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## Implementation of Disaster-Resilient Village (DESTANA) Principles Based on Local Wisdom

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### ABSTRACT

*This study aims to explore how the principles of the Disaster-Resilient Village (DESTANA) program are implemented in Bolapapu Village through the integration of local wisdom, as well as to examine how such integration enhances community resilience across different phases of disaster management. This research employed a qualitative design. Data were collected in 2025 through in-depth interviews with 20 informants consisting of village officials, traditional leaders, disaster volunteers, and affected households; participatory observation of disaster preparedness activities and traditional rituals; and document analysis of local regulations, disaster reports, and customary norms. Data analysis followed the Miles and Huberman model, with triangulation applied to ensure validity. The findings reveal four DESTANA principles implemented as efforts to prevent and manage disasters in Bolapapu Village: participation, self-reliance, mutual cooperation, and sustainability. These principles are operationalized through local wisdom practices such as pahombo (communal labor), nosimpali (solidarity and reciprocal relations), and traditional ecological knowledge (reading natural signs). These practices enhance preparedness through early warning mechanisms, accelerate response, facilitate recovery through internal community mobilization, and encourage adaptive customary norms for long-term resilience. This study contributes empirical evidence to the discourse on hybrid resilience by integrating formal disaster risk reduction frameworks with local knowledge systems. The Bolapapu model may serve as a reference for other disaster-prone villages in Indonesia and globally, particularly in regions where customary institutions remain strong.*

**Keywords:** Disaster-Resilient Village (DESTANA); Local Wisdom; Community Resilience; Disaster Risk Reduction; Social Capital.

### ABSTRAK

*Penelitian ini bertujuan untuk mengeksplorasi bagaimana prinsip-prinsip program Desa Tangguh Bencana (DESTANA) diimplementasikan di Desa Bolapapu melalui integrasi kearifan lokal, serta untuk meneliti bagaimana integrasi tersebut meningkatkan ketahanan masyarakat di berbagai fase manajemen bencana. Penelitian ini menggunakan desain kualitatif. Data dikumpulkan pada tahun 2025 melalui wawancara mendalam dengan 20 informan yang terdiri dari pejabat desa, pemimpin tradisional, relawan bencana, dan rumah tangga yang terdampak; observasi partisipatif terhadap kegiatan kesiapsiagaan bencana dan ritual tradisional; dan analisis dokumen peraturan lokal, laporan bencana, dan norma adat. Analisis data mengikuti model Miles dan Huberman, dengan triangulasi diterapkan untuk memastikan validitas. Temuan menunjukkan empat prinsip DESTANA yang diimplementasikan sebagai upaya pencegahan dan pengelolaan bencana di Desa Bolapapu:*

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*partisipasi, kemandirian, kerja sama timbal balik, dan keberlanjutan. Prinsip-prinsip ini dioperasionalkan melalui praktik kearifan lokal seperti pahombo (kerja komunal), nosimpali (solidaritas dan hubungan timbal balik), dan pengetahuan ekologi tradisional (membaca tanda-tanda alam). Praktik-praktik ini meningkatkan kesiapan melalui mekanisme peringatan dini, mempercepat respons, memfasilitasi pemulihan melalui mobilisasi komunitas internal, dan mendorong norma-norma adat yang adaptif untuk ketahanan jangka panjang. Studi ini memberikan bukti empiris pada wacana tentang ketahanan hibrida dengan mengintegrasikan kerangka kerja pengurangan risiko bencana formal dengan sistem pengetahuan lokal. Model Bolapapu dapat berfungsi sebagai referensi untuk desa-desa rawan bencana lainnya di Indonesia dan secara global, khususnya di daerah-daerah di mana lembaga adat masih kuat.*

**Kata kunci:** Desa Tangguh Bencana (DESTANA); Kearifan Lokal; Ketahanan Komunitas; Pengurangan Risiko Bencana; Modal Sosial.

## INTRODUCTION

Indonesia is among the countries with the highest disaster risk globally due to its seismic, volcanic, hydrological, and climatological vulnerabilities. Central Sulawesi, particularly Sigi Regency, has experienced major disasters including earthquakes, liquefaction, and flash floods, most notably during the 2018 disaster, highlighting the need for more effective locally based disaster risk reduction strategies.

In response to these challenges, the government, through the National Disaster Management Agency (BNPB, 2012), developed the Disaster-Resilient Village (DESTANA) program, emphasizing community participation, self-reliance, mutual cooperation, and sustainability. However, in many regions, alignment between DESTANA and local wisdom – including customary practices, ecological knowledge, and traditional social organizations – remains weak, thereby limiting its effectiveness.

Bolapapu Village (Kulawi District) represents a relevant case study: a disaster-prone village with strong customary structures and well-preserved local wisdom practices. This study examines how DESTANA is implemented with attention to local wisdom and explores its implications for strengthening community resilience.

## METHODS

The study was conducted in Bolapapu Village, Kulawi District, Sigi Regency, Central Sulawesi. The village lies in a disaster-prone zone and possesses strong customary structures and local wisdom practices. While residents adhere firmly to customary law, they remain open to external influences and interactions. Bolapapu has a population of 1,218 people (608 males and 610 females) across 367 households. This study involved 20 purposively selected informants based on their involvement in disaster prevention and management activities. Informants included village officials (4), traditional leaders (3), community resilience actors/volunteers (4), and affected households (9), representing diverse genders, ages, and socio-economic backgrounds.

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Data were collected through semi-structured in-depth interviews, participatory observation during village deliberations and disaster simulations, observation of customary rituals, and document analysis of risk maps, disaster reports, and customary laws.

Data were analyzed using the Miles and Huberman (1994) model: data reduction, data display, and conclusion drawing. Triangulation and member checking were applied to ensure credibility and validity.

## RESULTS AND DISCUSSION

### *Implementation of DESTANA Principles*

#### 1. Participation

The study found active community participation in disaster-related activities, including risk mapping, emergency planning, routine simulations, and mitigation deliberations. Participatory risk mapping integrates hazard, vulnerability, and capacity analysis, serving both as a technical tool and a social learning process. Emergency planning ensures coordinated preparedness, while routine simulations build collective reflexes and institutionalize preparedness. Mitigation deliberations function as participatory governance mechanisms supporting sustainability and social legitimacy.

#### 2. Self-Reliance

Self-reliance is reflected in the use of local materials (bamboo, timber), local craftsmanship, and traditional early warning systems. This principle positions the community as the primary actor in disaster risk management, strengthening local capacities for rapid response and long-term sustainability.

#### 3. Mutual Cooperation

Mutual cooperation manifests through *pahombo* during infrastructure repair and *nosimpali* in voluntary mobilization of labor and materials. This social capital underpins collective disaster management and reinforces institutional sustainability.

#### 4. Sustainability

Disaster risk knowledge is transmitted intergenerationally through customary norms, while forest conservation and drainage management are upheld through customary regulations. Sustainability ensures that disaster risk reduction is institutionalized and continuously adaptive.

### *Local Wisdom Practices*

Local wisdom practices include traditional ecological knowledge—interpreting animal behavior, soil moisture, water flow, and vegetation as disaster indicators. Rituals and customary ceremonies strengthen environmental awareness and disaster vigilance, while customary leadership functions as mediator and coordinator across all disaster phases, bridging formal policies and local practices.

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## CONCLUSION

The implementation of DESTANA in Bolapapu Village is significantly strengthened through the integration of local wisdom. Practices such as pahombo, nosimpali, ecological knowledge, and customary leadership reinforce participation, self-reliance, mutual cooperation, and sustainability. This integration enhances community resilience across mitigation, preparedness, response, recovery, and adaptation phases.

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