PRE-FLOOD DISASTER MITIGATION BASED ON COMMUNITY EMERGENCY FOOD PROCESSING IN DORANG VILLAGE

Linda Nurul Amaliyah[1], Windy Windayanti[2], Dany Miftah M. Nur[3]

[1] Institut Agama Islam Negeri Kudus, Indonesia
[2] Institut Agama Islam Negeri Kudus, Indonesia
[3] Institut Agama Islam Negeri Kudus, Indonesia
Email : lindanurul@ms.iainkudus.ac.id[1], 2210910048@ms.iainkudus.ac.id[2],
dany@iainkudus.ac.id[3]

Abstract:

Floods have often occurred in Indonesia recently, causing a number of damages that require people to evacuate or live in emergency places for a while. One of them is in Dorang Village, not only damage to housing, natural disasters also cause damage to social infrastructure at the disaster site which hampers victims' access to sources of food needs. Food insecurity that occurs after a disaster can be overcome by processing emergency food which is expected to meet the nutritional needs of people in disaster-affected areas, especially during panic periods when public kitchens are not operating properly. The purpose of this study was to analyze pre-disaster flood mitigation based on emergency food processing in Dorang Village, Nalumsari, Jepara. Researchers used data collection methods of observation, interview, and documentation. The results of this study show that emergency food processing is an appropriate way of pre-flood disaster mitigation when infrastructure is hampered and an alternative way to meet food needs during a disaster.

Keywords: Flood, Emergency Food, Pre-Disaster

INTRODUCTION

Dorang Village, Nalumsari Sub-district, Jepara District is a flood-prone area, now facing challenges in maintaining community food security during and after disasters. Limited access to nutritious and durable food often worsens the condition of flood-affected communities (Efrizal *et al*., 2022; Sandri *et al*., 2023). In an effort to improve preparedness and reduce the impact of disasters, community empowerment through emergency food processing is important. Dorang Village is part of the Nalumsari Sub-district of Jepara Regency, around this village is included in the Jepara Regency area.

Kaliwungu Subdistrict, Kudus. Due to high rainfall over the past week, the discharge of Wulan River increased until it finally overflowed. Dorang Village, which is traversed by the SWD 2 River, which is part of the Wulan River, was also affected. Most of the area south of the SWD 2 River in Dorang was flooded. At least three floods occurred, namely in 2021, 2023 and the current one in 2024. Dorang Village Head, Arief Soepratiknyo, S.H, revealed that in 2024 there were 3,134 people affected by the flood. He is grateful that two boats from BPPD Jepara have arrived to help evacuate residents in need. Arief is also very hopeful that the drainage planned by the government will soon be implemented, so that Dorang can be free from the increasingly frequent floods (Soepratiknyo, 2025).

Disaster is a natural event caused by humans or nature that has the potential to harm human life, disrupt normal life, and cause property and property losses (Alfaris & Nur, 2025). Another definition of disaster is an event or series of events that threaten and disrupt people's lives and livelihoods caused by natural or non-natural factors or human factors resulting in human casualties, environmental damage, property losses, and psychological impacts (Shafani, Nuraini, & Endrawati, 2022). In response to the definition of disaster, it is concluded that most definitions of disaster reflect characteristics such as disruption of normal life, impact on humans, such as casualties, injuries/disabilities, health problems, impact on social structures, and community needs. Vulnerability is the degree to which a disaster object consisting of people, structures, services or geographic areas is likely to be damaged or disrupted by disaster impacts or the tendency of an object or creature to be damaged by a disaster (Iswardoyo & Satria, 2023).

Emergency food product (EFP) is food that has high energy and nutrition for victims of natural disasters that can be consumed immediately in an emergency (Sari *et al.*, 2023). One of the efforts that can be made to help victims of natural disasters is to provide emergency food in the form of ready to eat food or food that is easy to consume. One example of emergency food that has a long shelf life is mocaf cookies (Windyatama, Fauzi, & Nisa, 2023). Dorang Village is often affected by flood disasters, which requires pre-disaster mitigation based on community empowerment which is implemented by making mocaf cookies. Based on the results of an interview with Mr. Arief, the Head of Dorang Village explained that mocaf cookies are suitable as an alternative emergency food because they are ready to eat and have a long shelf life (Soepratiknyo, 2025). Cookies are one example of a product that can be used as emergency food (Susanto, Kartika, Fertiasari, & Sari, 2023). Currently, many studies have been conducted to make cookies with the aim of being an emergency food product.

The purpose of emergency food is to reduce the morbidity and mortality rates of disaster victims by providing food that has complete nutrition to meet daily needs. Important requirements in the development of emergency food products are safe, have organoleptic (palatability) that is acceptable to the community, easy to distribute, have good shelf life, have complete nutritional content and meet nutritional needs, especially for vulnerable groups, easy to make and utilize local resources (Ismail, Irfan, Irwan, Mulkim, & Lenas, 2023). Based on the explanation above, researchers are interested in pre-disaster mitigation based on emergency food processing in Dorang Village. This study aims to determine and examine (1) emergency food-based flood pre-disaster mitigation and (2) implementation of emergency food processing programs in Dorang Village.

RESEARCH METHOD

This type of research is descriptive research with a qualitative approach (May *et al.*, 2022; Limna, 2023; Mohammadi *et al.*, 2024). Qualitative research is a research method based on the philosophy of postpositivism, used to research on

natural object conditions (as opposed to experiments), where the researcher acts as a key instrument (Orenstein *et al.*, 2023; Rahimi & Khatooni, 2024; Vaz *et al.*, 2025). The approach used in this research is a qualitative approach. This approach was chosen because the data collected are descriptive and narrative (Whiffin *et al.*, 2022; ACosta, 2023; Alfaris, 2024).

This research was conducted in Dorang Village, Nalumsari Subdistrict, Jepara Regency. The selection of this location is based on unique disaster risk management efforts by processing mocaf cookies as emergency food, so it is relevant to explore information about pre-disaster flood mitigation based on emergency food processing. This research was conducted on April 8, 2025. The researcher collected data by means of observation, interviews with the main informants, namely the village head, local residents, and the head of the Aisyiyah branch leader organization, as well as documentation.

FINDINGS AND DISCUSSION
Pre-disaster Mitigation Based on Emergency Food Processing

Researchers need to inform several important (original) field data obtained from interviews, observations, questionnaires, surveys, documents, and other data collection techniques. The findings are presented in full and are related to the pre-determined scope of research. Findings can be supplemented with tables, graphs, and/or diagrams. Tables and figures are numbered and titled. Example.

Dorang Village is a flood-prone area, which urgently needs pre-disaster mitigation based on community empowerment which is implemented by making emergency food mocaf cookies. Based on the results of interviews with Mr. Arief, the Head of Dorang Village, it shows that mocaf cookies are suitable as an alternative emergency food because they are ready to eat and have a long shelf life (Soepratiknyo, 2025).

Mitigation is the initial stage in the disaster management cycle. This mitigation stage is the stage that determines the success of disaster risk management. At this stage, policies and disaster risk reduction (DRR) are carried out structurally and non-structurally in a safe period and over a long period of time. Mitigation in accordance with its meaning is an effort to reduce or the impact of disasters (Nurillah, Maulana, & Hasanah, 2022). This is in line with the activities carried out in Dorang Village, based on emergency food processing as mitigation before the flood. Disaster victims who fled to be able to process foodstuffs set up a public kitchen for cooking, but there are obstacles such as the unavailability of cooking utensils, lack of clean water and environmental conditions that do not allow it to be an obstacle to meet food needs in refugee camps.

There are various kinds of donations that are distributed to those affected by the disaster, namely in the form of clothing, food and shelter needs. Usually the assistance provided for food assistance, in the form of instant noodles or rice that requires equipment and also clean water to be processed and cooked first until it can be consumed. This is not easy to do in Dorang Village because there

is not always enough clean water to cook and the equipment that can be used is not adequate. Therefore, nutritious food is needed to meet the nutritional needs of disaster victims that is practical and can be consumed immediately without having to be processed first in the refugee camp. Food products that can be a solution to these problems are emergency food products.

One way to overcome food insecurity in disaster-affected areas is to design emergency food that can meet energy needs and nutritional needs that can be consumed directly. Emergency food has an important role to help refugees in affected areas. It is hoped that the emergency food stocks provided can be utilized. Especially the provision of emergency food in the form of mocaf cookies in Dorang Village is useful for maintaining life until isolation takes place and can be consumed by various ages.

Implementation of Emergency Food Processing Program in Dorang Village

Based on Law Number 24 of 2007, Article 26 paragraph 2 states that every person who is a victim of a disaster is entitled to receive assistance to fulfill basic needs. Meanwhile, according to Government Regulation of the Republic of Indonesia Number 22 of 2008 concerning funding and management of aid, Article 28 paragraph 1, that assistance to fulfill basic needs as referred to in Article 24 paragraph 2, is provided to disaster victims in the form of temporary shelter, food assistance, clothing, clean water, sanitation, and health services. Emergency assistance is an effort to provide assistance related to the fulfillment of basic needs in the form of clothing, food, shelter, protection, health, sanitation, and clean water (Satriawan, Mansur, & Ambo, 2023).

In natural disaster management, a mechanism is needed to protect disaster victims, especially during the emergency response period. In disaster emergency situations, people really need help from the government, the business world, community organizations, the private sector, and individuals. The assistance most needed by disaster victims is logistical assistance. This assistance covers the basic needs of the community, in the form of clothing, food and shelter such as basic necessities, instant noodles, ready meals, milk, clean water, blankets, medicines, and others.

Emergency food product (EFP) is food that has high energy and nutrition for victims of natural disasters that can be consumed immediately in an emergency. One of the efforts that can be made to help victims of natural disasters is to provide emergency food in the form of ready to eat food or food that is easy to consume. Cookies are one example of a product that can be used as emergency food. Currently, many studies have been conducted to make cookies with the aim of being an emergency food product. The purpose of emergency food is to reduce the morbidity and mortality of disaster victims by providing food that has complete nutrition to meet daily needs. Important requirements in the development of emergency food products are safe, have organoleptic (palatability) that is acceptable to the community, easy to distribute, have good shelf life, have complete nutritional content and meet nutritional needs, especially for vulnerable groups, easy to make and utilize local resources (ADianty, 2022).

Mocaf cookies are one type of emergency food. Mocaf (Modified Cassava Flour) is cassava flour that has been modified through a fermentation process. This fermentation process improves product quality. The advantages of mocaf flour over other flours are its soft texture, no cassava smell, high fiber and calcium content, and gluten-free. Mocaf cookies are packaged using aluminum foil with vacuum. This aims to increase the shelf life of the cookies and prevent microbes from entering the food. Emergency food needs must have a long shelf life. The nutritional content of mocaf cookies in 35 grams is 211 kcal of energy, 9 grams of fat, 4.5 grams of protein, 29.5 grams of carbohydrates. This product contains higher calories compared to market cookies. Therefore, mocaf cookies as emergency food in Dorang Village.

The implementation of mocaf cookies has been carried out since the floods in 2024, starting from a Muhamadiyah organization making counseling with the village head, and implemented in Dorang Village.

CONCLUSION

Dorang Village is a flood-prone area, as it is a low-lying area and the river in the village overflows. The existence of this flood disaster often requires emergency food for affected parties who lack food intake. This is a pre-flood mitigation, which is a countermeasure before a disaster occurs. Emergency food is food that has high energy and nutrition for victims of natural disasters and can be consumed immediately in an emergency. One of the efforts that can be made to help victims of natural disasters is to provide emergency food in the form of ready to eat food or food that is easy to consume.

During evacuation, there is no guarantee that victims will get food intake that meets the body's energy and nutritional needs. Therefore, food is needed that can meet human nutritional needs practically and does not need to be cooked first. One way to overcome this is with emergency food, which is a food product designed to be used in emergency situations and can be consumed directly, as well as meeting human daily nutritional needs. The existence of emergency food consumed by disaster victims can overcome the problem of hunger and malnutrition while public kitchens cannot be used optimally.

REFERENCES

ADianty, J. (2022). Tanggung Jawab Pemerintah dalam Menyediakan Dana Penanggulangan Bencana Alam Menurut Undang-Undang No. 24 Tahun 2007. *Lex Administratum*, *10*(4), 21–31.

Alfaris, M. R. (2024). Nyadran Tradition Procession: A Cultural Study at the Tomb of Sheikh Maulana Abdurrahman in Demak. *Journal of Noesantara Islamic Studies*, *1*(5), 294–302. https://doi.org/10.70177/jnis.v1i5.1413

Alfaris, M. R., & Nur, D. M. M. (2025). Pengendalian Bencana Alam: Efektivitas Mitigasi Banjir di Kabupaten Kudus. *Jurnal Riset Sosial Humaniora Dan Pendidikan*, *4*(2), 46–66.

Costa, A. P. (2023). Qualitative Research Methods: do Digital Tools Open Promising Trends? *Revista Lusófona de Educação*, *59*(2), 67–76.

https://doi.org/10.24140/issn.1645-7250.rle59.04

Efrizal, E., Adi Saputro, Y., & Hidayati, N. (2022). Implementasi Software Hec-Ras 4.1.0 dan Epa Storm Water Management Model (Swmm) 5.1.0 pada Efektivitas Analisis Saluran Drainase (Studi Kasus Desa Kelet Kecamatan Keling Kabupaten Jepara). *Jurnal Civil Engineering Study*, 2(01), 7–16. https://doi.org/10.34001/ces.02012022.2

Ismail, A., Irfan, A., Irwan, A., Mulkim, A., & Lenas, M. N. J. (2023). Penyaluran Bantuan Bencana dan Keterpenuhan Kebutuhan Korban Bencana Banjir Bandang Masamba. *Jurnal Abdimas Resoku*, 1(1), 5–10.

Iswardoyo, J., & Satria, H. (2023). Analisis Daerah Terdampak Banjir Bandang Menggunakan HEC-RAS 2 Dimensi di Sungai Sat, Kabupaten Pati, Jawa Tengah. *Jurnal Teknik Hidraulik*, 14(1), 13–26. https://doi.org/10.32679/jth.v14i1.717

Limna, P. (2023). The Impact of NVivo in Qualitative Research: Perspectives from Graduate Students. *Journal of Applied Learning & Teaching*, 6(2), 271–282. https://doi.org/10.37074/jalt.2023.6.2.17

May, C. M. C. R. C. M. C. R. C. M., Albers, B., Bracher, M., Finch, T. L., Gilbert, A., Girling, M., … Rapley, T. (2022). Translational Framework for Implementation Evaluation and Research: A Normalisation Process Theory Coding Manual for Qualitative Research and Instrument Development. *Implementation Science*, 17(1), 1–15. https://doi.org/10.1186/s13012-022-01191-x

Mohammadi, S., Balador, A., Sinaei, S., & Flammini, F. (2024). Balancing Privacy and Performance in Federated Learning: A Systematic Literature Review on Methods and Metrics. *Journal of Parallel and Distributed Computing*, 192(1), 104918. https://doi.org/10.1016/j.jpdc.2024.104918

Nurillah, S., Maulana, D., & Hasanah, B. (2022). Manajemen Mitigasi Penanggulangan Bencana Banjir oleh Badan Penanggulangan Bencana Daerah (BPBD) Kota Cilegon di Kecamatan Ciwandan. *JDKP Jurnal Desentralisasi Dan Kebijakan Publik*, 3(1), 334–350. https://doi.org/10.30656/jdkp.v3i1.4613

Orenstein, L. A. V, Salame, N., Siira, M. R., Urbanski, M., Flowers, N. I., Echuri, H., … Chen, S. C. (2023). Pain Experiences Among Those Living with Hidradenitis Suppurativa: A Qualitative Study. *British Journal of Dermatology*, 188(1), 41–51. https://doi.org/10.1093/bjd/ljac018

Rahimi, S., & Khatooni, M. (2024). Saturation in Qualitative Research: An Evolutionary Concept Analysis. *International Journal of Nursing Studies Advances*, 6(1), 100174. https://doi.org/10.1016/j.ijnsa.2024.100174

Sandri, D., Amarta, D., & Savina, H. A. (2023). Identifikasi Perumahan di Lokasi Rawan Bencana Kabupaten Jepara. *Perwira Journal of Science & Engineering*, 3(1), 1–10. https://doi.org/10.54199/pjse.v3i1.166

Sari, M. S., Aulia Tiba, M., Irfan, M., Williadani, S., Syah, A., Br Harahap, K., & Akmal Putra, B. (2023). Model Pertanian Organik Berbasis Tanaman Cepat Panen dan Toga untuk Kemandirian Pangan dan Pengendalian Penyakit Pasca Banjir di Desa Paya Udang Kecamatan Seruway Kabupaten Aceh

Tamiang. *Jurnal Masyarakat Berdikari Dan Berkarya (Mardika)*, *1*(1), 47–55. https://doi.org/10.55377/mardika.v1i1.8164

Satriawan, A. P., Mansur, S., & Ambo, N. (2023). Pengelolaan Logistik dalam Upaya Penangangan Pasca Bencana Alam Gempa Bumi, Tsunami dan Likuifaksi di Kota Palu. *Jurnal Kolaboratif Sains*, *6*(8), 1068–1077.

Shafani, R. H., Nuraini, R. A. T., & Endrawati, H. (2022). Identifikasi dan Kepadatan Mikroplastik di Sekitar Muara Sungai Banjir Kanal Barat dan Banjir Kanal Timur, Kota Semarang, Jawa Tengah. *Journal of Marine Research*, *11*(2), 245–254. https://doi.org/10.14710/jmr.v11i2.31885

Soepratiknyo, A. (2025). *Wawancara di Rumahnya tanggal 8 April, sebagai Kepala Desa Dorang*. Jepara.

Susanto, A., Kartika, K., Fertiasari, R., & Sari, D. (2023). Food Bar Berbasis Tepung Pisang dan Mocaf Sebagai Emergency Food. *Journal of Food Security and Agroindustry*, *1*(2), 24–31. https://doi.org/10.58184/jfsa.v1i2.65

Vaz, P., Braga, A. C., D, M., & Carvalho, o S. (2025). Advanced Statistical Methods for Real-Time Industrial Process Analysis: An Analysis of the Literature. *International Journal of Applied Decision Sciences*, *18*(2), 215–227. https://doi.org/10.1504/IJADS.2025.144818

Whiffin, C. J., Smith, B. G., Selveindran, S. M., Bashford, T., Esene, I. N., Mee, H., … Kolias, A. G. (2022). The Value and Potential of Qualitative Research Methods in Neurosurgery. *World Neurosurgery*, *161*(3), 441–449. https://doi.org/10.1016/j.wneu.2021.12.040

Windyatama, F., Fauzi, M., & Nisa, A. F. (2023). Analisis Neraca Ketersediaan Beras Pasca Banjir di Kecamatan Astambul Kabupaten Banjar. *Frontier Agribisnis*, *7*(4), 66–73. https://doi.org/10.20527/frontbiz.v7i4.11554