



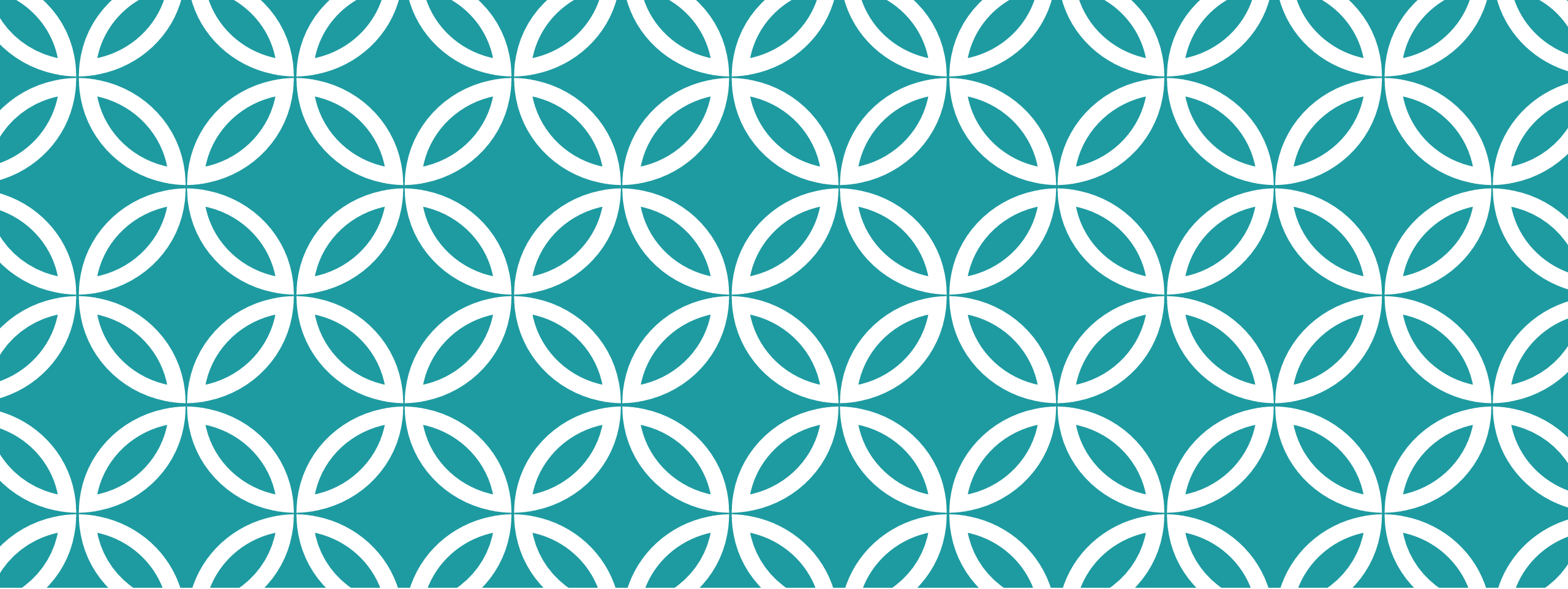
MANAGED RETREAT AND TSUNAMI RECOVERY IN JAPAN

MANAGED RETREAT: GLOBAL LESSONS FOR SUCCESS
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KEY MESSAGE

Resettlement is effective in risk reduction, while implementing needs various efforts in policy, approach, communication, support, etc.



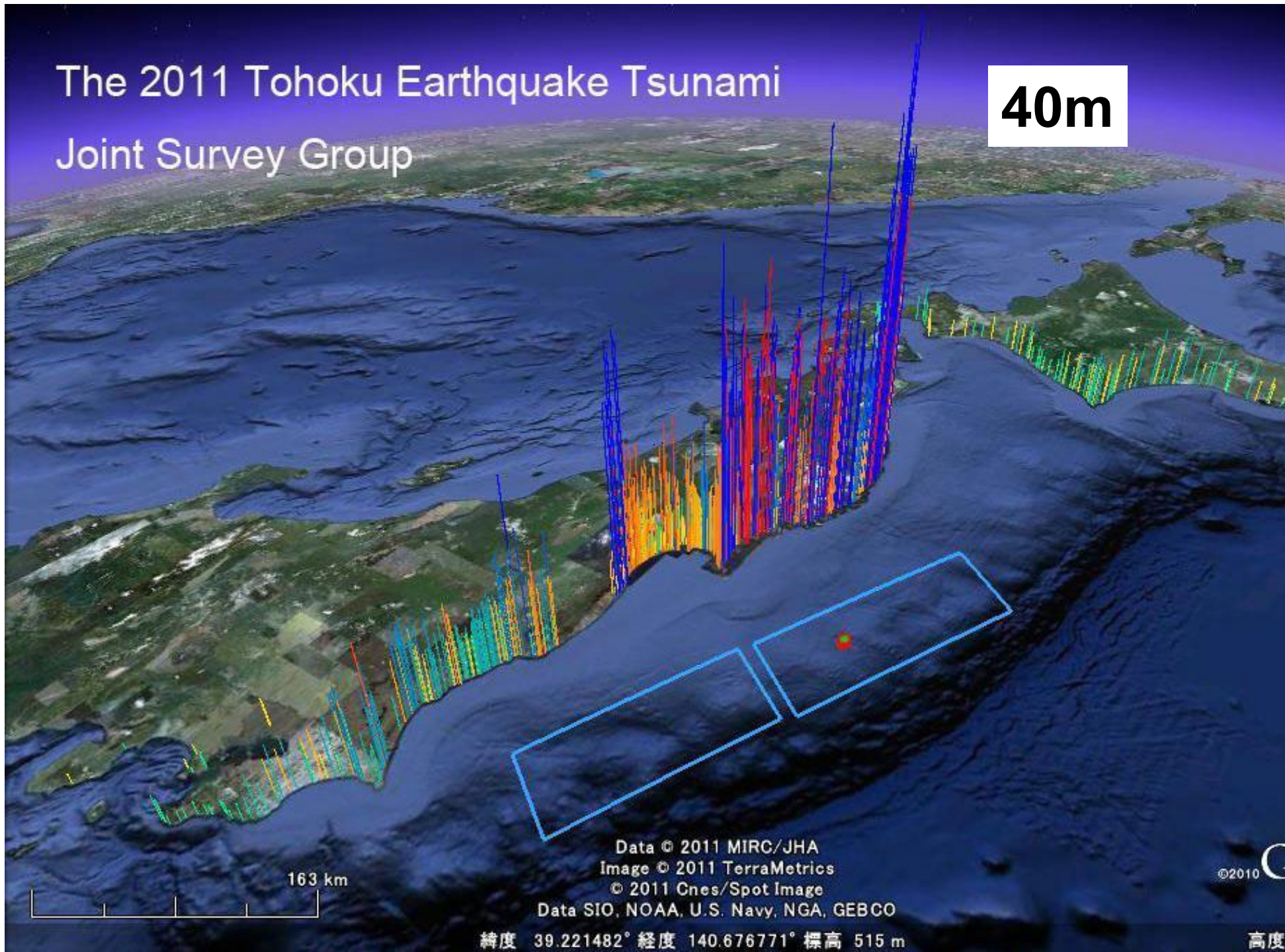
1. CURRENT RECOVERY PROGRESS



The 2011 Tohoku Earthquake Tsunami

Joint Survey Group

40m

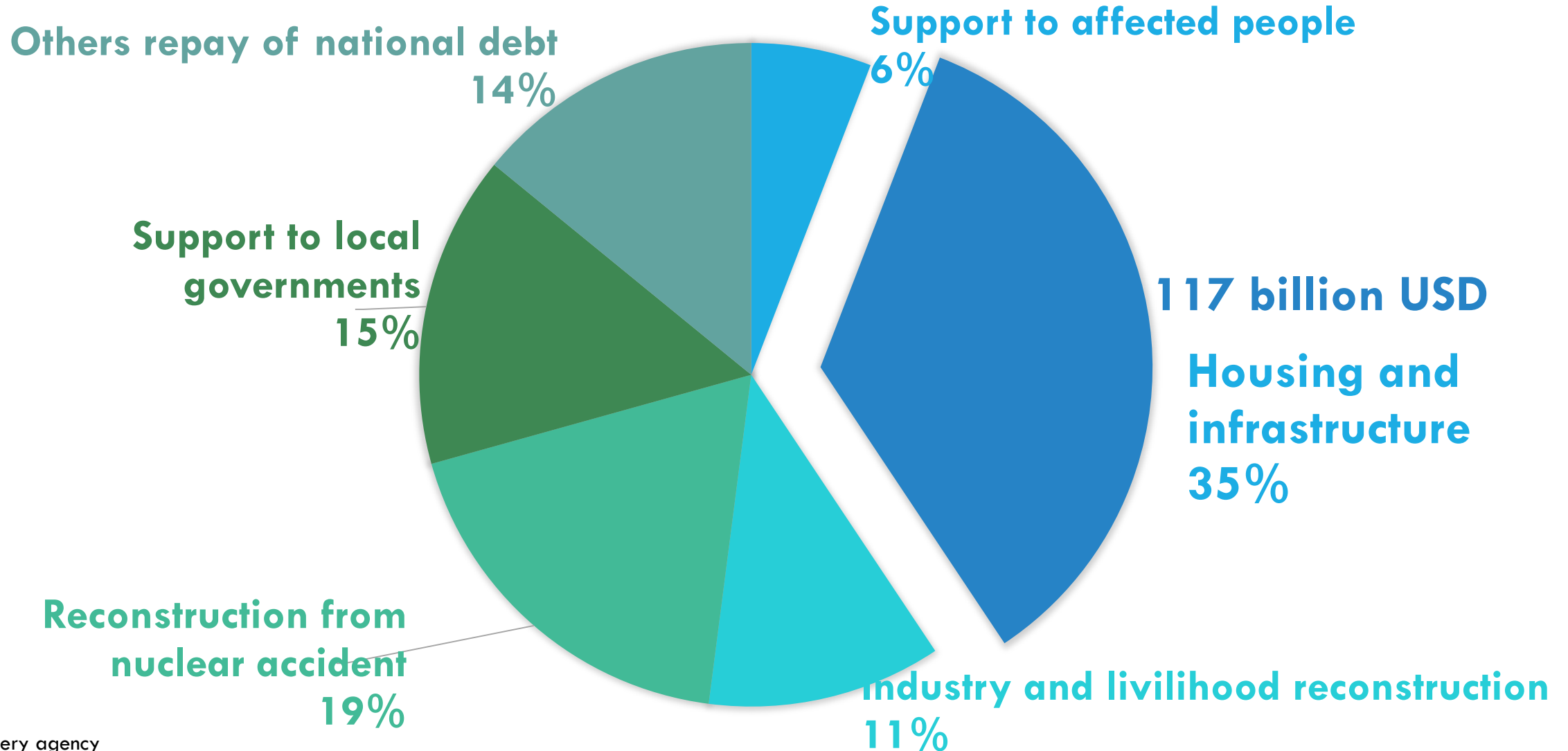


DAMAGE

- ✓ Date: March 11, 2011
- ✓ Magnitude: MW 9.0
- ✓ Death and missing: 22,303 (including disaster related-death)
- ✓ Economic damage: 16.9 trillion JPY, 140 billion USD

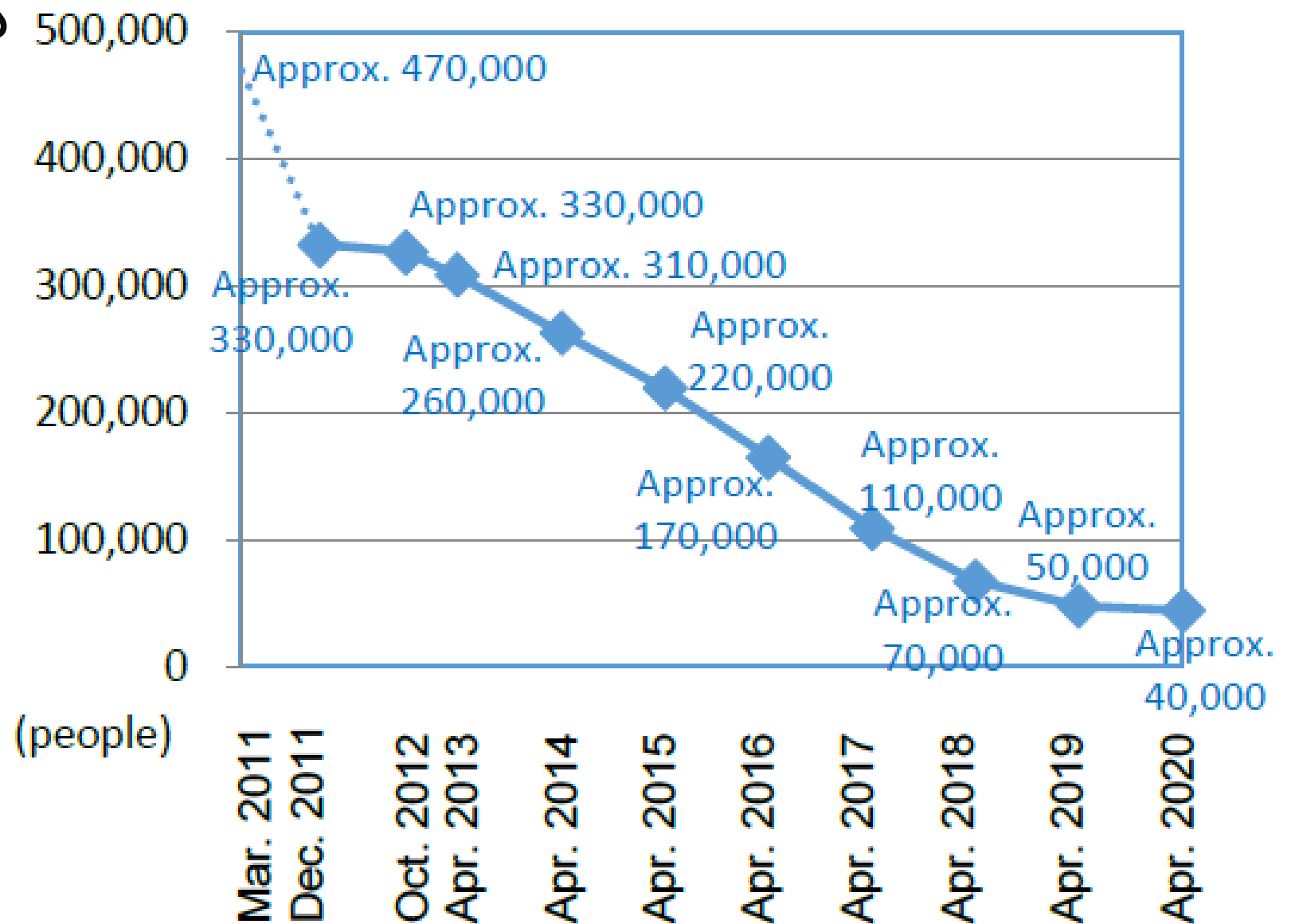


RECONSTRUCTION BUDGET: 336 BILLION USD, 38.6 TRILLION JPY FROM 2011 UNTIL 2020, ALMOST DOUBLE OF DAMAGE



NUMBER OF EVACUEES

Decreased
from 470,000
To some 40,000
(mainly from
Fukushima)

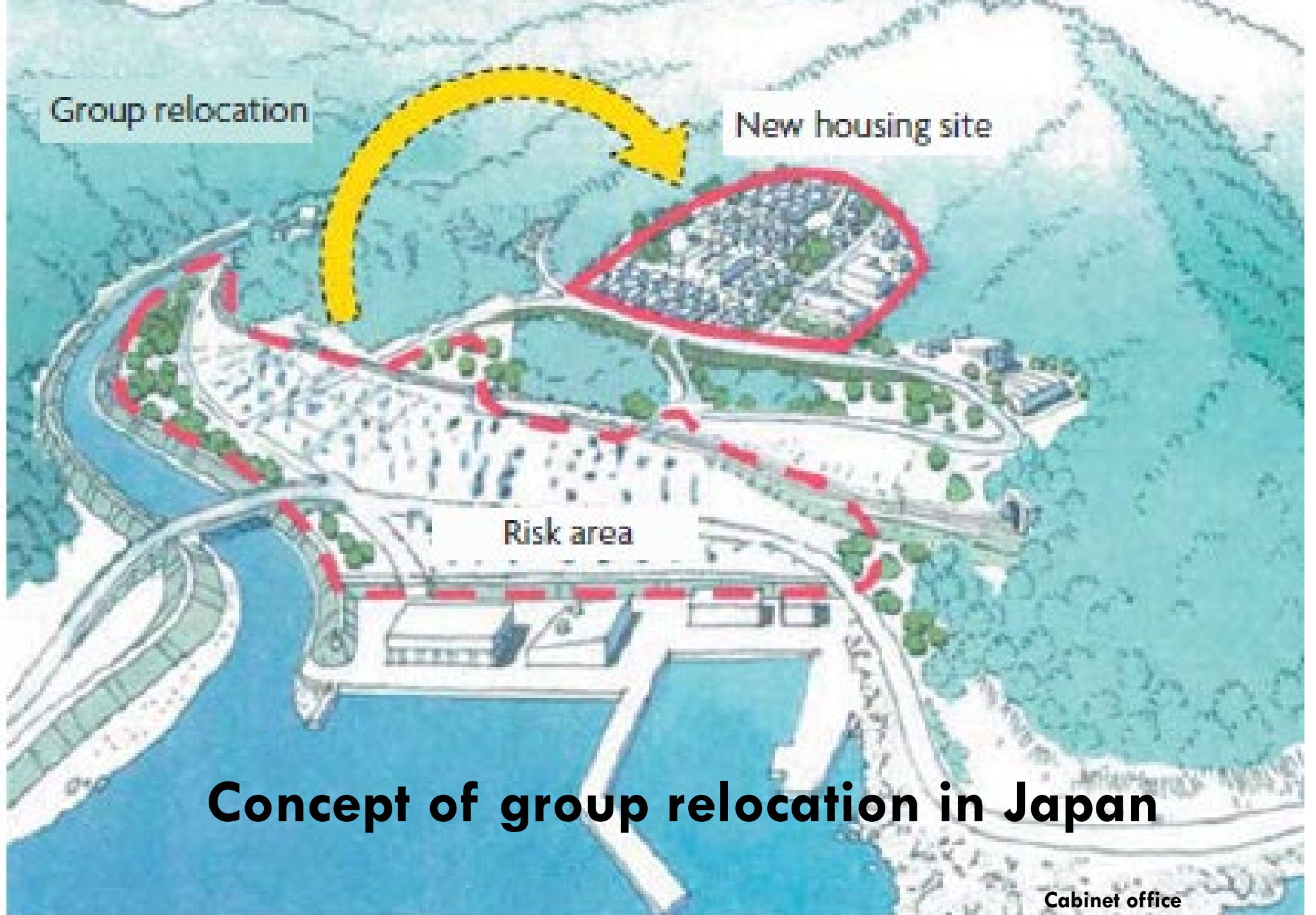


Group relocation

New housing site

Risk area

Concept of group relocation in Japan



ACHIEVEMENT: RECONSTRUCTING HOUSES

Damaged houses : 350,000 (completed destroyed 122,000)

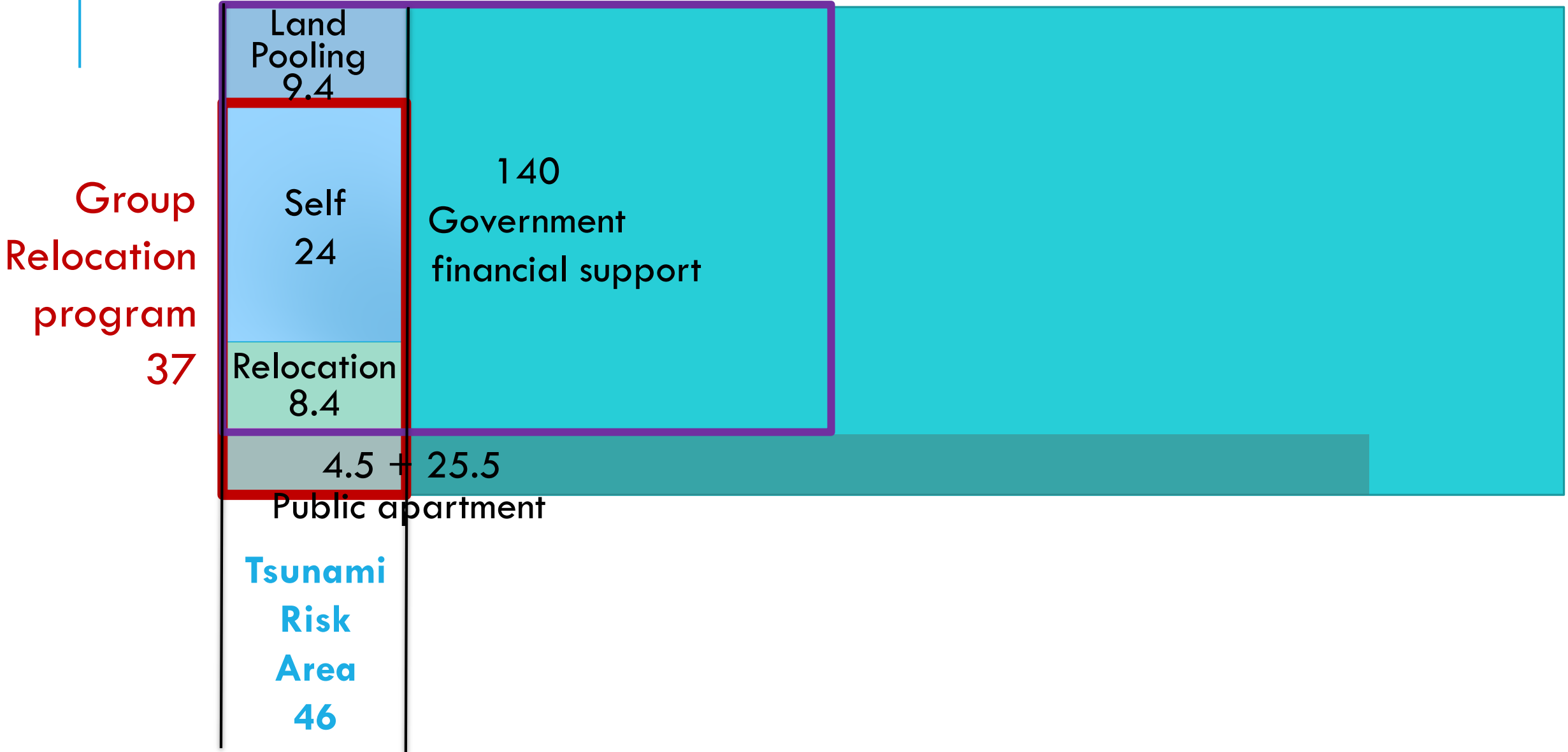
Buy-out at risk areas : 37,000

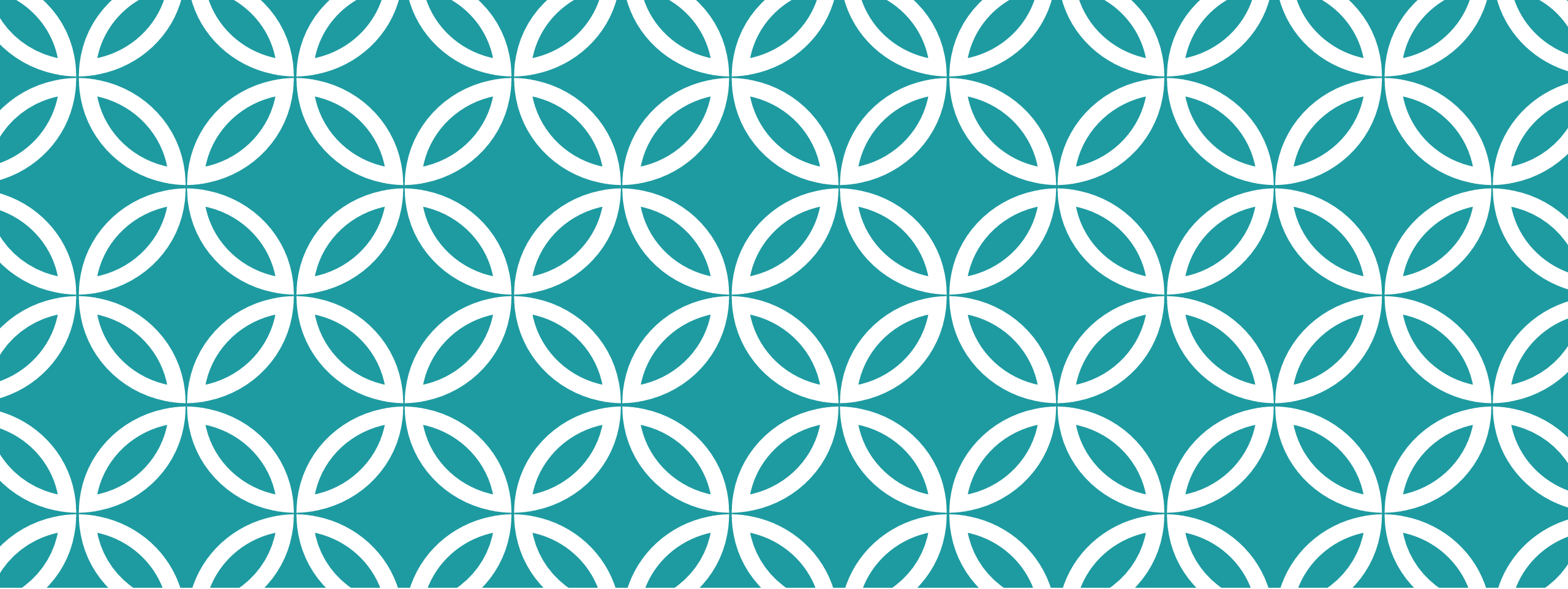
Reconstructed houses : 18,000 at 393 sites
at relocation site (Buy-out 8,400+ land pooling 9,400)

Public apartment : 30,000 (4,500 in risk area)

Self reconstruction : 24,000

Damaged houses 350 thousands (,000)





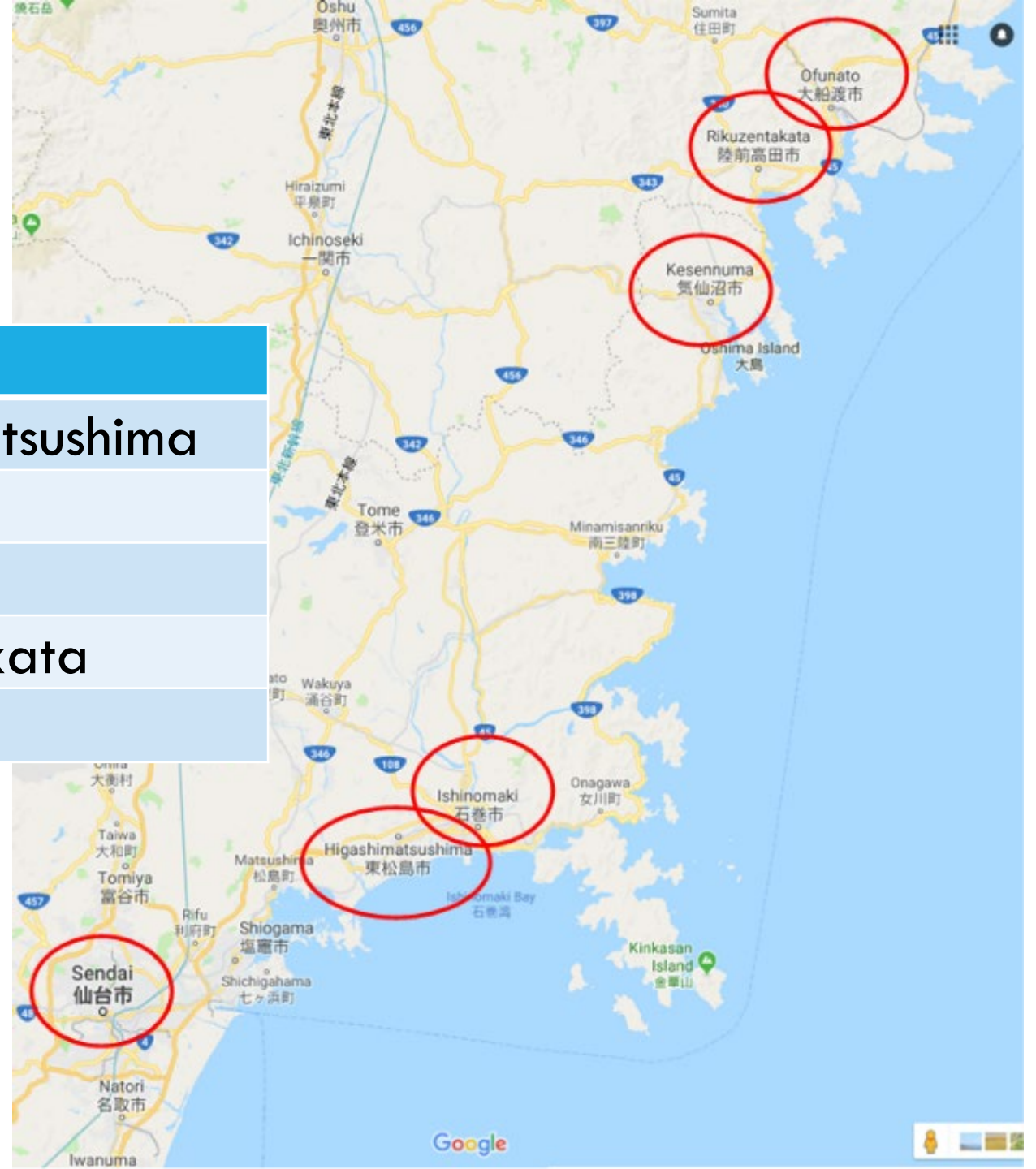
2. JOINT SURVEY

SURVEY IN JAPAN: NOV, 2018 NOBIRU, ELEMENTARY SCHOOL

Higashimatsushima



Arriving at Sendai	City
Nobiru	Higashi Matsushima
Kitakami,	Ishinomaki
Oya Kaigan Coast	Kesennuma
Miracle pine tree	Rikuzen-takata
IBASHO cafe	Ofunato



US BUY-OUT: MANAGED RETREAT

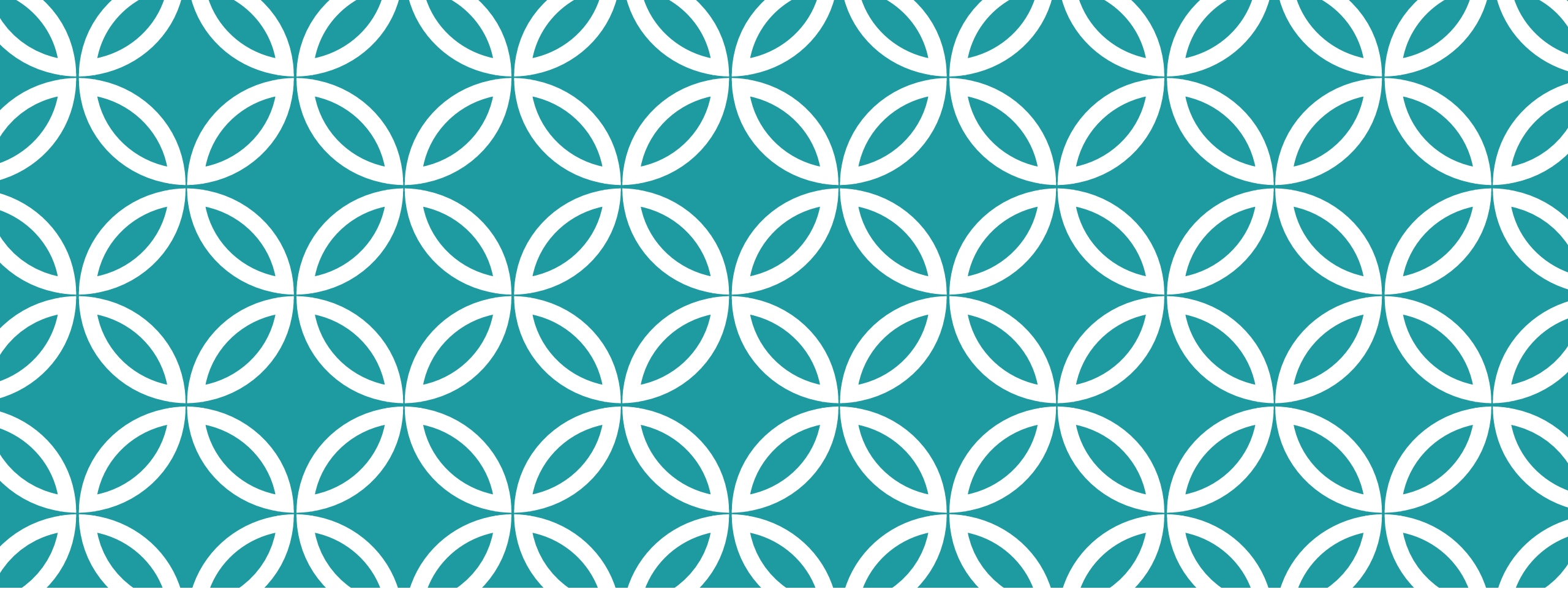


WHAT ARE ISSUES?

RECENT STUDIES FOUND VARIOUS ISSUES

- ✓ long time required to develop relocation sites
- ✓ If community members move out separately, local communities can easily collapse
- ✓ expansion of existing social inequality
- ✓ complexity of building consensus among affected people
- ✓ difficulty of sustaining public services and communities at relocation sites in the long term

(Binder et al 2015; Ishiwatari, 2018 & 2021; Ranghieri and Ishiwatari 2014; Siders 2018; Siders et al. 2019).



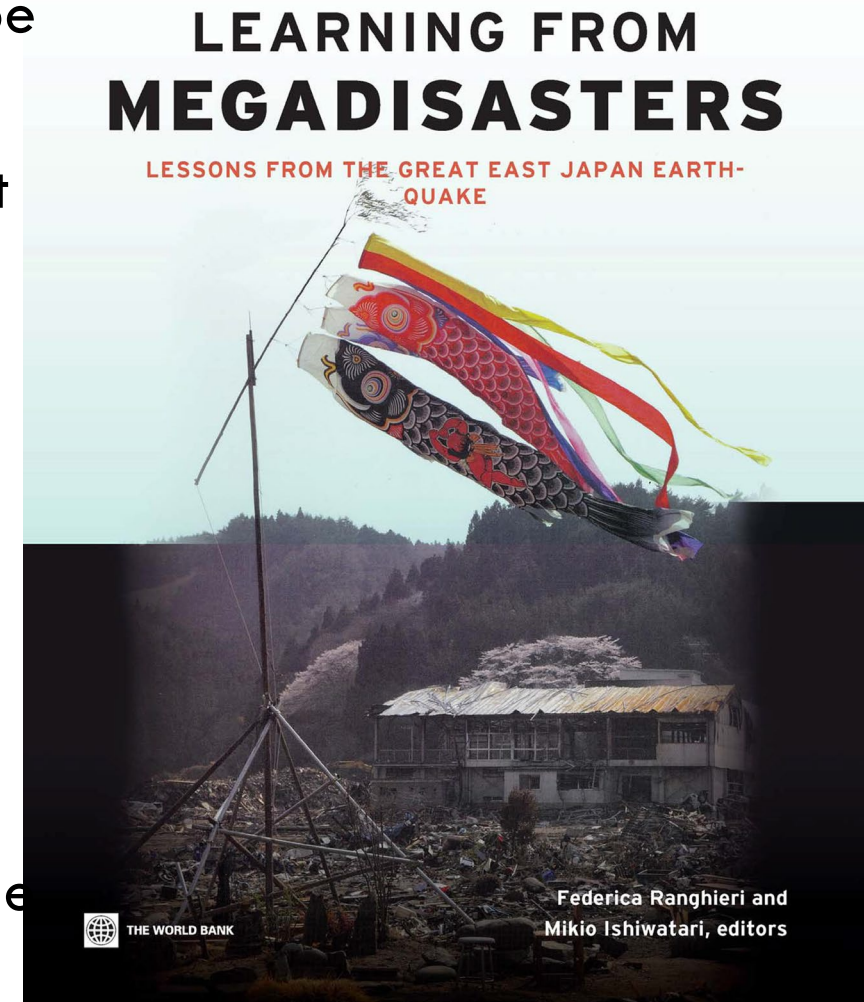
3. ISSUES OF IMPLEMENTATION

SCHEMES AS GROUP RELOCATION PROGRAM COMPARISON BETWEEN US AND JAPAN

	US	Japan
Program schemes	Fragmented programs <ul style="list-style-type: none">- Buy out- Community Dev. Block Fund, etc.	Package of buy-out, relocation site dev, relocation support, etc.
Role of local gov.	Initiated by local gov.	Pref. gov. assess risk areas. Implemented by city gov.
cost share	Federal: 75% State & Local: 25%	Central: 100% Local: 0% (at GEJET)
number	20-30 communities (Pinter 2020)	393 sites at GEJE

WORLD BANK'S LESSONS FROM TSUNAMI DISASTER

1. Relocation is effective, but implementing relocations can be challenging
2. Community participation is key to promoting recovery, but local governments face practical issues
3. Close communication between government and affected communities is essential aspect of effective response.
4. Disasters exacerbate existing problems of aging & dwindling rural population.
5. Gov. help people affected, particularly the most vulnerable groups.
6. Local gov. should strive to identify the best way to manage process of housing reconstruction.



1. IMPLEMENTING IS CHALLENGING

- ❑ Limited capacity of municipality
- ❑ Support from outside
- ❑ Community participation drive project
- ❑ Mistrust delay project

COLLABORATIVE MECHANISM ESTABLISHED





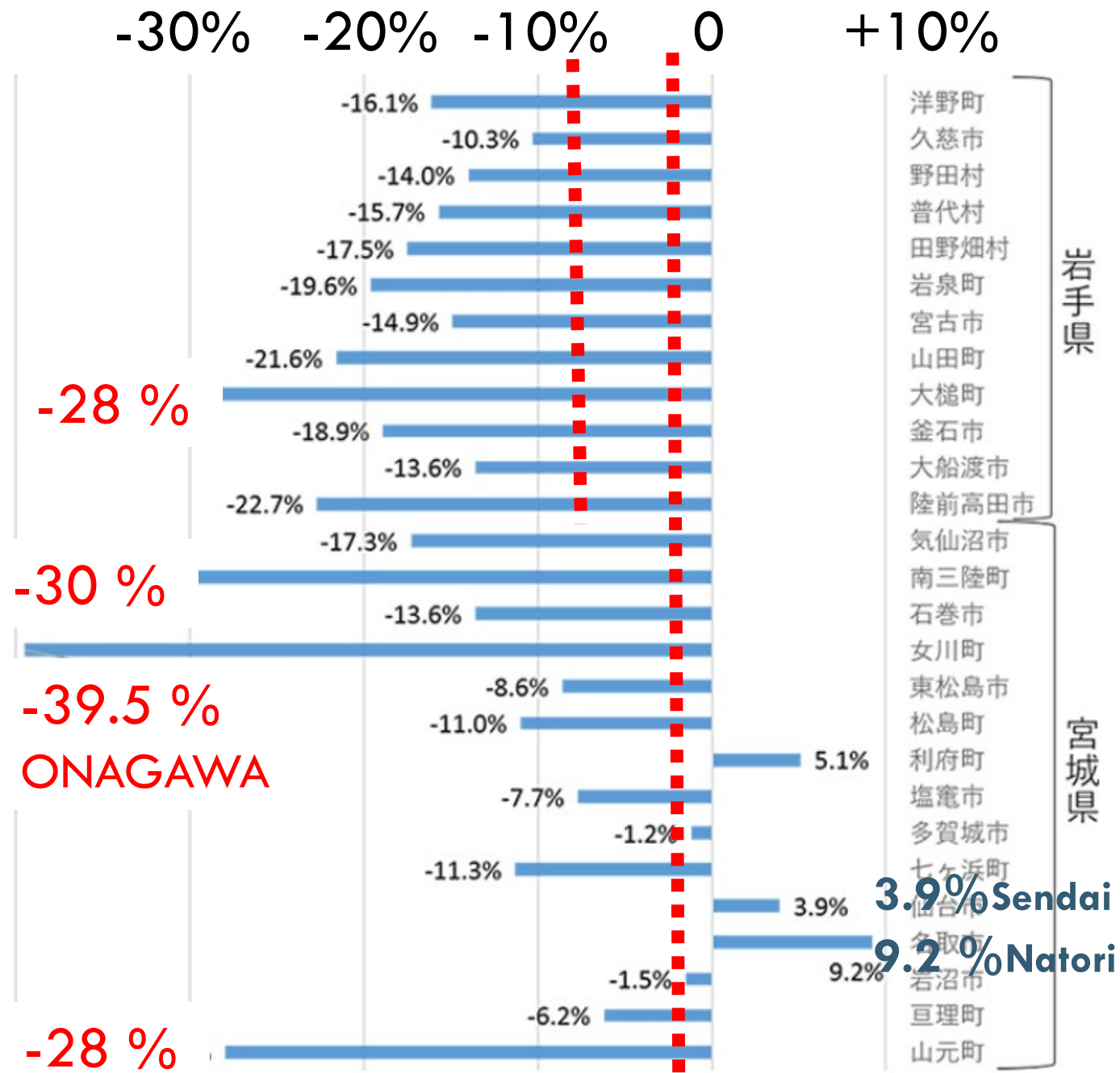
COMMUNITY CONSULTATION JULY 2013



2 .RISK OF COLLAPSING COMMUNITY

Population substantially decrease in affected towns 2020/2010

- Natori +9.2%
- Sendai +3.9 %
- National average: -2 %
- Miyagi Pref. Ave: -2 %
- Iwate Pref. Ave: -9 %
- Onagawa -39.5 %



DEVELOPING INDUSTRY

□ US

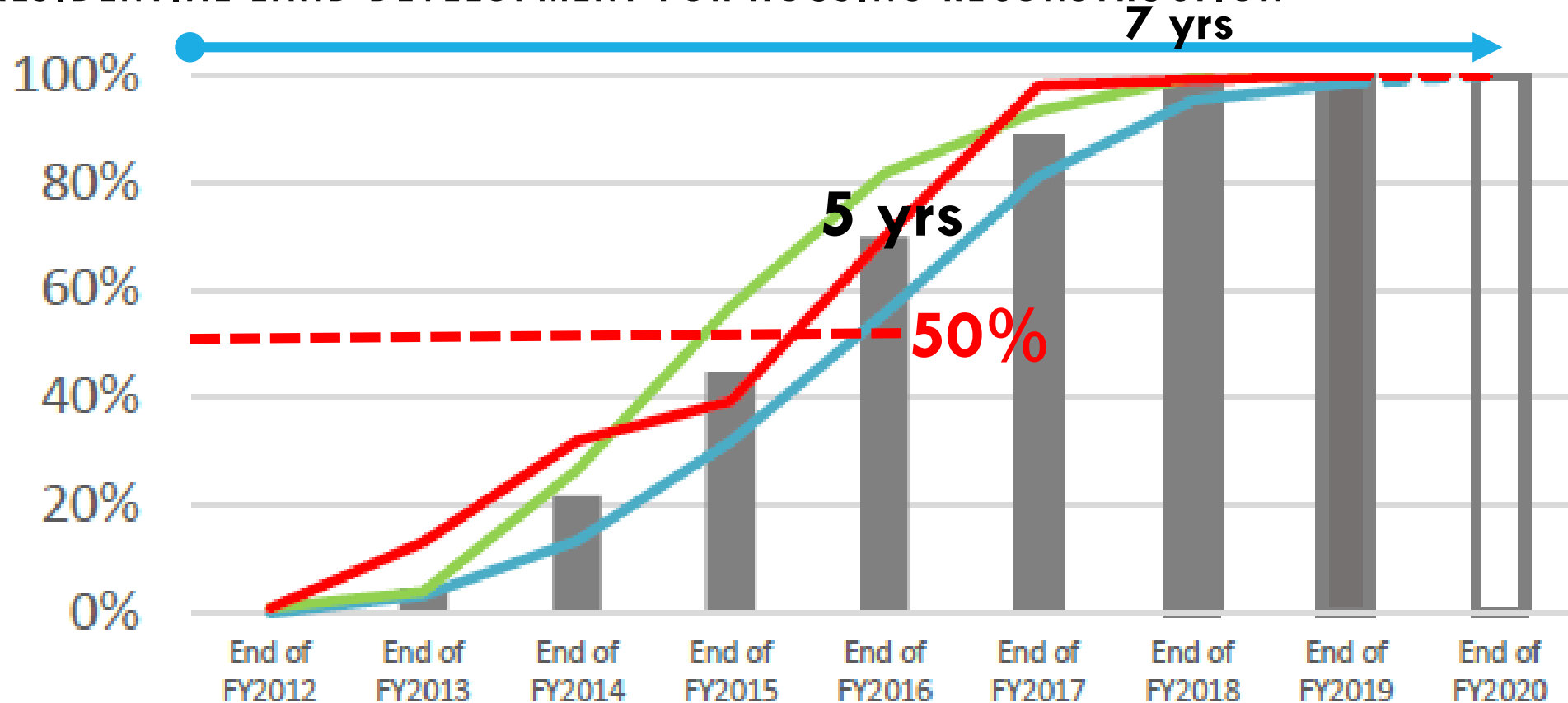
Incorporated in town planning, inviting factory, shops, tourism facilities,

Building town next to interchange

■ Japan

separate program for rehabilitating industry

3. TAKES TIME: NEED TO WAIT SEVERAL YRS RESIDENTIAL LAND DEVELOPMENT FOR HOUSING RECONSTRUCTION



■ Total for 3 prefectures — Iwate Prefecture

— Miyagi Prefecture

— Fukushima Prefecture

4. COST ONAGAWA RELOCATION SITE



DEVELOPMENT COST FOR RELOCATION SITE

56 million JPY/lot, some 460,000 USD/lot (house)

Central gov. covered

Excluding housing cost

1 trillion JPY

塩崎賢明, 2021, 東日本大震災 10 年と住宅復興、復興 (25 号) 9(2)

5. TO PREVENT EXPANDING INEQUALITY

Following bought out, if vulnerable group, such as low-income or the elderly, cannot construct new houses.....

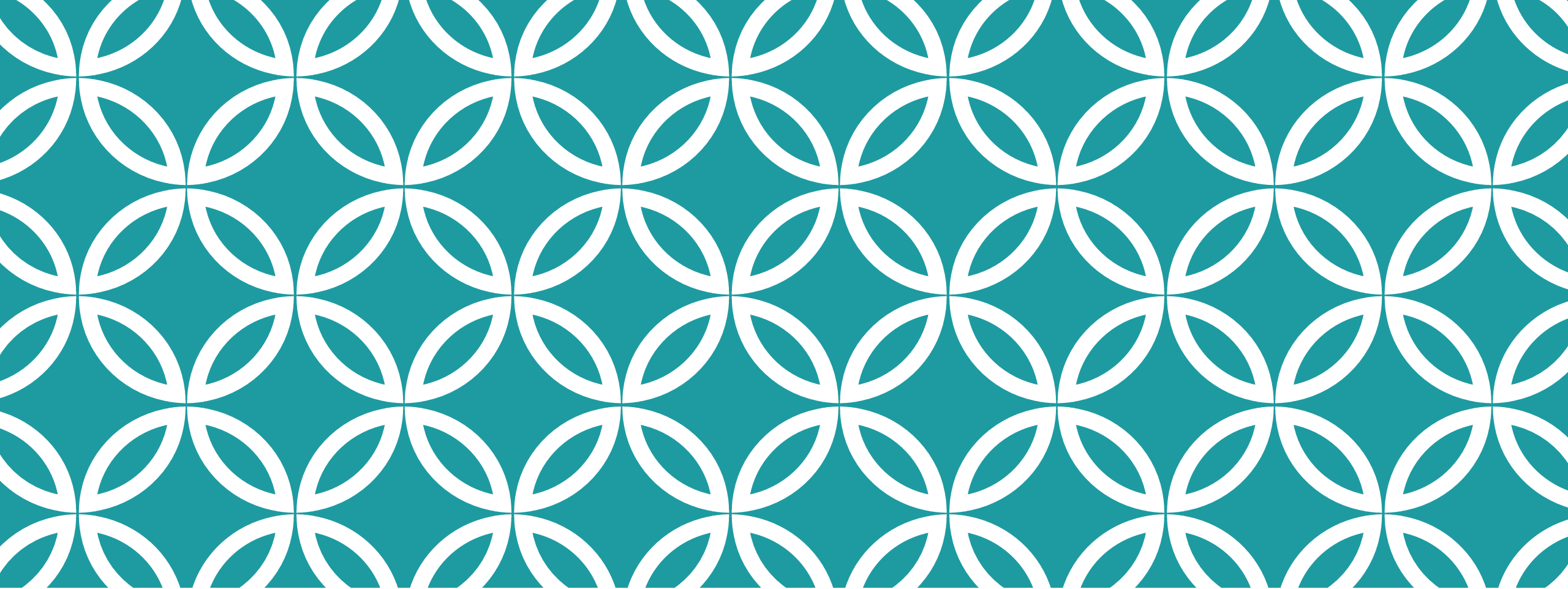
- JPN: Public apartment with subsidized rent
- US: no support, affordable housing, district for low-incomes...

KESENNUMA PUBLIC APARTMENT



6 TO MANAGE THE PROCESS

- US: No integrated scheme of relocation and buy-out
- Japan: Package of buy-out and relocation
- US: able to renovate houses at in-risk area
- JPN: Prohibited



CONCLUSION



CONCLUSION

Resettlement is effective in risk reduction, but challenge

Integrating programs

Community participation, and outside support

US: long term vision and industry

JPN: Care for the elderly and low-income; Communication with them



Thank you

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