

Assessment of Earthquake and Tsunami Impact on Fisheries-dependent Coastal Communities of Western Province, Solomon Islands

Introduction

Almost 90% of rural communities in the Western Province, Solomon Islands are coastal-based (FAO) and heavily dependent on fisheries resources for their livelihood (Fig. 1). On April 2nd, 2007 a large earthquake and tsunami hit the Western Solomon Islands causing varying degrees of damage and disruption to such coastal communities. The WorldFish Center and WWF-Solomon Islands (WWF-SI) carried out a rapid assessment of impacts over a broad set of villages across the affected area. This assessment was focussed on the damage to and needs of coastal fisheries-related activities including the environment, infrastructure and equipment but also included a more general assessment of long-term threats to the sustainable management of coastal resources and communities.

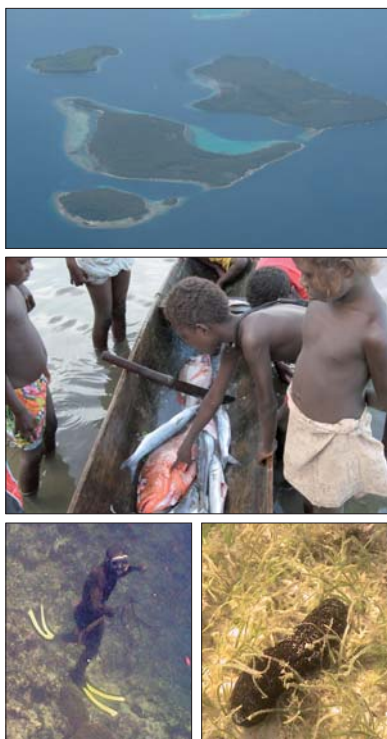


Fig. 1: Remote communities dependent on marine resources (fish, sea cucumber, seaweed)

Objectives and Approach

1. Determine the extent of damage to habitats that are important to coastal fisheries;
2. Establish level of direct impacts on the ability of communities to access marine resources;
3. Provide information to best guide post-disaster relief for rehabilitation of fisheries, resource management, diversified livelihoods and building of resilience.

The objectives were achieved through: habitat surveys; group discussions and one-on-one fisher interviews at 29 locations (12 with pre-event underwater surveys - WWF-SI sites) including on the islands of Simbo, Ranonga, Vella Lavella, Treasury, Shortland, Kolombangara, and Vona Vona Lagoon (Fig. 2). Assessments occurred between 25 May and 12 June 2007, less than two months after the event.



Fig. 2: Habitat surveying (a), group discussions and resource mapping (b), one-on-one fisher interviews (c)

Schwarz, A., C. Ramofafia, G. Bennett, D. Notere, A. Tewfik, C. Oengpepa, B. Manele, N. Kere. 2007. After the earthquake: An assessment of the impact of earthquake and tsunami on fisheries related livelihoods in coastal communities of Western Province, Solomon Islands, 81 p. The WorldFish Center and WWF-Solomon Islands Programme.

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Results and Recommendations

- Damage to infrastructure varied from village to village and included significant losses of houses and fishing equipment, most importantly paddle canoes, fishing lines and diving goggles (Table 1, Fig. 3)
- Motorized boats, nets, mask and fins are rarely available and used
- Damage to marine habitats also varied greatly and included broken or rolled corals and underwater landslides that had removed large sections of coral from reef slopes
- The most dramatic habitat effects were at sites where the earthquake had uplifted islands and the surrounding marine habitats (reefs, mangroves, seagrass) potentially reducing fisheries productivity through declines in the quantity and quality of habitat
- Fishers reported loss of gleaning areas at these sites but the full effect of habitat loss may take some time to be realized
- Uplifting has also compromised canoe launching routes at Ranonga and Buri and reduced water exchange between the open sea and the Rarumana lagoon
- Short-term assistance should not compromise efforts aimed at longer-term coastal fisheries management and resilience building
- We recommend replacing like with like equipment (paddle canoes, lines, and goggles) to avoid unsustainable fishing and liaising with pre-existing village resource management systems (Schwarz et al. 2007)



Fig. 3: Damaged villages (a), surviving canoes (b), broken coral (c), temporary camps on high ground (d)

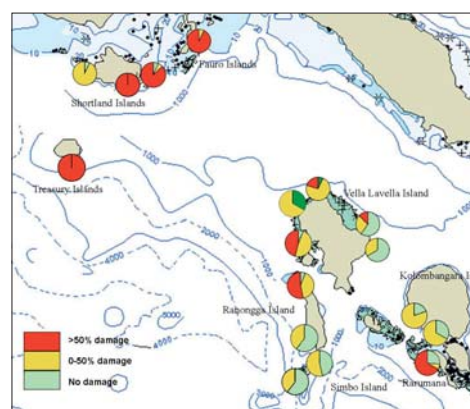


Fig. 4: Western Province showing relative proportion of damage to submerged reef along 1500 m of reef surveyed (depths 2-5 m) at each of 17 villages visited by WorldFish. Sites on Ranonga, Rarumana and Mono Islands all have extensive areas of reef exposed to the air.



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Table 1: One-on-one fisher interviews (60 men, 38 women)

% primary line fishers	61.2
% primary divers	9.2
% primary net fishers	6.1
% primary gleaners/seaweed harvest	23.5
% fishing for consumption	36
% fishing for sale	19
% equal sale and consumption	43