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INCREASING COMMUNITY KNOWLEDGE IN OVERCOMING FLOODS THROUGH COUNSELLING AS A FLOOD DISASTER MITIGATION EFFORT

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ABSTRACT

Background: Flood disasters present a recurring challenge in Indonesia, particularly in low-lying regions like Sumberagung Village, Lamongan Regency, which is highly vulnerable to shallow river overflows. A critical barrier to community resilience is the lack of public understanding regarding disaster preparedness. **Objective:** This community service initiative aimed to enhance residents' knowledge through flood mitigation education and a targeted reforestation program. **Methods:** The intervention combined educational sessions on local flood risks and mitigation techniques with a collaborative tree-planting initiative. Diverse local stakeholders, including village officials and community members, actively participated in planting 65 trees at designated landslide-prone points. The efficacy of the educational component was evaluated using a quantitative pre-test and post-test design. **Results:** The evaluation demonstrated a significant increase in community knowledge, with average assessment scores rising from 51.87 in the pre-test to 76.87 in the post-test. **Conclusion:** The results indicate that structured educational activities are highly effective in raising public awareness and fostering a culture of disaster mitigation. To ensure long-term environmental conservation, future programs must establish community-led monitoring frameworks to sustain the newly planted trees.

Keywords: Disaster mitigation, education, flood, reforestation

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A. BACKGROUND

In recent years, Indonesia has experienced an upward trend in hydrometeorological disasters driven by extreme weather conditions; indeed, these events consistently dominate the country's natural disaster landscape (BNPB,

2023). Hydrometeorological disasters are atmospheric phenomena influenced by meteorological factors such as precipitation, temperature, humidity, and wind patterns. These hazards manifest as floods, landslides, high winds, tornadoes, wildfires, and droughts (Hidayat et al., 2023).

Fundamentally, flooding can be understood within the context of the hydrological cycle, which governs the movement of water across the Earth's surface toward the ocean. A flood occurs when an excess volume of water exceeds the capacity of a region's drainage network, resulting in physical, social, and economic losses. Within this cycle, the volume of surface runoff is primarily determined by rainfall intensity and the soil's infiltration capacity (Balahanti & Mononimbar, 2023). According to the National Disaster Management Authority (BNPB), flooding is the deadliest and most impactful disaster in Indonesia, affecting a total of 4,072,037 individuals nationwide. In East Java province, floods have impacted 105,350 residents, while in Lamongan Regency alone, 2,900 individuals were recorded as affected by these inundation events (BNPB, 2024).

A literature review conducted by Salim et al. (2021) identified several critical socio-economic and environmental impacts of flooding. First, inundation results in substantial material losses, as floodwaters damage not only residential structures but also household furniture and essential assets, incurring significant financial costs to restore properties to their pre-disaster state. Second, prolonged exposure to floodwaters causes varying degrees of structural deterioration to buildings, with components such as flooring, ceramic tiles, door frames, and the lower sections of walls being particularly vulnerable to water damage. Third, flood events, especially tidal floods, facilitate the proliferation of waterborne and vector-borne pathogens, leading to heightened morbidity characterized by spikes in cases of diarrhea, acute respiratory infections (ARI), dermatological irritation, and dengue hemorrhagic fever. Finally, flooding severely disrupts transportation networks by submerging public roadways alongside residential areas; this not only impedes logistical continuity and traffic flow but also poses a severe risk of engine stalling and mechanical failure for vehicles traversing the affected routes.

Sumberagung Village, situated in a low-lying terrain, is historically vulnerable to flash floods triggered by the overflow of the shallow Blimbing Paciran River upstream. During periods of intense precipitation, excessive river discharge consistently inundates adjacent areas along the river basin, directly impacting the

village. The primary challenge in this region is the community's limited understanding of proper and effective flood management protocols. Consequently, seasonal inundations routinely disrupt daily socioeconomic activities and threaten public infrastructure. This vulnerability is exacerbated by a lack of disaster mitigation education, insufficient information regarding stormwater management techniques, and low public awareness concerning environmental preservation, such as proper waste disposal. Therefore, addressing this knowledge deficit regarding flood response is a critical priority for Sumberagung Village.

Disaster education is vital for community resilience, as disasters yield extensive adverse impacts; even in regions considered low-risk, proactive disaster education remains imperative due to the unpredictable nature of these events (Saparwati, 2020). Effective flood mitigation strategies must encompass comprehensive preparedness frameworks, ranging from early warning systems that heighten community vigilance to structural logistics for evacuee management. Ultimately, robust disaster preparedness equips communities to formulate and execute strategic action plans during acute flooding events (Waluya & Wahyudin, 2024).

Community education and reforestation initiatives are vital instruments for enhancing public knowledge and fostering ecological awareness regarding proper arboricultural practices. Through structured training, community members can acquire essential skills in appropriate planting techniques, site-specific species selection tailored to local environmental conditions, and sustainable maintenance protocols. Equipped with this enhanced capacity, the public can actively participate in environmental conservation and restoration efforts, specifically targeting flood mitigation and urban canopy deficits (Ikhsani et al., 2021).

Beyond elevating public awareness, targeted tree-planting campaigns contribute significantly to ecosystem equilibrium, ambient air quality improvement, and the mitigation of natural hazards such as floods and landslides. These ecological benefits are driven by natural processes inherent to mature vegetation, which maximize stormwater infiltration into the soil matrix, reinforce soil structural integrity against erosion, and stabilize the local hydrological cycle. Consequently, reforestation serves as a long-term investment in environmental sustainability and public health, while simultaneously bolstering community resilience against recurrent hydrometeorological disasters (Bugel et al., 2024).

Various community service programs addressing flood mitigation have previously been implemented utilizing diverse approaches. Fernalia et al. (2021) reported that flood mitigation counseling using audiovisual media effectively enhances public knowledge regarding flood preparedness. Similarly, Saragi (2022) identified a significant increase in the knowledge and attitudes of household heads following structured flood mitigation education. Meanwhile, Nita et al. (2023) emphasized the importance of tree-planting initiatives as structural and ecological measures to reduce flood and landslide risks by increasing soil infiltration capacity and preventing erosion.

Although these existing programs have proven effective, most previous interventions have been implemented in isolation, focusing either on disaster education without environmental follow-up or on reforestation without strengthening community knowledge. The community service program executed in Sumberagung Village offers distinct added value compared to previous initiatives by integrating a dual-approach strategy: enhancing community capacity through flood mitigation education while simultaneously executing long-term preventive actions via targeted tree-planting in flood- and landslide-prone areas. The urgency of this program is underscored by the empirical conditions of Sumberagung Village, which is situated in a low-lying terrain and experiences recurrent flash floods driven by the overflow of the upstream Blimbing Paciran River. The impact of these chronic inundation events not only disrupts daily socio-economic activities but also poses severe risks of material loss, public health crises, and environmental degradation. Furthermore, baseline surveys indicated that public comprehension of mitigation protocols remains limited and has not yet been reinforced by sustainable environmental conservation efforts.

Based on the empirical challenges identified by the residents of Sumberagung Village, a collaborative solution was formulated with local partners to directly address these systemic issues. The agreed-upon intervention focuses on elevating community capacity in flood management through targeted disaster mitigation education, coupled with an ecological reforestation initiative. To resolve the community's limited understanding of disaster protocols, the educational component is designed to equip residents with actionable skills in emergency preparedness, early warning interpretation, and localized stormwater management.

This directly counteracts the seasonal disruptions to daily socioeconomic activities and public infrastructure caused by previous inundations.

Simultaneously, to address the physical vulnerability of the low-lying terrain and the threat of upstream river overflows, a targeted tree-planting campaign will be executed. This serves as a structural intervention where the deep root systems of the selected vegetation will enhance soil infiltration capacity, minimize surface runoff, and stabilize landslide-prone banks along the river basin. Consequently, the execution of this community service program is highly urgent as a dual preventive and promotive strategy. By integrating capacity-building education with long-term ecological rehabilitation, this comprehensive approach offers a sustainable model for risk reduction that surpasses the efficacy of single-method interventions previously implemented.

B. METHOD

Community empowerment regarding proper flood response strategies was executed through a structured community service program in Sumberagung Village, Brondong District, Lamongan Regency. The framework of this initiative comprised three primary operational phases:

- Preparation Phase: This initial stage commenced with an initial socialization meeting with local authorities to align objectives, followed by the formal establishment of a working committee. The team subsequently conducted field surveys to map out flood-prone zones and coordinate logistics with village officials and local partners. Concurrently, the project proposal was finalized, and the educational curricula were developed. It is important to note that the pre-test was not administered during this preparatory stage, but rather immediately prior to the commencement of the educational session in the execution phase to ensure accurate baseline measurements.
- Execution Phase: This core phase integrated capacity-building education and ecological action. The educational component was delivered through interactive lectures and discussion forums facilitated by experts from the Regional Disaster Management Authority (BPBD) of Lamongan Regency. The curriculum covered specific modules, including early warning system identification, emergency evacuation protocols, and localized stormwater management. To assess knowledge acquisition, participants completed a quantitative pre-test immediately before the session and an identical post-

test upon its conclusion. Following the educational session, the tree-planting initiative was carried out using standard arboriculturally techniques—such as digging optimized planting pits and applying organic fertilizer—to secure the successful establishment of 65 trees at designated landslide-prone coordinates.

- Evaluation and Reporting Phase: The evaluation framework utilized a comparative analysis of pre-test and post-test scores to quantify the immediate increase in participant knowledge. For the ecological component, a long-term monitoring protocol was established to track tree survival and growth rates, ensuring environmental sustainability. The final outputs were compiled into a comprehensive, formal written report submitted to the university's community service board (LPPM) and shared with the BPBD. This documentation was further substantiated by systematic photographic and video records serving as verifiable evidence of the project's milestones. The comprehensive workflow of these implementation methods is illustrated in Figure 1.

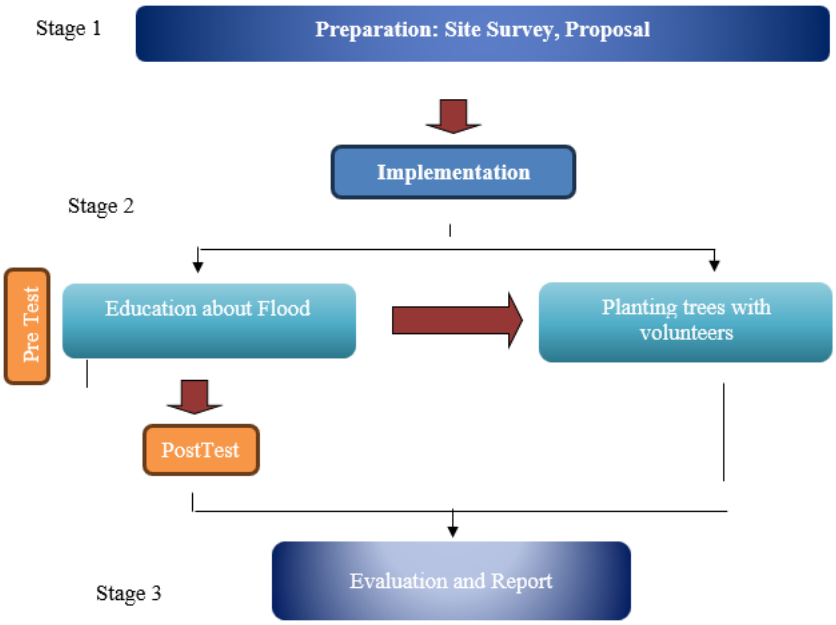

Figure 1. Workflow of the Implementation Methods

The collaborative stakeholders involved in this community service program included keynote speakers from the Regional Disaster Management Authority (BPBD) of Lamongan Regency. The target audience comprised members of the local

family welfare empowerment group, village administrators, and residents of Sumberagung Village.

To evaluate the immediate program outcomes and assess long-term sustainability, a rigorous evaluation framework was implemented. The primary evaluation instrument for the educational component consisted of a structured, closed-ended questionnaire developed specifically to align with the core disaster mitigation themes introduced during the sessions. This instrument was deployed both as a baseline measure (pre-test) and as a summative assessment (post-test). To ensure data consistency, the post-test utilized the identical 10-item multiple-choice questionnaire administered in a written format immediately following the conclusion of the educational session on the same day.

The quantitative data derived from the pre-test and post-test scores were analyzed using descriptive statistics. This analysis involved a comparative evaluation of mean scores, frequency distributions, and percentage changes to measure the shift in participants' knowledge levels before and after the disaster mitigation intervention. Conversely, the evaluation of the ecological component required a distinct long-term monitoring protocol designed to systematically track the growth, survival rates, and overall development of the planted trees over an extended period. All cumulative evaluation metrics were compiled and synthesized through descriptive recapitulation.

C. RESULTS AND DISCUSSION

The intervention was executed in two distinct phases, with the operational details of the first phase outlined below:

The initial phase comprised a structured educational session featuring interactive lectures and discussion forums conducted in collaboration with the Regional Disaster Management Authority (BPBD) of Lamongan. This session, which focused on flood disaster mitigation strategies, was held on January 5, 2025, from 09:00 to 12:30 WIB at the Sumberagung Village Hall. The target audience encompassed members of the local family welfare empowerment group (Ibu-Ibu PKK), village administrators, and local residents. Out of the 50 invited participants, a total of 16 individuals attended the session. Prior to the commencement of the presentation, a baseline assessment was established by requesting participants to complete a written pre-test questionnaire consisting of 10 multiple-choice

questions evaluating their fundamental knowledge of flood disasters. Following the delivery of the material by the keynote speakers, the same cohort completed an identical post-test questionnaire to measure immediate knowledge acquisition.

Figure 2. Education about the Danger of Flood

Figure 3. The Process of Planting Trees

Descriptive analysis of the baseline data revealed that prior to the intervention, the participants' knowledge levels were predominantly distributed across the following categories: good (13%), sufficient (38%), and insufficient (50%). This baseline deficit underscores that public comprehension of disaster dynamics was highly suboptimal before the implementation of the program, thereby validating the necessity of a structured educational intervention.

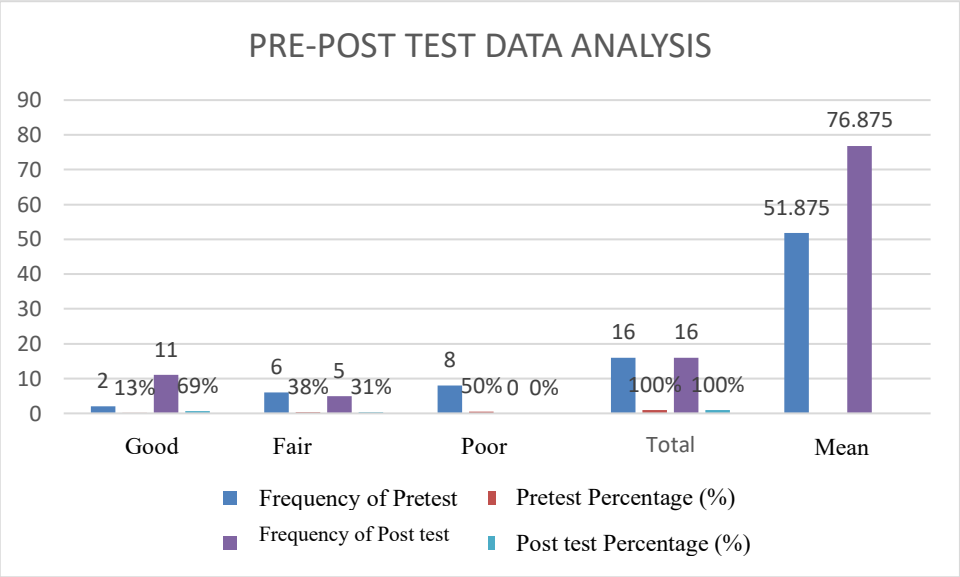

Figure 4. Pre-Post Test Data Analysis

This condition underscores the critical necessity of structured educational interventions. This urgency is further validated by the baseline finding that half of the participants (50%) initially demonstrated low disaster mitigation knowledge—a deficit that poses a direct threat to human safety, risks substantial property loss, and presents public health hazards. In contrast to previous community service initiatives, such as the study by Maknuun et al. (2024), which focused exclusively on physical reforestation and generic public socialization, the program executed in Sumberagung Village offers distinct added value through a scientifically measurable educational intervention. By utilizing a pre-test and post-test design, this initiative successfully demonstrated a significant increase in community understanding, with mean scores rising from 51.87 to 76.87. Consequently, the integration of data-driven education and tangible tree-planting actions represents a vital strategy for shifting the community from a passive stance to a proactive posture in confronting increasingly frequent hydrometeorological hazards.

Following the intervention, the post-test results demonstrated a significant increase in the participants' knowledge levels. Specifically, 69% of the participants achieved the "good" knowledge category, while the remaining 31% scored within the "sufficient" category; notably, no participants remained in the "insufficient" category post-training. This upward shift confirms that the structured intervention was highly effective in enhancing the target audience's disaster preparedness knowledge.

Field observations indicated that the demographic profile of the attendees was predominantly female, primarily consisting of housewives who were available during the morning sessions. This demographic concentration aligns with findings by Widayati et al. (2023), who posited that female demographics in communal settings often exhibit robust knowledge acquisition due to greater opportunities for localized social learning and information sharing within their community networks.

Beyond gender dynamics, formal education played a critical role in shaping baseline and post-intervention knowledge. According to Nastiti et al. (2021), higher educational attainment correlates with superior disaster readiness, as educated individuals possess the capacity to access and synthesize diverse information from multiple sources. This is further substantiated by Fernalia et al. (2021), who argued that higher education facilitates more efficient information processing and retention. Consequently, individuals with advanced educational backgrounds accumulate broader cognitive resources, which directly enhances their capacity to understand, internalize, and execute flood disaster management protocols.

Furthermore, prior exposure to disaster events serves as a critical determinant of empirical knowledge. According to Darmawan (2025), direct experience with disasters equips individuals with the practical insights necessary to anticipate future, unpredictable hazards. This experiential background significantly enhances disaster readiness, as past exposure stimulates rapid, effective decision-making and adaptive behaviors during acute crisis situations.

The comparative analysis between the pre-test and post-test scores illustrates a positive paradigm shift in community understanding. Prior to the intervention, the majority of participants exhibited deficient baseline knowledge; however, post-intervention metrics indicated that most participants successfully achieved a robust level of comprehension. This outcome aligns with findings by Saragi (2022), which demonstrated a significant statistical correlation between public knowledge levels before and after flood mitigation training. Ultimately, the dissemination of targeted information through public health and safety education acts as the primary driver for elevating community disaster literacy. Previous literature confirms that prior to receiving structured health education, communities often exhibit limited operational awareness regarding flood preparedness, which increases significantly following targeted instructional interventions (Fernalia et al., 2021).

The second phase of the intervention consisted of a collaborative reforestation campaign executed on January 5, 2025, commencing at 10:00 WIB. This ecological initiative mobilized a diverse cohort of 50 stakeholders, including the course coordinator for Disaster Nursing, 25 undergraduate nursing students from the Universitas Muhammadiyah Lamongan, village administrators, and local residents. A total of 65 saplings were strategically planted across designated border zones between Sumberagung and Sidokumpul villages. The botanical composition included species provided by the Environmental Agency—specifically five mahogany (Swietenia mahagoni) and five rain tree (Samanea saman) saplings—supplemented by fruit-bearing varieties sourced from the Sumberagung Village Hall, comprising 15 sapodilla (Manilkara zapota), 15 longan (Dimocarpus longan), 12 starfruit (Averrhoa carambola), and 13 durian (Durio zibethinus) trees.

As demonstrated by Sedijani (2022), the canopy and foliage of trees mitigate the mechanical impact of precipitation on the soil surface, while their root systems anchor the substrate against hydraulic erosion. This structural configuration significantly enhances stormwater infiltration into the soil matrix, thereby preventing land degradation and slope failure. The infiltrated stormwater subsequently replenishes sub-surface aquifers, creating vital freshwater reserves.

Furthermore, Kurniawan (as cited in Sedijani et al., 2022) delineates nine primary ecological services provided by mature vegetation. Summarily, these include water purification, atmospheric pollutant reduction, and watershed restoration through enhanced groundwater recharge. Additionally, trees preserve biodiversity by establishing localized habitats, sustaining wildlife, and stabilizing microclimates. The microclimatic stabilization is primarily driven by photosynthetic carbon sequestration, which actively mitigates anthropogenic global warming. Concurrently, dense tree canopies reduce ambient temperatures through shading and evaporative cooling, while atmospheric oxygen production enhances environmental quality.

Vegetation also serves as a fundamental source of provisioning ecosystem services for human society, supplying raw materials for nutrition, pharmaceuticals, cosmetics, furniture, and structural timber. Most critically, trees act as primary producers of atmospheric oxygen, a continuous physiological necessity for human survival. Historically, the geo-evolutionary trajectory of the Earth has been intrinsically linked to botanical processes. Recognizing this critical ecological

reliance, successive governmental administrations have consistently prioritized large-scale afforestation and urban forestry programs as matters of national environmental policy (Sedijani et al., 2022).

Nevertheless, the efficacy of reforestation in reducing flood risks is non-instantaneous, requiring prolonged periods and continuous maintenance to yield measurable environmental benefits. The primary challenges identified during this initiative include the limitations of post-planting monitoring frameworks, the vulnerability of saplings to adverse weather conditions, and the long-term commitment required from the community to sustain arboricultural care. Consequently, the active engagement of local residents and village administrators serves as a critical determinant of project success. This finding is corroborated by Ikhsani et al. (2021) and Nita et al. (2023), who emphasized that the ultimate success of afforestation programs depends heavily on sustained community-led participation in plant maintenance.

The urgency of this tree-planting campaign is further underscored by the geographical profile of Sumberagung Village, which is situated in a low-lying basin and experiences recurrent upstream flash floods. Absent ecological interventions, flood risks are projected to escalate progressively alongside intense precipitation patterns and accelerating environmental degradation. Therefore, reforestation functions not only as a structural mitigation strategy but also as a vital preventive measure to bolster ecological and community resilience against future inundation events.

Administratively, the planting was executed across targeted border zones between Sumberagung and Sidokumpul villages. Commencing at 10:00 WIB, the field activity mobilized 50 stakeholders, including local residents, 25 undergraduate nursing students from the Universitas Muhammadiyah Lamongan, and supervising faculty members. Participants demonstrated a high level of enthusiasm for the project's ecological objectives, exhibiting a robust collaborative spirit that ensured the seamless and cohesive execution of the environmental intervention.

Evaluation metrics demonstrated a substantial increase in community literacy following the disaster mitigation intervention, as evidenced by the shift in mean scores from a baseline pre-test value of 51.87 to a post-test value of 76.87. This statistical advancement confirms that the instructional framework was highly effective in enhancing public understanding of flood disaster mitigation. This

outcome aligns with health education theory, which posits that structured pedagogical processes act as external stimuli that expand an individual's cognitive domain—specifically knowledge retention—through the systematic dissemination of contextualized information (Notoatmodjo, 2014).

Empirically, these findings are consistent with the work of Fernalia et al. (2021), who reported a significant upward shift in community disaster literacy following the deployment of educational media for flood mitigation. Similarly, Saragi (2022) determined that targeted disaster counseling positively governs public knowledge and attitudes regarding flood preparedness. The convergence of these empirical outcomes suggests that the knowledge acquisition observed among the residents of Sumberagung Village is not an isolated or coincidental phenomenon, but rather the reproducible result of an instructional intervention scientifically validated across disaster mitigation literature.

Furthermore, this knowledge optimization was heavily driven by the contextual alignment of the educational curriculum with the immediate environmental realities encountered by the target population. The training modules delivered by the experts from the Regional Disaster Management Authority (BPBD) of Lamongan Regency were highly applied and grounded in field experience, allowing participants to seamlessly synthesize the material with their recurrent encounters with seasonal inundations. This observation supports the assertions of Widayati et al. (2023), who maintained that contextualized disaster education that mirrors localized community experiences is significantly more effective at bolstering operational knowledge and long-term disaster readiness

D. CONCLUSION AND SUGGESTION

The community service program focusing on flood disaster mitigation was successfully and seamlessly executed. Evaluation metrics for the educational component revealed a substantial knowledge acquisition gain of 29.01 points between the pre-test and post-test baselines. Data analysis concerning the flood mitigation training demonstrated that after the delivery of the instructional modules, the participants' post-intervention knowledge scores culminated at an average of 76.87. Concurrently, the ecological intervention was effectively realized through the planting of 65 saplings. This fieldwork actively engaged village administrators, supervising faculty members, representatives from the Regional Disaster Management Authority (BPBD), and 25 undergraduate nursing students

from the Universitas Muhammadiyah Lamongan. The entire initiative was marked by a high level of stakeholder enthusiasm and a robust collaborative spirit, ensuring the efficient and unified execution of the program.

Consequently, a follow-up initiative is imperative to ensure the long-term maintenance and ecological sustainability of the newly planted trees. Establishing local volunteer conservation groups or implementing a structured, routine monitoring framework would effectively safeguard sapling growth while simultaneously reinforcing community commitment to sustainable environmental preservation.

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REFERENCES

Balahanti, R., & Mononimbar, W. (2023). Analisis Tingkat Kerentanan Banjir Di Kecamatan Singkil Kota Manado. Jurnal spasial, Volume 11, No1, 2023 ISSN 2442-3262. 11, 69–79. https://ejournal.unsrat.ac.id/v3/index.php/spasial/article/view/51447

BNPB. (2024). Data Informasi Bencana Indonesia. https://bnpb.go.id/storage/app/media/Buletin%20Info%20Bencana/Buku%20Data%20Bencana%202024/20250613_Buku%20Data%202024.pdf

Bugel, K., Bugel, K., & Kota, P. (2024). Manfaat Penanaman Pohon Dalam Rangka Membantu Program Penghijauan Pemerintah Di Kelurahan Bugel Kecamatan Karawaci Kota Tangerang. 4(3), 782–796. https://doi.org/10.53363/bw.v4i3.307

Darmawan, D., Setiawan, G., & Safariah, T. D. (2025). Perilaku masyarakat terhadap kesiapsiagaan bencana. 9, 755–761. http://journal.universitaspahlawan.ac.id/index.php/ners

Fernalia, Wahyuni, S., & Hanifah. (2021). Pengaruh Penyuluhan Dengan Media Audiovisual Terhadap Pengetahuan Masyarakat Tentang Penanganan Menghadapi Bencana Banjir Di Desa Tanjung Kecamatan Hamparan Rawang Provinsi Jambi. Manuju: MALAHAYATI NURSING JOURNAL, 3, 587–599. https://ejurnalmalahayati.ac.id/index.php/manuju/article/view/5257

Hidayat, A. R., Wahyuningsih, T., Ilmi, K., Ernawati, A., Zarkasi, A., Muttaqin, A., Yustissiani, E., Rasikun, H., Samengasbumi, P., Irawan, F., Amaelisa, V., & Haryadi, F. E. (2023). Rengganis Jurnal Pengabdian Masyarakat Penyuluhan bahaya dan upaya mitigasi bencana hidrometeorologi di Desa Lembah Sari , Kecamatan Batu Layar , Kabupaten Lombok Barat. 3(November), https://mathjournal.unram.ac.id/index.php/Rengganis/index

Ikhsani, H., Azwin, & Ratnaningsih, A. T. (2021). Penanaman Pohon di Perumahan Bukit Permata Sumbari II Kecamatan Tenayan Raya, Pekanbaru. Dinamisia : Jurnal Pengabdian Kepada Masyarakat, 5(2), 421–426. https://doi.org/10.31849/dinamisia.v5i2.5266

Nastiti, R. P., Pulungan, R. M., & Iswanto, A. H. (2021). Faktor-Faktor yang Berhubungan dengan Kesiapsiagaan Masyarakat dalam Menghadapi Bencana Banjir Di Kelurahan Kebon Pala Jakarta Timur Factors That are Related to The Community Preparation in Facing Flood Disasters in Kelurahan Kebon Pala Jakarta Timur Revy. Jurnal Ilmu Kesehatan, 15(1), 48–56. https://doi.org/10.33860/jik.v15i1.219

Nita, Y., Nastiti, R., & Ananta, A. (2023). Penanaman Pohon Pelindung sebagai Upaya Penghijauan Lingkungan. 4(1), 111–116. https://doi.org/10.30812/adma.v4i1.2655

Salim, M. A., & Siswanto, A. B. (2021). Kajian Penanganan Dampak Banjir Kabupaten Pekalongan M. Rang Teknik Jurnal, 4(2), 295–303. http://jurnal.umsb.ac.id/index.php/RANGTEKNIKJOURNAL

Saparwati, M. (2020). Peningkatan Pengetahuan Kesiapsiagaan Bencana Dengan Video Animasi Pada Anak Usia Sekolah. Pro Health Jurnal Ilmiah Kesehatan, 2(1), 23–28. https://doi.org/10.35473/proheallth.v2i1.385

Saragi, M. M. (2022). Pengaruh penyuluhan mitigasi bencana terhadap peningkatan pengetahuan dan sikap kepala keluarga dalam menghadapi banjir. 01. https://doi.org/10.58439/ipk.v1i2.19

Sedijani, P., Eniarti, M., & Hermana, S. Y. (2022). Penanaman Seribu Pohon Sebagai Upaya Mencegah Banjir dan Tanah Longsor di Desa Eyat Mayang Lembar Nusa Tenggara Barat. 15, 0–5. https://doi.org/10.29303/jpmpi.v5i2.1837

Widayati, K. P., Fida, & Husain. (2023). Gambaran Tingkat Pengetahuan Tentang Kesiapsiagaan Masyarakat Dalam Penanggulangan Bencana Banjir Krisna. Jurnal Ilmiah STIKES Kendal, 13, 887–894. http://journal.stikeskendal.ac.id/index.php/PSKM