Social Science and Humanities Journal
Everant Journal
ISSN: 2456-2653
Volume 08 Issue 03 March 2024
https:https://sshjournal.com/
Impact Factor: 2024: 6.576
2023: 5.731
Doi: https://doi.org/10.18535/sshj.v8i03.964

Efforts to Increase the Capacity of Sukorejo Village, Semarang City Community in Facing Landslide Disasters Through the Preparation of Evacuation Standard Operating Procedures (SOPs)

Saptono Putro[1*], Hariyanto[1], Azhar Azhari[1], Muthia Tazkia Amira[1]

[1]Program Studi Geografi, Universitas Negeri Semarang, Semarang 50229, Indonesia

Received 24-02-2024
Revised 25-02-2024
Accepted 11-03-2024
Published 13-03-2024

Abstract:

This study identified the problem of landslide disasters that often occur in Sukorejo Village, Gunungpati District, Semarang City. Sukorejo village belongs to the high ground movement zone which has a high degree of vulnerability to soil movement. The purpose of the study was to determine efforts to increase the capacity of the community in facing landslide disasters through the preparation of evacuation standard operating procedures (SOPs). The data collection of this study used interview, observation, documentation, and geographic information systems (GIS) methods. Data analysis is carried out with the approach of spatial analysis and qualitative descriptive analysis. The results showed that the preparation of evacuation SOPs is very important to increase the capacity of the community during landslide emergency response. The recommendations given are the need to add an Early Warning System (EWS) tool, install evacuation route signs, and gathering points in landslide-prone areas. In addition, the community also needs to increase awareness and preparedness in the face of possible landslides. This research contributes to improving understanding of landslide disaster mitigation efforts and can be followed up by assessing community capacity and evaluating future evacuation SOPs.

Keywords: Capacity, Landslide, SOP, Evacuation

Introduction:

Landslide is a natural disaster that occurs due to the movement of masses of rock or soil that slide or fall down on steep or flat slopes. Lindslides can be caused by various faktors such as extreme weather, earthquakes, volvanic eruptions, climate change, human activities such as deforestation, and the building construction that is not in accordance with enviromental conditions. According to Cristiady (2012), landslides occur due to shear collapse along one or more landslide planes. Causal factors of landslides are the geology and topography of an area, while triggering factors are external factors such as extreme weather or human activities (Cruden and Varnes, 1996).

Landslides are one of the most common natural disasters in Indonesia and have abig impact on society. Semarang City, is one of the cities in

Central Java that has a high potential for landslides. Based on disaster data collected by Bappeda Kota Semarang from 2017 to 2022, landslide is a type of disaster that often occurs in Semarang City. According to research by Faizana dkk., (2015), the risk of landslides in Semarang City can be classified into three risk levels: low risk level covering 126.003 hectares in eight villages, medium risk level covering 323.141 hectares in ten villages and fifteen villages at 475.127 hectares at high risk level.

Sukorejo Village, located in Gunungpati District, is one of the villages prone to landslides. According to Sugalang and Siagian (1991), Sukorejo Village is included in the high land movement area because it has a high degree of vulnerability to land movement. The impact of disaster losses caused by landslides can be referred to as disaster risk. A disaster can occur if the threat posed is higher than the capability (Prihananto & Muta'ali, 2013). Therefore, to reduce the risk of landslides, efforts need to be made to improve the understanding and capacity of the community. Among them is the preparation of Standard Operating Procedures (SOPs) for evacuation. Standard Operating Procedures (SOPs) as an order to produce an effective activity and related documents as chronological stages to complete a job (Abuhasmy, 2018). SOPs will guide the community in evacuating safely and on time when a landslide occurs. Thus, it is expected that the number of victims from landslides can be minimized and the community can be better prepared to face natural disasters that may occur. The purpose of this study is to determine the efforts to increase the capacity of the community in Sukorejo Village in facing landslide disasters through the preparation of evacuation standard operating procedures (SOPs).

Method:

This research was conducted in Sukorejo Village, Gunungpati District, Semarang City, Central Java. The researcher chose Sukorejo Village because it has a high potential for landslides. The potential for landslides in this area is caused by various factors, such as geological factors, topography, and human factors such as agricultural activities and development that do not pay attention to environmental safety factors. In addition, by choosing Sukorejo Village as the research location, researchers can find out the impact of landslides on the surrounding community and community evacuation efforts through the preparation of standard operating procedures.

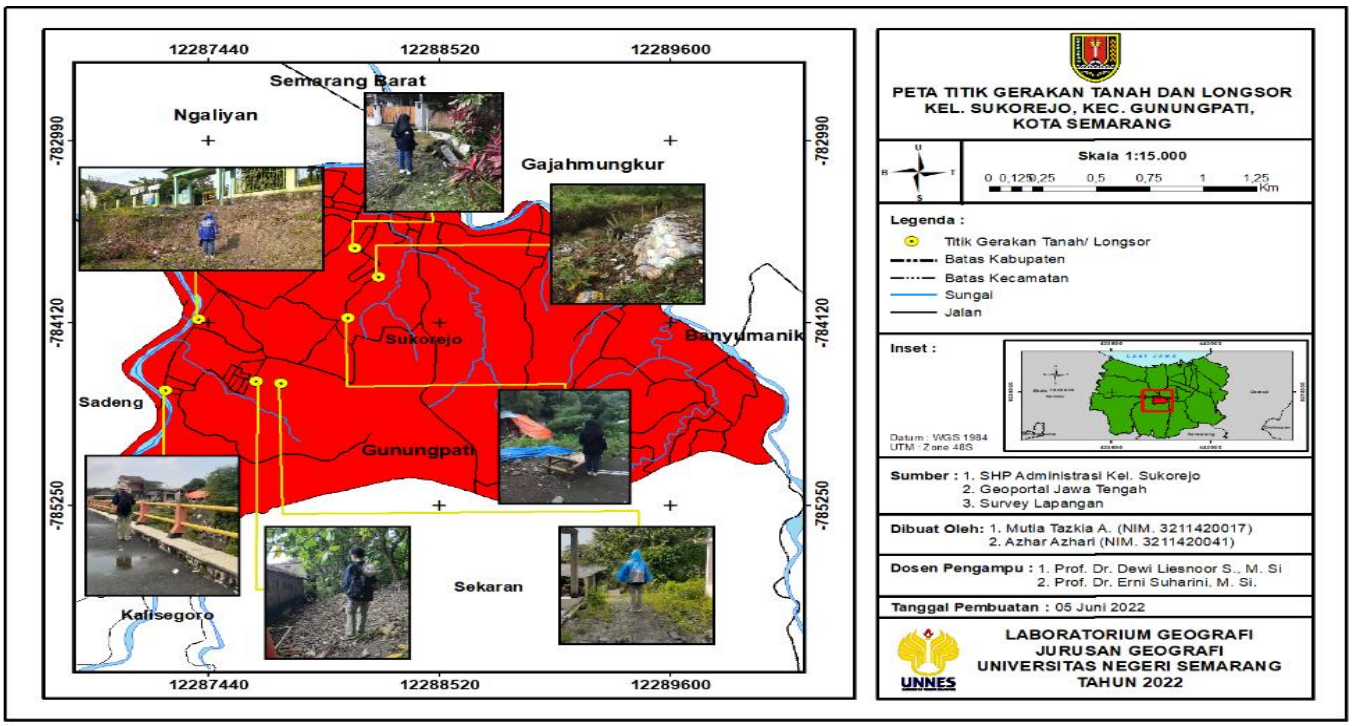

Figure 1. Map of Land Movement and Landslide Points (Research Result, 2022)

Data Collection

Data collection techniques in this research include interviews, observation, documentation, and geographic information system (GIS). First, interviews were used to gather information from respondents about efforts to increase the community capacity to face with landslides in Sukorejo Village. The sampling technique used is random sampling technique. Secondly, observation was conducted to observe the behavior of the community and the evacuation SOP are implemented. Third, documentationis carried out by taking photos of the activities. Finally, GIS was used to process spatial data and create digital maps to determine landslide risk reduction strategies and prepare effective evacuation.

Data Analysis:

This research used two methods, spatial analysis and descriptive qualitative analysis to understand the risk of landslides and improve community knowledge in Sukorejo Village. Spatial analysis was conducted by mapping evacuation routes and EWS points to form a spatial pattern that helps the community to face landslides. Meanwhile, qualitative descriptive analysis aims to provide information on efforts to increase community capacity in facing landslides by preparing evacuation SOPs. The data used comes from spatial data and questionnaire data as well as documentation that is translated into easy-to-understand language through diagrams, figure and tables. In the overall analysis, this research succeeded in improving the knowledge and capacity of the community in facing landslides in Sukorejo Village. It is expected that the results of this analysis can provide a better understanding for the community and government in dealing with landslides in the area.

Results and Discussion:
Efforts to Increase the Capacity:

Efforts to increase the community capacity in facing landslide disasters can be carried by planning evacuation routes and gathering points, Early Warning System (EWS) tools, and drafting SOPs. Based on the observation, it can be concluded that community capacity for landslides in Sukorejo Village through evacuation route planning still needs to be improved. This is based on field observation which shows that the installation of evacuation route in the area only has one sign installed, which is located in RT 06, RW 06. Although there is one evacuation route sign installed, the number is still minimal and inadequate to help the community in dealing with landslides. The condition of the evacuation route sign at that location is in a well-maintained condition. In addition, the writing on the signs is still clear and easy to read, as it is not obstructed by vegetation/objects. However, the signs are not installed using iron poles as in general, but are installed on a wooden pole. So it is necessary to do careful and more detailed planning related to the placement of appropriate and adequate evacuation route signs.

Figure 2. Evacuation Route Sign (Research Result, 2022)

Capacity for preparedness shows that the community in facing landslide disasters is based on basic knowledge as mitigation and emergency response efforts (Prihananto & Muta'ali, 2013). Based on the results of interviews conducted to respondents using purposive sampling technique. Community readiness in facing landslide is measured by basic knowledge on landslide, which includes interview questions as shown below.

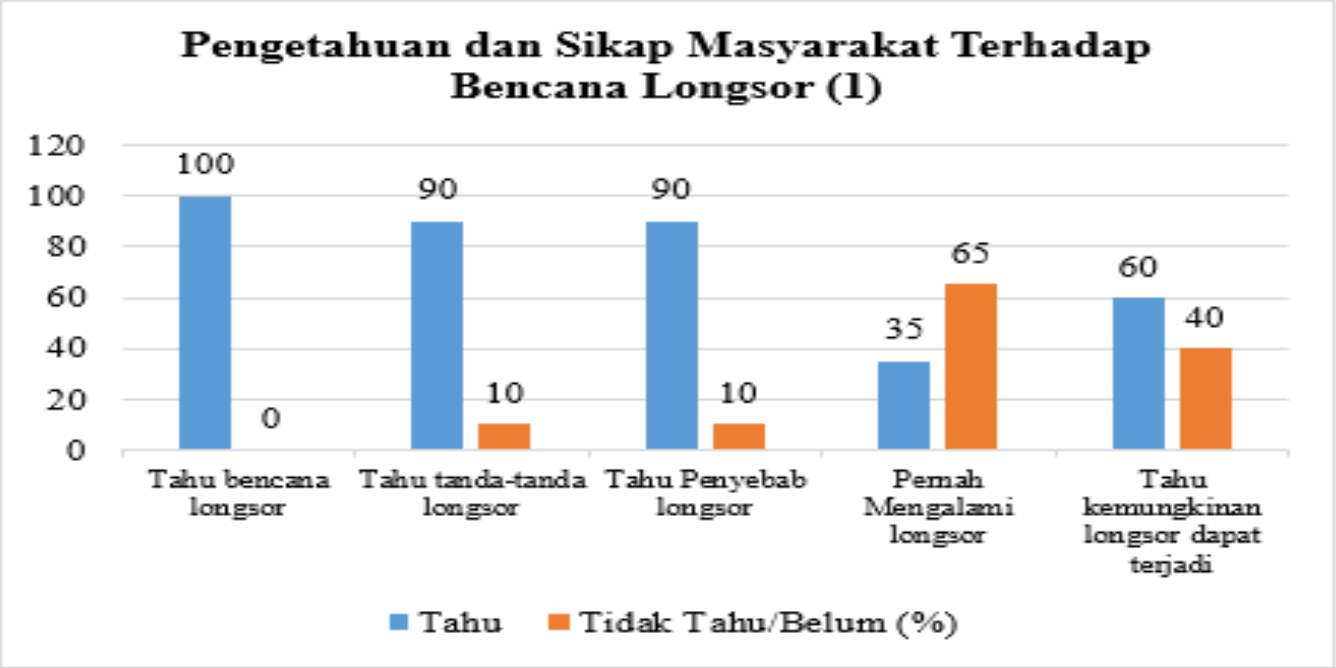

Figure 3. Community Knowledge and Attitude towards Landslide Disaster (1) (Research Result, 2022)

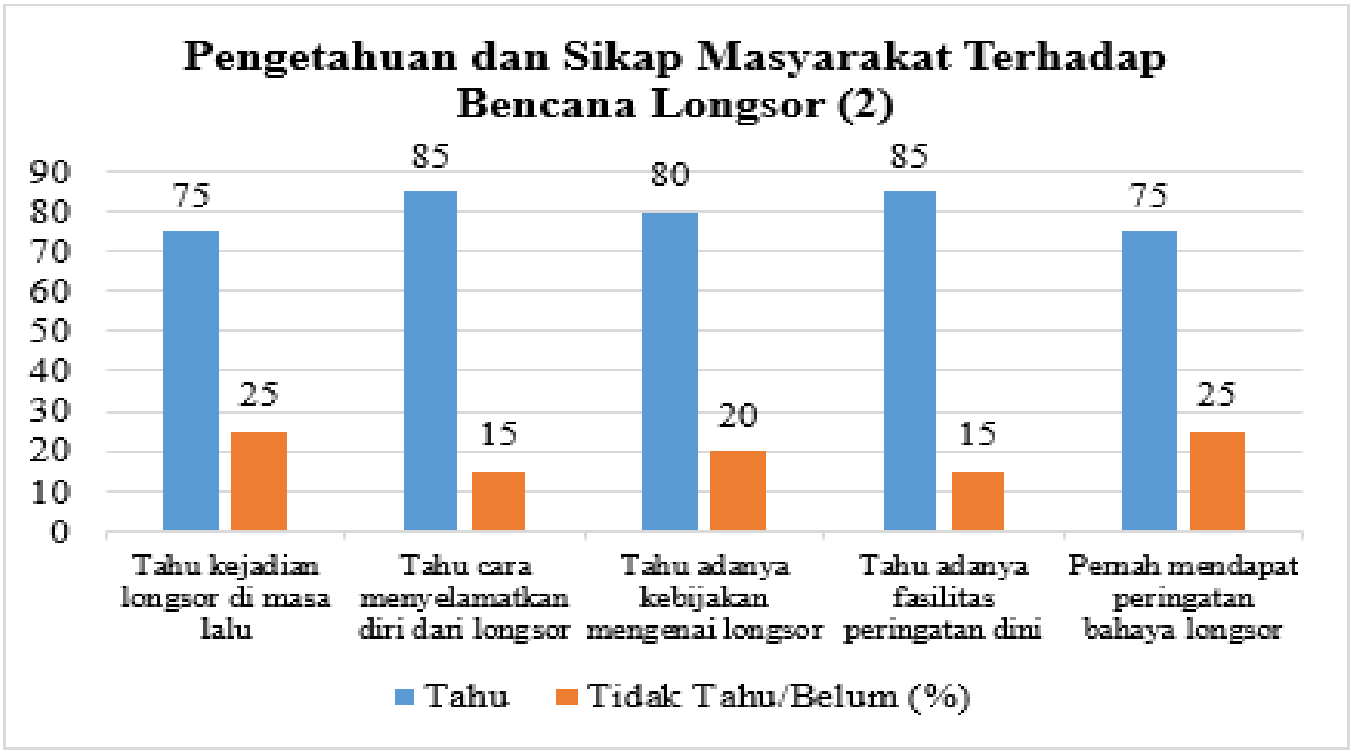

Figure 4. Community Knowledge and Attitude towards Landslide Disaster (2) (Research Result, 2022)

From the interview instrument that has been conducted, questions regarding the knowledge of the community of Sukorejo Village on landslide disaster can be visualized through graphs in Figure 3 and Figure 4. In general, the community of Sukorejo Village has understood the basic knowledge on landslide mitigation and emergency response. However, there are only a few people who have experienced landslides, which affects the level of knowledge in question number 4 (four) which is lower than the other questions. In general, based on the results of data tabulation and categorization of capacity level, the community in Sukorejo Village has a high level of capacity towards landslide disaster preparedness as shown in the following figure.

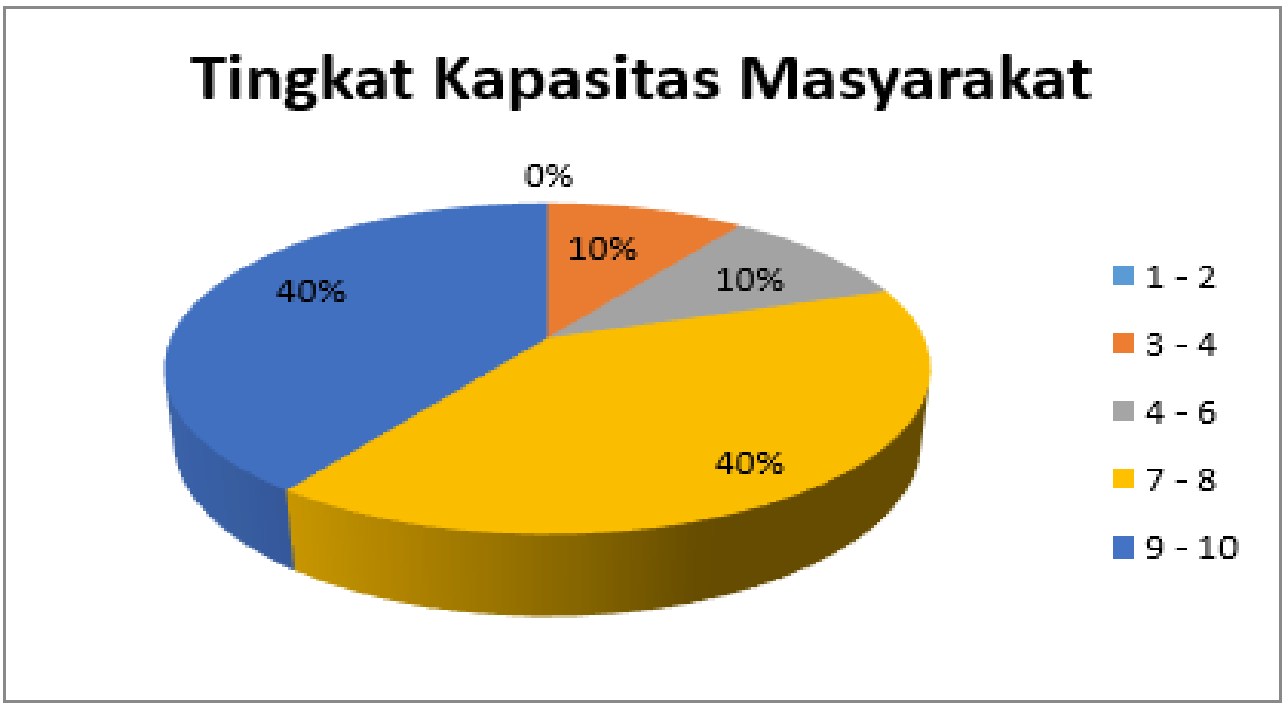

Figure 5. Community Capacity Level (Research Result, 2022)

As an effort to improve the community's capacity in facing landslide disasters, researchers have planned the evacuation route of the community in Sukorejo Village with mapping. The installation of evacuation route signs and gathering points aims to facilitate the process of evacuating the community when a landslide occurs (Wirawan & Koswara, 2021). The following is a map plan of the evacuation route for landslides in Sukorejo Village.

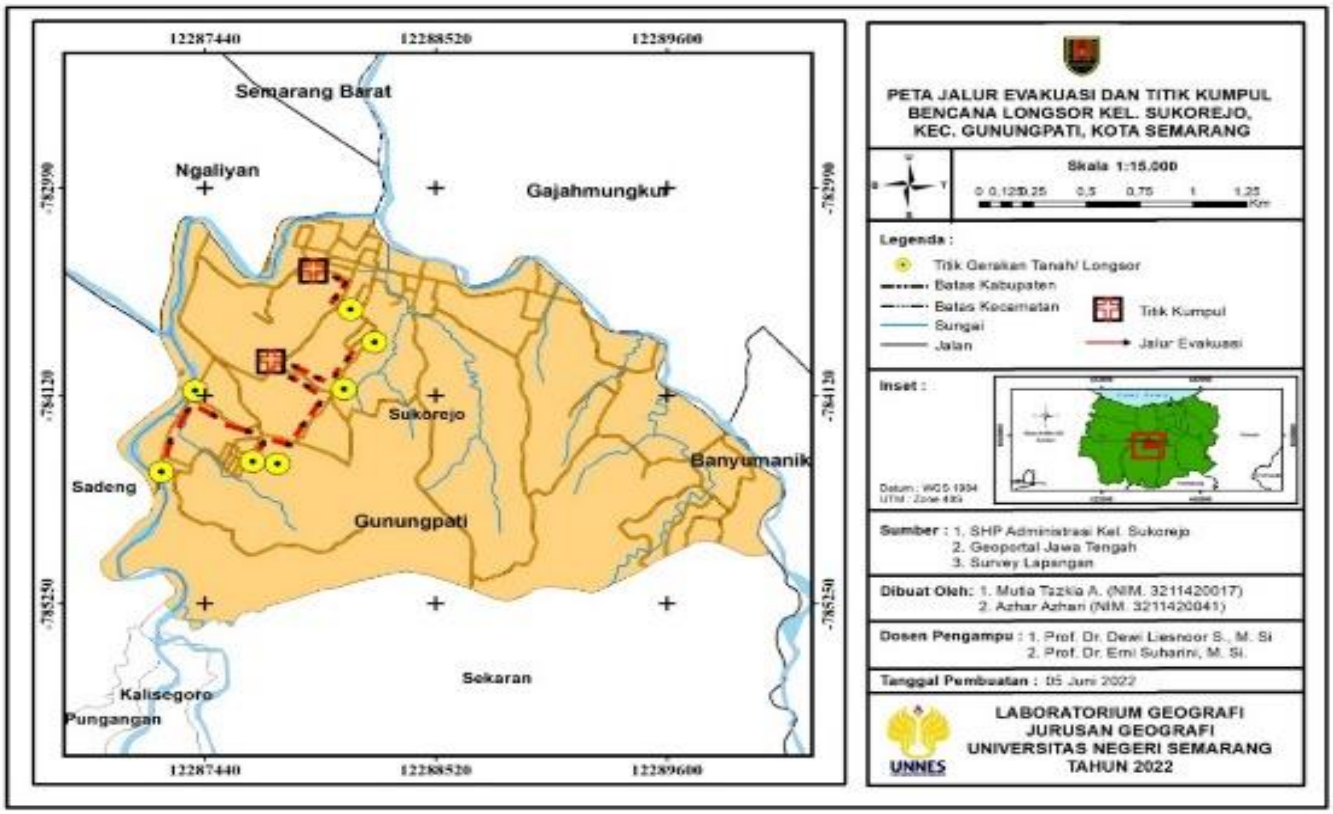

Figure 6. Evacuation Route Map (Research Result, 2022)

In addition, it is necessary to use an effective and appropriate Early Warning System (EWS) tool that can help the community in anticipating and reducing the risks caused by landslides. The existing landslide early warning system in Sukorejo Village is EWS (Early Warning System). Landslide disasters detection equipment installed by BPBD Kota Semarang aims to reduce casualties due to landslides with existing warning signs. However, the number of EWS tools is still very little when compared to landslide prone points in Sukorejo Village. The following is a map of the distribution of EWS points.

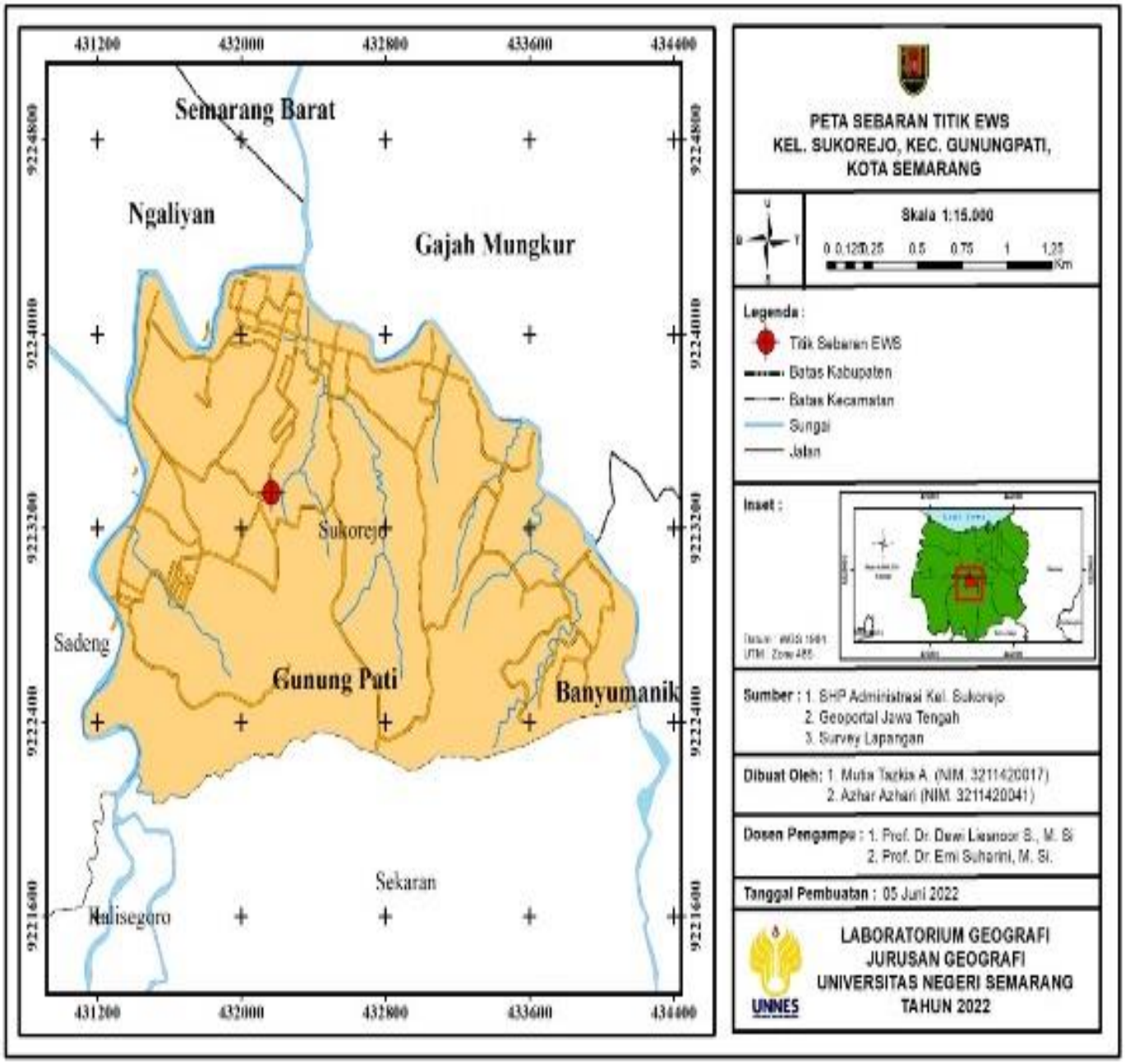

Figure 7. EWS Point Distribution Map (Research Result, 2022)

Procedure for Preparing Evacuation SOP:

In preparing evacuation SOPs for landslide disasters in Sukorejo Village, the data used in the research is based on primary data from field observations and secondary data from Semarang City Government. The data was processed and analyzed as the basis for the development of the SOPs. In the preparation of the evacuation SOPs, the output is in the form of an evacuation SOPs document that has been previously prepared and agreed upon by the community and government of Sukorejo Village.

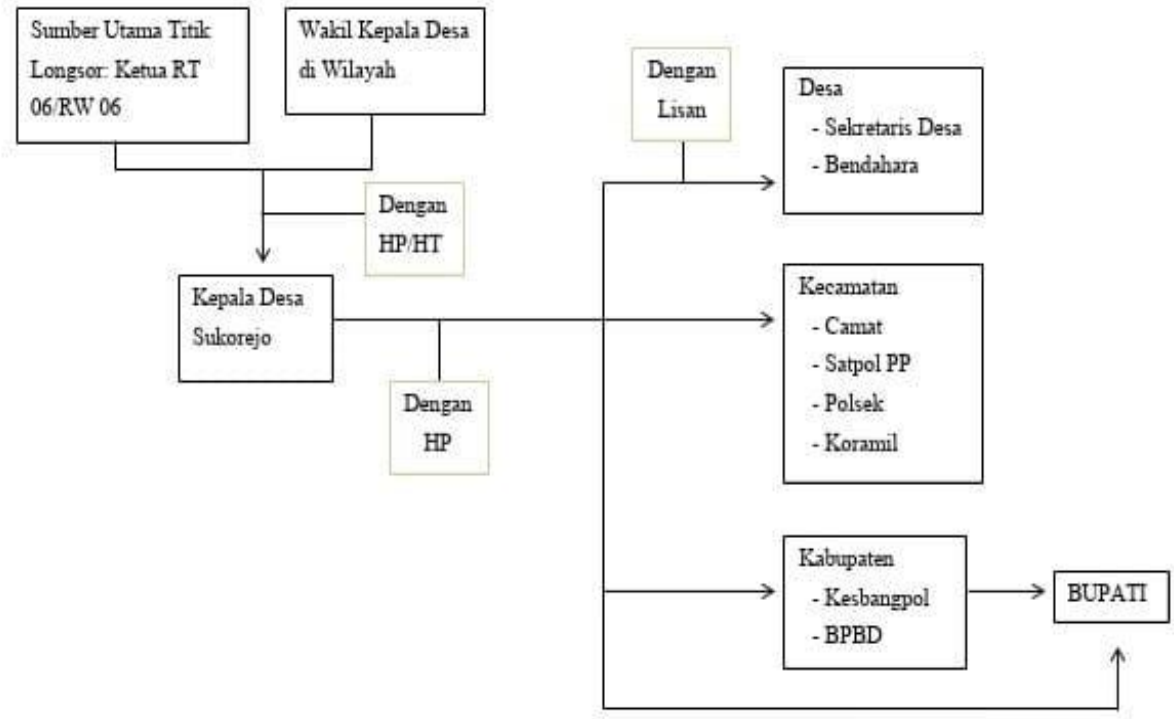

Figure 8. Landslide Disasters Evacuation SOPs (Research Result, 2022)

Education or counseling is also very important to build community knowledge on landslides emergency response. In this case, the preparation of appropriate SOPs can help the community in overcoming emergency situations during landslides. A structured SOP will help the community in determining the actions to be taken in certain situations, so as to minimize the risks and losses caused by landslides (Sadisun, 2007).

The preparation of the evacuation SOP procedure in this research focused on the location at the landslide prone point in Sukorejo Village, that is RT 06, RW 06. In emergency response conditions when a landslide occurs, the responsible team previously determined in the preparation of the evacuation SOP provides information on landslide events to the Head of Sukorejo Village via handphone or handy talkie. Aftar that, the information is forwarded to the village, district and city. On the instructions of the smallest unit of government, that is village. The village instructed the team in charge to provide aid and rescue for the landslide victims. Subsequently, the Semarang City Government, through BPBD, mobilized officers to evacuate the landslide victims. The rescue team observed the condition of the field by assessing the severity of the disaster and determining the rescue strategy.

Rescue actions in evacuating disaster victims can be carried out independently or through the help of auxiliary facilities. The last stage of the evacuation process is to direct the disaster victims to a safe evacuation site in accordance with the planned gathering point. Evacuation shelters in evacuating landslides in Sukorejo Village can be public facilities, such as schools, sports fields, village halls, and mosques.

Tindakan penyelamatan dalam mengevakuasi korban bencana dapat dilakukan sacara mandiri atau melalui bantuan sarana penolong. Tahapan yang terakhir dari proses evakuasi adalah dengan mengarahkan masyarakat yang menjadi korban bencana ke tempat pengungsian yang aman sesuai dengan titik kumpul yang direncanakan. Tempat pengungsian dalam mengevakuasi bencana longsor di Kelurahan Sukorejo dapat berupa fasilitas umum, seperti sekolah, lapangan olahraga, balai kelurahan, dan masjid.

Conclusion:

Based on the results of the research, it shows that the supporting facilities for disaster mitigation in Sukorejo Village are very minimal, such as the lack of evacuation route signs installed, the absence of gathering point signs, damaged EWS (Early Warning System) tools, and the absence of rescue procedures or evacuation emergency response. Therefore, the researchers provide suggestions and recommendations that are shown to the government and BPBD, the people of Sukorejo Village, and future researchers. For the government and BPBD, the suggestions are the need to add EWS tools, evacuation route signs and gathering points in landslide-prone areas. For the community, the suggestion is to increase awareness to always be prepared with the possibility of landslides. And for future researchers, it can be followed up by examining community capacity and reviewing or evaluating evacuation SOPs in the future.

Acknowledgments:

We would like to thank the Department of Geography, Universitas Negeri Semarang, the government and the people of Sukorejo Village for facilitating our research in the data collection process.

Reference:

1. Abuhasmy, Z. 2018. Implementasi Standar Operasional Prosedur (SOP) Terhadap Kinerja Karyawan PT. Amanah Finance Cabang Parepare. Skripsi. Parepare: IAIN Parepare.
2. Faizana, F., Laila Nugraha, A., & Darmo Yuwono, B. 2015. Pemetaan Risiko Bencana Tanah Longsor Kota Semarang. Dalam Jurnal Geodesi Undip Januari (Vol. 4, Nomor 1).
3. Prihananto, G. F., & Muta'ali, L. 2013. Kapasitas Masyarakat dalam Upaya Pengurangan Risiko Bencana Berbasis Bencana Komunitas (PRBBK) di Desa Wonolelo Kecamatan Pleret Kabupaten Bantul. Jurnal Bumi Indonesia.
4. Sadisun, A., I. 2007. Smart SOP dalam Mitigasi dan Penanganan Bencana Alam. Peran dan Fungsi Standard Operation Procedure (SOP) dalam Mitigasi dan Penanganan Bencana Alam di Jawa Barat.
5. Wirawan, I. L., & Koswara, Y. A. 2021. Penentuan Jalur Evakuasi Potensi Jebolnya Tanggul Waduk Gondang di Desa Gondanglor Kecamatan Sugio Kabupaten Lamongan. Jurnal Teknik ITS, 10.