



**Asia-Pacific
Economic Cooperation**

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The Process of Drawing up Reconstruction Plans in Extensive Disaster-hit Areas Including Community Relocation and Challenges in the Implementation of Plans (the Great East Japan Earthquake)

Submitted by: Disaster Reduction and Human Renovation Institute (DRI)



**Seminar on Capacity Building for Disaster
Recovery and Rehabilitation
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27-28 June 2012**

The Process of Drawing up Reconstruction Plans in Extensive Disaster-hit Areas Including Community Relocation and Challenges in the Implementation of Plans (the Great East Japan Earthquake)



Disaster Reduction and Human
Renovation Institution (DRI)

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Introduction of DRI and activity related to response and recovery of the Great East Japan Earthquake



The Great Hanshin-Awaji Earthquake Memorial

Disaster Reduction and Human Renovation Institution (**DRI**)



**Executive Director
Dr. Yoshiaki Kawata**

Mission of the DRI



- *Transferring the live experiences of the Disaster*
- *Applying lessons learned from the Disaster for a better future*



- *Cultivating a Disaster Resilient Culture, reducing social risk and vulnerability*
- *Developing Policies for Disaster Reduction*
- *Realizing a safer and more secure civil society*

Museum Exhibit



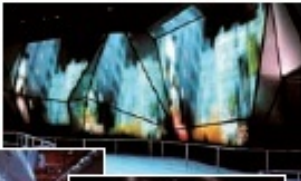
West Building

Remember "1.17" Learn from the Great Earthquake - for a Splendid Future

4F Re-experience the Earthquake

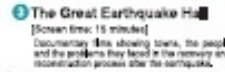
1 1.17 Theater

[Screen time: 7 minutes]
The tremendous destructive power of earthquakes is portrayed using sound and stereoscopic images on big screen.



2 Streets just after the Earthquake

The realistic scenarios reproduce devastated streets just after the Great Hanshin-Wanai Earthquake.



3 The Great Earthquake Hall

[Screen time: 15 minutes]
Documentary film showing scenes, the people and the problems they faced in the recovery and reconstruction process after the earthquake.

3F Memories of the Earthquake

5 Reconstruction from the Earthquake Corner

People's lives and aspects of the towns in the reconstruction process after the earthquake are explained with graphics.



6 Memories Corner

This corner exhibits with the customer's own memories along with the stories of those who donated the materials.



7 Storytellers' Corner

Stories and experiences of the earthquake are shown by video and told by storytellers in person.

2F Experience Protection and Reduction against Disaster

1 Disaster Protection and Reduction Workshop

Learn about disasters and how to prevent them from them through games and demonstration.



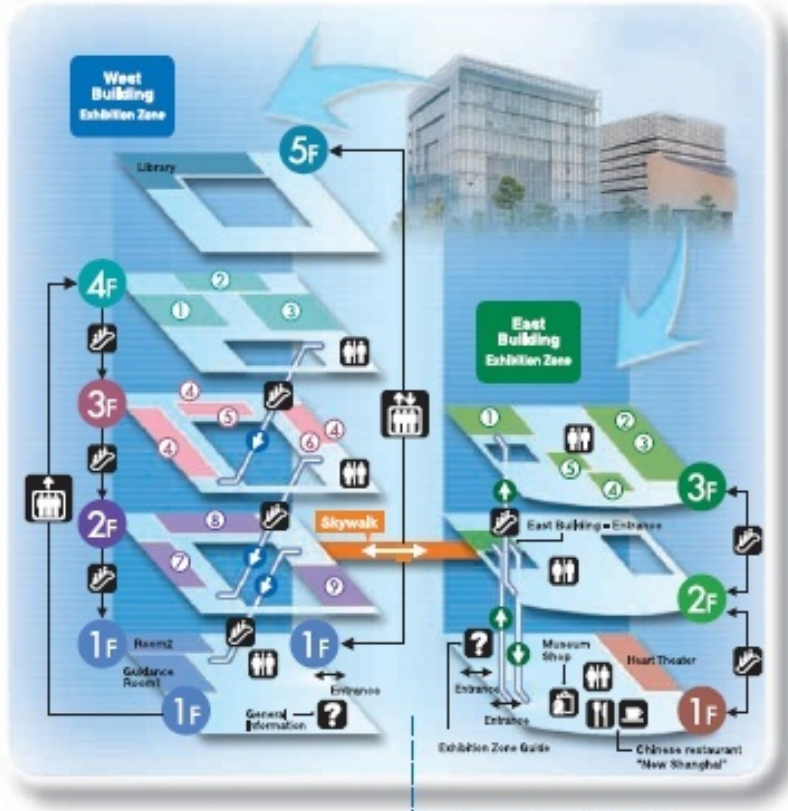
2 Disaster Information Station

Learn about natural disasters currently occurring around the world.



3 Gallery of Disaster Prevention for the Future

Exhibitions of various materials related to disaster prevention help.



1F Guidance Room

[Exhibitions & Programs]
By reservation only

Program 1
Actual experiences of the earthquake are told by "storytellers," the people who survived the earthquake.

Program 2
A disaster prevention seminar conducted by research fellows for discussion and poster talk on disaster prevention in earthquake risk.

5F Library

[Disaster Relief of Great Earthquake]

General support for disaster relief activities. The DRI Library collects and preserves materials related to the Great Hanshin-Wanai Earthquake and disaster relief.

- Collection: Primary Source Materials, Special Collections, Reference Materials, Secondary Source Materials, Special Collections, etc.
- Audiovisual Corner: Video & CD-ROM
- Information against Disaster for Tsunami's Study Library: Learning Center for Children

*Please use the north escalator to get to 5F Library.

1F Heart Theater

[Screen time: 15 minutes]
In this animation film, a line of life and the message to live are the themes depicted through the story "The Will of Finally the Leaf".
(Directed by YUKI Kato and Kazuo Nakayoshi)

[Screen time: 10 minutes @ 10, 20 and 30.]

East Building

3F Learn about Water and Disaster Reduction Floor

1 Miracle of the Planet of Life

Earth, the miracle planet that gives life to all plants and animals, has not only taken about the earth using heat and moisture as energy but also has a variety of life forms.



2 A Song in Praise of the Water Planet

[Screen time: 5 minutes]
This short film shows how our lives are affected with an abundance of water and how, but also reminds us that the threat of natural disaster is ever-looming.



3 The Threat of Wind and Water Disasters

[Screen time: 5 minutes]
Documentary footage of storm and flood damage is shown on a big wall screen. Also and various actual footage of the 1998 Great Hanshin Flood shows the latter experience.



4 Gallery

Approach to disaster prevention and reduction by risk zone and international disaster reduction organizations, etc. are shown.



5 For the Future Salon

This is an area where opinions and discussions on protection against disaster and disaster reduction can be exchanged. You can learn about protection against disasters in a fun way via the computer monitor.

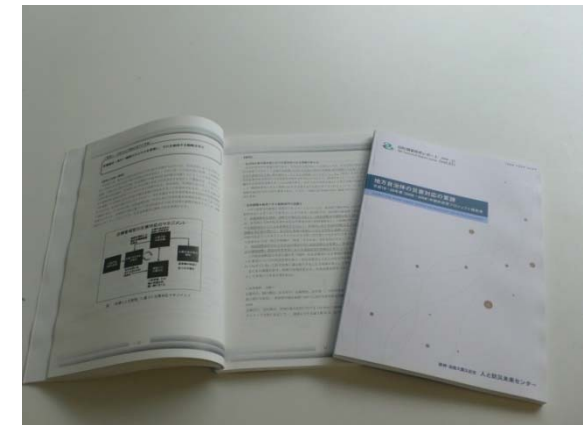


DRI is also providing support directly to disaster-stricken governments



◆ DRI staff directly supported Miyagi Prefecture Disaster Response Headquarters

and also planning support to municipalities



▲ Supporting activities in the stricken areas Disaster Response guidelines for municipalities ▲

Outline of our presentation



- I. Introduction: the Great East Japan Earthquake and damage
- I. Challenges and outline of **policy for recovery by the Japanese Government**
- I. Process of drawing up reconstruction plans and **challenges in the implementation of plans: Case study** of Minamisanriku town in Miyagi Prefecture
- I. Conclusion: Idea for Disaster Recovery Checklist



1 . Introduction: the Great East Japan Earthquake, damage and current situation

2:46 pm, March 11, 2011

- 9.0 magnitude earthquake
- tsunami-40 meters run up
- fires, nuclear accident



The Great East Japan Earthquake

March 11, 2011
Shizugawa, Minamisanrikucho,
Miyagi Prefecture



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BROADCASTING
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Damage



Human damage (as of June 2012, from the Japan National Police Agency)

Number of dead: 15,863 Number of missing: 2,949

more than 340,000 people evacuated from their homes

Building damage

House:

totally damaged:	130,435
half damaged:	262,917
partially damaged:	717,678
total	1,111,030

other building damage: 59,576

area of land damaged: 561km² (total land area Japan 377,944 km²)

Damage: \$225 billion, 4% GDP

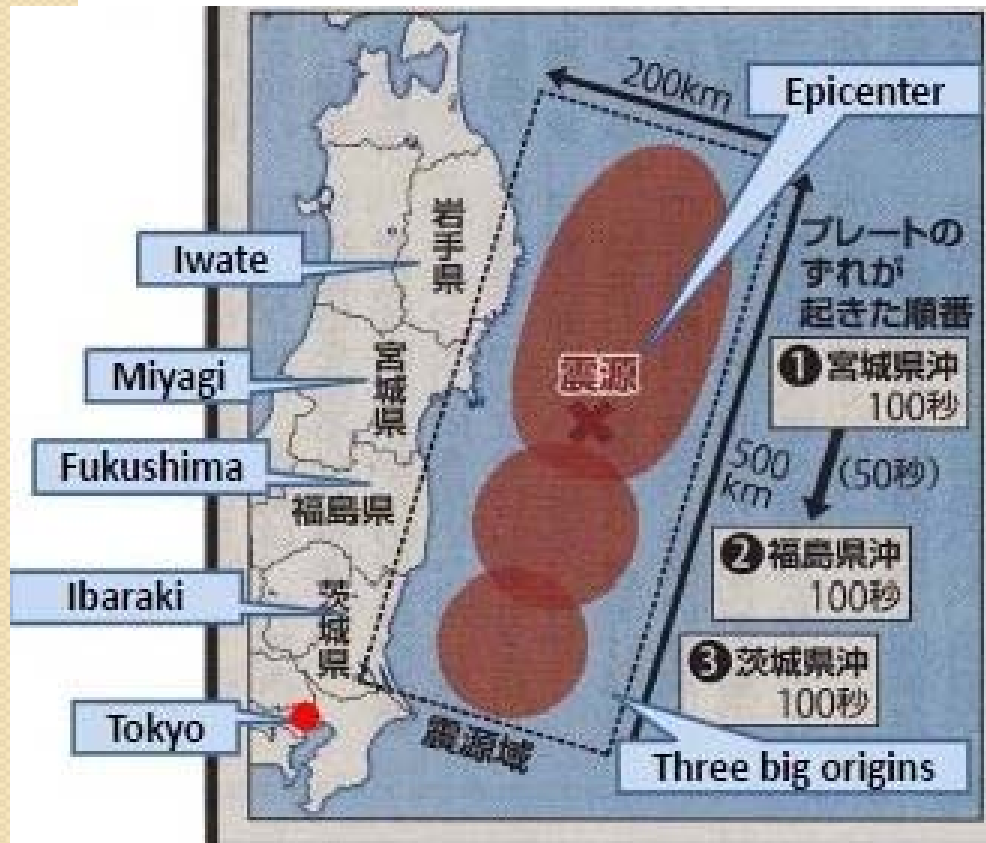
Great East Japan Earthquake = The Costliest Disaster of all time

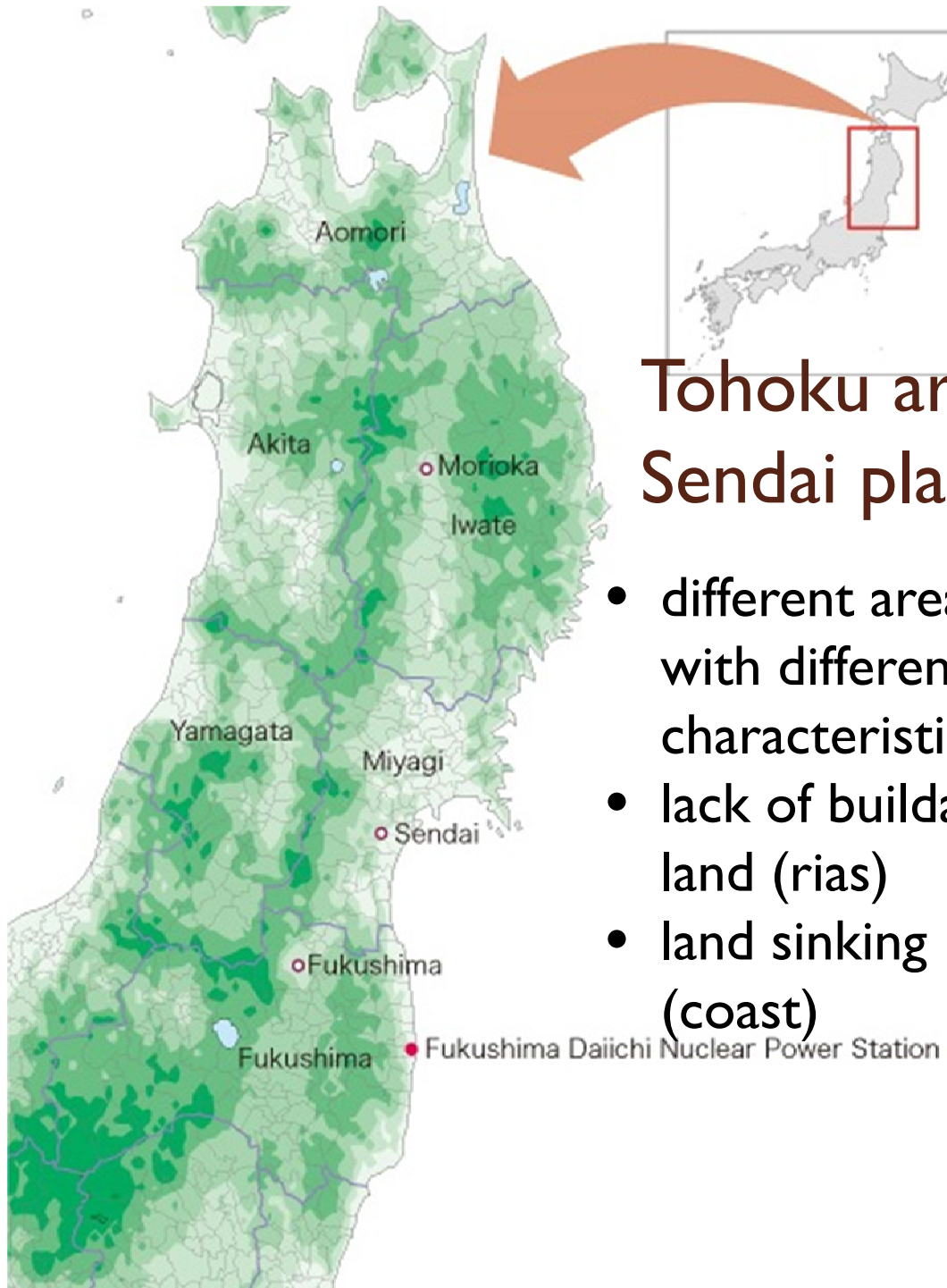
-the World Bank

A wide area, multi-locational disaster



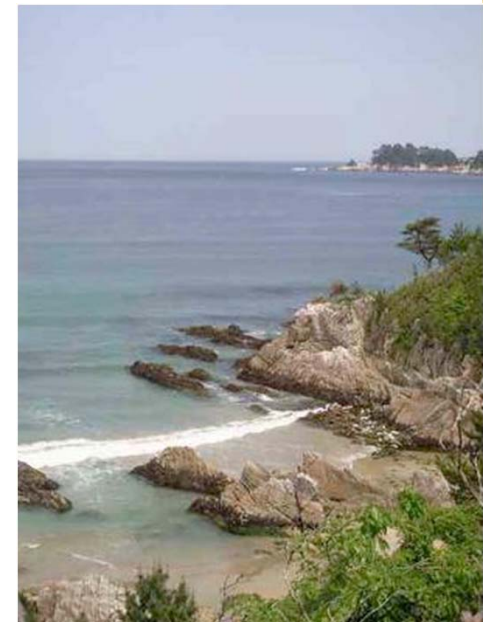
- 500 km by 200 km zone
- multiple towns/prefectures in tsunami-struck coastal area



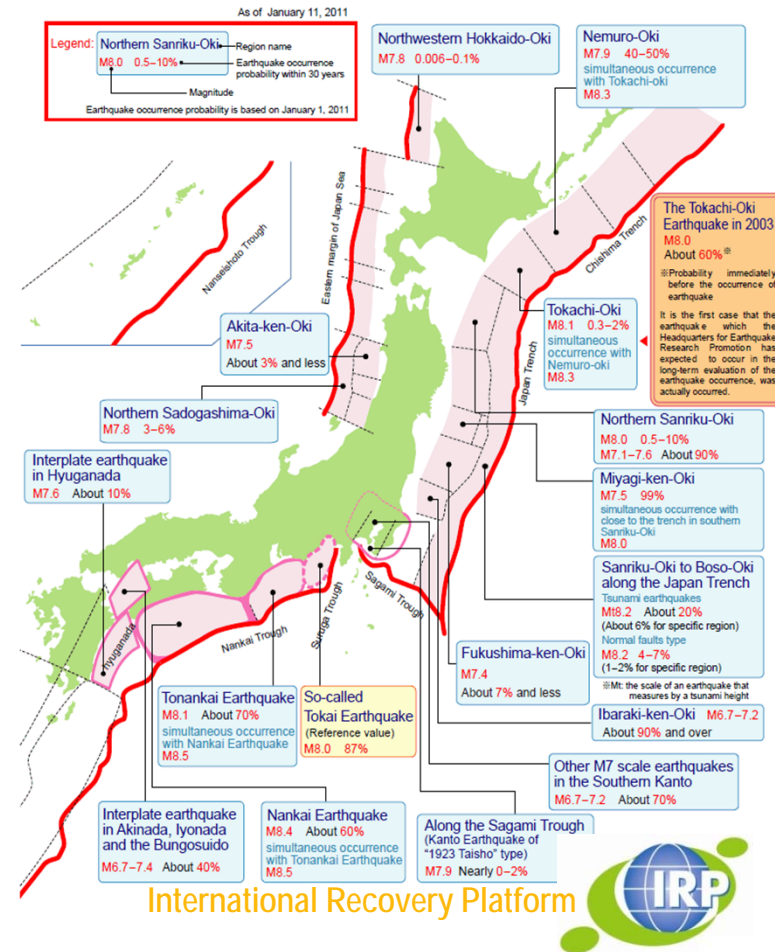
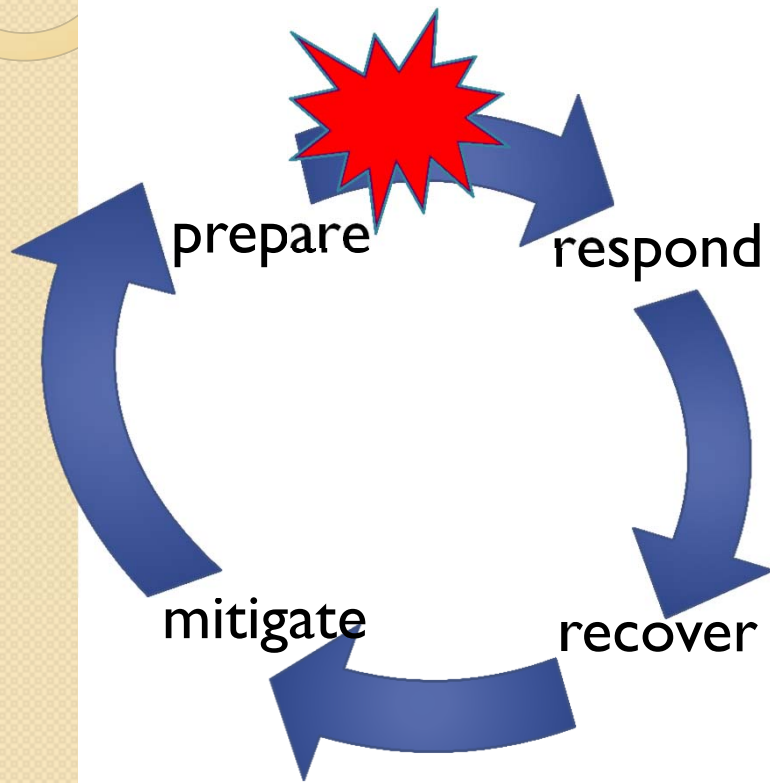


Tohoku area: rias coast and Sendai plain

- different areas with different characteristics
- lack of buildable land (rias)
- land sinking (coast)



Disaster recovery and history in Tohoku, and Japan



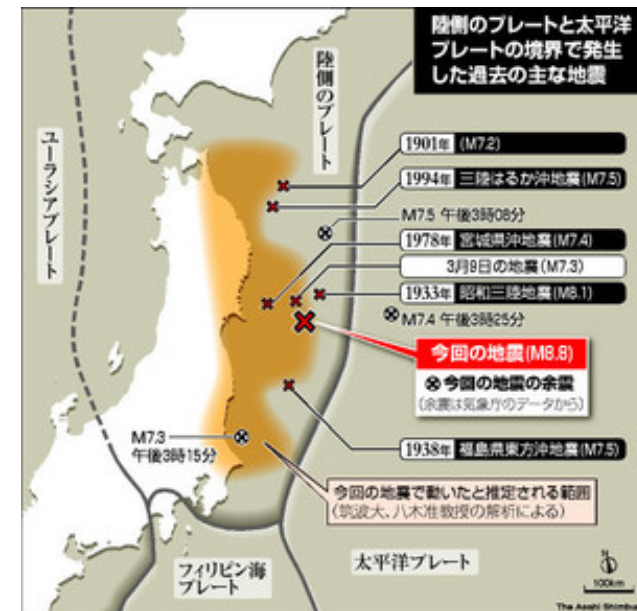
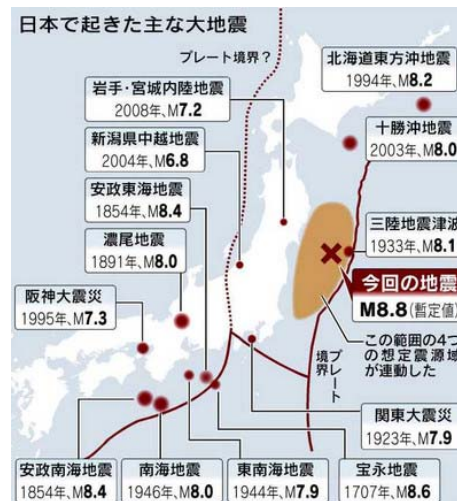
- integrating DDR into Recovery

History of tsunami in Sanriku

- 1000 year tsunami
- 30/40 year tsunami
 - high awareness (social aspects)
 - evacuation
 - disaster prediction data
 - ...but EXCEEDED expectation
- historical experience rebuilding (physical aspect)
 - relocation
 - disaster prevention infrastructure

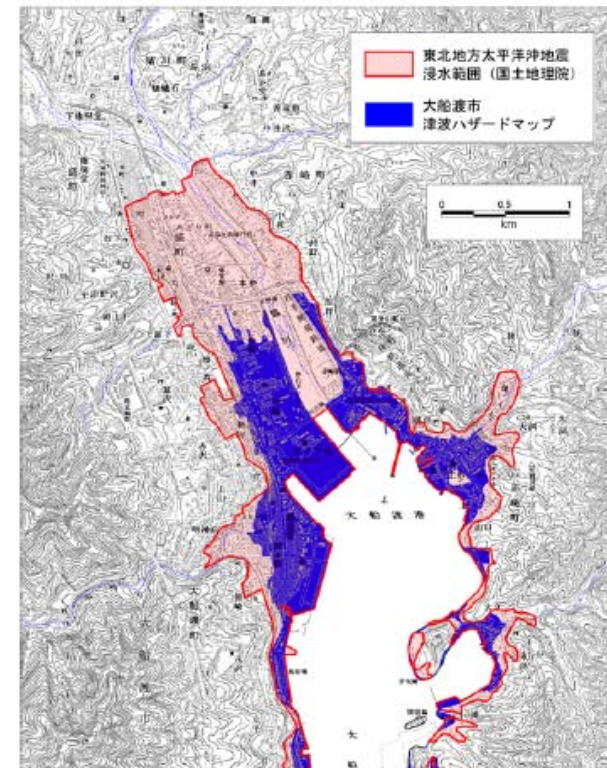
History of tsunami

- 869 Jomon Era Tsunami--similar to 2011 3.11 tsunami
- 1896 Meiji Tsunami
- 1933 Showa Tsunami
- 1960 Chile Tsunami
- 1993 Miyagi off-shore earthquake tsunami
- 2011 Great East Japan Earthquake



Preparation and Awareness

- culture of 'tsunami tendenko'
- examples of successful evacuation on March 11, 2011
- **but 3.11 exceeded all predictions**

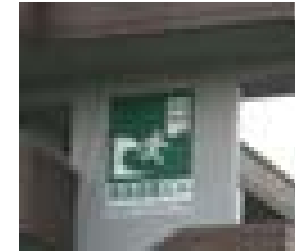


...but 3.1 I was beyond expectations



- evacuation places were not safe
- loss of life of many people who evacuated, and many government officials

Signs of evacuation buildings



International Recovery Platform



Apartment building in Minami-sanriku town



The disaster management center of Minami-sanriku town



Reinforced concrete building Onagawa town

Many City Office staff dead/missing

Many city leaders or managers of disaster response lost their lives, making disaster response impossible in their towns.

Disaster area municipalities	Dead/Missing workers	Workers total	Disaster area municipalities	Dead/Missing workers	Workers total
Iwate Prefecture			Miyagi Prefecture(cont.)		
Rikuzentakata-C	68	261	Osaki-C	2	700
Ofunato-C	1	357	Watari-T	1	161
Kamaishi-C	4	362	Yamamoto-T	4	97
Otsuchi-T	32	136	Shichigahama-T	1	110
Yamada-T	2	184	Onagawa-T	1	105
Miyagi Prefecture			Minamisanriku-T	39	158
Sendai-C	5	9,446	Fukushima Prefecture		
Ishinomaki-C	48	848	Soma-C	2	214
Kesennuma-C	2	529	Minamisoma-C	4	427
Natori-C	5	316	Namie-T	1	128
Iwanuma-C	4	193	Total of 19 cities	226	14,732

C: City, T: Town

Note:

Numbers of dead/missing workers include temporary staff in some cities.

Numbers are based on hearings on 1 Aug 2011, not finalized.



(for reference) Municipal officers who died or were not found after Hanshin-Awaji Earthquake

Disaster area municipalities	Dead/Missing workers	Workers total
Kobe-C	15	10,677
Amagasaki-C	1	3,196
Nishinomiya-C	4	2,100
Ashiya-C	4	577
Total of 4 cities	24	16,550

International Recovery Platform



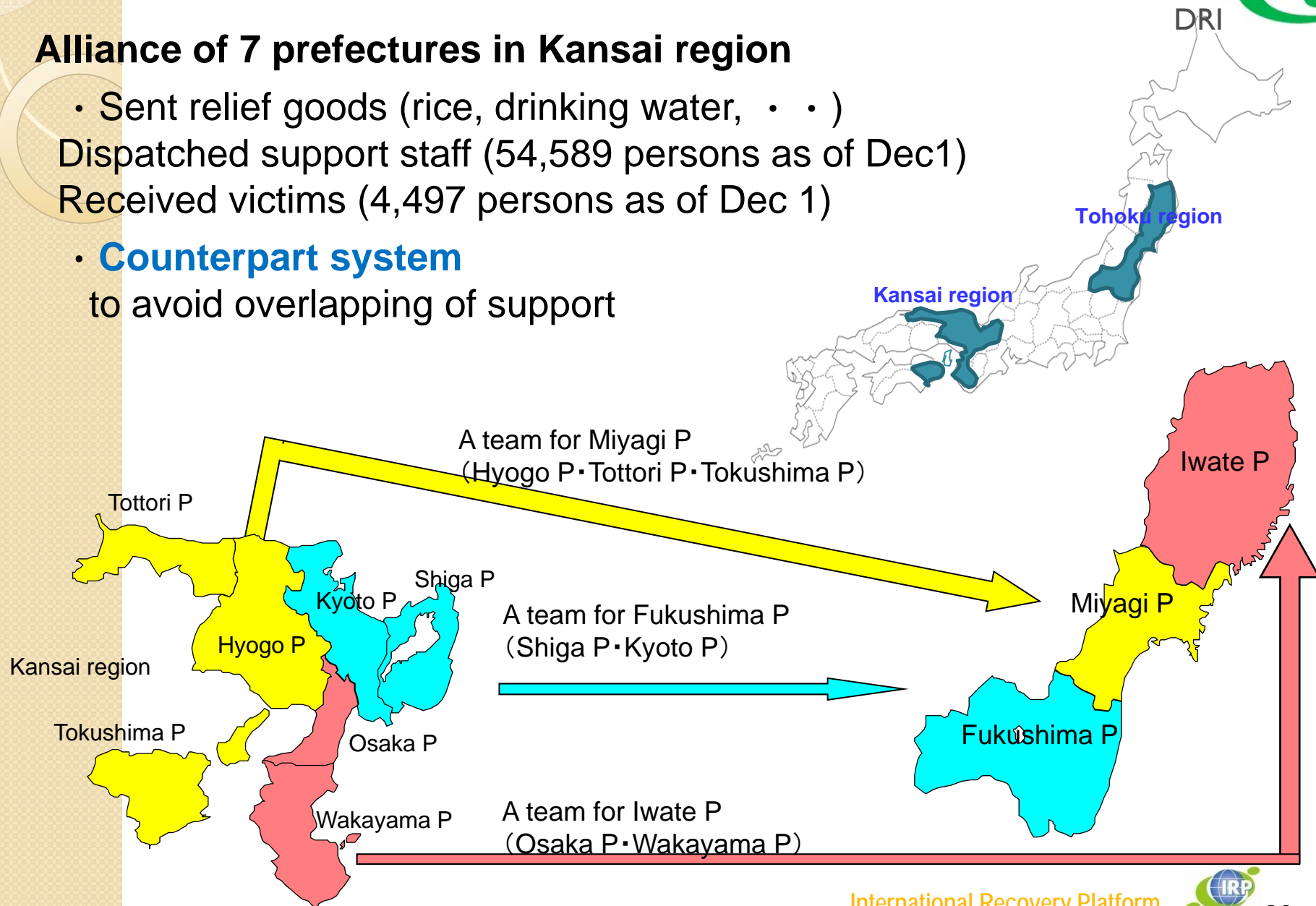
Source: Commemorative speech of the opening of Disaster Education Center, University of Hyogo

Support among local governments



Alliance of 7 prefectures in Kansai region

- Sent relief goods (rice, drinking water, . . .)
- Dispatched support staff (54,589 persons as of Dec1)
- Received victims (4,497 persons as of Dec 1)
- **Counterpart system** to avoid overlapping of support





2. Challenges and outline of policy for recovery by Japanese Government

Challenges for Life Recovery ^{DRI}



- life recovery for victims
 - need support for livelihood recovery--including businesses, fishing and other local industry
 - continuity in housing
 - how to relocate population from hazardous area (relocation and zoning)
 - connected with the time scale of recovery/relocation
- some initiatives in for livelihood recovery
 - temporary shopping arcade
 - handicrafts for income
 - support for fishing industry



南三陸漁業生産組合

Livelihood





Livelihood: Temporary markets for rebuilding community and business



Housing recovery process in Japan



evacuation center

- schools, gymnasiums, community centers, other municipal buildings



evacuation center

- no privacy
- crowded

temporary housing

- pre-fabricated temporary structures provided by the government
- 2 years (by law, can be extended)



temporary housing

- distance/inconvenient locations
- entry randomized by lottery-destroying communities
- solitary deaths
- pre-fabricated temporary structures provided by the government
- residents stayed in them for up to 5 years

permanent housing

- residents rebuild on their own
- public subsidized rental housing provided by the government

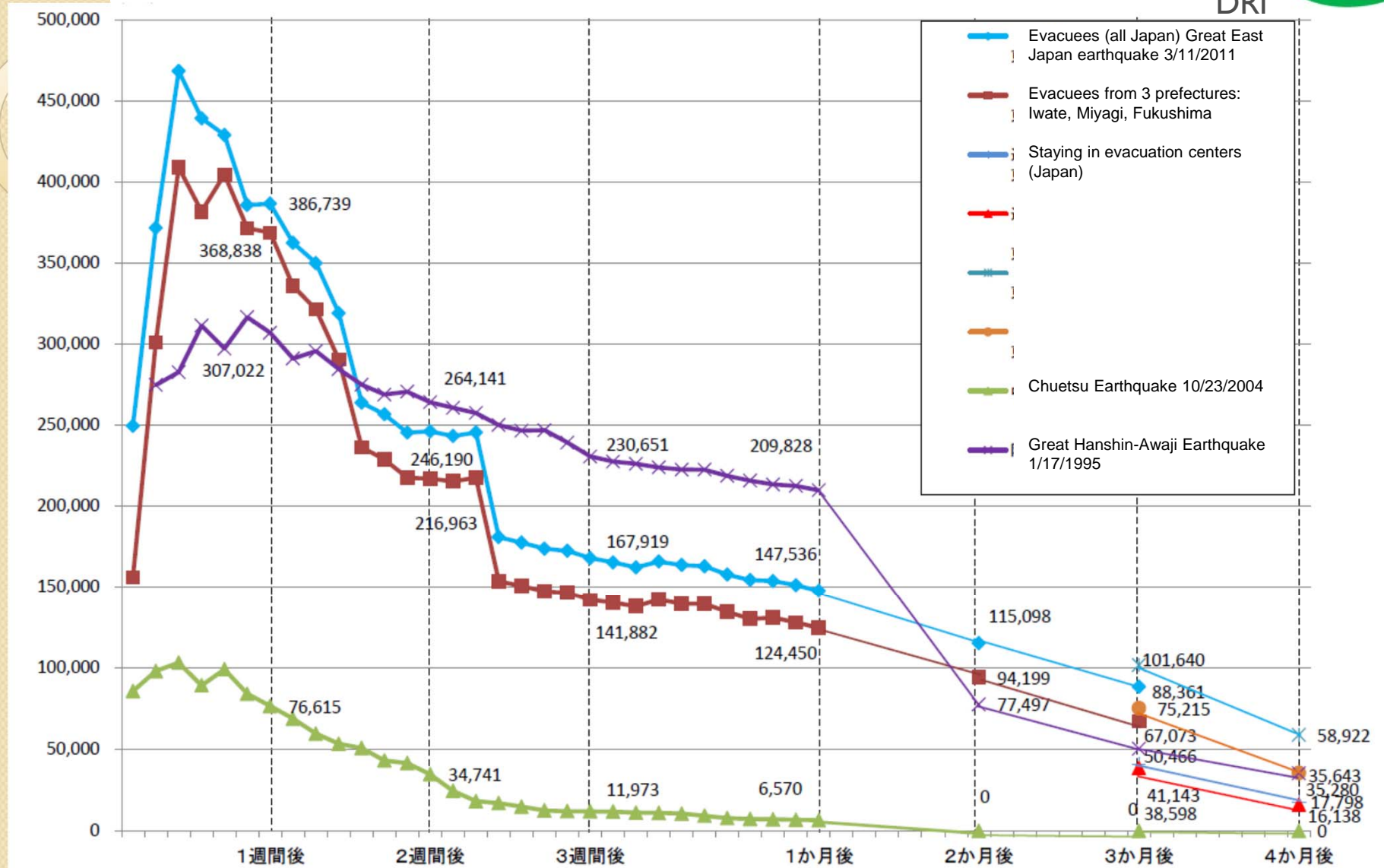


permanent housing

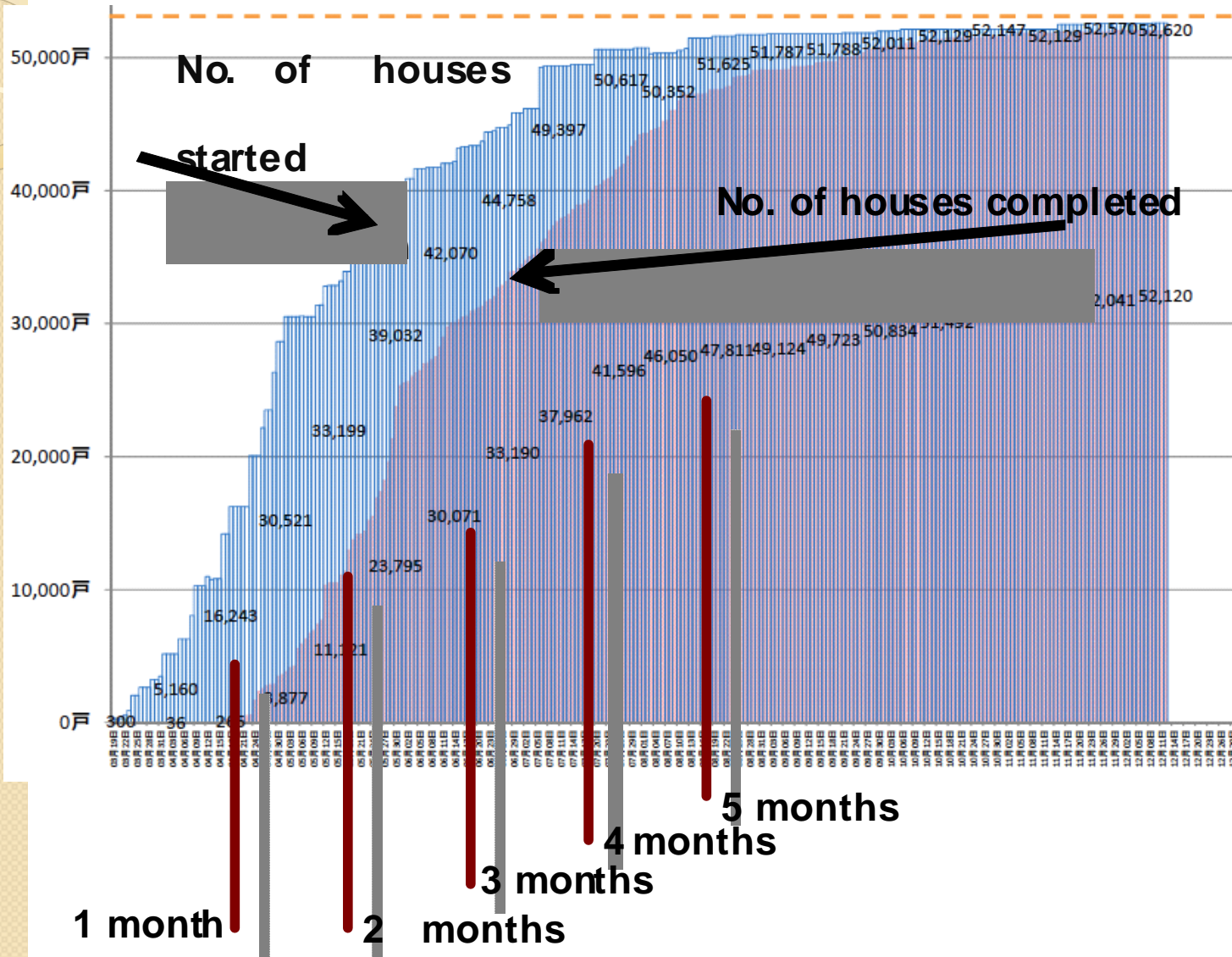
- public subsidized rental housing provided by the government
- tall buildings in distant locations
- solitary death continued
- entry by lottery with priority for elderly/vulnerable people
- little/no support for private homes apartment, business reconstruction

In Kobe, 1995

Number of people living in evacuation shelters, comparison of the Great East Japan Earthquake and Hanshin-Awaji Earthquake



Temporary housing construction



Government role in temporary housing DRI



national government

- funding (based on the (Disaster Relief Act)

prefectural government

- responsible for building temporary housing-can contract to private contractor of their choice

municipality

- find suitable land, select residents and provide maintenance

•**52,247 units built**, size is standard (less than 30m²)

Officially “2 years, 3 months” (already extended to 3 years) but up to 5 or longer is likely

Construction and material quality, location, scale of housing area, and distance varies.

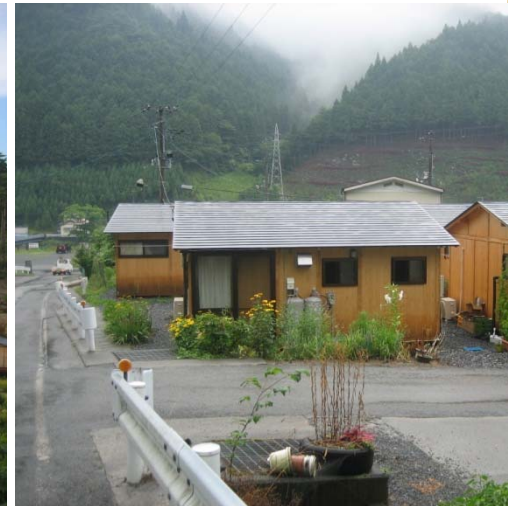
Some efforts at relocating residents collectively; many scattered.

Rias coastal areas: a lack of buildable land near the coast

Coastal plains: more available land, dominated by Sendai city

Towns in Fukushima: residents evacuated for an unknown period

Temporary housing in Tohoku-varies



Examples of Innovative housing



Various types of transitional housing ^{DRI}



	Number of housing units in use
Temporary housing (As of 1/10/2012, Source: MLIT)	<u>52,182</u>
Gov.-owned accommodations (As of 1/9/2012, Source: MOF)	9,832
Public housing (As of 1/9/2012, Source: MLIT and MOF)	8,238
Private rental housing (As of 12/27/2011, Source: MHLW)	65,692
Total	135,944

- newly-built temporary housing
- existing government-owned housing (dormitory, etc.)
- existing public housing
- private rental housing—actually this is the largest amount

Limits of physical infrastructure for disaster prevention

- level 1 tsunami- 100 years
 - protect lives and property
- level 2 tsunami- 1000 years
 - protect lives, by EVACUATION



	Design tsunami	Required performance
Level 1	Largest tsunami in modern times (return period: around 100 years)	<ul style="list-style-type: none">• To protect human lives• To protect properties• To protect economic activities
Level 2	One of the largest tsunamis in history (return period: around 1000 years)	<ul style="list-style-type: none">• To protect human lives• To reduce economic loss, especially by preventing the occurrence of severe secondary disasters and by enabling prompt recovery

Land Elevation is key—for survival and recovery



Minami Sanriku Town Shizugawa Area

International Recovery Platform IRP



Hongo area of Kamaishi, relocated after 1933 tsunami, damaged again in 2011



Yoshihama area, Ofunato—collective relocation carried out after Meiji Tsunami, low areas became rice fields, no casualties in Showa Tsunami



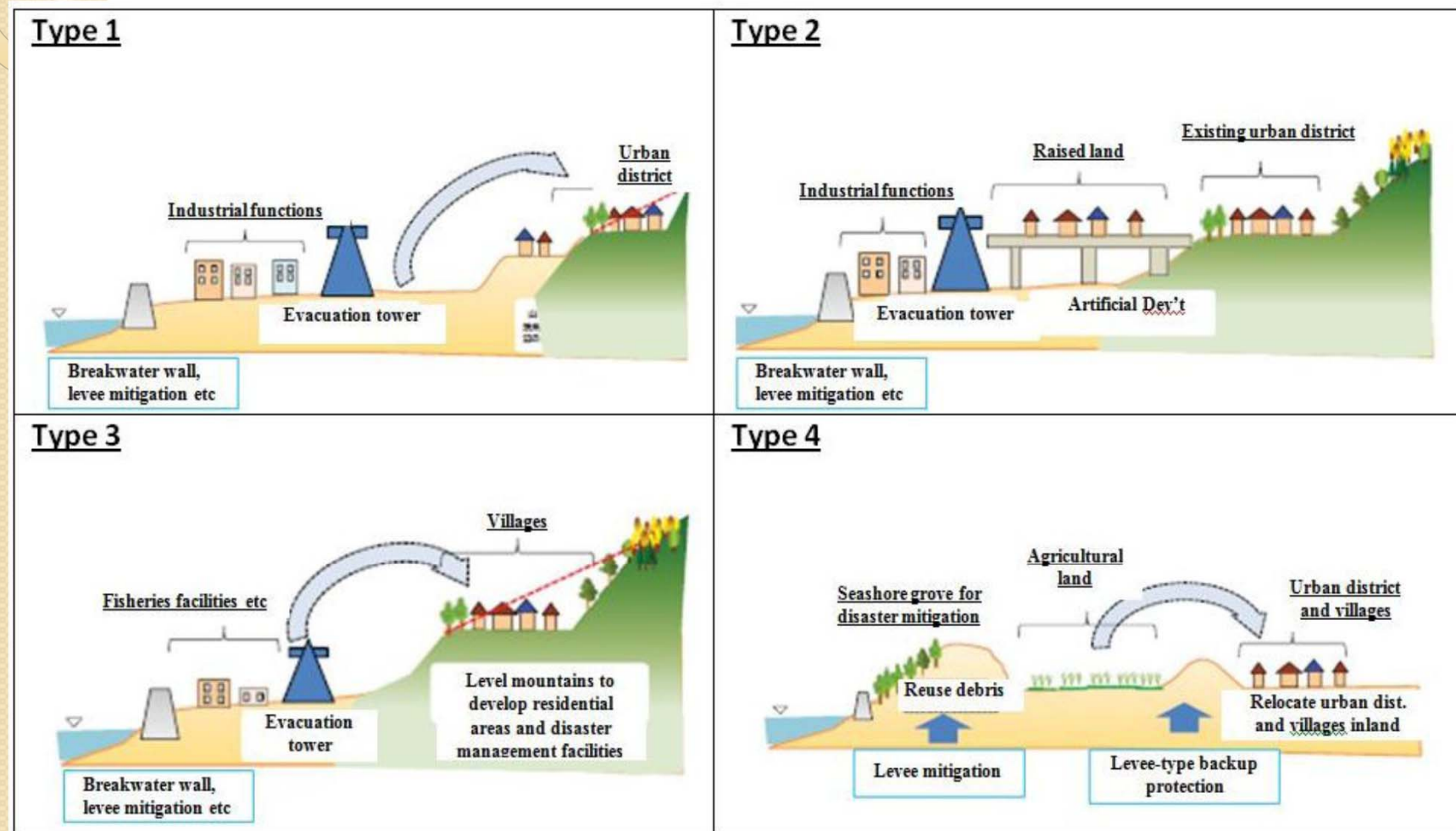
明治三陸地震津波



昭和三陸地震津波

出所：中央防災会議資料

Example guidelines provide by the Reconstruction Design Council



The case study, Minami Sanriku, is type 3.

Recovery & Reconstruction Process

- GEJET (Great East Japan Earthquake & Tsunami)

Immediate rescue & temporally housing construction backed by supplementary budgets

- the Reconstruction Design Council (April.11)

- Basic Act on Reconstruction (June.24)

- Recommendation from RDC (June.25)

“Towards Reconstruction – Hope beyond the Disaster”

- Basic Reconstruction Guidelines (July.29) from RH

- Reconstruction plans from prefectures (Aug.-Oct.)

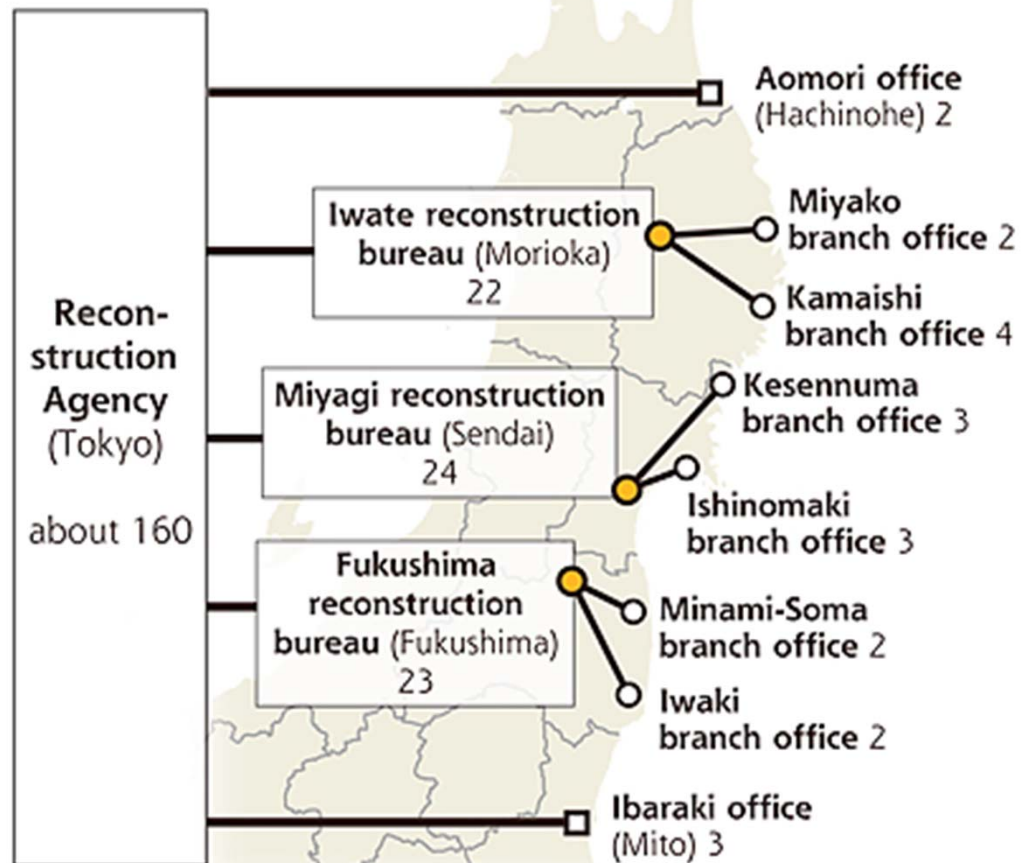
- Reconstruction plans from municipalities (Oct.-Dec.)

- 3rd supplementary budget 9.2 trillion yen (Nov.21)

Recovery Agency

Reconstruction Agency organization

* Numbers indicate staff in each location



Bureaus and offices will hire more local staff as operations grow.

Special Zone for Reconstruction DRI



Municipalities or Prefectures in this area can apply for Reconstruction Acceleration



Then can apply for individual recovery projects Grants



Funding by the National Government, Recovery projects can include tax incentives, zoning, medical, housing etc. projects.



Framework of the law for Special Zone for Reconstruction

Municipalities located in the “disaster afflicted zones” , stipulated in the Act on Special Provisions of Article 3 of the Public Finance Act, can formulate plans on the Special Zone for Reconstruction to be submitted to the Government for the package of special arrangements.

Basic Guidelines for the Special Zone for Reconstruction (To be decided by the Cabinet)

- Significance of smooth and swift reconstruction in the Special Zone for Reconstruction
- Basic guideline for necessary assistance and other measures to be taken by the Government for afflicted municipalities for smooth and swift reconstruction in the Special Zones
- Basic elements of approval system of Reconstruction Acceleration Plans
- Special measures and arrangements to be taken in the Special Zones

Consultative body of Central and Local Governments

established in each Prefecture, held in regions affected by the disaster and directed by the future Reconstruction Agency to discuss proposals from local authorities on special arrangements and other related elements (working groups can be set up by region)

Add and/or enhance special arrangements

Reconstruction Acceleration Plan

Plan to apply for special measures and arrangements involving deregulation, reduced procedures, tax incentives and other special measures.

Formulated by Prefectures and municipalities separately or jointly. Private enterprises are entitled to make proposals.

Approval by the Prime Minister

- **Special deregulation and reduced procedures covering housing, industry, town- building, medical services, nursing care and others.**
- **Tax incentives to promote employment and industrial activities**
- **Interest substitute for loan lenders**

Land Restructuring Plan

Plan to apply for special arrangements involving approval, procedures, etc. for land restructuring

Formulated by municipalities alone or jointly with Prefecture.

- **Public hearings, announcement and inspection when necessary**
- **Consultation and agreement in the process of consultation on restructuring**

Disclosure of Plans

- #### Special arrangements for land use restructuring
- Special arrangement of concession necessary for projects
 - Integrated “one-stop” procedures
 - Creation of new types of project system related to land use.

Reconstruction Grant Projects Plan

Plan involving grant projects (projects for reconstruction in areas severely affected by the disaster)

Formulated by municipalities alone or jointly with Prefecture.

Submission to the Prime Minister

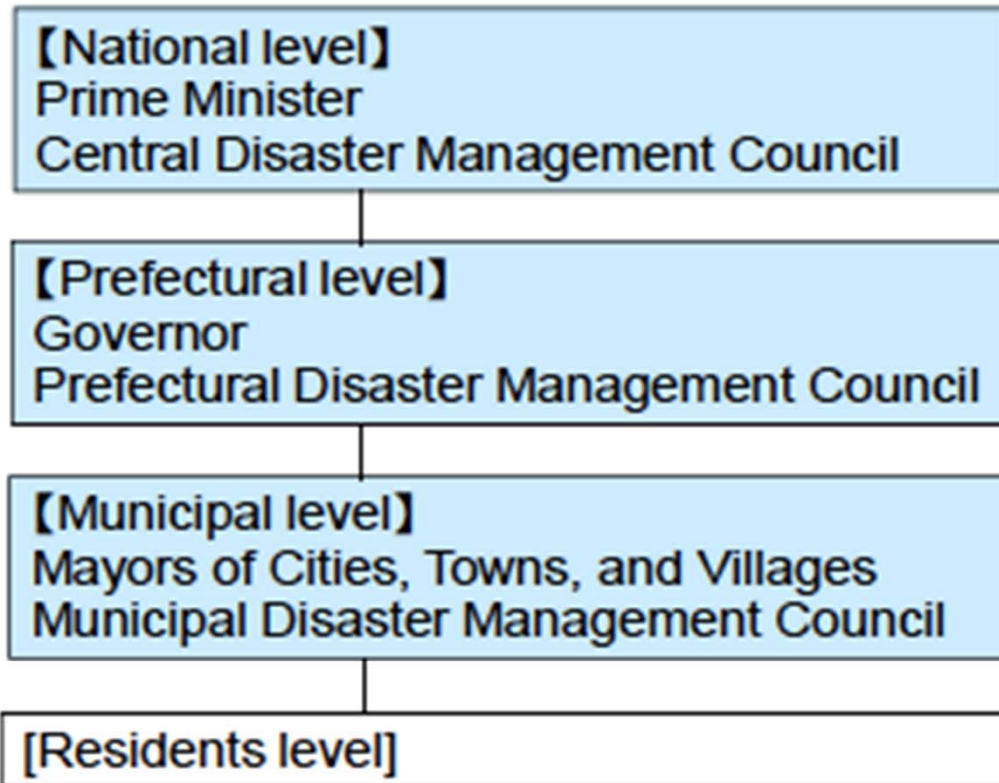
Reconstruction Grant to support regional reconstruction

- Unified subsidy projects for municipalities (originally 40 projects at different ministries)
- Secure resources with flexible use for local governments
- Central government will finance all the local expenditures
- Flexible implementation and simplified procedures

Recovery & Reconstruction Process

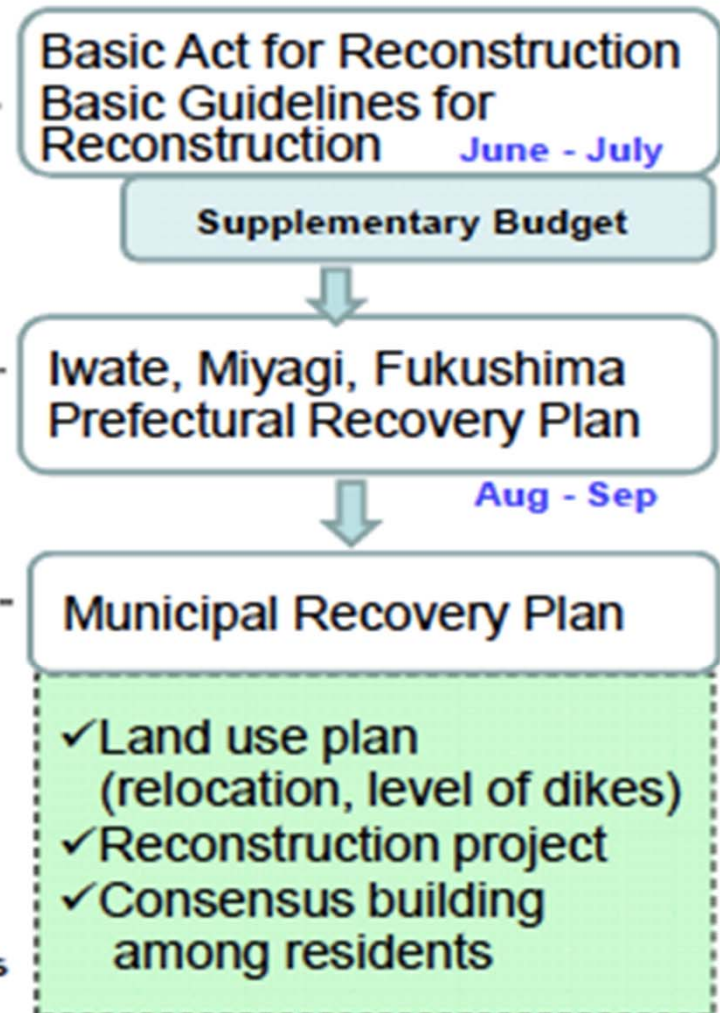


Disaster Counter Measures Basic Act

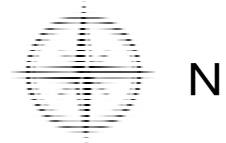


- Municipalities are responsible to first respond to disasters
- Prefectural or Central government support if the scale of the disaster is bigger than the capacities of the municipalities

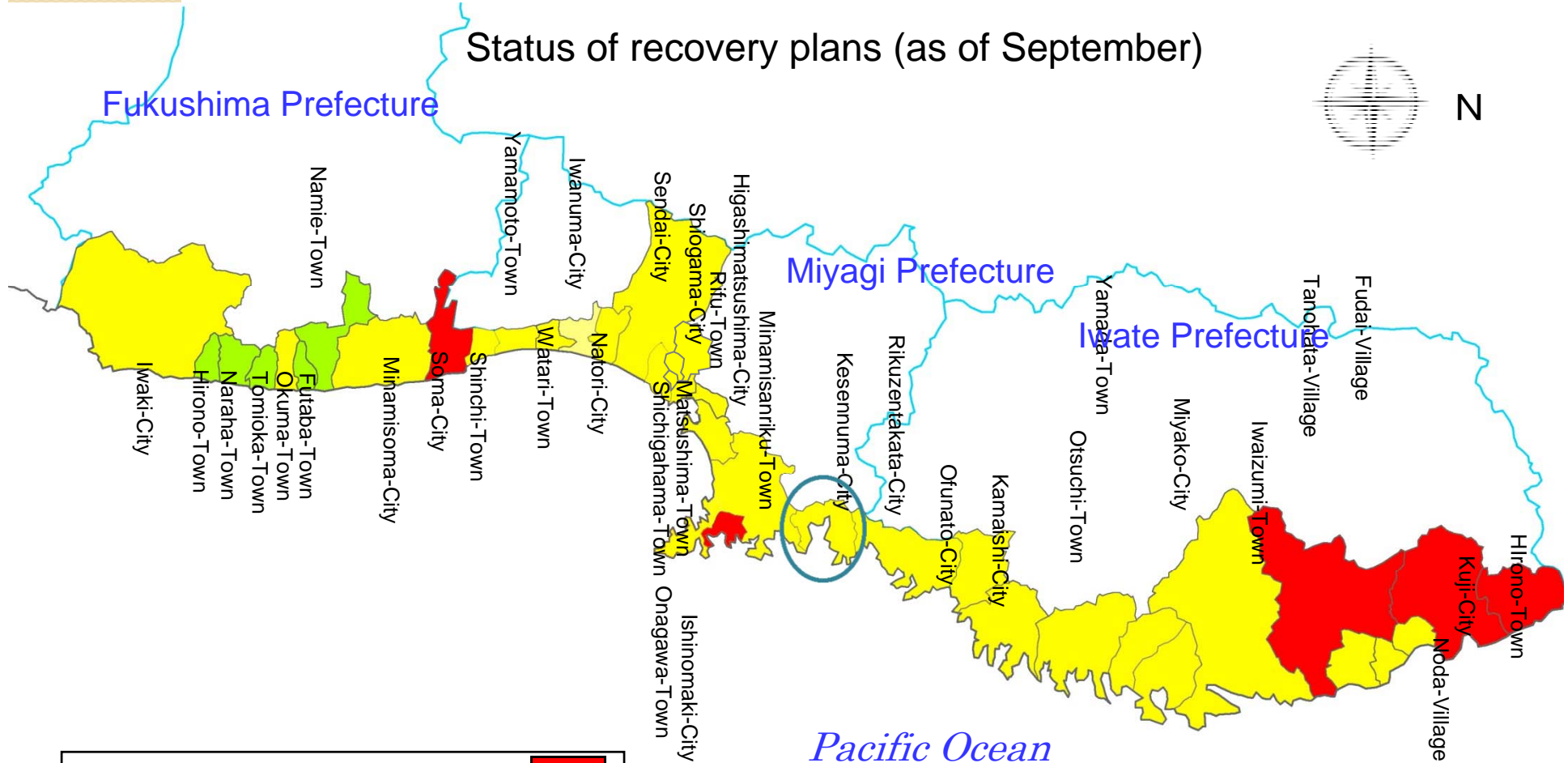
<Recovery Planning>



Mapping out municipal recovery plans



Status of recovery plans (as of September)



Recovery plan completely mapped out	
Goals decided; Basic/Guideline Plan complete	
Nothing (no online announcement at all)	

Source: Documents on Web pages of municipalities



3. Process of drawing up reconstruction plans and challenges in the implementation of plans

- Case study of Minamisaniriku town , Miyagi Prefecture -

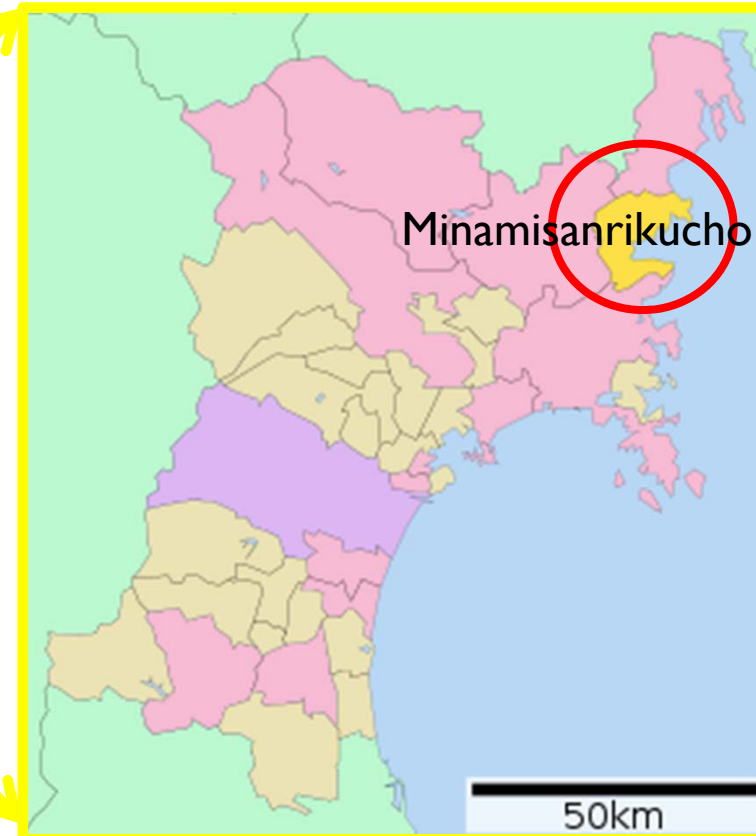
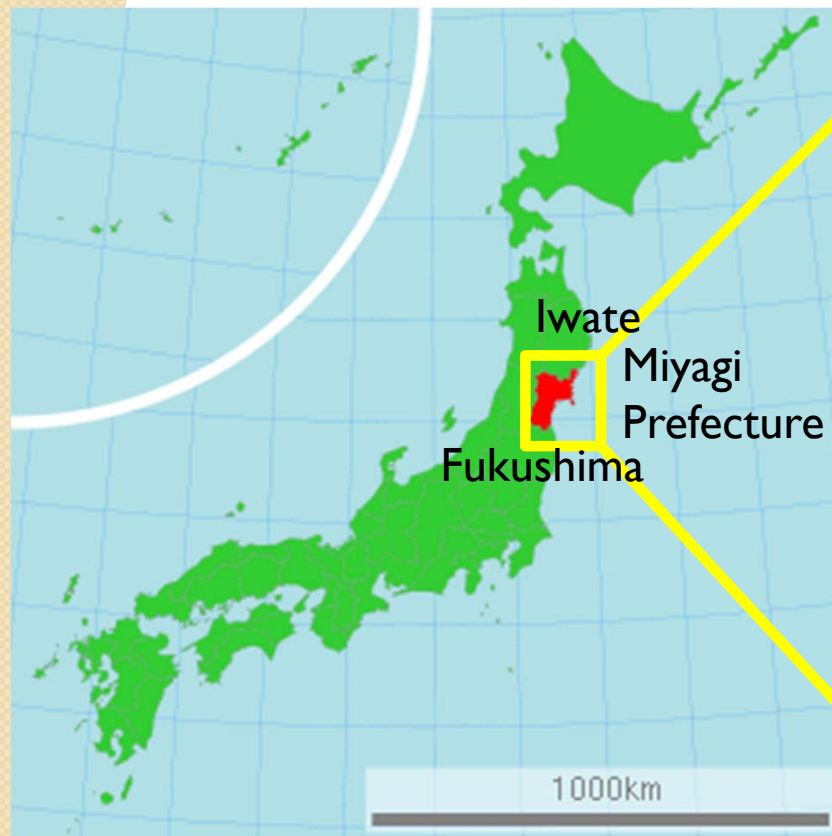
DRI Support in Minamisanriku town Office (April 2011 ~ October 2011)



- Advice to draw up reconstruction plans
- Advice to land use planning
- Assistance to residents' consensus building
(Town meeting workshop, Questionnaire to residents etc.)



Location of Minamisanrikucho



Central Town (Before 3.11)



Central Town (After 3.11)



Damage

Human damage

Number of dead: 5 1 1 (Ratio of dead 2. 8 9 %)

Number of missing 2 6 8 (Ratio of missing 1. 5 1 %)

※ population 1 7 6 6 6

Damage of houses etc.

Houses 3 3 1 1 Family (Ratio of damage houses 6 2 %)

Farmland 4 5 2 h a

Forest 1 2 h a



Minami Sanriku Town - entire city destroyed and government paralyzed

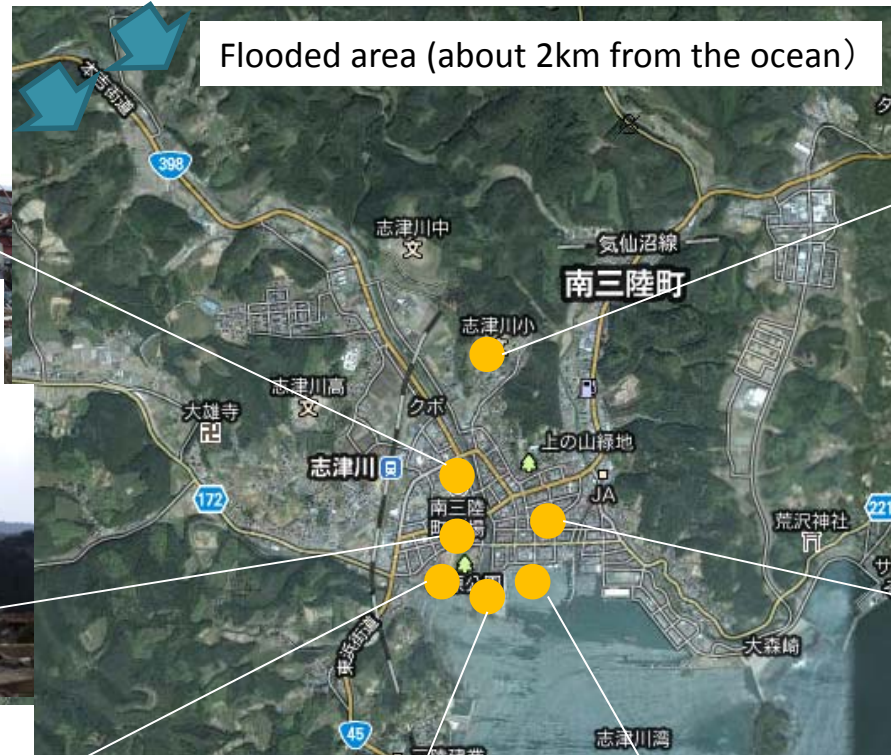
International Recovery Platform



- Entire urban area destroyed; one of the most heavily damaged places in the disaster area
- Half of the population sent to evacuation centers; town hall destroyed/government paralyzed.



Disaster management center
3.23



Flooded area (about 2km from the ocean)



Shizugawa elementary school
on a hill used as an evacuation
center 3.23



Shizugawa Hospital 3.23



The town has disappeared
3.23



4 story apartment building



Shizugawa River floodgate was
closed 3.23



Sea walls destroyed 3.23

Evacuation Centers & Temporally Houses



First Evacuation 9 5 0 0 people (Max)



(Bayside Arena gymnasium (inner town)
in April 2011)



(Elementary School (inner town)
in March 2011)

Second Evacuation 1 8 0 0 people

Temporally house 2195 units &
Many Private rental housing



(Hot spring inn & gymnasium
in July 2011)



Many residents live outside of Minamisanriku town still now
(about 200 units of temporary houses, most of private rental housing)



Process of Drawing up Reconstruction Plans and Challenges in the Implementation of Plans

Reconstruction Planning Process

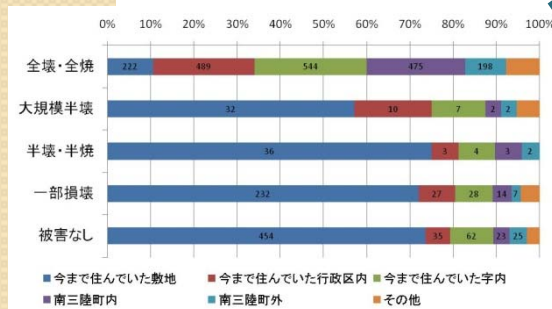


Academics' plan formulation meeting
(to compile a rehabilitation plan)

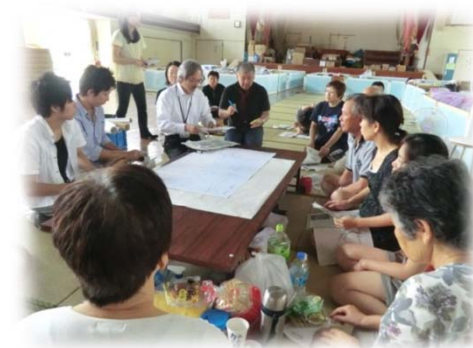


Citizens' plan formulation meeting
(to select projects of highest priorities)

Reconstruction plan



Survey on opinions from all the town people



Citizens' round-table conference held by district
(to examine town development principles by district)

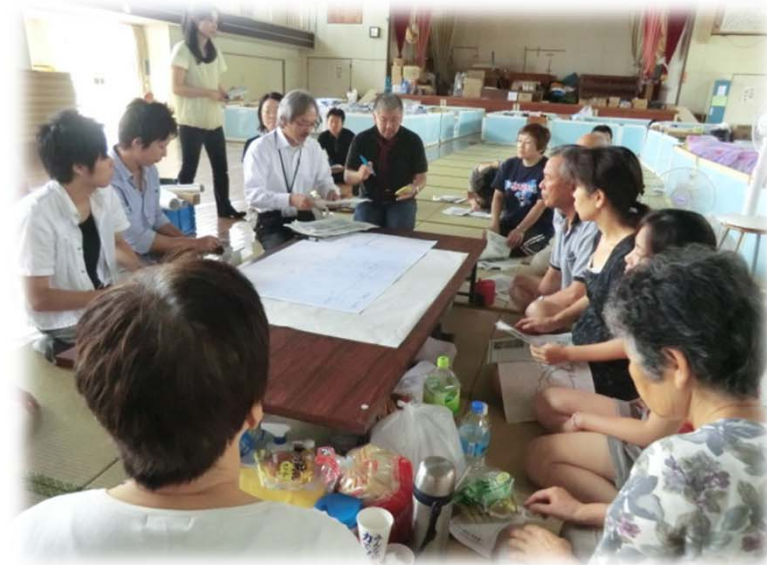


Discussion on town development by district
(to talk about specific relocation site candidates and land deals)



Local Round-Table Conference Held at 23 Places DRI

(at various facilities within the town, evacuation centers outside of town etc.)



(gymnasium outside of town in July 2011)



(Temporary houses outside of town in July 2011)



Reconstruction Policy

Vision for the Town's Future

A town with peace and vitality created through intertwining nature, people and works



Minamisanrikucho Earthquake Disaster Rehabilitation Plan (Target Year: March 2021)

Goal 1 Development of a town where people can continue to live at ease

- (1) Shift to the land use to protect people's lives
- (2) Promotion of town development for disaster management and mitigation to protect property
- (3) Maintenance, improvement and enhancement of disaster management and mitigation systems
- (4) Maintenance and improvement of transport networks to protect people's lives and livelihoods
- (5) Establishment of information and telecommunications networks and promotion of regional informatization
- (6) Stable supply of health, medical care, welfare and educational services
- (7) Function consolidation and proper placement of public facilities and the like

Goal 2 Development of a town coexisting with nature

- (1) Challenges to eco-town development
- (2) Construction of a water and green network
- (3) Creation of a recycling society system
- (4) Nurturing people who love their hometowns and support rehabilitation
- (5) Creation of new lifestyles

Goal 3 Development of a town full of works and vitality

- (1) Early rehabilitation and enhancement of industrial infrastructure
- (2) Regeneration and vitalization of the fishery and marine products industries
- (3) Farmland re-creation, forest industry promotion and reestablishment of management bases
- (4) Revitalization of commerce, industry and tourism and creation of new industries
- (5) Creation of employment and expansion of exchange population

Measures 1

A town to be developed in collaboration of the town and the region

Measures 2

A town to be developed in collaboration with the nation and the prefecture with the town taking the initiative

Issues for recovery of the Great East Japan Earthquake

for Community & Victims

Disaster risk reduction (DDR)

in recovery planning including community relocation

- Disaster risk reduction
- People based recovery
- Housing

Livelihood Recovery

- Long term assistance for victims
- Recovery of industry, Employment
- Assistances for evacuees living wide area

Movement of population ,aging society

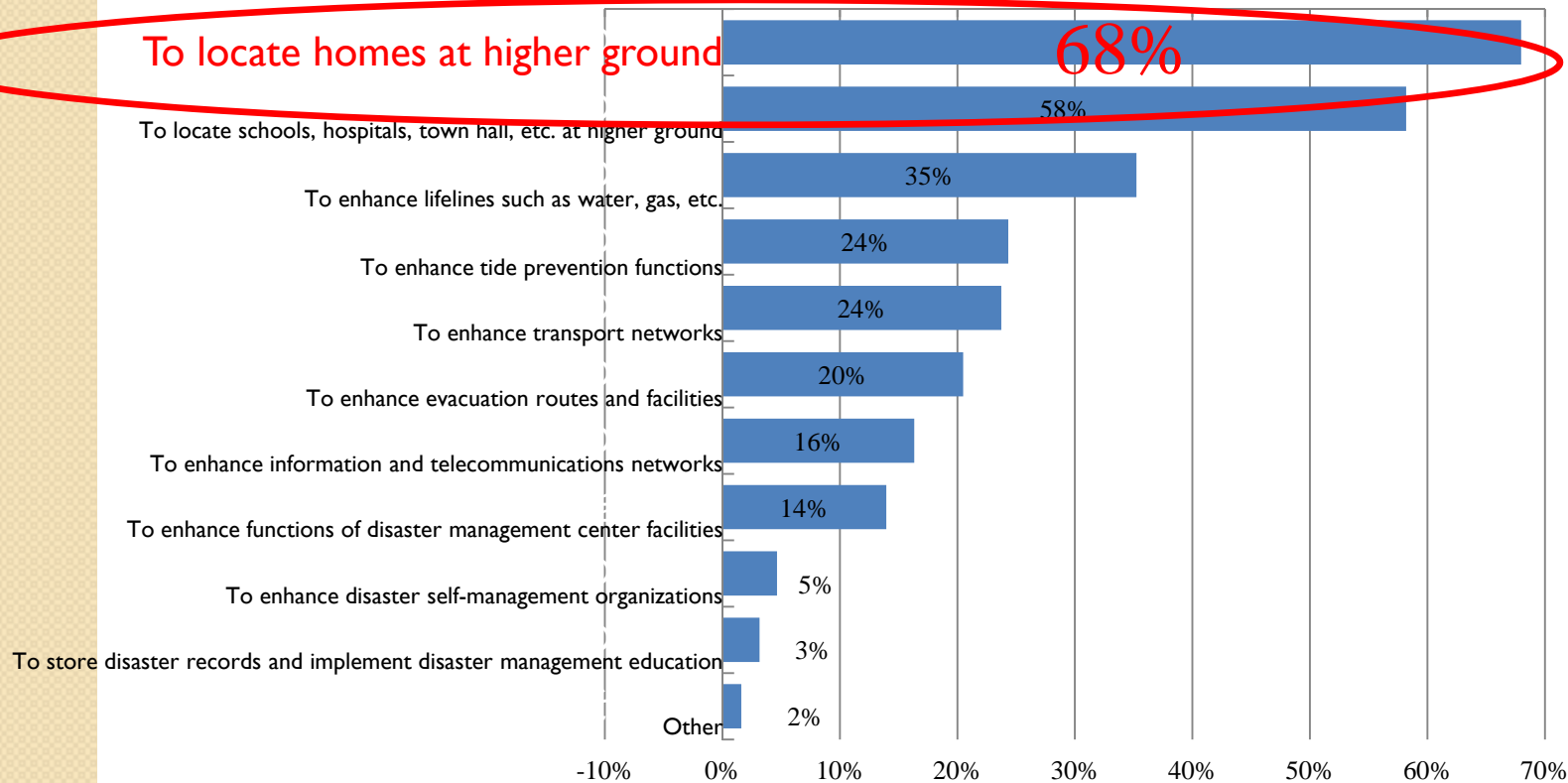
- Recovery of village
- Smart shrinking

Results of Town People's Questionnaire Essentials for Disaster-Resistant Town



■ What they think is a key to the development of a natural disaster-resistant town.

- The largest number of respondents (60%) think “to locate homes at higher ground” is essential, while the second largest (58%) choose “to locate schools, hospitals, town hall, etc. at higher ground” and the third largest (35%) choose “to enhance lifelines such as water, gas, etc.”



Rehabilitation of Fishing Villages

Community Relocation

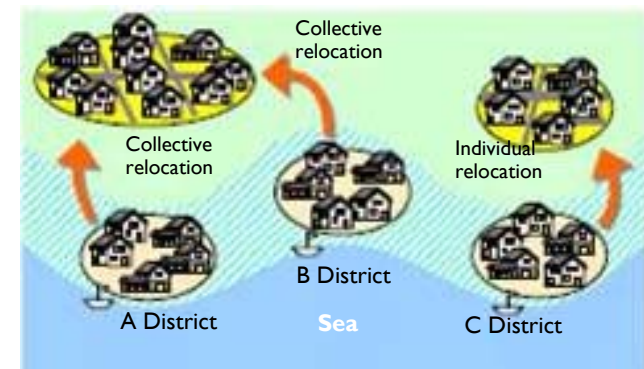
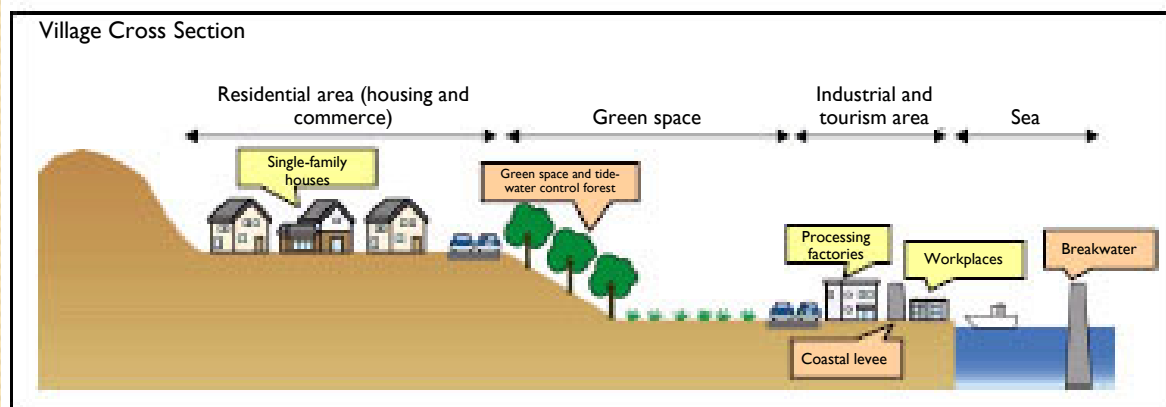
(Disaster risk reduction)

- Workplaces and marine products processing factories to be located at lower ground.
- Residential area to be relocated to higher ground
- Building regulation of lower ground (prohibit building house)
- Road planning not to be isolated by Tsunami damage



Points of discussion

- Priority depends upon where people stand. “To live at ease by fast building a house”, “to resume fishing operations is the first consideration as residence has been secured by temporary housing” ...
- Villager prefer “ Individual community relocation” (but...Many aged people, Decrease number of families especially young families go out of the town)
- Land use plan of low land have not be arranged



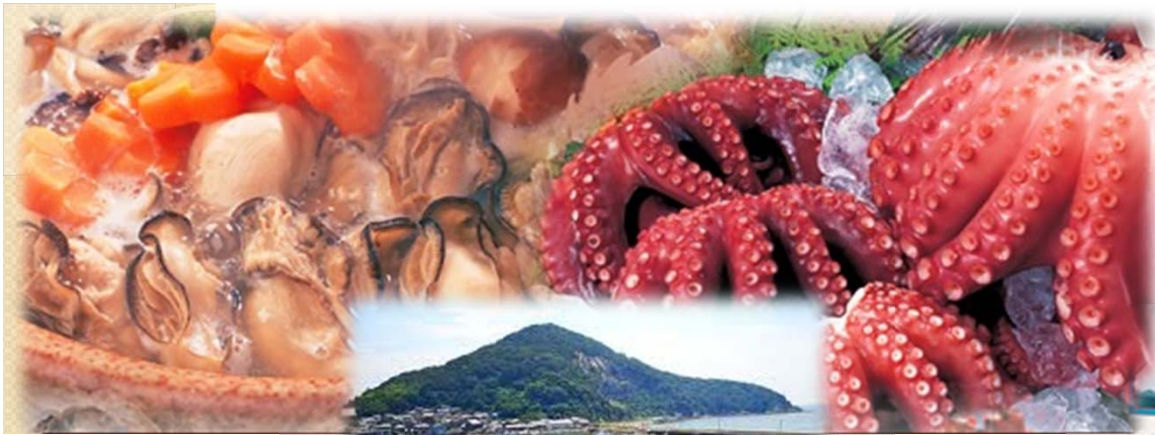
Plan to choose individual or collective relocation case-by-case taking local characteristics and residents' intentions into account

Village Discussion

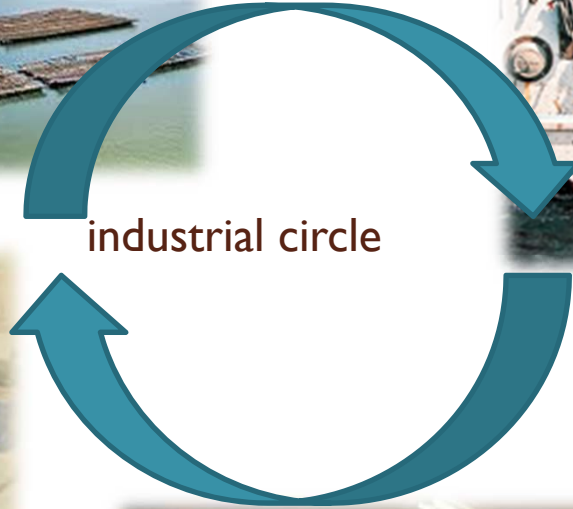


- Meeting with local land owners (Contracting Societies, etc.)
- Transfer to common land at higher ground
- Explanation on project method institutions
- Road maintenance and re-planning





Harvest from the sea and industrial circle

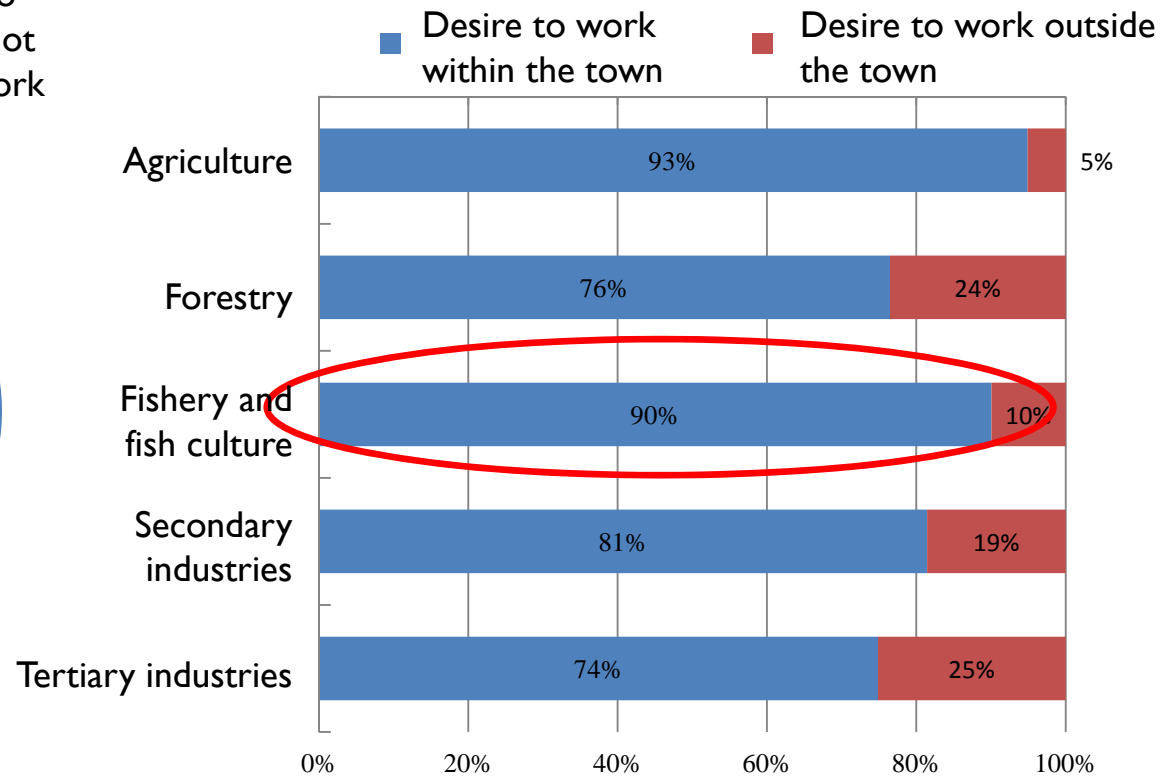
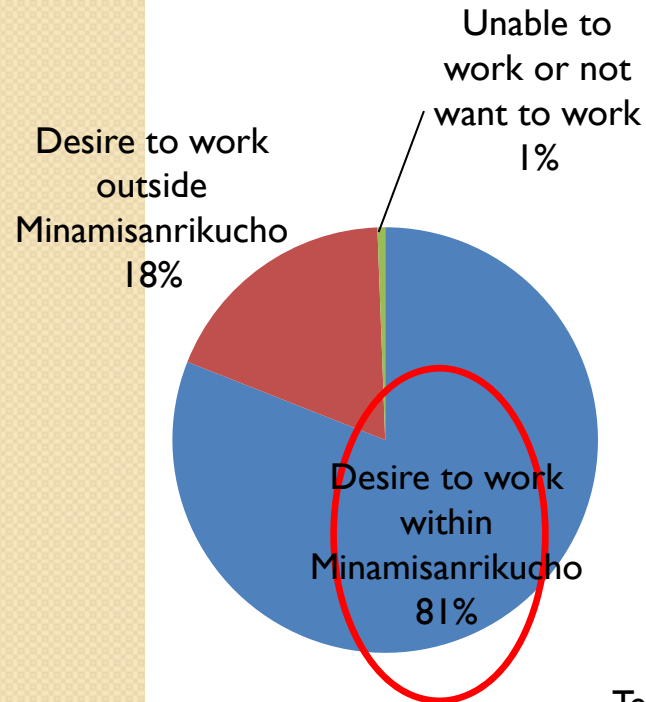


Results of Town People's Questionnaire Desired Workplace



Future work

- 81% of respondents desire to have jobs within the town.
- As long as primary industries are concerned, 93% of workers in “the agricultural industry” desire to continue their jobs, while 90% of workers in “the fishery and fish culture industry” desire to continue their jobs.



Reconstruction of Central Town area



land use; Sharp distinction between residential area and industrial area (Disaster risk reduction)

Move of Town central zone to highland;
New town office, hospital...
(Land adjustment projects,
Nodal urban improvement projects)

Residential committee to plan recovery project central area

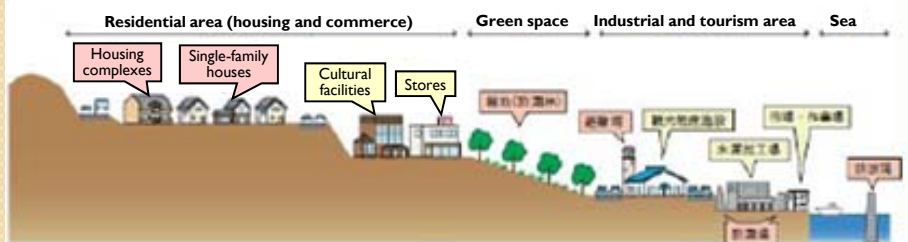
Evacuation road from industrial area to residential area, highland



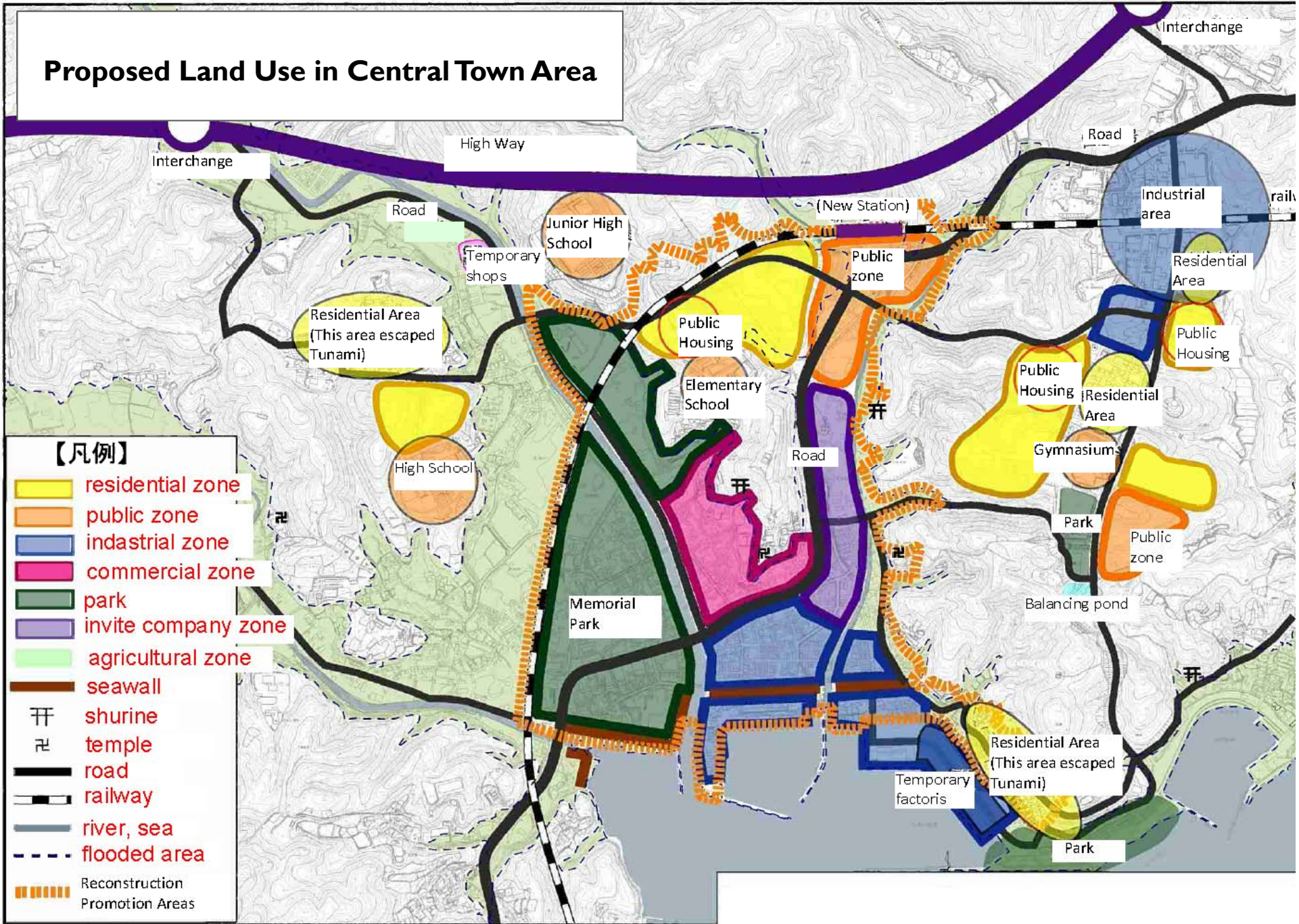
Points of discussion & problems

- Long time project ; because of large lot, many landowners
- Bustle of commercial zone, Invite manufacturing companies, Employment
- Many victims live outside the town, Residents hard to discuss about recovery plan
- Rubble(560thousands ton) →dispose only 2% (2012.6)

Cross Section of Central town area



Proposed Land Use in Central Town Area



【凡例】

- residential zone
- public zone
- industrial zone
- commercial zone
- park
- invite company zone
- agricultural zone
- seawall
- shurine
- temple
- road
- railway
- river, sea
- flooded area
- Reconstruction Promotion Areas

Housing issue

Permanent Public Housing for Victims

Plan of Permanent Public Housing for Victims 2012.3

- ▪ ▪ Construct **1000** units (- 2015.3)

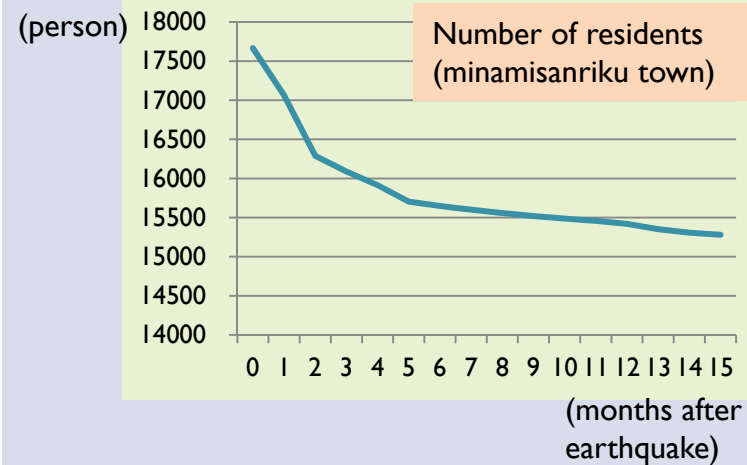
Assistance for family build house by themselves

2million yen (aid) per family
+ Community relocation assistance
(prepare housing site etc.)



Points of discussion

- Many victims live outside the town (Temporary public houses, rented apartment (rent assistance))
- Young families tend to move urban city → Number of residents decline after earthquake



Wisdom enabling to live in prosperity with only necessary development.

Residents over 65years old are over 30%

Town office have to manage many permanent houses for long time...



Issues for recovery of the Great East Japan Earthquake

for Public Office

Public Service Reconstruction for recovery

- Organization of reconstruction
(Roles of National, Prefectural, and Municipal governments)
- Human Recourses

Implementation of projects for recovery

- Budget
- New system for recovery

Town hall & Disaster Management Center



Temporary Town Hall Office



Move to highland

The town hall was hit by the tsunami, facilities were badly damaged and workers (39 persons) dead or missing.

Basic data of residents and **maps** flowed to the sea



Public Service Reconstruction & Implementation of projects



• How to build a system to receive assistance

Pairing assistance system (対口支援 etc.)

Human Recourses support

- Activity of “Union of Kansai Governments”
- National Government coordinate visiting public long term-visit technical officers
- Many officers support public service reconstruction

Dispatched specialized nonofficial consultants to each city and town (2011.5 -2012.3)

- support to draw up reconstruction plan in city planning and civil engineering
- in city planning and civil engineering
- National government’s budget



Visiting technical public officer help to draw up reconstruction plan 2011.6



Nurses advice about health care to victims 2011.8



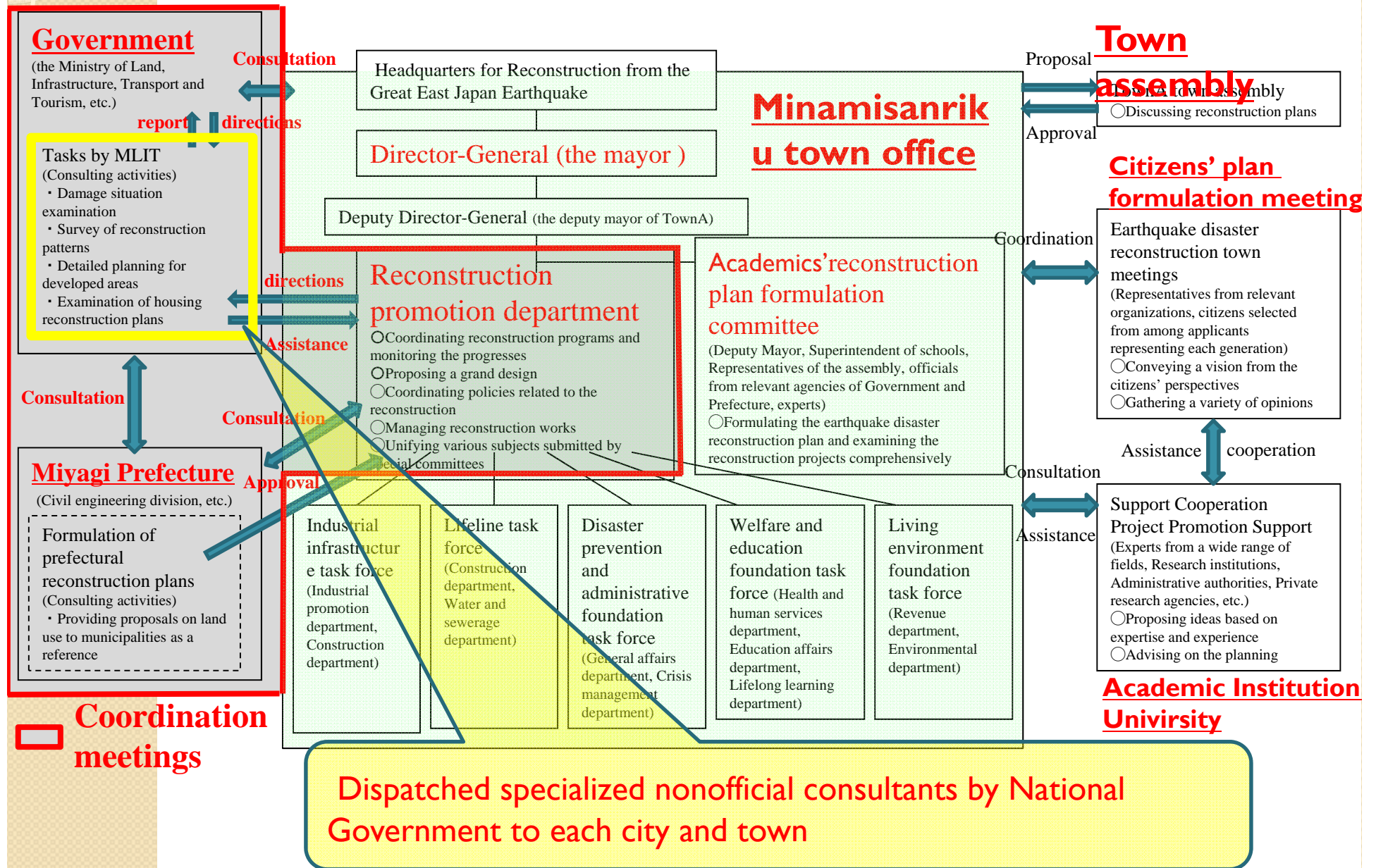
Volunteer Center 2011.6



Temporary office of “Union of Kansai Governments” 2011.4



Minamisanriku town Organization Chart of Reconstruction Planning



Public Service Reconstruction & Implementation of projects



Issues of Implementation of projects are;

The affected **Towns and cities** had no choice but to **draw up a reconstruction plan** for their recovery on their own **before the support systems from national government were made clear.**

Small coastal towns need a lot of visiting staff ,
but now, some former small towns that have been incorporated into larger towns are left behind in the implementation of relocation projects.

Coast town **population outflow** to surrounding inland cities;

Smart shrinking recovery planning and only necessary development is important for
“Sustainable recovery”

Need to balance “value of **regional characteristics**” and **“importance of quick recovery”**

What should be the use of the vacant land in **low laying area where** residential use is forbidden. (To keep people from rebuilding in dangerous areas in the future **for long term Disaster risk reduction**)



4. Conclusion ;
Idea for Disaster Recovery Checklist
lessons from the Great East Japan Earthquake

issues in Tohoku related to the disaster recovery checklist



- Smart shrinking recovery planning
 - 4.3 Resettlement of scatter households into compact communities may be considered if original sites are no longer suitable for inhabitation and production due to high disaster risks and high costs for reduction
- Land Elevation planning and DRR
 - 4.2 The rebuilding planning must be based on reassessment of local disaster risks
- Residents consensus building
 - 4.2 The resettlement plan will be discussed and agreed by majority of local residents and with full support from the government.
 - community layouts will be prepared by professionals in close consultations with community residents
 - land re-allocations for residents housing and agriculture production must be discussed with all residents.
- Pre-disaster recovery planning and training
 - 1.2 As part of disaster preparedness activities, a disaster recovery framework may be prepared.

Pre-Disaster Recovery Planning (Tokyo Government)

- Training program for public officers



<Manual of recovery planning ,
Tokyo government>

<Program of Pre-disaster recovery planning training program>

- ① Building damage assessment training
- ② Training of setting up the area of building regulations and land use planning based on prediction of the damage
- ③ Training of drawing up district recovery plan
- ④ Training of announce the plan at town meeting

Pre-Disaster Recovery Planning (Tokyo)



- Training program for community residents



issues in Tohoku related to the disaster recovery checklist

- DRR and Universal design
 - In an aging society, universal design must be included along with DDR in recovery
- Long term land regulation and DRR
 - To ensure future safety, land use regulations must be created to prevent people from re occupying hazardous areas in the future.
- Industrial circle and recovery
 - The recovery process must consider the relationship between different parts of the industrial circle, and support these connection.
 - Temporary support needed for businesses during the recovery process (like temporary shopping arcade)
- Timing of announcement of national government support systems and recovery budget
- Pairing assistance system
 - It is important to create a system to coordinate support from outside the disaster region (twinning, etc.)
- Partnerships of public office to private experts and NGOs
 - NGOS, the private sector, and public sector all are important to recovery
- Assistances for evacuees living wide area
 - It is important to support all disaster victims, also those who evacuate from their hometown after disaster
- Continuous housing recovery
 - Housing recovery must be considered holistically as a continuous process, with smooth transitions between phases