

LESSONS FROM TOHOKU EARTHQUAKE AND TSUNAMI DISASTER

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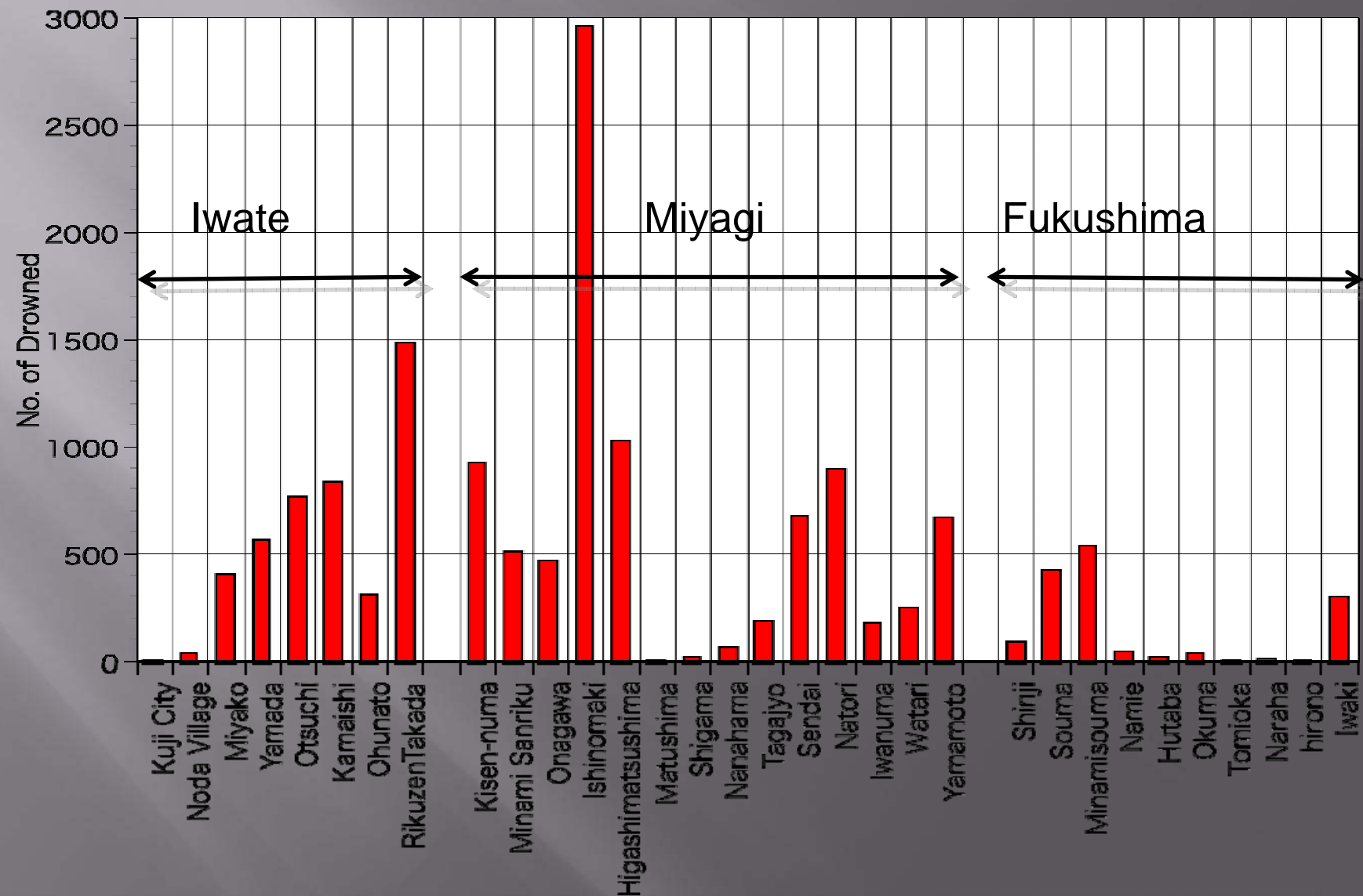
Institutional Responses

- Immediate responses of CAO & Ministry of Defense were very good ← Improvements from the Great Hanshin-Awaji EQ.
 1. Disaster Management Headquarter @ CAO → Team gathered @ 4 min after shaking, and Headquarter @ 28min after.
 2. Disaster Management Headquarter @ Ministry of Defense, and reconnaissance helicopter dispatched → Headquarter @ 4 min after shaking, and helicopter @ 15min after.
 3. Requests for disaster response to MD from Iwate and Miyagi Prefectures @ 6 & 16 min respectively after shaking
 4. Response for Nuclear Disaster @ 19:30
- Thanks to Revision of Disaster Countermeasure Basic Act & Basic Plan in 1995

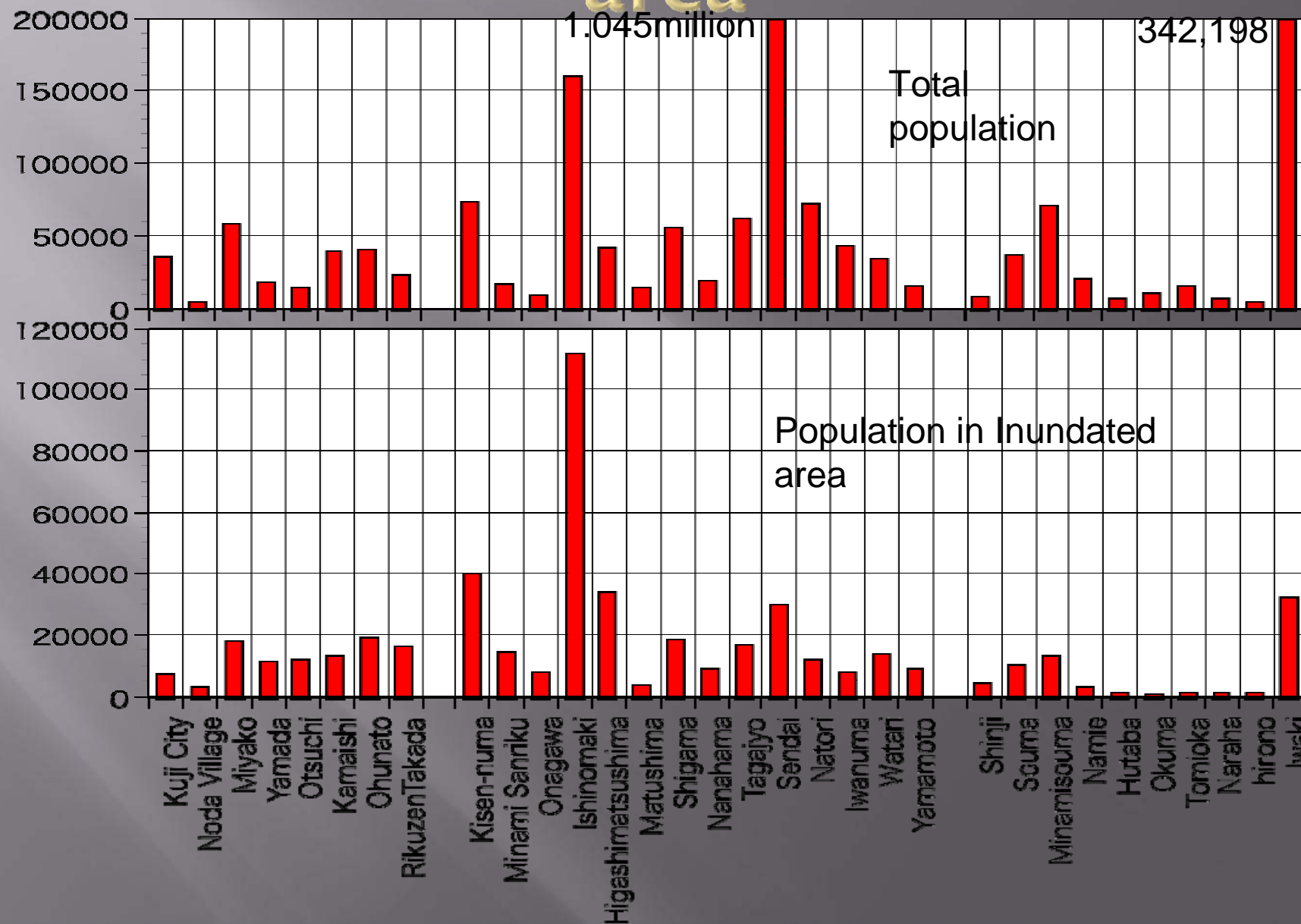
Responses of People and Community

- ▣ Has the idea of “Self Help, Mutual Help and Public Help” based on the Great Hanshin Awaji EQ worked?
- ▣ Too much emphasis on “Mutual Help” has lead to unfortunate loss of healthy individuals trying to help other vulnerable people.
- ▣ For the tsunami disaster, only “Self Help” should be exercised for escaping to a safer place.
- ▣ “Public Help” could no function because of heavy damages at local governments.

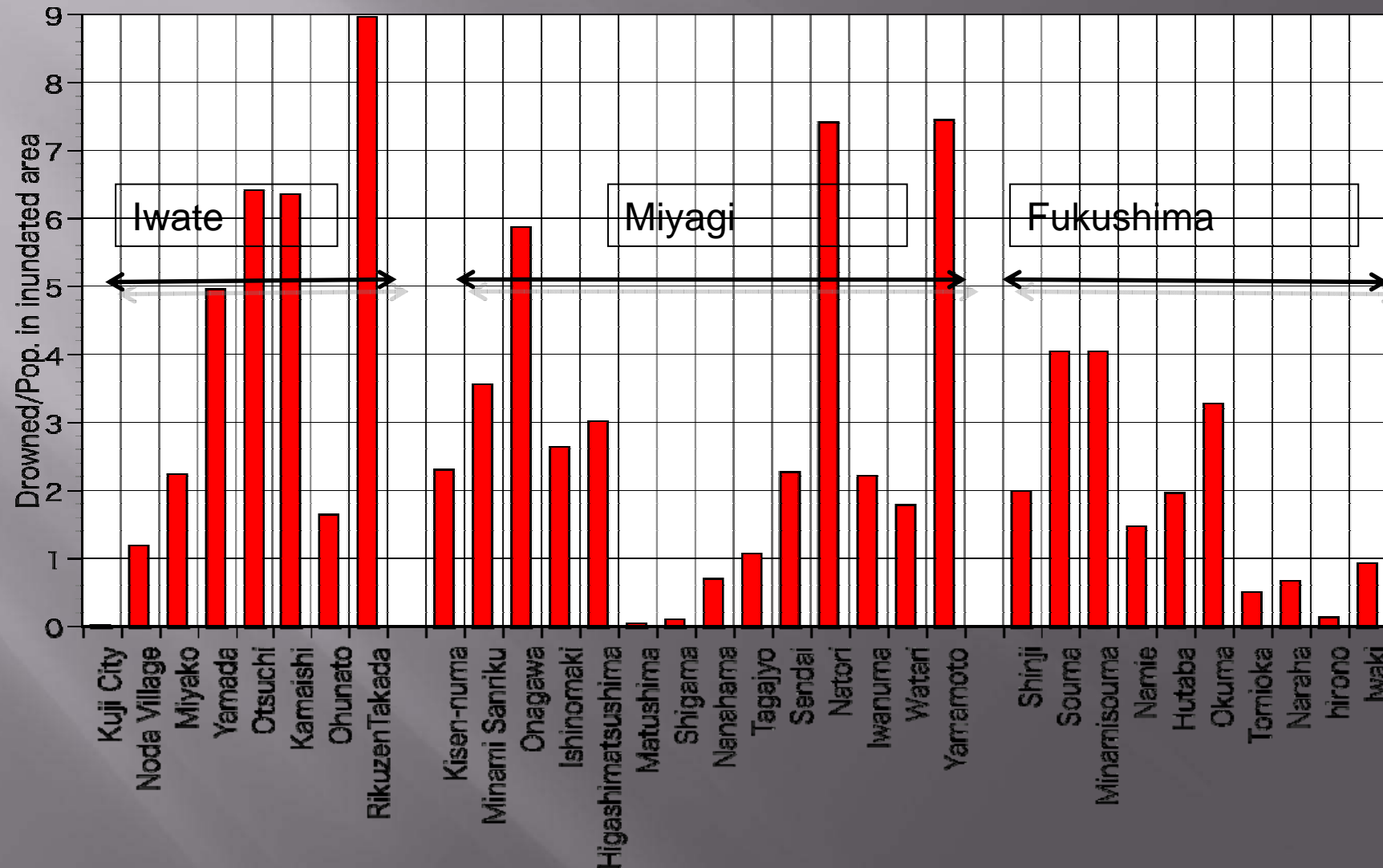
Casualties due to Tsunami



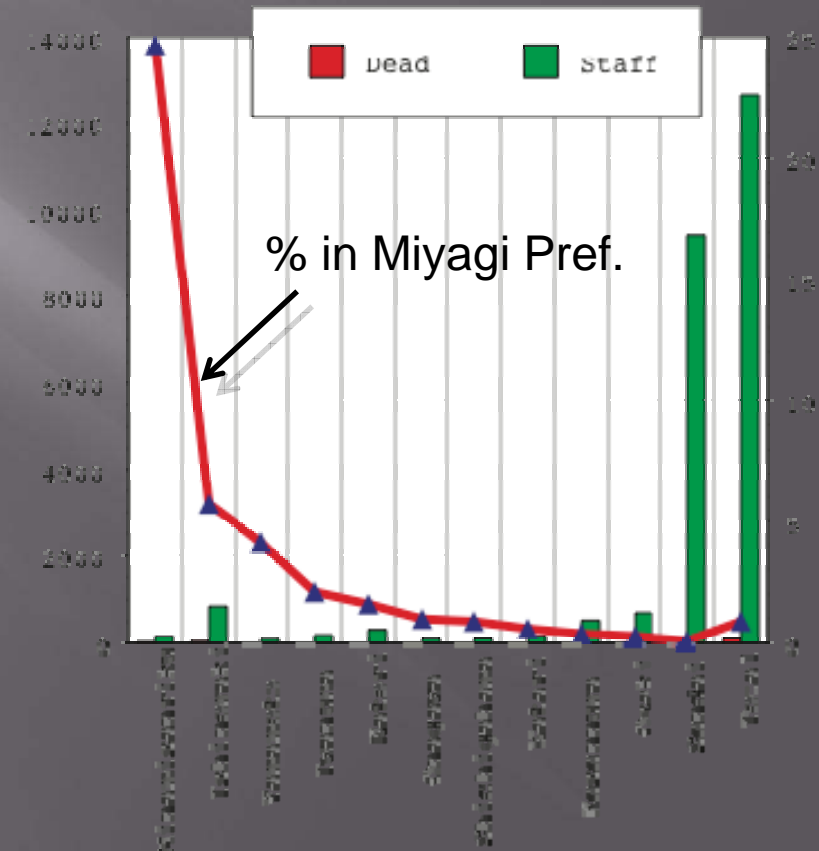
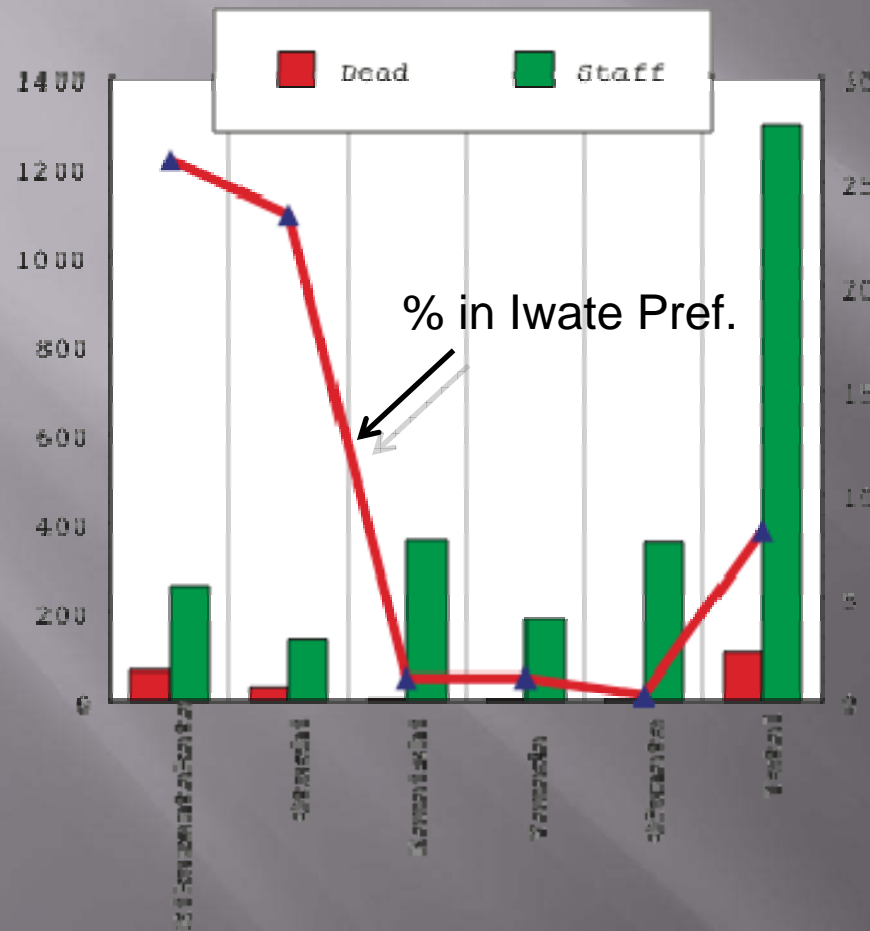
Population in total & inundated area



% of Death over population in Inundated Area



% of Dead Civil Servants in Iwate & Miyagi Prefectures



Problems in local government's immediate response

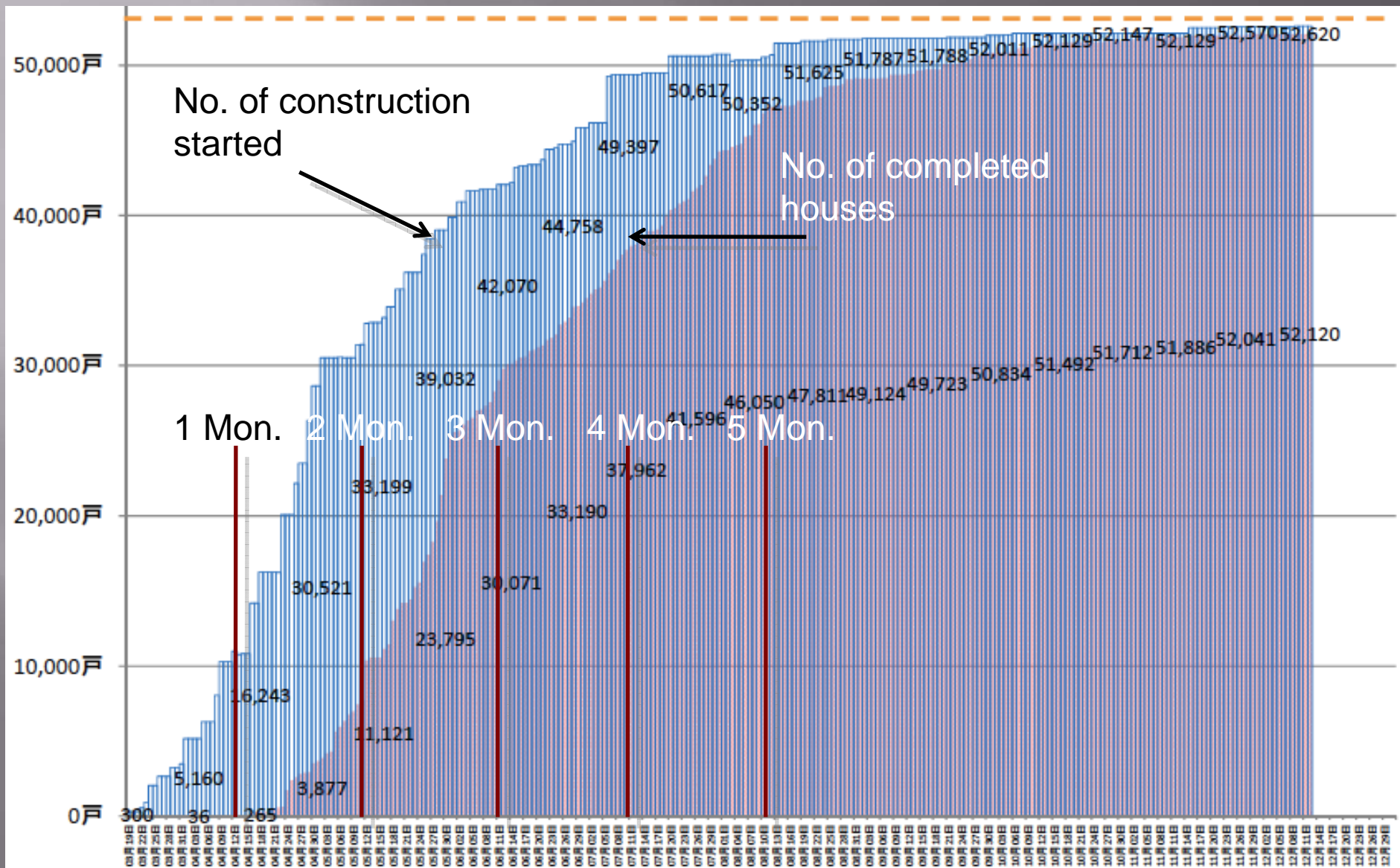
- ▣ Very high rate of casualties (e.g. 25%) in some local governments in Iwate & Miyagi, while the highest rate of death over the population in inundated area was less than 10%.
- ▣ Lack of information on damage situations has prevented immediate response from Morioka capital to coastal villages in Iwate Pref. and from Sendai to Ishinomaki City in Miyagi.
- ▣ Information was available only through self defense communication system in Iwate.
- ▣ “Public Help” could not be mobilized in this case

Robust communication system!!, & Alternative operation center?

Recovery & Reconstruction

- ▣ No. of volunteers is fewer than the Great Hanshin-Awaji EQ (620,000 during 1 month in GHA while 104,600 in GEJET, and 1.06 million over 4 month in GHA while 0.55 million in GEJET.)
- ▣ Lack of local capacity in accepting volunteers
- ▣ Difference in culture between Tohoku and outside (somewhat closed but strong community in Tohoku.)

Problem in Temporary Housing



Empowerment of People

- ▣ Importance of traditional culture and festivities to empower the local people. (Otsuchi Town Festival in September)



<http://www.tohokukibou.com/katsudoh-houkoku/archives/1847>

- ▣ Local initiatives with good collaboration through internet communication.

Reconstruction through Good Town Planning?

- ▣ Temporary housing to public supported permanent housing (town rebuilding phase).
- ▣ Independent planning for tsunami preventive structures and permanent housing (e.g. relocating housing at higher ground while building sea walls by national agency).
- ▣ Less attention to business recoveries for employment.
- ▣ Zoning versus mixture of business and residential areas