

ACP Conference: International Expert Session on “Future Perspective of Safety Management in Asia”

# Importance of Transfer of Lessons Learned from Past Disasters

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# Disasters in 2018, JAPAN (1) OSAKA

## Osaka North Earthquake

Date/Time :18 June, 2018 / 7:58(JST)

Epicenter: Osaka North Depth:13km

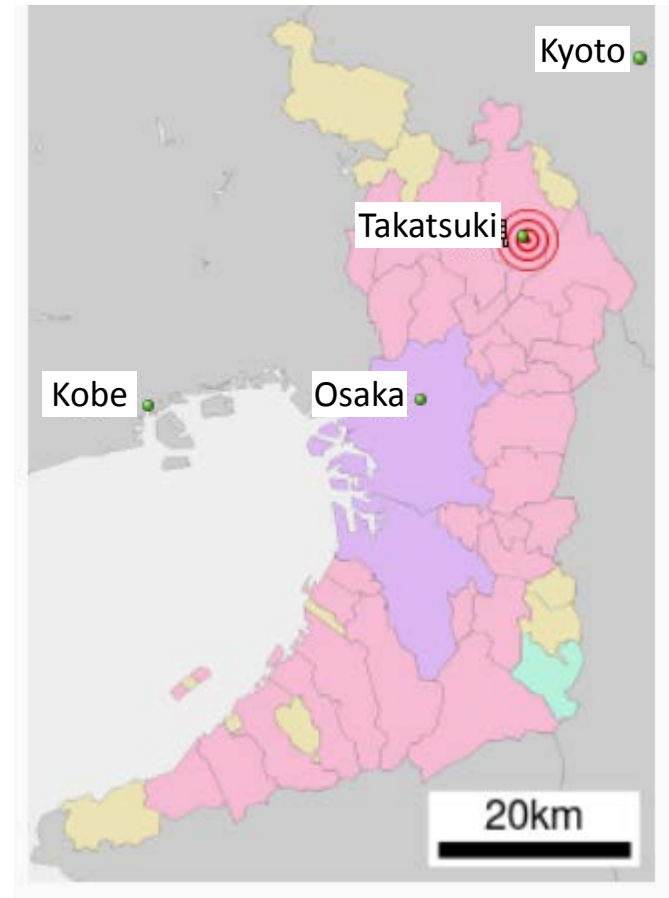
Magnitude : Mj 6.1(JMA)/ Mw 5.5

Max inntensity : 6L(JMA Scale) in Osaka city north,  
Takatsuki city, Ibaraki city etc.

Tsunami: Non

Death: 6, Injured 443,

Housing Damage: Total 18, Half 517, Partial 57,787



# 9歳女儿ら3人死亡

壁倒壊・火災多数けが



を観測したのは、大阪府の高槻市、枚方市、茨木市、箕面市の5市区。震度5強は京都市中京区、京都府亀岡市など18の市区町だった。

大阪府災害対策本部などによると、高槻市立寿栄小学校のプールの塀が倒れ、



# M6.1 大阪北部震源

[illegible]

府の地盤調査研究推進本部は、同断層帯で今後30年以内に「M7・5程度の大地震が起きる確率を「0・1」未満」と評価している。

また、同庁地震津波監視課の松森敬幸課長は「M6程度の地震は日本全国、いつでもあつても発生している」とした。

1995年の阪神・淡路大震災の原因となった活断層は、距離などから関係がないとみられるとされ、近畿地方を貫き、大阪府と奈良県を分ける山崎断層が、

# 部震源

新大阪間と山陽新幹線の新大阪・岡山間は午前10時現在運転を見合わせている。

京阪神のJR各線、阪急、南海、近鉄、阪神、京阪の各私鉄も一時全線で運転を見合わせた。18日午前10時45分現在、近畿の主な高速道路は通行止めが続いている。



# Disasters in 2018, JAPAN (2)

## Typhoon Jebi (No. 21) , Kansai Ap.

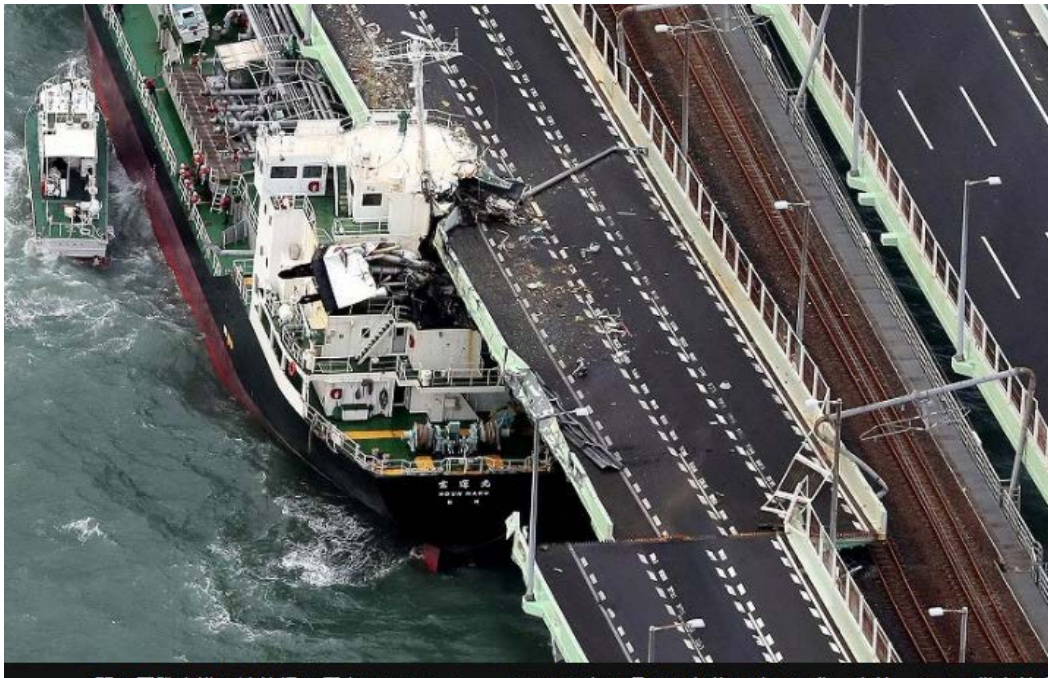
Date/Time : 2018 September 4<sup>th</sup> / 14:00 Landed in

Max wind speed: 45m/sec(Kobe), Max tidal level: 329cm (Osaka), Wave hight: 6m (Ashiya)

Strongest typhoon in 25 years

Death: 13, Injured: 912, Flooding Houses : 28 (over floor), 191 (Under floor)

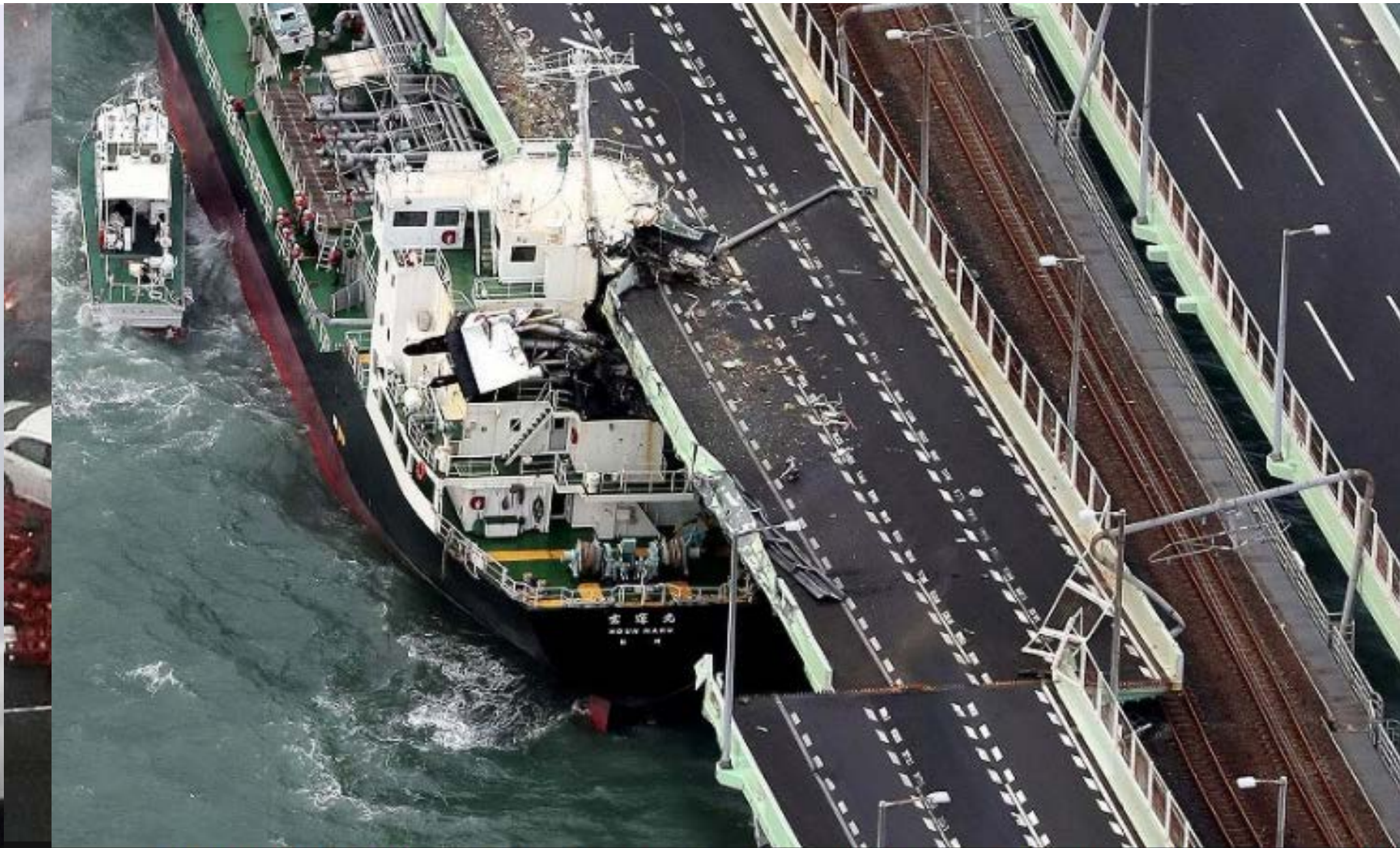
Transportation damage: Tanker hit the KIX bridge connecting Osaka → KIX closed



<https://edition.cnn.com/2018/09/04/asia/japan-typhoon-jebi-intl/index.html>

# Typhoon Jebi (No. 21)

Mainichi Shinbun



関西国際空港の連絡橋に衝突したタンカー＝2018年9月4日午後5時56分、本社ヘリから幾島健太郎撮影

# Disasters in 2018, Indonesia

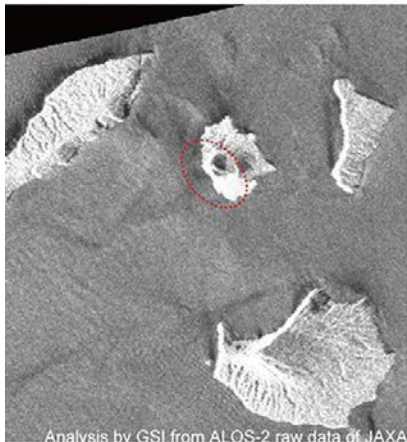
2018. 12. 22 Eruption of Anak Krakatau Volcano caused Tsunami disaster



# 2018. 12. 22 Eruption of Anak Krakatau Volcano caused Tsunami disaster



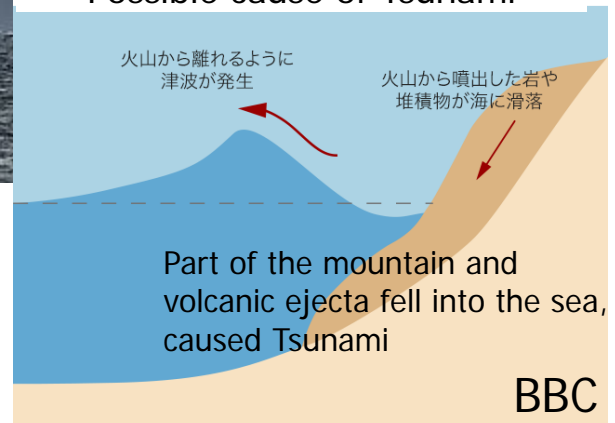
噴火前 2018/08/20  
(Before Eruption Aug. 20, 2018)



噴火後 2018/12/24  
(After Eruption Dec. 24, 2018)



## Possible cause of Tsunami



出典: BBC、米カリフォルニア大学サンタクルーズ校

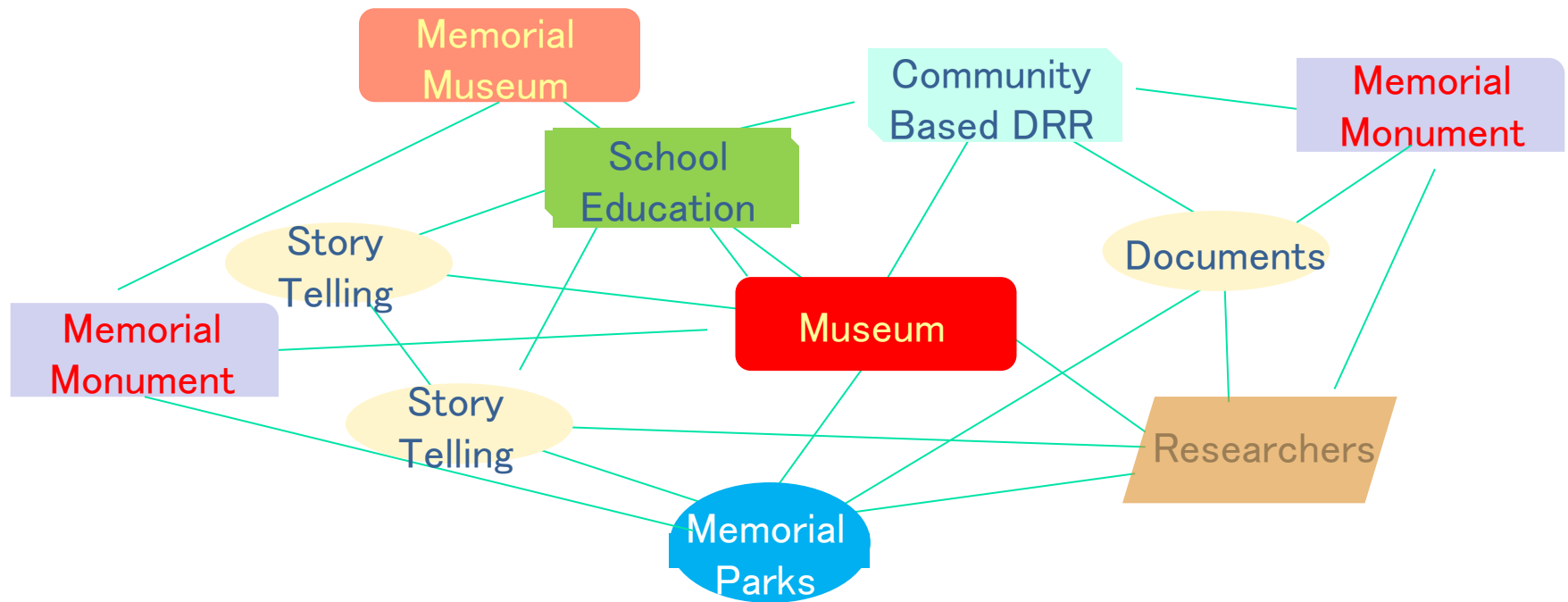
Hight of the mountain became 1/3 JAXA  
Eruption in 1883, Dead: 36,000

# KUIS Safety Management Education Is Based on the Lessons from the 1995 Great Hanshin-Awaji Eq. (Kobe Eq.)



# Tools to transfer lessons learned from past disasters

## ■ Museum: Information Center of Lessons



Story-telling : Festivals, Songs, Plays, Story-telling activities (live, video)

# World's largest Disaster Museum to transfer lessons from GHAE Disaster Reduction and Human Renovation Inst. (DRI)

- Collect and exhibit materials, documents related to the disaster (200,000)
- Training of government staff in charge of disaster management
- Expert research, study and advise on disaster-stricken areas
- Networking of DRR related organizations
- **500,000+ visitors every year to learn Kobe Experiences <Got 8mil. Visitors>**
- **60% are school excursion students**
- **150 Volunteers (40: Story-tellers) support**



# Museum Exhibit at DRI

## *World's Largest DRR Educational Museum*

- 500,000+ visitors every year to learn Kobe Experiences  
<Got 6.7mil. Visitors on 31 March 2015>
- 60% are school excursion students (Elementary, Junior high, High)
- 4% from abroad (Vietnam, Malaysia, Korea, Thailand, China, IDN, ...)
- 150 Volunteers (40: Story-tellers) support museum operation



# Transfer lessons of Tsunami by a volcanic eruption 230 years ago

## Mt. Unzen Disaster Memorial Hall (Gamadas Dome)

### 1991 Mt. Unzen Volcanic Disaster

1990~1995 Eruption created a new mountain: Heise-Shinzan

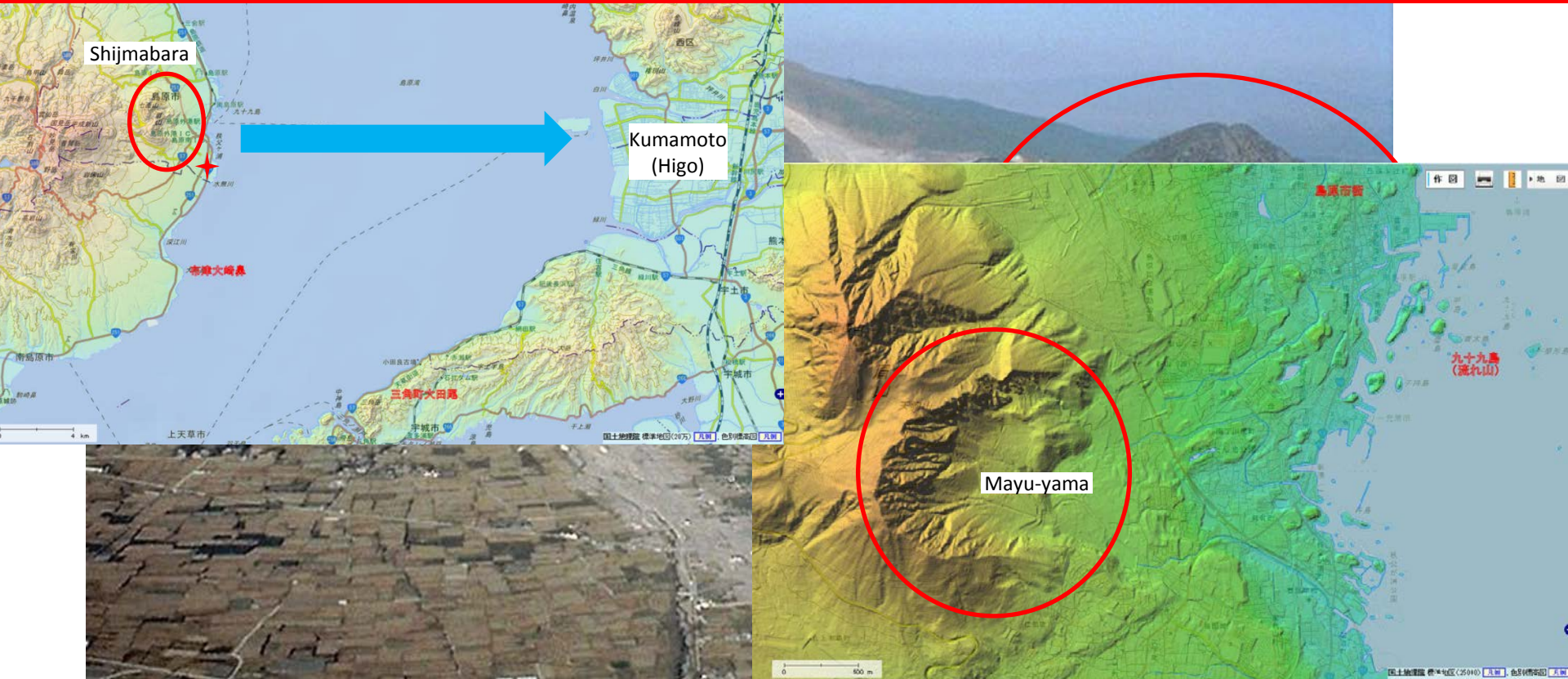
1991 June 3<sup>rd</sup>: Pyroclastic flow  
⇒43 dead



# 1792 Eruption “Shimabara Disaster”

1792 Mayu-yama (Shimabara) erupted, part of the mountain body fell into the Ariake-sea, caused tsunami at Kumamoto (Higo) killing 15,000 people

Similar to the 2018 Anak Krakatau Eruption and Tsunami



# Transfer of Shimabara Disaster at the Gamadas dome



**This story is told through a picture-card show in the style of Kabuki**

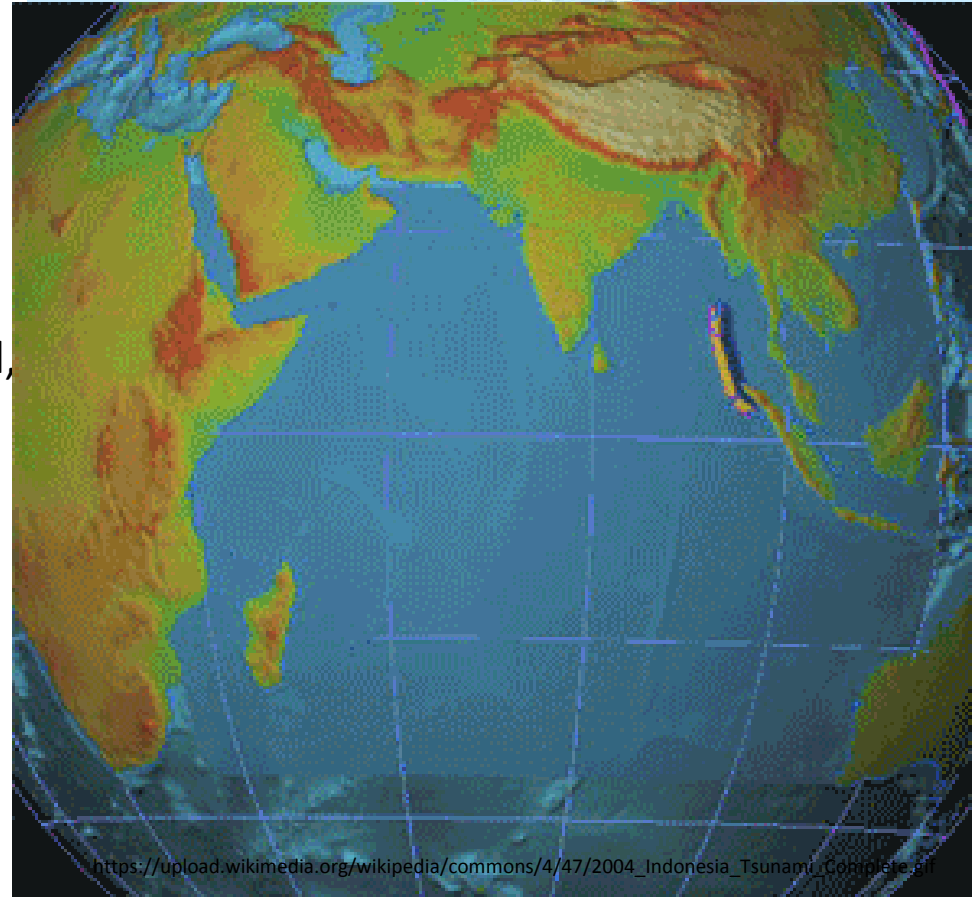


<https://www.udmh.or.jp/exhibition/picture-story/>

# Tsunami Lessons (1907) Saved Many Lives in 2004

## <2004 Indian Ocean Tsunami>

- Date: 7:58, 26 December, 2004 (Local time)
- Epicenter: 160 km off the western coast of northern Sumatra, just north of island
- Depth: 30km
- Mw: 9.3 (9.1)
- Tsunami: Max 34m (Sumatra)
- Dead: 228,000 Injured: 130,000
- Damaged Area: Indonesia, Malaysia, Thailand, Myanmar, India, Sri-Lanka, Maldives, Somalia



[https://upload.wikimedia.org/wikipedia/commons/4/47/2004\\_Indonesia\\_Tsunami\\_Complete.gif](https://upload.wikimedia.org/wikipedia/commons/4/47/2004_Indonesia_Tsunami_Complete.gif)

# Successful Tsunami Evacuation at Simeulue Island, Indonesia

<What happened on 2004/12/26>

Felt earthquake  
Seawater receded  
Fishes stranded in sands  
Someone shouted **"SMONG"**  
Repeated from one to another while running up  
(evacuation)



8 people killed out of 84,000 residents  
(0.005% of Population at coastal area; 66,000)



# Indigenous Knowledge on TSUNAMI

## SMONG Song

Tsunami 1907 destroyed Simeulue  
Older people pass on the information to next generations in  
**stories and songs**  
Describing the symptoms of tsunami  
Telling people what to do what not to do

*Hear you all, this story  
Once upon a time  
A place gone under the sea  
This is what happened*

*First there would be a quake  
And then a wall of water  
A village goes under water  
In a flash*

*So when the land shakes  
Run you all, run  
Find places that are high*

*Smong that is  
Told by our great old ones  
Remember this and be aware  
Hear ye, message from elders before us:*

*Smong is your bathwater  
Quake is your gentle swaying lullaby  
Thunders are your tambourines  
And lightning are your sparkling lights*

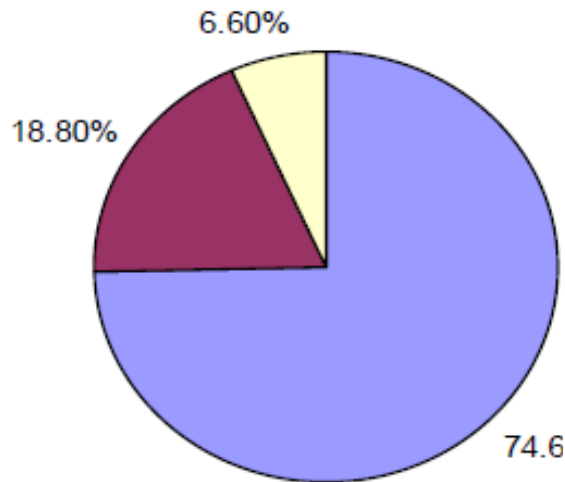


Mayor's wife of the Simeulue sang the Smong Song at JICA (2006.1.20: TeLL-Net)

# Research Output on Tsunami

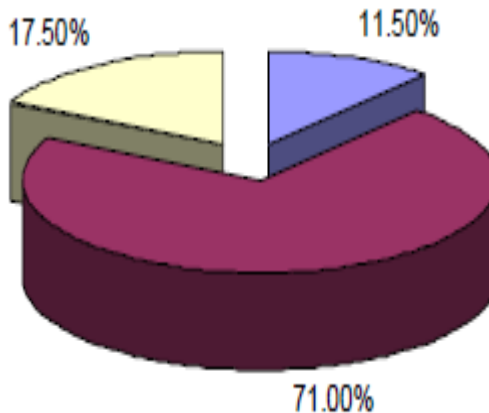
Survey on Tsunami Awareness in Indonesia : --West Sumatra (Simeulue District) ADRC: September 2006

Q14. Have you heard about tsunami before the disaster ? [https://www.adrc.asia/publications/Indonesia\\_Survey/Banda%20Aceh/en/index.html](https://www.adrc.asia/publications/Indonesia_Survey/Banda%20Aceh/en/index.html)



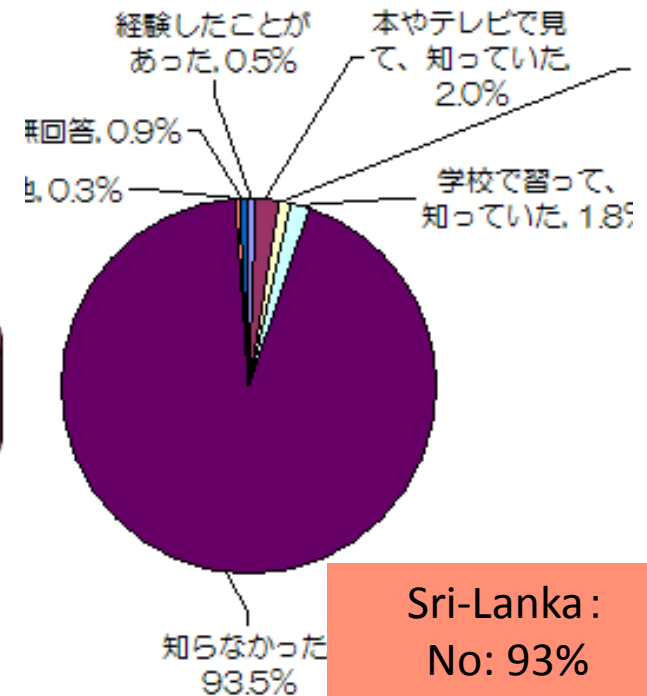
Simeulue Island:  
Yes= 75%

8 people killed out of  
84,000 residents



Banda Aceh:  
Yes=11.5%

70,000 people killed  
(40% of the population)



Sri-Lanka:  
No: 93%

35,000 people killed  
(Goal)

Simeulue is the closest island to the epicenter, however the story of their ancestors/ the experienced people regarding the early signs of tsunami avoided victims.

# 2004 Tsunami Monument and Museum in Kuala Muda, Malaysia

KUIS-UUM visited in August 2017 as a Global Study



**KUALA MUDA**  
Pengenalan



# “Inamura no Hi”

*"Inamura no Hi" means fire of rice sheaves.*

"Inamura no Hi" is a story of a man who noticed a precursor of a large tsunami at the earliest stage and led village inhabitants to a high ground by burning harvested rice sheaves. This story was based on a true story at the time of Ansei-Nankai Tsunami (1854), which claimed around 3,000 lives in the coastal areas of Western Japan. (See the below for the detailed story.)

Asian Disaster Reduction Center (ADRC) developed Tsunami educational materials with basic knowledge of Tsunami in 8 countries, using "Inamura no Hi" story, funded by the Government of Japan.



Inamura-no-Hi no Yakata  
**稲むらの火の館**  
演口梧陵記念館 津波防災教育センター  
Hamaguchi Goryou Archives Tsunami Educational Center

# Tsunami Educational Center: Inamura no-hi no Yakata:

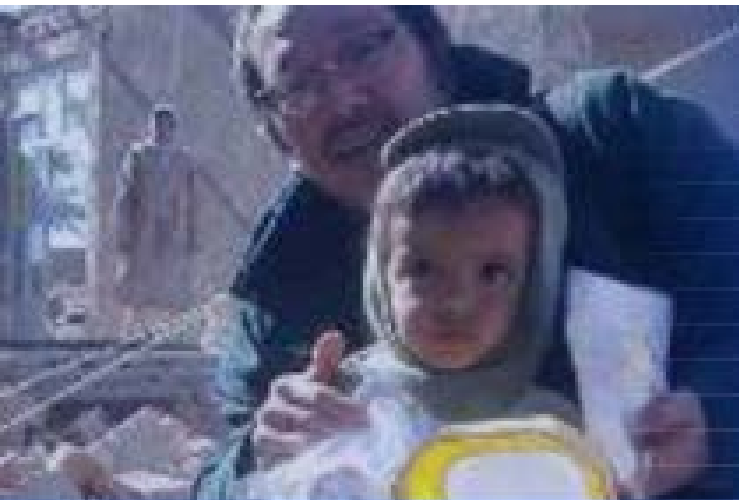


# KUIS-Hyogo Joint Research in 2019

- ✓ Joint research with Awaji branch office of Hyogo Prefectural Government
- ✓ KUIS-Hyogo will jointly make interviews to person involved in the first stage search and rescue, refugees' support, evacuation center management, community-gov't collaboration for recovery etc.
- ✓ KUIS-Hyogo will summarize good practices and lessons
- ✓ KUIS-HYOGO will develop educational materials to transfer lessons to the next generation world-wide.

# TeLL-Net

The Role of Museums for Transfer of  
Disaster Experience and Risk Reduction



International Disaster Transfer Live Lessons Network



# *Fin*

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