ERIA-JCIE Webinar Disaster Preparedness and Response for Aging Populations June 21, 2024

# **Disaster Preparedness for Aging Populations:** Lessons from Japan

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### Contents

- Disasters and aged society in Japan
- Legal system and countermeasures based on lessons learned from disasters
- Health issues for older people resulting from disasters
- Efforts to prepare for future disasters
- Implications for Asia

	<b>Disaster Preparedness</b>
Key Lessons	for Aging Populations:
Japan is at high risk of natural	
disasters due to the nature of its land. Based on lessons learned from	Lessons from Japan
past disasters, the government has been reviewing its legal system and	
strengthening its countermeasures	Dr. Hiroko Okuda, Chtef Sentor Researcher, Department of
to specifically protect those at greatest risk.	Dr. Hiroko Okuda, Chief Senior Researcher, Department of Health Crists Management, National Institute of Public Health, Japan (NIPH)
Older people are disproportionately affected by disasters, and in Japan's	Dr. Jun Tomio, Dtrector, Department of Health Crists Manage- ment, NIPH
case, they have accounted for the	Disasters and Aged Society in Japan
vast majority of *disaster-related	Construction of the second
deaths" in recent years-those that	Between 1900 and 2021, an average of 90 disasters occurred annual in Asia, and Asia accounted for about 90 percent of the world's disaster
occur in the period following a disaster.	in terms of fatalities and injuries. During this period, China experience
	the highest number of natural disasters, followed by India, the Philippine:
In Japan's super-aged society, older	Indonesia, Bangladesh, Vietnam, Japan, Pakistan, Afghanistan, and Iran
persons are regarded as people	In recent years, Japan has experienced many natural disasters that
in need of special care in times	have caused extensive damage, and disaster management has bee
of disaster and the legal system	positioned as one of the country's most important policy priorities. I
gives them high priority in disaster management and relief systems.	addition, since the 1970s, Japan's population has been aging rapidly
management and relier systems.	and the number of older people living alone or in households with only ol
Supporting older people during	people has been increasing. <sup>2</sup> Therefore, disaster preparedness that ful considers the needs of older residents is an urgent issue.
disasters requires preparation in	This policy brief will outline some of the changes that Japan has made t
advance by building coordination	its legal systems over the years in response to past large-scale disaster
between and a system of	in order to strengthen disaster management and relief measures for olde
collaboration among institutions that are responsible for their wellbeing.	people, and will explain recent measures and challenges. It is hoped the
are responsible for their wendeling.	Japan's experience might offer lessons to other countries in Asia Pacifi
Individualized evacuation plans for	and around the world that likewise will face the challenge of ensuring the
people who are most at risk are	health and wellbeing of an aging population in the face of increasing
an important aspect of disaster	frequent natural disasters.
preparedness, although there are	1. Asia Disaster Reduction Center (ADRC), Natural Disaster Datebook 2022, An Analytical
challenges with implementing this	Overview, https://www.adrc.asia/publications/databook/ORG/databook_2022/pdf/ DataBook2022.pdf.
policy on the ground.	2. Cabinet Office, Annual Report on the Ageing Society 2023, https://www8.cao.go.jp/koure

### Disasters and aged society in Japan Disasters in Asia and Japan

- In Asia, avg. 90 disasters occurred annually (1900-2021)
- Japan also has been affected by many natural disasters
  - Disaster management is one of the Japan's most important policy priorities



<sup>1</sup> 2023 Disasters in Numbers (Centre for Research on the Epidemiology of Disasters, 2024) <sup>2</sup> Natural Disaster Databook 2022 An Analytical Overview (Asian Disaster Reduction Center, 2023)

#### Disasters and aged society in Japan

### Aging of Japan

#### Trend and projection of total population and its composition 1950-2070 % or ratio 1000 pop. 14.000 super-aged aging aged 40 12,000 We are 35 here! 10,000 30 8,000 25 20 6,000 15 4,000 10 2,000 5 n ~35<sup>6</sup>~35<sup>67</sup>~36<sup>66</sup>~45<sup>67</sup>~45<sup>16</sup>~35<sup>67</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45<sup>66</sup>~45 15-64 65+ ---- % of 65+ ---- Ratio of 15-64 to 65+ 0-14

We are living in a super-aged society

#### As of 2022

% of 65+: **29.0**% Ratio of 15-64 to 65+: **2.0** % of household with 65+: **49.7**% (2021)

Disaster preparedness that fully considers the needs of older people is an urgent issue

Sources: Population Census of Japan.

National Institute of Population and Social Security Research. Population Projections for Japan: 2021 to 2070 (2023)



Sources: (Photo, above) Tokushima Local Weather Observatory (https://www.data.jma.go.jp/tokushima/shosai/nankai/syashin.html) (Photo, below) White Paper on Disaster Management (2009) (https://www.bousai.go.jp/kaigirep/hakusho/h21/bousai2009/html/ph/ph002.htm)





28 21 14 7 0 19<sup>50</sup> 19<sup>50</sup> 19<sup>50</sup> 19<sup>50</sup> 19<sup>50</sup> 19<sup>50</sup> 10<sup>50</sup> 10<sup>10</sup> 10<sup>11</sup> 10<sup>11</sup>

% of 65+: 20.2 % (2005)

### Development of the Guidelines for Evacuation Assistance for Persons in

### **Need of Support during Disasters** (2006)

- Sharing of information on older residents and other persons in need of special considerations
- Specific evacuation support plans

Source: (Photos) Ministry of Land, Infrastructure, Transport and Tourism website (https://www.mlit.go.jp/river/pamphlet\_jirei/bousai/saigai/kiroku/suigai2004/index.html)

## 2011 Great East Japan Earthquake

Deaths/missing: 22,318

#### **Characteristics and lessons learned**

- The deadliest disaster since WW II in super-aged society
- Multi-hazard event
- 65% of the deaths were 60+
- Delayed evacuation from tsunami exacerbated the human damage
- List of persons requiring assistance and their supporters were not prepared





% of 65+: **23.0** % (2010)



#### Actions

- Revision of the Basic Act (2013)
  - **Mandatory registration** of residents in need of evacuation assistance
- Guidelines for evacuation support were also revised to Guidelines for Supporting the Evacuation Behavior of Those Who Require Assistance Evacuating

Source: (Photos) Website of Disaster Management, Cabinet Office (https://www.bousai.go.jp/kohou/kouhoubousai/h23/63/special\_01.html)



### Development and use of the list of residents in need of assistance with evacuation

(see Figure 2 of the paper)



• Disaster-related deaths and secondary health damages



% of 65+: 28.6% (2020)

#### <u>Actions</u>



 Municipalities were required to make efforts to create individual evacuation plans for each person on the list who requires support in evacuation

### Preparedness status as of January 1, 2023

- Lists of persons requiring support for evacuation action
  - **100%** (all 1,741 municipalities)
- Individual evacuation plans
  - 9% (159 municipalities) completed
  - 25% (438 municipalities) had not prepared

### Health issues for older people resulting from disasters

 Older people are at high risk of disaster-related deaths

### **Disaster-related deaths**

Deaths as result of deteriorations in their physical conditions due to the evacuation and other related factors after a disaster



in three large earthquakes

### Health issues for older people resulting from disasters Factors associated with disaster-related deaths

- In the Great East Japan Earthquake...
  - 90% of disaster-related deaths were aged 70+
  - Common reported causes
    - Physical/mental fatigue from living in shelters
    - Physical/mental fatigue during transportation to shelters
    - Aggravation of pre-existing diseases due to shutdown of medical facilities
  - Living environment where the disaster-related deaths were reported
    - Hospital/nursing care facility
    - Same place as before the disaster, such as a home
    - Shelters, etc.

### Health issues for older people resulting from disasters Efforts to ensure satisfactory living conditions at shelters

- Guidelines for Ensuring Satisfactory Living Conditions at Shelters called for a strengthening of measures to be taken during normal times
- A support system for older people and others requiring special care must be established to
  - 1. Secure space in shelters
  - 2. Procure necessary nursing and medical supplies
  - 3. Coordinate the confirmation of individuals' safety, provision of supplies, provision of medical and welfare support, etc., for those are sheltering in place at their homes

## Efforts to prepare for future disasters

- Collaboration and cooperation among relevant parties (overcoming siloed administration)
- Utilizing an existing framework to support older people (e.g., long-term care services)



### **Implications for Asia**

- Common context in the Asia-Pacific region
  - Increasing frequency of natural disasters
  - Rapid aging of the population
- Lack of following abilities are potential risk drivers for older people in times of disasters
  - Obtaining disaster information
  - Evacuating quickly by themselves
- Suggestions for better preparedness
  - Development of legal system
  - Identification of older people in the community
  - Planning for evacuation and support from normal times



<sup>&</sup>lt;sup>1</sup>Aging well in Asia: Asian Development Policy Report (Asian Development Bank 2024)

### Lessons from Noto...

- 2024 Noto Peninsula Earthquake
  - M 7.6 Earthquake and Tsunamis on New Year's Day
  - Deaths: 260+
    - 70%+ were older people
    - Disaster-related deaths: 30+
  - % of 65+ in the affected area: 50%+
  - Severe weather conditions
  - Wide-area/long-term evacuations
  - Individual evacuation plans were not fully prepared...



Wajima City, March 2024

Recovery efforts are still ongoing ...