies to achieve goals effectively (Tjiptono, 2000). According to Mintzberg and Quinn (1991), strategies are made by government officials who have positions to determine accurate initial steps so that they can solve the problems being faced. Meanwhile, Pearce and Robinson (2014) stated that strategies are similar to long-term large-scale plans that are interconnected with the environment for the purpose of an organization.

Based on the aforementioned theories of strategy, Mintzberg et al's (2003) theory was used as the theoretical basis in this study that refers to the strategy of the Fire and Rescue Department in dealing with fire disasters in Bantul Regency, Special Region of Yogyakarta Province. There are several dimensions of strategy that are used as organizational tools to achieve predetermined goals or targets. The types of strategies (Mintzberg et al., 2003) are:

a. Objectives

Objectives determine what must be achieved and when to achieve them, but

do not state how the results are to be achieved. All organizations have multiple goals that exist in a complex hierarchy including value objectives, which express the broad value premises that the organization seeks to pursue; overall organizational goals, which define the nature of the organization and its direction; and a series of less permanent goals that define the targets of each organizational unit, its subunits, and ultimately the entire major program of activities within each subunit. The major goals that affect the direction and survival of the entity as a whole are called strategic goals (Miles & Huberman, 1992).

b. Policies

Policies are rules or guidelines that state the boundaries of action to be taken. These rules often take the form of contingent decisions to resolve conflicts between individual goals.

c. Programs

Programs define the series of stepwise actions necessary to achieve main objectives. They express how the objectives will be achieved within the boundaries set by the policies. They ensure that resources are committed to achieving the objectives, and they provide a dynamic path with which progress can be measured. The main programs that determine the thrust and survival of an entity are called strategic programs (Hakimi, 2020).

2. Fire Disaster Management

Disaster management is a dynamic, continuous, and integrated process that aims to improve the quality of each interrelated stage, including analysis, observation, preparedness, mitigation, prevention, early warning, emergency response, rehabilitation, and reconstruction. In practice, disaster management involves three main stages, namely pre-disaster, emergency response, and post disaster.

a. Pre-Disaster Management

It refers to activities before a disaster, that are reducing the risk and the probability of the disaster occurring, including the implementation of mitigation, preparedness, and early warning.

b. Emergency Response Management

It refers to the stage when a disaster occurs including evacuation and emergency response activities that aim to reduce factors that have the potential to reduce the losses, in terms of material and casualties.

c. Post-Disaster Management

This is stage after the disaster occurs that involves rehabilitation and reconstruction activities of facilities and infrastructure and also

reactivating the services and economic devices.

3. Fire

Fire is a type of disaster event that can occur anywhere and can cause losses in the form of loss of life or property (Kowara & Martiana, 2017). Fire hazard refers to the risk caused by the possibility of contact or exposure to fire. This occurs from the start of the fire until the sparks appear and then the smoke and gas produced (Ramli, 2010).

METHOD

This study uses a qualitative approach. The qualitative approach is used for data collection, analysis, interpretation, and report writing which is different from the traditional quantitative approach (Creswell, 2009). This study took 10 months using primary data sources and secondary data sources. Primary data is a source that directly provides data to the collectors, while secondary data is a type of data that is not obtained directly from the source, but through intermediaries such as other people or documents (Arikunto, 2017). The data collection techniques applied in this study were semi-structured interviews, observation, and documentation. In the data analysis, the activities conducted were data reduction,

data presentation, and drawing conclusions (Ismail, 2015). The informants were selected by the purposive sampling method (Furchan, 2004). Purposive sampling is a method of determining samples with certain considerations or the person is considered to know the most about what we expect (Sugiono, 2013). The informants were:

1. The Head of Fire and Rescue Division,
2. The Sub-Coordinator of Fire Prevention Substance Group,
3. The Sub-Coordinator of Fire and Rescue Substance Group,
4. The Sub-Coordinator of Facilities and Infrastructure Substance Group, and
5. The Commander of Fire and Rescue Personnel Squad.

RESULTS AND DISCUSSION

Bantul Regency Fire and Rescue Department has duties and functions in organizing rescue and evacuation operations in conditions that endanger humans and emergency operations. They also have the obligation to carry out a quick response (response time) to handle and control fires. They are the forefront in implementing fire control to protect the community. This study analyzed how the Fire and Rescue Department's strategy in

dealing with fire disasters using the three dimensions in Mintzberg et al. (2003): Objectives, Policies and Programs.

1. Objectives

Objectives are the final results or outputs produced from an activity set by an agency. Objectives can also be interpreted as statements about things that need to be done and achieved and as guidelines for implementing a plan. The Bantul Regency Fire and Rescue Service has objectives in activity planning. Strategies can be determined based on the objectives of the organization. In this case, the objectives or targets have several indicators to see the effectiveness of a strategy implemented in an organization. Important indicators in determining the objectives of the Bantul Regency Fire and Rescue Department are clarity, measurability, time limitation, and relevance to the strategy.

a. Clarity

Objectives must be formulated in great detail and clearly so that there is no doubt about what is to be achieved. Clear objectives help avoid confusion and ensure everyone involved has the same understanding of what is expected. This is important to focus efforts and resources effectively. Bantul Regency Fire and Rescue Service has a clear objective written in the 2023 LAKIP BPBD of Bantul Regency. The objective set by the Bantul Regency Fire and Rescue Department is "Realizing disaster risk reduction." The objectives set are clear, unambiguous, and easy to understand because they make it easier to measure existing performance.

b. Measurability

Bantul Regency Fire and Rescue Department has the objective of realizing disaster risk reduction. Based on the existing objectives, the objectives must be measurable so that progress can be tracked and evaluated. Objectives are said to be measurable because they have specific criteria that can be measured annually. By having measurable objectives, progress towards achieving these objectives can be tracked objectively, allowing for accurate and timely evaluation of the extent to which the objectives have been achieved. This is very important for effective performance management and decision making. The objective of the Bantul Regency Fire and Rescue Department, "Realizing disaster risk reduction," is measurable, because disaster risk reduction can be measured based on the *Indeks Risiko Bencana Indonesia* (IRBI/Indonesian Disaster Risk Index) each year. Figure 3 shows the disaster risk index data in Bantul Regency in 2020-2023.
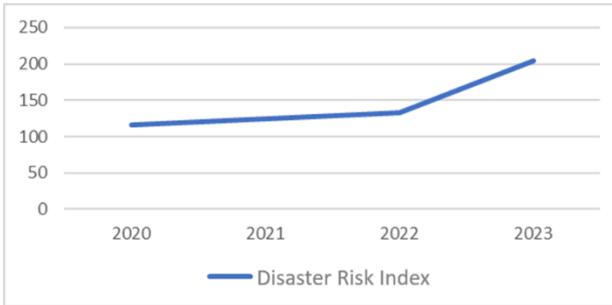
Source: BPBD Bantul Regency 2023

Figure 3. Bantul Regency Disaster Risk Index 2020-2023

Based on the data in Figure 3, the Disaster Risk Index in Bantul Regency has increased in the last four years. This data illustrates that the objective of the Bantul Regency Fire and Rescue Department, namely "Realizing disaster risk reduction," is Measurable.

c. Time Limitation

The objective is the output that must be achieved to determine the effectiveness of the activities carried out. The purpose of a time limit for objectives is that each objective set must have a clear time period or a specific deadline to achieve it. This requires that the objective be accompanied by a specific or defined schedule that helps in planning and measuring progress.

The objective implemented has a time limit and is in accordance with the Strategic Plan of the Regional Disaster Management Agency for 2021-2026 which is five years. The objective of the Bantul Regency Fire and Rescue Department can change if the Strategic Plan has expired.

d. Relevance to the Strategy

Relevance to the strategy means that objective must be related to the strategy that has been made. This relevance is important because it ensures that the strategies set to achieve the objective are in line with greater priorities and needs. By having relevant objective, the resources used, be it time, money, or energy, will be more efficient and effective in achieving the desired results. Relevance to the strategy also means that the objective set is not only realistic and measurable, but also support or strengthen the broader strategic objective of the organization. Ensuring relevance to strategy also helps in decision making and resource allocation, so that objectives that do not support the strategic direction can be avoided or prioritized. It also helps ensure that an organization is working in the same direction, increasing continuity and effectiveness in achieving the objective.

Table 1. The strategy of Bantul Regency Fire and Rescue Department in 2023

OBJECTIVE	GOAL	STRATEGY
Realizing disaster risk reduction	To Improve the Quality of Fire Control and Rescue	Fulfillment of Fire Fighting and Rescue Infrastructure and Facilities
		Fulfillment of Quantity and Quality Standards for Human Resources in Firefighting and Rescue
		Strengthening the Communication, Operation, Data, and Information Systems
		Strengthening Fire Prevention Systems.

Source: LAKIP BPBD Bantul Regency 2022 (Badan Penanggulangan Bencana Daerah Kabupaten Bantul, 2022b)

Based on the table above, there is data on the objectives, targets, and strategies implemented by the Bantul Regency Fire and Rescue Department. The table shows that the strategies implemented are in accordance with the existing objectives because the strategies that are formulated contain encouragement to provide support to realize a reduction in the risk of fire disasters. This is in accordance with the objectives of the Bantul Regency Fire and Rescue Department, namely: Realizing Disaster Risk Reduction. Therefore, it can be concluded that the strategies implemented have integrated the Objectives.

2. Policy

Policy is a series of decisions that guide or direct and limit the actions taken. Policy is also a series of concepts and principles that serve as guidelines and the basis for plans in implementing a job and how to act. Based on Mintzberg et al.'s theory (2003) theory and supported by observations in the field, the actions implemented by the Bantul Regency Fire and Rescue Department to overcome fire disasters are one of the efforts to achieve the objective. The following is an explanation of several indicators that contain the policy dimension.

a. Policy Direction Supports the Strategy Implementation

Policy direction is one of the factors in supporting the implementation of the strategy. The preparation of strategies and the direction of the regional development policy are important and inseparable parts. Strategy is a step containing indicative programs to achieve the objective. While policy is a guide or rule that is set to provide a framework for decision making.

The strategy and policy direction of the Bantul Regency Fire and Rescue Department are closely related because

both influence each other in achieving organizational goals. The policy carried out by the Bantul Regency Fire and Rescue Department is a manifestation of the strategy that has been formulated. This policy regulates the actions and steps that must be taken to achieve the objective or goals that have been set. In addition, the policy often contains indicators that are used to assess the extent to which the strategy has been successfully implemented.

b. Specific Limiting Actions

A policy is clearly and firmly designed to limit or regulate certain actions in an organization. This policy is usually used to ensure that the actions taken by the organization are in accordance with established standards or regulations and aims to avoid risks or problems.

There are four disaster management strategies written in the 2023 Bantul Regency BPBD Performance Report. According to existing data, each program carried out by the Bantul Regency Fire and Rescue Department has a policy direction that is in line with the strategy.

1) Fulfillment of Firefighting and Rescue Infrastructure and Facilities

In this strategy, there are two policy directions, namely standardization of infrastructure and facilities for prevention, firefighting and personal protective equipment and procurement of infrastructure and facilities for prevention, firefighting and personal protective equipment. Both policy directions are in accordance with the existing strategy, namely according to the context of fulfilling facilities and infrastructure.

2) Fulfillment of Quantity and Quality Standards for Human Resources in Firefighting and Rescue

In this strategy, there are 2 (two) policy directions, namely increasing personnel capacity through competency certification and implementing periodic and continuous Operation Plan drills. Both policies are in accordance with the existing strategy, namely regarding the fulfillment of the quantity and quality standards for Firefighting and Rescue personnel.

3) Strengthening the Communication, Operation, Data, and Information Systems

In this strategy, there are two policy directions, namely, the development of *Sistem Komunikasi dan Informasi Kebakaran dan Penyelamatan* (SKIK/Fire and Rescue Communication and Information System) to the village/sub-district level and other vital building objects

and the implementation of an incident command system (ICS). Both policies are in accordance with the existing strategy, namely regarding communication, operation, data, and information systems.

4) Strengthening the Fire Prevention System

In this strategy, there are 7 (seven) policy directions, namely, periodic review of fire hazard maps, increasing the scope of fire prevention socialization and literacy, strengthening the *Dokumen Rencana Induk Sistem Proteksi Kebakaran* (RISPK/Fire Protection System Master Plan Document), increasing the scope and quality of fire protection equipment inspections, cooperation and coordination between bordering regions, between institutions, and partnerships, the role and capacity of *Relawan Pemadam Kebakaran* (REDKAR/Firefighter Volunteers), community empowerment in fire prevention. The seven policies are in accordance with the existing strategy, namely regarding strengthening the fire prevention system.

Based on the above explanation, it can be concluded that the policy direction that has been set is effective and appropriate to limit certain actions during the strategy implementation process. The

policy direction that limits these strategic actions is a boundary for activities that may and may not be carried out. This policy plays an important role in ensuring that all actions taken are in accordance with the objectives.

3. **Program**

A program is an action or steps needed to achieve objectives within the limits set by the policy. A program emphasizes the importance of adaptation and flexibility in strategic planning (Bryson, 2005). Mintzberg et al. (2003) believed that effective strategies often emerge from adaptive processes that allow organizations to respond quickly to changes in market conditions and technology. Mintzberg et al. (2003) further stated that strategy is determined by the existence of programs implemented by an organization. The program has several indicators in its achievement, the indicators are as follows.

a. Conformity Between the Program and the Strategy

The Bantul Regency Fire and Rescue Department has several strategies that are structured in order to achieve its goals, namely the realization of disaster risk reduction. To realize the existing objective, the Bantul Regency Fire and Rescue Department has several programs that are implemented as a manifestation of the existing strategy. Table 2 lists the

program or activity data implemented by the Bantul Regency Fire and Rescue Department.

Table 2. Bantul Regency Fire and Rescue Program 2023

No.	Strategy	Activity Program
1	Strengthening the Fire Prevention System.	Formation of Fire and Rescue Volunteers at the sub-district/village level.
		Community Education about Fire Prevention and Control
		Inspection of Firefighting Facilities and Infrastructure Building
2	Fulfillment of Firefighting and Rescue Infrastructure and Facilities	Periodic Standardization of the Facilities and Infrastructure for Fire Prevention and Control, and Personal Protective Equipment
3	Fulfillment of Quantity and Quality Standards for Human Resources in Firefighting and Rescue	Certification of Technical and Analyst Skills in Fire Prevention and Control
4	Strengthening the Communication, Operation, Data, and Information Systems	Fire and Rescue Communication & Information System Development that can be Updated Periodically (Annually)

Source: Bantul Regency BPBD 2023 (compiled by the authors)

In Table 2, six programs have been implemented. The program is held by each person in charge who serves as a sub-coordinator for each substance in the Fire and Rescue Department. The program implementation is in accordance with the existing strategy. The implemented programs have included the strategy outlined in the 2023 LAKIP BPBD Bantul Regency. This shows the program conforms with the strategy

b. Commitment of Leaders and Members in Implementing the Strategy

In this indicator, the commitment of leaders and members in implementing the strategy is seen whether it is in accordance with service standards or not.

This is because the Leadership of the Bantul Regency Fire and Rescue Department plays an important role in implementing existing programs, which overall aim to increase the effectiveness and efficiency of services and improve public safety.

The leader has maximized its efforts to implement the strategies. Apart from the dedication and willingness of the leaders in implementing the strategy, the members also play important roles in implementing the strategy. The Fire and Rescue members or personnel are directly involved in the implementation of fire disaster management. The members' commitment in achieving an effective

strategy has been well. The members have complied with the strategic plan and worked together to achieve the objective. This involves loyalty, consistency and active participation in implementing the agreed strategy. Although it turns out that there are shortcomings in terms of human resources which cause a shortage of stand-by personnel. Six to seven people should have been available for each implementation but only be four are available.

c. Periodic Measurement of Program Success

The success of a program or activity is seen from whether the program is running effectively or not. The program implemented by the Bantul Regency Fire and Rescue Department has periodic measurements to determine whether the implemented program has achieved the expected success. Based on data obtained from the Bantul Regency BPBD, there are six programs by the Department to achieve its objective, the realization of disaster risk reduction. To see whether the implemented program is running effectively or not, a measurement of program success is needed.

Based on the results obtained, it can be seen that not all of these programs can be said to be successful because there are still unrecorded programs or that have not even been implemented or still in planning. Programs that have been running effectively include the formation of REDKAR because there is an increase in the number of volunteer participants each year, then the standardization program for facilities and infrastructure because the program has been implemented and recorded since 2022, and then the technical skills development program and analysis by the personnel which is routinely carried out yearly. In addition, several programs cannot be measured in terms of success. The first is the implementation of building inspections that was only recorded in 2023. Another is the community outreach program that has been running for a long time, yet the evaluation data was recorded in 2023. Therefore, the level of success of these programs could not be measured. Then the last program is the development of the Fire and Rescue Communication & Information System which is implemented in 2024.

Efforts made by the Fire and Rescue Department to improve strategies in handling fire disasters in Bantul Regency are as follows.

1. Technical Skills Improvement. This is carried out by providing special training, such as skills in using fire extinguishers, operating fire engines,

and using communication and navigation devices, also improving understanding of fire principles, including fire dynamics, fire behavior, and understanding of flammable materials. By improving the personnel's skills, it is hoped that the members will carry out their duties effectively to protect the community and the environment from the dangers of fire and other emergencies.

2. Utilization of Technology. The Bantul Regency Fire and Rescue Department has attempted to utilize existing technology by improving the Fire and Rescue Communication & Information System program. This is still being pursued to assist in fire disaster management.

3. Cooperation Improvement. Cooperation between agencies such as the Indonesian Red Cross, the Indonesian Army, the Indonesian Police, and other related agencies needs to be improved to increase effectiveness and efficiency in implementing various fire management strategies. This can be done by coordinating and sharing information regularly.

CONCLUSION

Based on the results and discussion, it can be concluded that the strategy of the Bantul Regency Fire and Rescue Department has integrated the Objectives, Policies, and Programs. This can be seen from the relationship between strategies, objectives, policies, and programs carried out by the Bantul Regency Fire and Rescue Department as follows:

a. From the objective aspect, the objective of the Bantul Regency Fire and Rescue Department is clear, measurable, has a time limit, and is relevant to the strategy.

b. From the policy aspect, the existing policies have supported the strategy and limited existing actions.

c. From the program aspect, the programs are in accordance with the strategy, the leaders and members are also committed in carrying out the program, and the program activities are carried out successfully.

Budget limitations and lack of personnel are the obstacles in the implementation of policies and programs so that several programs cannot be implemented optimally.

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