

**Initiative 7 Promoting town development based on a multi-layered disaster risk reduction system**

**[Outline of Approach]**

- During the Great East Japan Earthquake and Tsunami, Fudai Village was one of the places which suffered from minimal injuries and damage due to countermeasures against tsunami, which consisted of floodgates, seawalls and relocation to mountainous areas of the village.
- Tsunami countermeasures in the coastal municipalities of Iwate Prefecture did not rely solely on seawalls and the relocation of public facilities to higher ground, but also 'soft measures' that emphasize evacuation. Even though the waves rose above the seawalls during the Great East Japan Earthquake and Tsunami, residents were able to evacuate rapidly due to the 'soft measures', thus minimizing injuries.
- Based on actual cases in affected areas, the "Great East Japan Earthquake and Tsunami Town Planning Guidelines" have been drawn up, promoting urban development that is effective against disasters yet is still pleasing to the eye.

**Approach 1: Fudai Floodgate: The floodgate and seawalls that protected the local people**

The Great East Japan Earthquake hit Fudai with a seismic intensity of 5 and the tsunami hit with a maximum height of T.P. +24m. The waves rose up against the seawalls and floodgates and into the village center, but damage was kept to a minimum through the preventive measures.



Fudai Floodgate after the disaster  
Source: *Koho Fudai* (March 2011 edition)

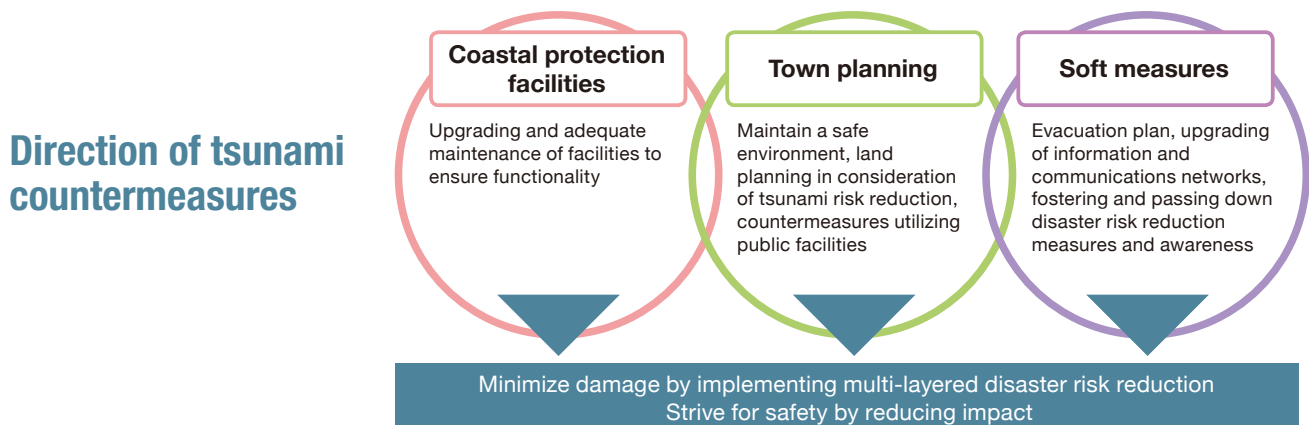


View of Fudai Floodgate

Fudai Coast (district coast name: Belforte Monferrato Coast specifications]

- Extension 205m (floodgates 105m, embankment 100m)
- Planned dam height TP + 15.5m (Meiji Sanriku Tsunami)  
\*highest in the prefecture

**Approach 2: Promotion of "multi-layered disaster risk reduction" -based town development**



### Approach 3: Town planning guidelines based on tsunami information

Following much revision and study by the Tsunami Information Town Planning Committee comprising academics with experience in town planning of the affected areas, we have outlined the following town planning proposals:

1. Proposal on general town planning
2. Proposal on tsunami countermeasures
3. Proposal on desirable urban development
4. Proposal on urban development promotion and regional management

#### Outline of town planning guidelines based on tsunami information

### Town planning based on tsunami information – key points

#### To continue living in Sanriku



Plan an attractive town the next generation will take pride in  
Protect the region's culture, which provides emotional support  
Create a town more conducive for living than before

#### to accomplish this...

- |                                  |                                       |
|----------------------------------|---------------------------------------|
| Compact towns                    | ▶ Not too big                         |
|                                  | ▶ Built up gradually                  |
| Convenient towns                 | ▶ Incorporating new technologies      |
|                                  | ▶ Having spaces available to everyone |
| Towns in which people can gather | ▶ Having gathering spaces             |
|                                  | ▶ Takes advantage of unique character |

#### Inherit the memories



Strive to build a town from lessons learnt  
Pass on the memories to the next generation

#### to accomplish this...

- |                          |                                        |
|--------------------------|----------------------------------------|
| Never forget to evacuate | ▶ Create evacuation spots              |
|                          | ▶ Create evacuation routes             |
| Never forget the tsunami | ▶ Keep memories and records            |
|                          | ▶ Pass on the experiences and thoughts |

#### To protect and nurture the natural appeal



Reaffirm the beauty of Sanriku's seas, mountains and rivers  
Create a new appeal

#### to accomplish this...

- |                                   |                                  |
|-----------------------------------|----------------------------------|
| Recognize the region's uniqueness | ▶ Protect Sanriku's scenery      |
|                                   | ▶ Create lively towns            |
|                                   | ▶ Connect water and green spaces |

#### Moving forward together



Everyone works to share information and news  
Consider better approaches to reconstruction

#### to accomplish this...

- |                       |                                |
|-----------------------|--------------------------------|
| Strengthen the system | ▶ Share information            |
|                       | ▶ Define goals/accomplishments |
|                       | ▶ Formulate a structure        |

#### Related URL

<http://www.pref.iwate.jp/anzen/machizukuri/18201/001813.html> (JPN only)

### Approach 4: Efforts to accelerate reconstruction projects

The land re-zoning projects in Rikuzentakata City transport soil needed for relocation to higher ground using conveyor belts.

At 3km long and 1.8m wide, the conveyor belt can transport 20,000m<sup>3</sup> (4,000 10-ton dump trucks) of soil, shortening the construction period (using normal dump trucks) by 6 years.



tA pine tree, still miraculously standing, and the "Bridge of Hope" conveyor belt (Iwate Prefecture Rikuzentakata)