CARADDE: Jurnal Pengabdian Kepada Masyarakat
https://journal.ilininstitute.com/index.php/caradde
Volume 8 | Nomor 3 | April |2026
e-ISSN: 2621-7910 dan p-ISSN: 2621-7961
DOI: https://doi.org/10.31960/caradde.v8i3.3222

Improving The Capacity of Village Officials Using Digitalization for Vulnerable People Disaster Area

Damayanti Wardyaningrum[1], Endang Ripmiatin[2], Ade Jamal[3], Ani Isnaeni[4], Dani Kuntowibisono[5]

Keywords:
capacity improvement;
disaster area;
digitalization;
vulnerable people.

Corespondensi Author
[1]Magister Ilmu Komunikasi, Universitas Al-Azhar Indonesia
Address: Jl. Sisingamangaraja, Kebayoran Baru, Jakarta Selatan, 12110
Email: damayanti@uai.ac.id

Article History
Received: 10-11-2025;
Reviewed: 13-01-2026;
Accepted: 18-02-2026;
Available Online: 25-03-2026;
Published: 25-04-2026.

Abstract. Sukanagalih Village in Cianjur, West Java is one of the villages located in an area prone to earthquake disasters. The 2022 earthquake in Cianjur claimed the lives of more than five hundred people, and thousands of refugees required major efforts to mitigate disaster risks. This region urgently needs to manage population data with digitalization for the purpose of disaster mitigation. Especially identifying the residents who are included into the category of vulnerable people affected by disasters, such as toddlers, children, pregnant women, the elderly and the disabled. In the event of the 2022 disaster, the distribution of aid to vulnerable people was inadequate due to the unavailability of data that can be readily accessed by the benefactors. This community service program aims to improve the capacity of village officials in managing population data, especially for disaster-prone groups through the digitalization. The activities in this program consisted of compilation of population data materials, creation of a digital application, implementation of the training program and evaluation of the activities. These activities received very good responses from the training participants, who were village officials from all elements, and there were a number of requests, wishing improvement to several features in the digital application.

INTRODUCTION

Sukanagalih Village, located in the regency of Cianjur, West Java, is one of the villages that has tremendous economic potential in the tourism sector; however, the area is unfortunately vulnerable to earthquakes, tsunamis and tornadoes.

In the 2022 disaster, Sukanagalih Village, which is situated at the bottom of a hill, was fortunate enough not to experience the devastating earthquake as severe as its neighboring villages. Therefore, this village became a refuge shelter for nearly one thousand victims who survived the earthquake. In mid-2022, after an earthquake hit several villages in the Cianjur area, help arrived quickly. Cianjur earthquake victims received immediate assistance, sent from various stakeholders such as disaster

volunteers, West Java BPBD (Regional Disaster Management Agency), Basarnas (National Search and Rescue Agency), police, and various other groups including direct assistance from all kinds of communities in towns within the greater area of Jakarta.

One of pressing problems in handling disasters in Sukanagalih is that the largest number of fatalities are children. The death of children means the tragic loss of future generations. Second, in the treatment of earthquake victims, it was found that vulnerable people such as toddlers, children, pregnant women and the elderly and disabled had not been treated optimally. While in the refuge shelters, vulnerable people suffered from increased vulnerability to physical and mental health issues, and premature death. Because physically, vulnerable people are weaker, especially in situations where they just lose their homes, are exposed to the outside air for a long time and are starving for food.

Problematic handling of the victims from vulnerable population during the disaster emergency response period is partly due to the absence of easily accessible guidelines and data bases regarding vulnerable people. It is important to have data about vulnerable people, such as number of victims, their ages, their current health conditions, and the locations of the emergency refugee camps which are scattered in the area. Without sufficient data, the assistance provided would be unable to accommodate the needs of vulnerable groups. The demand for children's food were not fulfilled because most of the food from donation was intended for consumption by adults. Treatment of pregnant women and they who were breastfeeding could not be prioritized either because medical personnel were not adequately informed. Elderly people who were at risk were generally not accompanied by family, and they could not be taken care of properly. Apart from physical limitations, mental conditions due to age (children and the elderly) in facing disaster situations (staying in tents, in wet and cold conditions) may increase the potential for subsequent risks such as illness, depression and even death. Therefore, there is an urgency for other members of society, especially non-vulnerable groups, to understand more about this risk (Asiah et al., 2024; Buchair et al., 2024)

The definition of vulnerable people in the Law has not been formulated explicitly, as stated in Article 5 Paragraph (3) of Law No. 39 of 1999 concerning Human Rights, which states that, "Everyone who is categorized into vulnerable people has the right to receive extra treatment and protection" (Undang-Undang Republik Indonesia, 1999).

Those who are included in the vulnerable group are the elderly, children, the poverty-stricken people, pregnant women and people with disabilities. Meanwhile, according to the Human Rights Reference, vulnerable people are Refugees, Internally, National Minorities, Migrant Workers, Indigenous Peoples, Children and Women. On the other hand, the definition of a vulnerable people according to the Department of Law and Human Rights is everyone who face obstacles or limitations in enjoying a decent standard of living. It can be concluded that vulnerable people are the ones who cannot meet the essentials of a decent life and they need special attention from the government.

Vulnerability is a condition of a community or society that leads to, or causes inability in dealing with the threat of disaster (Badan Nasional Penanggulangan Bencana, 2012). Vulnerability is a condition determined by social, economic, physical and environmental factors or processes, and that it may increase the weakness of society in dealing with the aftermath of disasters (Thywissen, 2006; United Nations Inter-Agency Secretariat of the & (UN/ISDR), 2004). In the context of disaster events, several studies have found that vulnerability factors are also caused by low levels of social networks within communities in facing potential natural disasters, low sex ratios, low levels of education, and occupations in economically vulnerable sectors, including those without physical assets and savings, (Dwiyanti et al., 2020; Malthuf, 2023) as well as those undergoing treatment for illegal drug use (Blake et al., 2024).

Found in one study in Vietnam among vulnerable groups with disabilities, there are eight themes pertaining to socially constructed difficulties facing people with disabilities: barriers to accessing disaster risk information

and warnings; difficulties in understanding emergencies; challenges in communicating needs; evacuation and mobility hurdles; decreased sense of belonging and isolation; increased risk of getting sick; increased risk of developing mental health and behavioral disorders; and disrupted livelihood and loss of income (Nguyen-Trung et al., 2025).

But with the increased preparedness level of vulnerable communities, the disaster impact on communities can be reduced, and they can be more resilient in dealing with natural disaster (Margarena et al., 2023). Therefore community-based contingency planning program and emergency services effectively increase the knowledge of vulnerable groups in disaster preparedness and resilience (Hutahaean et al., 2026). From another perspective vulnerability is typically not inherent to certain people, populations, or subgroups. Instead, vulnerability is created by society, usually by some population groups for others; that is, individuals and groups are made to be vulnerable by the choices of others (Kelman, 2020)

Resilience according to Twigg includes three meanings, namely: (a) the capacity to absorb pressure or destructive forces through resistance or adaptation; (b) the capacity to manage or maintain certain basic functions and structures during a disaster or catastrophic event; and (c) the capacity to recover or 'rebound' after a disaster (Twigg, 2007).

Some results from a study about problematic data from the development of a data collection system for natural disaster refugees, are as follows; a) Inaccurate refugee data causes impropriety in treating disaster victims b) A map is needed that displays refugee data at each location, as well as three sub-systems in the form of a mobile application to input refugee data and their locations (Indriasari et al., n.d.). Population statistics enabled them to assess population presence and composition in areas more precisely than registry-based approaches. This should evacuation planning, resource allocation and communication activities while preparing for and responding to disasters (Tominga et al., 2023).

Based on population data for 2024 in Sukanagalih, it is revealed that almost 50% (of around twenty thousand residents) of the current population in aggregate is categorized as vulnerable people (pre-elderly, elderly and children). This data does not yet identify health conditions and the ability of family caregivers for those vulnerable groups. On the other hand, concerning the economic conditions of the villagers, they generally do not work in the formal sector, so they mostly do not have access to health services. Based on the identification of these problems, the aim of this community service program is to improve the skills of village officials in mapping the population of disaster-vulnerable people through the method of digitalization.

Due to some research demographic or population data is a fundamental component of disaster risk models. Fine scale population distribution information is needed for the assessment of casualties, determination of shelter needs and proper implementation of evacuation plans in pre- and/or post-disaster (Schneiderbauer & Ehrlich, 2005; Tenerelli et al., 2015).

Though it was found that there is a lack of research that aspects beyond technology and examines the impact of digital transformation on the full life cycle of disaster management on the national level (AlHinai, 2020).

The participants of this program consisted of eight people, and they were the village secretary, staff for data management in the kelurahan (sub-district) office, coordinator of the posyandu (Integrated Medical Service) at the kelurahan, Posyandu head and disaster volunteers. The team's consideration for selecting these participants was based on the results of preliminary interviews with the head of kelurahan, and the result demonstrated that these individuals had access and authority in managing population data.

METHODS

This community service program was carried out from June to September 2024 and consisted of six stages, namely

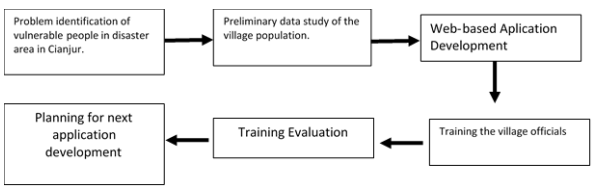

Figure 1. Stage of Community Services Program

At each stage, there are a number of findings which will become the basis for implementing activities at the next stage in this community service program. Apart from that, a number of note findings from each stage will be the feedback for the advancement of the future program of the community service.

RESULT AND DISCUSSION

Problem identification

In the methods of this community service program, the stage of problem identification is implemented through preliminary interviews with local officials, including heads of the villages, heads of social services, posyandu managers and disaster volunteers. Identification through interviews and discussions is carried out to reaffirm the assumptions of the implementation team of the community service, based on research conducted the previous year regarding the problems of vulnerable people in the aftermath of the 2022 earthquake disaster. Several problems were found, especially in handling disaster victims, such as a lack of assistance for vulnerable people in terms of the type of assistance, amount of assistance and supporting facilities such as health services for pregnant women, high-risk elderly and toddlers.

Population data, especially concerning vulnerable people, is needed by benefactors who have relationships with various parties, either ordinary people or government and private institutions.

Preliminary study of population data

From the results of initial interviews regarding population data in Sukanagalih village, there were twenty-two thousand residents, and the data input was still performed manually using Microsoft Excel software. However, the data in the local administration office stated there were twenty thousand people. At one occasion, the head of local administration office obtained data from Population and Civil Registration Agency (Dukcapil), and there were around twenty-four thousand inhabitants. So there is a discrepancy of about two thousand in population number. With this great discrepancy, a number of suspicions arise. First, data update had not been verified because there were residents who were newly born or moved to this area. The difference in number should not have been around two thousand villagers. Furthermore, the most up-to-date data should be from local administration office. On the other hand, the community service team obtained data about Sukanagalih's population from Population and Civil Registration Agency, and the number is thirty thousand villagers. Another suspicion arises that this data bloat was deliberately done during elections, or when there was event of distribution of social assistance. The discussion resulted in some suggestions regarding the discrepancy among three versions of population data, that it is necessary to do the re-verification to achieve data accuracy.

Regarding direct services for vulnerable groups, there are twenty-three posyandu groups, four of which cater for the elderly. The following is a diagram of the units that manage data on vulnerable people.

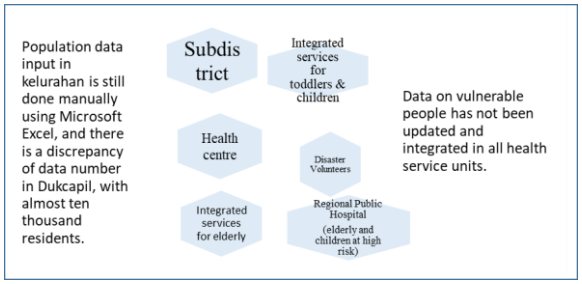

Figure 2. Data management units for vulnerable people in the village

Web-based application development

In the next stage, a web-based application system was created by the community service team, based on the need to manage data about vulnerable people for the purpose of disaster mitigation. Such application is called SIGASI (Information System for Disaster Mitigation Preparedness). The menus on the application include: logging into the system, population data input menu, data change menu, menu for uploading additional data such as birth, death, changing address, and others. Next, there is a dashboard display which contain all data compilation about vulnerable people in the

form of diagram.

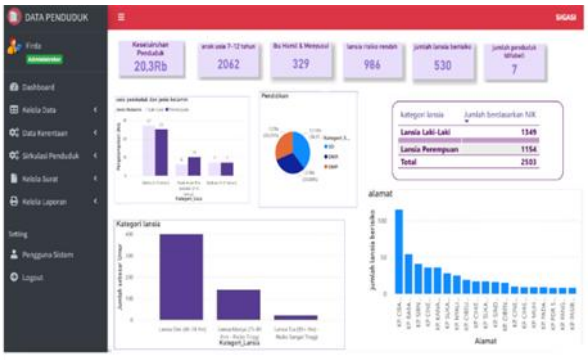

Figure 3. Features on the Application about Vulnerable People Data

Training village officials to input population data

At the training stage, the initial presentation material were the importance of population data management; what are the benefits of population data that has been managed properly using digitalization; how to make digitalization more efficient, and how to make data be integrated and transparent. Also discussed were the benefits of well-managed population data for disaster mitigation.

In the second stage, the presenter discussed about the features of the application. Starting from the start menu, population data input menu, data change menu, menu for uploading additional documents and so on.

Figures 4. Training in session with the data management team consisting of village officials, disaster volunteers and posyandu cadres.

Training evaluation

After completing the training, all eight respondents participated in the evaluation by filling out the questionnaires. The structured questionnaires were used to measure user perceptions of the web-based population data collection system.

Figure five illustrates the evaluation instrument, which consisted of fifteen items designed to assess the quality, functionality, and usability of SIGASI population data application. The questionnaire items specifically addressed the system's ability to record and manage data related to populations, to change the data, and to categorize vulnerable people. Dashboard of the apps was also discussed. These features represent the core focus of SIGASI apps. The evaluation was also intended to examine the level of user understanding, ease of apps operation with the system, and the overall usage of the training participants when using the apps. The evaluation employed a two point scale, in which training participants rated each item as follows: (1) Agree and (2) Disagree.

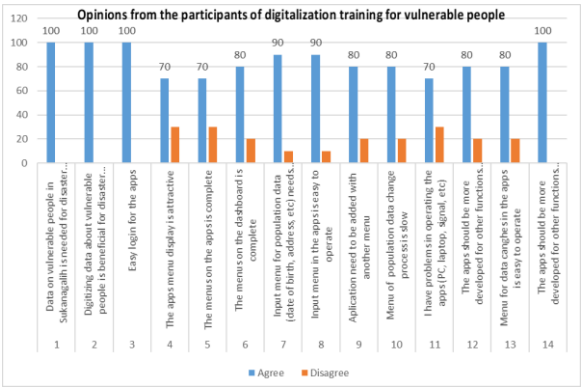

Figure 5. Quesionare Result of Training Participant

Based on the quantitative data above, regarding the opinions of training participants about the use of the application, the community service implementers then conducted an in-depth study of several questions that had not yet reached one hundred percent in agreement, or for statements that still require further explanation.

a. The appearance of the menus must be made more attractive by using more varied image notations and stronger colors.
b. In the population education feature, the available options only include data about education. Apparently this makes the

data out of sync when related to the age of the population. It was found that during population data input, the current age of the population was thirty years old, but in the education column, it was categorized still in the elementary school age. It is necessary to add final educational diction.

c. Changes to educational data need to be logged by the villagers when they complete the next level of education, so that the data is always reliably accurate.
d. The family card input menu should be combined with the population input feature, so that population input data can be within one menu between population data and family card data.
e. Not all participants with the access to population data have laptop computer which they can use as an important data processing infrastructure. So data processing can only be done at kelurahan office during working hours only.
f. There should be revision in the marital status submenu: not married, married, widowed, divorced alive.
g. It is recommended that to make easier the job of population data input in the future, officers can simply scan the QR/barcode and tap the e-KTP (ID card). Officers no longer need to carry sheets of paper forms for residents to enter their NIK (Population Identification Number), cellphone number and address, as well as the result documents of health checks (blood pressure, ultrasound, etc.). This data is connected to the Puskesmas or hospital where residents seek medical treatment. Posyandu staff or village officers do not need to input inspection result data again, therefore eliminating the risk of typing errors.
h. Village leaders hope that in future, the information system that has been built can be made to project the demand of the village residents when a disaster occurs.
i. None of the village officers have a background in informatics (computer science), at either vocational or diploma level. In the future, informatics skill is necessary for the development of data management information systems.

The responses were generally favorable from the village officials as training participants. From discussions during the training, almost all participants developed a growing awareness of the importance of digitized data. Knowledge of transforming manual data to digital for village officials whose job is to manage population data, could further develop along with training programs from the community service (Mair et al., 2025).

Furthermore, it was stated that up to now there has been quite a large discrepancy in total population data between data from villages and data from Dukcapil. It is hoped that problems like this can be overcome by integrated digitalization of the population data from kelurahan to dukcapil. This was in line with studies in other regions that found that the utilization of digital platforms resulted in the more effective and transparent relationship between village government and communities (Ambarsari et al., 2024).

For more effectiveness and efficiency, a "super-application" should be designed to function as a digital ID card, complete identity, self-screening by health insurance policy holders, and this is important for the elderly, children, pregnant women and breastfeeding mothers.

On the other hand, by joining the training for population management through digitalization, village government administration could learn strategic skills that will support their analytical thinking capacity. Technical capability in managing data is very much needed in the current era of disruption. Besides that, by enhancing these skills, they would be able to anticipate the crises of regeneration and sustainability at public service institutions. Adding new skills with this training will also enable them to adapt to the risk of losing jobs within the field of population data management, as an impact of technology and automation. Relevant condition was found in several regional government agencies where there were hindering problems in the capacity of human resource whose function was to manage the digitalization process (Normawati et al., 2025; Nurhayati et al., 2025; Yunas et al., 2024).

CONCLUSION AND SUGGESTION

Training participants recommended

that population data management through digitalization could also be developed further to predict the needs of vulnerable people during disaster emergency response, in a transparent and accountable manner. Therefore, the process of distributing assistance to vulnerable people can be managed properly.

The benefits of population data is very tangible for various things, from present, past and future. The current demographic structure of the population with data grouping or categorizing using digitalization method helps regional heads to determine village priority programs in the process of disaster mitigation. It makes it easier for the government to allocate resources appropriately to ensure public services in the aftermath of a disaster, such as health service, clean water and other emergency needs for all disaster victims, especially vulnerable groups.

Complete and valid population data supports regional and central governments in making better and strategic policies (Marsyadi et al., 2025). Such data allows the government to monitor and evaluate the effectiveness of ongoing disaster mitigation programs, as well as identify areas that require improvement. These also relevant with the result study from (Putri et al., 2023) that the use of application menus for village government administration to show openness of public information to the community and related stakeholders. With the aim of providing the resulting information more quickly and accurately, using this application can streamline government activities in the current digital era more efficiently.

From this training to improve the skills of village officials, the community service team has provided several recommendations as the feedback. First, it is urgently needed to recruit village staff who have an computer science background either from vocational school or diploma level. It is necessary to prepare personnel who have the capacity and ability to manage data. This competency is needed to support quick and balanced population data services. This is important for the development of a population data management system and the continuity of digitalized data management. Because the population may grow with its demographic characteristics and the complexity and dynamics of the demand for population data, more specifically for the preparedness for potential disasters.

Second, the challenge of managing population data by digitalization certainly cannot be fulfilled with partial training. It is important to have more strategic management system with other institutions whose tasks are to deal with disasters as well.

ACKNOWLEDGEMENT

Acknowledgment is expressed to the Institute for Research and Community Service (LPIPM) of Universitas Al Azhar Indonesia for supporting and ensuring the success this community service program. Their assistance made it possible to improve village officials' capacity by implementing digitalization mapping for vulnerable people in Cianjur disaster area with Information System for Mitigation (SIGASI).

REREFENCES

AlHinai, Y. S. (2020). Disaster management digitally transformed: Exploring the impact and key determinants from the UK national disaster management experience. *International Journal of Disaster Risk Reduction*, *51*, 1–19. https://doi.org/10.1016/j.ijdrr.2020.101851

Ambarsari, I. F., Azizah, N., Ansori, A., Al-faruq, Y. F., & Fahrozi, K. K. (2024). Digitalisasi Informasi dan Peningkatan Kualitas Pelayanan Publik Transformasi Desa Digital Melalui Pengembangan Website Desa Klatakan. *I-Com: Indonesian Community Journal*, *4*(1), 396–405. https://doi.org/10.33379/icom.v4i1.4041

Asiah, N., Sitohang, N. A., Karo, E. I. B., & Adela, C. A. (2024). Pengetahuan Remaja tentang Implementasi Mitigasi Bencana pada Kelompok Rentan di Kelurahan Aur Kecamatan Medan Maimun. *Jurnal Riset Hesti Medan Akper Kesdam I/BB Medan*, *8*(2), 189. https://doi.org/10.34008/jurhesti.v8i2.317

Badan Nasional Penanggulangan Bencana.

(2012). Perka BNPB No 3 Tahun 2012 tentang Panduan Penilaian Kapasitas Daerah Dalam Penanggulangan BEncana. In *Peraturan BNPB*. http://bpbd.jogjaprov.go.id/assets/public/19-PerkaBNPB-3-2012-Panduan Penilaian Kapasitas Daerah Dalam Penanggulangan Bencana.pdf

Blake, D., Rijnink, A., Lyons, A., & Aspin, C. (2024). Losing everything: Experiences of a flood for people who inject drugs in Aotearoa New Zealand. *International Journal of Disaster Risk Reduction*, *106*, 1–11. https://doi.org/10.1016/j.ijdrr.2024.104440

Buchair, N. H., Syahadat, D. S., Laba, S. B., & Ardiansyah, M. (2024). Analisis Kerentanan Kesehatan Penduduk Pasca Bencana Banjir Rob Di Wilayah Kecamatan Sirenja Kab. Donggala. *Preventif: Jurnal Kesehatan Masyarakat*, *15*(1), 23–37. https:jurnal.fkm.untad.ac.id/index.php/preventif

Dwiyanti, L. A., Aribowo, & Subarkah, A. (2020). Kerentanan Masyarakat Kampung 200 Terhadap Ancaman Tanah Longsor Di Kelurahan Dago Kecamatan Coblong Kota Bandung. *Jurnal Ilmiah Perlindungan Dan Pemberdayaan Sosial (Lindayasos)*, *2*(2), 131–150. https://doi.org/10.31595/lindayasos.v2i2.321

Hutahaean, N., Hutahaean, P. A., Simanjuntak, E., Simanjuntak, M., & Pinem, S. B. (2026). Disaster Resilience Analysis in Vulnerable Groups Through Contingency Planning And Community-Based Emergency Services in the Martubung Region Medan City, North Sumatra Province, 2026. *Open Access Health Scientific Journal*, *7*(1), 103–107. https://doi.org/10.55700/oahsj.v7i1.174

Indriasari, T. D., Anindito, K., & Julianto, E. (n.d.). Analisis dan Perancangan Sistem Pengumpulan Data Bencana Alam. *Jurnal Buana Informatika*, *6*(1), 73–82. https://doi.org/10.24002/jbi.v6i1.396

Kelman, I. (2020). Disaster vulnerability by demographics? *The Journal of Population and Sustainability*, *4*(2), 17–30. https://doi.org/10.3197/jps.2020.4.2.17

Mair, Z. R., Heriansyah, R., Nofiansyah, D., & Setyady, M. T. (2025). Training and implementation of a web-based data collection system to improve data processing. *Abdimas: Jurnal Pengabdian Masyarakat Universitas Merdeka Malang*, *10*(3), 565–574. https://doi.org/10.26905/abdimas.v10i3.15851

Malthuf, M. (2023). Analisis Tingkat Kerentanan Sosial Penduduk Terhadap Bencana Gempa Bumi Di Kabupaten Klaten. *Jurnal Plano Buana*, *3*(2), 112–121. https://doi.org/10.36456/jpb.v3i2.7190

Margarena, C., Pradipta, H. T., Utomo, L. N., Muhammad, S. K., & Manurung, M. A. (2023). Making a Resilient Community: Preparedness of Vulnerable Communities in Disaster Mitigation Based on Disaster Risk Map. *IOP Conf. Ser.: Earth Environ. Sci*, *1264*, 1–10. https://doi.org/10.1088/1755-1315/1264/1/012014

Marsyadi, A. P., Ihsan, M., & Saputra, Z. R. (2025). Evaluation of Advantages and Disadvantages of Village Information Systems in Supporting Sustainable Development Programs. *Jurnal Teknologi Dan Open Source*, *8*(2), 864–874. https://doi.org/10.36378/jtos.v8i2.5014

Nguyen-Trung, K., Thuy, T. T. T., Anh, N. P., Cong-Lem, N., Huyen, D. T., Diu, L. T., Giang, N. H., & Simon, M. (2025). Vulnerabilities of people with different types of disabilities in disasters: a rapid evidence review and qualitative research. *Disasters*, *49*(3). https://doi.org/10.1111/disa.12686

Normawati, SAKIR, A. R., & Almahdali, H. (2025). Digitalization of Village Administration to Improve Public Service Efficiency in Waiheru Village, Baguala District, Ambon City. *Community Services: Sustainability Development (CSSD)*, *2*(2), 38–44. https://doi.org/10.61857/cssdev.v2i2.1

02

Nurhayati, S., Rustiyana, R., Judijanto, L., Indrayani, N., Kusumastuti, S. Y., & Zubaidi, M. (2025). *Pemberdayaan digital*. Sonpedia.

Putri, A., Taufiq, A., & Swasanti, I. (2023). Efficiency of Village Government Administration Information System Applications in realizing Public Information Openness. *Publik (Jurnal Ilmu Administrasi)*, *12*(2), 94–106. https://doi.org/10.31314/pjia.12.2.%25p.2023

Schneiderbauer, S., & Ehrlich, D. (2005). Population Density Estimations for Disaster Management: Case Study Rural Zimbabwe. *Geo-Information for Disaster Management Gi4DM*, 901–921. https://publications.jrc.ec.europa.eu/repository/handle/JRC30913

Tenerelli, P., Gallego, J. F., & Ehrlich, D. (2015). Population density modelling in support of disaster risk assessment. *International Journal of Disaster Risk Reduction*, *13*(1), 334–341. https://doi.org/10.1016/j.ijdrr.2015.07.015

Thywissen, K. (2006). *Comparative Risk A comparative Glossary*. https://scispace.com/pdf/components-of-risk-a-comparative-glossary-k3rli7uag5.pdf

Tominga, A., Silm, S., Orru, K., Vent, K., Klaos, M., Võik, E.-J., & Saluveer, E. (2023). Mobile positioning-based population statistics in crisis management: An Estonian case study. *International Journal of Disaster Risk Reduction*, *96*(8). https://doi.org/10.1016/j.ijdrr.2023.103887

Twigg, J. (2007). Characteristics of a disaster-resilient community: a guidance note. In *Natural Hazards Review* (Vol. 1, Issue August). Aon Benfield UCL Hazard Research Centre. http://practicalaction.org/reducing-vulnerability/docs/ia1/community-characteristics-en-lowres.pdf

Undang-Undang Republik Indonesia. (1999). Nomor 39 Tahun 1999 Tentang Hak Asasi Manusia. In *Undang-Undang Republik Indonesia Nomor 39 Tahun 1999 tentang Hak Asasi Manusia* (LN. 1999/ No. 165, TLN NO. 3886, LL SETNEG : 29 HLM; Issue 39).

United Nations Inter-Agency Secretariat of the, & (UN/ISDR), I. S. for D. R. (2004). *Living with risk: a global review of disaster reduction initiatives* (1st ed.). United Nations publication.

Yunas, N. S., Wibowo, D. B. B., Ratu, J. G., Novarani, N., Putri, P. M., Mairisa, P. Z., & Muhammad, A. D. (2024). Digital Transformation Training for Village Community Groups in Efforts to Turn Sumberejo Village into a Smart Village. *Sahwahita: Community Engagement Journal*, *1*(2), 114–126. https://doi.org/10.69965/sahwahita.v1i2.77