APPROPRIATE LAND USE
AND SAFE LIVING
STUDY FROM RECENT NATURAL DISASTERS IN JAPAN AND THE PHILIPPINES

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INAPPROPRIATE PLACE TO LIVE (1991)
MANILA, THE PHILIPPINES

- Facing to Danger in case of heavy rain
- Sanitary Problem
- There are some good vacant land, but not suitable in
  - Price
  - Public Transportation
  - Will of the land owner
**Typhoon Yolanda**

- 6300 death, 1,100 missing, 28,000 injured
- Affected by strong wind and high tide
Usuda et al.: Building Damage Analysis due to 2013 Typhoon Haiyan in Basey, Philippines, AIJ 2015
- Inappropriate place for living was rented
- Not convenient resettlement site
Civil engineering can not win the fight against Nature

Broken Sea Wall

Broken Bridge

Un expected weather in climate change era
CONDOMINIUM FOR TSUNAMI EVACUATION WAS NOT SAFE
PEOPLE GO BACK TO SEASIDE! ESPECIALLY NEW COMER FIND PLACE FOR LIVING CLOSER TO THE SEA

Relocation site after 1869 disaster

People start to go back after 10 years
WEST NAKAMA VILLAGE, AMAMI-O SHIMA
WELFARE FACILITIES, HOUSE FOR YOUNG PEOPLE ARE LOCATED ON FLOODING ZONE

- 2 elderly people died.
Shrine

Approximate flood water line

Approximate above floor line

Root to shrine on the hill. Vertical gods’ path

Relatively new housing sites

Shrine

Horizontal gods’ path
New clear power plant is usually located in less populated and less industry area.
Previous study shows that “very local names” indicate disasters in old days.

- National Hospital is the 1st building to destroy pine tree forest. (1937)
- There was a liner pine forest along seashore to protect village from salty wind and to use as firewood.
- TODORO = typical danger name. Onomatopoeia for sound of torrent.
- Meaning of the name was not understood by residents.
- Bad image name sometimes disappear when housings developed.
Old chateau site

Housing site existed Before Mid Yedo Period

Safe housing sites existed since Mid Yedo period.

Straight path from the sea to the shrine used for religious activity (bring sea water)
Why become an victim of disaster?

- **Social system**
  - Safe area not used because of owner’s profit
  - Not enough public investment for basic transportation

- **Personal skill**
  - Not enough understanding of natural disaster
  - In appropriate information

- Appropriate planning system
- Loss of long period (several hundred years or more) knowledge of ancestors
- Empowerment of people
Findings

Safe Housing Sites
- **Old Housing Sites** (e.g. since Mid-Edo period) are relatively safe but many are vacant.
- Young and low income families tend to live in danger zone.
- Traditional shrines (respect nature) are located safe place, but inconvenient for daily life. (not temples)
- Religious activities were hidden knowledge for disaster prevention.

**Our Land Use Plan should be**
- Build houses where people started to live.
  - There are vacant safe sites.
  - Land should not be a property to produce money, but place for living.
- Enjoying festivals, keeping Sacred paths shall let the people safe.
- People’s power to understand their landscape and agree to