



## Construction of Disaster-aware Communities through Local Wisdom and Social Media

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### Abstract

*The social construction process runs simultaneously. The utilization of local wisdom and social media is the result of the community construction process. Disaster-aware communities can utilize local wisdom and social media to overcome flood disasters. This research aims to analyze the construction of a disaster-aware community in Wonoasri Village, including the use of local wisdom and social media to overcome disasters. This research uses the construction theory of Berger and Luckmann. The research method used was a qualitative method with a phenomenological approach. Purpose sampling techniques were used to collect research informants. Data collection through observation, interviews, FGD, and documentation. The validity of the data using triangulation and data analysis using interactive models. The research results show that the social construction process runs simultaneously. The social construction process of the community starts from community experience, which shapes community knowledge about floods, the formation of Destana, and the transfer of knowledge, to the utilization of local wisdom and social media to overcome floods in Wonoasri Village.*

**Keywords:** construction, disaster-aware communities, local wisdom, social media.

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## INTRODUCTION

Local wisdom and social media can be utilized by disaster-aware communities to overcome flood disasters. The process of social construction through externalization, objectivation, and internalization by the Wonoasri Village community has long been built into a habit and behavioral activity in both material and non-material forms. This construction process then creates a disaster-aware community. Local wisdom and social media are among the results of the construction process of a disaster-aware society.

In the construction theory of Peter L. Berger and Thomas Luckmann (2012), there are three simultaneous dialectical processes, namely the process of externalization, objectivation, and internalization. The social order or socio-cultural world is a continuous human production in the externalization process. Humans externalize themselves in activities in their social environment. This process starts from the beginning when humans interact with their social environment so this becomes a habit that builds the individual's background (Berger and Luckmann 2012). This habit can be in the form of memories about disasters, which then develop into local knowledge.

In the objectivation process, social institutions become objectivation intermediaries (Berger and Luckmann 2012). A piece of knowledge about society is objectivized and produced continuously. The existence of the reality of everyday life is possible because of objectivation (Samuel 2012). There is significance in objectivation. Signification is the process of humans marking or producing various signs, one of the most important of which is language (Samuel 2012). At the internalization stage, the people of Wonoasri Village were aware of the flood disaster that had befallen the village. Therefore, Wonoasri Village formed a Disaster Response Village (Destana).

Furthermore, the internalization process is a direct understanding of an objective event as the expression of a meaning. Internalization is achieved through socialization. Primary socialization is experienced by individuals in childhood. Then, secondary socialization is experienced afterward or is a continuation process of primary socialization (Berger and Luckmann 2012). At this stage, there is a transfer of knowledge, both from the government, Destana and from the Wonoasri Village Community itself. The results of the social construction process, namely externalization, objectivation, and internalization, can be used to overcome disasters.

Researchers collected several research results discussing floods in several regions in Indonesia, such as Basri's (2021) research on floods in North Buton; research by Priyanti, et al. (2019) regarding flooding in Mojoagung District, Jombang Regency; Suryandari and Wijayanti's (2021) research on flooding in Sampang Regency, Madura Island; research by Syahrin, et al. (2020) regarding flooding in Samarinda City, East Kalimantan; research by Thamrin, Ridho, and Nasution (2021) on flooding in Medan City; research by Wulandari, Muryani, and Karyanto (2019) regarding flooding in Jebres District, Surakarta City; and research by Zakariah and Kismartini (2018) regarding flooding in Songkar Village, Sumbawa Regency; as well as research by Weng, Ku-Mahamud, and Karim (2014) regarding floods in the ASEAN region including Malaysia, Thailand, Philippines, and Indonesia.

From several studies, it can be concluded that efforts to overcome flood disasters require social capital (Mulyono and Paramitha 2022; Sudibyakto, et al. 2012; Wulandari, Muryani, and Karyanto 2019); local wisdom utilized for disaster mitigation (Basri 2021; Mulyono and Paramitha 2022; Sudibyakto, et al. 2012; Suryandari and Wijayanti 2021; Weng, Ku-Mahamud, and Karim 2014) and to strengthen community social resilience (Komarudin, Adrianti, and Mashud 2022); as well as political will, both cooperation between the government and society (Mulyono and Paramitha 2022; Syahrin, et al. 2020; Zakariah and Kismartini 2018), as well as government commitment (Thamrin, Ridho, and Nasution 2021; Zakariah and Kismartini 2018).

Wonoasri Village often experiences flood disasters. Floods occur every year. The two most recent cases of flash floods were in 2019 and 2021. In 2019, hundreds of houses in Wonoasri Village were flooded (Solichah 2019). The geographical location of Wonoasri Village, characterized by lowland and concave landforms, contributes significantly to its flood vulnerability, as heavy rainfall leads to overflowing rivers and sedimentation issues (Dianasari et al. 2019). This persistent flooding not only disrupts the lives of residents but also poses challenges to effective disaster management and community resilience (Setioputro et al., 2024).

Meanwhile, in 2021, floods submerged thousands of houses in Wonoasri Village (Balya et al. 2021). It can be said that every rainy season, river water always overflows and stagnates from a matter of centimeters to meters. That's why the floods in Wonoasri are said to be seasonal floods, because they always come every rainy season, starting from inundation to the peak, there are floods that make people have to evacuate.

Even though flooding often occurs, this has not deterred the community from remaining in Wonoasri Village. The community continues to live in Wonoasri Village and consciously adapts to the seasonal flooding. Wonoasri Village has become a disaster-resilient village and has received an intermediate ranking. This research aims to analyze the construction of a disaster-aware community in Wonoasri Village, including the use of local wisdom and social media to overcome disasters.

Local wisdom and social media are part of the culture. Berger (in Nurdin and Abrori 2020) explains that culture is a human product that becomes an objective reality that influences those who produce it. Culture is divided into material culture (art, buildings, weapons, etc.) and non-material culture (ways of thinking including beliefs, values, and assumptions about the world and ways of acting including behavior, language, gestures, and other forms of interaction) (Henslin 2007). Local wisdom can be classified as non-material culture or material culture. Meanwhile, social media is classified as non-material culture. Henslin (2007) explains that electronic media is included in new technology which is a non-material culture, where electronic communication via electronic media can send messages throughout the world in a matter of seconds.

## **METHODS**

This research is located in Wonoasri Village, Tempurejo Sub-district, Jember Regency. The research was carried out from March to June 2023. Wonoasri Village is a village that often experiences flood disasters. Floods come every rainy season, ranging from centimeters to meters of standing water. In fact, floods can occur up to seven times a year. The thing that makes Wonoasri Village important and interesting to choose as a research location is because the flood that occurred there did not come suddenly. The flood came gradually, starting from the overflow of the upstream river in the surrounding village, then overflowing to Wonoasri Village.

The method used is a qualitative method with a phenomenological approach. Through phenomenological research, researchers identify the nature of human life experiences regarding certain phenomena (Creswell 2016). In this research, the researcher wants to identify the community's construction of disaster awareness, namely the construction of the Wonoasri Village community regarding seasonal floods that often hit the village.

Determining informants was carried out using purposive sampling techniques. The parties who were informants for this research were residents of Wonoasri Village who were affected by the flood, Destana administrators, and Wonoasri Village officials. At the start of the research, the research team made observations at the research location, including meeting the head of the Destana and the former head of the Wonoasri Village Destana to conduct interviews. Researchers traced Wonoasri Village to the neighborhood area that experienced the most severe flooding and met people affected by the flood. The research continued by meeting other research informants, namely the village government and the head of the neighborhood, which is the party closest to the community. The research also included focus group discussions (FGD). The FGD involved thirty people consisting of administrators and members of Destana, the Wonoasri Village government, Wonoasri Village Destana administrators, the community who helped during the flood, and sociology lecturers from the University of Jember. The one-day FGD was held in mid-June 2023.

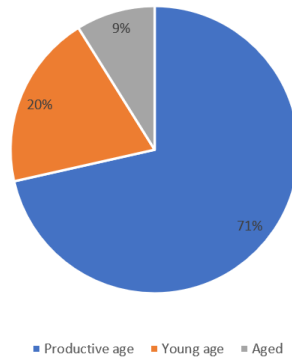
The data sources used are primary and secondary data sources. Primary data sources use observation, in-depth interview techniques, and FGD. Meanwhile, secondary data sources use documentation techniques by collecting data from various research journals, books, data from the National Disaster Management Agency (Badan Nasional Penanggulangan Bencana [BNPB]), and so on. Data dari observasi, interview, dan documentation selaras dengan data yang didapatkan saat FGD. The validity of the results obtained during the research was tested using the data triangulation method. Data-data tersebut saling melengkapi dan triangulasi data menghasilkan data yang valid. Next, the researcher applied an interactive model of data analysis with stages as proposed by Miles and Huberman (1992), which consisted of data collection, data reduction, data presentation, and drawing conclusions. During the data analysis process, if there is still insufficient data, the researcher can return to the data collection stage by visiting the research location or contacting research informants, or returning to the data reduction or data presentation stage.

## **RESULTS AND DISCUSSION**

### **Overview of Wonoasri Village**

Wonoasri Village is located in Tempurejo District, Jember Regency. Wonoasri Village consists of two hamlets, namely Kraton Hamlet and Curahlele Hamlet. The location of Wonoasri Village is like the bottom of a bowl, because its position is lower than the other villages around it. If the Sanen River, which passes through Curahnongko Village, overflows, the flood will come to Wonoasri Village.

**Figure 1.**  
**Wonoasri Village Community**



*Source: (SID) 2023 data processing*

Based on Figure 1, which is a source from Village Information System (Sistem Informasi Desa [SID]) data (2023), the population of Wonoasri Village is 6,601 people, with a total of 2,270 families. The largest population is at the productive age of 15-64 years, as much as 71%, young age 0-14 years old, as much as 20%, and aged  $\geq 65$  years old, as much as 9% of the total population. The population of Wonoasri Village, which is classified as people with disabilities, is 195 people. Young age, age and people with disabilities are the populations most vulnerable to natural disasters.

Based on the status of house land occupied by families based on ownership, as many as 1,816 families occupy their own house land, and other families occupy house land owned by other people (SID 2023). The majority of residents living in Wonoasri Village are native residents who have lived in the village for generations. Frequent flooding has not deterred residents from living in the village.

### **Externalization Process**

The flood disaster in Wonoasri Village is classified as a hydrometeorological disaster that occurs in the rainy season. Floods include hydrometeorological disasters, namely natural disasters related to climate (BNPB 2021). According to BNPB (2021), flooding is defined as an event when water inundates an area that is not usually flooded within a certain time. Seasonal flooding in Wonoasri Village is caused by the overflowing water of the Sanen River.

Heavy rain can increase water discharge so that it exceeds the capacity of the river. The presence of sedimentation and human product waste, as well as organic

waste such as tree branches covering rivers, can also worsen flood conditions. Based on SID data (2023), as many as 81 families do not have rubbish dumps and as many as 39 families throw rubbish in gardens or rivers. The act of throwing rubbish into rivers can also cause flooding.

Floods in Wonoasri Village occur every year. However, the people of Wonoasri Village can still remember the big floods that hit Wonoasri Village in 1989, 1995, 2000, and 2021. On the online media, the big flood event in Wonoasri Village that was most widely reported was the 2021 flood. Floods that occurred before 2021 were not published online because, at that time, the internet was still rarely used. The flood that hit Wonoasri Village came from an overflowing river, little by little. People had time to save themselves, so there were no casualties.

Disaster management consists of the pre-disaster stage, the disaster or emergency response stage, and the post-disaster stage. Disaster mitigation is classified as disaster management at the pre-disaster stage. In this externalization process, memories of disasters that occurred when people were still young gave rise to local knowledge that during a flood, you must immediately escape to a higher place, such as a hill or cemetery which is located higher than the settlement, and their livestock is also evacuated. People also piled grain in high places. Afterward, according to the appeal from the head of the neighborhood, the public was asked to secure property, especially negotiable papers. The head of the neighborhood also said which areas were safe from flooding.

### **Objectivation Process**

Based on the Head of BNPB Regulation No. 1 of 2012 concerning General Guidelines for 'Desa Tanggap Bencana' (Destana) or Disaster Response Village/Subdistricts, Destana are villages that have the independent ability to adapt and face the threat of disasters, as well as recover immediately from the detrimental impacts of disasters if they are hit by a disaster (BNPB 2016). The development of Destana is in accordance with BNPB's vision, namely "the nation's resilience in facing disasters". In this objectification process, the Wonoasri Village Community became aware of the flood disasters that often hit their village, so they formed a Destana. In 2018, Wonoasri Village became a Destana which received an intermediate award or 'madya' from the governor of East Java.



**Figure 2.**  
**Wonoasri Village Destana Office**



*Source: Research documentation 2023*

**Figure 3.**  
**Shelter Location**



*Source: Research documentation 2023*

**Figure 4.**  
**Garden at the Village Yard**



*Source: Research documentation 2023*

**Figure 5.**  
**Evacuation Route Sign**



*Source: Research documentation 2023*

Destana was formed based on public awareness of the seasonal flood disaster that hit Wonoasri Village. Figure 2 shows the location of the Wonoasri Village Destana office, which is in the village hall. Next to the Wonoasri Village Destana office, there is a pavilion room that was used as an isolation room during the COVID-19 pandemic, which was then used as a shelter for the people of Wonoasri Village during a flood (Figure 3). Figure 4 shows the garden at the village hall. The garden is planted with various vegetables, fruit, and tubers, which can be consumed by people who were evacuated during the flood disaster. Destana installed evacuation route signs leading to a safe point. Figure 5 shows the evacuation route signs in front of the village community's house. The evacuation route sign leads to the Wonoasri Village Hall as the center of the shelter location. When the evacuation route signs were installed, Destana socialized them with the public. However, as time goes by, the signs of the evacuation route are starting to become damaged, and new ones need to be installed.

During a flood, the head of the neighborhood directs people to a safe location. However, not all people go to shelters. There are some people whose houses are multi-storeys so they can occupy the second floor of their house during a flood. There are also some people who choose to evacuate to their family homes which are outside the flood zone. The community reports to the head of the neighborhood about where their family has evacuated and the head of the neighborhood reports to the village officials.

### **Internalization Process**

Culture is a unit of interpretation, memory and meaning that exists within humans and not just in words (Liliweri 2002). Culture influences human behavior because each person will display his culture when he acts in everyday life. In this internalization process, a transfer of knowledge occurs where people institutionalize knowledge within themselves. The manifestation of this internalization process includes, among other things, a culture of disaster awareness.

At its inception, Wonoasri Village did not have its own rubber boat. People take advantage of local wisdom by making emergency boats from banana stems, logs, or plastic barrels that are held together with rope. Vulnerable people, for example, the aged, were carried out of the house or carried using sarongs because there were no stretchers, then got on the emergency boats. Evacuation prioritizes the aged, people with disabilities, sick people, pregnant women, and children. Now, in Wonoasri Village, there are stretchers and rubber boats that can be used for the evacuation process.

**Figure 6.**  
**Elevated Well**



*Source: Research documentation 2023*

**Figure 7.**  
**House on Stilts or Attic**



*Source: Research documentation 2023*

Due to frequent flooding, since the 1980s, people have raised wells by around 1-2 meters so that flood water does not pollute the well water (Figure 6). People also raise house buildings so that flooding does not enter the house. Most of the people of Wonoasri Village work as farmers, so the people store grain at home. People build stilt houses behind the house or build attics above the house to store grain (Figure 7). The local term for this kind of building is ‘pogoh’. Nowadays, ‘pogo’ is not only for storing grain but also for storing various properties and negotiable papers, including as a place for people to evacuate. In Wonoasri Village, there is a multi-story school building so the top floor of the school building can be used to accommodate basic necessities such as a food supply during floods.

As an effort to overcome flooding, the Head of Wonoasri Village also created the ‘Karya Bakti’ program. This program is a community service program called ‘kerja bakti’ that is held every first Friday of every month. ‘Kerja bakti’ aims to keep the environment clean and free from rubbish that can cause flooding. The Head of the Village also provides a Handy Talkie (HT) for communication during floods. Wonoasri Village used to use HT to communicate during floods. HT is held by village officials. Destana can use HT only during a flood disaster. Previously, many people did not have cell phones, so communication depended on HT and directions from village officials.

## Facebook Group



*Source: Research documentation 2023*

Apart from using HT, cell phones can now be used to communicate more quickly and efficiently. From Wonoasri Village SDGs data as of March 2022, it was recorded that 3,568 people had cellphone numbers, 2,643 people had Facebook social media, and 2,996 people had WhatsApp (SID 2023). Figure 8 shows the appearance of the Facebook group belonging to Wonoasri Village. Wonoasri Village formed a Facebook group called the 'Info Warga Kraton' Group. The Facebook group is a closed group consisting of members from the Wonoasri Village community. Group members shared information related to conditions in Wonoasri Village. There is also a WhatsApp group, namely a village disaster response group. Wonoasri Village has a sister village relationship with Sanenrejo Village and Curahnongko Village. If heavy rain occurs and river water levels in the two villages increase, Wonoasri Village will immediately receive news via WhatsApp group to prepare for flood disasters.

Discussion. Disasters burden all levels of society. Therefore, community or community-based disaster mitigation is needed (Supartono, Ambari, and Rudi, 2022). Developing a culture of disaster preparedness is more appropriate if it is based on the values and experiences of the community and not a model imposed by the government (Appleby-Arnold, Brockdorff, and Callus 2021). The past experiences of people who have experienced floods influence decision-making in disaster preparedness (Priyanti et al. 2019). This is where the externalization process occurs. When the community became aware of the flood disaster, it formed Destana. This is where the objectification process takes place.

Disaster response efforts can utilize community culture (Rahmani, Muzwagi, and Pumariega 2022). People's habits in adapting to floods make people carry out disaster mitigation based on local wisdom or other terminology called local knowledge, indigenous knowledge, traditional wisdom, and traditional knowledge (Suryandari and Wijayanti 2021). This is where the internalization process occurs. The community has local wisdom which is formed based on experience (Sudibyakto, et al. 2012). This can be seen through the local wisdom of the people of Wonoasri Village, which is useful when floods occur. Just like research by Basri (2021), Priyanti et al. (2019), also Weng, Ku-Mahamud, and Karim (2014), where the community has local wisdom by building houses on stilts as an effort to overcome flooding, the people of Wonoasri Village also build houses on stilts called 'pogoh.'

According to Basri (2021), local wisdom, which is also a disaster mitigation effort, is carried out by observing changes in river volume. Through sister villages, village communities observe changes in river water volume and then convey this to the WhatsApp group so that other village communities can prepare before the flood comes. Here, social media are used to communicate, educate, and transform local wisdom values (Komarudin, Adrianti, and Mashud 2022).

Apart from utilizing local wisdom and social media to overcome disasters, social networks between the government and the community are also important (Wulandari, Muryani, and Karyanto 2019). Increasing community capacity to deal with disasters can be done with political will from the government, where the government is a facilitator to encourage the formation of a disaster-aware society (, et al. 2012). The literature highlights that effective flood disaster management hinges on active community participation, which not only fosters a sense of ownership but also enhances preparedness (Nugraheni and Suyatna, 2020). Efforts to overcome disasters cannot be carried out by one group alone but require cooperation between groups; the government must involve community participation and collaborate with volunteers, NGOs, and various other organizations (Syahrin et al. 2020; Zakariah and Kismartini 2018). Political will here includes government commitment to implement flood disaster management policies (Zakariah and Kismartini 2018), such as coordination between government institutions and the existence of a unity of command (Thamrin, Ridho, and Nasution 2021).

According to Mulyono and Paramitha (2022), the community has social capital in facing disasters, namely local wisdom and trust in the government or social linking capital. Apart from using local wisdom and social media to overcome floods, the community also utilizes social networks between the community and village officials and Destana. There is trust between the community and the government. Here, the person closest to the village community is the head of the neighborhood. If the head of the neighborhood can be relied on and the community, with its trust, obeys the directions of the head of the neighborhood, then this can be an effective flood disaster management effort.

In the externalization process, local knowledge about floods is formed through people's memories or experiences when dealing with floods. Furthermore, in the objectivation process, people who were aware of the seasonal floods that hit the village formed Destana. Destana socializes about evacuation during floods. The village government, namely the head of the neighborhood, plays an important role in helping the community in evacuation efforts. Next, in the internalization process, a transfer of knowledge occurs. The internalization process can be seen in the use of local wisdom and social media to overcome flooding in Wonoasri Village.

## **CONCLUSION**

In the construction process of disaster-aware communities, in the externalization process, local knowledge about floods is formed through people's memories or experiences when dealing with floods. Furthermore, in the objectivation process, people who were aware of the seasonal floods that hit the village formed Destana. Destana socializes about evacuation during floods. The village government, especially the head of the neighborhood, plays an important role in helping the community in evacuation efforts. Next, in the internalization process, a transfer of knowledge occurs. The internalization process can be seen in the use of local wisdom and social media to overcome flooding in Wonoasri Village.

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