



**THE FUTURE OF
GLOBAL
DISASTER
RISK REDUCTION**

**Lessons from the 2024 Noto Peninsula EQ &
Expectations for Science and Technologies**

**R6能登半島地震の教訓と
学術への期待**

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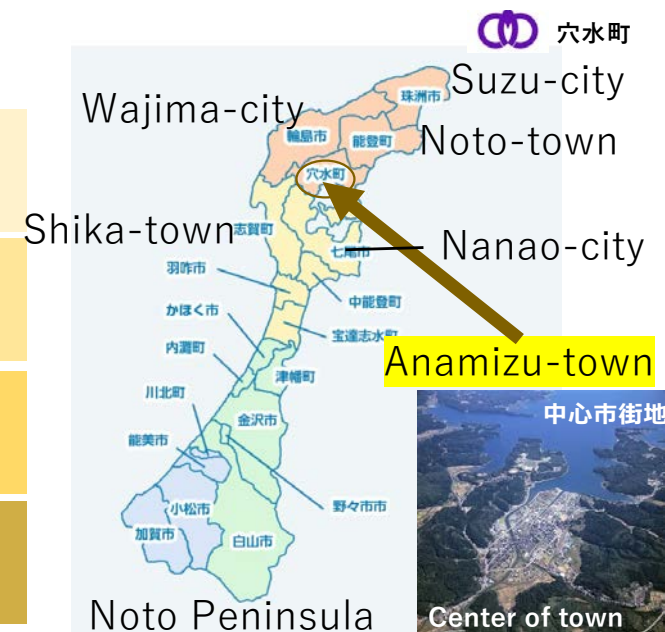
穴水町 町長



STRENGTHENING THE RESILIENCE of MEGACITIES THROUGH SCIENCE, TECHNOLOGY & INNOVATION

穴水町の特徴 Characteristics of Anamizu Town

地勢	石川県・能登半島の中央。県庁所在地・金沢市から約90 k m 北西部は能登丘陵の一部。東部と南部は海に面し、面積は約183km ²
気候	年間平均気温 約13°C、年間降水量 約2,000mm。 積雪あり（12～2月）（膝丈を超えるのはまれ）
産業	主な産業は農林水産業。 特産品は、能登ワイン、牡蠣貝、ナマコ、栗 など
観光	四季を通じた「まいもん(うまいもの)まつり」を開催 能登長寿大仏、ぼら待ちやぐら、能登さくら駅 で有名
Location	Located in the center of the Noto Peninsula in Ishikawa Prefecture, around 90 km from Kanazawa City, the prefectural capital. The northern & western parts form part of the Noto Hills, while the eastern and southern parts face the sea. Total is around 183 km ² .
Climate	Annual average temperature Approx. 13° C, annual precipitation approx. 2,000 mm. Snowfall from December to February, but knee-deep snow is rare
Industry	Agriculture, forestry, and fisheries. Specialty products include Noto Wine, Oysters, Sea cucumbers, Chestnuts, etc.
Tourism	Year-round “MAIMON (Delicious foods) Festival”. Noto Long Life Great Buddha, Bora-machi Yagura (fishing tower), Noto Sakura Station, etc.



Great Buddha



Oysters Noto Wine



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THROUGH SCIENCE, TECHNOLOGY & INNOVATION

2024能登半島地震 2024Noto Peninsula Earthquake



区 分	内 容
① 発生日時 2024EQ Occurrence	令和 6 年 1 月 1 日 午後 4 時 1 0 分頃 January 1, 2024, around 4:10 PM
② 震源域 Epicenter region	石川県能登地方（珠洲市） Noto region, Ishikawa Prefecture (Suzu City)
③ 地震の規模 Earthquake Magnitude	マグニチュード7.6、最大震度7、深さ16km Magnitude 7.6, Maximum Intensity 7, Depth 16km 穴水町 震度 6 強 <u>Anamizu Town: JMA Seismic Intensity 6 Upper</u> 輪島市、志賀町で震度 7 を観測した他、北海道から九州地方にかけて震度 6 強～ 1 を観測 Intensity 7 observed in Wajima City and Shika Town; Intensity 6 Upper to 1 observed from Hokkaido to Kyushu
④津波の高さ Tsunami Height	最大5.8m （新潟県上越市）Maximum 5.8m (Joetsu City, Niigata Prefecture) <u>穴水町 約1m Anamizu Town: Approximately 1m</u> 石川県、富山県及び新潟県にかけて観測 Observed across Ishikawa, Toyama, and Niigata Prefectures



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2024能登半島地震被害の影響 The Impact of the 2024 EQ



人口	6,686人（令和7年9月30日現在 住民基本台帳人口）高齢化率 50.6% <ul style="list-style-type: none">・ 令和 6 年 6 月末：7,000人を割る・ 令和 7 年 9 月末：661人減少。8.9%の人口が減少→震災からの転出人口は、例年の約 3 倍。
交通	のと里山街道・能越自動車道：178箇所被災。34箇所で盛り土崩壊。道路寸断。 2024年9月：全区間で対面通行が再開 のと鉄道：震源地に近い能登鹿島・穴水間では、盛土の沈下やトンネル のひび割れなどが発生。 穴水駅も駅舎の損壊やホームの屋根が 傾く。2024年4月：全線復旧 のと里山空港：滑走路に亀裂等被害。患者搬送，孤立住民輸送，物資輸送，給油，待機など，空からの 救援救助活動に一定の活用がなされた
Popul ation	6,686 (September 30, 2025) Aging rate: 50.6% <ul style="list-style-type: none">• End of June 2024: Population falls below 7,000• End of September 2025: Population decreased by 661 people. Population decreased by 8.9%• Population outflow since the earthquake is approximately three times the annual average.
Trans porta tion	<ul style="list-style-type: none">• <i>Noto Satoyama Highway / Noto-Echigo Expressway</i>: 178 locations damaged. 34 locations with embankment collapses. Road severed. September 2024: Two-way traffic resumed on all sections• <i>Noto Railway</i>: Between <i>Noto-Kashima</i> and <i>Anamizu</i>, near the epicenter, embankment subsidence and tunnel cracks occurred. Anamizu Station also suffered damage to the station building and a tilted platform roof. April 2024: Full line restoration• <i>Noto Satoyama Airport</i>: Damage including cracks on runway. Rescue and relief operations were conducted by air.




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穴水町 被害と復旧状況 Damage and Recovery Status in Anamizu Town

令和7年9月30日現在 2025.Sep.30th  穴水町

区 分 Categories	内 訳 Details	被害状況等 Damage	復旧状況等 Restoration Status
① 犠牲者 Causalities		53名（内 33名は災害関連死） 53individuals (including 33 indirect death)	
② 道路（全363線） Roads	通行止め Road Closed 片側交互通行 One-way traffic	20路線 20lines 11路線 11lines	5路線 5lines 3路線 3lines
③ 電気・通信 Electricity/ Communication	電気 Electricity 通信（電話、インターネットなど） Communications (telephone, internet, etc.)	全域停電 Total power outage 全域不通 Complete service disruption	1月28日全通 Jan 28th: Full restored 2月 9日全通 Feb 9th: Full restored
④ 上下水道	上水道（簡易水道等含む） Water Supply 下水道（集落排水含む） Sewage	全域断水suspended throughout entire area 全域使用不可 suspended throughout entire area	3月20日通水（上水は3月1日） 1月20日復旧
⑤-1 被害家屋(住家) Damaged Buildings(Residence)	全壊 totally Collapsed 大規模半壊～半壊 Partially Collapsed	496棟（H19地震 079棟） Collapsed Buildings(2007EQ) 1,436棟（H19地震 100棟） Collapsed Buildings(2007EQ)	公費解体 Publicly funded demolition 申請 Applied 769棟(Buildings) 完了 Done 759棟(Buildings)
⑤-2 被害家屋(非住家) Damaged Buildings (Non-residence)	全壊 totally Collapsed 大規模半壊～半壊 Partially Collapsed	928棟（H19地震 141棟） Collapsed Buildings(2007EQ) 1,093棟（H19地震 105棟） Collapsed Buildings(2007EQ)	公費解体 100%完了 done Publicly funded demolition 申請 Applied 1,987棟(Buildings) 完了 Done 1,884棟(Buildings)
⑥ 避難所 Emergency Shelters	町内避難所 Local shelters 1.5次避難所 1.5Lv Regional Shelters 2次避難所 2Lv Regional Shelters	54ヵ所(shelters)3,991名(evacuees) 1ヵ所(shelters) 55名(evacuees) 11ヵ所(shelters) 314名(evacuees)	全て閉鎖(All Closed)
⑦ 仮設住宅 Temporary Housings	応急仮設住宅 Newly constructed みなし仮設住宅 Rented	532世帯(households) 1,072名(individuals) 145世帯(households) 305名(individuals)	498世帯(households) 1,008名(individuals) 82世帯(households) 153名(individuals)

避難所生活における課題 The problems of food supply in emergency shelters

栄養バランスの乱れ→支援物資だけでは、塩分の過剰摂取、ビタミンやタンパク質が不足

Imbalanced nutrition→ Excessive salt intake from relief supplies, insufficient vitamins and protein

支援物資の在庫管理→大量の在庫となる食料物資と、迫る賞味期限（消費期限）

Relief supply inventory management→ Handling large food stockpiles and approaching expiration

セントラルキッチン方式による炊き出し Central Kitchen System Meal Distribution 町と飲食店組合・ボランティアなどが連携した新たな炊き出し

A new food distribution initiative was launched
through collaboration between the town, restaurant associations, and volunteers.

- 全国初の取り組みとして、内閣府防災がモデル事業として紹介
- 飲食店組合には、農林水産大臣から感謝状を贈呈

セントラルキッチンの実施 Implementation of Central Kitchen

・飲食店とボランティアなどが協力 Collaboration between restaurants and volunteers

→町の管理栄養士が支援物資を活用した献立を作成し、その献立を飲食店組合が調理と町内の各避難所へ運搬 (R6.2.27~R6.5.31)

→ The town's registered dietitian created menus utilizing relief supplies. The restaurant association prepared these meals and transported them to each evacuation center within the town (Feb. 27, 2024 - May 31, 2024)

※ 約30名が交代制で、最大320食／日を提供、不足分はボランティアによる炊き出しでカバー

※ Approximately 30 people worked in shifts, providing up to 320 meals per day. Shortfalls were covered by volunteer-run communal kitchens.

※ 炊き出しの必要量については、大学ボランティアと連携した調整

※ The required amount for communal kitchens was coordinated with university volunteers

This was introduced as a model project by the Cabinet Office's Disaster Management Division as the first of its kind nationwide. The restaurant association also received a letter of appreciation from the Minister of Agriculture, Forestry and Fisheries.

被災者支援における課題 Challenges in Disaster Survivors' Support

- ・避難所運営と避難者への支援→ 避難者からの様々なニーズへの対応不安の解消
Shelter Management and Support for Evacuees→ Addressing diverse needs from evacuees and alleviating
- ・避難所閉鎖後の被災者支援→ 仮設住宅への入居後や帰宅後も継続し支援が必要
Support for Survivors After Shelter Closure
→ Continuous support is necessary even after moving into temporary housing or returning home

ボランティア団体と連携した被災者支援 Disaster survivors support in collaboration with volunteer organizations

情報共有に基づいた的確な対応 Accurate Response Based on Information Sharing

- ・町と社会福祉協議会、国・県・ボランティアとの連絡会議
→ 定期的な情報共有により、迅速で的確な被災者支援の実施が可能
- ・Coordination meetings between the town, social welfare council, national/prefectural governments, and volunteers
→ Regular information sharing enables swift and accurate implementation of disaster victim support
- ※ 発災後 3 ヶ月は 週 1 回、4 ヶ月目以降は 月 2 回の開催
- ※ Held weekly for the first 3 months after disaster, then bi-monthly thereafter
→ 被災者の生活・再建手続きのサポートや、相談窓口といった心のケア
→ Support for victims' daily lives and reconstruction procedures, plus mental health care through consultation services
→ 行政だけでは行き届かないような「きめ細かな支援」
→ “Detailed support” that goes beyond what government alone can provide

ボランティア団体と連携した被災者支援
Disaster survivors support in collaboration with volunteer organizations



① 3者連絡会議/3 Liaison Meeting

② 被災者支援ケース検討会議
Disaster Survivors' Support Case Review Meeting



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発災当初は職員の登庁が困難となり、**本部の設置や運営に遅れや混乱**が発生

Staff had difficulty commuting due to the disaster, which caused delays and confusion when operating the EOC.

前回地震（2007年）には無かった**対口支援等の受入体制が未整備**

The framework for accepting support through counterpart assistance, which was not in place following the 2007 earthquake, was not yet established.

災害対応の知識と経験不足などによる**混乱と戸惑い**が発生

were confused and uncertain due to their lack of knowledge and experience in disaster response.

発災当初から迅速に対応できる体制の整備と強化

Strengthening EOC system capable of responding appropriately/immediately right after a disaster

① 災害対策本部の強化 Strengthening EOC

停電、断水、通信網の遮断に耐えられる設備の強化
Strengthening facilities capable of withstanding power outages, water supply interruptions, and communication network disruptions
職員間及び外部機関などとの連絡手段の確保
Ensuring communication channels between staff members and with external organizations

迅速・正確な状況把握による各災害担当班への的確な指示体制及び各対応班間との協力体制の構築
Establish an accurate command structure for each disaster response team and a cooperative framework among all response teams through swift and precise situation assessment.

② 受援体制の整備

Strengthening coordination system

様々な支援を即時に受入れ、指示ができる体制の整備（応急対策職員派遣制度による対口支援や自衛隊・各省庁のリエゾン）
Establishment of a system capable of immediately accepting and directing various forms of support (Through the Emergency Response Personnel Dispatch System, counterpart support and liaison personnel from the Self-Defense Forces and various ministries and agencies)

支援職員等との情報共有と連絡調整による支援内容の状況把握や進捗状況等の管理体制の整備
Establish a management system to grasp the status and progress of support activities through information sharing and coordination with support staff and others.

③ 職員の対応水準の強化

Enhance the level of responding staff

今回の震災を受けての課題や反省点などを整理・共有。今後の備えとして確実に引き継ぎできる体制を整備
Organize and share lessons learned and areas for improvement following this disaster
Establish a system to ensure reliable handover for future preparedness

地域防災計画等とは別の行動マニュアルや注意事項などを整理した各対応班別のハンドブック等の整備
Preparation of handbooks for each response team, including action manuals and precautions

科学技術への期待

Expectations for Science and Technology

いかに最低限の資源を確保するか

- 災害に強いまちづくりが今後求められる
 - 行政ができる対応は限られる。自助・共助が頼り。
- 自助・共助が機能するためには
 - ① コミュニティの存続
 - ② 電源・水・トイレ・食糧等の最低限の資源
- 電源：オフグリッドとして機能できる（ソーラーの蓄電）
- 水：浄化システム・井戸
- トイレ・物資：更新しながらの最低限の物資のストック

科学技術に期待すること

- 防災施策を動かす
- 住家の耐震化等の被害軽減策への貢献

ハザードマップの重要性

- ゆれやすさマップの再整理（地盤の災害への強さ）
- 津波の高さ・時間の想定

そなえ

- 健常者目線になりがち
- 高齢者、障がいをお持ちのかた、乳幼児等にやさしいそなえが不足を実感
- 新技術にも期待

How to secure the minimum resources

- Disaster-resilient community development will be essential in future
- Government response capabilities are limited. Self-reliance and mutual aid are crucial.
- For self-reliance and mutual aid to function effectively
 - ① Community continuity
 - ② Essential resources like power, water, toilets, and food
- Power: Capable of off-grid operation (solar power storage)
- Water: Purification systems, wells
- Toilets/Supplies: Stockpile minimal supplies while replenishing

Expectations for Science and Technology

- Drive disaster management measures
- Contribute to damage mitigation strategies like seismic retrofitting of homes

Importance of Hazard Maps

- Reorganize seismic vulnerability maps (ground resistance to disasters)
- Projected assessed tsunami height and timing

Preparedness

- Preparedness skewed toward able-bodied individuals
- A real sense of lack in preparedness that is kind to the elderly, people with disabilities, infants, etc.
- Expect the development of new technologies