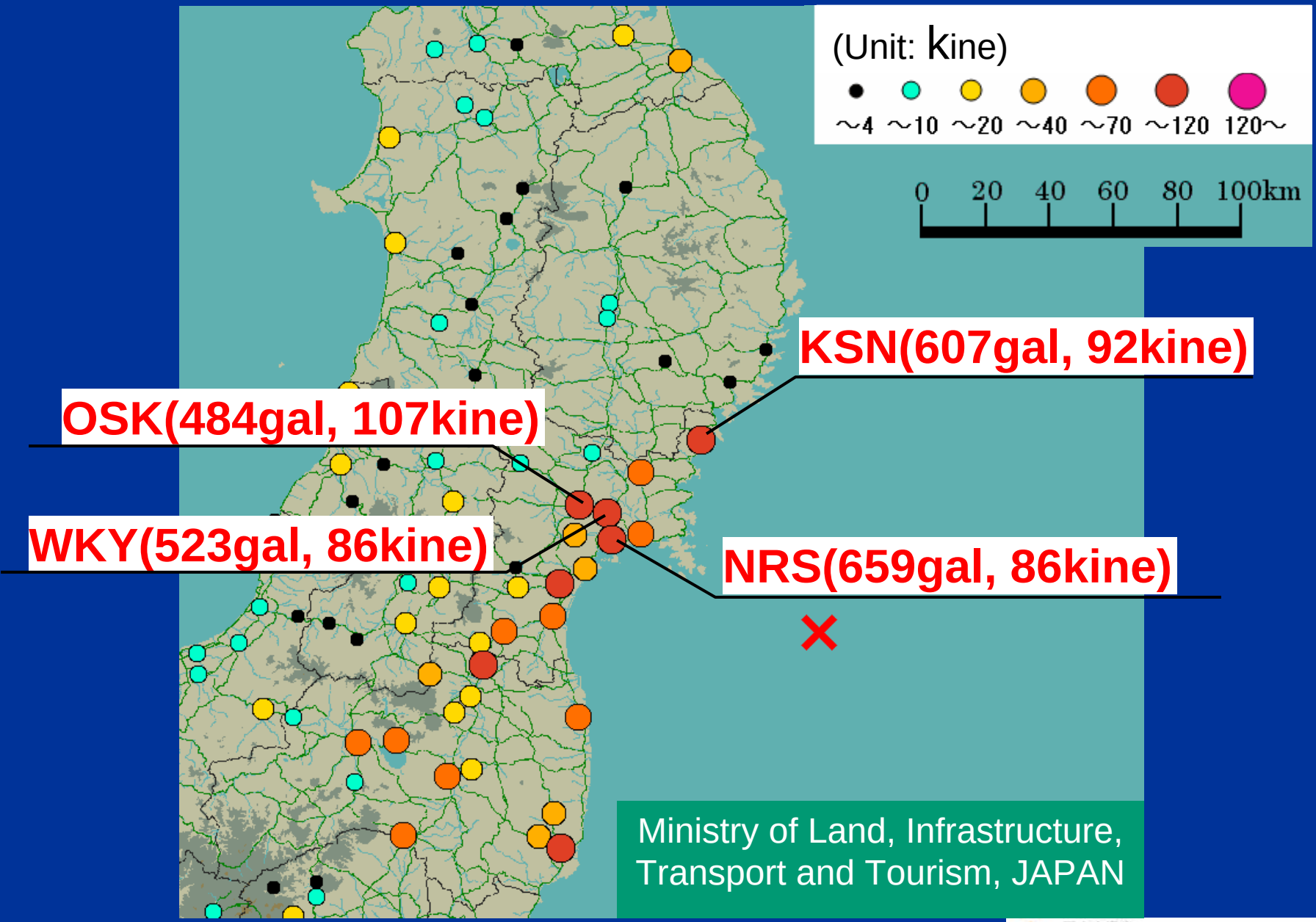
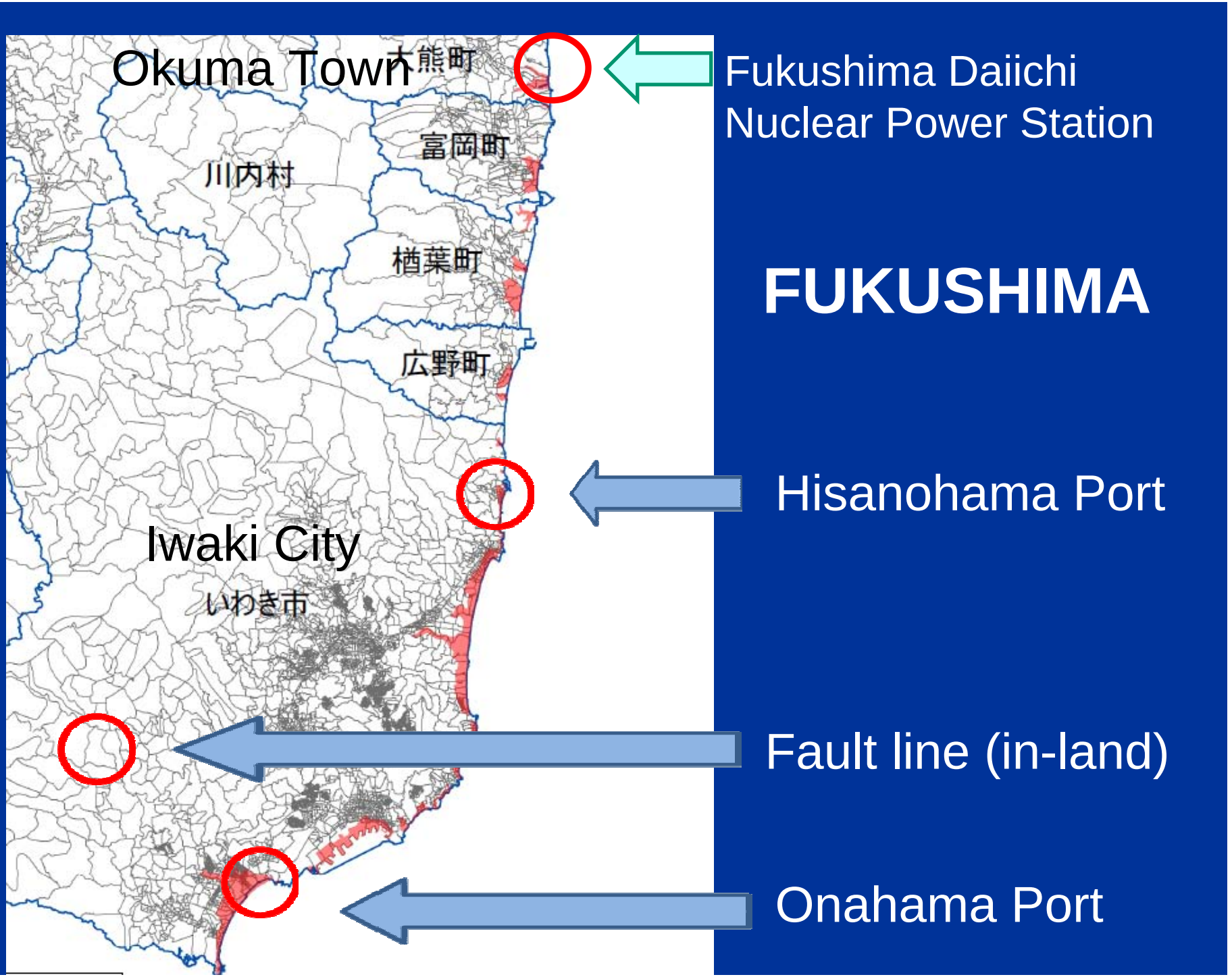
4. 2011 Great East Japan Earthquake and Tsunami

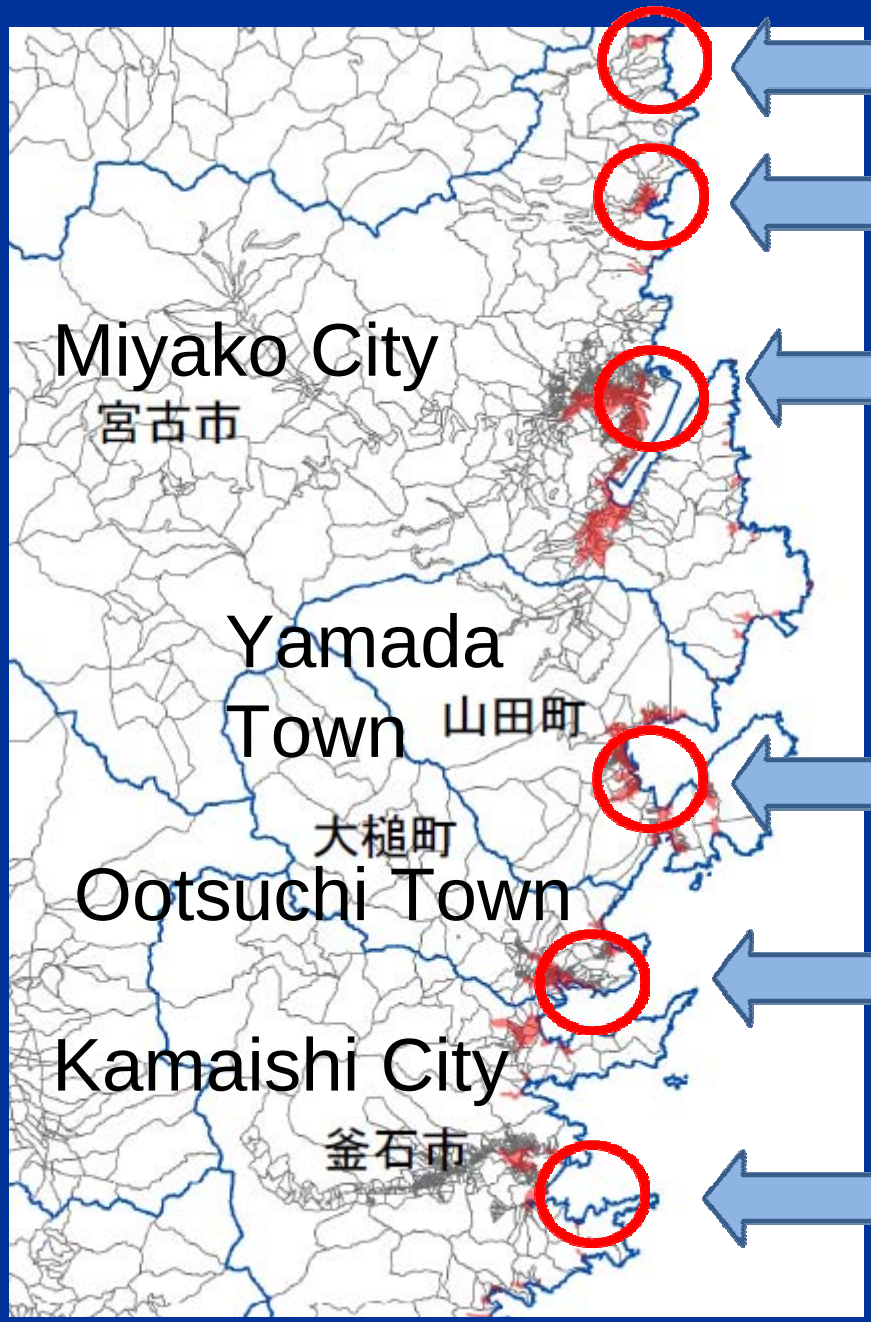
Strong Motion Record by MLIT (11 March 2011)



国土交通省
国土技術政策総合研究所
National Institute for Land and Infrastructure Management


Okuma Town
大熊町
富岡町
川内村
楢葉町
広野町
Iwaki City
いわき市
Fukushima Daiichi
Nuclear Power Station
FUKUSHIMA
Hisanohama Port
Fault line (in-land)
Onahama Port


2011 Iwaki, Fukushima
(IISEE/BRI)



Small port (h 37m)

Taro area

Miyako City Hall

IWATE

Collapsed dikes

Ship on a building

Collapsed huge dike


2011 Miyako, Iwate
(IISEE/BRI)

Miyako City, Taro area (Iwate)

Before 11 Mar. 2011

After 11 Mar. 2011

1: Collapsed dike (10m high) 2: Hotel, 3: Collapsed port , 4: Sign board


2009 Miyako (IISEE/BRI)
2011 Miyako, Iwate (IISEE/BRI) 1

2011 Miyako, Iwate
(IISEE/BRI)

2009 Miyako (IISEE/BRI)

2011 Miyako, Iwate
(IISEE/BRI) 2


2011 Miyako, Iwate
(IISEE/BRI) 3

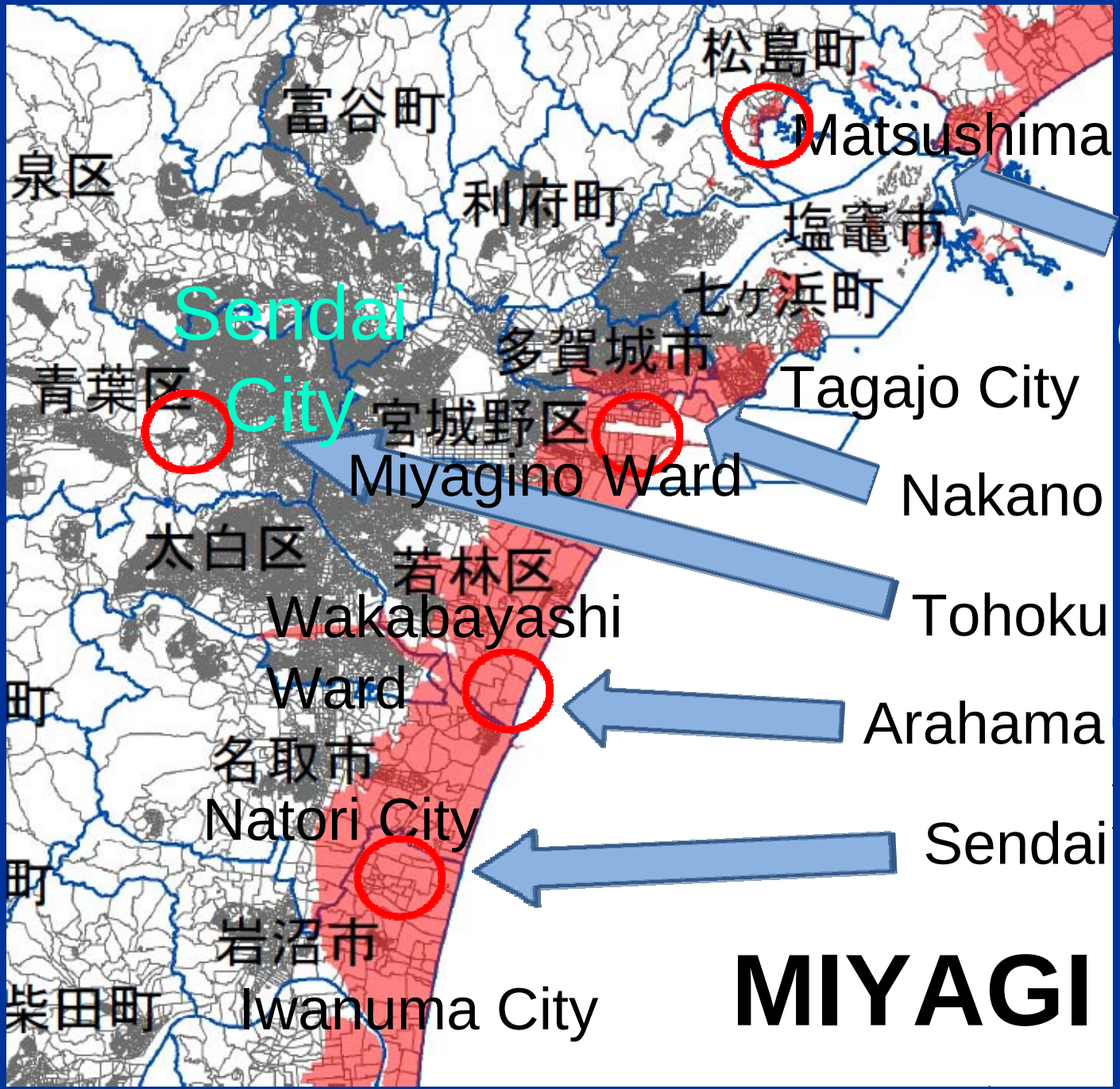
MIYAGI (Onagawa Town)


2011 Onagawa, Miyagi
(IISEE/BRI)


2011 Onagawa,
Miyagi (IISEE/BRI)


2011 Onagawa,
Miyagi (IISEE/BRI)


2011 Onagawa,
Miyagi (IISEE/BRI)


松島町
富谷町
泉区
利府町
塩竈市
七ヶ浜町
Sendai City
多賀城市
青葉区
宮城野区
太白区
若林区
町
名取市
Natori City
町
岩沼市
柴田町
Iwanuma City
MIYAGI
Matsushima Town
Matsushima (National park)
Tagajo City
Miyagino Ward
Nakano area
Wakabayashi Ward
Tohoku Univ.
Arahama area
Sendai Airport


2011 Sendai, Miyagi
(IISEE/BRI)

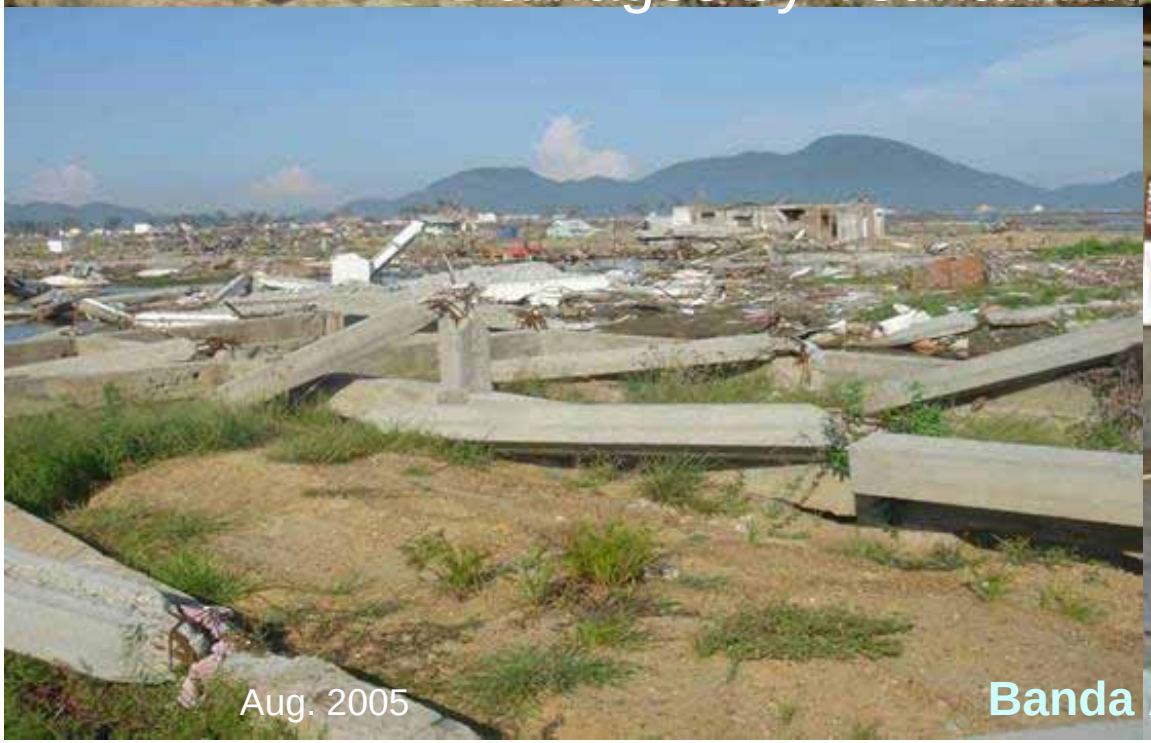
2011 Sendai, Miyagi
(IISEE/BRI)


2011 Sendai, Miyagi
(IISEE/BRI)


2011 Sendai, Miyagi
(IISEE/BRI)

5. Recent Large-Scale Disasters all over the World

Damages by Tsunami in 2004



Aug. 2005

Banda Aceh, Indonesia

Pakistan Earthquake
12th October 2005

Margala Tower (Islamabad)

Pakistan mission Mar. 2006

Java Earthquake in May 2006 (Yogyakarta, Indonesia)

Peru Earthquake in August 2007 (Pisco)

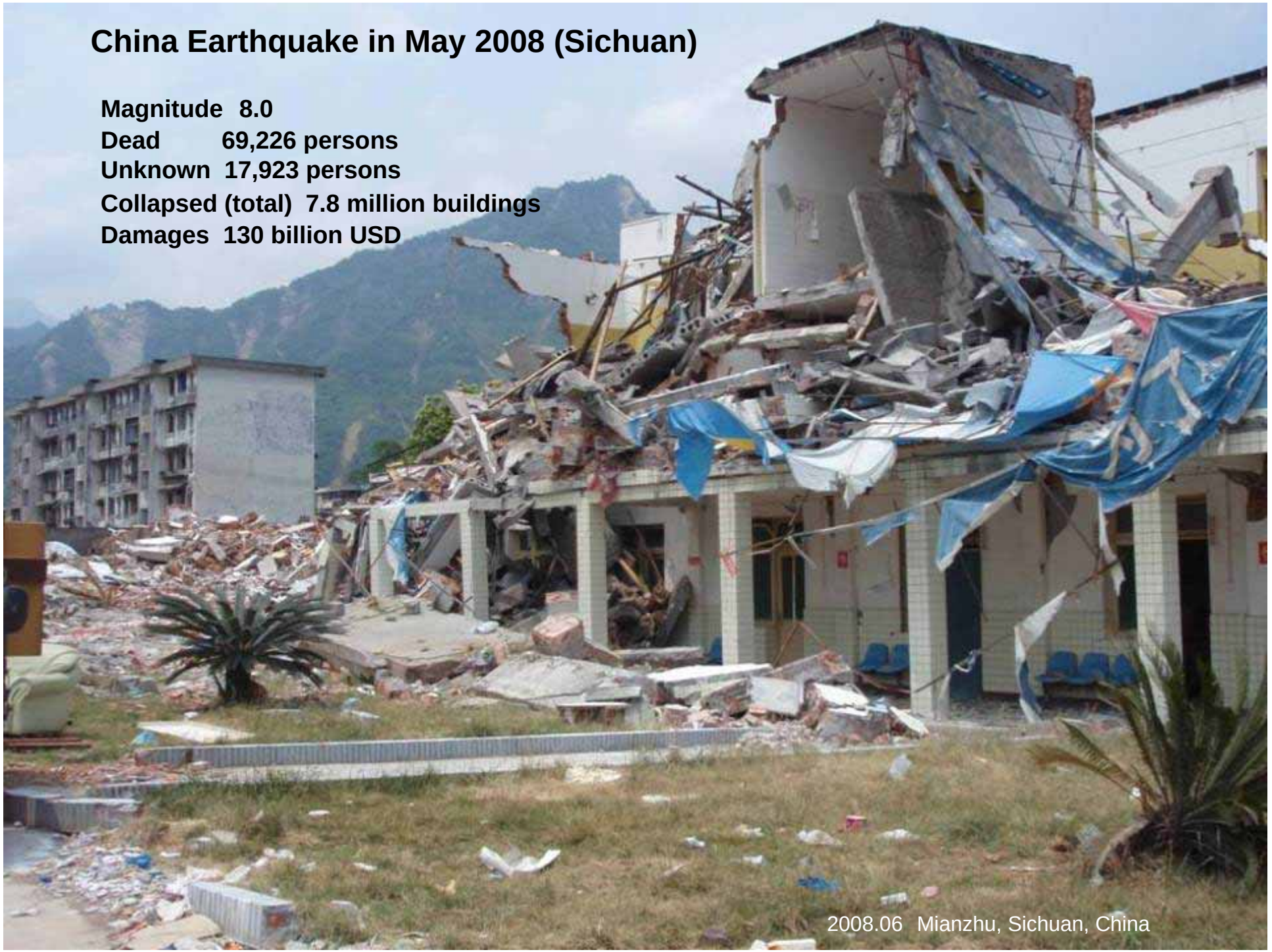
Magnitude 8.0

Dead 519 persons

Collapsed (total) 52,887 buildings
Collapsed (partial) 22,939 buildings

China Earthquake in May 2008 (Sichuan)

Magnitude 8.0
Dead 69,226 persons
Unknown 17,923 persons
Collapsed (total) 7.8 million buildings
Damages 130 billion USD



2008.06 Mianzhu, Sichuan, China

6. Analysis of Recent Large-scale (Huge) Disasters

1. Constant occurrence of natural hazards

2. Increasing risks by expansion of population, city, and urbanization

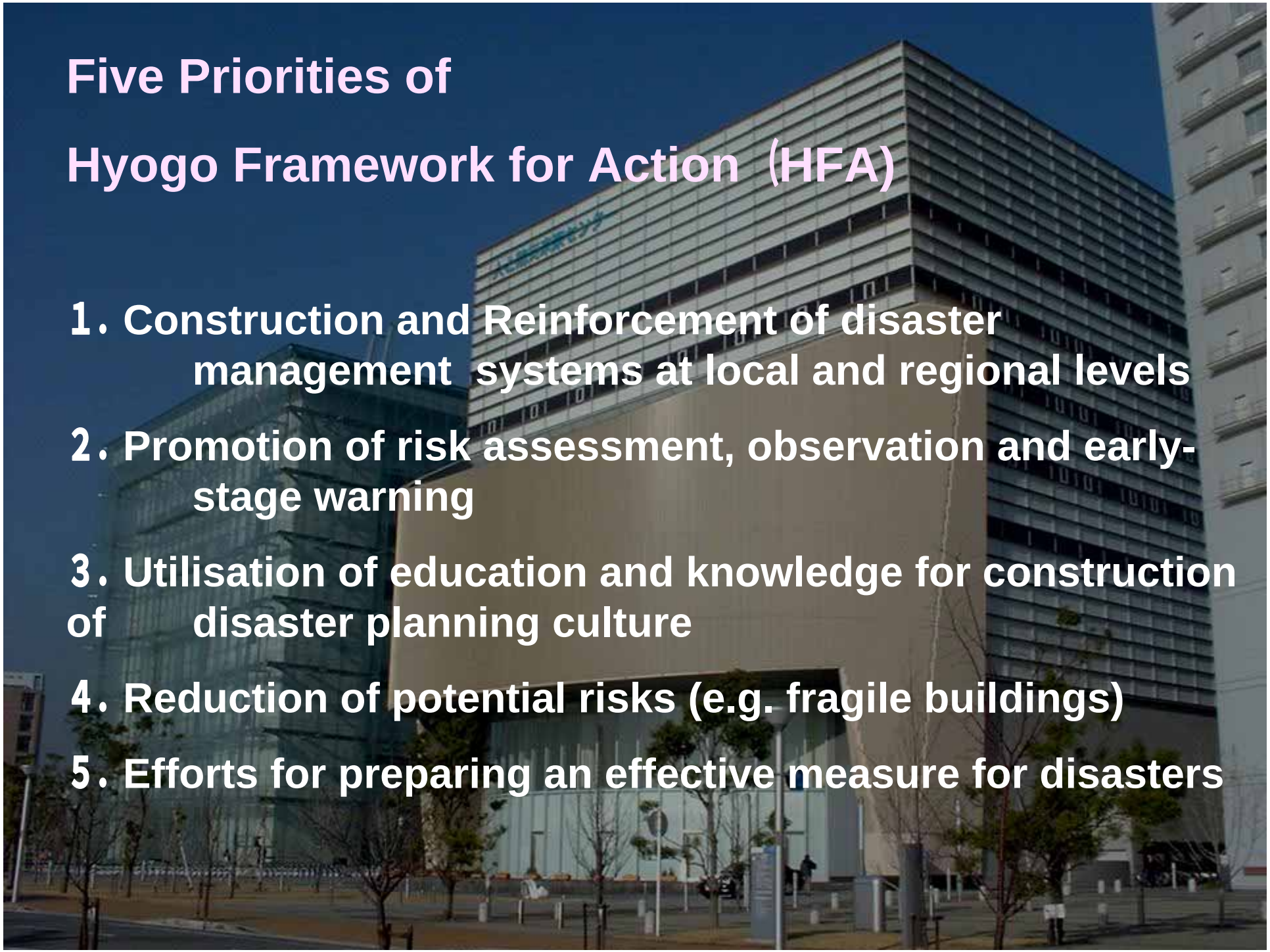
3. Trends of heavier damages to the poor in LDC (Earthquake to middle incomes etc.)

4. Degradation of eco-system / Climate Change

7. UN's International DM System

International Challenges on Disaster Management

1. **Implementation of HFA** (Hyogo Framework for Action) Target by year of 2015
2. **International collaboration for HFA among countries** UNISDR plays secretariat role.
3. **Activities have been centered post-disaster responses** Preparedness falls future tasks. As emergency response and recovery can be easily covered by NGOs and UN financially.
4. **Challenge to connect disaster management with Sustainable development and MDGs**



Five Priorities of Hyogo Framework for Action (HFA)

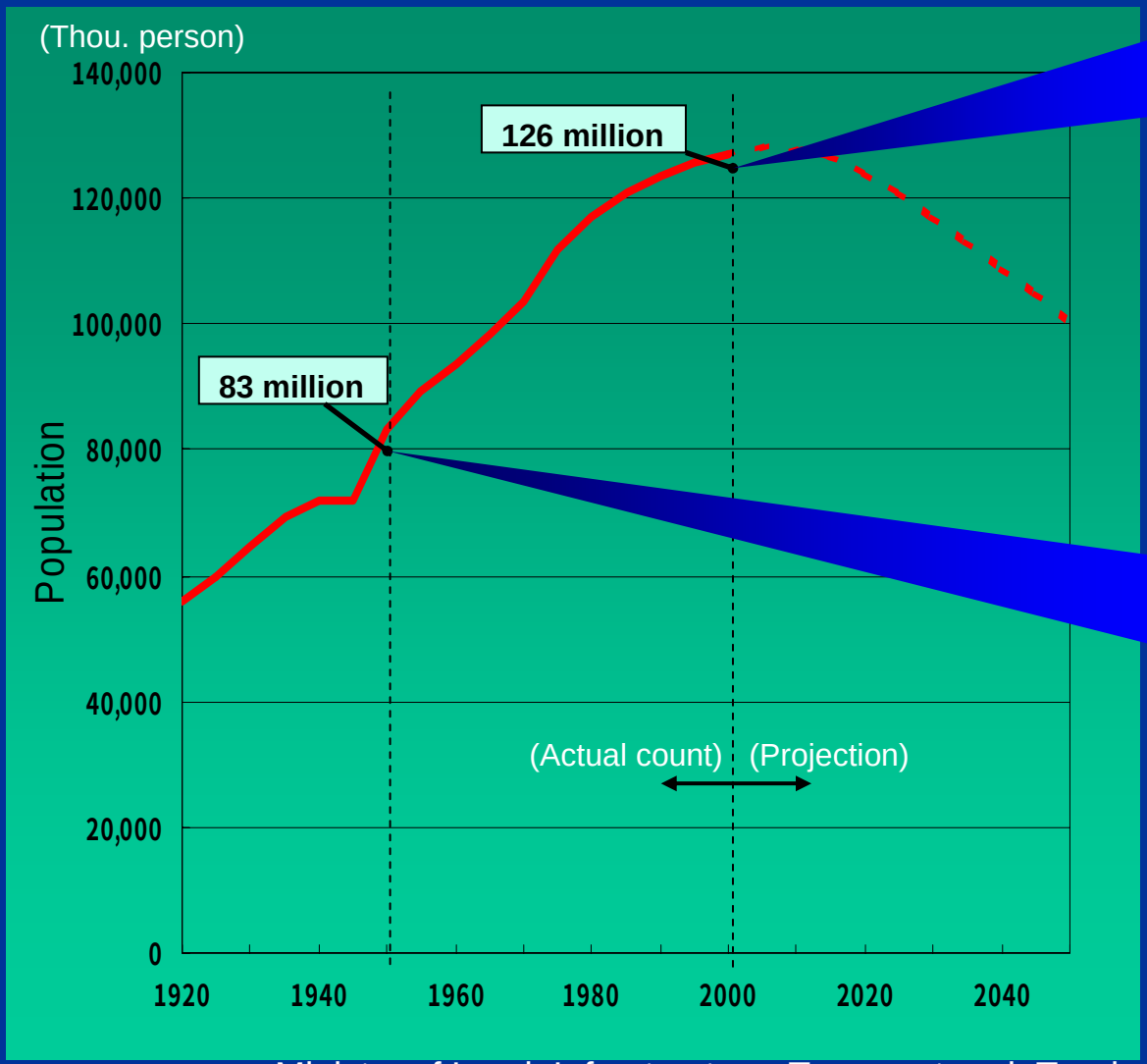
1. Construction and Reinforcement of disaster management systems at local and regional levels
2. Promotion of risk assessment, observation and early-stage warning
3. Utilisation of education and knowledge for construction of disaster planning culture
4. Reduction of potential risks (e.g. fragile buildings)
5. Efforts for preparing an effective measure for disasters

(Reference) Urban DM Policies and Practices in Japan

- 1st City Planning Law (1919)
  Urban structure against fire
- Great Kanto Earthquake (1923)
- Building Standard Law (BSL1950)
  Fire-proof buildings
- Urban Renewal of Densely Built-up Area
- Urban Renewal Projects (incl. DM project)

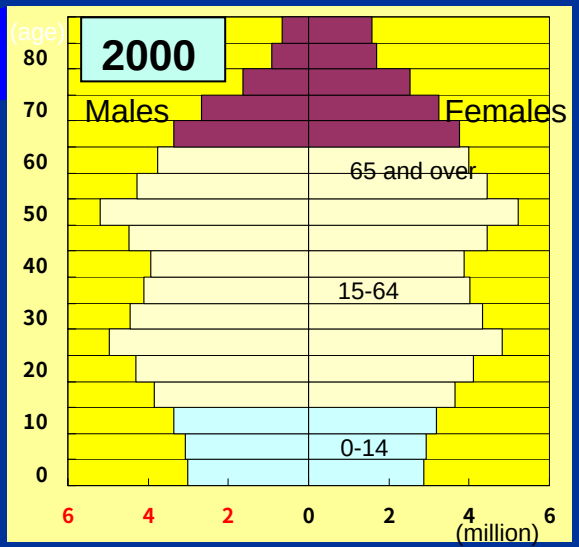
Trends of Population in Japan

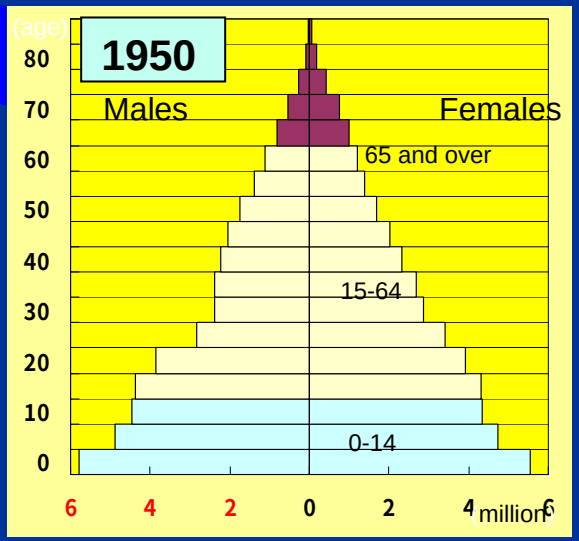
Change of Population in Japan



Ministry of Land, Infrastructure, Transport and Tourism

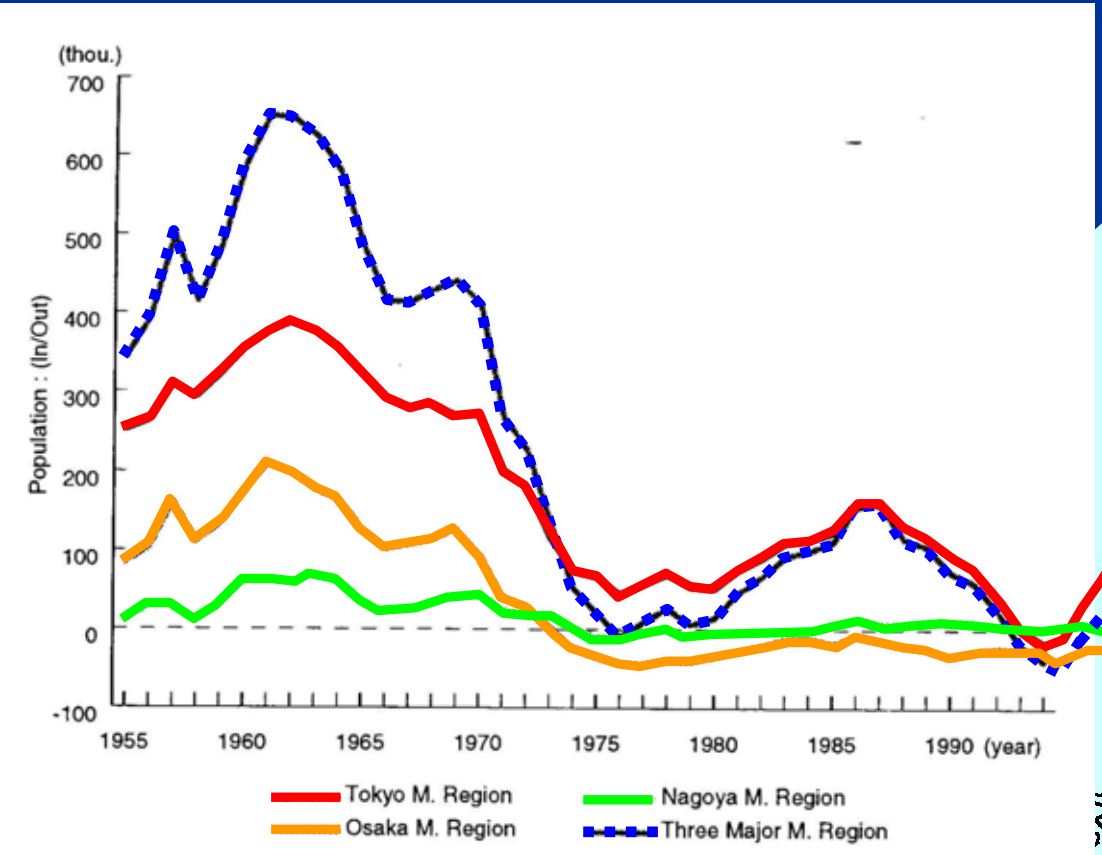
Population Distribution





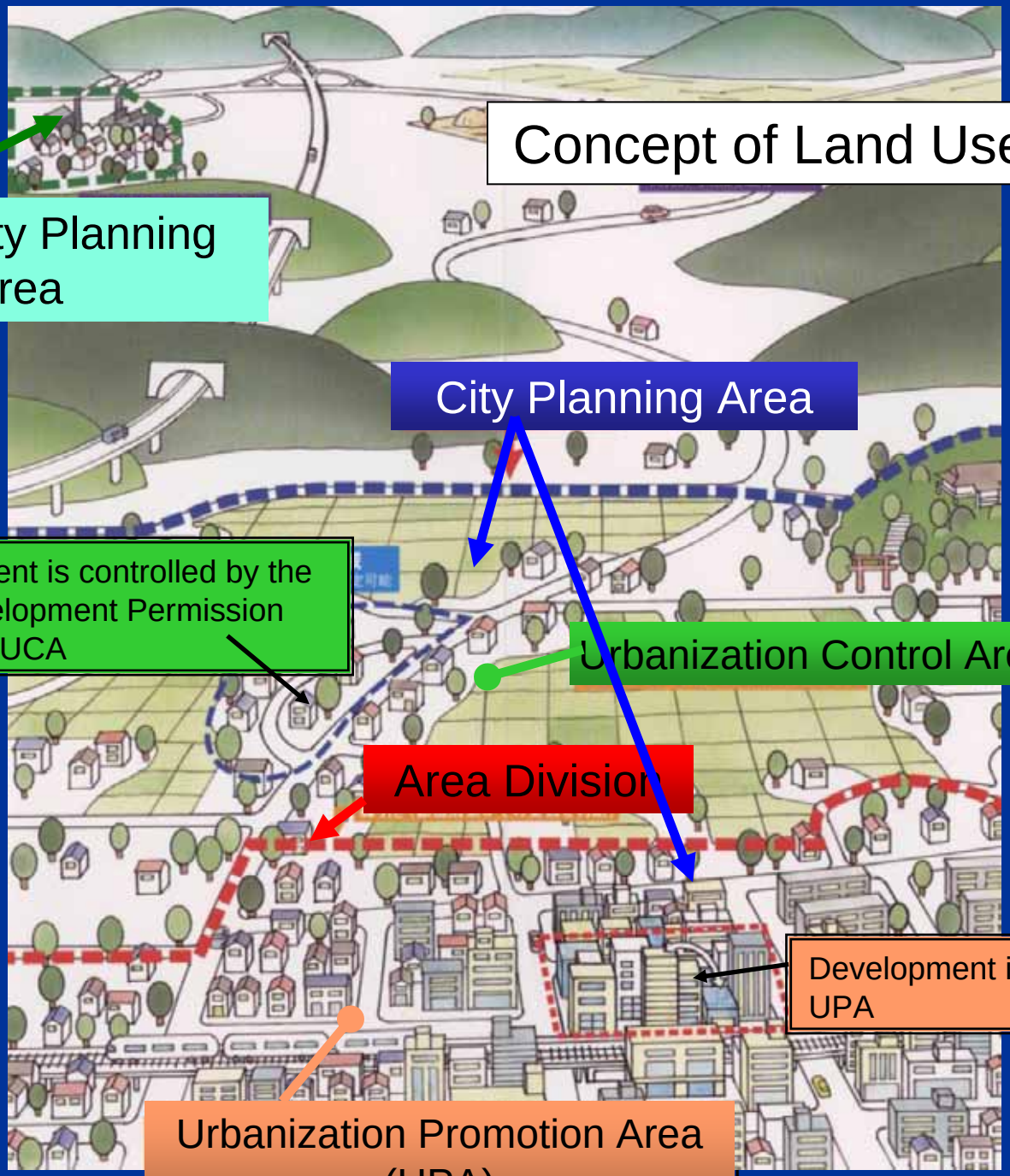
Trends of Population in Metropolitan Regions

Net Increase/Decrease of Population Moving in/out of Three Metropolitan Region



2003 Ministry of Land, Infrastructure and Transport

Concept of Land Use Planning



Quasi-City Planning Area

City Planning Area

Development is controlled by the Land Development Permission System in UCA

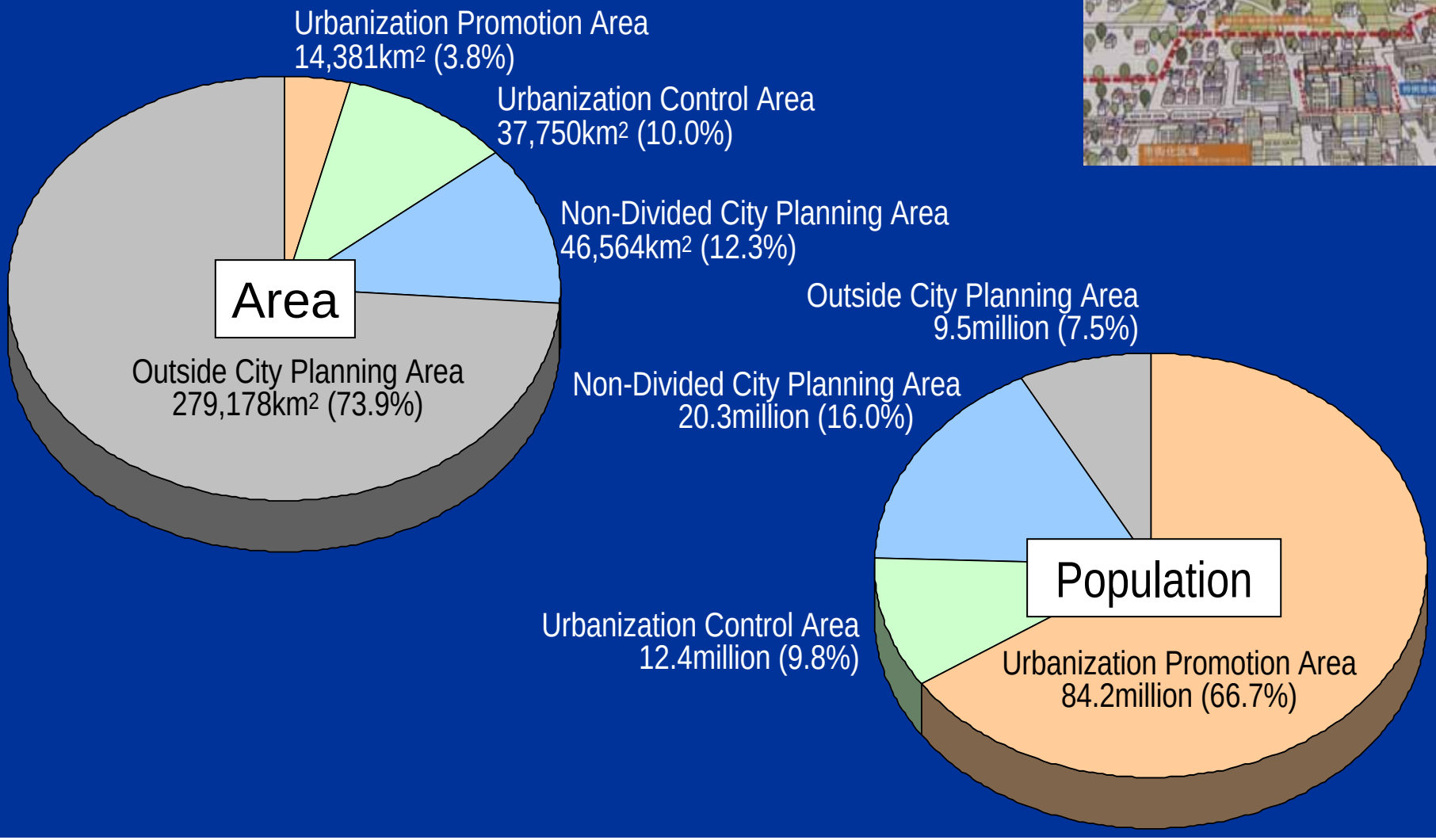
Urbanization Control Area (UCA)

Area Division

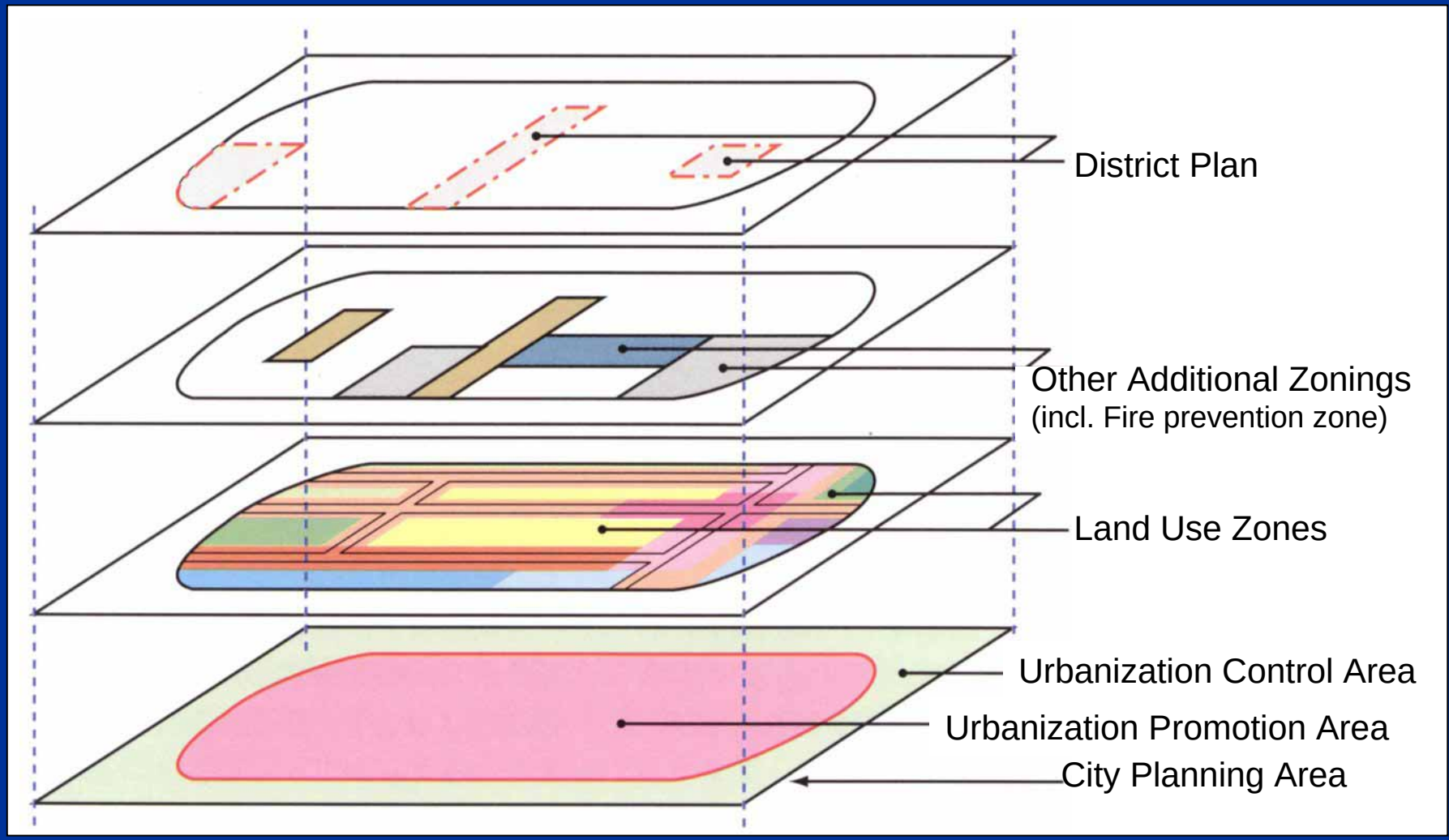
Development is Promoted in UPA

Urbanization Promotion Area (UPA)

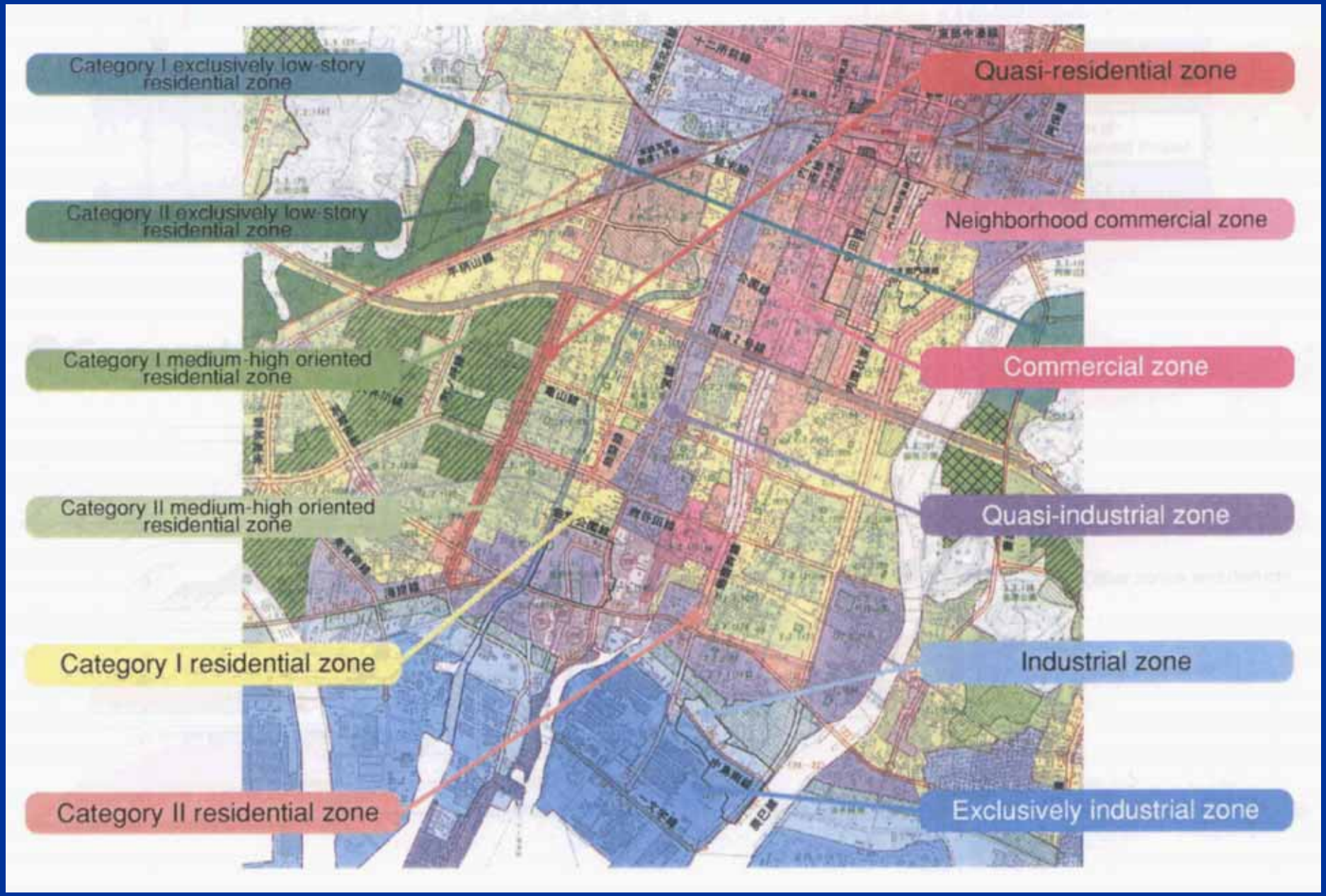
Current Land and Population by Area of City Planning



Concept of Land Use Planning System



Land Use Zone



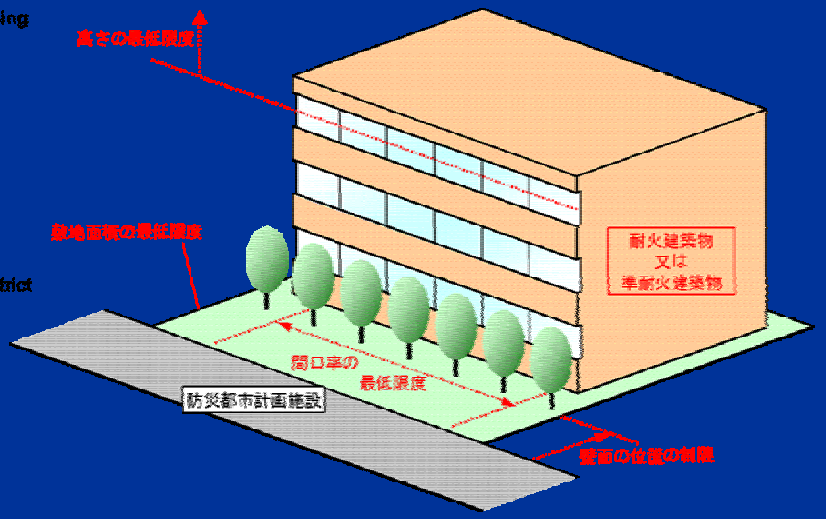
Summary of Act for Densely Built-up Areas Improvement for Disaster Mitigation

The act was enforced in 1997 and reformed in 2003 to promote totally to improve densely built-up areas which have the high risk of disasters.

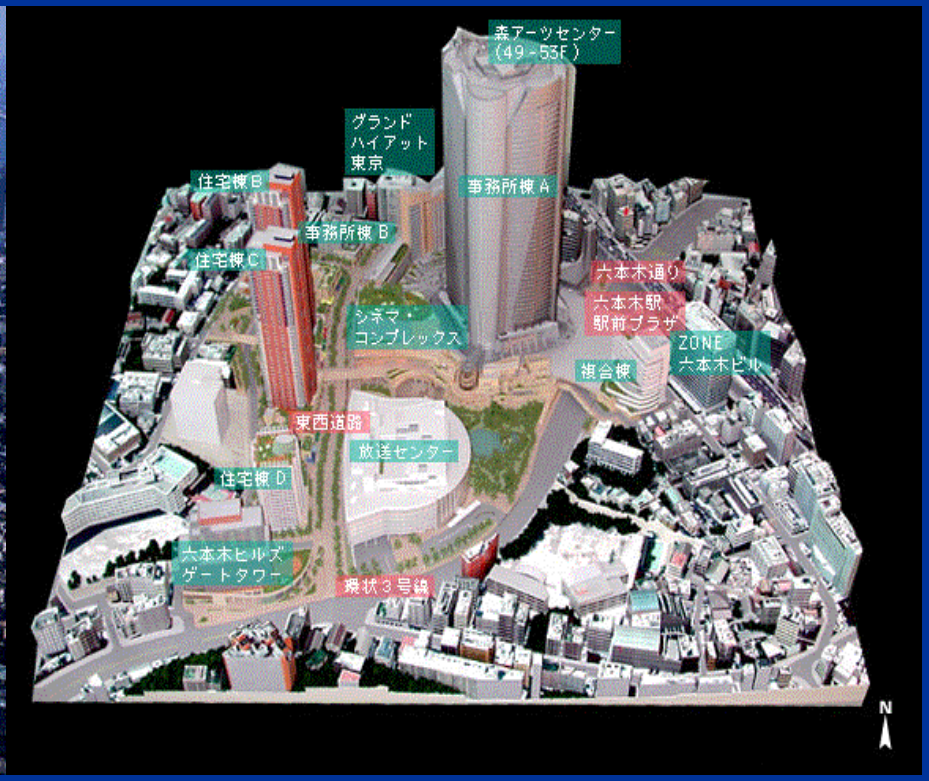
防災都市構造のイメージ

Image of an urban structure resistant to disasters

Special disaster-resistant districts improvement system



Project Site in Tokyo (2000)



Project Area (2003 completed)

Roppngi Area Urban Renaissance Projects

Snimbashi / Akasaka / Roppongi Immediate Improvement Area

Roppongi 6 Chome (Roppongi Hills) Projects by Mori Building Company

Urban Renaissance Project in the same Immediate Improvement Area

Hinoki-Cho UR Project (Tokyo Mid-Town Project)

(Data)

Project Area: 10.1 ha

Floor Area: 56.6 ha

Main Building: 54 F

Planned: 2001

Open: 2007 Spring

Location: former headquarters of the Japanese Defense Agency

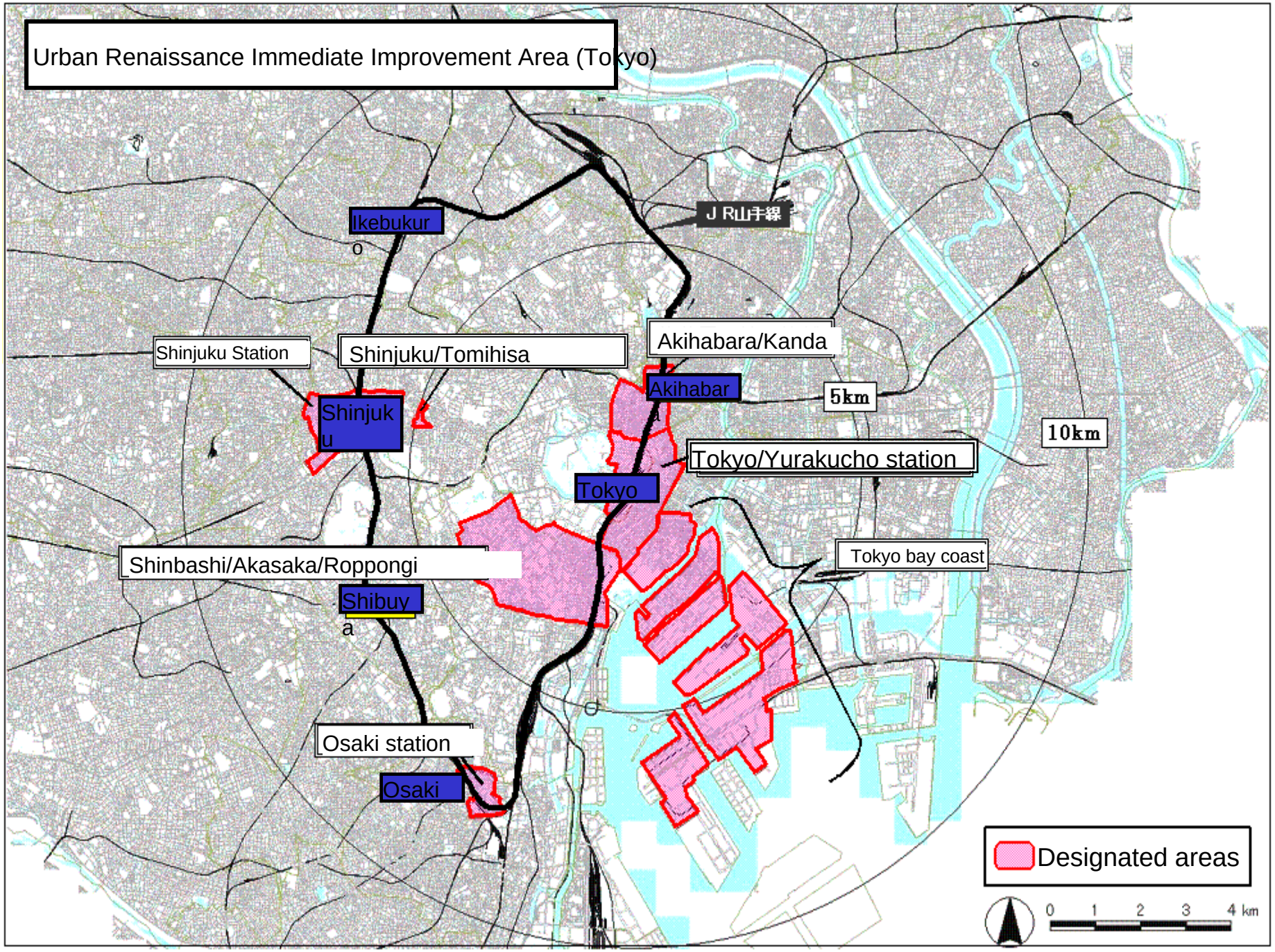
Akasaka Tokyo 2003

Urban Renaissance Immediate Improvement Area:

Tokyo Station Area (Marunouchi)

Marunouchi Building: completion **Aug. 2002**

179m, 37 stories, Mistubishi Real Estate Co.


Urban Renaissance Immediate Improvement Area (Tokyo)
Ikebukuro
JR山手線
Shinjuku Station
Shinjuku/Tomihisa
Akihabara/Kanda
Akihabara
5km
10km
Shinjuku
Tokyo/Yurakucho station
Tokyo
Shinbashi/Akasaka/Roppongi
Tokyo bay coast
Shibuya
Osaki station
Osaki
Designated areas
0 1 2 3 4 km