



**Asia-Pacific
Economic Cooperation**

2011/SOM3/EPWG/SDMOF/002

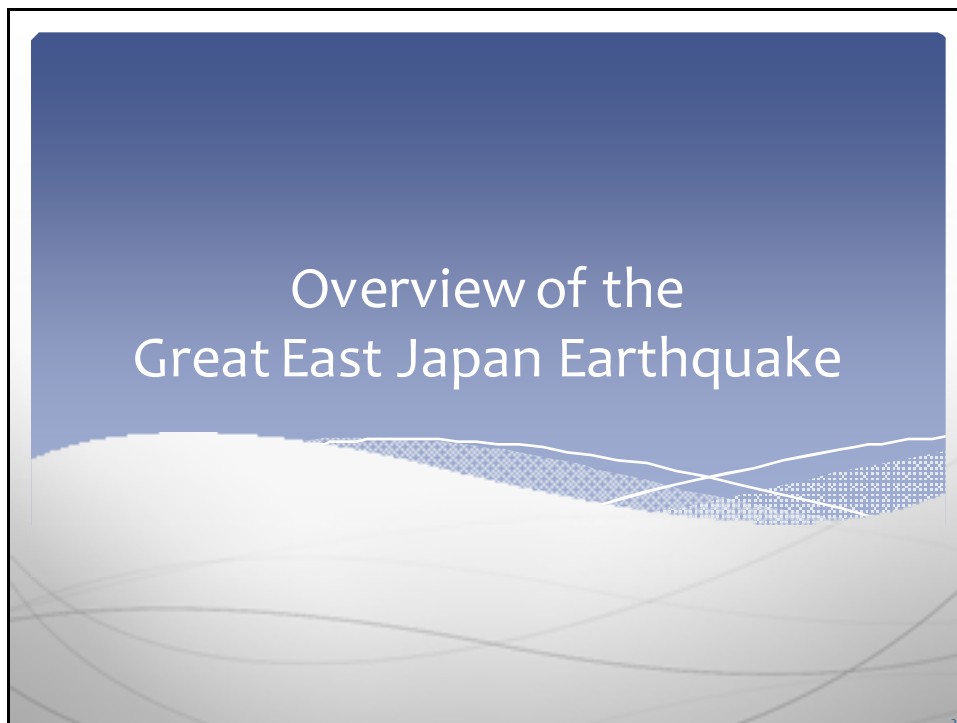
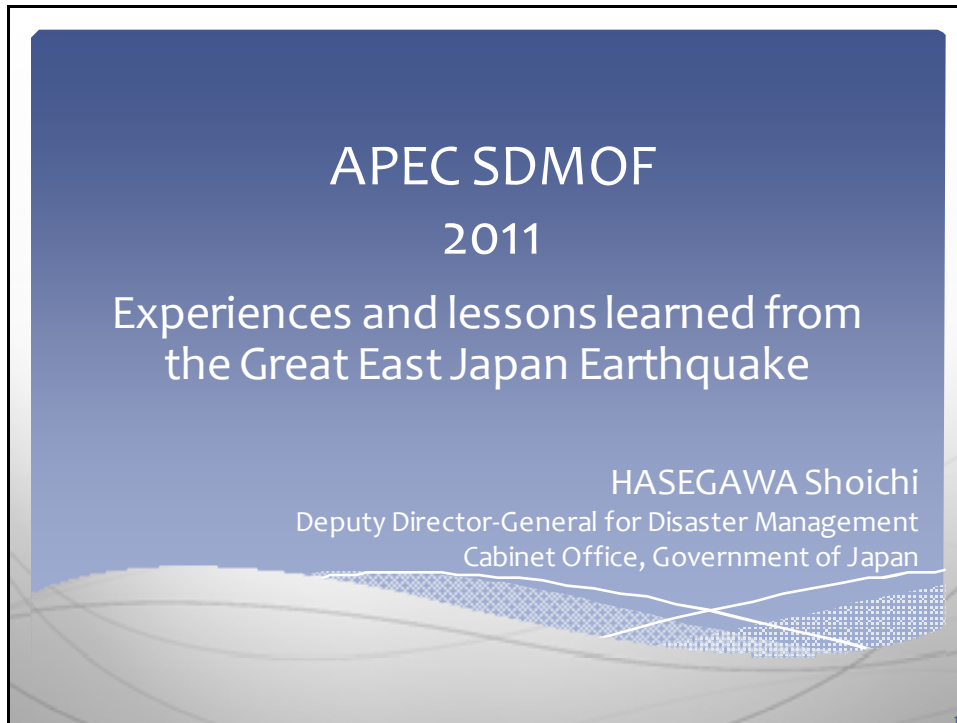
Session 1

Experiences and Lessons Learned from the Great East Japan Earthquake

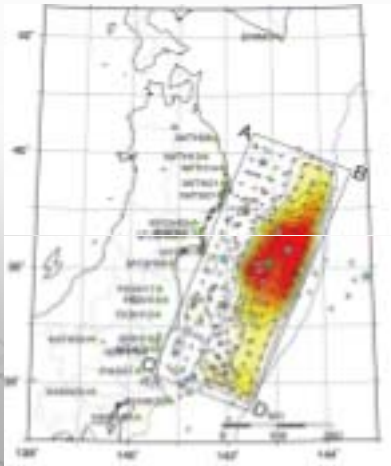
Submitted by: Japan



**5th Senior Disaster Management Officials
Forum
San Francisco, United States
21-23 September 2011**



Massive Earthquake and Tsunami



- * Occurred on 11 March 2011, 02:46pm
- * Moment Magnitude **9.0**
- * Massive tsunami - observed tsunami height: more than **20m (22yards)**, run up of tsunami wave height: **40.5m (44yards)**

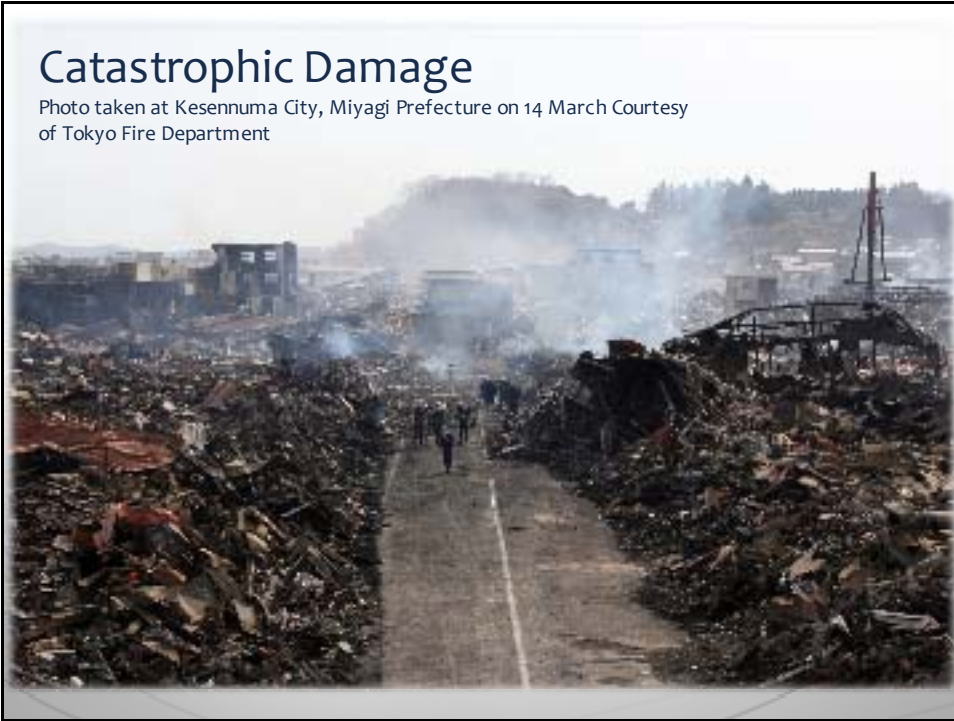
Tsunami Disaster

Photo taken at Miyako City, Iwate Prefecture
Courtesy of Tarocho Fisheries Cooperative Association



Catastrophic Damage

Photo taken at Kesenuma City, Miyagi Prefecture on 14 March Courtesy of Tokyo Fire Department



Widespread Inundation

Aerial Photo around Miyagi Prefecture
12 March 2011





Damage caused by Great East Japan Earthquake

Estimated damage to the economy

| Item | Damage (approx.) |
|---|--|
| Buildings | 10.4 trillion yen (135 billion dollars) |
| Lifeline facilities | 1.3 trillion yen (17 billion dollars) |
| Social facilities (Roads, Ports, Rivers, etc.) | 2.2 trillion yen (29 billion dollars) |
| Agriculture, forestry, and fisheries | 1.9 trillion yen (25 billion dollars) |
| Others | 1.1 trillion yen (14 billion dollars) |
| Total | 16.9 trillion yen (220 billion dollars) |

Human Damage

- * Casualties: **15,769**
as of 06 Sep
- * Missing: **4,227**
as of 06 Sep
- * Evacuees:
Max **470,000** → **3,439**
as of 14 Sep

Immediate Government Response

Government inspection in Miyagi Prefecture, 12 March 2011



Support from Overseas

* Many countries supported Japan.

* “People are incredibly calm, despite the ground constantly shaking.”

— THE INDEPENDENT

Monday, 14 March

2011

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Disaster Risk Reduction and Disaster Preparedness

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Earthquake-resistant Retrofitting of Buildings

* School Facility



* Building



* Progress of earthquake-resistant retrofitting

| Category of building | Progress |
|--|--------------|
| Houses | 79% (2008) |
| Public schools (elementary and junior high schools) | 73.3% (2010) |
| Hospitals | 56.2% (2009) |

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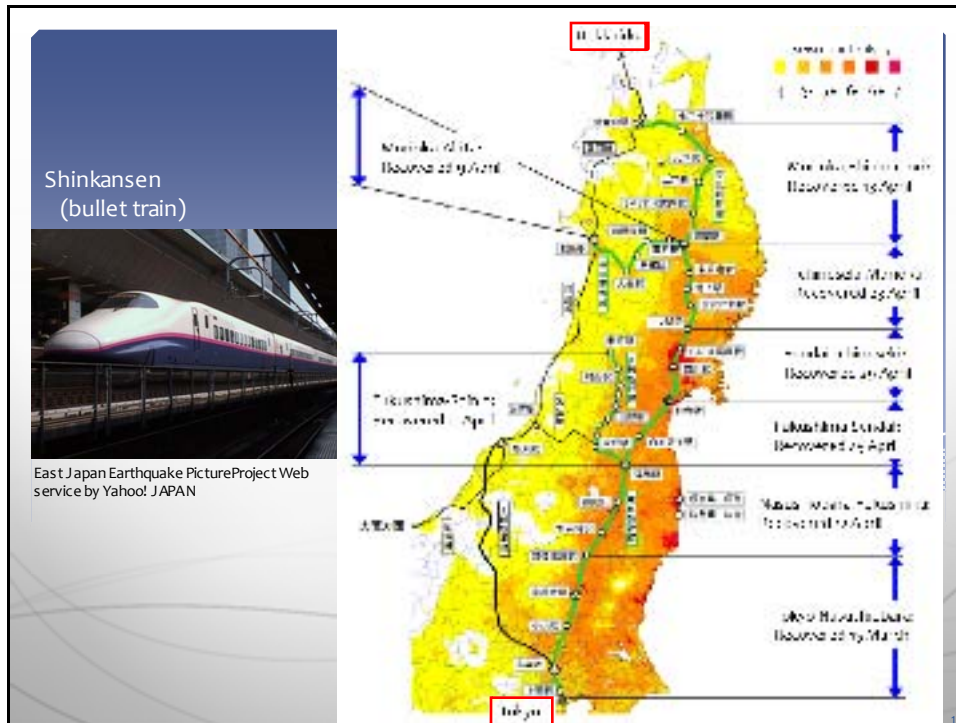
Earthquake-resistant Retrofitting for Shinkansen (bullet train)

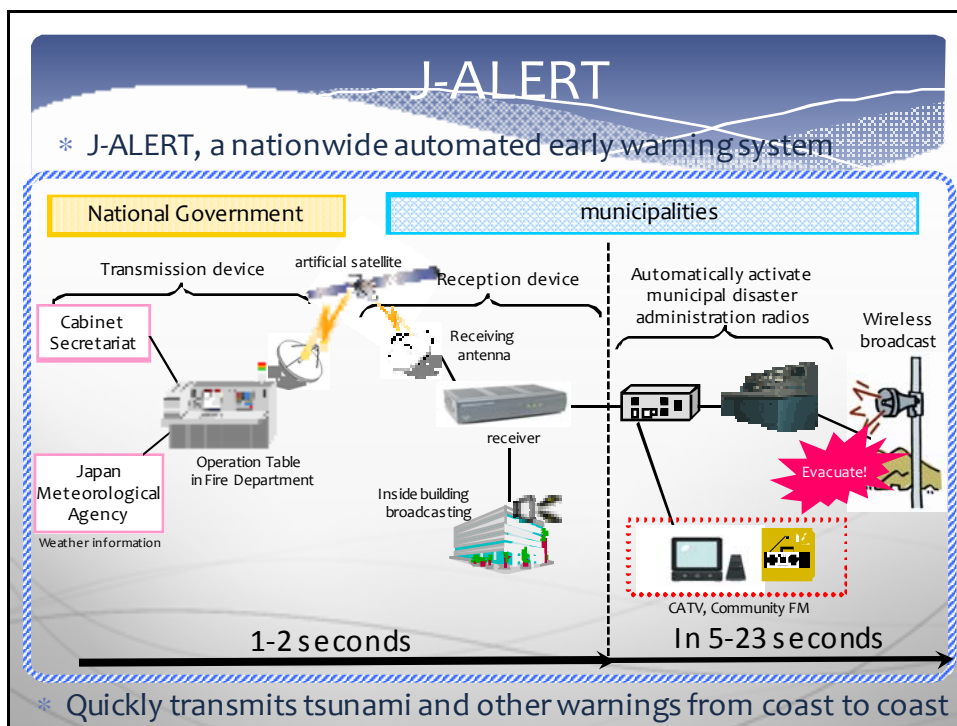
* Reinforced Shinkansen bridge columns



Reinforced by steel plate

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Good Practice by Disaster Education

* “Miracle of Kamaishi”

Students in Kamaishi City, Iwate Prefecture, all evacuated safely, because of the disaster education.

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Learning from the Past

- * Taking countermeasures followed by lessons learned from the past disasters
- * The percentage of the death is decreasing

| | Meiji-Sanriku Earthquake Tsunami 1896 | Showa Sanriku Earthquake Tsunami 1933 | Great East Japan Earthquake 2011 |
|---|--|--|---|
| Number of the casualties in Taro district | 1,867 = 83% of all of the population | 972 = 20% of all of the population | 230 = 6% of all of the population |

Emergency Response and Recovery

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Dispatch of Rescue Teams

* Japan Self-Defense Force

11 March: **8,400**

since 18 March to 5 May: **more than 100,000/day**

→ More than 40% of all JSDF dispatched

* Emergency Fire Response Teams

104,093 (total, since 11 March to 6 June)

→ One in six firemen across the economy joined rescue operations

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Rescue teams rushed to the affected area

Photo provided by Tokyo Fire Department



Kesenuma City, Miyagi Pref.



On-site headquarter

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Tokyo Fire Department

Photo took on 12 March, in Kesenuma City, Miyagi Prefecture

Provided by Tokyo Fire Department



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Quick Recovery of the Infrastructure: Expressway

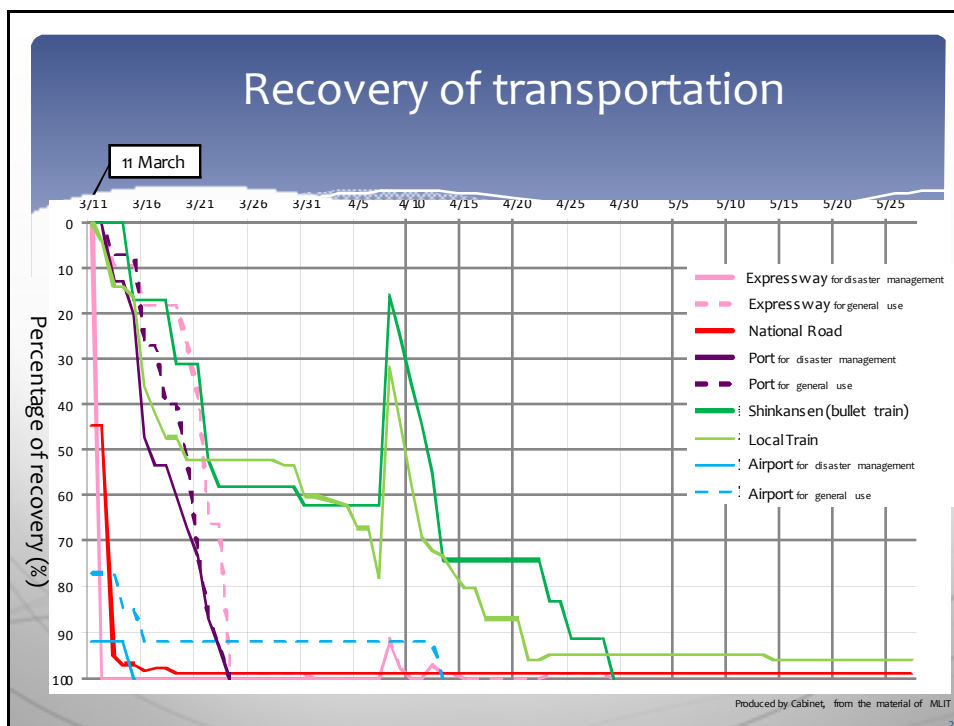
- * Emergency recovery operation of Tohoku Expressway (the longest expressway in Japan) had done on 22 March, just 11 days later of the occurrence of the disaster.
- * It contributed not only to the transportation of the emergency relief supplies, but also recovery of the economy in Japan.

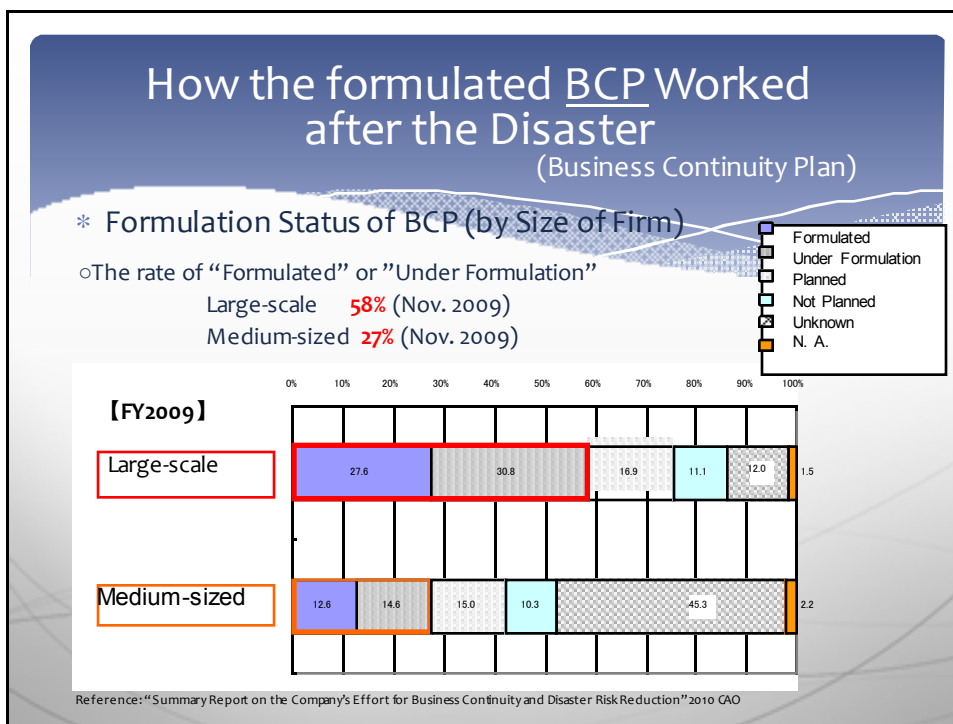


Six days later



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Grass Roots Activities

* 717,700 volunteers (as of 28 August) worked in affected area.



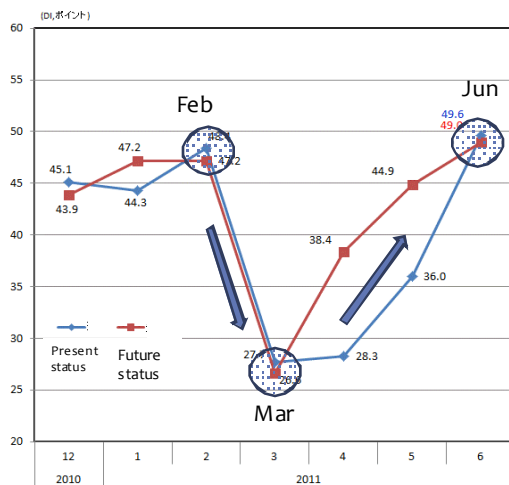


Volunteer Bus Tours
©Nano-hana Busline Co., Ltd



Volunteers at affected area

Recovery of business confidence



〈備考〉内閣府「景気ウォッチャー調査」より作成。各月調査の調査期間は当該月の25日～月末。

Economy Watchers Survey

Way Forward

Toward Reconstruction




11 April

11 September

East Japan Earthquake Picture Project Web service by Yahoo! JAPAN

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Improving the Countermeasures against Disasters



- * Verification and Reviewing of countermeasures against earthquake and tsunami based on Great East Japan Earthquake.

Committee for Technical Investigation on Countermeasures for Earthquakes and Tsunamis learned from the Great East Japan Earthquake, 28 May 2011

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Strengthening of International Cooperation on Disaster Management

- * Japan proposed hosting The 3rd United Nations World Conference on Disaster Reduction in 2015.
- * Also, Japan will share the lessons of Great East Japan Earthquake with the world, and promote for disaster management cooperation with the world.

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Children Reading "Inamura no hi", Tsunami Education Picture Book

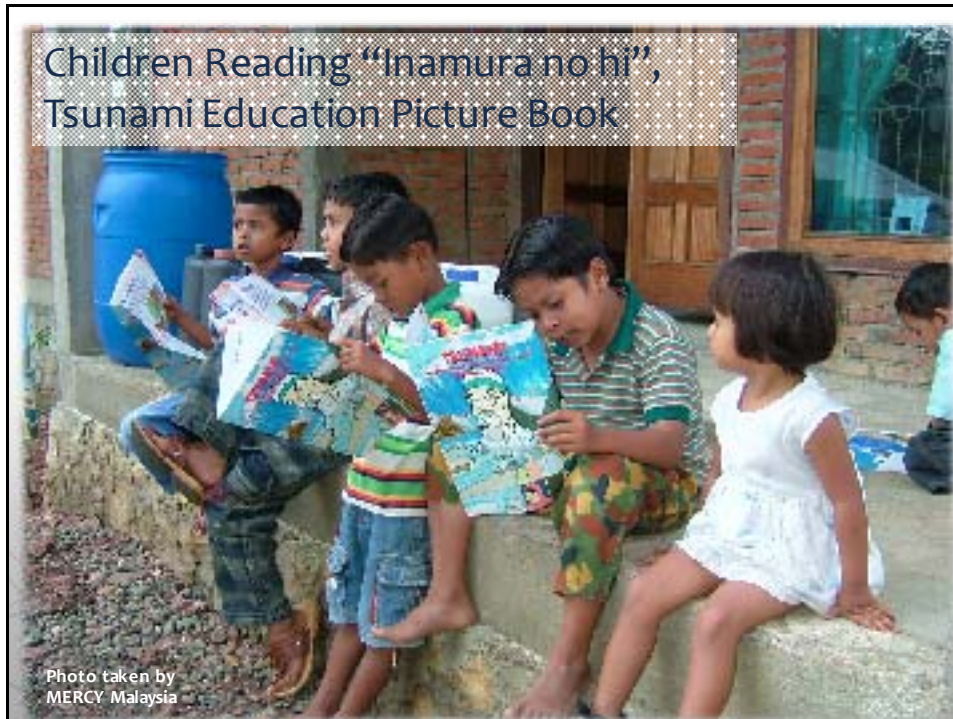


Photo taken by
MERCY Malaysia

Affected Area is Ready for
Welcoming Tourists!



 **Japan.**
Endless
Discovery.

©Matsushima Town

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Thank you for your attention

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