3rd Expert Group Meeting on the Great East Japan Earthquake

Applying Lessons on Recovery From Mega Disasters to Reduce Impacts of Future Disasters

Report

July 2012

Cabinet Office（Disaster Management）
Government of Japan

Table of contents

1. Purpose and program of the meeting and program

1.1 Purpose of the meeting

As a side event, in the interest of sharing our experiences and lessons learned for future disaster prevention and in cooperation with the International Ministerial Conference on Disaster Reduction in Tohoku sponsored by the Ministry of Foreign Affairs, the 'Third Professional Meeting' is expected to be held by the Japanese Cabinet Office, International Recovery Platform (IRP), Asian Disaster Reduction Center (ADRC), United Nations International Strategy for Disaster Reduction (UNISDR) and United Nations Economic and Social Commission for Asia-Pacific Ocean (UNESCAP). Approximate 70 participants, who are high-level representatives, researchers and representatives of NPO/NGO, etc., gather at the venue. The result and achievements of this meeting will be reflected in the Tohoku Reconstruction and Status Report, the Asia and Pacific Ocean Disaster report, and global reports.

1.2 Date and site

Meeting: July 3, 2012 (Tue) at Sendai International Center in Sendai City
Field Visit: July 4, 2012 (Wed) to tsunami affected areas of Sendai City

1.3 Languages

Meeting: English (simultaneous translation to Japanese provided)
Sub meetings: English only

1.4 Hosts

Japanese Cabinet Office, International Recovery Platform (IRP), Asian Disaster Reduction Center (ADRC), United Nations International Strategy for Disaster Reduction (UNISDR), United Nations Economic and Social Commission for Asia-Pacific Ocean (UNESCAP)

1.5 Program

9:40 - 12:20	Plenary session 1
9:45-9:50 (5 minutes)	**Opening** Cabinet Office of Japan (Disaster Management)
9:50-10:15 (25 minutes)	**Keynote Speech** Sendai City Current State of Reconstruction **Mr. Fumio Yamada**, Director General Post-disaster Reconstruction Project Bureau, City of Sendai
10:15-11:00 (45 minutes)	**Issues Associated with Recovery from Mega Disasters** **1. Governance Issues** Ms. Angeles Arenas, Recovery Advisor UNDP/BCPR **2. Health Issues** Mr. Alex Ross, Director WHO Kobe Center **3. Environmental Issues** Mr. Muralee Thummarukudy, Programme Officer UNEP Moderator: **Ms. Gwi-Yeop Son** Director of Corporate Programs United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA)
11:00-12:10 (70 minutes)	**Panel Discussion:** How lessons on health, environment, and governance issues in recovery can be applied to reduce the impacts of future disasters? **Panelists:** 1. Dr.Marqueza Cathalina Lepana Reyes, Senior Adviser for DRRM, ASEAN 2. Mr. Ivan Morales, Executive Secretary, CEPREDENAC 3. Dr. O.P.Mishra, Head of Geological Disaster Division, SAARC 4. Mr. Peter James Sinclair, Advisor Water Resources, SOPAC 5. Mr. Fumio Yamada, SENDAI CITY Moderator: **Mr. Sanjaya Bhatia**, IRP Secretariat/UNISDR)
12:10-12:15 (5 minutes)	**Wrap Up** **Mr. Shun-ichi Murata** Deputy Executive Secretary UNESCAP
12:15-12:20 (5 minutes)	**Closing** **Mr. Kiyoshi Natori,** Executive Director ADRC

3rd Expert Group Meeting on the Great East Japan Earthquake

Applying Lessons on Recovery from Mega Disasters to Reduce Impacts of Future Disasters

Sendai International Center

3-4 July 2012

Organizers

- Cabinet Office Government of Japan
- International Recovery Platform
- Asian Disaster Reduction Center
- United Nations International Strategy for Disaster Reduction
- United Nations Economic and Social Commission for Asia and the Pacific

Rationale

In conjunction with the "World Ministerial Conference on Disaster Reduction in Tohoku", organized by the Ministry of Foreign Affairs Government of Japan (MOFA), the Third Expert Group Meeting (EGM3) will be also organized as one of the side events to provide venue for sharing of experiences and lessons on how to reduce impacts of future disasters.
The organizers of the EGM3 are the Cabinet Office of Japan (CAO), the Asian Disaster Reduction Center (ADRC), the International Recovery Platform (IRP), the United Nations International Strategy for Disaster Reduction (UNISDR) and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). About 60 high level delegates, researchers, and NPO/NGO representatives are expected to participate. The conclusions and recommendations drawn from this meeting will feed into the reports on Tohoku Recovery Process as well as the Asia Pacific and the Global Reports on Disaster Risk Reduction.

Day 1: 3rd July 2012

09:45-09:50 **Opening**
Cabinet Office of Japan (Disaster Management)

09:50-10:15 **Keynote Speech**
Sendai City Current State of Reconstruction
Mr. Fumio Yamada, Director General
Post-disaster Reconstruction Project Bureau, City of Sendai

10:15-11:00 **Issues Associated with Recovery from Mega Disasters**

1. Governance Issues
Ms. Angeles Arenas, Recovery Advisor UNDP/BCPR

2. Health Issues
Mr. Alex Ross, Director WHO Kobe Center

3. Environmental Issues
Mr. Muralee Thummarukudy, Programme Officer UNEP

Moderator: ***Ms. Gwi-Yeop Son***
Director of Corporate Programs
United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA)

11:00-12:10 **Panel Discussion:** How lessons on health, environment, and governance issues in recovery can be applied to reduce the impacts of future disasters?
Panelists:
1. ASEAN (tbc)
2. *Mr. Ivan Morales*, Executive Secretary CEPREDENAC
3. *Dr. O. P. Mishra*, Head of Geological Disaster Division, SAARC
4. *Mr. Peter James Sinclair*, Adviser Water Resources SOPAC
5. *Mr. Fumio Yamada*, SENDAI CITY

Moderator: ***Mr. Sanjaya Bhatia***, IRP Secretariat/UNISDR

12:10-12:15 **Wrap Up**
Mr. Shun-ichi Murata
Deputy Executive Secretary UNESCAP

12:15-12:20 **Closing**
Mr. Kiyoshi Natori, Executive Director ADRC

Day 2: 4th July 2012

09:00-12:00 **Field Visit** (Tsunami affected areas of Sendai City)

Contact Us

International Recovery Platform Secretariat
DRI East Tower 5F
1-5-2 Wakinohamakaigan-dori, Chuo-ku, Kobe 651-0073, Japan
Phone: +81-78-262-6041 FAX: +81-78-262-6046
E-mail: info@recoveryplatform.org

2. Plenary session

2.1 Presentations overview

In conjunction with the World Ministerial Conference on Disaster Reduction in Tohoku, the **Third Expert Group Meeting** (EGM3) gathered over 70 participants representing 10 countries, 8 international organizations, 3 inter-governmental organizations, NGOs, and research institutions on 3rd July 2012 at Sendai International Center, Sendai City, Japan. Field visit to disaster affected areas of Sendai City was also organized on 4th July 2012.

Mr. Fumio Yamada, Director General post-disaster Reconstruction Project Bureau, City of Sendai delivered the keynote speech highlighting the city's current state of reconstruction as well as the remaining challenges. Moderated by Ms. Gwi-Yeop Son of UNOCHA, specific issues on governance, health, and environment that are commonly encountered during the recovery from mega-disasters were presented. Ms. Angeles Arenas of UNDP/BCPR noted that poor disaster recovery matters with a governance issue that should be remedied through effective leadership and planning. Mr. Alex Ross of Director WHO Kobe Center pointed that lessons learnt from the disaster, which may be perceived as "culture of prevention" and accepted by peoples, help in some way to handle some health-care issues during recovery. Hence, in order to collect such lessons, making wider partnership with various stakeholders and experiencing and sharing knowledge-based lessons lead to reduce impacts of future disasters. Dr. Muralee Thummarukudy, Programme Officer UNEP referred to the challenges of managing post-disaster debris in Japan and highlighted points such as recycling of debris, monitoring it, and issuing waste management guidelines.

At the panel discussion, moderated by Mr. Sanjaya Bhatia of IRP Secretariat/UNISDR, measures to cope with two important issues were taken up as niche challenge, and relevant discussion were made. First one is how lessons learnt in the field of governance, health-care, and environment can be utilized to reduce the impact of future disasters, especially what should be done to ensure better compliance with the HFA. Secondly, which measures should be taken in order for recovery and rehabilitation matters in the scheme of post-HFA to be formulated more explicitly and effectively. Regarding first point, lots of ideas were recommended, which include promoting pre-disaster planning, strengthening capacity building programs, developing partnerships, carrying out policy plans, which were compiled based on existing solutions by local communities, enhancing mechanisms for effective information sharing, and putting systems in place that help ensure human security. Regarding the second point, suggestions for more explicit provisions of rehabilitation in post-HFA include:

- Post HFA should be linked up with MDGs (which also end in 2015) and Sustainable Development (Rio +20 discussions) as it's because stakeholders engaged in the

rehabilitation involve in these two challenges in common.

- It should aim at strengthening the hookup between national and local governments. If such hookup is neglected, it causes insufficient resilience. Often communication gap between two parties brings to lose the opportunity of rehabilitation. Information and data on disaster prevention should be strengthened and widely be made available in the public domain.
- A greater emphasis should be placed on human security, thinking of disaster resiliency. Hence, it should aim at increasing individual awareness of disaster risk reduction. It is also important to get communities to engage in the recovery process – noting some unique cultural practices such as “self-help”, “mutual help”, or “community help”.
- It should strengthen the capacity and support for rehabilitation planning, specifically at national, regional, and local levels.
- It should further explore the use of new communication tools, including social media and open data, as well as develop applications for rehabilitation.
- It should explore ways for donors to become more aware of the financing needs for rehabilitation. Currently, donors’ attention is more focused on response and assessment. Donors need to also pay more attention at the phase of post assessment, when the rehabilitation planning is implemented.
- It should treat resilient recovery as a basic human right. The governments and international organizations have an obligation to prevent citizens from the impacts of future disasters.
- It should enhance and strengthen the enactment of legislative framework for recovery. Otherwise the recovery becomes temporary measures.
- It should advocate pre-disaster rehabilitation planning as a tool at post HFA to further reduce risks, which may be further linked up with the concerns to new economic development .
- It should explore a system of monitoring and evaluating rehabilitation by stakeholders. Indicators for good rehabilitation and an autonomous monitoring mechanism are needed.
- It should set clear target goals rather than policy recommendation. In particular, it should put more emphasis on actions by the local governments.
- It should enhance a global cooperation system so that countries affected by disaster can be supported at the initial phase of rehabilitation.
- It should design a mechanism to resolve problems at local level, including provision of long term support.

To wrap it up, Mr. Shun-ichi Murata, Deputy Executive Secretary of the United Nations Economic and Social Commission for Asia Pacific, reiterated the importance of aligning post-HFA Framework for Disaster Risk Reduction with other global frameworks such as the post-MDGs Framework on Sustainable Development, outcome of the Rio+20 Conference on Sustainable Development, and Climate Change Adaptation. Mr. Murata emphasized that one

critical element for ensuring success of the post-HFA Framework is setting measurable goals and targets for disaster risk reduction. Strengthening resilience of disaster-prone countries reduces vulnerabilities of populations at risk, and complements efforts in achieving the MDGs. In this regard, reliable disaster statistics based on official sources and capability of national authorities to collect data before, during and after disasters are strongly welcomed regionally and globally. Because reliable statistics are essential for all stages of disaster management, and become a foundation to promoting investment in disaster risk reduction.

2.1 Presentation Materials

2.2.1 Keynote Speech: Sendai City Current State of Reconstruction Mr. Fumio Yamada, Director General Post-disaster Reconstruction Project Bureau, City of Sendai

Sendai City Current State of Reconstruction

Fumio Yamada, Director General
Post-disaster Reconstruction Bureau, City of Sendai

Outline

1. Damage in Sendai
2. Situation Immediately Following
3. Support from Japan and from Ar
4. Sendai City Earthquake Disaste
5. Recovery and Support for Tsuna
6. Recovery and Support for Disas Land Areas
7. Support to Rebuild the Citizens
8. Economic Recovery Information
9. Striving for a Brighter Future

1

1. Damage in Sendai

Earthquake Summary

○Date: Friday, March 11, 2011 at 14:46
○Epicenter Location: Off the Sanriku Coast (38.1 degrees north, 142.9 degrees east)
○Magnitude: 9.0
○Seismic Intensity with in Sendai:
- Seismic Intensity 6-high: Miyagino-ku
- Seismic Intensity 6-low : Aoba-ku, Wakabayashi-ku, Izumi-ku
- Seismic Intensity 5-high: Taihaku-ku

○Tsunami
- March 11, 14:49 – Tsunami warning was issued for the Pacific Coast of theTohoku region
- 7.2 meter high tsunami at Sendai Port (estimated scale) (March 13, 17:58 – Cancellation of Tsunami advisory)

*Largest Aftershock in Sendai: April 7, 23:32
○Magnitude: 7.1, Off the Miyagi Prefecture Coast
○Seismic Intensity within Sendai;
- Seismic Intensity 6-high: Miyagino-ku
- Seismic Intensity 6-low : Aoba-ku, Wakabayashi-ku
- Seismic Intensity 5-high: Izumi-ku
- Seismic Intensity 5-low : Taihaku-ku

Damage in Sendai

◆Death Toll / Missing / Injured (As of May 31, 2012)

	In Sendai	
		Sendai Residents
Death Toll	863	770
Missing	31	
Injured	2,269	

※Number of Sendai residents who died outside of Sendai 174

◆Building Damage (As of May 27, 2012)

	In Sendai
Completely collapsed	29,817
Severely damaged	26,651
Partial damaged	81,192
Minor Damaged	115,571

◆Breakdown of Damage in Sendai (As of January 29, 2012)
○City-run Facilities: 327 billion yen
○Other utilities: 145 billion yen
○Residential Housing/Land: 609 billion yen
○Agricultural and Fishery Industries: 73 billion yen
- Agricultural fields, machinery, etc. : 72 billion yen
- Fisheries : 0.8 billion yen

○Industry and Commerce: 215 billion yen

* This is based on rounded numbers, and therefore totals may not match.

1

1. Damage in Sendai

The large tsunami that struck the Send

1

1. Damage in Sendai

Damage to Coastal Areas of Sendai【Fujitsuka District】

(before the disaster)

(in the aftermath of the tsunami)

5

1. Damage in Sendai

Damage to Coastal Areas of Sendai【Arahama District】

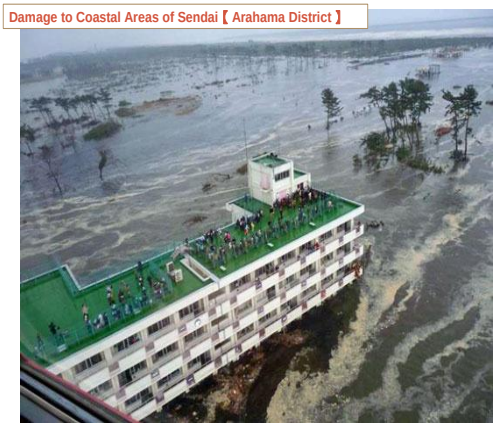
(before the disaster)

(in the aftermath of the tsunami)

6

1. Damage in Sendai

Damage to Coastal Areas of Sendai【Arahama District】

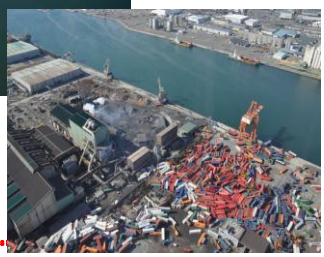


6

1. Damage in Sendai

Damage to Coastal Areas of Sendai (Sendai Port Container Terminal)

(before the disaster)



(On the tsunami struck)

8

1. Damage in Sendai

Damage to Residential Areas

(Otoya, Taihaku-ku)

(Midorigaoka, Taihaku-ku)

7

1. Damage in Sendai

Damage to Residential Areas

(Seika, Aoba-ku)

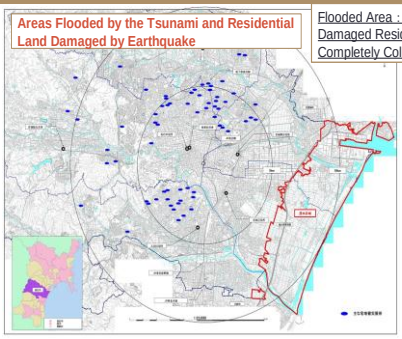
(Oritate, Aoba-ku)

10

1. Damage in Sendai

Areas Flooded by the Tsunami and Residential Land Damaged by Earthquake

Flooded Area : 4,633ha
Damaged Residential Land : 5,080
Completely Collapsed Buildings : 29,817



【Recovery of Utilities】
○Electricity: March 18
○Water: April 11
○City Gas: April 16
*Except for areas damaged by the tsunami

【Recovery of Public Transportation】
○City Bus: March 12-Approximately 70% of all bus routes in operation
April 18-Bus operation fully back to normal schedule
○Subway: March 14-Started operation in some zones
April 29- Full restoration of subway line
○Sendai Airport: April 13- Provisional flights provided
July 25- All domestic flights resumed operation

8

2. Situation Immediately Following the Disaster

- ”Information, Heating, Lights”
- City Hall offices were occupied by people attempting to charge their cellular phones.
- ”Evacuation” was most important. The tsunami struck within one hour of the earthquake.
- Sendai due to its large size was plunged into chaos.
- Citizens realized how important essential utilities are for their daily lives.

Picture source: The Kahoku Shimpo website

12

4. Sendai City Earthquake Disaster Reconstruction Plan

◆Period of the plan

Fiscal 2011-2015 (5 years)

Long-term issues to be addressed (psychological care for the victims, disaster-prevention education, etc.)

◆For reconstruction

"A disaster-resistant, environmental city of new level"
Building a resilient and stronger city

Rebuilding victims' livelihoods

Four directions for reconstruction

◆Reconstruction projects for the one million citizen's of Sendai

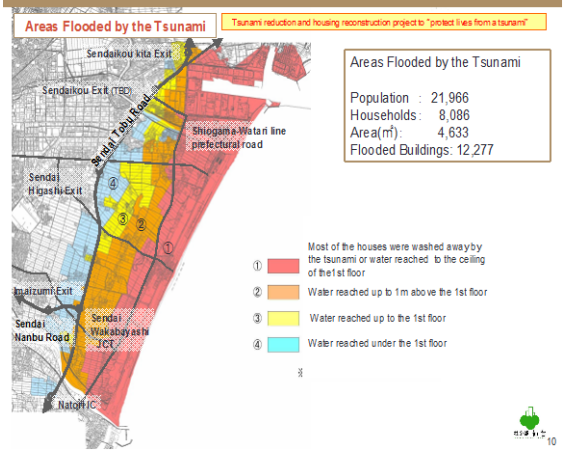
1 Tsunami reduction and housing reconstruction project to "protect lives from a tsunami"
2 Residential area rebuilding project to "build the foundation for safe homes"
3 Life recovery project to "support individual livelihoods"
4 Agricultural and food frontier project to "strongly revitalize agriculture"
5 Seaside exchange and revitalization project to "restore the beautiful coast"
6 Model development project for a disaster-proof Sendai to "learn from the past disasters for the future"
7 Energy-saving and new energy projects for a "sustainable energy supply"
8 Sendai economy development project to "improve urban vitality and the quality of life"
9 Exchange promotion project to "promote the features of the city and its reconstruction efforts"
10 Earthquake disaster memorial project to "convey the memory of the earthquake disaster to future generations"

14

5. Recovery and Support for Tsunami Damaged Land

Areas Flooded by the Tsunami

Tsunami reduction and housing reconstruction project to "protect lives from a tsunami"



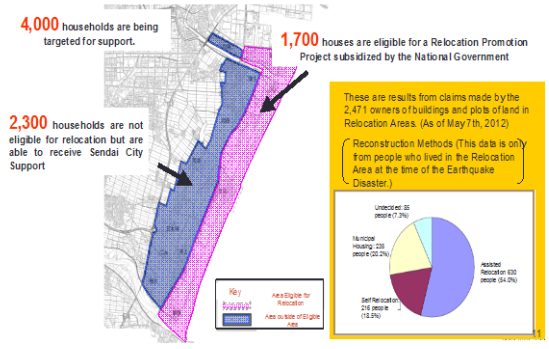
10

5. Recovery and Support for Tsunami Damaged Land

Tsunami Affected Area Projects

Tsunami reduction and housing reconstruction project to "protect lives from a tsunami"

We are currently undertaking several different disaster counter-measures which include, fortifying embankments on rivers and in costal areas and raising the height of Prefectural Roads. In addition, areas that are likely to expect flooding in the event of a tsunami, the following support systems are in place to ensure safety.

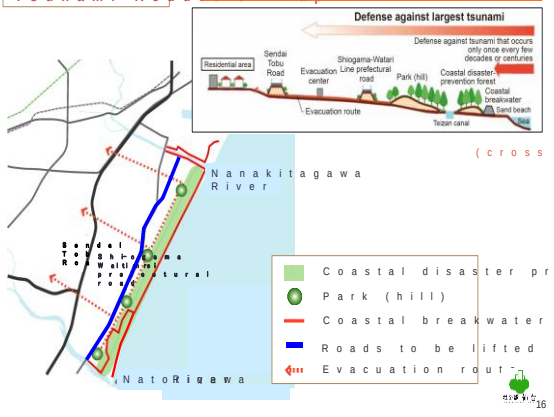


11

5. Recovery and Support for Tsunami Damaged Land

Tsunami Reduction and Housing Reconstruction

Tsunami reduction and housing reconstruction project to "protect lives from a tsunami"

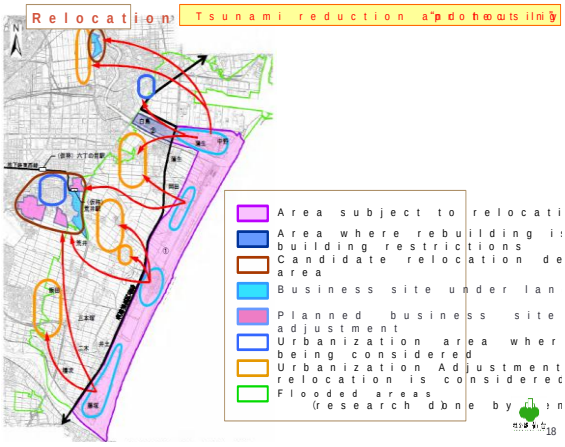


16

5. Recovery and Support for Tsunami Damaged Land

Relocation

Tsunami reduction and housing reconstruction project to "protect lives from a tsunami"



18

5. Recovery and Support for Tsunami Damaged Land

Plans for Municipal Housing

Tsunami reduction and housing reconstruction project to "protect lives from a tsunami"

This affordable Municipal Housing is being built for individuals who lost their homes in the Earthquake Disaster and are unable to secure their own housing.

Concept Model of Municipal Housing in Tago-nishi

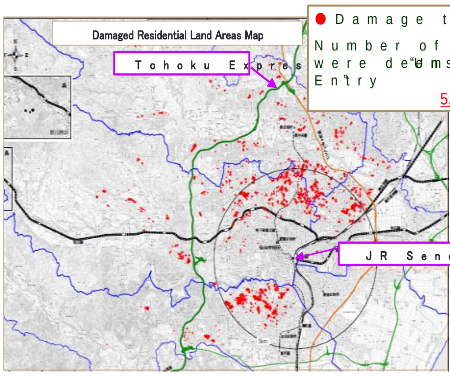
Concept Model of Municipal Housing in Arai-higashi

- Our goal is to make 2,800 houses available in 17 different locations.
- Sendai City plans to build these facilities then sell them to private individuals for administration.
- In picking a location for the facilities we take into account several different factors: ease of access to transportation, shopping, and proximity to local industries.
- While we primarily are planning to make housing complexes, we also are taking into consideration building individual houses.

6. Recovery and Support for Disaster Damaged Residential Land Areas

Damaged Residential Land Areas

Residential area rebuilding project to "build the foundation for safe homes"



● Damage to Residential Land

Number of residential land areas were deemed damaged

5,080

6. Recovery and Support for Disaster Damaged Residential Land Areas

Residential area rebuilding project to "build the foundation for safe homes"

Reconstruction Project for Damaged Residential Land Areas

Sendai City backs up reconstruction of damaged areas by utilizing two assistance systems.

Damage to residential land Areas **5,080**

Approx. **70%**	Approx. **30%**
Reconstruction by public work projects	Reconstruction by utilizing subsidy

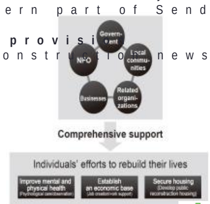
7. Support to Rebuild the Citizens' Lives

Life recovery support for individual livelihood

● Diverse support for independence
- Secure employment by creating emergency ...
- Support the securing of permanent residence ...
- Provide individuals with ... related organizations.

● Fine-tuned care to reassure everyone
- Provide health support tailored to individual ...
- Promote comprehensive local care systems ... development in the eastern part of Sendai ...

● Enhancing information provision
- Send out a periodic reconstruction newsletter ...



7. Support to Rebuild the Citizens' Lives

Support System for Everyday Life

Continued support to temporary housing residents by government, related organizations, and supporting organizations

Life Support

Health support and observation through individual visits, gathering the community through social events and providing support information

Health Support	Observation
Social Events	Information Provision

Enhancing Support

Emergency Report System (planning in progress)

Eligible people: elderly people living alone over 65 years old or severely disabled people living alone over 18 years old

Lending Livelihood Support Devices (with the following functions: emergency calling, safety confirmation and everyday conversation assistance)

Compiling individual records on disaster victims

Integrating information related to disaster victims which had been managed separately, and provide individuals with tailored support to rebuild their lives

8. Economic Recovery Information

Agricultural and food frontier project to "strongly revitalize agriculture"

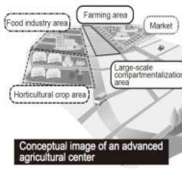
● Building an agricultural and food frontier
- Build an agricultural ... producing and consuming food with future

● Restoring and recovering farmland
- Promote the removal of ... pumping stations, and salt removal from ...

● Supporting farmers in enhancing their ...
- Enhance the ... supporting the development of systems that nurture diverse leaders and produce a wide variety of farm products, and developing large-scale farmland) and support incorporation and tie-up with private capital.

● Launching suburban agriculture
- Conduct studies on agriculture as a service industry (e.g., provision of technical guidance on vegetable gardens by farmers, pick-your-own farms), and provide support to farmers who enter such businesses.

● Promoting the sixth industry
- Create added value to agriculture, and support farmers who enter the food processing, distribution and sales business to raise the level of agriculture.



Conceptual image of an advanced agricultural center

8. Economic Recovery Information

Damage to Agricultural Land

Total Damage 72.1 billion yen

①Agricultural Industry 39.6 billion yen
・Damaged Land 1,800ha
(Rice Paddies 1,600ha Farmland 200ha)
②Agricultural Processing Equipment 10.6 billion yen
③Land Improvement Equipment 21.9 billion yen

Plans for Cultivated Land

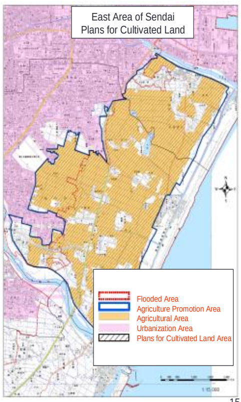
2,200 ha are being targeted in this area.
(This land is adjacent to 1,800ha of land that was engulfed by the tsunami and includes land that is necessary for relocation and the building of evacuation roads)

・Preventative Measures for Future Disasters
・Management of Agriculture and creating a designated agricultural area
・Protecting National Land

before

image

after



8. Economic Recovery Information

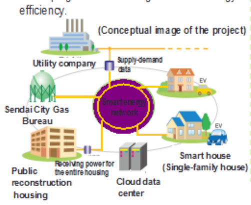
"Making Sustainable Energy Possible" New Energy and Energy Conservation Project

Next-Generation Energy Development Program (2012 Improvement plan for the economy of Sendai)

▼Survey on implementing an Eco-Friendly Model Town

In areas where we will promote new city developments we plan on engaging in cooperation with the private sector in order to make progress towards an "Eco-Friendly Model Town" that does not excessively rely on a specific type of energy source by developing an area with high levels of energy efficiency.

(Conceptual image of the project)

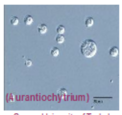


▼Survey on the Development & Location of Next-Generation Energy Industries

We plan on promoting higher levels of utilization of Solar Powered facilities in the disaster affected coastal area and implementing several different types of guaranteed energy, also creating related industry. In addition, we aim to build a Sustainable Environmental-Friendly model by utilizing algae biomass to be used in waste treatment and the development of fuel. We also plan to attract supporting industries in this field.

Solar Energy Generation

Algae Biomass



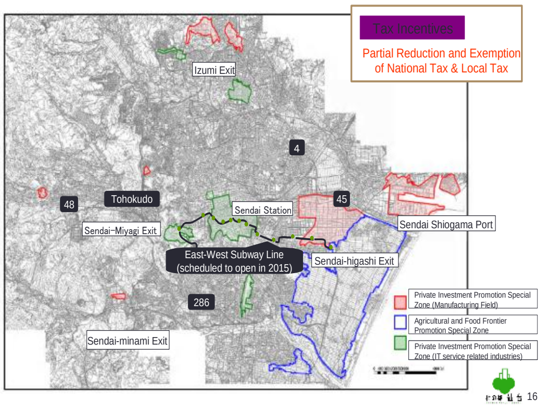
Source: University of Tsukuba

8. Economic Recovery Information

Special Reconstruction Zone Map of Industry Integrated Area

Tax Incentives

Partial Reduction and Exemption of National Tax & Local Tax



8. Economic Recovery Information

Effects of Radiation from Damaged Reactors

Sendai City School and Public Area Radiation Testing

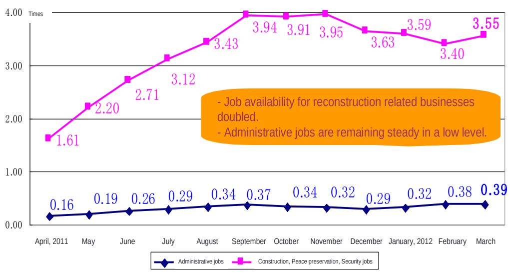
Radiation tests are being carried out by Sendai City has entrusted ... at Elementary Schools, ... are taken at 50cm from ... above the ground.

➡The results from our ... 1mSv/year acceptable ... medical procedures

※We are also currently testing and guaranteeing the safety of garbage collection facilities, disaster related drop off facilities, sewage lines, Sendai City School pools, meat sold in Sendai City, agricultural products, school lunches, and Sendai City Water.

8. Economic Recovery Information

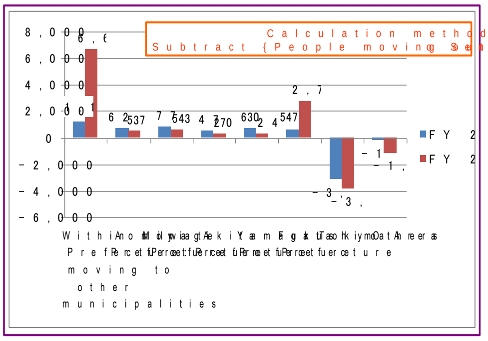
Transition of the Rates of Job Availability by Occupation



Data: Sendai Area's "Balance of Job Availability and Job Seeking by Public Employment Security Offices" compiled by Miyagi Labour Bureau
* "Construction, Peace preservation, Security jobs" indicates numbers of job availability and job seeking including the following jobs: Security Guards, Construction Machinery Operators, Electrical Engineers, Structure Construction, Construction Works, Public Engineering Works, Conveyance Work.

8. Economic Recovery Information

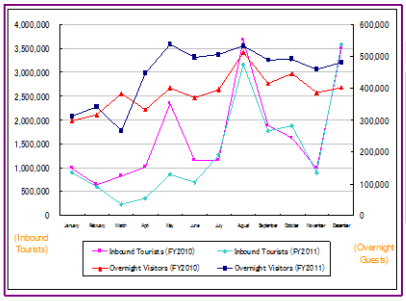
Demographic Shift between Sendai City an...



FY 2011 Demographic ...

8. Economic Recovery Information

Number of Inbound Tourists and Overnight Visitors Comparison



◆Year-on-year

FY 2010 Inbound Tourists	132.2%
FY 2011 Inbound Tourists	81.9%
FY 2010 Overnight Visitors	103.7%
FY 2011 Overnight Visitors	115.1%

Compared to FY 2010, the number of Inbound Tourists decreased and Overnight Visitors increased in FY 2011.

* Inbound Tourists are counted from the number of people visiting major facilities in Sendai
* Overnight Visitors include tourists and out-of-town workers

18

9. Striving for a Brighter Future

Sendai Related Events

▼DC: Destination Campaign

April-June, 2012 Sendai & Miyagi *"Date na Tabi"* Spring Campaign
April-June, 2013 Sendai & Miyagi Destination Campaign

▼2012 Major events scheduled to be held in Sendai City

- WTTC (World Travel & Tourism Council) The Global Summit 2012 (April)
- High-Level International Conference on Large-Scale Natural Disasters (July)
- Nenrin Pick Miyagi-Sendai 2012 (October)
- Japan Women's Conference in SENDAI 2012 (October)

WTTC (World Travel & Tourism Council) The Global Summit 2012

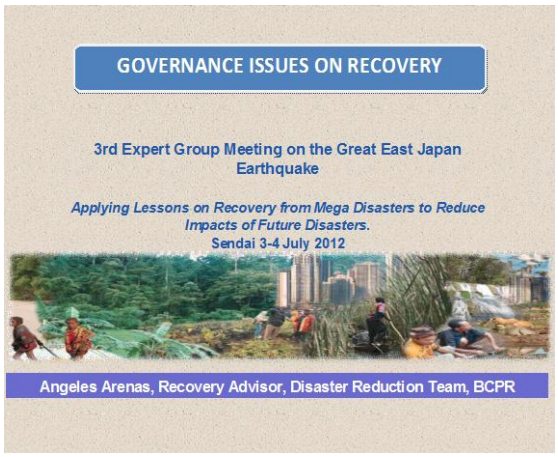
▼Inviting International Conventions

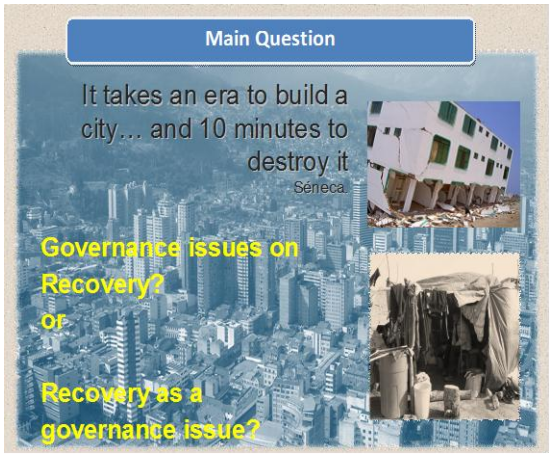
Inviting "2015 World Conference on Disaster Reduction"

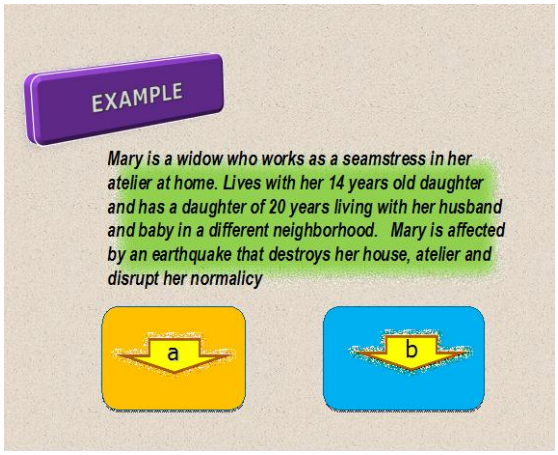
19

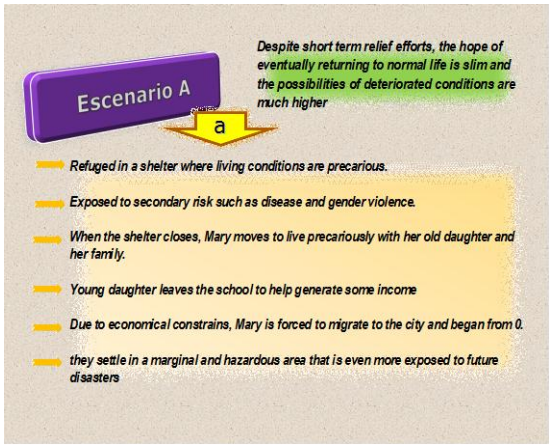
2.2.2 Issues Associated with Recovery from Mega Disasters

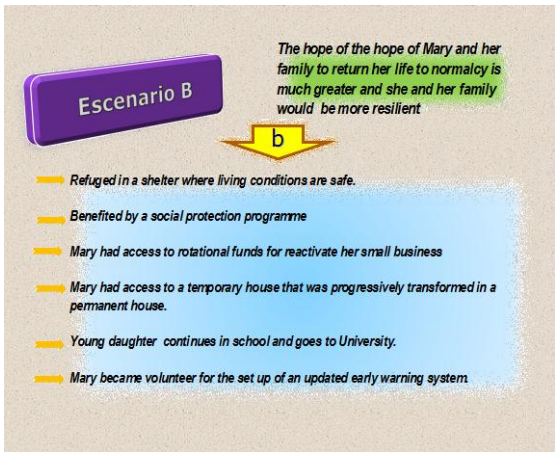
1. Governance Issues: Ms. Angeles Arenas, Recovery Advisor UNDP/BCPR

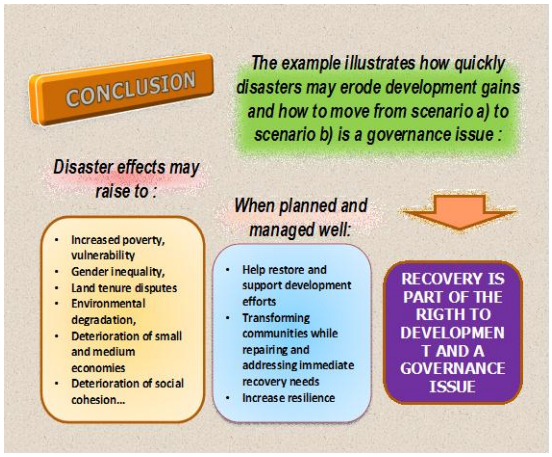


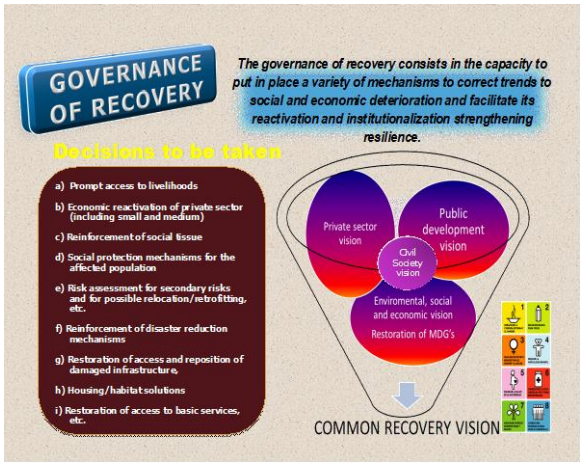


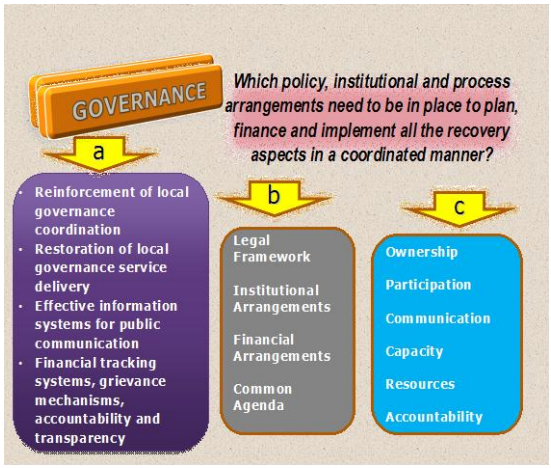


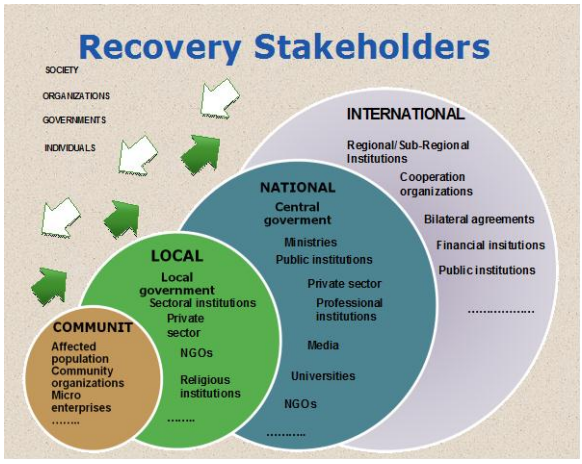


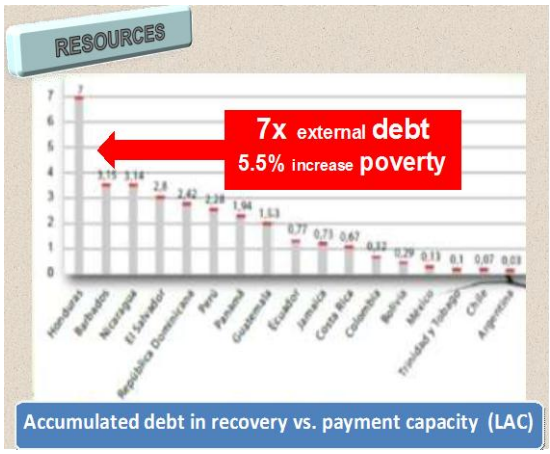












Some LESSONS LEARNT

- *Post-disaster interventions are often fragmented and uncoordinated; No systematic comprehensive analysis of the needs and comprehensive and strategic recovery plans are formulated to promote a long-term sustainable recovery. The tendency is to implement projects responding to immediate needs;*
- *Focus and tendency to allocate resources to the replacement of infrastructure rather than to livelihoods recovery, social tissue, psycho-social, reinforcement of capacities, etc.;*
- *Divergent visions on recovery and the role of the government ("laisezz-faire" vs. intervention) policies, criteria and priorities of international organisations do not always match those of the affected governments and communities;*
- *Unfinished recovery processes are the "breeding ground" for new disasters.*

About UNDP

UN development network – offices in 166 countries

www.undp.org

Focus on:

- *Democratic governance*
- *Poverty reduction*
- *Crisis prevention and recovery*
- *Energy and environment*
- *HIV/AIDS*

custodian of Resident Coordinator system

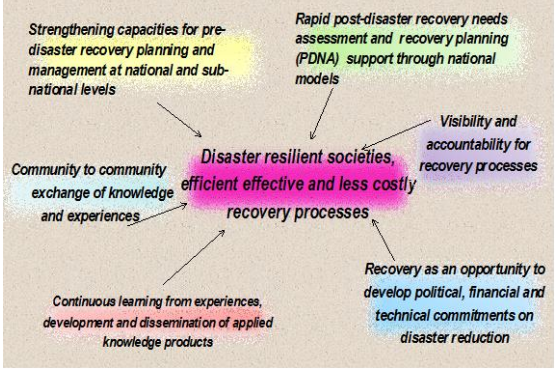
Mandate on Disaster Reduction and Recovery

by the UN General Assembly to conduct operational activities for natural disasters mitigation, prevention and preparedness (A/RES/52/12B – Dec. 1997);

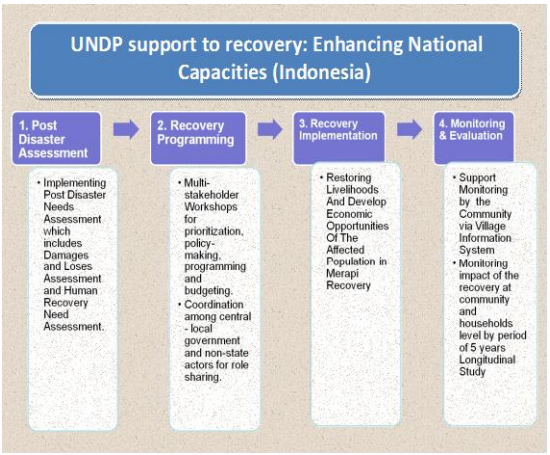
by the UN Emergency Relief Coordinator to ensure inter-agency recovery preparedness (2006);

Chair of the Cluster Working Group on Early Recovery.

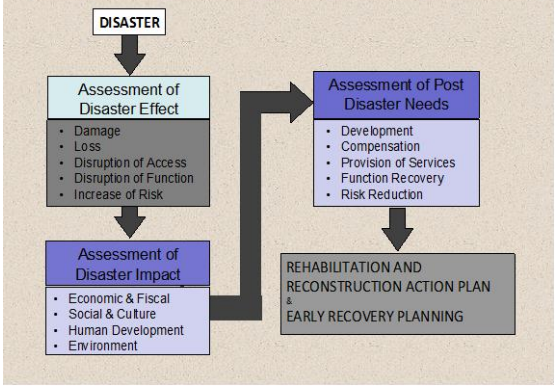
UNDP strategy on preparedness for recovery: from response to resilience



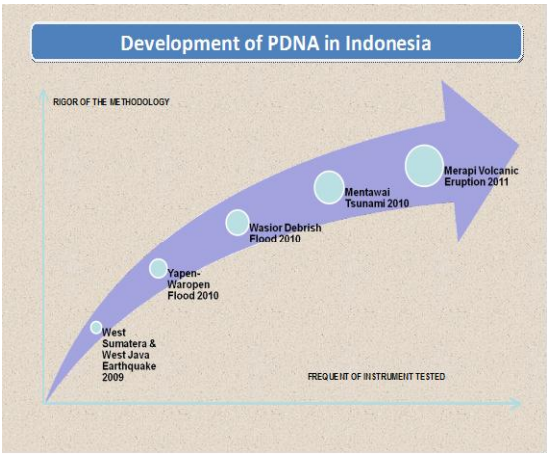
UNDP support to recovery: Enhancing National Capacities (Indonesia)



National PDNA process (Indonesia)



Development of PDNA in Indonesia



Thank-You

2. Health Issues: Mr. Alex Ross, Director WHO Kobe Center

Health

Issues associated with recovery from major disasters

Mr Alex Ross
Director
WHO Kobe Centre

World Health Organization
Centre for Health Development

Recovery of a Disrupted Health Sector

- Expansion of service provision to cover underserved populations (Equity)
- Improvement of technical contents of health care (Effectiveness)
- Adoption of new service delivery models in light of new needs (Appropriateness)
- Increased returns from inputs absorbed by the delivery process (Efficiency)

World Health Organization
Centre for Health Development

WHO Consultation on Urban Health Emergencies

- 4-5 June 2012, Bangkok
- Urbanization and disasters
- Covered: recovery issues

World Health Organization
Centre for Health Development

Good practise (1)

- ***Wenchuan, China & Kobe, Japan*:** counterpart assistance. Mobilization of resources, including human and financial facilities to support provinces affected by disaster for 3 years. Local autonomy is maintained.
- ***Iran*:** management and gradual turnover of responsibilities and resources for 5 years to the affected area
- ***Yogyakarta, Indonesia*:** use past experience and lessons learned to improve approaches

World Health Organization
Centre for Health Development

Good practise (2)

- ***Kobe:*** care for vulnerable groups (elderly, children)
- ***Bangkok floods:*** small grants for damage and destruction to residential properties and grants for hospitals
- ***Christchurch, NZ:*** community consultation successful but possibly not achievable financially (central versus local government tensions)
- ***Gujarat, Aceh, Kobe, Christchurch:*** establishment of a central authority for recovery facilitated planning, coordination and transparency

World Health Organization
Centre for Health Development

Good practise (3)

- ***China, Japan, Turkey:*** commitment on initial finance and human resources allocation from central government and local government. Not dependent on external aid.
- ***Japan, Turkey, Cuba, Chile:*** existing preparedness, response and recovery plans linked to time frame (government and communities set a time frame to measure recovery process)
- ***Japan, Turkey, China, Pakistan, Myanmar:*** 'Build Back Better' – increased resilience
- ***China, Japan:*** build on opportunities to 'right-size' or improve old or inappropriate systems

World Health Organization
Centre for Health Development

What not to do again

- ***Kobe, Japan***: delay recovery plan and implementation by the central government
- ***Bam, Iran***: absence of post-disaster needs assessment made during the recovery phase of the cities. No community involvement
- ***General (Pakistan earthquake, Aceh tsunami, epidemics)***: non-functional health system during disaster up to the recovery phase because of lack of preparedness
- ***General:*** Governance & Accountability--resources not reaching the affected population.

World Health Organization

What not to do…(2)

- Subsidy of health services (by agencies after Haiti earthquake) can lead to difficulty after the services are ceased
- Humanitarian agencies can hijack recovery programmes
- Exit strategy for recovery phase needs to be clear
- Central government may not have capacity for recovery

World Health Organization

Priority Issues and Needs (1)

- **Post-disaster needs assessment; countries should have a Recovery Plan**
- **Governments should have the capacity to implement the Recovery Plan (including funding)**
- **Documentation of effective practices and lessons learned to develop a doable model**
- **Health System and Social Sector capacity to address the needs of vulnerable population**

World Health Organization

Priority… (2)

- **Intersectoral links through public health**
- **Community based, bottom up consultations**
- **Training and capacity building for infrastructure**
- **Competition among various sectors for funding and resources**
- **Review of laws (eg, mental health law in Sri Lanka)**

World Health Organization

Priority . . . (3)

- **Ensuring continuum of health care services for affected, esp most vulnerable, undocumented and people with special needs (TB, HIV, etc)**
- **Existence of policies and legal frameworks to allow local governments, agencies and partners to engage in the recovery process**
- **Health sector response is integrated into the overall multi-sectoral government response**

World Health Organization

Our wish for health and recovery

- Safer infrastructures; hospitals and health facilities safer in emergencies
- Be prepared for key public health hazards and future disasters
- Provide equitable and affordable health services to all
- Recovery framework to ensure appropriate, sustainable health system

World Health Organization

Thank you!

World Health Organization
Centre for Health Development

3. Environmental Issues : Mr. Muralee Thummarukudy, Programme Officer UNEP

Tsunami Debris Management

Muralee Thummarukudy
Chief, Disaster Risk Reduction
United Nations Environment Programme

UNEP Background in Disaster Waste Management

- Disaster Waste Management is turning out to be a key feature of all major disasters
- Key issues
  - Health Care Wastes (during emergency)
  - Camp wastes (in case of temporary camps)
  - Hazardous Wastes (asbestos)
  - Demolition Wastes
  - Overwhelming of local waste management capacity
- UNEP Support National Governments
  - Technical Assistance
  - Capacity Building
  - Clean up
- UNEP experience in the past
  - SE Asia Tsunami
  - Pakistan Earthquake
  - China Earthquake
  - Haiti Earthquake
  - Lebanon and occupied Palestinian territories

Mission objectives

- Observe the disaster debris management in Japan and learn lessons which may be applied in other countries
- Facilitate experience exchange from other disaster situations

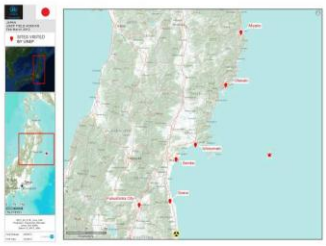
Mission team

Ronnie Crossland, US EPA, (Organisation and management)
Thorsten Kallnischkies, Germany, (Landfill operations)
David Smith, UK, (Hazardous wastes and asbestos)
Mike Cowing, St Lucia, (Waste recycling)
Yves Barthelemy, France, (Waste estimation)
Mario Burger, Switzerland, (Monitoring)
Prof Toshiaki Yoshioka, Tohoku University, (Member, National Task Force)
Surya Chandak, UNEP, International Environmental Tech Centre, (Waste to Energy Projects)
Muralee Thummarukudy, UNEP, Disasters and Conflicts Sub-programme, (Team leader)

Experience in Hurricane Katrina, Rita, China earthquake, SE Asia tsunami, earthquake in Haiti, Cyclone Nargis in Myanmar, oil spills + other emergencies

Mission itinerary

- **Day 1 – Sendai**
- **Day 2 – Miyako and Ofonato**
- **Day 3 – Ishinomaki**
- **Day 4 – Soma City**
- **Day 6 – Tokyo Waste Management Facilities**



Key observations

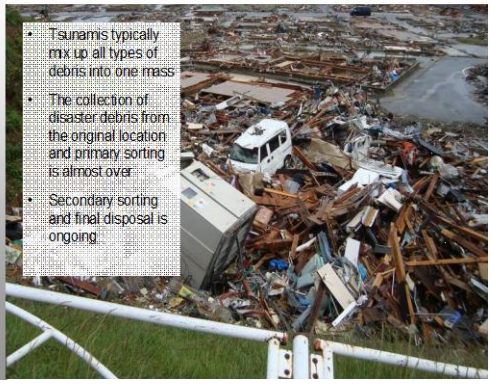
- The challenge faced by Japan is massive and unprecedented, 29 million tons of debris on land, unknown quantity in the sea
- In some municipalities more waste was generated in 15 minutes than what would have been in 100 years
- This will be the most expensive disaster debris management project ever, costing over ten billion dollars, overtaking Hurricane Katrina (USD 4 billion)
- This is done under very restrictive conditions (limitations of landfilling and transport)

Key observations

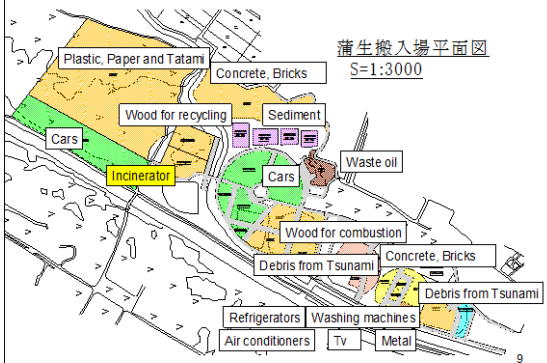
- The Central government gave clear technical direction and substantial financial support to deal with the disaster debris in a time-bound manner (MoE Guideline, May 2011)
- The local municipalities are implementing them, with support of prefectures, in a rapid and systematic manner
- Cities which had prior contingency plans were able to move forward faster

Key observations

- Tsunamis typically mix up all types of debris into one mass
- The collection of disaster debris from the original location and primary sorting is almost over
- Secondary sorting and final disposal is ongoing



Gamo Storage Site for Disaster Wastes



9

Key observations

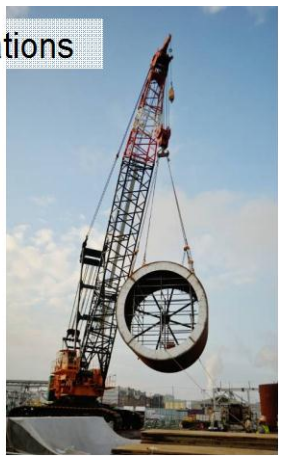
- Very high degree of mechanization, from sorting to treatment
- Local employment is promoted but additional employment generation is limited

Key observations

- When possible, use of local facilities - such as cement plant - to treat disaster waste has been attempted
- Cars and white goods have not yet been processed

Key observations

- Speed at which new facilities are being set up, such as sorting, incineration and desalinization, is impressive
- The biggest incinerator in Japan is being set up in Ishinomaki and will be operational within next 6 months
- Typically these take many years in other countries



Key observations

- Quantity of raw timber is massive
- The concrete foundations of buildings have not yet been removed
- Quantity of hazardous substances was somewhat limited compared to disaster situations elsewhere

Observations

- Some waste is not amenable to easy management, such as fishing nets
- Some waste still needs to be dug up from the ports

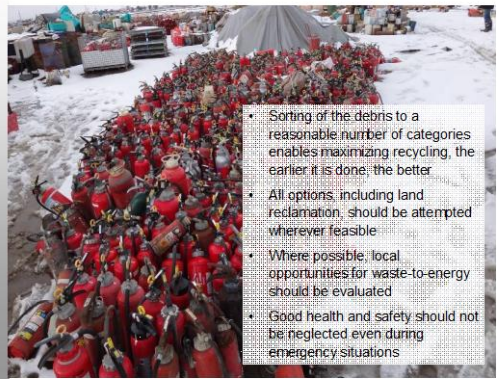
Key observations

- Monitoring of environmental conditions is ongoing at all locations
- Results are made publicly available often within hours of monitoring
- Health and safety management in the facilities is of a high standard
- No reported fatality relating to health and safety in the field

Lessons for other situations

- Having a contingency plan enables cities to initiate the disaster debris management quickly, thereby speeding up overall recovery
- Clear instructions from central government (or agency) at an early stage will facilitate standardization of approaches
- Without substantial financial support and technical back-up, local municipalities will not be able to cope with such disasters

Lessons, continued..



- Sorting of the debris to a reasonable number of categories enables maximizing recycling, the earlier it is done, the better
- All options, including land reclamation, should be attempted wherever feasible
- Where possible, local opportunities for waste-to-energy should be evaluated
- Good health and safety should not be neglected even during emergency situations

Lessons, continued..

- Environmental monitoring should be integral part of the projects
- Documentation and communication of the process and results are important

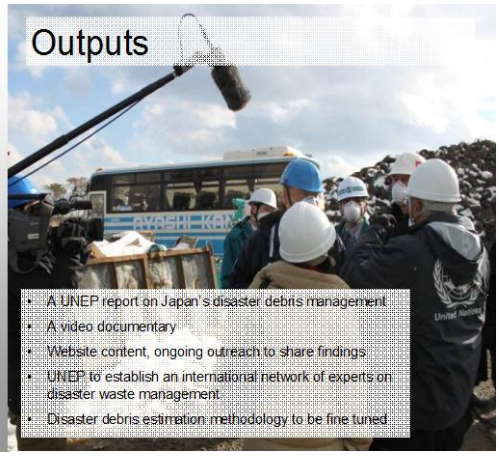
Lessons, from elsewhere, applicable in Japan

- No options, including landfilling, should be discounted at the earliest stage
- Local variations from the national guidelines should be evaluated so long as it suits local environmental conditions
- Monitoring is best done by an independent academic/research agency rather than the contractor or government

Lessons from elsewhere applicable in Japan

- There should be continued effort to coordinate between the municipalities and prefectures so that good practices can be shared
- Continued involvement of national experts to technically backstop the local authorities will ensure more optimal outcomes locally

Outputs



- A UNEP report on Japan's disaster debris management
- A video documentary
- Website content, ongoing outreach to share findings
- UNEP to establish an international network of experts on disaster waste management
- Disaster debris estimation methodology to be fine tuned

2.3 Some scenes from the meeting

3. Field Visit, Site inspection

3.1 Schedule

○Tour schedule○ July 4th (Wed)

9:00	Departing from Ark Hotel Sendai, Sendai City by a chartered bus
9:10	A brief description of the status of residential land damage given in the bus by a Sendai City Hall worker
9:25	Arriving at Oritate district
	■Commentary and on-site review in Oritate district (20 minutes)
9:45	Departing from Oritate district
10:20	Arriving at Ido Receiving Station (Commentary and on-site review at the station: 30 minutes)
10:50	Departing from Ido Receiving Station
11:00	Arriving at Arahama
	■Presentation by Community Restoration Department in Arahama district (20 minutes)
11:20	Departing from Arahama ~ through the vicinity of the temporary housing area in the proposed site of Arai Elementary School ~
12:20	Arriving at the lunch venue
13:30	Arriving at Ark Hotel Sendai, Sendai City

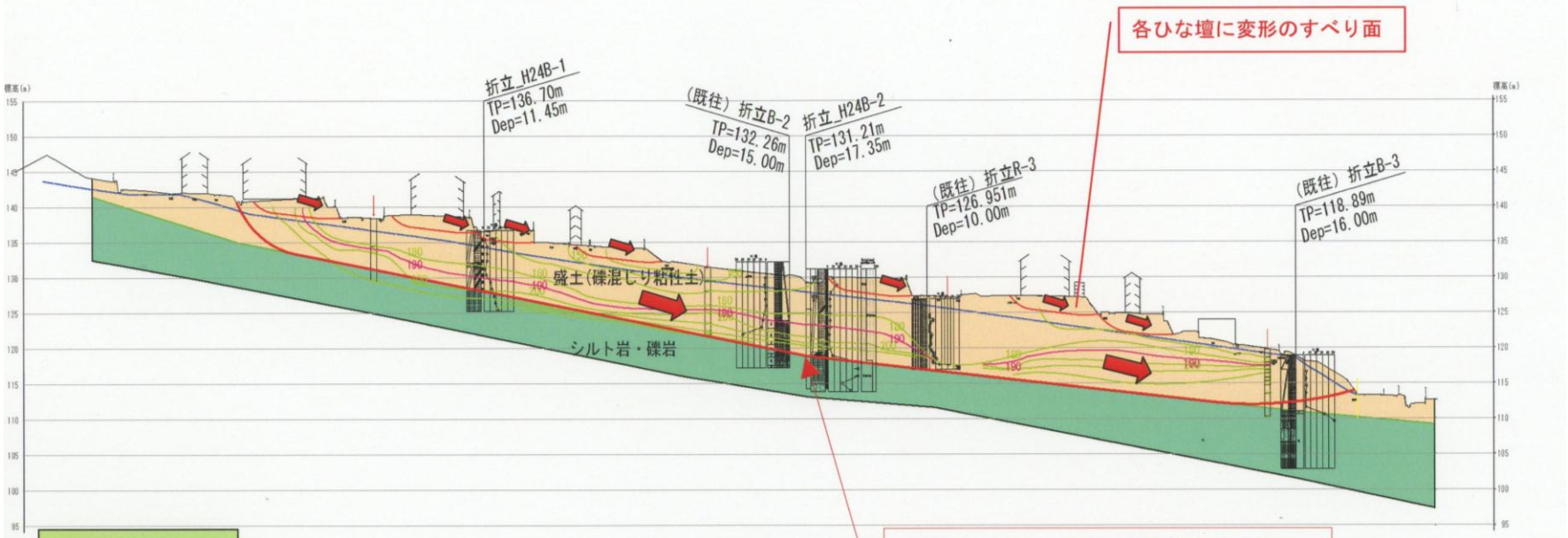
3.2 Inspection route

July 4th touring route

Oritate

Temporary housing area in the proposed site of Arai Elementary School (transit only)

折立五丁目地区　断面図



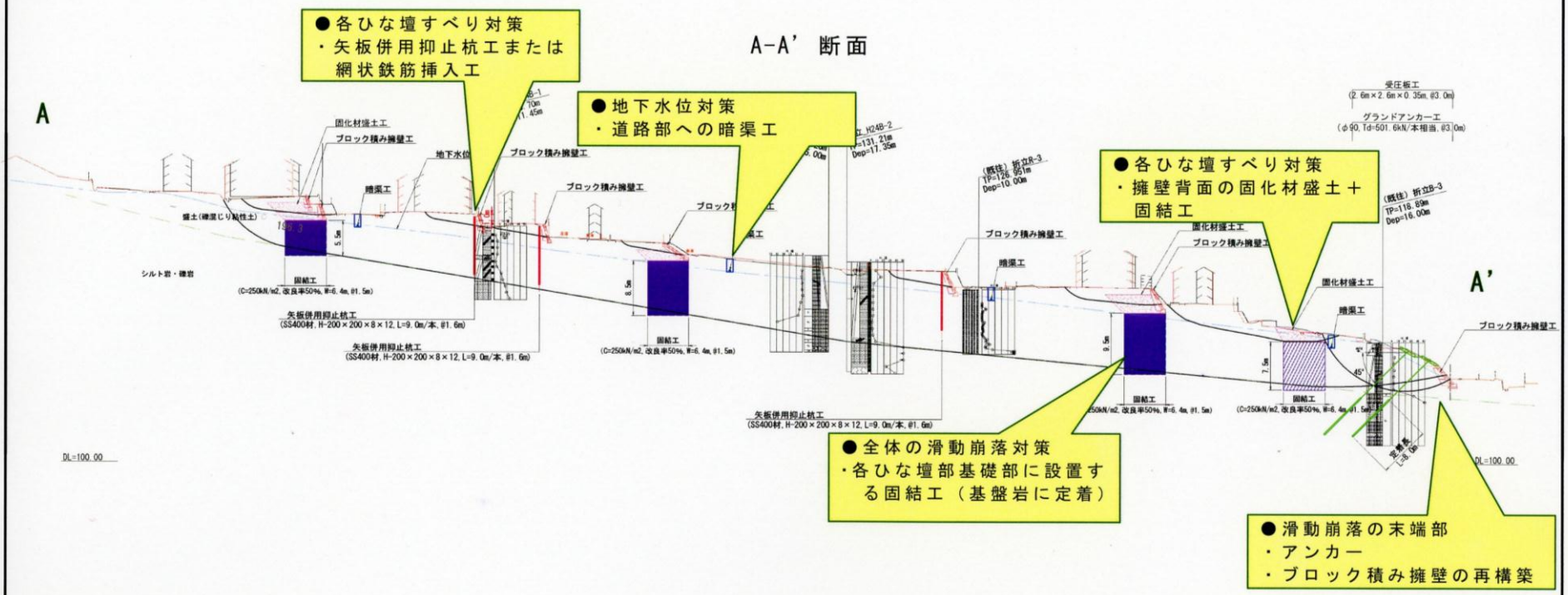
変状メカニズム

◆大きな連続した変形は、地山-盛土境界に発生した連続した地すべり状の変状である。

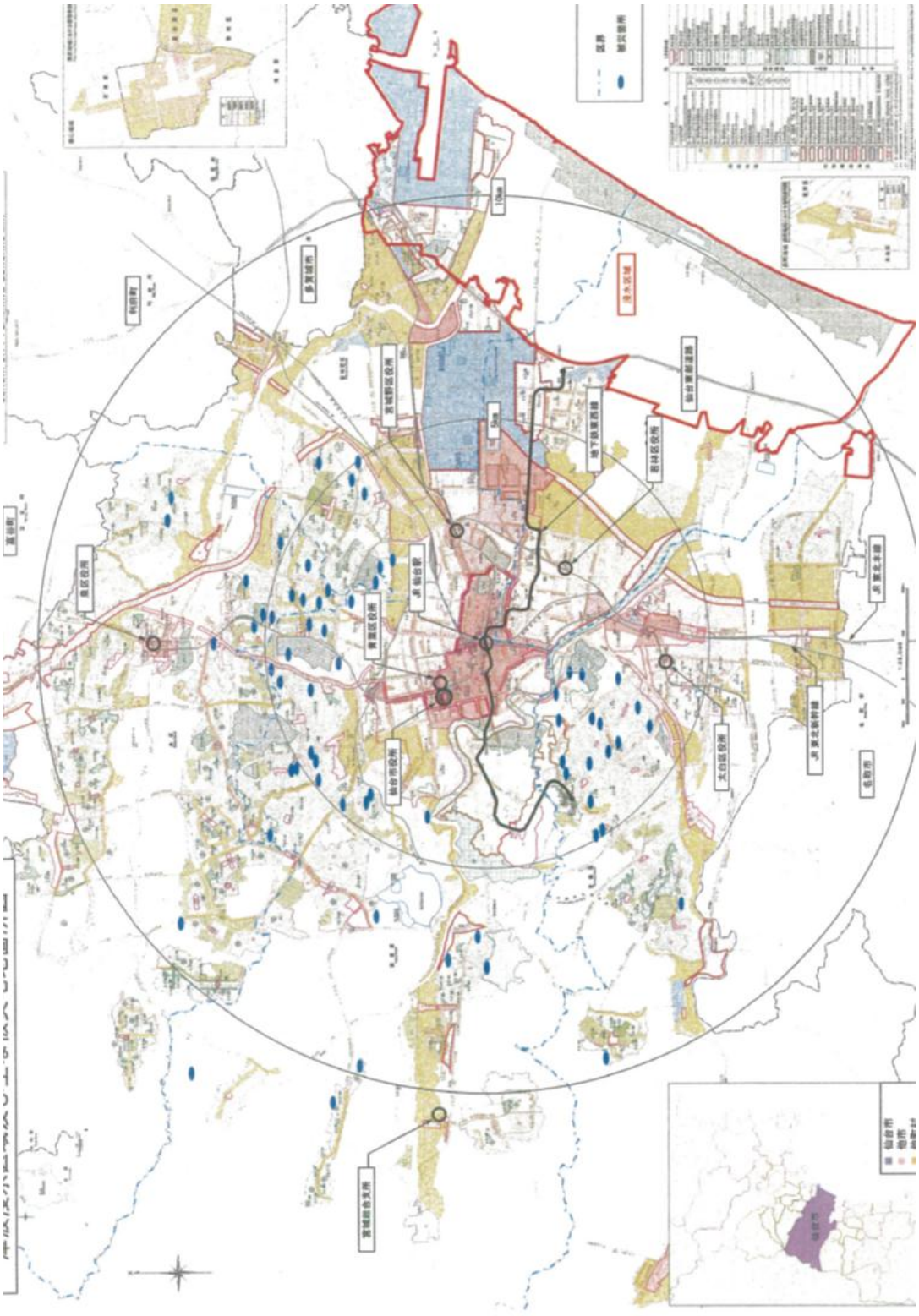
◆盛土表層部（ひな壇部）は特に脆弱化が顕著であり、剛性低下による変形により擁壁の転倒等が発生した。

◆部分的には、円弧すべりが発生しており、擁壁が転倒している。

折立五丁目地区　対策工断面図（案）

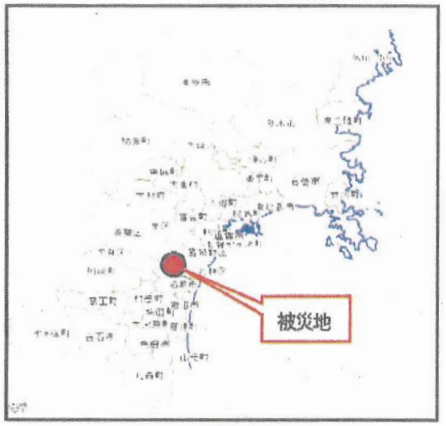


※この対策工計画は案であり、今後の検討により見直しが行われる場合があります。



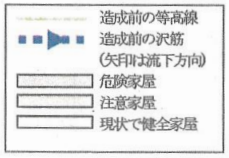
折立五丁目地区の宅地被災状況

【位 置 図】

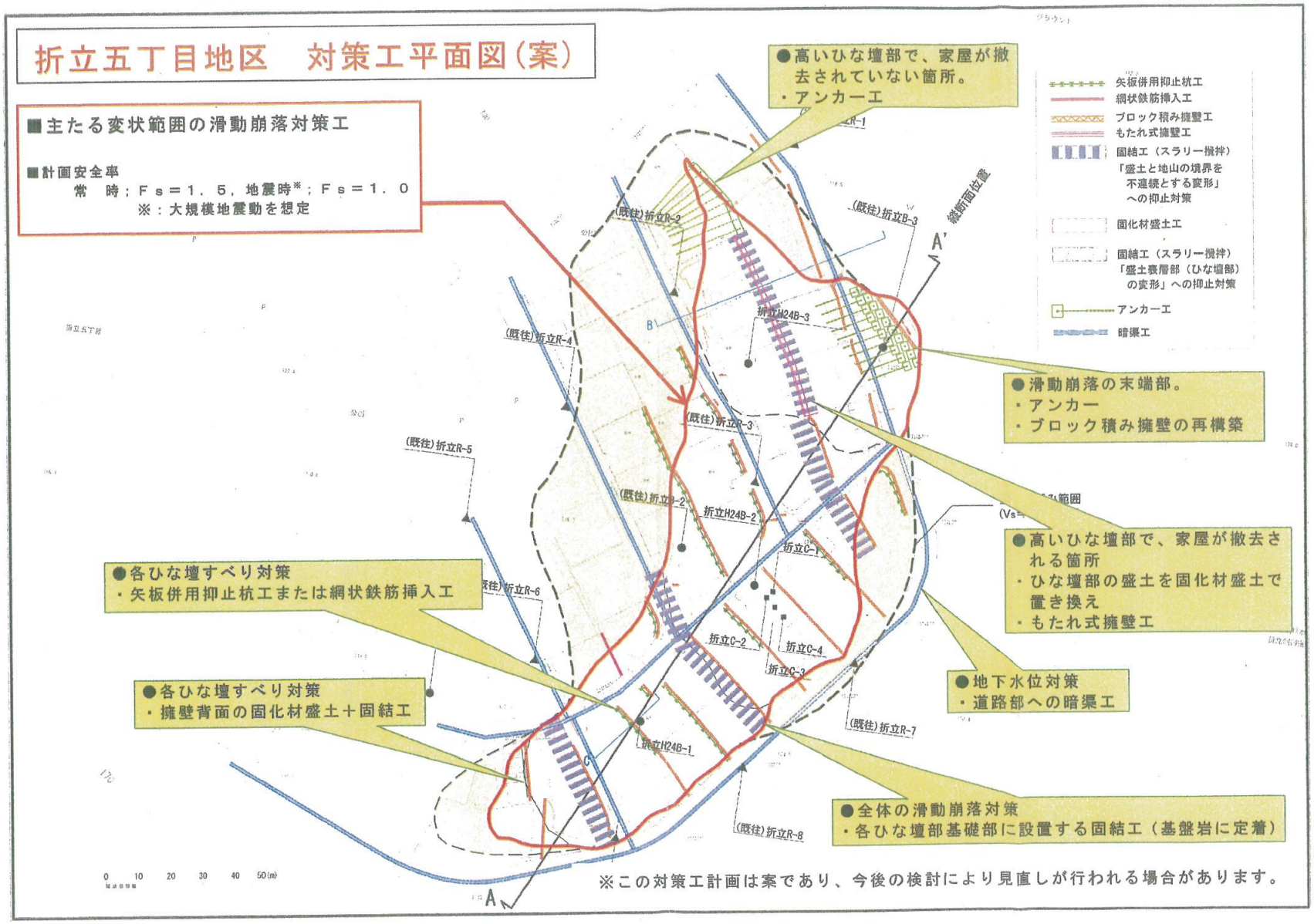


Yahoo!地図より引用・加筆

【古地図重ね合わせ】



折立５丁目付近には，大きな沢があり，最も大きな沢は，上図の中央を南西から北東に流下する。


折立五丁目地区　対策工平面図（案）
■主たる変状範囲の滑動崩落対策工
■計画安全率
常　時；Ｆｓ＝１．５，地震時※；Ｆｓ＝１．０
※：大規模地震動を想定
●高いひな壇部で、家屋が撤去されていない箇所。
・アンカー工
●滑動崩落の末端部。
・アンカー
・ブロック積み擁壁の再構築
●高いひな壇部で、家屋が撤去される箇所
・ひな壇部の盛土を固化材盛土で置き換え
・もたれ式擁壁工
●各ひな壇すべり対策
・矢板併用抑止杭工または網状鉄筋挿入工
●各ひな壇すべり対策
・擁壁背面の固化材盛土＋固結工
●地下水位対策
・道路部への暗渠工
●全体の滑動崩落対策
・各ひな壇部基礎部に設置する固結工（基盤岩に定着）
矢板併用抑止杭工
網状鉄筋挿入工
ブロック積み擁壁工
もたれ式擁壁工
固結工（スラリー撹拌）
「盛土と地山の境界を不連続とする変形」への抑止対策
固化材盛土工
固結工（スラリー撹拌）
「盛土表層部（ひな壇部）の変形」への抑止対策
アンカー工
暗渠工
縦断面位置
A
A'
B
C
(既往)折立R-1
(既往)折立R-2
(既往)折立R-3
(既往)折立R-4
(既往)折立R-5
(既往)折立R-6
(既往)折立R-7
(既往)折立R-8
折立H24B-1
折立H24B-2
折立H24B-3
折立C-1
折立C-2
折立C-3
折立C-4
0　10　20　30　40　50(m)
※この対策工計画は案であり、今後の検討により見直しが行われる場合があります。

3.4 Scenes from the inspection

Oritate district ①

Oritate district ②

Ido Receiving Station ①

Ido　Receiving　Station　②

Arahama　①

Arahama　②