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Community-based fire risk mitigation for Sumbanese architecture preservation in Prai Ijing Traditional Village

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ABSTRACT

The cultural heritage of Prai Ijing Traditional Village in West Sumba embodies local identity through its distinctive architectural traditions. However, the preservation of this architecture faces significant challenges due to modernization, climate change, and fire hazards. Devastating fires, such as those in Tarung Village, Bodo Maroto, and several other villages, have led to the destruction of cultural heritage, resulting in both material losses and profound cultural impacts. This study aims to develop a community-based fire mitigation strategy to safeguard Sumbanese architecture. Employing a qualitative descriptive approach, data were collected through interviews, observations, and document analysis. The findings highlight the critical role of social capital, particularly the kabizzu rule, in fire mitigation efforts. Additionally, traditional spatial and material planning, along with Wulla Poddu practices, serve as inherent fire mitigation measures. By integrating local knowledge with community-based risk management, the novelty of this study is to propose a comprehensive strategy in order to enhance fire resilience while preserving cultural heritage. Effective fire mitigation requires a comprehensive approach encompassing education, community training, and the adaptation of fire-resistant building materials to strengthen community resilience and ensure the sustainability of Sumbanese architecture for future generations.

Introduction

Traditional villages in Sumba, including Prai Ijing Traditional Village, have been designated as a cultural heritage area through the Decree of the Regent of West Sumba Number KEP/HK/227/2018. This village is an architectural and cultural heritage that reflects local identity and traditional wisdom. Traditional Sumbanese houses are generally made from local materials such as wood, bamboo, and reeds, and have high philosophical and cultural value. However, their existence is threatened by the risk of fire, which not only damages materials but also eliminates intangible cultural heritage. According to *Rato Rumata Lado Regi Tera* (Barat 2016), climate change, such as high temperatures and prolonged droughts, exacerbates this condition, while flammable traditional building materials accelerate the spread of fire.

Despite the resilience fostered by strong social systems, including the *Kabizzu* (*clan*) network and *Wulla Poddu* rituals, traditional villages remain highly susceptible to fire disasters. Recent incidents in *Tarung* (Ola Keda 2017), *Bodo Maroto* (Damanik 2018), *Kahale* (Humas 2024) and *Kampung Bodo Ede* (Piter 2024; Hendrizal 2024) have resulted in severe material, psychological, and cultural losses. These recurring events underscore the urgent need for

comprehensive and sustainable fire risk mitigation strategies to protect indigenous communities and their heritage assets (Dwi Noorwatha and Santosa 2023).

In accordance with Law No. 24/2007 on Disaster Management and Law No. 11/2010 on Cultural Heritage, effective mitigation must integrate traditional knowledge with modern approaches. This includes the application of adaptive technologies, fire-resistant materials, spatial planning, and community-based strategies. Such a multidimensional framework is essential to enhance village resilience and ensure the long-term protection of Sumbanese heritage in the face of modernization and environmental change (Afifah and Kurniawan 2022).

This study adopts a qualitative descriptive method through interviews, field observations, and document analysis. It proposes a community-based fire mitigation strategy that links architectural preservation with local capacity-building. While previous studies have addressed cultural tourism and sustainable spatial planning, the integration of indigenous knowledge with risk management in response to climate change remains limited (Septiana and Dewi 2022). The novelty of this research lies in formulating an integrated strategy that simultaneously strengthens fire resilience and preserves cultural heritage. The research offers a holistic model for safeguarding cultural heritage through community-driven, context-specific fire mitigation efforts (Tanto and Hartanto 2021).

Literature review

Community-based fire risk mitigation concept

Mitigation refers to sustained efforts to reduce long-term risks to life and property through structural measures such as risk-informed spatial planning, resilient infrastructure, and building design and non-structural approaches including education, training, public awareness, and regulatory frameworks (Umar, Arifin, and Sastrawati 2022). In the context of cultural heritage, mitigation supports the preservation of historic structures by minimizing disaster impacts, ensuring sustainable site use, and fostering community engagement in risk management (Amara and Bawono 2024).

Disaster risk arises from the interaction between hazards and vulnerabilities in the absence of resilience, representing the potential for harm within a specific area and time frame. Fire risk denotes the threat posed by uncontrolled fires to life and property (Januandari et al. 2017). Indigenous communities, such as the Sumbanese, live within defined customary boundaries and follow structured social systems governed by traditional rules.

A fundamental element shaping an Indigenous community is social capital, a valuable asset embedded in the relationships among its members (Yentriyani et al. 2024). The Sumbanese people follow a patrilineal system, where lineage is traced through the father's side (Huber et al. 2007; as cited in Reny et al. 2018). The predominant Sumbanese belief system, known as *Ma Rappu*, derives its name from the words "*ma*," meaning "*Sang*" (revered), and "*rappu*," meaning "respected, glorified, and deified." This belief system plays a crucial role in shaping their cultural identity, traditions, and social cohesion (Chelvy Soetanto 2024).

In Indigenous communities, social capital, traditional knowledge, and belief systems are vital for strengthening fire resilience (Lysion et al. 2022). Community-based mitigation builds on these assets to protect lives, preserve cultural heritage, and ensure its sustainability for future generations (Hari Murti et al. 2023).

Sumba architectural preservation concept

Preservation broadly refers to protecting and maintaining valuable objects, structures, or environments to ensure their continued existence (Zain 2014). Architectural preservation focuses on safeguarding historic sites and environments while retaining their cultural significance.

Preservation is also seen as protecting historical structures to understand the past, enrich the present, and support future urban development. Its main goal is to maintain the identity of a region or heritage site while permitting adaptations that respect its historical significance (Kembaren 2020).

Sumbanese architectural heritage and its preservation

in culture, society, and nature. As part of cultural heritage, preserving traditional architecture is vital to maintaining its historical and cultural value (Zain 2014). It evolves with ethnic communities and embodies social values, beliefs, and identity, making it central to regional heritage.

Sumbanese settlements and architectural preservation

Sumbanese settlements, often located in hilly terrain, exhibit spatial forms shaped more by topography than rigid customary rules. Traditional villages (*Parona/Paraingа*) are typically square or oval, enclosed by stone fences for territorial protection. House placement is irregular, oriented around an open communal space Talora or Natar which functions as the spiritual and social centre, containing sacred elements such as stone graves and altars. The highest-status umma is typically located in the most elevated and prestigious position, directly linked to the Natar.

Preserving Sumba's architectural heritage safeguards its cultural, social, and environmental values rooted in local wisdom. This involves maintaining historic structures and recognizing cultural identities shaped by topography. Preservation ensures cultural continuity while supporting sustainable adaptation that upholds traditional values.

Methods

Type of research

This study uses a qualitative descriptive approach to examine fire risks and community efforts in preserving traditional architecture in Prai Ijing Village. As Moleong 2013; in Feny Rita Fiantik et al. (2020) explains, qualitative research seeks to understand experiences, behaviors, and perceptions holistically through contextual analysis and descriptive narratives (Zellatifanny and Mudjiyanto 2018).

This research began with the phenomenon of West Sumba Traditional Architecture, followed by an observation of its settlements based on problems and potential disasters. As a basis for the research, a literature review was conducted at the beginning of the study to formulate data requirements in the field. Primary and secondary data obtained in the field were analyzed based on theories related to the preservation of traditional architecture and disaster issues, particularly fires in traditional architectural buildings. Both theoretical foundations are highly beneficial for preserving the traditional architecture of West Sumba, which remains in several villages in Waikabubak City. After the analysis process was completed, the research results were maximized (see figure 1).

Furthermore, descriptive research aims to accurately portray and interpret research objects based on real-world conditions without altering or manipulating them (Zellatifanny & Mudjiyanto 2018). This methodology ensures that the study provides an authentic and comprehensive understanding of the subject matter.

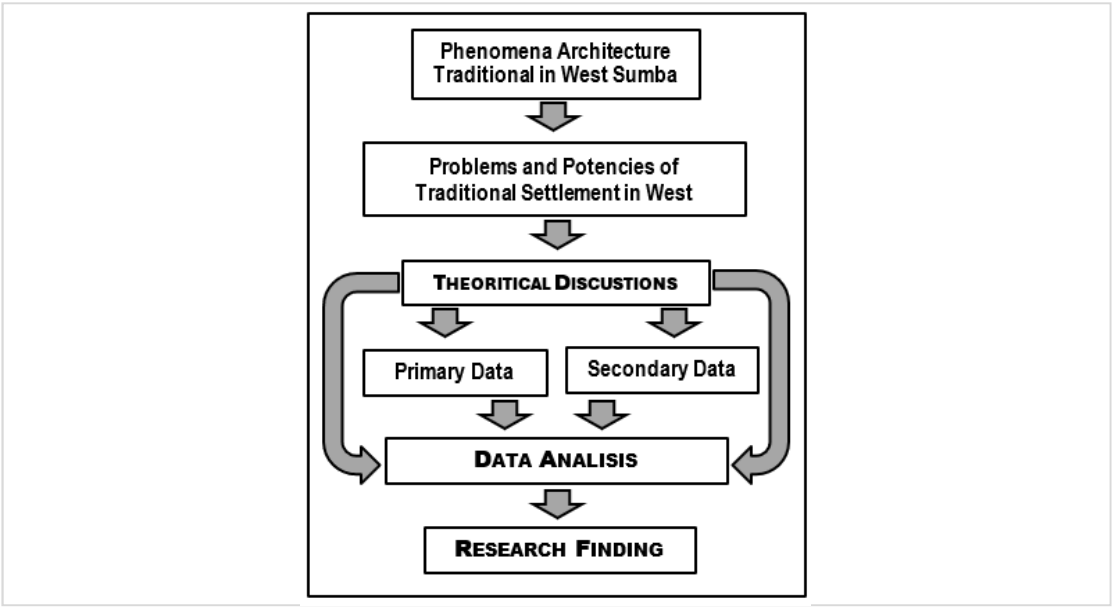


Figure 1. Research process

Type of data, data sources, and research location

Data were collected through interviews with community leaders, observations of Prai Ijing Village's structural and spatial features, and analysis of conservation regulations and fire records. The study was conducted in Prai Ijing Village, Kota Waikabubak District, West Sumba Regency, East Nusa Tenggara (see figures 2).

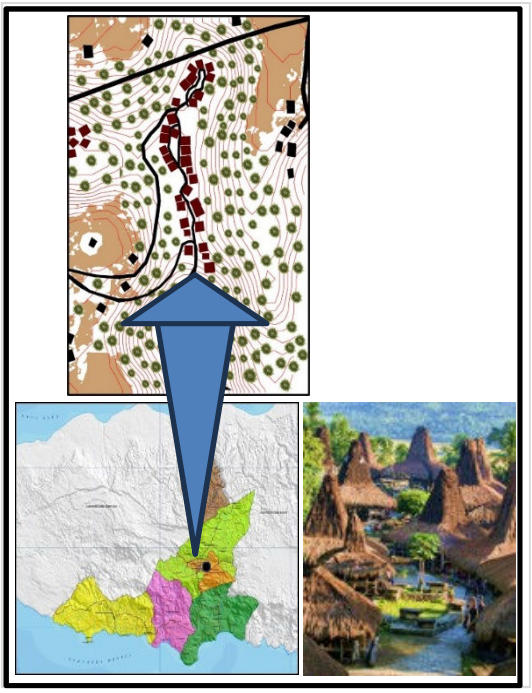


Figure 2. Map of the location of the Prai Ijing Village Site in West Sumba Regency, NTT.
Source: Private documentation and https://petatematikindo.wordpress.com/2015/05/administrasi-kabupaten-sumba-barat/. Accessed on 21-11-2024

Grounded in fire risk mitigation and architectural preservation theories, this study explores community-based fire mitigation in Prai Ijing Village. It analyzes how community involvement supports the preservation of traditional architecture and cultural heritage.

Results and discussion

Characteristics of Prai Ijing Traditional Village

Prai Ijing Village adheres to the Ma Rappu religion and is led by a Rato Adat, who preserves and transmits cultural values. The community maintains ancestral traditions, including worship sites, taboos, and megalithic gravestones (H, Deo, and Maranisya 2024). Its spatial layout and morphology reflect local culture, cosmology, and animist beliefs rooted in the *Ma Rappu* tradition (Reny, Subroto, and Saifullah 2018).

Prai Ijing Village's spatial typology consists of three main zones: 1. *Natar* – the central area for socio-cultural activities; 2. *Yelli Umma* – the residential zone for permanent houses, and; 3. *Kaliwo* – a peripheral, profane space bordered by ancient trees forming a natural boundary (see figure 3).

According to Mutiara and Pujianto, Prai Ijing Village follows a linear settlement pattern (Mutiara, Pujianto, and Ijing 2024), divided into four clusters, some separated by elevation differences (see figure 3).

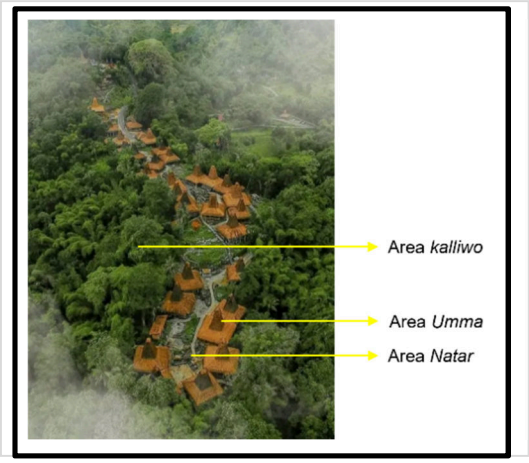
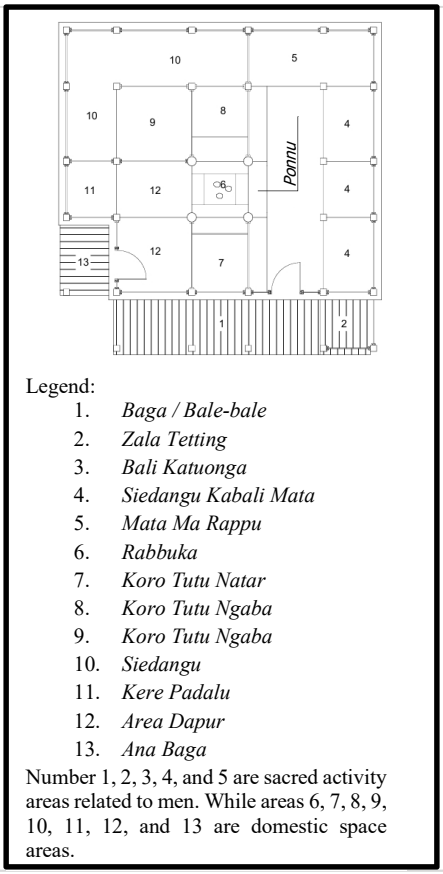


Figure 3. Spatial typology of Prai Ijing Traditional Village

Traditional house architecture (*Umma*)

Mross 1995; as cited in described Sumbanese traditional houses (*Umma*) as spatially organized by gender and function, with horizontal divisions separating sacred and domestic areas.

Sacred areas (1–5) are used for rituals, by male family members, while domestic areas (6–13) support daily household activities. At the center is *Rabbuka*, the fireplace, symbolizing life and family sustenance. The structure and functions of the *Umma* are shown in figure 4.



Legend:

1. *Baga / Bale-bale*
2. *Zala Tetting*
3. *Bali Katuonga*
4. *Siedangu Kabali Mata*
5. *Mata Ma Rappu*
6. *Rabbuka*
7. *Koro Tutu Natar*
8. *Koro Tutu Ngaba*
9. *Koro Tutu Ngaba*
10. *Siedangu*
11. *Kere Padalu*
12. *Area Dapur*
13. *Ana Baga*

Number 1, 2, 3, 4, and 5 are sacred activity areas related to men. While areas 6, 7, 8, 9, 10, 11, 12, and 13 are domestic space areas.

Figure 4. Floor plan of *Umma*

According to Widya Mandira University, Sumbanese traditional houses function as both dwellings and symbols of social structure and cultural identity, with each house named and designated according to *kabizu* (*clan*) and social role.

Prai Ijing Village originally had 42 traditional houses, but a fire in 2000 reduced the number to 38. Sumbanese traditional houses are built mainly from wood, with round pillars forming the main structure, reinforced by timber beams (*Patienga* and *Dalungu*) supporting the floor. Walls are made of bamboo and wooden planks, and the thatched roof is constructed according to customary rules for weather protection.

Challenges of preserving traditional architecture in Prai Ijing Traditional Village

Fire risk in the context of architectural preservation

Zidane and Maranisya (2024) highlight *alang-alang* thatch as a defining feature of Sumbanese architecture in Prai Ijing Village, yet its flammability alongside the use of wood and bamboo poses a considerable fire risk. This vulnerability is exacerbated by densely clustered houses, traditional open-fire practices, and firewood use in inadequately ventilated interiors, significantly increasing the likelihood of ignition and rapid-fire spread, thereby threatening the preservation of traditional architectural heritage (Zosim, Nikolaienko, and Nikolaienko 2024).

The structural elements are bound with forest rope (*Uwwe* and *Kaskara*) tied unidirectionally, symbolizing harmony and life unity. Architectural details of Sumbanese traditional houses are shown in figure 5.

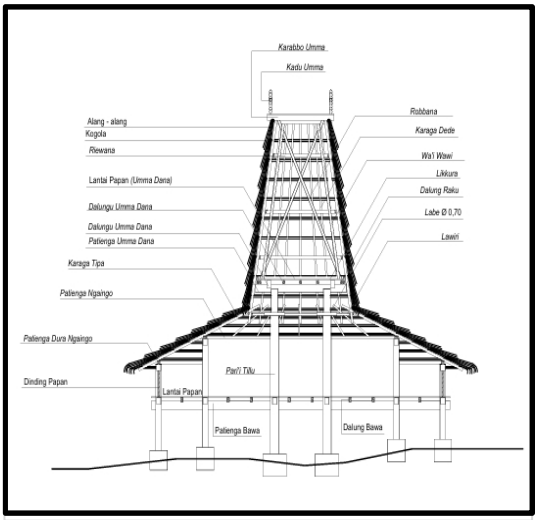


Figure 5. Section detailed of *Api Kalada*

The risk of fire in Prai Ijing Traditional Village is significantly heightened by the lack of fire mitigation infrastructure, including modern suppression equipment and accessible water sources. Although water is effective for extinguishing Class A fires involving solid combustibles like wood and textiles (Mubarak et al. 2023), the village's hilly terrain hampers access, limiting response capacity. Moreover, non-standard electrical wiring increases the likelihood of short circuits, further compounding fire hazards and undermining mitigation efforts.

Environmental challenges and impacts of the dry season

Prolonged dry seasons, characterized by extreme temperatures and strong winds, significantly increase fire risk in Prai Ijing Traditional Village. During these periods, thatched roofing materials become excessively

dry, highly flammable, and more susceptible to weather-induced deterioration. Additionally, the limited availability of thatched grass a consequence of land conversion further complicates roof maintenance and replacement efforts. The accumulation of dry leaves from surrounding shade trees also exacerbates the fire hazard, creating additional fuel sources that can accelerate fire spread.

This environmental challenge poses a serious threat not only to the village's long-term sustainability but also to the preservation of its traditional architecture. To address this issue, the efforts of balancing modern fire prevention measures with the preservation of traditional values will ensure that cultural heritage remains intact and protected for future generations.

The role of the community in fire risk mitigation in Prai Ijing Traditional Village

The community of Prai Ijing Traditional Village plays a pivotal role in fire risk mitigation by employing a combination of structural and non-structural approaches. These strategies integrate active community participation as a fundamental component of fire mitigation efforts, ensuring the long-term sustainability of the traditional village. By fostering collective responsibility and leveraging local knowledge, the community strengthens its resilience to fire hazards while preserving its cultural heritage.

Structural approach to fire risk mitigation

In Prai Ijing Traditional Village, fire risk mitigation is structurally integrated through the selection of traditional materials, spatial planning, and active community involvement. These elements reflect long-standing mitigation practices employed by the Sumba community, which have demonstrated proven effectiveness over generations.

Zidane and Maranisya highlight alang-alang thatch as a key feature of Prai Ijing's traditional houses, which are built from natural materials like thatch, wood, and bamboo, processed using traditional techniques for durability (H, Deo, and Maranisya 2024).

Alang-alang thatch is selected for its flexibility and formed into 12 cm bundles to optimize heat absorption and rain retention. Structural posts use durable local hardwoods like *Lapale, Masiela, Ullu Kataka*, and *Nangka Hutan*, while Sumba-native bamboo (*Wo'o Pi'a*) is valued for its strength and environmental resilience.

Material selection follows ancestral customs, including harvesting alang-alang, wood, and bamboo during the dark moon phase specifically on Thursday afternoons between 12:00 and 13:00 to enhance strength and deter termites.

Spatial design and fire risk mitigation in traditional houses.

Traditional houses (*Umma*) in Prai Ijing feature distinct spatial layouts separating public and private areas. The centrally located kitchen (*Rabbuk*), which uses firewood, is isolated from bedrooms and social spaces to minimize fire spread.

Smoke from the fireplace exits through gaps in the tapered thatched roof, serving to preserve food, deter insects, and protect structural materials from moisture damage. Beyond its symbolic role in representing family unity, the centralized kitchen aids fire mitigation by containing flames, enhancing the safety and resilience of the traditional house.

Spatial planning and fire mitigation in Prai Ijing Traditional Village

The organically developed spatial layout of Prai Ijing Village balances cultural and spiritual functions with fire mitigation, maintaining efficient land use and distinct sacred zones across the hilly terrain.

Karmen identifies human negligence, driven by low environmental awareness during the dry season, as a major cause of fires (Febria Karmen 2023). In response, Prai Ijing mitigates fire risk by planting large trees in the Kaliwo area, which serve as windbreaks, natural fire barriers, and sources of sustainable building materials.

A sustainable cut-and-regrowth system maintains both material supply and ecological balance, though dry leaf accumulation remains a fire hazard requiring ongoing management to enhance fire resilience.

Traditional fire control methods and mitigation strategies

Traditional fire control methods are vital to fire mitigation in Prai Ijing Village. In response to small fires, residents use water from a sacred jar (*Padalu*) stored in the house, either sprinkling it from the roof or extinguishing flames with tree branches.

In cases where the fire intensifies, the reeds (*alang-alang*) are swiftly cut with machetes to create a firebreak, preventing the flames from spreading to adjacent structures. This integrated approach, which combines local wisdom, traditional space management, and rapid response techniques, has been proven effective in containing fires and minimizing their impact on traditional architecture and community settlements (Kuba, Sahabuddin, and Hildayanti 2023).

Non-structural approaches to fire risk mitigation

Non-structural approaches play a crucial role in fire risk mitigation, focusing on enhancing community awareness, education, and active participation to ensure the safety and sustainability of Prai Ijing Traditional Village. These strategies leverage customary rituals, collective traditions, and local knowledge to instill fire prevention practices while preserving cultural heritage and social cohesion.

The role of customary rituals and traditions

Customary rituals and traditions in Prai Ijing Traditional Village serve multiple purposes, including cultural preservation, community sustainability, and fire risk reduction. One of the most significant rituals, *Wulla Poddu*, an annual holy month celebration, acts as a cultural and educational platform to raise collective awareness on safe fire management. During this event, which involves residents and relatives from surrounding villages, the traditional priest (*Rato*) and village elders provide guidance on responsible fire use and management. These rituals also strengthen community solidarity by fostering cooperation in both preparation and implementation, reinforcing the importance of environmental safety and fire preparedness.

Another tradition, *Kaleisuni Susu Ana Wolla Wua Lolo Domma, Kuoda Yelli*, a cultural practice of constructing large houses in Sumba (a tradition among the Loli tribe in West Sumba) exemplifies the sustainability of traditional villages and the preservation of cultural identity. This practice involves entire family units, including direct descendants (*Kabizu*) and in-laws (*Lolo Domma*), who collectively contribute labor, materials, livestock for rituals, and financial resources to support construction. The process is led by a chief traditional craftsman and supervised by a *Rato* to ensure adherence to customary guidelines.

The *Sabeiku* tradition further reinforces village sustainability through the rehabilitation of large houses, ensuring that damaged materials are replaced to maintain their structural integrity and longevity. This process involves the entire nuclear family, accompanied by animal sacrifices, joint prayers, and collective efforts in restoration. Similarly, the *Dubi* tradition, an annual practice of replacing weathered and moth-damaged thatched roofs, contributes to the preservation of traditional houses. Despite limited thatch availability, residents remain dedicated to this practice, utilizing barter systems and inter-tribal cooperation to secure necessary materials.

Community education and fire risk management

Fire risk management in Prai Ijing Traditional Village prioritizes community education and engagement as key elements of a resilient fire prevention strategy. Traditional priests (*Rato*) and elders, who hold high social respect, play an instrumental role in educating villagers about fire safety. Their guidance is delivered through direct appeals to adults and structured learning experiences for children, ensuring that fire control awareness is instilled from an early age (Pingge and Aingu 2021).

Within households, heads of families take on supervisory responsibilities, particularly at night, by positioning themselves in *Ponnu Koro*, a bamboo pavilion between *Rabbuk* (kitchen) and *Siedangu* (sleeping area). This strategic oversight allows them to monitor fire usage and ensure household safety. Parents actively discourage children from playing with fire, reinforcing fire prevention behaviors as an integral part of daily life.

Collective community involvement and fire resilience

Active community participation is fundamental to creating a fire-resilient environment. Collective responsibility for village cleanliness, controlled fire use, and hazard reporting strengthens social cohesion among residents. This collaborative effort enhances preparation for potential fire threats while ensuring swift recovery in the event of an outbreak. The integration of traditional education and collective action forms the foundation of community resilience in Prai Ijing Traditional Village.

Customary leaders, elders, and women, particularly homemakers, play a vital role in fire

prevention efforts. Their responsibilities include monitoring open fire use, overseeing land clearing, and ensuring fire-safe practices. These community members uphold the principle of a clean and waste-free village, regularly organizing environmental clean-ups to reduce fire hazards. Additionally, they engage in public education initiatives, emphasizing the importance of fire safety and environmental management to sustain a secure and culturally intact village (Poetri, Banjal, and Lika 2024).

Formulating a community-based fire mitigation strategy for the preservation of Sumbanese architecture in Prai Ijing Traditional Village

Community-based fire mitigation strategy

Enhancing community awareness of fire hazards is a critical component of fire risk mitigation in Prai Ijing Traditional Village. This is achieved through integrated educational initiatives, including training sessions, public awareness campaigns, and disaster response simulations. These programs incorporate both traditional knowledge and modern fire prevention techniques, equipping the community with practical skills for daily fire management, prevention strategies, and safeguarding traditional houses (DAENG 2023).

To strengthen adaptive capacity, residents are educated on the impact of rising temperatures and prolonged droughts on fire risks, enabling them to anticipate and respond effectively to changing environmental conditions. The communal system, rooted in local solidarity, fosters the development of a trained emergency response team.

Physical environmental management for fire Risk mitigation

Effective spatial planning plays a crucial role in fire mitigation by ensuring optimal distances between houses, thereby limiting the potential spread of fire. The creation of open spaces, such as Natar, is prioritized as a natural firebreak and a designated safe evacuation area for village residents, contributing to a safer built environment. Enhancing fire mitigation infrastructure includes improving access to water sources through wells and rainwater harvesting systems and increasing the availability of simple, user-friendly firefighting tools, such as buckets and manual sprayers. Additionally, the installation of automatic sprinkler systems is implemented to protect traditional houses, particularly in high-risk areas prone to fires during the dry season.

Beyond structural interventions, environmental and cultural vegetation management is a key component of the fire mitigation strategy. Vegetation surrounding the village is strategically managed to reduce the accumulation of flammable materials, such as dry leaves, while preserving its ecological functions, including wind protection and soil retention. Furthermore, the community actively participates in the reforestation of alang-alang grass, a practice that is accompanied by traditional rituals to honor cultural heritage while fostering collective awareness of environmental conservation (Melinda, Rajab, and Raksanagara 2020).

Integration of technology and innovation in architectural preservation

Optimizing traditional building materials with modern technology is essential for enhancing fire resistance while preserving the aesthetic and cultural integrity of traditional architecture. Locally sourced materials such as alang-alang, wood, and bamboo can be treated with fire-resistant coatings and environmentally friendly preservatives to improve durability and fire safety while maintaining adherence to local wisdom and traditional construction principles. Additionally, the integration of information technology enhances early warning systems in traditional houses.

Furthermore, reforming local regulations is crucial to strengthening fire mitigation efforts. The establishment of customary village regulations governing the use of building materials, fire-prone activities, and enforcement of sanctions (*Ruatu*) for violations ensures compliance with fire safety measures. These regulatory frameworks, when combined with technological advancements and traditional practices, contribute to the creation of a safe, fire-resilient environment while safeguarding the sustainability of customary villages.

Conclusions

Prai Ijing Traditional Village faces substantial fire risks that endanger the sustainability of its traditional houses, which are primarily constructed from thatch, wood, and bamboo. These risks are further compounded by factors

such as firewood usage, extreme weather conditions, and inadequate fire mitigation infrastructure.

Despite these challenges, the local community plays a critical role in fire risk mitigation, implementing both structural and non-structural strategies. These efforts include the selection of fire-resistant materials, adaptive spatial planning, and the preservation of customary traditions that reinforce safe fire management practices.

A synergistic approach that integrates Indigenous knowledge with modern technology, alongside active community participation in education, awareness initiatives, and fire prevention oversight, is fundamental to developing an effective and sustainable fire mitigation framework. These integrated measures are essential for safeguarding the long-term resilience, cultural heritage, and architectural sustainability of traditional Sumbanese settlements.

References

Afifah, N, and K R Kurniawan. 2022. "Intangible Aspect of Revitalization in Vernacular Heritage Architecture in Case Study of Wae Rebo NTT Village." *Applied Engineering and Technology* 1 (2): 90–100. https://doi.org/10.31763/aet.v1i2.671.

Amara, Yasmin Lana, and Rochtri Agung Bawono. 2024. "UPAYA MITIGASI BENCANA KEBAKARAN PADA BANGUNAN BERSEJARAH (STUDI KASUS PASAR PAING SIDAYU)" 4 (1): 39–47. https://doi.org/10.22437/jejak.v4i1.29240.

Barat, Humas Polres Sumba. 2016. "Kunjungan KEMENKOPOLHUKAM, Kapolres Sumba Barat Dan DANDIM 1613 Pada Upacara Adat Poddu Di Kampung Tarung." Skripsiarticle Web Site. 2016. https://tribratanewssumbabarat.com/kunjungan-kemenkopolhukam-kapolres-sumba-barat-dan-dandim-1613-pada-upacara-adat-poddu-di-kampung-tarung.

Chelvy Soetanto. 2024. "ANALISA KOMPARATIF TERHADAP PEMAHAMAN HIDUP SETELAH KEMATIAN DI SUKU LOLI DENGAN KONSEP KERAJAAN SURGA DALAM AGAMA KRISTEN." SEKOLAH TINGGI TEOLOGI SATYABHAKTI MALANG. https://media.neliti.com/media/publications/585010-analisa-komparatif-terhadap-pemahaman-hi-e67ffa5f.pdf.

DAENG, Ernawati. 2023. "Analysis of Factors Inhibiting the Implementation of Fire Hazard Management Policies by the Fire Department of Kupang City." *Journal of Tourism Economics and Policy* 3 (1): 49–61. https://doi.org/10.38142/jtep.v3i1.557.

Damanik, Caroline. 2018. "Kampung Adat Bondo Maroto Di Sumba Barat Ludes Terbakar." Kompas. 2018. https://regional.kompas.com/read/2018/09/12/15255941/kampung-adat-bondo-maroto-di-sumba-barat-ludes-terbakar.

Dwi Noorwatha, I Kadek, and Imam Santosa. 2023. "Preserving Traditional Balinese Architecture: Exploring the Relevance of Undagi's Indigenous Knowledge in Post-Pandemic Interior Design." *Dewa Ruci: Jurnal Pengkajian Dan Penciptaan Seni* 18 (1): 39–55. https://doi.org/10.33153/dewaruci.v18i1.5187.

Febria Karmen, Roselina. 2023. "Analisis Resiko Bencana Akibat Musim Kemarau Berkepanjangan Di Jawa Timur." *Prosiding Seminar Nasional*, 947–57.

Feny Rita Fiantik, Mohammad Wasil, Sri Jumiyati, Leli Honesti, Sri Wahyuni, Erland Mouw, Jonata, et al. 2020. *Metodologi Penelitian Kualitatif*. *Rake Sarasin*. First. Kelurahan Pasie Nan Tigo Kecamatan Koto Tangah Padang Sumatera Barat: PT. GLOBAL EKSEKUTIF TEKNOLOGI.

H, Zidane, Muhammad Deo, and Ulfi Maranisya. 2024. "The Impact of Tourism on the Socio-Cultural Life of the Community and the Environment in The Prai Ijing Traditional Village East Nusa Tenggara." *Jurnal Pariwisata Nusantara (JUWITA)* 3 (1): 1–23. https://doi.org/10.20414/juwita.v3i1.9692.

Hari Murti, Raditya, Hendra Adi Wijaya, Indira Laksmi Widuri, Julmadian Abda, Mada Sophianingrum, Muhammad Rizki Islami, Ahady Farrel Febriyanto, and Eduardo Erlangga Drestanta. 2023. "Risk Assessment of Fire Hazards in Semarang City Residential Areas." *Jurnal Teknik Sipil Dan Perencanaan* 25 (1): 52–61. https://doi.org/10.15294/jtsp.v25i1.42955.

Humas, Pranata. 2024. "Penjabat Sementara Bupati Sumba Barat Sambangi Korban

Kebakaran Di Kampung Kahale, Desa Harona Kalla." Pemda Kabupaten Sumba Barat. 2024. https://sumbabaratkab.go.id/penjabat-sementara-bupati-sumba-barat-sambangi-korban-kebakaran-di-kampung-kahale-desa-harona-kalla/.

Kembaren, Erwin Syahputra. 2020. "Bentuk, Fungsi, Dan Makna Dalam Tuturan Pasola, Kabupaten Sumba Barat Daya, Nusa Tenggara Timur." *Prosiding Seminar Nasional Linguistik Dan Sastra (SEMANTIKS)* 9 (1): 87–94.

Kuba, Dharma, Wasilah Sahabuddin, and Andi Hildayanti. 2023. "Preservation of Locality as a Vital Element of Architectural Tourism in Tongkonan Toraja, Indonesia." *ISVS E-Journal* 10 (5): 46–59.

Lysion, Olivia, Immanuel Zai, Angelina, Septriana, Cindy, Jody Rivano Wirawan, and Renata Indra Adiningtyas. 2022. "Analisis Penerapan Manajemen Risiko Dan Mitigasinya (Studi Kasus Kebakaran Gudang Jne Depok)/2895-7922-3-PB_Lysion.Pdf." *Jurnal Mirai Management* 7 (3): 543–50. https://doi.org/10.37531/mirai.v7i3.2492.

Melinda, Triesya, Budi Rajab, and Ardini S. Raksanagara. 2020. "Karodduka Tuba Marapu: Praktik Medis Pada Masyarakat Di Kampung Tarung, Sumba Barat, Nusa Tenggara Timur." *Al-Adabiya: Jurnal Kebudayaan Dan Keagamaan* 15 (01): 25–46. https://doi.org/10.37680/adabiya.v15i01.235.

Mubarak, Husni, Puspa Ningrum, Muhammad Toyeb, Debi Setiawan, Suci Sinta Putri Lestari, and Ramalia Noratama. 2023. "Sosialisasi Cara Penggunaan Apar (Alat Pemadam Api Ringan) Sebagai Bagian Dari Edukasi Keselamatan Dan Kesehatan Kerja (K3)" 3 (1): 13. https://rumahjurnal.or.id/index.php/JUDISTIRA/article/view/456.

Mutiara, Ariqo, Franseno Pujianto, and Kampung Prai Ijing. 2024. "CHILDREN ' S USE OF SPACE IN THE SETTING" 08: 369–87.

Ola Keda. 2017. "Si Jago Merah Musnahkan Kampung Adat Tarung Di Sumba Barat." Liputan6. 2017. https://www.liputan6.com/regional/read/3121632/si-jago-merah-musnahkan-kampung-adat-tarung-di-sumba-barat.

Pingge, Heronimus Delu, and Rahel Maga Aingu. 2021. "Studi Etnopedagogi Nilai-Nilai Sila Pancasila Pada Budaya Lokal Masyarakat Adat Sumba." *Jurnal Papeda: Jurnal Publikasi Pendidikan Dasar* 3 (1): 16–22. https://doi.org/10.36232/jurnalpendidikandasar.v3i1.770.

Piter, Petrus. 2024. "14 Rumah Kampung Adat Bodo Ede Di Kelurahan Sobawawi Sumba Barat Ludes Terbakar." 2024. https://kupang.tribunnews.com/2024/12/09/14-rumah-kampung-adat-bodo-ede-di-kelurahan-sobawawi-sumba-barat-ludes-terbakar.

Poetri, Maharanny Setiawan, Teul Panda Banjal, and Rita Enga Lika. 2024. "SIMBOLISME DAN MAKNA TRADISI BELIS DALAM PERKAWINAN ADAT SUKU BARADITA SUMBA TIMUR" 9 (2): 30–38.

Reny, Eka Kusuma, T. Yoyok Wahyu Subroto, and Ahmad Saifullah. 2018. "Konsep Ka ' Bani – Mawinne Dalam Arsitektur Rumah Tradisional Sumba Di Kampung Tarung Sumba Barat" 16 (30): 94–105.

Septiana, Merry, and Liliana Dewi. 2022. "STRATEGI PENGEMBANGAN DESTINASI PARIWISATA BUDAYA DI KAMPUNG ADAT PRAI IJING SUMBA BARAT NUSA TENGGARA TIMUR" 2 (April): 58–74.

Tanto, Try Al, and Tri Hartanto. 2021. "Sebaran Arus Geostropik Dan Transpor Massa Air Di Perairan Pulau Sumba, Nusa Tenggara Timur." *Jurnal Geologi Kelautan* 19 (2): 72–84. https://doi.org/10.32693/jgk.19.2.2021.691.

Umar, Mimi Arifin, and Isfa Sastrawati. 2022. "Jurnal Mitigasi Bencana Kebakaran Skala Lingkungan Permukiman Padat Di Kecamatan Tamalate (Studi Kasus: Kelurahan Jongaya, Kota Makassar)Umar (D101181014)." *Jurnal Wilayah Dan Kota Maritim*, no. Edisi: 1–14.

Yentriyani, Andy, Satyawanti Mashudi, Isti Fadatul Khoiriah, and Citra Adelina. 2024. *Kawin Tangkap Di Sumba*. *Komisi Nasional Anti Kekerasan Terhadap Perempuan (Komnas Perempuan), 2024*. Vol. 1. Jakarta. https://komnasperempuan.go.id/file-manager/get-content?ref=IkltVjVTakZqTWxa90995b1bb85b5ff4531b96a2f1027a2e1ecNVNXcHZhVm96Vm14ak0xRnBURU5LYldGWGVHeGliVVowV2xOSk5rbHFTVEJPUjA1c1drUlNiVXhVUlRWYWJWVjBUa1JCTkUxRE1EV

mFSRTVwVEZSWk0wMHlWbTFaYWs1cVdsUlJNVTFwTlZGU.

Zain, Zairin. 2014. "Strategi Perlindungan Terhadap Arsitektur Tradisional Untuk Menjadi Bagian Pelestarian Cagar Budaya Dunia." *Jurnal Arsitektur NALARs* 13 (1): 39–50.

Zellatifanny, Cut Medika, and Bambang Mudjiyanto. 2018. "Tipe Penelitian Deskripsi Dalam Metode Penelitian." *Diakom: Jurnal Media Dan Komunikasi* 1 (2): 83–90. https://www.researchgate.net/profile/Cut-Zellatifanny/publication/332168438_TIPE_PENELITIAN_DESKRIPSI_DALAM_ILMU_KOMUNIKASI/links/5f8ea114a6fdccfd7b6e9d1a/TIPE-PENELITIAN-DESKRIPSI-DALAM-ILMU-KOMUNIKASI.pdf.

Zosim, Stanislav, Volodymyr anatoliiovych Nikolaienko, and Volodymyr volodymyrovych Nikolaienko. 2024. "Preservation of National Traditions of Ukrainian Architecture During the Reconstruction of Destroyed Cities and Villages in the Post-War Period." *International Journal of Conservation Science* 15 (1): 221–34. https://doi.org/10.36868/IJCS.2024.SI.18.

Author(s) contribution

Paulus Bawole contributed to the research concepts preparation, methodologies, investigations, data analysis, visualization, articles drafting and revisions.

Charles Kadiwano contribute to the research concepts preparation and literature reviews, data analysis, of article drafts preparation and validation.

Winarna contribute to methodology, supervision, and validation.

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