

What have we learned from local and indigenous knowledge from previous events



Intergovernmental
Oceanographic
Commission



Harkunti P. Rahayu, Ph.D
Institute Technology of Bandung
Chair of WG1 – UNESCO IOC-ICG/IOTWMS
Chair of TOWS WG TTDMP
ODTP Science Committee



1

What is Local and Indigenous Knowledge

Local and Indigenous knowledge

- Indigenous knowledge refers to the methods and practices developed by a group of people from an advanced understanding of the local environment, which has formed over numerous generations of habitation.
- Originating within the community, maintaining a non-formal means of dissemination, collectively owned, developed over several generations and subject to adaptation, and imbedded in a community's way of life as a means of survival and building resilience.
- Indigenous practices and strategies embedded in the knowledge, which prove valuable against natural disasters, can be transferred and adapted to other communities in similar situations.



2

What we have learned from Local and Indigenous Knowledge – Indian Ocean Tsunami (Seismic Tsunami)

Phenomena of 2004 Indian Ocean Tsunami

- Lack of awareness the strong earthquake will be followed by tsunami, except in Moken Sea Nomad in Andaman Sea islands in Myanmar and Thailand and Simeulue, Nias and Siberut island in Indonesia
- Lack of awareness that due to immediate receding sea water, a lot of fish floundering on the beach → create chaotic situation where people flocking from the land to the coastal line trying to collect the fish
- Animals have a higher sensitivity than humans to the changes in nature: animal showing strange/panic behavior, i.e. cattle were getting louder, massive flying birds from the sea towards the land.

Laboon - Moken Sea Nomad in Thailand and Myanmar

- Moken is sea nomad living in Andaman Sea, about 2,000 Moken in the Mergui Archipelago Myanmar and about 800 Moken in Surin Islands Thailand
- During 2004 Indian Ocean Tsunami, all Moken saved by the indigenous knowledge of Laboon (giant wave).
- Tsunami is recognized as laboon (giant wave) which usually comes as series of waves “seven rollers”, and is believed occurring in every two generation to cleanse the sea.
- The legend of laboon is **natural warning** that everyone knew when the water along the shore suddenly went dry, they had to run to higher ground to save their lives.



Smong – Simeulue Aceh Indonesia

- Smong is a five stanza traditional story telling which is effective in saving life of Simeulue villagers during 2004 Tsunami as lesson learned from 1907 Tsunami and before. By 2004 Simeulue total population over was 78,000, nearly 95% of whom live in coastal areas only 3 people killed by tsunami.
- Stanza 1 – opening the story about a village was sinking
- Stanza 2 – telling **phenomena of tectonic tsunami** “Starting with earthquake, followed by a giant wave, the whole country was sinking, immediately”
- Stanza 3 – **instruction what to do/evacuate** “If the strong earthquake is, followed by the receding seawater, please find in a hurry, a higher place”
- Stanza 4 – **requesting always to remember the instruction** “This is called **Smong**, a story of our ancestors, please always remember, this message and instruction”
- Stanza 5 – closing about **advice to live in harmony with disaster** “Smong is your bath, Earthquake is your swing bed, Thunderstorm is your music, Thunder light is your lamp”



Foto: Anak-anak yang tengah bermain sepeda di Simeulue Barat, Pulau Sinabang. (Randy/detikcom)

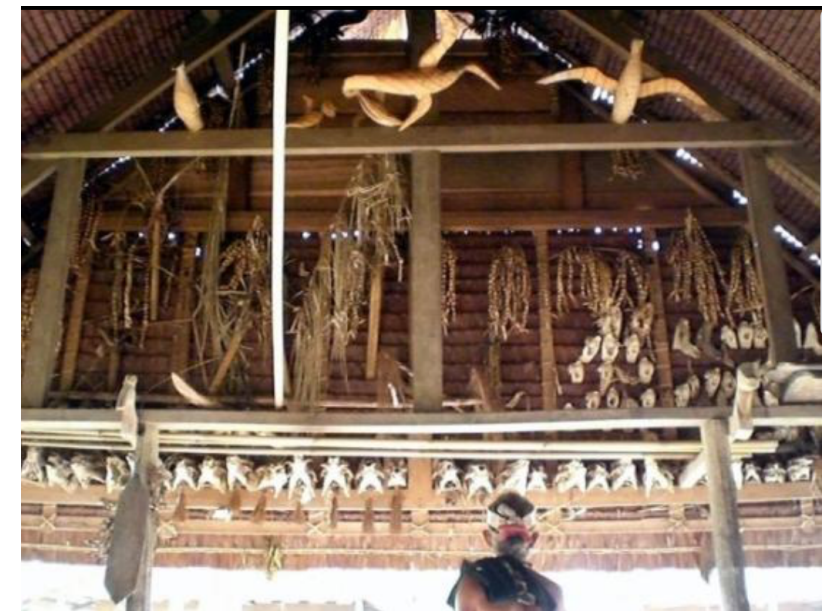
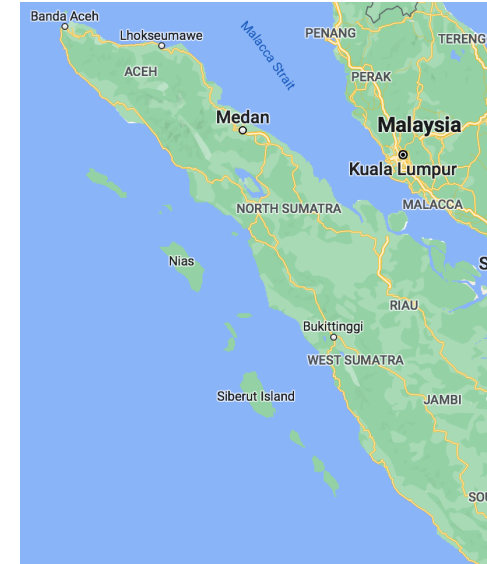
Nias – North Sumatera Indonesia

- Nias Island was strongly affected by the 26 December 2004 earthquake and tsunami that killed 140 islanders and rendered hundreds homeless.
- Few months later, the 8.7 magnitude earthquake occurred on 28 March 2005, claimed 8,394 lives and devastated impact: some part of island uplifted by more than 2 meters, exposing coral reefs and other areas as much as 100 meters seawards. Moreover it affected the lives of 90% of the population → 44,000 houses damage.
- Amidst this 2005 devastation, a solid example emerged of how indigenous practice can reduce the impact of disaster, i.e. most of the few remaining traditional wood houses had resisted the impact of the earthquake.



Siberut

- On 12 September 2007, an earthquake measuring 7.9 on the Richter scale occurred near Siberut with 30,000 people displaced. On the entire island there was only one casualty.
- One of the reasons for the low death toll was that most people **left their houses as soon as they felt the earthquake and took refuge in an open space** → collective reaction to earthquakes can be attributed to the public knowledge communicated through legends.
- The legend of acknowledging earthquake by words in Mentawaiian language, **sigegeugeu** and **teteu**.
- Sigegeugeu can be translated as a shaking.
- Teteu means grandfather which is a metaphysical meaning that reflects a possibly lethal natural phenomenon that needs to be approached with a certain level of respect and fear, as shown in building Uma – Traditional houses.



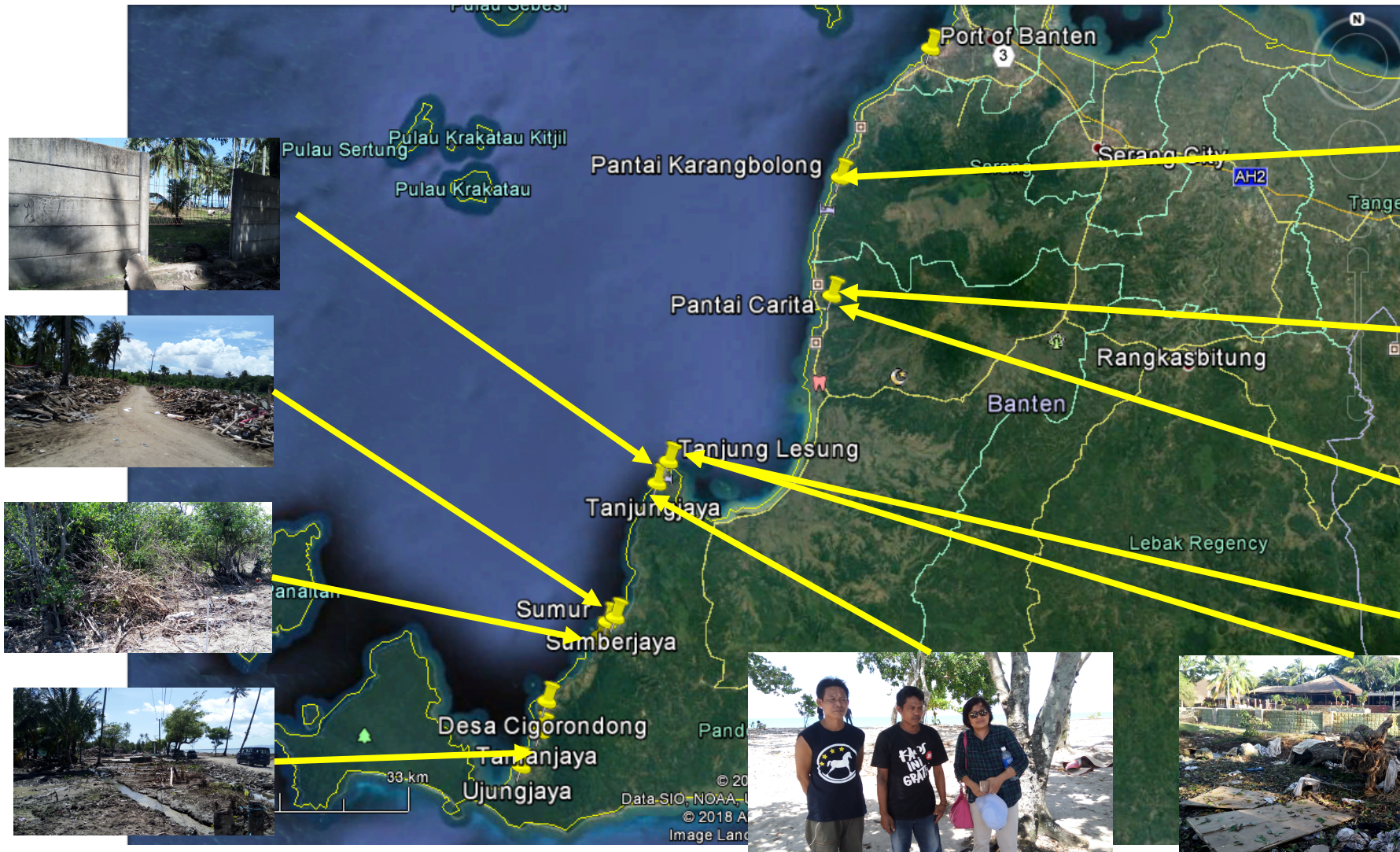


3

What we have learned from Local and Indigenous Knowledge from 2018 Sunda Straits Tsunami – A Non Seismic Tsunami

Sunda Straits Tsunami Observation

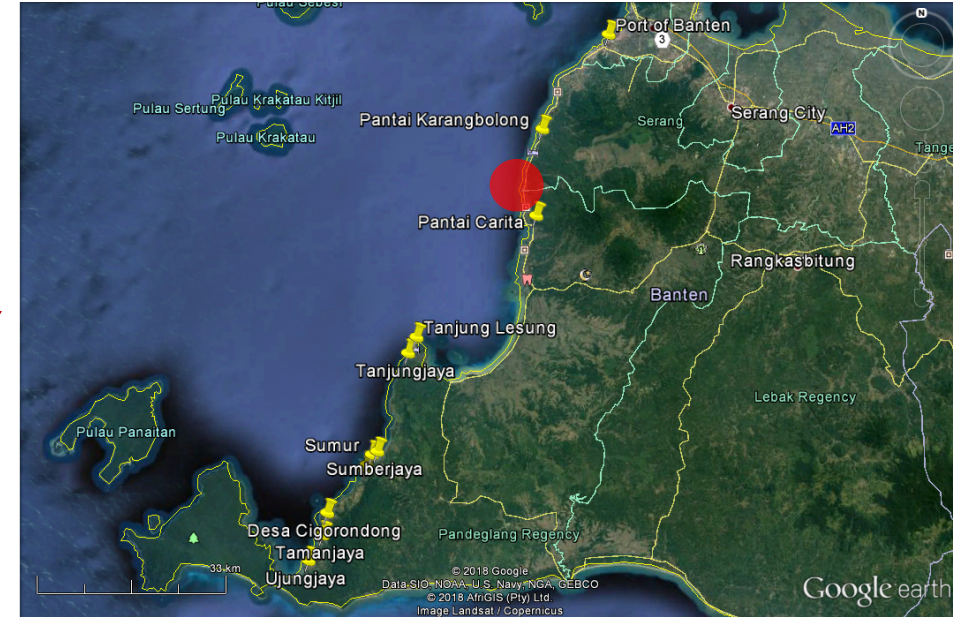
Route of Observation



Sunda Straits Tsunami

3. CARITA

- Carita had more damages than Karangbolong - tsunami wave has reached bay watch tower at Hotel Mutiara Carita.
- *Survivors (interviewed): middle school students saved by the tsunami signage even though never participated tsunami exercise*



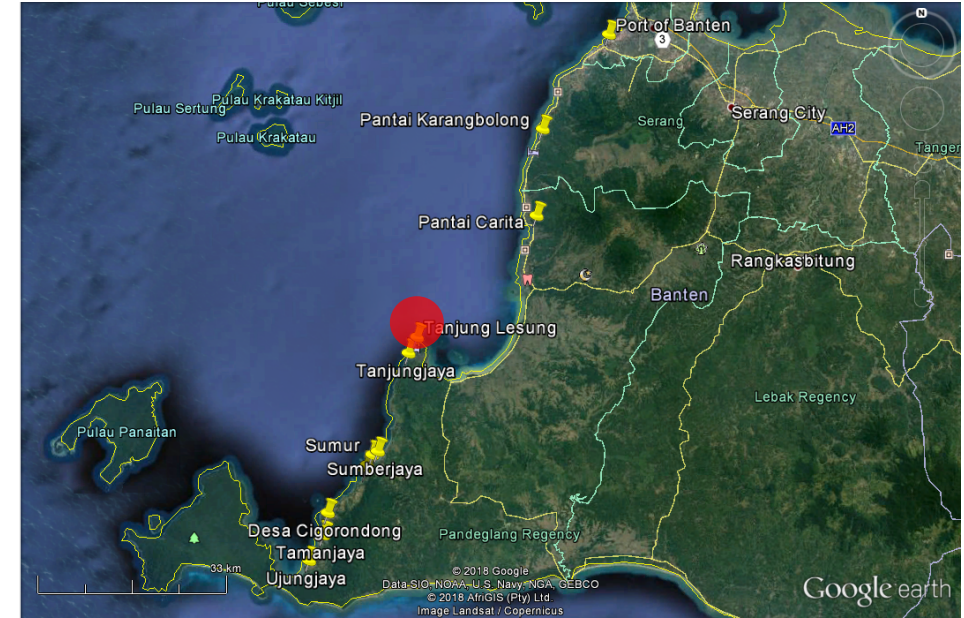
Tsunami trace at bay watch tower



Sunda Straits Tsunami

4. TANJUNG LESUNG

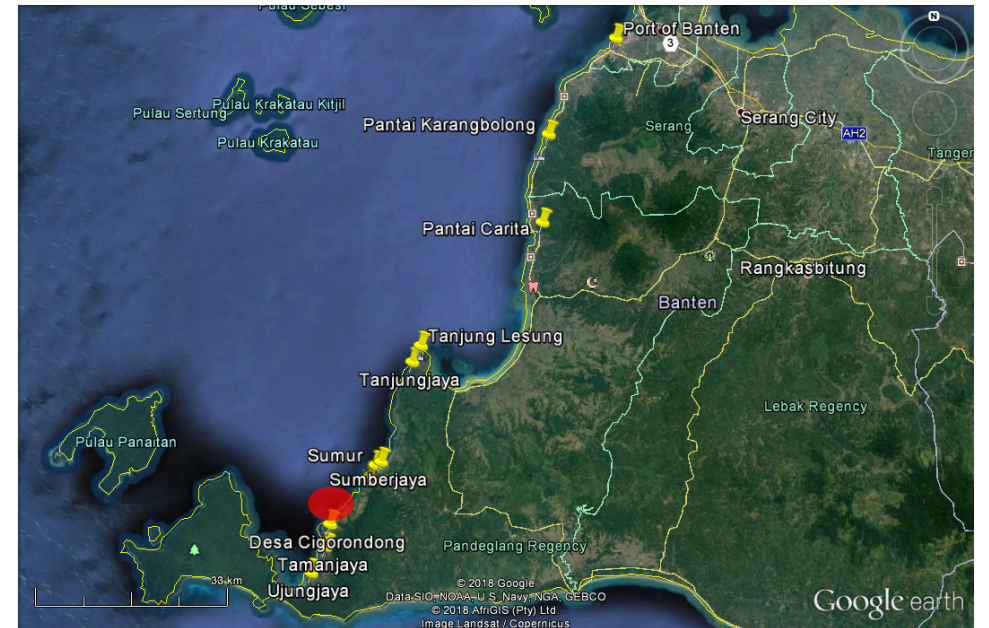
- Special Economic Zone for Tourism established by President in 2015
- 198 people died including Seventeen Boy Bond – *the sound of the concert was louder than tsunami wave sound (survivor testimony)*
- *Survivor saw the phenomena of the high wave with turbo jet plane sound.*



Sunda Straits Tsunami

8. DADAPLANGU

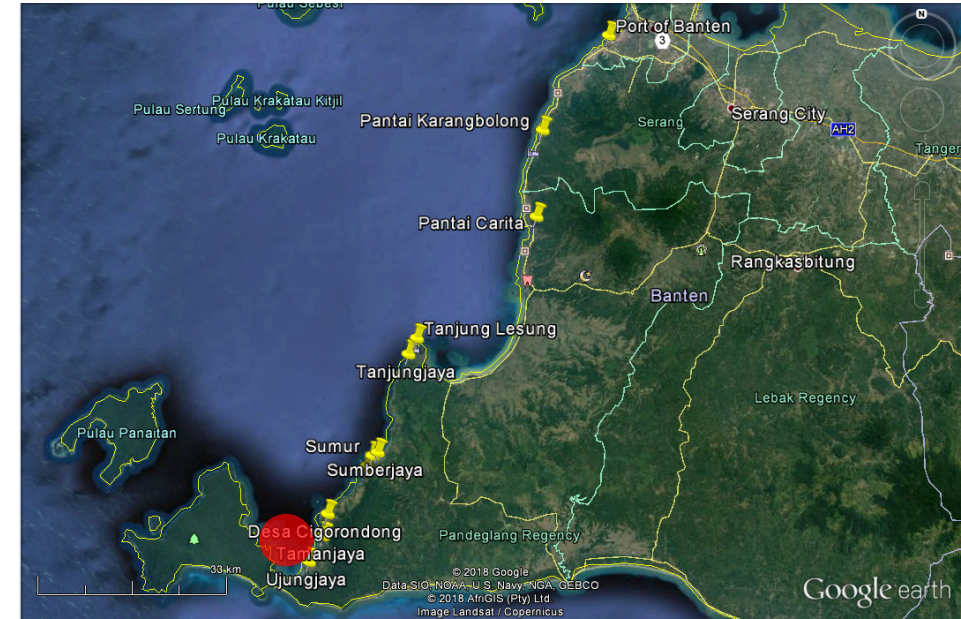
- Survivor head of Ineighborhood heard the **sound of airplane flying very low close the land coming from the sea, he saw white wall moving toward the land**
- He ran to evacaute to the nearby hill with no evacuation route and signed in place.
- Learning from this **direct experience**, he is willing to invest the evacaution route and plan guided by goverment



Sunda Straits Tsunami

12. UJUNG JAYA

- Part of Ujung Kulon National Park.
- Heavily damaged most of the housing using poorly timber structure and non structured.
- No fatality all village people manage to evacuate to nearby hill.
- Several survivor managed to after seeing natural phenomena of "dancing crocodile" from the sea – full moon make the clear vicinity → animal behaviour or mystic phenomena





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Issues, Challenges and Solutions

1. Mainstreaming of Local and Indigenous Knowledge

- Local and Indigenous Knowledge is collectively owned, developed over several generations and subject to adaptation, and imbedded in a community's way of life and often treated as traditional with non-formal means of dissemination.
- Most of Local and Indigenous Knowledge remains at elder generation, which may be gone by the times.
- Some new of Local and Indigenous Knowledge has been arisen, which potentially gone easily.



- Thus Local and Indigenous Knowledge need to be formally mainstream into policy, planning, regulation and education.

2. Current Local Knowledge: Important of Tsunami Signage Existence



1. Even though there was no socialization /drill in place → tsunami signage has proven to save lives
2. Need to increase number of signage

Tsunami Signage

Terima Kasih



Ir. Harkunti P. Rahayu, Ph.D
INSTITUT TEKNOLOGI BANDUNG

kontak:
Email: harkunti@gmail.com