
Pentahelix Policy Management Paradigm as a Model for Disaster Management in Bojonegoro Regency East Java

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ABSTRACT

Purpose: The purpose of this research is to describe the implementation of the pentahelix of disaster management and the paradigm shift to find obstacles and develop an ideal and practical disaster management model.

Design/methodology/approach: This study uses a descriptive type of research with a qualitative approach. Data collection techniques using in-depth interviews. The data analysis technique uses data reduction, data presentation, and drawing conclusions. The data validity technique uses source triangulation and data triangulation.

Findings: The results showed that the pentahelix management as a disaster management policy in Bojonegoro Regency was not optimal.

Research limitations/implications: The theoretical implication is that the collaboration model that reflects pentahelic management has not been optimally formed, the role of each element of non-governmental organizations is not optimal.

Practical implications: The practical implication is the application of disaster pentahelix management in Bojonegoro Regency.

Originality/value: The originality of this research is an added value for researchers.

Paper type: a Research paper

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I. INTRODUCTION

Indonesia has a very high vulnerability and potential for disasters in terms of several aspects. Geographical, climatological, geological, and socio-demographic aspects affect the scope of disasters in Indonesia (Indiyanto & Kuswanjono, 2012; Tampubolon & Tjahjorini, 2014). Indonesia's geographical, geological, hydrological, demographic, and climate change and environmental degradation in Indonesia also influence the high frequency of disaster events (Tampubolon & Tjahjorini, 2014). The pentahelix management policy is very important as a form of paradigm change in disaster, which is also a form of public awareness education on the environment.

This research is to describe the implementation of the pentahelix of disaster management and the paradigm shift to find obstacles and develop an ideal and practical disaster management model in Bojonegoro Regency, East Java.

Concept development administration, Government bureaucracies as well as non-governmental organizations that play a role are involved in carrying out government functions, both in terms of providing public services and collectively developing economic, social and other development fields. According to Suryadi (2012), substantially the area of study for managers' work has varied interests from government and public issues, from defense and security to social welfare and environmental quality, from road and bridge

design and construction to space exploration and from environmental issues. tax and financial administration to human resource management. In addition, Keban (2004), argues that the nature of public administration is more related to the executive world, although it is also related to the judicial and legislative world. Public administration is concerned with the formulation and implementation of public policies, and public administration is concerned with various human problems and cooperative efforts to carry out government tasks.

Concept paradigm shift, The opinion of (Kuhn 2015) about the paradigm is an approach to investigating an object or starting point, expressing a point of view, formulating a theory, designing simple questions or reflections. Furthermore, Kuhn Wahab, (2014), suggests that the paradigm is the basis of the research tradition; it defines which issues are interesting and which are irrelevant. According to , the meaning of paradigm is a foundation of thinking, basic concept, or foundation of thinking that is used as a model or basic concept of scientists in conducting their studies. In his book, Kuhn mentions that paradigm is a key term used in the development of science.

Concept disaster management policy, Henry Fayol (Kreitner, 2010) states that management is a process of planning, organizing, and monitoring existing resources to achieve goals effectively and efficiently. While policy is an instrument to achieve the ideals of a country, it is necessary to know the public policy process until it can reach the final stage. Stella Theodoulou (Nugroho, 2012) suggests that the public policy process is a movement from identifying problems which are then included in the policy agenda and finally implemented and seen for their effectiveness. (Islamy, 2002) explains that public policy is essentially a decision to choose the best values from the many existing values. The best value chosen is the value that is in accordance with the interests of the community. Law number 24 of 2007 concerning disaster management states that a disaster is an event or series of events that threatens and disrupts people's lives and livelihoods caused, both by natural factors and/or non-natural factors as well as human factors, resulting in human casualties, environmental damage, property loss, and psychological impact. Lindblom (Suleman & Apsari, 2017; Winarno, 2002) reveals that in order to understand who actually formulates policy, it must first be understood the nature of all the actors and participants or what roles they play, the authority or form of power they have and how they do it. interconnected and supervise each other in the policy-making process (Mukti et al., 2020; Pusparani, 2021). After understanding who formulates it, in the formulation of public policies, significant information is needed to facilitate decision making, such as information about the nature of the problem and its potential solutions (Rizkiyah et al., 2019)

Concept disaster policy in Bojonegoro Regency, Law number 8 years 8 of 2007 concerning Disaster Management and Government Regulation number 21 of 2011 concerning disaster management is a national umbrella for disaster management. In its implementation according to the law, it must be coordinated by BNPB. A set of government regulations and regulations of the head of BNPB and its body parts, or elements thereof, are an important part of carrying out disaster management efforts throughout Indonesia. Nurjanah et al. (2012) stated that the government prepares a disaster management plan starting from the government's initiatives and commitments. Countermeasures are structured and regulated in the National Medium-Term Development Plan (RPJMN) when viewed through aspects of development planning which in 2015-2019 relates to disaster management and stabilization of living spaces. The central/regional government has the authority to implement disaster management through planning and development, which includes elements of government decision-making on disasters. With the existence of Law number 24 of 2007 a policy regarding planning, including funding, emerged in the management of a disaster. Meanwhile, (Hidayah, 2015) revealed that in the era of regional autonomy, disaster management by most regions did not have awareness.

II. METHODOLOGY

This research was conducted in Bojonegoro Regency, East Java Province. The research time is from December 2021 to June 2022. The research method uses a qualitative approach. Data collection techniques used in-depth interviews with research informants from elements: East Java Regional Disaster Management Agency, Bojonegoro Regency Disaster Management Agency, East Java National Search and Rescue Agency, Youth Organizations, SAR from Nature Lovers Organizations, Disaster Response Organizations, Non-Governmental Organizations . The researcher chose the above informants on the grounds that primary data sources play a very important role in their field of provision, processing, operations and active participation in social and disaster issues.

The research instrument in this qualitative study, the researcher himself collects data by asking, asking, listening, and taking the data needed to study disaster problems in accordance with the disaster management stage. Researchers can ask for help from others to collect data, or so-called interviewers and observations. With a qualitative approach, it is expected to get more detailed information related to the disaster management

process in Bojonegoro Regency, East Java. This is interesting to study because East Java is an area that often occurs in disasters. The research material was obtained from information obtained through the website and obtained data information from the East Java Disaster Management Agency and Bojonegoro Regency.

According to (Suryabrata, 2008) suggests that the validity of the instrument is defined as the extent to which the instrument records or measures what is intended to be recorded/measured. Meanwhile, instrument reliability refers to the consistency of data recording (measurement) results if the instrument is used by the same person or group of people at different times, or if the instrument is used by different people or groups of people at the same time or at different times. Instruments. The validity of the data can be sought through an informant review. Before the data is presented, it is discussed first with the informant as the data source. Thus there is an understanding between the researcher as the instrument of data analysis and the informant as the source of the data, so that the report units that have been prepared have been approved by the informant. This shows that the validity of the data found is unquestionable, so it can be used as a basis for drawing conclusions (Nugrahani & Hum, 2014).

The data that allows for transferability are known from the following grid design: collaboration patterns, community empowerment, measurement uncertainty, compiling a baseline (baseline data is basic information collected before the program starts), and baseline adjustments (data which are then used as comparison to estimate the impact of the program. If the program has certain goals and objectives, the required baseline data will be adjusted). The baseline will be used for practical disaster management, recovery, and budget management. Data analysis in qualitative research is defined as an effort to systematically find and organize notes from observations, interviews, and others to increase the researcher's understanding of the case under study and present it. as a finding. To get that understanding, the analysis needs to be continued with trying to find meaning. (Moleong 2018) the notion of data analysis is the process of organizing and sorting data into a pattern of categories and basic units of description so that themes and working hypotheses can be found as suggested.

III. RESULTS AND DISCUSSION

The Regional Disaster Management Agency or commonly abbreviated as BPBD carries out other functions and duties. The main task of BPBD is as a regional government agency that has the task of regional disaster management. The function of BPBD is to determine guidelines and directions in the event of a regional disaster, determine safety standards and disaster management, formulate a map of disaster-prone areas in its working area, control the collection of donations of funds and other assistance in the event of a disaster, formulate permanent procedures for disaster management, to reporting and evaluation. disaster management. If a disaster occurs in its working area, BPBD cooperates with SAR and BNPB for handling, assistance, and distribution of humanitarian aid, including volunteers, food, tents, blankets and others. For other information, you can visit the nearest BPBD office, contact the telephone number, or access the official BPBD website for other general information. The main tasks and functions of the Bojonegoro Regency BPBD, based on the Bojonegoro Regency Regional Regulation Number 11 of 2010 concerning the Organization and Work Procedures of Other Bojonegoro Regency Institutions. CHAPTER III (Position, Main Duties and Functions); Article 4 (Main Duties); Article 5 (Function).

In carrying out its main tasks and functions, Regional disaster management agency is supported by Apparatus Resources, which consists of: 1 Chief Executive (Plt), 1 secretary, 3 Section Heads, and 8 staff. Meanwhile, there are 16 BPBD assistants/honorary staff/non-civil servants, bringing the total BPBD to 29 people. Starting in 2017, the Fire Department no longer joined the BPBD because it was independent as the Fire Department. The following table describes the composition of employees of the Bojonegoro Regency Regional Disaster Management Agency.

The urgency of BPBD's existence in Bojonegoro Regency, as stated above provides an overview of the intensity of disaster events that should receive proper handling, and even the importance of prevention to reduce material losses and casualties. As one of the disaster-prone districts, based on the Indonesian Disaster Data and Information (DIBI), Bojonegoro Regency has experienced 538 incidents in 2020 and 203 disasters in the span of 2021 spread across various villages in 26 sub-districts. Therefore, monitoring of natural conditions and activities against potential disasters in areas with high risk needs to be carried out continuously. Information related to disasters needs to be collected, processed, analyzed and subsequently prepared for reports and dissemination. The disaster information here is not only related to disaster events, but also the handling efforts made by various parties, both pre-disaster and post-disaster. In this process, it is necessary to have a Disaster Management Operations Control Center (Pusdalops PB) capable of managing data and information to disseminate it to

authorized officials and the public through the media. The Pusdalops PB that is formed should hold strong principles: fast and precise, accurate, coordinating, cooperative, transparent and accountable.

At the implementation level in the field, there are 3 (three) government regulations (PP) that implement this Law on Disaster Management, namely PP No. 21 of 2008 concerning the Implementation of Disaster Management, PP No. 22 of 2008 concerning Funding for Disaster Management, and PP No. 23 of 2008 concerning the participation of international and foreign institutions in disaster management. The provisions of these laws and regulations are actually expected to regulate accurately and carefully regarding disaster management in Indonesia. However, the global problems stated above seem to have not been answered by the existence of these 4 (four) laws and regulations.

BPBD's position as a regional apparatus, according to its duties and functions refers to the regional issue of "sustainable environmental development and disaster resilience". From the issue of disaster resilience, BPBD is related to the sub-issues: Sustainable environmental development and disaster resilience. The problem of disaster management in Indonesia, as previously stated, is actually a small part of the problem of disaster management in Indonesia. However, the three problems which include, firstly, the absence of a clear standard operating procedure (SOP), secondly, the lack of coordination between agencies that handle disasters, and third, the development of disaster mitigation has not been carried out optimally, can be used as a measure of the nation's unpreparedness in dealing with disasters. managing disasters.

The absence of a national SOP in disaster management becomes a hot issue when every disaster strikes in this country. The provisions in the Disaster Management Law have not explicitly regulated the SOP for disaster management, because indeed the rules in the Disaster Management Law do not regulate technically until the implementation level in the field. However, if it is investigated and analyzed further, actually the regulation regarding SOP or it can be said that the guidelines for disaster management have been regulated in the Regulation of the Head of the National Disaster Management Agency Number 10 of 2008 concerning Guidelines for Disaster Emergency Response which is the mandate of Article 15 paragraph (2), Article 23 paragraph (2), Article 50 paragraph (1), Article 77 and Article 78 of the Disaster Management Law and Article 24, Article 25, Article 26, Article 27, Article 47, Article 48, Article 49 and Article 50 PP No. 21 of 2008. However, why was this regulation not socialized to the parties inherent in the disaster, when the Regulation of the Head of BNPB stated that the purpose and objective of this regulation was to serve as a guide for BNPB/BPBD, related agencies/institutions/organizations, the Indonesian National Army and The National Police of the Republic of Indonesia in handling disaster emergency response, and aims that all relevant parties can carry out the task of handling disaster emergency response quickly, precisely, effectively, efficiently, integrately and accountably.

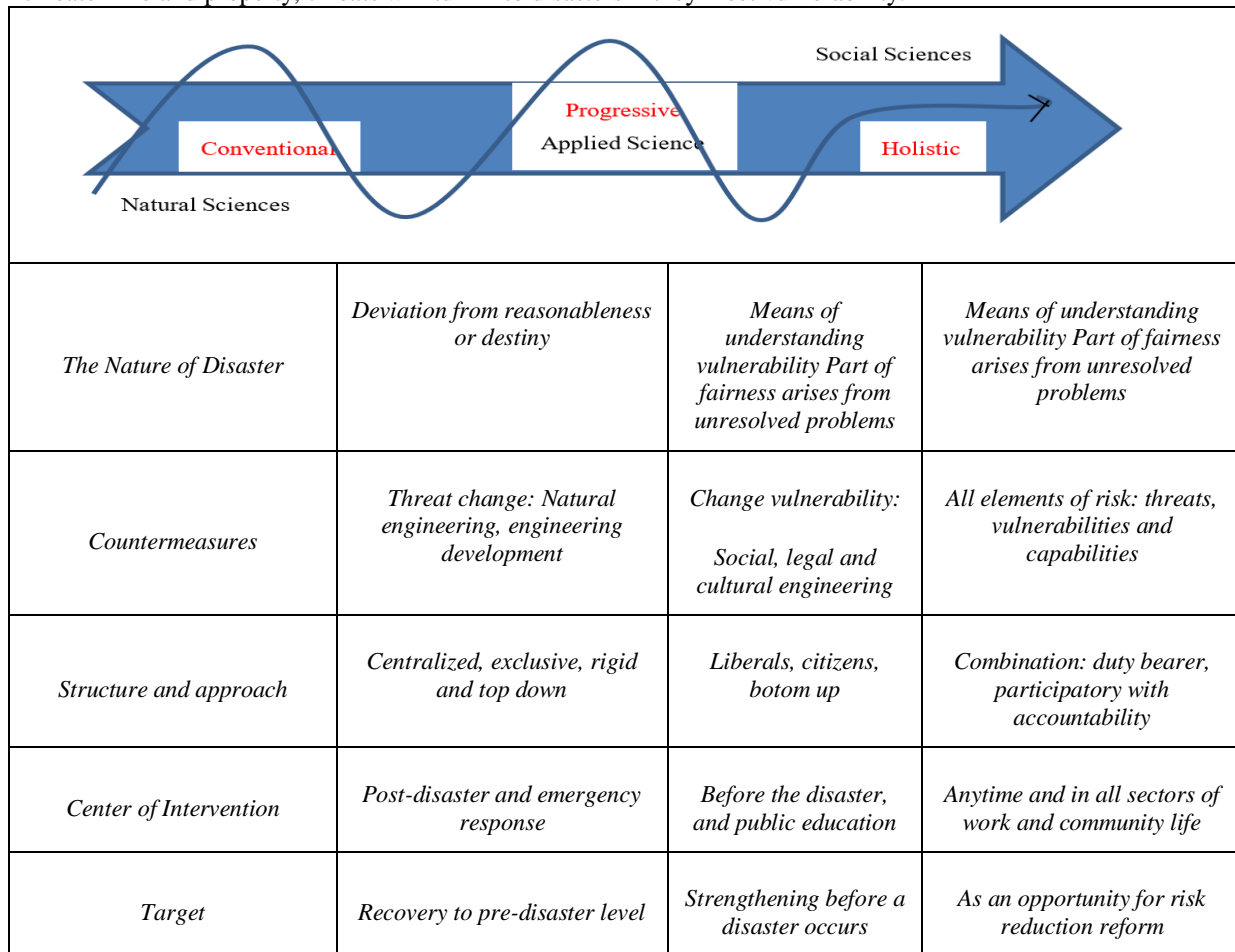
The enactment of Law no. 24 of 2007 concerning disaster management, it is hoped that the implementation of disaster management will be better, because the Government and Regional Governments are responsible for the implementation of disaster management. Disaster management is carried out in a targeted manner starting from pre-disaster, during emergency response, and post-disaster. The initial stage in this effort is the understanding of all stakeholders (especially related institutions) about the development of concepts and changes in the paradigm of disaster mitigation. By knowing the development of this concept and paradigm, it is hoped that all stakeholders can take actions from the smallest to the largest to minimize the impact of a disaster. Based on this view, the developed paradigm is mitigation where the focus of disaster management is directed at community readiness in dealing with hazards and increasing the physical strength of building structures to minimize damage caused by natural events. This paradigm views that disaster management efforts are more directed at identifying disaster-prone areas, recognizing patterns that cause vulnerability and carrying out structural mitigation activities such as building construction (houses, buildings, dams, embankments etc.) and non-structural such as spatial planning including land use, building standards and the like.

A holistic view sees that natural events can become a threat of disaster if they are met with the vulnerability and inability of the community to face risks. This view is known as the risk reduction paradigm. This approach combines technical and scientific perspectives with social, economic and political factors in disaster reduction. Therefore, based on this view, disaster management efforts are aimed at increasing the community's ability to manage and reduce the risk of disasters (Herianto et al., 2015).

The Progressive View views disasters as part of 'normal' community development. Disaster is a problem that never stops, so the central role of the community is to recognize the disaster itself. Then in the Social Sciences review, it focuses more on how the community responds and is prepared to face danger. Threats are natural, but disasters are not natural, and the magnitude of the disaster depends on the different levels of community vulnerability.

The view of applied science has a picture of the magnitude of a disaster depending on the magnitude of the resilience or damage caused by the disaster. Disaster assessment is aimed at increasing the physical strength of the building structure to minimize damage. The Holistic view places more emphasis on threats and

vulnerabilities, as well as the community's ability to face risks. Natural phenomena become threats if they threaten life and property, threats will turn into disasters if they meet vulnerability.



Awareness of the various disaster postures such as spectacular or small in size, widespread or local, and homogeneous or complex becomes a reference for conventional approaches which are considered no longer able to explain disaster phenomena, infusion of lessons from various fields including development studies disciplines. From the conventional perspective, the disaster management paradigm has evolved to a more progressive view which sees disaster as part of development and disaster is a problem that does not stop. Therefore, disaster management cannot be separated from development problems, so the efforts made are to integrate development programs with disaster management. The more progressive views that developed were also influenced by natural and social sciences. The development of knowledge encourages the emergence of the view that disaster is a geophysical, geological and hydrometeorological process that can affect the physical environment and endanger human life.

Meanwhile, a holistic view sees that natural events can become a threat of disaster if they are met with the vulnerability and inability of the community to face risks. This view is known as the risk reduction paradigm. This approach combines technical and scientific perspectives with social, economic and political factors in disaster reduction. Therefore, based on this view, disaster management efforts are aimed at increasing the community's ability to manage and reduce the risk of disasters occurring. Changes in views and paradigms about disasters and their management encourage new approaches through risk management. This approach requires every individual in the community to understand the situation and have the ability to identify threats and the capacity they have to reduce risk to a minimum.

In the current Paradigm (collaborative). More emphasis on disaster risk reduction which is an integrated plan that is cross-sectoral and cross-regional and includes social, economic and environmental aspects. In its implementation, the national disaster risk reduction activities will be adjusted to the regional and international disaster risk reduction plans. Where the community is the subject, object as well as the main target of disaster risk reduction efforts and seeks to adopt and pay attention to local wisdom and traditional knowledge that exists and develops in the community. As a subject, the community is expected to be able to actively access formal and non-formal information channels, so that disaster risk reduction efforts can directly involve the community.

The government is tasked with preparing facilities, infrastructure and resources for the implementation of disaster risk reduction activities.

According to Hoogerwerf (Mukti, Rosyid, & Asmoro, 2020) the rational-comprehensive (synoptic) policy analysis model is an analysis from the point of view of results or impacts which has the intention that the public policy formulation process will produce good results or impacts if it is based on the rational thinking supported by complete (comprehensive) data or information. The analysis is carried out carefully, thoroughly and in detail by utilizing a large amount of data/information that must be collected to produce results in the form of decisions/policies that have a positive impact.

It can be interpreted that the rational-comprehensive (synoptic) model holds that the results to be achieved from the formulation of public policies must be based on rational thinking or in accordance with the conditions faced and the capabilities possessed, the analysis carried out must have complete data or information, so that in the analysis it has no defects or reaches perfection without errors. Hope to get a good policy formulation by using rational thinking that is very good and good, but of course not all problems and realities in the field can be accepted rationally and there are even data obtained by policy makers that are very different from reality. In the opinion of the author of the rational model -comprehensive (synoptic) is an analytical model that strives for perfection in policy formulation by using complete and valid data, so that in its formulation it provides good public policy results.

Many institutions have begun to adapt the Sustainable Livelihoods Approach in designing intervention programs. This approach is composed of five pillars, namely (a) natural capital, (b) social capital, (c) human capital, (d) financial capital, and (e) physical capital. The five capitals are mutually sustainable, based on an understanding of the context of vulnerability, supported by strong policies and institutions, with the hope of producing better livelihood strategies.

Natural capital is all functions and services of natural resources that are the basic support for living things, including humans. If natural capital is lost or damaged, the balance of life is also disturbed. After natural capital, the second largest carrying capacity is social capital (Haridison, 2013). Although this asset is often overlooked, the fact is that social capital forms solidarity and collective action. According to (H. Usman, 2013), leveraging social relations is the key to converting social capital into benefits. In conditions of vulnerability, social capital such as mutual cooperation and local leadership can be a potential force that accompanies government policies and activities of other stakeholders.

Maintaining a balance between natural capital and social capital is the foundation for strengthening human, financial, and physical capital. The series is an integral part of the process of development and sustainable livelihoods. One of the mechanisms for maintaining balance is the resilience of the community in facing vulnerabilities. Resilience means resilience, resilience or capacity that is individual and collective in society, both in the form of social systems and social structures in dealing with disaster risk (Humaedi et al., 2021). One form of disaster in the current context is flooding, landslides and hurricanes, and pandemics.

Community resilience becomes effective if internal capacity, especially local leaders, plays a role on one side. On the other hand, local leaders and communities are aware of the vulnerabilities and risks at the disaster mitigation stage, then carry out impact reduction scenarios at the response stage and recovery at the recovery stage. Putnam (Tampubolon & Tjahjorini, 2014) puts forward two forms of social capital that exist in society, namely social bonding and social bridging. Putnam's concept of social bonding and social bridging is complemented by Woolcock (Tampubolon & Tjahjorini, 2014) adding what is known as social linking capital.

Table 3. Social Capital as an Instrument for Disaster Management

<i>Relationship type</i>	<i>Illustration</i>	<i>Social capital breaks down</i>	<i>Forms of social capital</i>	<i>Social capital strengthened</i>
<i>Community Group</i> <i>(social bonding-bridging)</i>	<i>Case</i>	<i>Suggestion waiver</i>	<i>Diversity of behavior towards disaster response recommendations</i>	<i>Uniformity of behavior on disaster response in training and socialization activities</i>
	<i>Step</i>	<i>Education on the importance of recognizing symptoms and mitigating</i>	<i>Literacy with customized language. Community initiatives in mutual</i>	<i>Dissemination of positive practices to external communities through agreement and</i>

	<i>disasters</i>	<i>cooperation.</i>	<i>examples from communities and local leaders</i>
<i>Case</i>	<i>Violation of local regulations on the environment</i>	<i>Fluctuating compliance with disaster response procedures/protocols</i>	<i>Active adherence to customary procedures or protocols in dealing with disaster symptoms</i>
<i>Society - government</i>			
<i>(social links)</i>			
<i>Step</i>	<i>The role of local leaders in the socialization of rules & collaboration across actor</i>	<i>Strengthening motivation through the provision of social rewards to the community by local leaders and government.</i>	<i>Joint oversight between communities, local leaders, and government in an organized manner</i>

Source: Tampubolon & Tjahyorini (2014)

Strengthening social bonding refers to positive aspects of values, perceptions, and traditions or customs and leads to strengthening community resilience in dealing with disasters that coincide with the Covid-19 pandemic, which needs to be carried out systematically and substantively. World view and social interaction accompanied by the spirit of mutual cooperation (Tessa, 2021) become an effective and strategic vehicle for overall disaster management. Meanwhile, strengthening social bridging will become social bonds that arise as a reaction to various characteristics of society. Social bridging arises because of various weaknesses and they also build on strengths. A person who is able to negotiate various interests and is able to support strengthening resilience in the face of disasters simultaneously who needs to be accompanied. Strengthening the role of local leadership in developing new custom scenarios is important in the midst of booming economic activity. Likewise, good and representative communication channels for various criticisms and solutions offered from the grassroots are a form of embodiment of deliberative democracy in leveraging types of social capital. In addition, it can also be used as part of community resilience in the midst of disasters. Strengthening social linking implies that the relationship between broader factors in social and political flows is placed in the context of the policy formulation mechanism.

Policies related to disaster management, especially in conjunction with the Covid-19 pandemic, are currently still dominated by the government (government-led) so that good practice and representation in the community is not accommodated. For example, the power of social capital which is summarized in the socio-cultural aspect is rarely discussed and found its relevance, even though the social dynamics that occur, especially the phenomenon of social mobility.

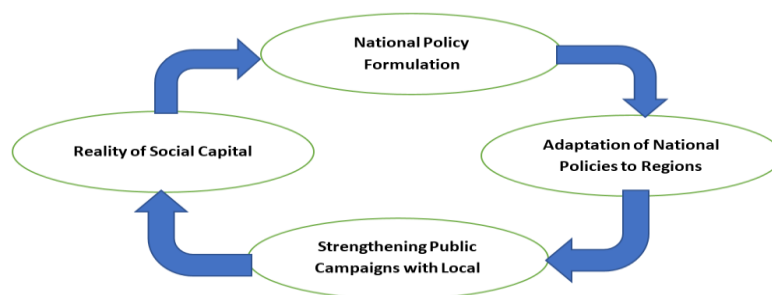


Figure 1. Pentahelix. Management Policy Model Formulation

(Source: Author's Analysis)

This means that the formulation and implementation of policies need to involve the community, including the social capital they have. In the context of social capital, Indonesian people need to pay attention to at least two things: the values and practices of mutual cooperation and the role of leadership at the local level. The question is, how can strengthening the values and practices of gotong royong and the role of local leadership contribute to disaster management policies and programs? What strategies can be developed to strengthen both social capital into disaster management policies and programs?

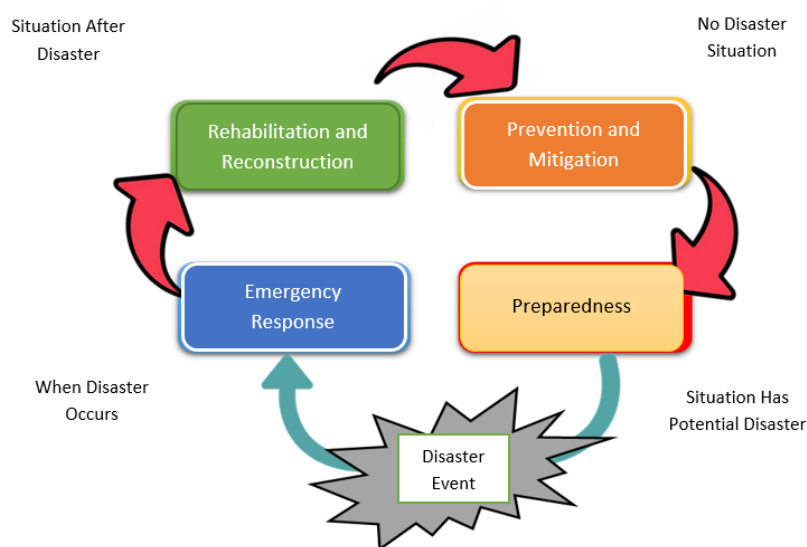


Figure 2. Sustainable Management Policy Framework

(Source: ADB-Knowledge Solutions, 2008)

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In the aspect of prevention, the social capital that stands out such as gotong royong and local leadership needs to be accommodated in the realm of national policy, whether its implementation is deployed on regulatory, fiscal and behavioral instruments. In formulating this policy, all lines need to be mobilized and their respective roles strengthened with a note that handling the pandemic is not only the responsibility of the government. The pentahelix framework introduced by the disaster management community can be applied in the context of disaster management in Bojonegoro Regency in the form of collaboration.

The opinion of Emerson, Nabatchi and Balogh (Izzati & Wilopo, 2018), tries to define collaborative governance with a wider scope, namely through public administration, planning, public management and environmental management. According to Emerson, Nabatchi and Balogh (Karunia et al., 2020) the process and structure of public policy in decision making and management engages people constructively and transcends the boundaries of public institutions, levels of government, and/or public, private and civic circles. In the disaster management program, pentahelic management is not applied in the form of collaboration, but rather a coordination model. This can be illustrated in the following scheme.

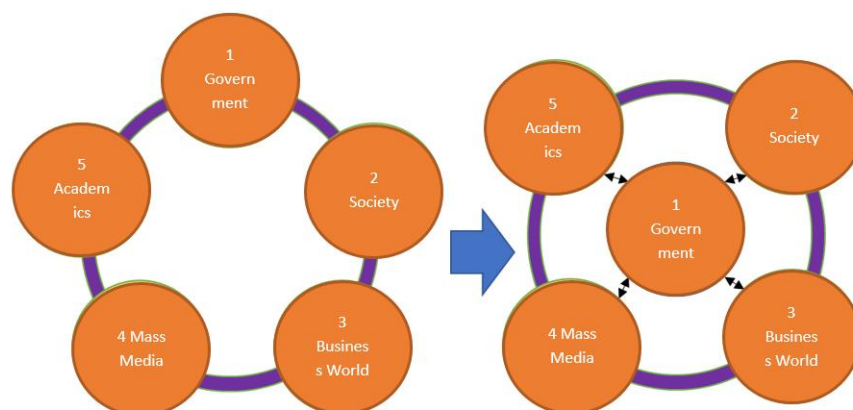


Figure 3 Disaster Pentahelix Implementation Scheme

Source: Researcher Analysis

In this scheme, it is known that the government remains as the primary or dominant actor in the pentahelix management practice. The government has formal and formal authority, almost unlimited resources to mobilize, and omnipotent and omnipresent versions. The role of the Government as the person in charge of disaster management with the active participation of the community and business institutions according to the National Platform. For this reason, the efforts in implementing pentahelix management are also expected as an effort to change the response paradigm into disaster risk reduction. This was done by considering the various efforts in previous years, that the protection of the community against disasters started from pre-disaster, during and after the disaster, in a planned, integrated, and coordinated manner. So build a resilient/resilient community in the face of disasters, and build a reliable disaster management system through strong institutions, adequate funding.

Implementatively, the implementation of pentahelix management by BPBD in Bojonegoro district is a form of collaboration that involves various elements in the community, such as a summary of interview results that can explain the role of each element as follows:

1. Personal. The role of the private sector will be very useful to increase resilience in the face of disasters, such as providing emergency assistance.
2. Non-Governmental Institutions. With good coordination, non-governmental organizations can contribute to disaster management efforts. These non-governmental institutions such as NGOs, the Scout Movement, and various mass organizations were very helpful and needed, especially at the time of the incident. This assistance can be in the form of personnel assistance for evacuation assistance, and other assistance for logistics distribution and social situation management.
3. Universities/Research Institutes. Disaster management can be effective and efficient if it is carried out based on the proper application of science and technology. This can be seen from the statement which also gives reasons for the need for cooperation between BPBD and universities.
4. Mass media. The media have a great ability to shape public opinion. Therefore, the role of the media is very important in terms of building community resilience in facing disasters through speed and accuracy in providing disaster information
5. In terms of the presentation of the concept of disaster management. The Disaster Management Law does not explicitly explain the definition of disaster management, but is described in several definitions that are in line with disaster management, namely through the definition of disaster management, disaster prevention activities, preparedness, early warning, mitigation, disaster emergency response, rehabilitation, reconstruction, recovery, disaster prevention, and emergency relief. At the conceptual level, disaster management is defined as an applied science that seeks, with systematic observation and analysis of disasters, to improve measures (measures) related to prevention (prevention), mitigation (reduction), preparation, emergency response, and recovery. (Khusniyah, 2020).

Regional capacity studies need to be compiled in parameters that refer to KAH and Law Number 24 of 2007. In addition, regional capacity studies must also be able to map the general capacity of the region for all disaster threats that exist in an area. Various understandings in the regions related to increasing regional capacity in disaster management have caused regional capacity gaps. In addition, the main points of regional capacity that need to be built based on the National Disaster Management System are organized by the regions based on the level of ability in various development priorities.

The BPBD of Bojonegoro Regency has prioritized the collaboration of the pentahelix model with a regional approach, so that the regional government must have readiness as a leader in efforts to handle the COVID-19 outbreak and natural disasters such as floods which have the highest intensity of natural disasters in Bojonegoro. This is also in line with the ideals of Law no. 23 of 2014 concerning the administration of government by the Regional Government and DPRD based on the principle of autonomy and assistance tasks with the broadest principle to manage their regions. From this, it becomes an implication that the regions increasingly have great responsibilities and demands to maximize the use of regional resources to support the lives of their people in all matters including health (Syahputra & Ma'ruf, 2020).

The pentahelix model collaboration is a reference for developing collaboration between agencies to achieve the targeted goals. Each element has its own function which will create collaborative interactions. The first element is that the government has a function as a regulator, coordinator and controller. The second element is that business people function as infrastructure providers, develop human resources and support infrastructure to funding. The third element is the community, which functions as an accelerator, or liaison between the community and stakeholders. The fourth element is academics, which functions as drafters. The fifth element is the media, which functions as an actor who supports the publication of the goals to be achieved.

In addition to the need to overcome challenges in terms of funding, especially regional finance, it is important to build awareness or awareness of disasters as early as possible, such as through formal education in schools about knowledge about disasters. In addition, the capacity and competence of disaster management officers in the field also needs to be improved, for example in utilizing technology to detect disasters. Because in the future there will be more challenges in disaster management as the effects of climate change are increasingly felt. Therefore, the anticipated budget needs need to be continuously adjusted. Meanwhile, it is related to the challenges regarding disaster awareness culture, namely changing national perspectives and behavior in responding to disasters from being responsive and distributing aid to disaster risk reduction based on collaboration with the community.

It can be seen that the implementation of pentahelix management as a form of collaboration between the Bojonegoro Regency Government Bureaucratic Apparatus through the BPBD and the Community Forum as an organization or individual in the implementation of disaster management has been well established in the pre-disaster stage. pre-disaster, both in terms of the dimensions of the system context, namely resources, policies, lessons from the past, political dynamics, networks, and levels of conflict as well as good driving factors in the pre-disaster stage. However, the pattern of collaboration that occurs between the district government and BPBD with community organizations in the implementation of disaster management at the emergency response stage tends to weaken, this is because the role of BPBD partner organizations, especially from non-government organizations such as NGOs, is reduced at this stage. This is because the role of collaboration partners is only up to the division of clusters in the emergency response stage. Collaboration that occurs between BPBD or the government of Bojonegoro Regency with disaster resilient partner organizations in the implementation of disaster management at the pre-disaster stage is very weak this is because the role of community organizations in the Post-Disaster stage no longer exists, there is only cooperation between the Government and members of the organization with carrying the name of each organization does not carry the name of a disaster-resilient forum.

IV. CONCLUSION

Result and discussion must be written in the same part. They should be presented continuously start from the main result to the supporting results and equipped with a discussion. Unit of measurement used should follow the prevailing international system. All figures and tables placed separately at the end of manuscript pages and should be active and editable by editor.

The implementation of disaster management policies in Bojonegoro Regency has been carried out with reference to Law 23 of 2014 and Presidential Regulation No. 8 of 2008 concerning the National Disaster Management Agency. The framework refers to Permedagri No. 46 of 2008 concerning BPBD Organizational Guidelines and Work Procedures; Regulation of the Head of BNPB No. 3 of 2008 concerning Guidelines for the Establishment of BPBDs; District Regulation. Bojonegoro No: 7 of 2012 concerning Disaster Management; Perbup No. 32 of 2009 concerning the Bojonegoro Regency Regional Disaster Management Agency; and Perbup No. 27 of 2019 concerning Regional Apparatus Strategic Plans for 2018 – 2023.

The paradigm shift in disaster management through pentahelix management as a disaster management policy in Bojonegoro Regency has been realized, although not yet optimal. The paradigm shift in disaster management has been implemented well, from the conventional paradigm to the holistic paradigm, although its implementation using the pentahelix approach which is classified as holistic management has not been effective.

The collaboration model that reflects pentahelic management has not been optimally established, the role of each element, especially from non-governmental organizations has not played a role and is strongly interwoven, and is still at the level of formality and incidental. The pentahelic model collaboration is a reference for developing collaboration between agencies to achieve the targeted goals that are not yet optimal.

Factors that are lacking in pentahelic management implemented by the East Java provincial government and especially in Bojonegoro are the district government which has not established a symbiotic and formal coordination system that regulates collaboration; elements of business as infrastructure providers, as well as supporting infrastructure that is still very limited; the community as an accelerator to stakeholders still carries out its function when a disaster occurs, so that its role is less reliable before a disaster or for prevention; and academics, their role as drafters is still very limited in the BPBD of Bojonegoro Regency. Then the media element, as a supporting actor for publications, is also not optimal.

For this reason, it is recommended to implement pentahelic management so that the district government through BPBD improves communication skills and builds communities as a form of strengthening collaboration in disaster management. Community-based communication and coordination need to be built by taking a group leadership approach or an individual approach. It is also recommended to involve local leadership or community leaders individually who are deemed to be able to contribute to education and disaster mitigation activities in the community

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