

## Changes in farmers' work practices following the disaster in Watubula Village, Sigi Subdistrict, Sigi Regency

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**Abstract:** The purpose of this study is to examine changes in the work patterns of the community in Watubula Village, Dolo Subdistrict, Sigi Regency. This study employs a qualitative research method with a descriptive research design. Informants were selected using the "purposive" technique, which involved intentionally selecting seven individuals. Data collection techniques included observation, interviews, and documentation. The results of the study indicate that the current economic conditions in Watubula Village are extremely poor, placing a heavy mental burden on individuals, particularly those who play a key role within the family. These economic conditions cause psychological anxiety for every head of household who has lost access to water or their source of livelihood, as they must contend with numerous concerns, one of which is the educational status of their children. Changes in farmers' work in Watubula Village occurred as a result of the disaster on September 28, 2018, and there was a significant shift from rice farmers to vegetable farmers due to the disruption of irrigation channels, leading to a transition to vegetable farming in Watubula Village.

**Keywords:** Changes in employment; natural disasters; farmers.

### 1. Introduction

A disaster is an event that disrupts and threatens the lives and livelihoods of communities, whether caused by natural, non-natural, or human factors, resulting in loss of life, environmental damage, property loss, and even psychological impacts on the community. According to Law No. 24 of 2007, disasters are classified into three categories: natural disasters, non-natural disasters, and social disasters.

On September 28, 2018, at 6:02 p.m. WITA, an earthquake measuring 7.4 on the Richter scale struck when the Palu-Koro fault, which runs through the city of Palu, shifted approximately 10 kilometers below the earth's surface; minor tremors had been occurring throughout the day (Lin & Henschke, 2018). The natural disaster that occurred in Palu City on September 28, 2018, was not the first of its kind. According to historical records dating back to 1905, 1907, 1909, 1927, 1937, 1968, and 2012, Central Sulawesi—particularly the city of Palu—has experienced numerous earthquakes and tsunamis that have claimed a large number of lives (Fikrie & Siswadi, 2018).

This earthquake was not the first to strike the city of Palu, but it was the strongest. Five minutes later, the Meteorology, Climatology, and Geophysics Agency (BMKG) issued a tsunami warning for waves ranging from 0.5 to three meters, followed by liquefaction that occurred in several areas, such as Balaroa, Petobo, and Jono Oge Sigi. Liquefaction occurs in sandy soil that is easily saturated with water, such as the soil in Palu City, which

is close to the sea. The shaking caused by the earthquake caused the soil to lose its cohesion, causing it to dissolve like water and flow, carrying away the buildings and vehicles on top of it (Lin & Henschke, 2018).

The damage to the Gumbasa irrigation system has had a massive impact on the communities in Sigi Regency, particularly on farmers; many of whom were forced to stop farming or change professions after the disaster, as the Gumbasa irrigation system was the sole source of water for the farmland of residents across 28 villages and 4 districts: Gumbasa District, Tanambulava District, Sigi Biromaru District, and Dolo District. The total area of land affected by drought and rendered unusable after the disaster due to the damage to the Gumbasa irrigation system was 8,180 hectares; the government has planned to immediately repair the Gumbasa irrigation system and completed Phase 1 of the repairs in December 2019; however, it can currently irrigate only about 1,079 hectares, leaving 7,101 hectares of farmland that cannot yet be irrigated again using the Gumbasa system (Susanto, 2021).

The construction of the second phase of the Gumbasa irrigation project has been delayed due to COVID-19. The project, which was originally scheduled to begin in early 2020 and was slated for completion in 2022, has had to be postponed, and to date there is no information on when construction of the second phase of the Gumbasa irrigation project will begin. As a result, many farmers in Sigi Regency are unable to farm again and have lost their jobs (unemployment), some farmers have had to switch professions to become construction workers, while others have chosen to continue farming by relying on alternative water sources, such as digging shallow wells; however, because the water obtained is very limited, they have had to switch from growing rice to growing drought-tolerant crops like corn or chili peppers, which require less water.

The Theory of Peasant Economic Morals by James C. Scott. In sociological studies, economic morals are defined as an analysis of what causes individuals to behave, act, and engage in economic activities. This is described as a social phenomenon present in society that is likely to influence the structure of social life (Bahri & Sepriandi, 2015). Scott notes that the moral economy of farmers arises from the central economic dilemma faced by most farming households, as they live so close to the subsistence line (Syahrizal, 2016). Therefore, the moral economy of farmers tends to be based on two norms: the norm of subsistence and the norm of reciprocity.

James C. Scott examines the actions that underlie a farmer's engagement in a series of economic activities. According to Scott (1981), farmers living near the subsistence threshold prioritize what is considered safe and reliable over potential long-term gains. Therefore, the actions taken by these farmers tend to be strategies for coping with, rather than changing or escaping, the dire conditions of their lives. Furthermore, Scott (1981: 21) has elaborated on the subsistence lives of farming communities living within constraints. The inability to meet various basic needs, the lack of capital, and the unavailability of jobs outside the agricultural sector ultimately force them to sell, pawn, or rent out their possessions; such circumstances represent the farmers' struggle to survive in a situation that Scott refers to as a "subsistence crisis."

In general, a natural disaster is a harmful event resulting from the natural processes of the Earth's rotation (Bankoff, 2003). Examples include floods, storms, volcanic eruptions, earthquakes, tsunamis, and other geological processes. The consequences of natural disasters include loss of life, injury or illness, property damage, loss of family income, and psychological impacts; experience has shown that natural disasters have direct implications for communities in a given region. It is not just physical damage, but many families lose relatives as a result of disasters. The loss of loved ones and homes that have been lived in for a long time places psychological stress on residents, which can lead to the onset of PTSD (Post-Traumatic Stress Disorder) or post-disaster stress (Jia et al., 2010). In addition, psychological distress such as depression, psychosomatic symptoms, and anxiety may also arise (Wang in Chou et al., 2004). In the post-disaster period, individuals typically become vulnerable and helpless in the face of the traumatic effects of the disaster. When a disaster strikes, the government and the public often focus more on the logistical needs (clothing, food, and shelter) that individuals require in the short term. Meanwhile, attention to the family or community and social levels is often overlooked, as is the restoration of community/social institutions such as markets, places of worship, livelihoods, and others. This is why there needs to be a focus on support from all levels of the community, because during and after a disaster, institutions at the community level also suffer destruction. From a sociological perspective, disasters are often understood based on human or societal perceptions, and on what people feel regarding the emotional experiences of events that threaten their survival. A disaster is one aspect of a definition constructed within the socio-cultural context of the lives of communities experiencing a disaster (Pramono, 2016).

## 2. Method

Qualitative research is a type of research that emphasizes the most important aspects of the nature of a product or service. Qualitative research can be designed to contribute to theory, policy, social issues, and action (Mulyana, as cited in Satori & Komariah, 2017). This study employs a qualitative research method of the descriptive type. Informants were selected using the "Purposive" technique, which involves intentionally selecting 7 participants. Data collection techniques included observation, interviews, and documentation.

## 3. Main Heading of the First Analysis or Discussion

Rural communities rely on nature in their daily lives. Nature is everything to villagers, as it provides everything humans need to survive. They work the land with simple tools to harvest its fruits and meet their daily needs. As is well known, rural communities are often identified as agrarian societies—that is, communities whose economic activities are centered on agriculture. This is the case in Watubula Village, Dolo Subdistrict, Sigi Regency, where the majority of residents work as farmers and depend on agriculture for their livelihoods. This is because the area is blessed with fertile soil and a reliable irrigation system. It is therefore no surprise that the residents rely on this natural fertility to sustain

their daily lives. The earthquake disaster has had a negative impact on the environment and the community in Watubula Village. The negative impacts resulting from the earthquake and liquefaction include direct damage involving partial destruction of physical assets in both the public and private sectors. Examples include infrastructure, buildings, agriculture, harvested crops, and irrigation systems, which are the direct consequences of the earthquake.

Meanwhile, due to the economic conditions in Watubula Village, the residents have lost their livelihoods as rice farmers as a result of the earthquake, which affected their income prior to the disaster. This is because the rice fields they cultivated dried up due to the lack of water flowing to their land, caused by the damage to the irrigation channels from Gumbasa resulting from the earthquake. In order for some of the residents of Watubula Village to survive, they were forced to find other jobs even though they were not skilled in those fields. For example, before the earthquake, their livelihood was as rice farmers because that was the only way they could meet their household needs; however, after the disaster, they were forced to switch to other jobs, such as becoming construction workers, to meet their daily needs. One of the impacts caused by the earthquake and soil liquefaction in Watubula Village is damage to the irrigation system that supplies water to the rice fields, so that to this day farmers have been unable to use their land to grow rice. However, since some of them cannot generate income from other sources of livelihood, they have continued to farm by growing corn. Yet, the income they earn from harvesting rice is far more profitable than that from harvesting corn; consequently, there has been a decline in their total income following the earthquake and liquefaction disaster. This has impacted the production, distribution, and consumption activities of the farming community in the aftermath of the disaster.

As has happened in the village of Watubula, many rice farmers have switched to working as vegetable farmers due to the disruption of the irrigation channels that once supplied water to the rice fields; as a result, all the farmers who previously worked in rice farming have now turned to vegetable farming. The socio-economic impact of the post-earthquake disaster on rice farmers has had a significant effect on the social conditions of the Watubula village community, particularly in the economic sector. The economy is the foundation or core of social life; if economic conditions face problems, it will affect other social aspects.

The numerous social challenges faced by earthquake victims, particularly those with modest incomes, require the community to take action to restore their social conditions by transitioning to new sources of livelihood. The actions taken by the residents of Watubula village—especially those affected by the earthquake—reflect their commitment to addressing the social realities they face.

They made a conscious transition with clear intentions and objectives. The effects of the earthquake felt by the community of Watubula Village included changes in economic conditions, shifts in livelihoods, and a decline in income. These circumstances were experienced by the residents of Watubula Village, whose primary source of livelihood was rice farming. Thus, the social conditions experienced by the community of Watubula Village saw both declines and improvements in different contexts. The social changes

evident from the earthquake in Watubula Village are as follows: Before the earthquake, the farming community in Watubula Village still had steady jobs as rice farmers, where they could meet their basic needs from the harvest and even send their children to school without worrying about the costs.

However, following the earthquake on September 28, 2018, many farmers in Watubula Village lost their steady livelihoods because the land they had been cultivating became unusable. This has had a significant impact on the economy of the farming community, particularly those with low incomes and limited education, who struggle to find alternative employment to support their families and their children's education. The various impacts felt by the people of Watubula Village, particularly the farmers, have prompted them to take steps toward recovering from the economic hardships they are facing. The events and their impact on the residents of Watubula Village have not caused them to lose hope in improving their economic situation. In particular, many residents of Watubula Village—who are primarily rice farmers—have now had to switch to working as gardeners due to the difficulty of finding sources of income that match their skills. The changes in the socioeconomic conditions of Watubula Village have made the residents realize that, regardless of the circumstances, they will inevitably experience change, whether significant or minor. As posited by functionalist theory, when a social system within a society becomes dysfunctional, social change—whether progressive or regressive—occurs in response to the dysfunctional system. This is what the community of Watubula Village experienced, where their economy—particularly that of the rice farmers—suffered a setback because their livelihoods were devastated by an earthquake, forcing them to undertake economic recovery that requires time and effort to start from scratch. Consequently, this has become a serious problem for every head of household, given their limited capital and education. Economic issues will affect other aspects of social life because the economic situation serves as the foundation or core of the social order. The earthquake caused significant damage to the social life of the Watubula village community; however, the community learned many valuable life lessons from the disaster. One of these lessons is the importance of preparing for potential social changes—particularly in the economic sphere—by analyzing the events they experienced.

#### 4. Conclusion

The conclusion that can be drawn from the results of this study on Changes in the Work of Rice Farmers in the Community of Watubula Village, Dolo Subdistrict, Sigi Regency is that this study demonstrates that the natural disasters—the earthquake, tsunami, and soil liquefaction—that occurred in the cities of Palu, Sigi, and Donggala have indeed affected people's livelihoods, causing those who previously worked as rice farmers to shift to other occupations. Furthermore, the impact on employment in Watubula Village, Dolo Subdistrict, Sigi Regency, in terms of both income and economic circulation, has

affected heads of households, forcing them to switch to other jobs in order to meet their families' basic needs and to pay for their children's schooling, among other things.

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