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The Role of Social Infrastructure
in Community-Based Disaster Resilience:
A Case Study of the 2024 Noto Peninsula Earthquake

Key message

Strong community ties play an important role in disaster management in Noto, despite demographic and topographical challenges.

1. Introduction: Social infrastructure and disaster risk reduction

Social infrastructure

- Social capital and accompanying strong community ties: critical determinants of both disaster preparedness and recovery
- Social infrastructure: community centers, libraries, and public gathering spaces,
has potential to play critical role in fostering disaster resilience through community engagement

This study aims

- how integration of disaster preparedness into social infrastructure influences both immediate disaster response and long-term recovery outcomes

Kominkan as Social Infrastructure

- community learning center, “building for citizens”
- “locality”, “specialization”, and “inclusivity”
- expected to provide social learning to community members, contributing to peace and democratic society building following World War II
- 13,000 Kominkan, 1.3 trillion people use (including multiple use)

Functions of Kominkan



Great East Japan Earthquake and tsunami of 2011

- 139 kominkans as evacuation shelters, accepting 12,000 evacuees by May 2011
- supported recovery programs, recovery planning, social learning programs in disaster recovery
- Issues: limited staff capacity, limited emergency stocks, communication equipment, and sanitation management

Far remote, hilly peninsula isolated, aging and
population decreasing

2. Noto Peninsula Earthquake

Jan 1, 2024

Noto Peninsula Earthquake Jan 1, 2024

- Magnitude 7.6
- Dead and missing: 636
Indirect death: 406
- Evacuee at peak: 52,000
on January 2,
- Damage 160,000 houses







Fire

- 17 events
- Wajima
- 240 houses



Dead 15

Flooded houses: 1 8 0 4



August 2025







Moving to transition shelters



仮設商店 珠洲市

Temporally shops, Suzu town



One thousand paddy lots 千枚田



千枚田

https://www.hot-ishikawa.jp/spot/detail_5573.html

4 Kominkan as social capital
in Noto

Overview of Study Sites

Kominkan	Evacuees at peak	Population 2020	Major causes
Fudoji	60	420	Earthquake shaking
Shiromaru	188	572	Tsunami
Matsunami	Building damaged	1915	Earthquake shaking
Ukawa	Building damaged	861	Earthquake shaking
Ushizu	130	3825	Earthquake shaking

Kominkan	Preparedness	Response	Shor--term recovery	Longterm Recovery
Fudoji		Head shelter managed		Student program
Shiromaru	evacuation route mapped fluorescent signage installation	Head shelter managed		
Matsunami	Seminars		Joined temporary housings from	
Ukawa	trained 40 experts, newsletter, seminars, sports festival	Rescued 8 persons		
Ushizu		Head shelter managed	Community garden Joined temporary housings from	

Ukawa KOMINKAN



Rescued 8 people from collapse houses

- monthly gatherings of qualified disaster management experts
- 40 community members—including 15 women—received formal disaster management training and qualification
- annual community-wide evacuation drills, educational seminars and workshops
- Newsletters included practical disaster management tips

A competition of disaster management drill

- そんなんあっタンカー “Sonan A Tanker”
- competition to carry a stretcher by practicing faster by making one easily with a blanket and a stick.



https://www.town.noto.lg.jp/www/section/detail.jsp?common_id=74



Shiromaru Kominkan

During earthquake and tsunami, evacuated to higher ground as planned, while houses in low-lying areas were damaged by the tsunami

- surveys of evacuation routes and installing fluorescent signboards to guide residents
- community-based disaster management organizations that conduct regular evacuation drills

Emergency Response During 2024 Earthquake

- transformed into critical emergency infrastructure
- Kominkan heads assumed primary responsibility for shelter management due to knowledge of local conditions, leadership positions, and community relationships.
- Despite contingency plans town staff as primary shelter managers



Recovery Ushizu Kominkan

“Lien”, “community bond” in
French. リアンの庭 絆：フランス語

- temporally housing welcomed displaced residents from other districts, facilitating new community connections

Education program

Fudoji Kominkan

- hosting college students from Kansai, providing direct exposure to post-disaster living conditions and evacuation experiences.

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Discussion and conclusion

- Social infrastructure, kominkan of community learning centers, plays critical role in disaster resilience.
- Communities with established disaster management programs facilitated through kominkan activities demonstrated superior capacity for autonomous emergency response
- Kominkan heads embedded local knowledge and community relationships enabled rapid, context-appropriate decision-making
- bonding social capital—cultivated through regular kominkan activities—enabled effective coordination

Policy recommendation

- Investment in Social Infrastructure
- Formalization of Community Facility Roles
- Preservation of Cultural Identity
- Alternative Infrastructure Models



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