

Livelihood Transformation Of Farming Communities In Jono Oge Village After The Earthquake And Liquefaction

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Abstract

This research aims to describe the transformation process of economic activities of farmers in Jono Oge village post-earthquake and liquefaction in 2018. This was descriptive qualitative research with a survey method. The research sample was 22 households selected using the purposive sampling technique in five hamlets. The data were obtained through a questionnaire. The research results show that the transformation process of economic activities of the farmers in Jono Oge village to obtain new occupations through a middleman as many as 23%, relatives 54%, and neighbors 23%, with an initial capital for the middleman family, reached from Rp 80,000 to IDR 1,000,000. The duration needed by the farmers to do the new occupation is more than twelve months or a year, with a monthly income average of Rp 700,000 to Rp 7,000,000. The impact of the earthquake and liquefaction that occurred on September 28, 2018, caused 17 (77%) households had their farm destroyed and 5 (23%) households to lose their farm. In addition, people choose to change their livelihood as traders (18%), breeders (27%), laborers (27%), and construction labors (27%), with the respondents living place conditions being 15 households or 68%, stay in the temporary shelter is four households or 18%, and stay at emergency home is three households or 14%.

Keywords: Transformation, Farmer, Liquefaction

1. INTRODUCTION

Sulawesi is an area where three plates meet, namely the Indo-Australian, Eurasian and Philippine plates. This condition makes it very vulnerable to tectonic earthquakes. The Indo-Australian ocean plate moves northward at a speed of about 50-70 mm/year and subducts under the Sumatra-Java sea trench to the west of the island of Timor in NTT. Meanwhile, the Pacific plate crashed into the northern side of the island of Irian and the islands north of Maluku at a speed of 120 mm/year, which is twice as fast as the speed of subduction of the plate on the western and southern sides of Indonesia (Bock in Suliyanti 2015). The Palu Koro Fault extends approximately 240 km from the north of the city of Palu to the south of Malili to Bone Bay, and this fault is an active sinistral fault with a displacement speed of about 25-30 mm/year.

The earthquake that occurred on September 28, 2018, was centered on the mainland around the Palu Koro valley and caused by the activity of the Palu Koro fault, which is the main fault on the island of Sulawesi and is classified as an active fault. Jono Oge village is one of the villages affected by the 7.4 magnitude earthquake that shook Palu to Donggala on September 28, 2018. This area was also affected by liquefaction, and settlements and residents' land moved along with the ground 500 meters to the west. The area was formerly fertile land for agriculture, where most of the people were farmers. As a result of the disaster, several people living in the village lost their homes and jobs. Jono Oge is one of the villages in Sigi Regency, precisely in Sigi Biromaru District, with an area of 447, 0000 Ha consisting of plantations 178,5000 Ha, Sawah 186,0000 Ha, dry land 77,5500 Ha, and land for public facilities 4,9500 Ha. The main livelihood of the residents is farming. With a total of 476 families, agricultural land in this village is used by farmers to grow rice, vegetables, and secondary crops. In addition, there are also coconut and cocoa farmers.

After the earthquake and liquefaction, agricultural land was damaged where the surface of the land was wavy and split, while the land affected by liquefaction of ± 209.9 Ha was moved so that the boundaries of land owned by farmers could not be identified with a total of 172 buildings affected, in addition to irrigation canals. This is one of the accesses for farmers to carry out their activities. Due to the earthquake and liquefaction, irrigation was severely damaged so that farmers did not have enough water to replant; besides that, agricultural land became dry and unproductive. This has triggered a change in the work orientation of the farmers in Jono Oge Village.

According to (Nur Indah Aryani in fahlia, 2019), Change is a continuous process that occurs in every society. There is a process of Change that runs in such a way that it is not honed by the supporting processes. This movement of Change is called evolution. Sociology has a picture of a change in the evolution of society from a simple society to modern society. The process of community movement of Change is within a range of goals in modern society. (Baiq, 2011) describes the transformation as a change in form, nature, and so on. Transformation is also a change of form from one form to another. In a broader sense, transformation does not only include changes in the external (physical) but also changes in the economic and socio-cultural structure of a society that can ensure the survival of a society. In the Big Indonesian Dictionary (KBBI), transformation means Change can be in the form of form, nature, function, and so on. Transformation is a change of form from one form to another. In a broader sense, transformation does not only include changes in the external (physical) form but also changes in the economic and socio-cultural structure of a society that can ensure the survival of a society. Transformation is a process of Change that has the following characteristics: (a) The existence of differences is the most important aspect of the transformation process. (b) The existence of the concept of characteristics or identity becomes a reference for differences in a transformation process. If it is said that something is different or, in other words, there has been a transformation process, it must be clear what the difference is from. (c) Historical in nature, the transformation process always describes historically different conditions (different conditions at different times) (Ernita 2012).

The purpose of this study is to find out the transformation of the economic activity of the farming community in Jono Oge Village after the 2018 earthquake and liquefaction. The farming community changed their livelihoods to become traders, builders, breeders, and construction workers.

The benefit of this research is that it becomes a source of information for the entire community as well as a reference or reference for prospective researchers who want to conduct further research related to livelihood transformation. In addition, this research can increase people's knowledge about the process of livelihood transformation and adaptation that will be carried out by farming communities in order to survive.

The difference between previous research and current research is that this study does not discuss in more detail the learning process that is used as a provision for the community to do new jobs. The actors of the learning process are divided into two parties, namely individual and group processes. However, the research touches on the process that the community does in starting their new job and the condition of the community before the earthquake and liquefaction disaster as the cause of the shift in people's livelihoods, as well as the impact caused by the disaster on assets and agricultural access.

2. RESEARCH METHODS

This type of research is descriptive qualitative research with survey research methods with the types of data, namely primary data and secondary data. Primary data in this study is data obtained directly from informants, in the form of interviews and observations obtained from informants, while secondary data in this study is sourced from books, journals, and related agencies in the village, sub-district, district, and local government levels. Other related departments.

The sampling technique used in this study is purposive sampling. This technique is a sampling technique with certain considerations (Sugiyono, 2008). If the number of subjects is large, it can be taken between 10-15% or 20-55% or more depending on the number of:

1. The ability of researchers is seen from time, energy, and funds.
2. The area of observation is narrow for each subject because this involves a lot of funding.
3. The size of the risk borne by the researcher for researchers who have a big risk, of course, if the sample is large, the results will be better. (Sugiyono, 2008)

In this study examining the transformation of the livelihoods of the farming community of Jono Oge Village after the earthquake and liquefaction, the researchers decided that the sample was farmers who changed their livelihoods after the earthquake and liquefaction disaster with the following criteria:

- a. Farmers who experience damage or loss of agricultural land
- b. Changed livelihood in more than 12 months
- c. Farmer owners and tenants

The number of samples in this study was 22 households spread over five hamlets, namely hamlet 1 with five respondents, hamlet 2 with six respondents, hamlet 3 with five respondents, hamlet 4 with three respondents, and hamlet 5 with three respondents.

Data collection techniques in this study are literature study, observation, interviews, and documentation. The technique of collecting data is by means of a literature study, namely by looking for data in books that support related research, especially books related to the transformation of livelihoods and adaptation processes of farming communities, then analyzed, recorded, and written. The technique of collecting data with the observation method is a data collection technique that requires researchers to go to the field to observe things related to space, place, actors, activities, objects, events, time, goals, and feelings. The observation method is a very good way to monitor the behavior of research subjects, such as behavior in the environment or space, time, and certain circumstances. In making observations, the researcher is passively involved. This means that the researcher is not involved in the activities of the research subjects and does not interact with them directly. Researchers only observe the social interactions they create, both with fellow research subjects and with outsiders. (M. Djunaidi Ghony and Fauzan Almanshur, 2013). Observation is the initial activity before the researcher conducts research at the location. Researchers see phenomena in society related to research materials so that researchers can formulate existing problems and make temporary conclusions (Hypothesis). Furthermore, observations were made on the transformation of livelihoods and the adaptation process of farming communities in Jono Oge Village after the earthquake and liquefaction disaster. The interview technique is an activity to find material (information, opinion) through oral questioning with whoever is needed. Interviews were held to reveal the background and the motives around the problem being observed (Soekartawi, 1995). The interview is a data collection technique that is carried out by researchers by going directly to the field/houses of residents who are selected as respondents using instruments. This was done to obtain verbal information regarding the process of transforming the livelihoods of the farming community in Jono Oge Village after the earthquake and liquefaction disaster. Documentation Techniques According to (Sugiyono, 2010) is a record of events that have passed. Documentation can be in the form of writing, pictures, or monumental works of someone. Researchers use documentation techniques to complete the data obtained through observation and interviews. The data is in the form of photos at the location, letters, and so on. The instruments used in this study include cameras, laptops, printers, stationery, and question sheets (research instruments).

The data analysis technique used in this study is divided into data reduction, data display, and conclusion drawing/verification. Data reduction in this study is a process of sorting the data that has been obtained during observations and the results of interviews that have been conducted. This is done to make it easier for the author to process the data that has been obtained to suit the research objectives. After sorting the data, the next step is data presentation. The presentation of the data in this study is in descriptive form. After analyzing the results of observations and interviews, the researchers describe the results obtained from the respondents. The conclusion drawn is the final process that describes the transformation of livelihoods and various forms of adaptation of farming communities after the earthquake and liquefaction in Jono Oge Village. In making this conclusion, the researcher summarizes the results of observations and interviews in the field that have been analyzed in presenting the data.

The data analysis technique in this research is qualitative descriptive analysis. Qualitative description is used to solve the investigated problem by describing the current state of the subject and object based on the facts that appear or how (Hadari Nawawi, 1996). To find out the number of answers from the respondents through percentages, the following formula is used:

3. RESULTS AND DISCUSSION

Sigi Biromaru District is one of the sub-districts in the Sigi Regency Region, which has 17 villages and 1 UPT in the Palu valley. The area of Sigi Biromaru District is 29756.77, all of which can be reached by four-wheeled vehicles. Administratively, the research area is located in Jono Oge Village, which is one of the villages in Sigi Biromaru District, Sigi Regency, Central Sulawesi, which is located between 0058°20' - 0059°30"LS and 119054°00" - 119055°35"BT. The monographic data of Jono Oge Village shows that the total area of the village is 447,0000 Ha. Jono Oge Village consists of 5 Hamlets and 22 RT. The administrative boundaries of Jono Oge Village are as follows:

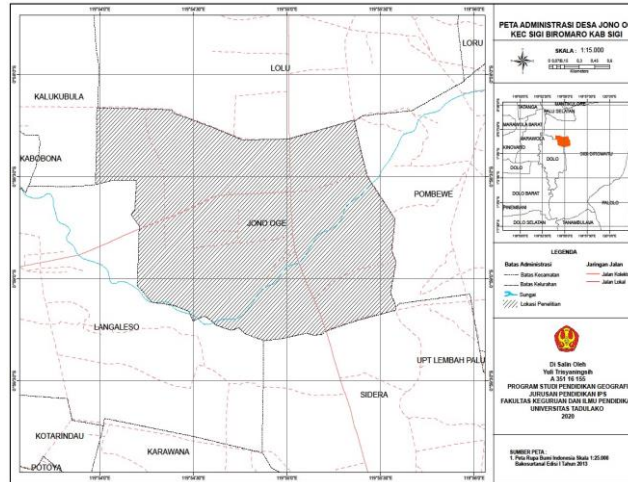


Figure 1. Map Jono Oge Transformation of Farmers' Livelihoods After the Earthquake and Liquefaction

Transformation is a change of form from one form to another. In a broader sense, transformation does not only include changes in the external form (physical) but also changes in the economic and socio-cultural structure of a society that can ensure the survival of a society. In this study, there are similarities with previous research, namely describing changes in the livelihoods of people affected by a phenomenon, both phenomena caused by nature and humans themselves, one of which is describing changes in livelihoods that occur in affected communities.

The transformation of farmers' livelihoods in Jono Oge Village was caused by the earthquake and liquefaction, which had an impact on the damage to agricultural land, agricultural assets, and water regulators in irrigation canals which were farmers' access to carry out their economic activities. The results of interviews and field observations also show that the boundaries of the land cannot be clearly identified, the land surface is uneven (some parts rise and the other side goes down), parts of the land are split or cracked, and other lands are carried away by liquefaction. This is even worse because there is not enough water supply after the natural disaster.

The transformation process carried out by the farming community of Jono Oge Village is through several processes, including respondents getting their new jobs through family, relatives, and neighbors. Initial capital is the main obstacle for respondents to start their new jobs. Some people who have sufficient capital to rent land will still choose to farm. Farmers who do not have sufficient capital to rent agricultural land choose to switch their livelihoods to become ranchers, traders, laborers, and builders. The capital issued by respondents to start a new job ranges from Rp. 80,000 to > Rp. 1,000,000, the length of time used by all respondents to cultivate their new job is more than twelve months or one hold, with respondents' monthly income ranging from Rp. 700,000 to Rp. 7,000,000.

3.1 Type of Work

The table below shows that farmers who changed their livelihoods to become ranchers were six families or 27.3%, farmers who changed their livelihoods to traders were four families or 18.1%, farmers who turned into laborers were six families or 27.3 %, and those who become builders are six families or 27.3%.

Table 1. Type Of Work

Livelihood Changes	f	Percentage	f	Total Percentage (%)
Type of work				
• Breeder	6	27.3	22	100
• Trader	4	18.1		
• Laborer	6	27.3		
• Builder	6	27.3		

Based on the results of interviews with 22 respondents, it can be concluded that farmers who switch their livelihoods to traders, breeders, laborers, and builders are due to agricultural land that is damaged and cannot be reprocessed, so it is not productive. Respondents chose the job because they saw the conditions of the opportunities that existed in the field, in addition to relying on the abilities of each individual.

3.2 Intermediaries Get A Job

An intermediary is a person who acts as a liaison between two interested parties. The intermediary in this study is the intermediary of the farming community of Jono Oge Village who switch livelihoods to get a new job such as intermediaries through family and neighbors, each as many as five families or 22.7%, while intermediaries through relatives as many as 12 families or 54.6%.

Table 2. Intermediaries Job

Livelihood Change	f	Percentage	f	Total Percentage (%)
Intermediaries get a job				
• Family	5	22.7	22	100
• Relatives	12	54.6		
• Neighbor	5	22.7		

The intermediary of respondents to get a job are family, relatives, and neighbors intermediaries. Respondents who work as laborers and artisans get work through relatives and neighbors, while respondents who work as farmers and traders get work from their families. They choose to continue the work of their parents to make it easier for them to improve their family's economic conditions after the earthquake and liquefaction.

3.3 Length of work

Of all respondents, they have been in their new job for more than 12 months. Respondents saw the condition of agricultural land and irrigation canals that were severely damaged, so it took a long time to repair the land and irrigation. Respondents chose an alternative to switch livelihoods in order to survive.

3.4 Working Capital

The initial working capital issued by the respondent is also very dependent on the income of the respondent. The respondent who started a new job with a capital of <100,000 was seven families or 31.8%, a capital of 100,000 - 500,000 was three families or 13.7%, and a capital of 600,000 - 1,000,000 as many as seven families or 31.8%, while capital > 1,000,000 as many as five families or 22.7%. Based on the results of interviews with respondents, it is known that respondents who work as construction workers need less than Rp. 100,000 in the capital. This is because workers only need transportation and consumption costs to start work, while respondents who work as construction workers need more capital to provide tools. building tools, they need capital > Rp 1,000,000. Respondents who work as farmers and traders need capital of Rp. 500,000 to Rp. 1,000,000.

3.5 Obstacles During Work

Constraints are obstacles or obstacles in a situation that hinder or limit the achievement of goals. Constraints in this study are the constraints of respondents during work, respondents who have problems while working as many as 19 families or 86.4%, and respondents who do not have problems while working as many as three families or 13.6%. Based on the interviews with 22 respondents, it can be seen that not all people experience difficulties in doing their new jobs. Some respondents explained that they do not experience difficulties in starting their new jobs. This is because the work they are currently in is a side job before the earthquake and liquefaction and does not require more capital to start a new main job. While other respondents explained that starting a new job is not easy for them, the initial working capital is their main obstacle to starting a new job. In addition to the lack of knowledge and abilities that exist in each individual, some people are easy to adapt to. The environment also requires a long process and time to adapt to the new environment. But lately, what has become an obstacle for those who work as builders and laborers is experiencing erratic working time constraints. Besides that, breeders and traders experience very low selling prices due to the Covid-19 outbreak that hit almost all cities and even countries. Initial working capital is the main obstacle for them to starting a new job. Besides that, the knowledge and abilities that exist in each individual are different. Some people are easy to adapt to their environment and also require a longer process and time to adapt. With the new environment. But lately, what has become an obstacle for those who work as builders and laborers is experiencing erratic working time constraints. Besides that, breeders and traders experience very low selling prices due to the Covid-19 outbreak that hit almost all cities and even countries. The initial working capital is the main obstacle for them to starting a new job. In addition to the lack of knowledge and abilities that exist in each individual, some people are easy to adapt to their environment and also require a longer process and time to adapt. With the new environment. But lately, what has become an obstacle for those who work as builders and laborers is experiencing erratic working time constraints. Besides that, breeders and traders experience very low selling prices due to the Covid-19 outbreak that hit almost all cities and even countries. Some communities are easy to adapt to their environment, and some require a longer process and time to adapt to a new environment. But lately, what has become an obstacle for those who work as builders and laborers is experiencing erratic working time constraints. Besides that, breeders and traders experience very low selling prices due to the Covid-19 outbreak that hit almost all cities and even countries. Some communities are easy to adapt to their environment, and some require a longer process and time to adapt to a new environment. But lately, what has become an obstacle for those who work as builders and laborers is experiencing erratic working time constraints. Besides that, breeders and traders experience meager selling prices due to the Covid-19 outbreak that hit almost all cities and even countries.

3.6 Post-Disaster Land Conditions

Based on the results of the interview, it showed that the condition of the respondent's agricultural land after the earthquake and liquefaction experienced land damage as many as 17 families or 77.3%, while the respondents who lost land were five families or 22.7%.

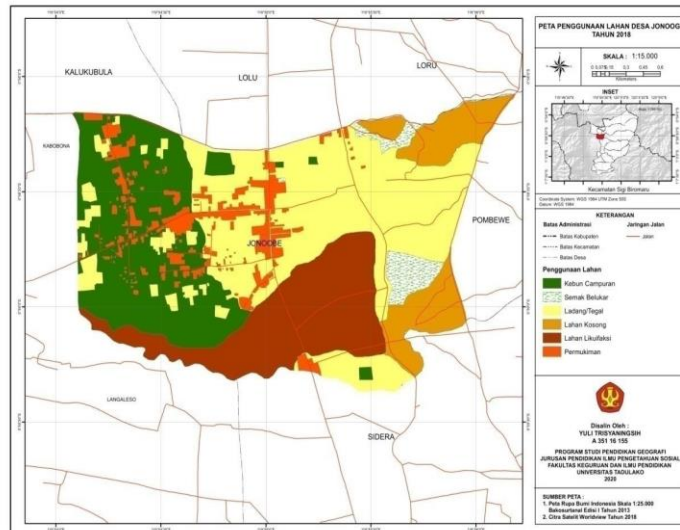


Figure 2. Map Post-Disaster Land Conditions

Based on the land use map above, it can be seen that the earthquake and liquefaction disaster had a major impact on the condition of the land in Jono Oge Village, especially agricultural land. His profession as a farmer but by renting land in another village.

3.7 Place To Live After The Earthquake And Liquefaction

One of the impacts caused by the earthquake and liquefaction was damage and loss of the respondent's house or residence so some respondents chose to live in HUNTARA (Temporary Residential) and emergency houses. Based on the results of the study, it can be seen that 15 households or 68.2% of respondents who returned home, respondents who lived in HUNTARA were 4 or 18.2%, while respondents who chose to live in emergency houses were three families or 13.6%...

3.8 Casualties Due To Earthquake And Liquefaction

The loss of family was one of the impacts of the earthquake and liquefaction that occurred on September 28, 2018, especially in Jono Oge Village. Based on the results of interviews with the village head of Jono Oge, it was said that there were 57 people who died as a result of the disaster. However, the fatalities did not include the respondent's family members. In this study, the researcher did not find any fatalities in the respondent's family.

3.9 Post-Earthquake And Liquefaction Income

Income is the income earned by the respondent per month. Respondent's income can be seen by how much money they receive per week per month from each type of work they do. Respondents with high incomes are more likely to be able to meet all the needs of their family members. Gross income from the work of respondents per month is between IDR 700,000-10,000,000 with different types of work.

Table 3. Income Post Disaster

No	Reception	Frequency	Percentage (%)
1	High (> 7,000,000)	2	9.1

2	Medium (3,800,000-6,900,000)	2	9.1
3	Low (700,000-3,800,000)	18	81.8
Total		22 KK	100

The table above shows that the monthly acceptance rate of respondents is low; 81.8% (18 people), 9.1% (2 people) have moderate acceptance rates, and 9.1% (2 people) have high acceptance rates.

In addition to agricultural land, the earthquake and liquefaction disaster that hit Palu, Sigi, and Donggala Regencies on September 28, 2018, also had an impact on assets and agricultural access in Jono Oge Village. Based on the results of the research, it is known that agricultural assets lost to liquefaction are 1 unit of Power Thresher and 1 unit of Hand Tractor, while the other two units are no longer used optimally. Changes in the people's livelihoods of Jono Oge Village impact the use of tools at work. Farmers in Jono Oge Village who change their livelihoods no longer utilize agricultural assets in Jono Oge Village. Now farmers who change their livelihoods start using different work tools/media.

Based on the table above, it can be seen that the condition of agricultural assets lost to liquefaction is 1 unit of Power Thresher and 1 unit of Hand Tractor, while the other two units are no longer used optimally. Changes in the livelihoods of the people of Jono Oge Village have an impact on the use of tools at work. Farmers in Jono Oge Village who change their livelihoods no longer utilize agricultural assets in Jono Oge Village. Now farmers who change their livelihoods start using different work tools/media.

The irrigation channel in Jono Oge Village, which is one of the accesses for farmers in Jono Oge Village to carry out their activities as farmers, suffered heavy damage due to the earthquake and liquefaction disaster that occurred on September 28, 2018. Based on the results of the interview, it was explained that from the 5 Bora secondary canals, there were three missing channels. Carried out by liquefaction were BGKn 45, BGKn 46, BGKn 47, and BGKn 49 channels on the left network. Meanwhile, two others were severely damaged, namely the BGKn 48 and BGKn 49 channels on the right network.

The provision of secondary water for processing is 2.10 l/sec/ha, for growth of 1.25 l/sec/ha, for secondary crops as much as 0.4 l/sec/ha, and for ponds 2.10 l/sec/ha. Damage and loss of irrigation canals and agricultural land located in Jono Oge Village greatly affect the condition of the Jono Oge community, especially those who make a living as farmers.

4. CONCLUSION

Based on the results of the study, it shows that the process of transforming the livelihoods of the farming community in Jono Oge Village to get new jobs, namely through family intermediaries, as many as five families or 23%, besides that respondents get jobs through relatives as many as 12 families or 54%, and through neighbors as many as five families or 23%. Respondent's initial capital starting a new job ranged from IDR 50,000 to IDR 1,000,000, respondents who started a new job with a capital of < IDR 100,000 were 7 families or 31%, respondents who used capital of IDR 100,000-IDR 500,000 were 3 families or 14% , and capital of Rp 600,000-Rp 1,000,000 as many as 7 families or 31%, while those using capital > Rp 1,000,000 are 5 families or 23%. All respondents have been in their new job for more than 12 months or one year, with the monthly income of respondents ranging from Rp. 700.

The condition of the respondent's land that was damaged was 17 families or 31%, while the land lost to liquefaction was five families or 23%. The damage and loss of agricultural land in Jono Oge Village greatly affect the economic activities of the farming community of Jono Oge Village. This is marked by the shift in the livelihoods of farming communities after the earthquake and liquefaction. The dominant farming community changed their livelihoods to become traders with a total of 4 families or 19%, breeders, six families or 27%, workers, six families or 27%, and construction workers or six families or 27%. In addition, 15 families or 68% of respondents returned to their respective homes, four families or 18% of respondents resided in the shelters, while three families or 14% of emergency houses lived in emergency houses.

Based on some of the conclusions that have been described related to the problems in this paper, can also be put forward suggestions that can be useful as consideration or information, including:

1. It is hoped that the government will repair or rebuild agricultural facilities and access in Jono Oge Village, especially gum base irrigation, roads, and agricultural land in Jono Oge Village.
2. It is hoped that the government will pay more attention to the economic conditions of the people of Jone Oge Village and can provide assistance both materially and non-materially.
3. It is hoped that this thesis can be used as a reference for further research regarding the condition of the people of Jono Oge Village after the Earthquake and liquefaction disaster on September 28, 2018.
4. Further research was conducted to see the condition of the economic activity of farmers in Jono Oge Village after the Earthquake and liquefaction disaster on September 28, 2018.

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