Solidarity and Impact of 2009 Situ Gintung Disaster-Based Value System to Raise Awareness of Disaster Resilience and the Environment

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Abstract. Originally a natural lake of marshland, Situ Gintung was later created to benefit the local community. This lake fell in 2009 due to its inability to withstand the rushing water. This tragedy impacted many sociological and economic aspects of society. The purpose of this study is to assess the value system's impact on the interview and observation process. The study took place near Situ Gintung. The study ran from March through June 2011. Among the informants were victims of the Situ Gintung disaster, local inhabitants who knew the history of Situ Gintung, and the South Tangerang Regional Government. This study's findings imply that people's concern for one another is expanding. It has shown great care and togetherness via cooperation, community service, and attending neighbors’ weddings. Residents, on the other hand, tend to take care of their own requirements, whether family or personal. These residents are citizens that stay in touch with or greet their neighbors when needed. In the event of a future natural disaster, the community will come together to help and understand.

1. Introduction
Disaster management is essential to assess the people affected. This management will improve with the economy and society in the community [1]. Not only regulation but also social resilience is the critical point of the social system that not separated from infrastructure and early warning system. A resilient city to natural disasters must also implement six systemic model functions: anticipation, monitoring, response, recovery, learning, and individual monitoring [2]. These processes are implemented in organic solidarity to give mutual understanding as a novelty of this research. These are needed in the Situ Gintung disaster in 2009.

The main embankment surrounding the spillway was not strong enough to hold the overflowing water, resulting in the Situ Gintung flash flood disaster. The cause of the levee's collapse in 2009 is still unknown, but runoff water stored in the Situ had a volume of 2,000,000 m³ immediately after the levee burst, causing flash flooding. This flash flood washed away soil and mud from the Situ, and several structures located just below the embankment.

The turbulence of the downstream flow is expected to increase in volume and density as more materials from buildings and other objects are washed away by the flood. The flow of water and mud is thought to have had the most significant impact in the residential area and buildings surrounding the
Muhammadiyah University Jakarta library building, which is located about 650 meters from the point of the embankment rupture.

There is a recapitulation of the final data for the victims of the Situ Gintung disaster in a book published by the South Tangerang City Government regarding data on victims of the Situ Gintung disaster (Table 1) [3].

| No. | Location | Number of KK | Number of People | Permanent Resident | Non-Permanent Resident |
|-----|----------|--------------|------------------|--------------------|-----------------------|
| 1   | 02 03   | 29           | 100              | 23                 | 6                     |
| 2   | 02 04   | 36           | 91               | 16                 | 20                    |
| 3   | 02 05   | 1            | 6                | 1                  | -                     |
| 4   | 08 01   | 41           | 123              | 27                 | 14                    |
| 5   | 08 03   | 62           | 172              | 20                 | 42                    |
| 6   | 08 04   | 135          | 381              | 78                 | 57                    |
| 7   | 11 04   | 5            | 19               | -                  | 5                     |
| 8   | 11 05   | 7            | 23               | 3                  | 4                     |
|     | Total   | 316          | 915              | 168                | 148                   |

According to the findings of this study [4], which was conducted in March 2011, the Situ Gintung embankment was completed in February 2011. If the volume of water could not be accommodated, the presence of waterways resulted in a significant improvement. This channel runs up to the Petukangan neighborhood in South Jakarta. A monument has been erected on the aqueduct's left side to remember the victims of the 2009 Situ Gintung embankment collapse tragedy (Figure 1). This monument serves as a reminder that the community must be more vigilant in dealing with disasters and that past events must not be repeated.

The impact of the value system that occurred because of the tragedy of the Situ Gintung embankment in 2009 was examined in this study. Furthermore, this research was conducted with many victims and resulted in trauma, and asset loss, including job loss, which resulted in social change.

2. Method

This study used a qualitative research method to investigate the behavior and public perception of the Situ Gintung tragedy in 2009. This study takes a qualitative approach, looking at people's lives, histories, behaviors, and kinship relationships in the vicinity of Situ Gintung.

2.1. Research location

The research was conducted in the vicinity of Situ Gintung. The study lasted four months, from March to June of 2011. Interviewing and verifying research data took up the majority of this activity's time.

2.2. Data collection and analysis

This study's data was gathered through in-depth interviews and observation. The selection of informants has included as many as 15 informants, with a visit frequency ranging from 1 to 5 visits per informant (Table 2). These fourteen informants were Situ Gintung tragedy victims, knew the history of Situ Gintung, the South Tangerang Regional Government, and residents who were not affected by the Situ Gintung tragedy but lived in the vicinity of Situ Gintung.

Furthermore, this research included direct observations of Situ Gintung and its surroundings, both from the social activities of its citizens and from business activities carried out by residents in the vicinity of Situ Gintung. The descriptive analysis performed is based on the data collected and elaborated on the theory used.
Table 2. Informant Identity

| No | Name       | Age (years old) | Sex    | Jobs               |
|----|------------|-----------------|--------|--------------------|
| 1  | H. Su’aib  | 78              | Male   | Entrepreneur       |
| 2  | Bongas     | 39              | Male   | Entrepreneur       |
| 3  | Lamro S    | 40              | Male   | Employee           |
| 4  | Nana       | 51              | Male   | Head of RT 04/08   |
| 5  | Shodiqin   | 59              | Male   | Security RT 01/08  |
| 6  | Suhaini    | 43              | Female | Housewife          |
| 7  | Sumarni    | 50              | Female | Housewife          |
| 8  | Aminah     | 62              | Female | Does not work      |
| 9  | Sumarno    | 51              | Male   | Head of RT 03/08   |
| 10 | Tommy      | 35              | Male   | Entrepreneur       |
| 11 | Wa’ Enah   | 52              | Female | Trader             |
| 12 | Iyok       | 52              | Female | Head of RT 02/08   |
| 13 | Yudi       | 36              | Male   | Head of RT 01/08   |
| 14 | Informant 1 (Anonym) | -   | Male   | Labourer          |
| 15 | Informant 2 (Anonym) | -   | Female | Entrepreneur       |

3. Results and discussion

3.1. Situ Gintung Topographic Data
Situ Gintung is located in Cirendeu Village, Ciputat District, South Tangerang Municipality, Banten Province, according to the South Tangerang City Government Book entitled Data of Victims of the Situ Gintung Disaster Book 1. Situ Gintung was built in 1933 by the Dutch government as a reservoir for water to irrigate rice fields located downstream (northeast) under the dam's embankment. The area of the Situ Gintung catchment area is estimated to be around 112.5 hectares, based on calculations performed by BPPT experts.

The water body of Situ Gintung itself was estimated to be around 31 hectares when it was built in 1933, while the estimated area measured on Google Earth images by the BNPB Team shows an area of around 24 hectares. Here are some photos from Google Earth taken before and after the Situ Gintung disaster (Figure 1).

3.2. Solidarity
According to Durkheim [7], mechanical solidarity characterized ancient societies: individuals were interchangeable, whereas consciousness was entirely moral and collective beliefs. The new society also has an organic solidarity feature: it is made up of individuals who are clearly distinguished by the division of labor so that individual consciousness is widely emancipated (free) in terms of morals and group values.

Another explanation of Emile Durkheim's theory of solidarity in the book The Division of Labor in Society [7] explains that modern society is not bound by similarities between people who do the same work, but the division of labor that binds people by forcing them to depend on each other. Solidarity refers to a relationship between individuals and/or groups based on shared moral feelings and beliefs reinforced by shared emotional experiences.
Repressive laws shape mechanical solidarity because members of this type of society have something in common. Because they tend to believe in a shared mortality strongly, any violation of the shared value system will not be judged playfully by any individual. Violators will be punished for their violation of the collective moral system. Even if the violation of the moral system is only a minor offense, it may be punished with severe punishment.

Organic solidarity societies are shaped by restitutive law. A person who violates is required to make restitution for their crime. The offense is viewed as an attack on a specific individual or segment of society rather than an attack on the moral system itself. In this case, most people's lack of morals prevents them from reacting emotionally to lawlessness. Durkheim contends that modern society's moral solidarity has shifted. Individual consciousnesses in this society become more independent because of the division of labor, but they also become increasingly dependent on one another because everyone is only one part of a division of social work.

The researchers experience two types of solidarity here. There are two types of solidarity: mechanical and organic. After interviewing with 15 informants, the result is that the people are identified with mechanical solidarity. This solidarity usually meets with residents and listens to their grievances about the Situ Gintung tragedy. Residents at the shop discuss business income or other topics to foster organic solidarity. When residents perform recitations, they talk about their families rather than the recitation's content.

3.3. Value System

The value system of society as a whole must change in tandem with changes in social structures and functions that are becoming increasingly differentiated [8]. However, as the new system becomes diverse, it becomes more difficult for the value system to encompass it. As a result, an increasingly differentiated society necessitates a value system that “outlines general provisions at a higher level to
legitimize the increasingly diverse range of purposes and functions of society's subunits.” However, the process of generalizing this value is frequently hampered by opposition from groups that adhere to their narrow value system [8].

This study focuses on four aspects of the value system based on the interview process within 15 informants such as meaning from citizens, education, nature, religion, and values of concern and togetherness. When their residents experience disasters such as death, sick people, etc. The community understands each other, particularly those who live around Situ Gintung. Residents mostly went out with their neighbors.

In terms of education, most people in Situ Gintung have the most recent education, namely SMA (High School) and Junior High School (SMP). Only long-term residents have the most recent education, up to and including a bachelor's degree.

Many people still litter when it comes to interpreting nature and religion after the Situ Gintung tragedy. There are also no activities to clean up the environment, such as community service. Furthermore, garbage is still piling up as a result of complex waste. Occasionally, garbage is simply burned, which can emit an unpleasant odor to nearby residents. Concerning the meaning of religion, residents held recitation activities regularly before the Situ Gintung tragedy. Religious activities have not resumed since the disaster in Situ Gintung.

It has done very well in terms of caring and togetherness values through cooperation activities, community service, attending neighbors' weddings, etc. On the other hand, residents tend to carry out their own needs, without interference from others, regarding family or personal matters. These residents can be described as citizens with organic solidarity who stay in touch with or greet their neighbors when needed.

According to the data we gathered, there is a lack of disaster management awareness in the community. It should have some social system that connects the community and public figures. Moreover, in order for people to be resilient in the future in the face of disasters, they can only provide anticipation, monitoring, response, and recovery. The community has yet to implement learning and individual monitoring. It should be finished with the last two functions so that it is well-prepared for disasters.

4. Conclusion
The research concluded that the people around Situ Gintung must improve the need for solidarity and a value system. Because the community only improving with anticipation, monitoring, response, and recovery, not complete it with learning and individual monitoring. The completeness of the six systemic models is essential to increase the awareness regarding the disaster from Situ Gintung and to increase inter-relation from everyone in the community. Also, in the event of a future natural disaster, the community is hopefully dedicated assisting one another and giving mutual understanding. It would be great if there were improvements in responding if a similar situation occurred again in future research. These enhancements will include education and understanding of the functions of the Situ Gintung and how they will survive in the event of a disaster.

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