8. Summary

- After the April 1, 2007, off-Solomon earthquake, four Japanese teams performed post tsunami surveys in Ghizo and adjacent islands.
- The first to the third teams conducted their surveys successively from April 11 to 24, and one team conducted a survey in July, three months later.
- The main purpose of the teams was to provide information on the earthquake and tsunami to the National Disaster Council of the Solomon Islands, who was responsible for the disaster management at that time.
- The tsunami survey teams interviewed the affected people and conducted reconnaissance mapping of the tsunami heights and flow directions. In total the four teams measured 146 tsunami heights and runups and took 54 coastal uplift/deformation measurements.
- Tsunami flow heights at beach and inland were evaluated from watermarks on buildings and the position of broken branches and stuck materials on trees. These tsunami heights along the southern to western coasts of Ghizo Island were about 5 m (a.s.l.).
- Tsunami run-up was traced by distribution of floating debris carried up by the tsunami and deposited at the limit of inundation. The maximum run-up was measured at Tapurai on Simbo Island to be ~9 m.
- Most of the inundation area was covered by a 0-10 m thick tsunami deposit that consists of beach sand, coral peaces and eroded soil.
- Coseismic uplift and subsidence were clearly identified by changes of the sea level before and after the earthquake, that were inferred by eyewitness accounts and evidence such as dried up coral reefs. These deformation patterns, as well as the tsunami height distribution, constrained the earthquake fault geometry and motion.
- It is worth mentioning that the tsunami damage in villages in Ranongga Island was significantly reduced by 2-3 m of uplift before the tsunami attack.
- Field survey on damage to structures by the tsunami was carried out at one area and four villages in the island. It is inferred that traditional raised floor houses seem to be suitable to reduce tsunami disaster in the surveyed islands, but design based on an engineering approach is essential.
- The tsunami-reduction effect of solid houses and coastal forests was confirmed on the coast of Malakarava 1 and Suve village in Ghizo Island, respectively.
- By considering lessons learned from the 2007 Solomon tsunami disaster, recommendations for future tsunami disaster prevention and reduction were issued.
- If sea-level rising occurs by global warming in the future, the ground elevation of low-lying areas above sea level becomes lower. That is, coastal zone becomes more vulnerable to

tsunamis in the future while no one notices.

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