

World Bank Tokyo

Housing Reconstruction in Japan: Policies and Examples

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Japan has experienced many disasters throughout its history.

⋮

- 1923 The Great Kanto Earthquake
- 1933 Showa Sanriku Earthquake
- 1934 Muroto Typhoon
- 1948 Fukui Earthquake
- 1959 Ise Bay Typhoon
- 1991 Unzen-Fugendake Eruption Disaster
- 1993 The Hokkaido Southwest Offshore Earthquake
- 1995 The Great Hanshin-Awaji Earthquake
- 2004 The Mid Niigata prefecture Earthquake
- 2007 Noto Peninsula Earthquake
- The Niigataken Chuetsu-oki Earthquake
- 2011 The Great East Japan Earthquake
- 2016 Kumamoto Earthquake
- 2024 Noto Peninsula Earthquake

⋮

We have created laws and systems based on lessons learned from past disasters to prepare for the next disaster.

In providing housing after the damage to many houses, keys are

Speed

to protect life

- ① Advance preparation
- ② Supporting local government capacity
- ③ Sharing and supporting decisions

Quality

to lead a healthy and sustainable life

- ④ Legal guarantee
- ⑤ Learning from good practices and implementation

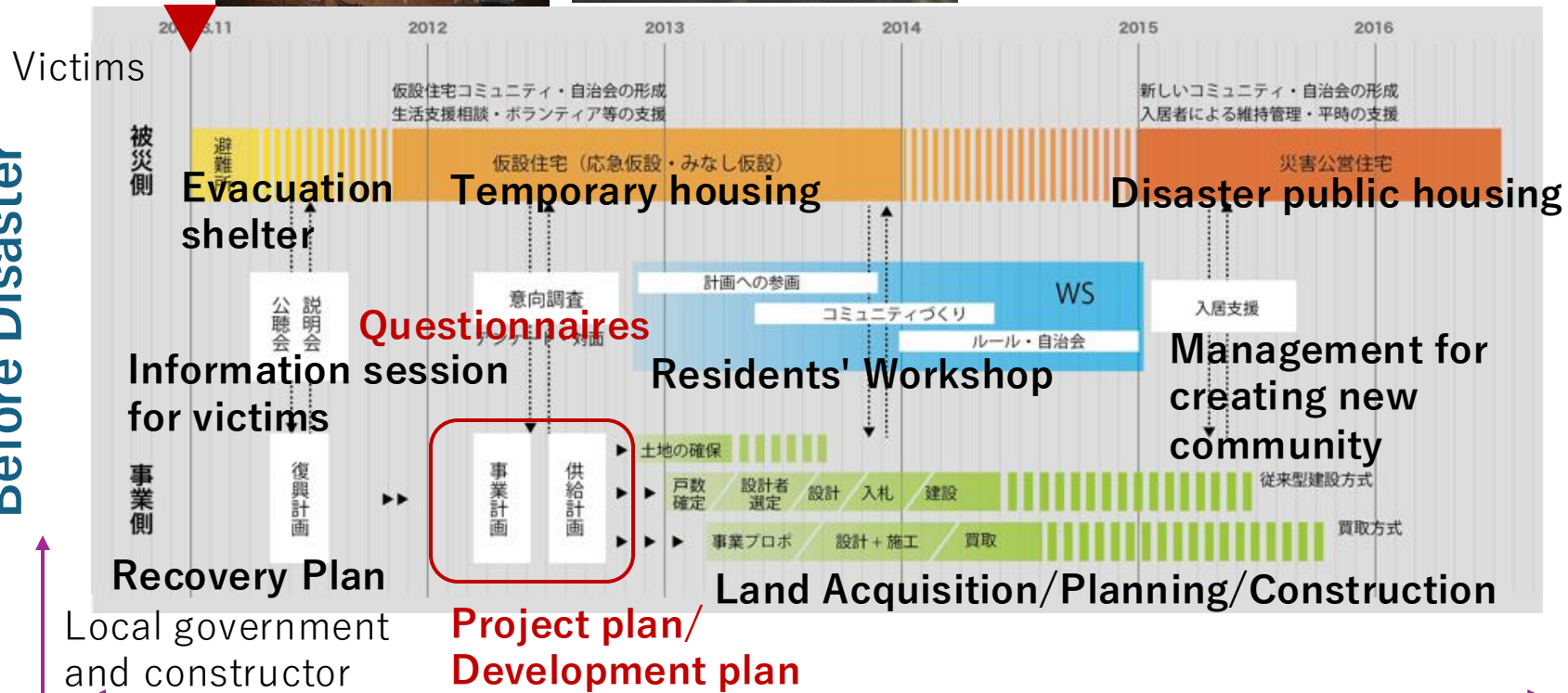
Timeline for residential environment transition and construction of public housing

Disaster



Before Disaster

After Disaster



- ① Advance preparation
- ④ Legal guarantee

- ② Supporting local government capacity
- ③ Sharing and supporting decisions
- ⑤ Learning from good practices and implementation

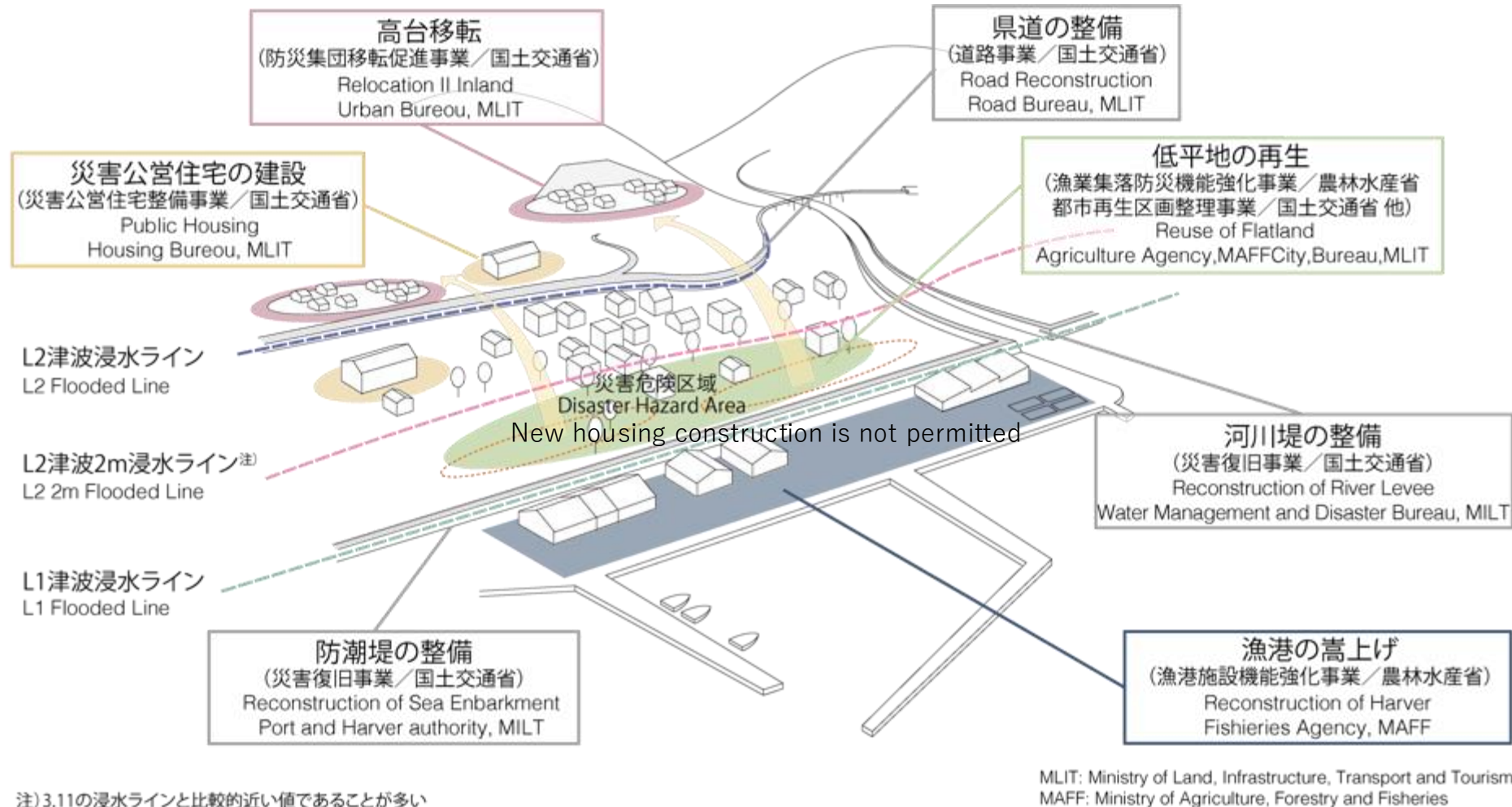
④ Legal guarantee

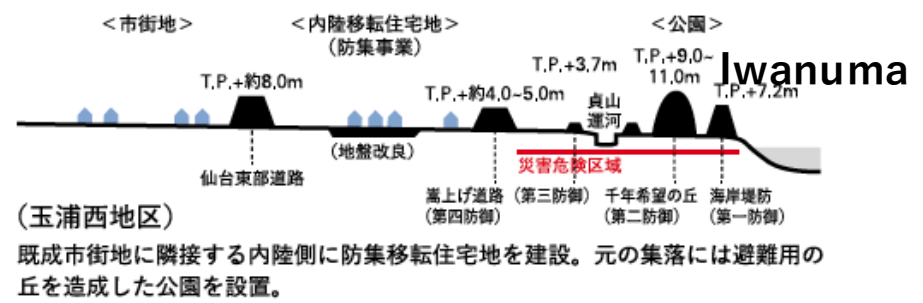
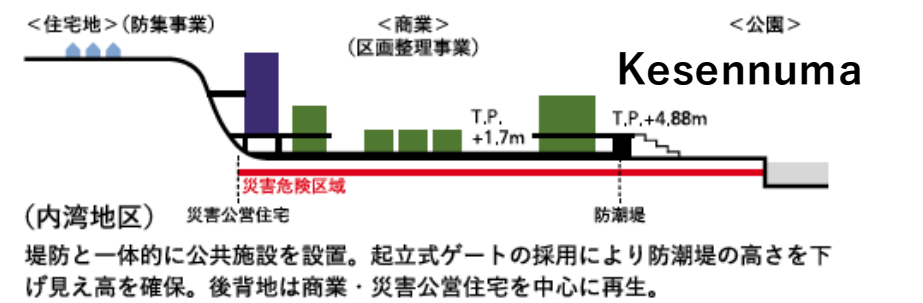
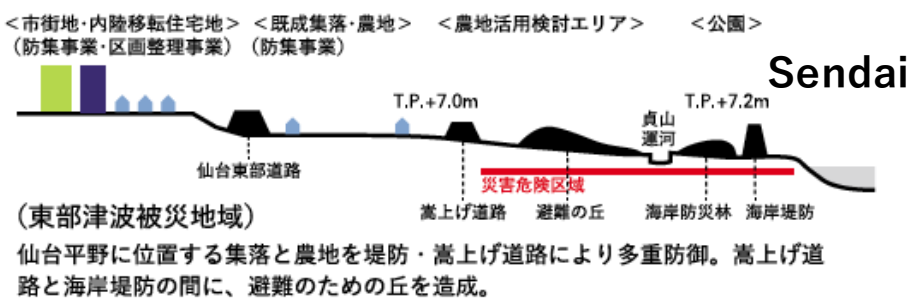
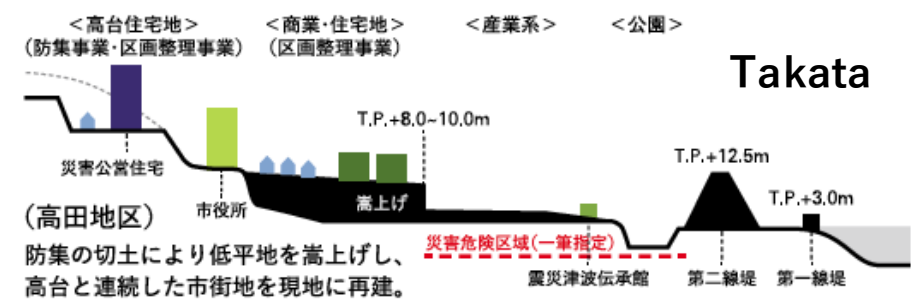
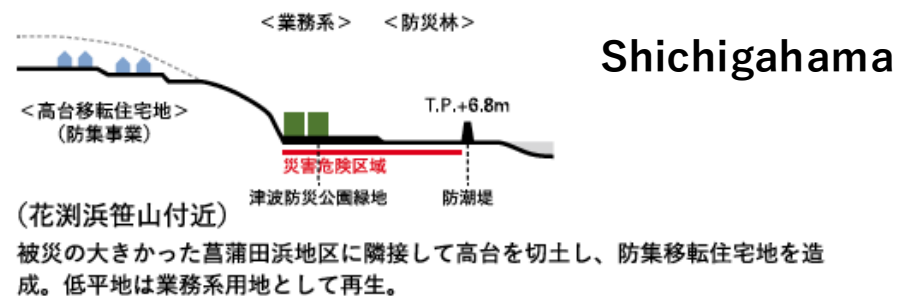
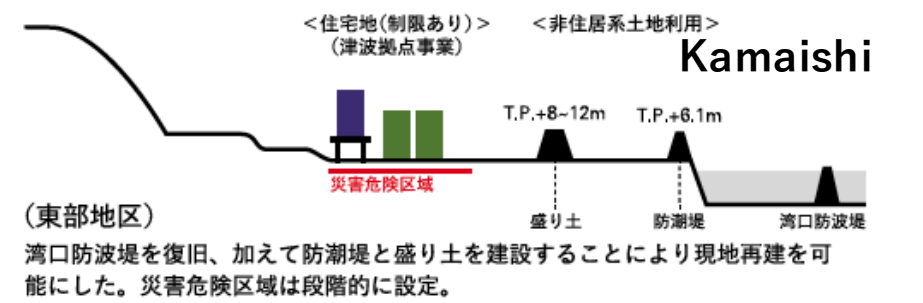
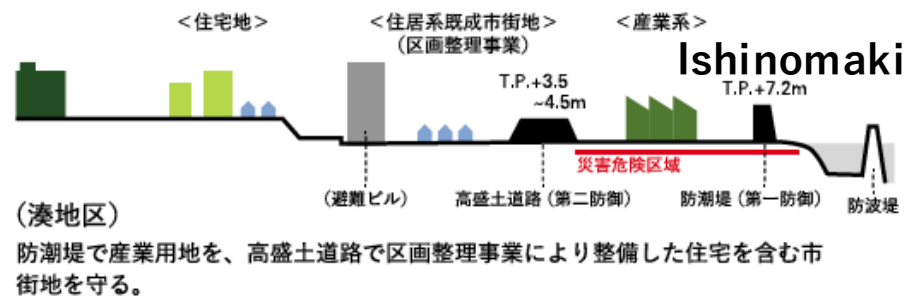
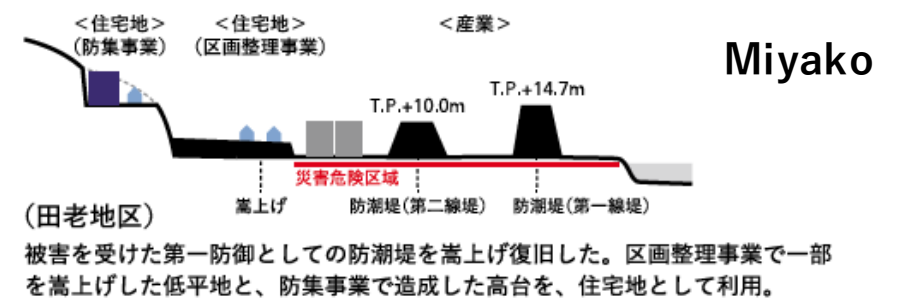
Disasters and Systems in Japan

1947	Disaster Relief Law	← Minimum living support after a disaster	
1950	Building Standards Law	← Construction safety standards	
1951	Public Housing Act		
1959	Ise Bay Typhoon		
1961	Basic Act on Disaster Management		} “Restoration” Systems
1962	Act on Special Financial Support to Deal with the Designated Disaster of Extreme Severity		
1981	Building Standards Act revision (New earthquake resistance standards)		
1990	Unzen Fugendake eruption disaster		} Reconstruction involving large-scale land reclamation
1993	The Hokkaido Southwest Offshore Earthquake		
1995	The Great Hanshin-Awaji Earthquake		
1998	Act on Support for Reconstructing Livelihoods of Disaster Victims		
	← Direct support for victims		
2004	The Mid Niigata prefecture Earthquake		
2011	The Great East Japan Earthquake		
		Large-scale damage generous support from the national government	
		Land use planning using numerical simulation	
2013	Act on Special Financial Measures for Urgent Earthquake		
	← Permanent Act on Reconstruction		
2014	Kumamoto Earthquake		
2018	Emergency response staff dispatch system		
2024	Noto Peninsula Earthquake		

Each time a disaster occurs, relevant laws and systems have been established.

Laws and systems used in the Great East Japan Earthquake





Building Standards Law (1951, 1981)

Structural standards, fire resistance standards, etc. are established, and the construction of safe buildings is a legal requirement, which also applies to housing after a disaster.

In 1981, earthquake resistance standards were set higher in response to the earthquake damage at that time. Buildings that met these standards are said to have suffered less damage in the Noto Peninsula earthquake.

② Supporting local government capacity

The respective roles of the national, prefectural and local governments in reconstruction

National government

- Emergency support immediately after the disaster
- Determining the scale of compensation and financial support
- Establishment of special measures and permanent laws

Prefectural government

- Temporary housing construction
- Support for local government reconstruction plans and projects

Local government

- Main body of reconstruction work
- Support for disaster victims

Formation of local government organizations for reconstruction

A・B→ Maintaining existing organizations

	April 2011	April 2012	April 2013	April 2014	April 2015	April 2016	April 2017
A Retain the existing organization and set up a special affairs office 既存組織保持・特務室設置型 [企画調整型]							
A2 Matsushima Town 松島町							
2012 2014 2016	3 3 3	3 3 3	3 3 3	3 3 3	3 3 3	3 3 3	3 3 3
2012 2014 2016	9 9 9	9 9 9	9 9 9	9 9 9	9 9 9	9 9 9	9 9 9
2012 2014 2016	13 13 13	13 13 13	13 13 13	13 13 13	13 13 13	13 13 13	13 13 13
B Existing organization retention and management section coordination type 既存組織保持・管理課調整型 [都市整備部]							
B2 Miyako City 宮古市							
2012 2014 2016	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5
2012 2014 2016	29 29 29	29 29 29	29 29 29	29 29 29	29 29 29	29 29 29	29 29 29
2012 2014 2016	14 14 14	14 14 14	14 14 14	14 14 14	14 14 14	14 14 14	14 14 14
2012 2014 2016	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5

C → Establishment of multiple departments

	April 2011	April 2012	April 2013	April 2014	April 2015	April 2016	April 2017
C Multiple section insertion type 複数担当課挿入型							
C2 Yamamoto Town 山元町							
2012 2014 2016	13 13 13	13 13 13	13 13 13	13 13 13	13 13 13	13 13 13	13 13 13
2012 2014 2016	9 9 9	9 9 9	9 9 9	9 9 9	9 9 9	9 9 9	9 9 9
2012 2014 2016	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5
2012 2014 2016	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0

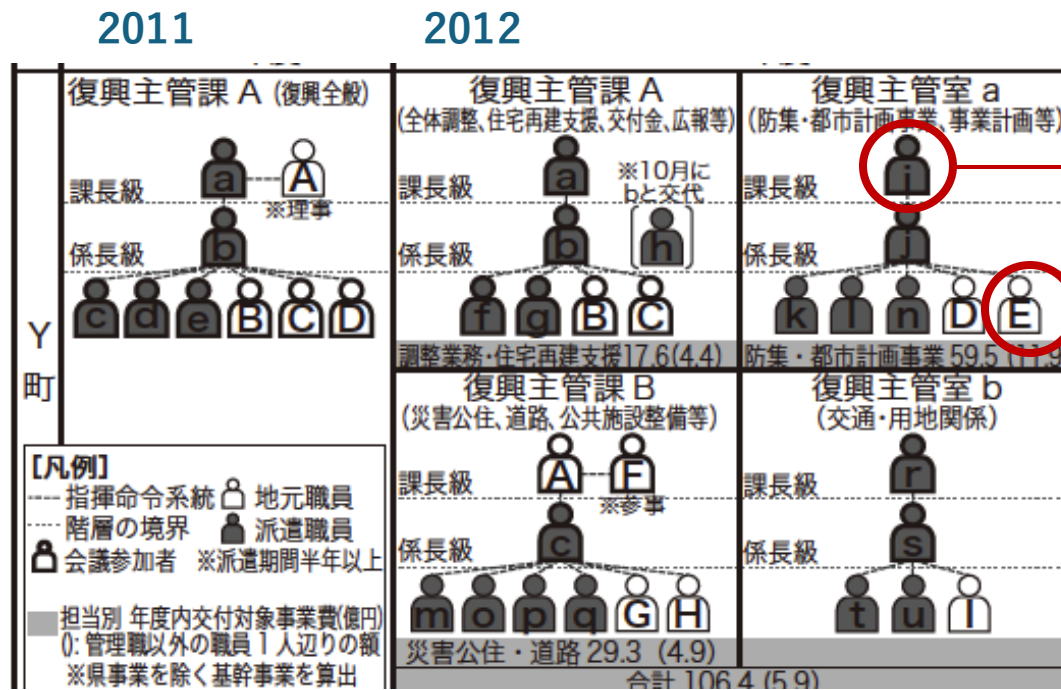
D・E → Establishment of a comprehensive department

	April 2011	April 2012	April 2013	April 2014	April 2015	April 2016	April 2017
D Newly established One Comprehensive Reconstruction Bureau type 包括的統合局新設型							
D2 Kamakishi City 鎌石市							
2012 2014 2016	20 20 20	20 20 20	20 20 20	20 20 20	20 20 20	20 20 20	20 20 20
2012 2014 2016	2 2 2	2 2 2	2 2 2	2 2 2	2 2 2	2 2 2	2 2 2
2012 2014 2016	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5
E Newly established Two Bureaus type (Policy/Construction) 包括的統合局新設型							
E1 Ofunato City 大船渡市							
2012 2014 2016	15 15 15	15 15 15	15 15 15	15 15 15	15 15 15	15 15 15	15 15 15
2012 2014 2016	22 22 22	22 22 22	22 22 22	22 22 22	22 22 22	22 22 22	22 22 22
2012 2014 2016	26 26 26	26 26 26	26 26 26	26 26 26	26 26 26	26 26 26	26 26 26
2012 2014 2016	16 16 16	16 16 16	16 16 16	16 16 16	16 16 16	16 16 16	16 16 16

【Reference】 Yasuaki Onoda, Mitsuki Sekine and Haruka Tsukuda: Relationships between Work-loads and Organizational Structure of Municipalities in Implementing Housing Reconstruction Program after Large-scale Disasters, J.Archit. Plann., AIJ., Vol.86, No.781, pp.849-858, 2021.3

Dispatch of support staff from non-disaster affected municipalities

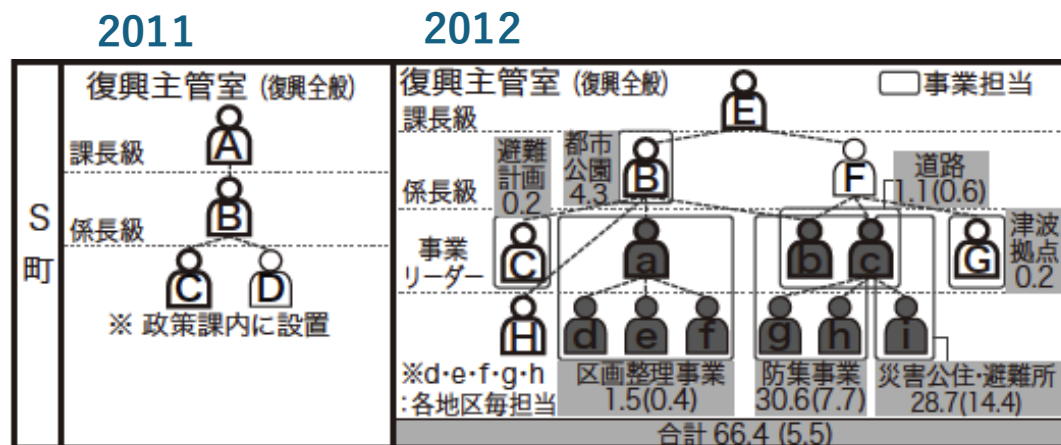
Y Town



Local staff

Support staff from other municipalities

S Town



The respective roles of the national, prefectural and local governments in reconstruction

Dispatch of support staff

National government

- Emergency support immediately after the disaster
- Determining the scale of compensation and financial support
- Establishment of special measures and permanent laws

Prefectural government

- Temporary housing construction
- Support for local government reconstruction plans and projects

Local government

- Main body of reconstruction work
- Support for disaster victims

③ Sharing and supporting decisions

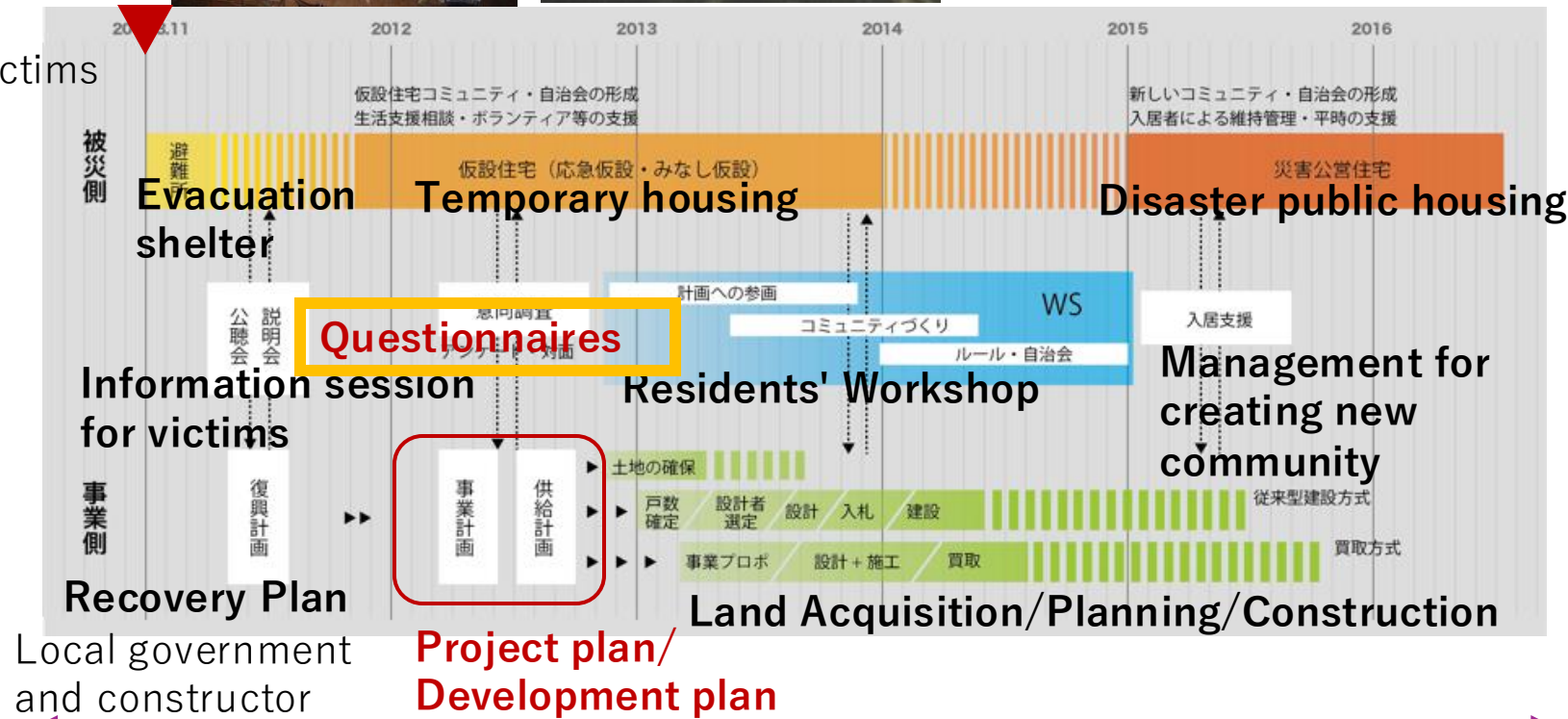
Timeline for construction of public housing

Disaster



Before Disaster

Victims



After Disaster

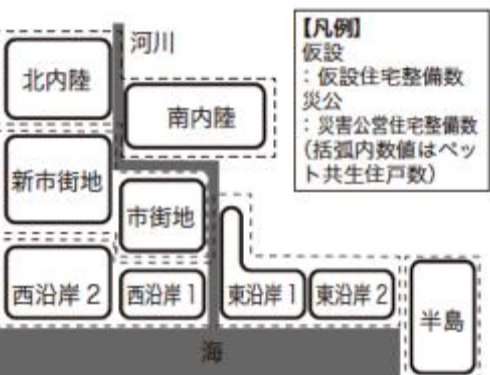
- ① Advance preparation
- ④ Legal guarantee

- ② Supporting local government capacity
- ③ Sharing and supporting decisions
- ⑤ Learning from good practices and implementation

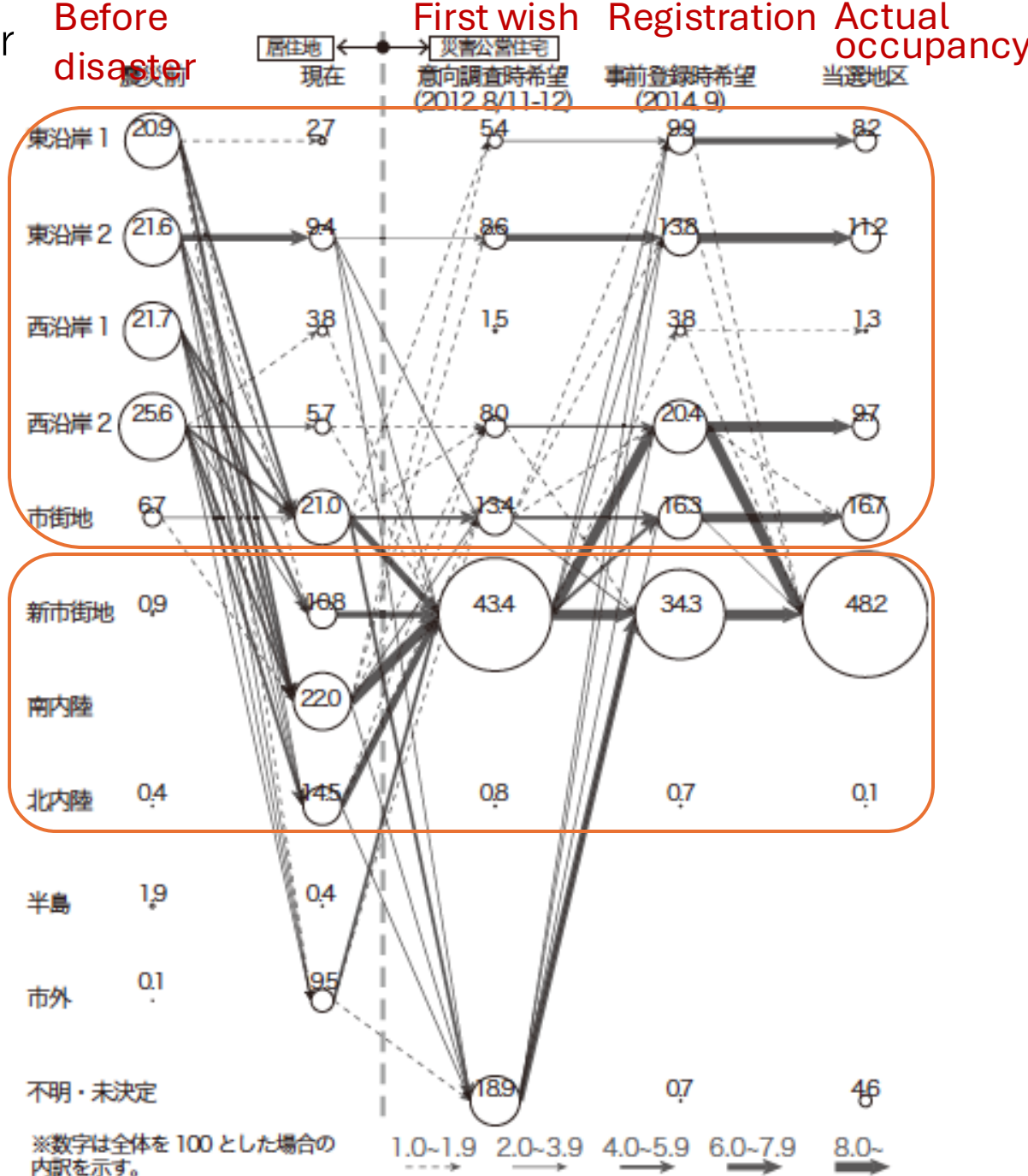
Change in preferred disaster public housing location

Tsunami damaged area

Inland area



【Reference】 Haruka Tsukuda, Kinji Yamanobe and Yasuaki Onoda : A Study on the Change of Housing Recovery Opinions Based on Public Housing Registration Date, J.Archit. Plann., AIJ., Vol.82, No.731, pp.1-9, 2017.1



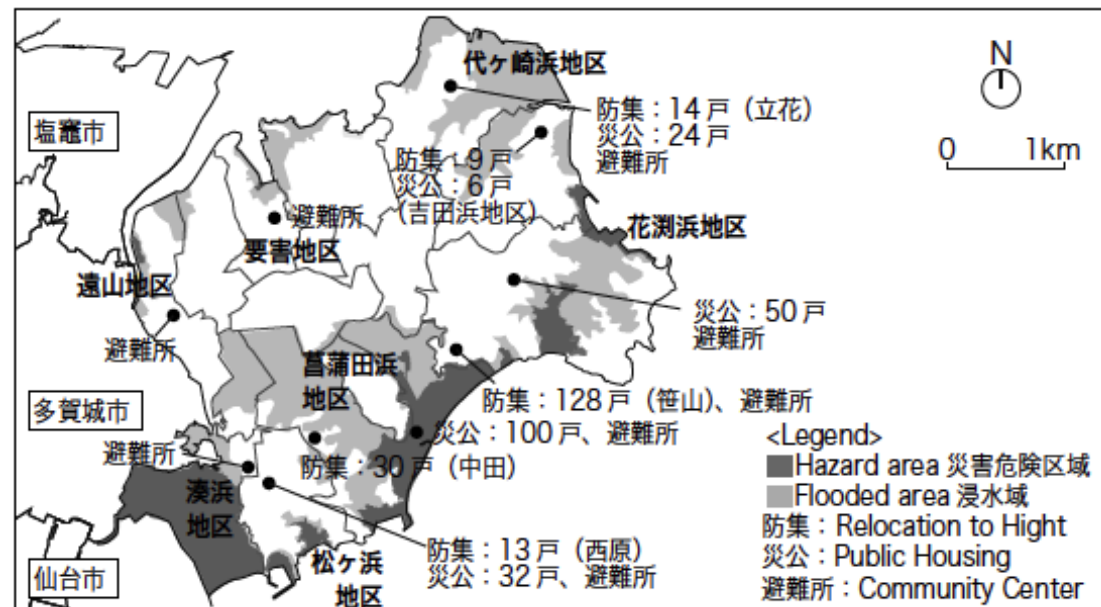
One local government, Shichigahama Town, Miyagi Prefecture, held information sessions for residents and conducted multiple individual face-to-face surveys.

At that time, the government presented each affected household with the price they would have to pay for their home in the future by staff using documents comparing the necessary expenses depending on the reconstruction method and conducting the housing reconstruction flow for each affected area, encouraging them to make appropriate decisions.

This enabled them to grasp the true needs with a high degree of accuracy.



【Reference】 Yasuaki Onoda, Haruka Tsukuda and Sachi Suzuki: Behind the Scenes, Kajima-publishing, 2021.7



Disaster case management

When temporary housing is removed, in many cases, people remain unable to acquire housing for one reason or another.

Assistance in finding work

Medical support
Mental health support

Care service

Provision of information or private housing

Victims

- unemployment
- disease
- aged
- Not covered by public housing

⑤ Learning from good practices and implementation

Example:

Measures required for disaster public housing construction after the Great East Japan Earthquake

① Prevention of Solitary death

- Lessons of Hanshin-Awaji Earthquake

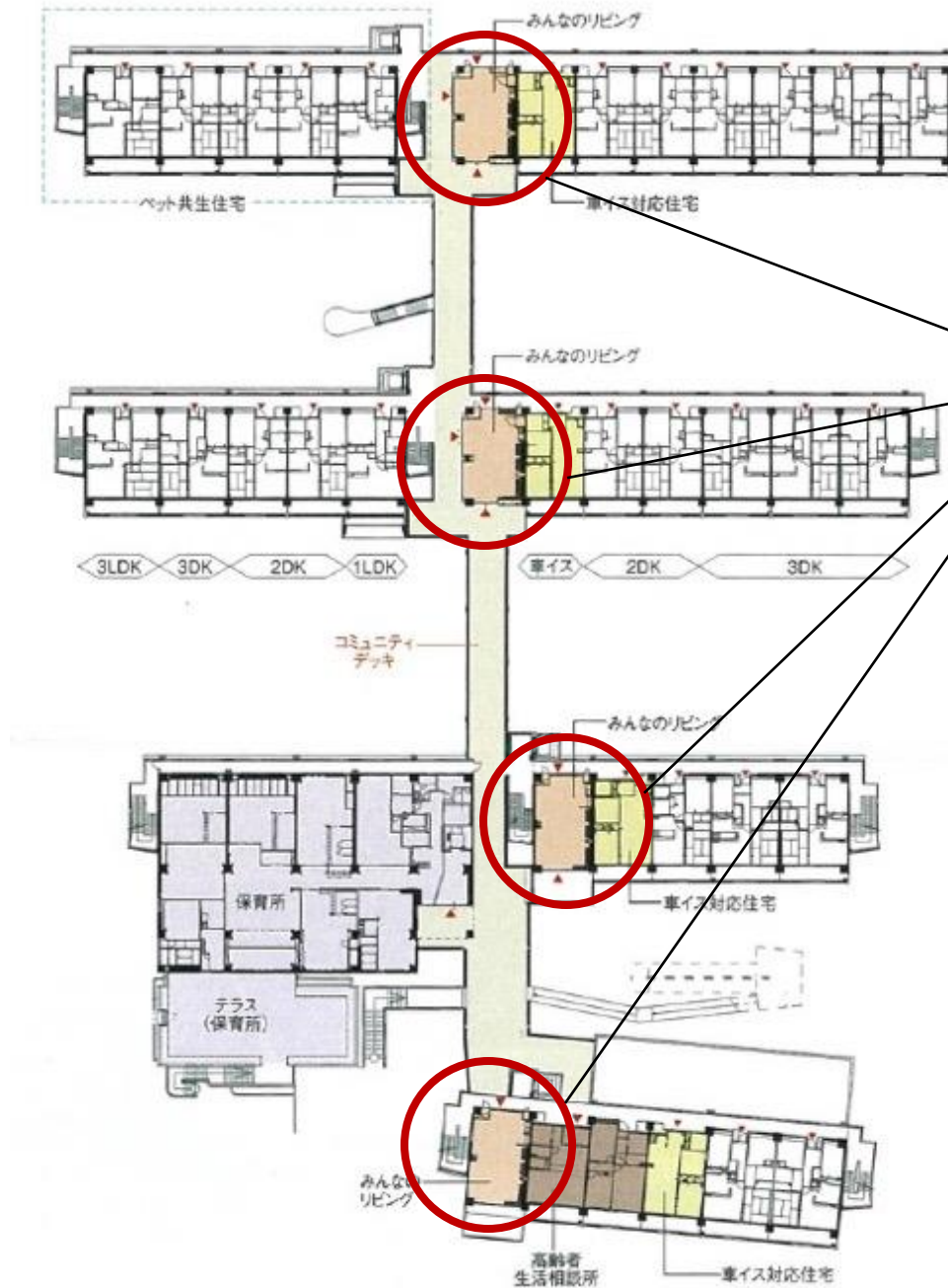
- High elderly rate in Disaster public housing after the Great East Japan Earthquake



② Cooperation with local comprehensive care system

→Community-friendly architectural planning





Assembly rooms





Shichigahama Town: Shobutahama



鎌石市
復興公営住宅設計ガイドライン（案）

平成25年2月 鎌石市

A guideline to plan
disaster public housing by
Kamaishi government
for potential contractors

（３）孤立化の防止とコミュニティに配慮する

誰もが安全安心に生活するために、「アウェアネスを促す空間※」づくりを基本とし、コミュニティに配慮した計画とします。

①地域性に配慮した配置計画

同一地域内でもできるだけ従前居住地に近い場所に居住できるように住宅の配置に配慮します。

②適正な規模の居住単位

適正な規模の居住単位で住戸のまとまりを形成します。

※阪神淡路大震災の復興公営住宅では、小規模（1～49戸）、中規模（50～199戸）の公営住宅に比べて、200戸以上の大規模になったり、8階以上の高層になると孤独死の発生率が高くなることが分かっています。

③複数住戸タイプの混在

複数の住戸タイプを混在させ、多様な世代・家族構成の世帯が入居できる住棟とします。また、住戸内は可動間仕切り等を用い、家族形態の変化に柔軟に対応できるよう配慮します。

④段階的な共有空間

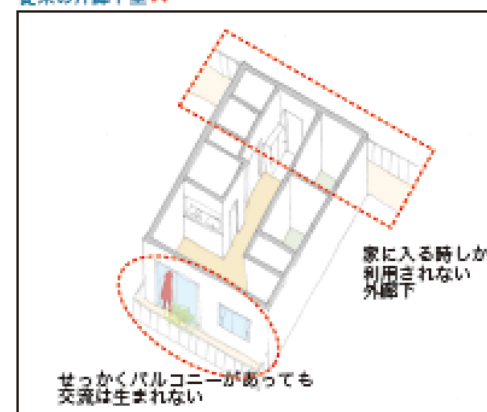
数住戸単位の溜まり空間、敷地内の動線に沿った交流空間、地域にも開かれたオープンスペースや集会室等段階的なコミュニティに配慮した共有空間づくりを行います。

⑤住宅へのアクセス

一方向からの住戸アクセスではなく、ある程度の住戸のまとまりごとに共有庭からアクセスできるように配慮します。

リビングアクセス等を採用することによって、日常を過ごす空間を玄関に近い場所に配置し、コミュニティとの緩やかなつながりやアウェアネスを促します。

従来の片廊下型✕



リビングアクセス型○



リビングアクセス

During the actual design stage, local government staff and architects receive input from potential residents and make adjustments accordingly.

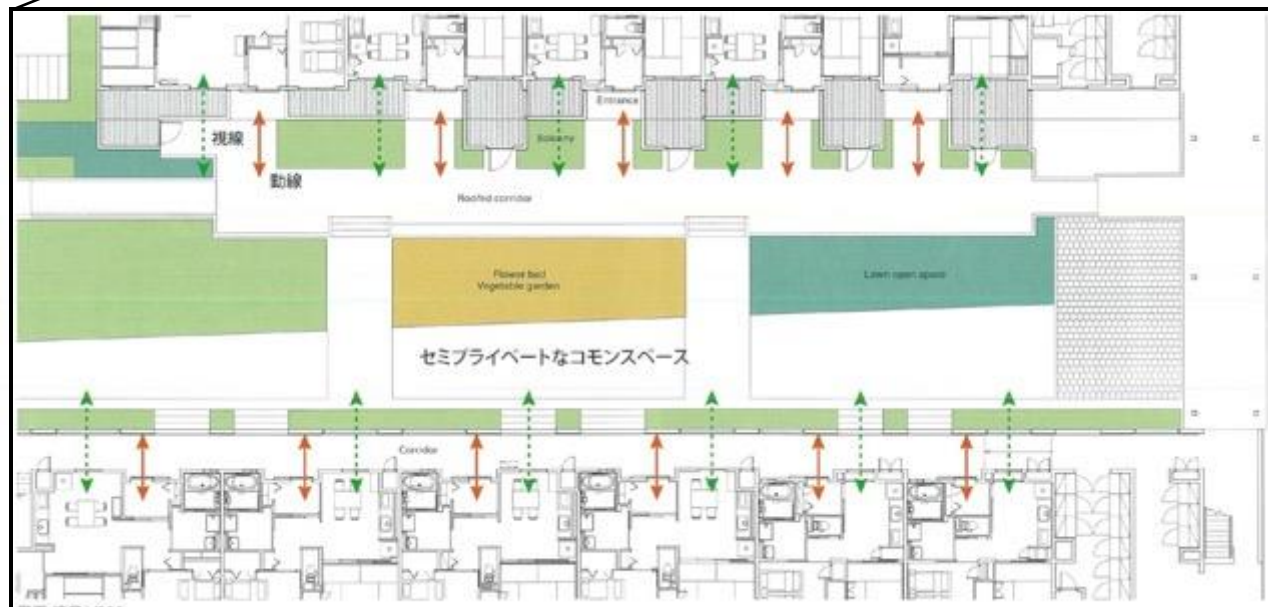
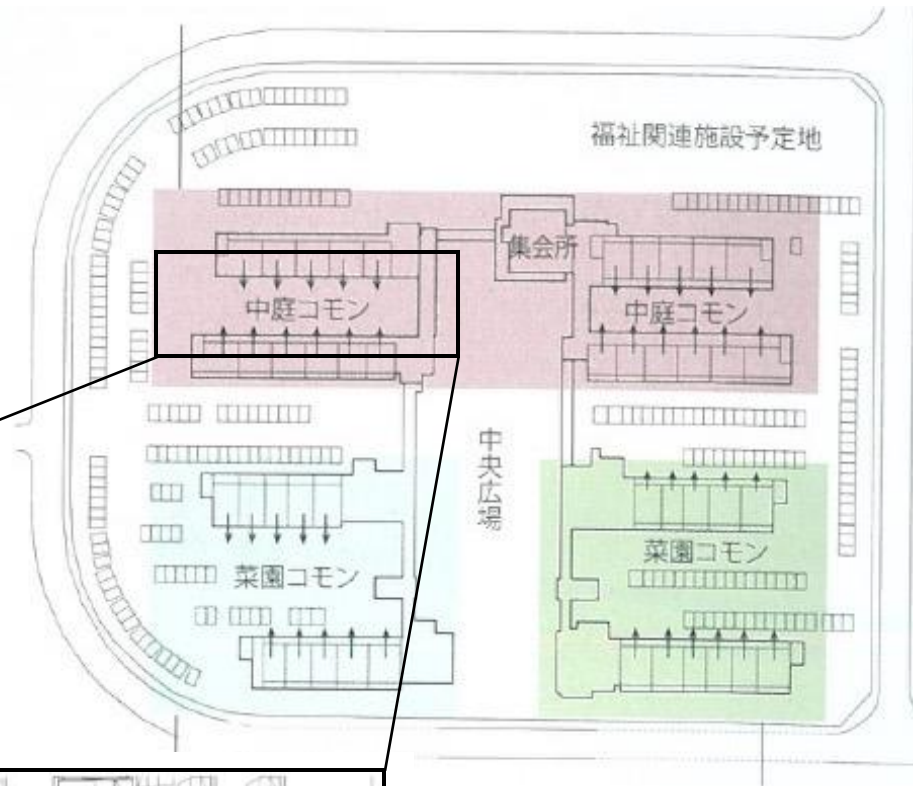
Workshop with architects and potential residents



Minami-sanriku Twon: Shizugawa-higashi



Welfare facility was added.
Residents can continue to live while
receiving care even at the end of life.



Front-access type

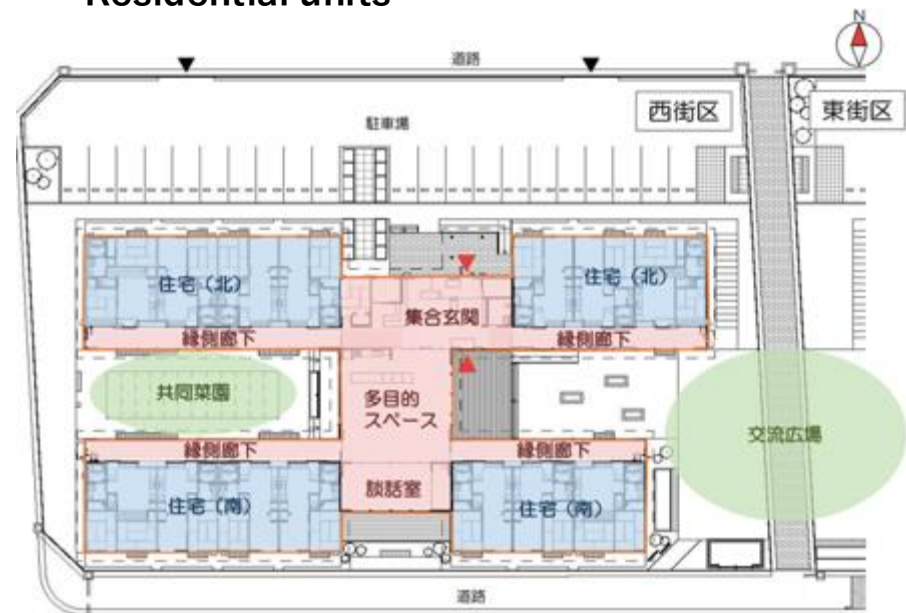
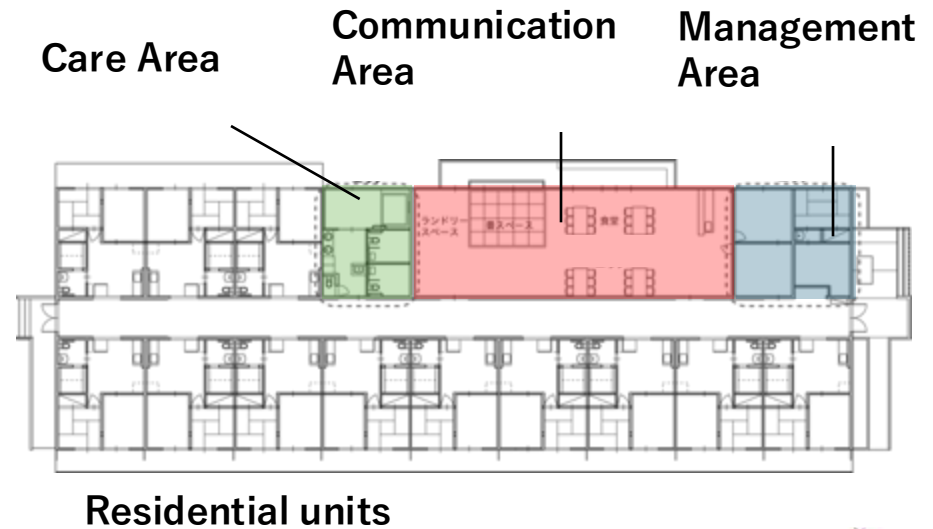
Collective housing for the elderly



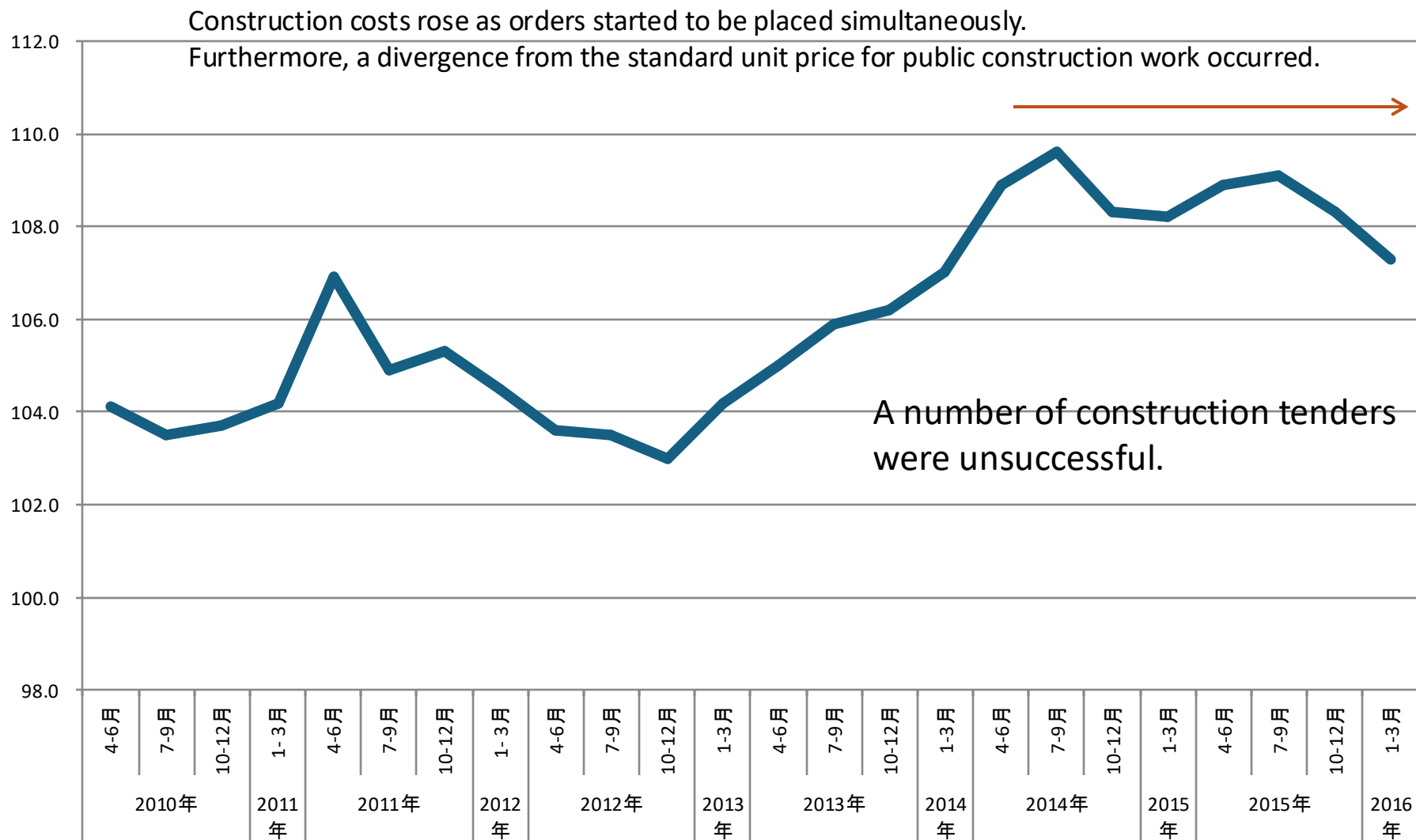
in Soma City, Fukushima



in Ishinomaki City, Miyagi



Copyright.(the figure below) Ishinomaki City



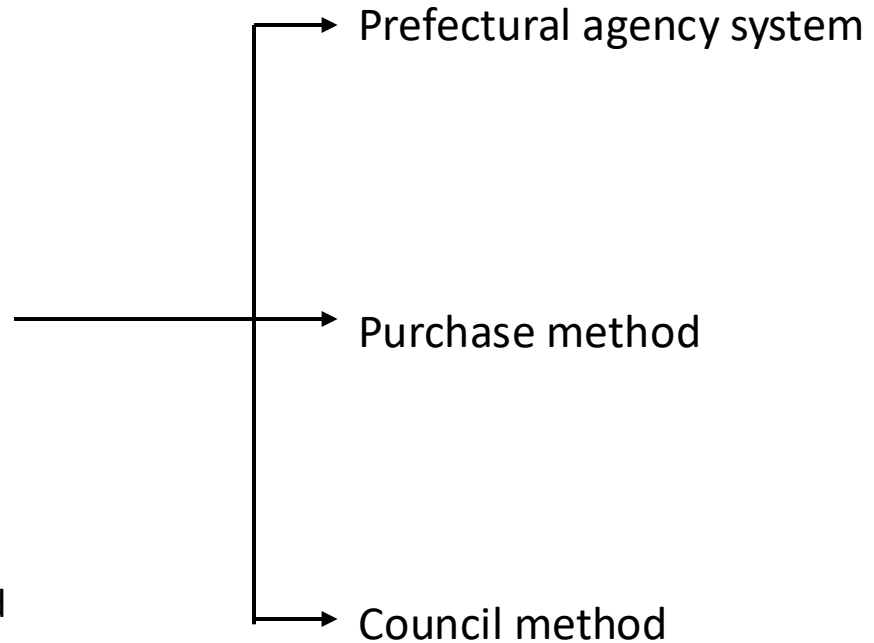
MLIT : Created from "Construction Work Deflator"

Normal ordering methods make rapid construction impossible → Adoption of a variety of ordering methods

Direct ordering system

※Public ordering system in
normal times

Local governments directly order design and
construction separately



Prefectural agency system

To make up for the manpower shortages of municipalities, the prefecture took over ordering and management.

→It is possible to place orders with normal quality to a certain extent (RC construction, etc.)



Shichigahama Town

Purchase method

A method in which houses selected through a competition and constructed are purchased. The scope of companies that could participate in the competition was widened, including by allowing steel-frame construction. House manufacturers that had no experience with public housing but had spare production capacity participated.



Ishinomaki City



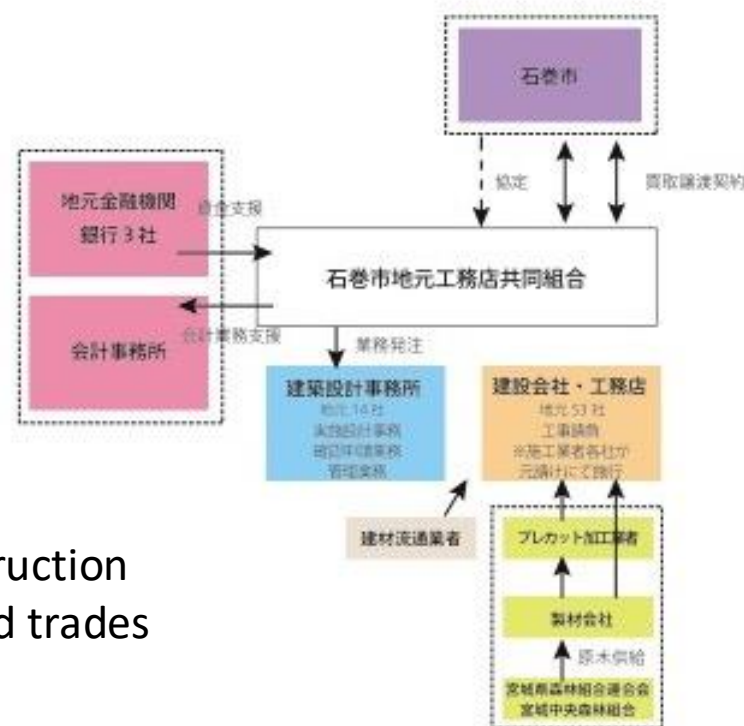
Kamaishi City

Council method



Ishinomaki City

In order to comply with the purchase system, local construction companies formed a council with multiple companies and trades to build public housing.



Structure and Material



RC造
Reinforced concrete



軽量鉄骨造
light-steel



重量鉄骨造
Heavy steel



木造在来構法
Wooden

Depending on the local conditions and the timing of construction, the most appropriate structure and material was selected from several options.

Post-disaster housing transition

Typical Route



Evacuation shelter



Temporary housing



Disaster public housing

Construction begins
within 20 days of the disaster
→ Early provision of housing

After Noto Peninsula Earthquake in 2024

Adoption of various
housing types to address
speed and labor
shortages

Converting temporary
housing into permanent
housing



プレハブ住宅（リース、後に撤去）



ムーゼンダハウス



木造仮設（場合によっては常設化）



常設型住宅（長屋・戸建：能登半島地震）

Continued use
as public
housing



① Advance preparation

What you can do in advance to prepare

- **Pre-selection for rapid housing availability**

Advance designation of evacuation shelters

Selection of construction sites for temporary housing and public housing

Agreement with construction company

- **Development of laws and systems (④ Legal guarantee)**

- **Pre-disaster recovery planning**

Reshaping cities by building new public facilities in safe locations

- **Post-disaster review and organization of important measures
(Between (After/Before) Disasters)**

Thank you