



Process, practice and priorities – key lessons learnt undertaking sensitive social reconnaissance research as part of an (UNESCO-IOC) International Tsunami Survey Team

Shona L. van Zijll de Jong^{a,*}, Dale Dominey-Howes^b, Carolina E. Roman^{b,c}, Emma Calgaro^{b,d}, Anna Gero^b, Siri Veland^{b,d}, Deanne K. Bird^{e,f}, Tolu Muliaina^g, Dawn Tuiloma-Sua^h, Taulagi Latu Afioaⁱ

^a National Institute of Water and Atmospheric Research (NIWA), Private Bag 14–901, Wellington 6241, New Zealand

^b Australian Tsunami Research Centre and Natural Hazards Research Laboratory, University of New South Wales, Sydney NSW 2052, Australia

^c School of Geography and Environmental Science, Monash University, Clayton VIC 3800, Australia

^d Department of Environment and Geography, Macquarie University, North Ryde NSW 2109, Australia

^e Department of Geography and Tourism, Earth Science Institute, Faculty of Life and Environmental Sciences, University of Iceland, 101 Reykjavik, Iceland

^f Risk Frontiers, Department of Environment and Geography, Macquarie University, North Ryde NSW 2109, Australia

^g Division of Geography, School of Islands and Oceans, The University of the South Pacific, Suva, Fiji

^h Disaster Management Office, Ministry of Natural Resources, and Environment, Meteorology Division, Government of Samoa, Private Bag, Apia, Samoa

ⁱ Ministry of Women, Community and Social Development, Division for Internal Affairs Government of Samoa, Private Bag, Apia, Samoa

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ABSTRACT

The 29 September 2009 South Pacific tsunami has had a lasting impact upon local coastal villages and global collaborative research efforts. Locally, the impact of the tsunami is one of the most severe disasters Samoa has experienced in the last several decades. Within one week of the event, 143 people died. Approximately 6000 traumatized men, women and children – terrified of the sea – refused to return to live or work in their rural, coastal villages, which in turn has had broad consequences for humanitarian emergency relief distribution networks and early recovery planning efforts.

Researchers came from all over the world to participate in the UNESCO International Oceanographic Commission (IOC) Samoa International Tsunami Survey Team (ITST). Focusing on the need for interdisciplinary research, for the first time, a social impact assessment team (SIT) was expressly invited to participate. Within days of the tsunami, a group of Australian, New Zealand, American, Fijian, and Japanese disaster researchers began to discuss how they might develop a social science reconnaissance research plan using innovative approaches and best practice.

This paper presents an overview of challenges faced by the social impact assessment team with a focus on lessons to be learnt from this experience. We discuss the need to clarify project boundaries, develop a core research agenda and project milestones, and develop day-to-day fieldwork work plans and at the same time be sensitive to the emotional needs of the interviewees as well as the researchers. We also make several practical suggestions for future social reconnaissance research with a set of recommendations to support disaster researchers as they plan their own research projects.

The inclusion of a social impacts assessment group within a UNESCO-IOC ITST was a valuable response to the increasing need for responsible social research in sensitive topics of post-disaster analysis. Social scientists are aware that disaster social science research should not be a risk to the public, and that misconduct in such work should be avoided as far as possible. We believe that the inclusion of social science experts will revolutionise conceptual, methodological and empirical approaches in future ITSTs. Social scientists will provide unprecedented volumes of high quality information on post-disaster movements, communication and response activities by individuals, communities, private and public sectors – *because* social scientists are concerned about the integrity of the research process and results. Building upon our experiences, future ITSTs may tap into the potential that social science has to transform ITST's capacity to gather information about disaster preparedness, what tsunami survivors saw, heard and experienced, and to reconstruct the socio-economic and political dynamics of affected communities.

This paper contributes to the limited literature that outlines how to develop responsible plans and processes for post-tsunami disaster work; and, it furthers a line of inquiry applicable to a wide variety of hazards, such as flooding, cyclones, earthquakes, bushfires, pandemics and terrorism.

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* Corresponding author.

E-mail address: s.vanzijlldejong@niwa.co.nz (S.L. van Zijll de Jong).

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1. Introduction

A region-wide tsunami (Fig. 1) in the South Pacific, causing nearly 200 deaths and severe damage to coastal infrastructure in American Samoa, Samoa and Tonga, was triggered by an unusual earthquake doublet (M_w 8.1 and M_w 8.0) at about 17:50:00 UTC (approximately 7 am local time) on 29 September 2009 (Dominey-Howes and Thaman, 2009; UN OCHA, 2009; Beavan et al., 2010; Lay et al., 2010; NGDC, 2010). The first earthquake of the doublet was located at 15.51° S, 172.03° W. The second earthquake was composed of two sub-events (the first at 15.75° S, 172.25° W, the second at 16.0° S, 172.25° W) – their combined Moment Magnitude was equivalent to M_w 8.0. Whilst death and damage was confined to a limited number of Pacific Island countries (PICs), the tsunami was either observed or recorded on tide gauges across a significant part of the Pacific.

International Tsunami Survey Teams (ITSTs) are often deployed to conduct rapid post-event assessments (e.g. Satake et al., 1993; McSaveney et al., 2000; Borrero, 2005; Fritz et al., 2007). Given the regional reach of the tsunami's effects on PICs, a number of post-tsunami surveys were undertaken in different locations in the weeks after the tsunami. The majority of teams focused their attention on American Samoa but some surveys were conducted in Samoa, Tonga and Wallis and Futuna (see Lamarche et al., 2010; Okal et al., 2010, and other articles in this issue). Each of these surveys was highly successful and effective at gathering predominately physical sciences data. Each however, reflected the more traditional post-tsunami survey approach comprising small team sizes with limited technical expertise and a narrow physical science focus.

Responding to calls for broader approaches to post-tsunami surveys, the Australian Tsunami Research Centre (ATRC) made a proposal via the International Tsunami Information Centre's (ITIC) Tsunami Bulletin Board that a UNESCO International Oceanographic Commission International Tsunami Survey Team (UNESCO-IOC ITST) be established to conduct a post-tsunami survey that would provide a more extensive research focus. The main aim of such a survey would be to support and help build comprehensive mitigation initiatives that are part of the broader UNESCO-IOC's Tsunami Warning System programs. Negotiation between the eventual team leaders (Dale Dominey-Howes (University of New South Wales, Australia) and

Randy Thaman (University of the South Pacific, Tonga)), many international scientists from various disciplines, the UNESCO Pacific Regional Office, regional organisations including the Pacific Islands Applied Geoscience Commission (SOPAC), the Secretariat of the Pacific Regional Environment Programme (SPREP), the University of the South Pacific (USP) and the Government of Samoa (GoS), identified a need for a UNESCO-IOC ITST assessment. It was agreed that this survey would partner with a regional research organisation – the USP – to take account of regional scientific and technical expertise, and with appropriate ministries of the GoS to ensure that (1) incoming international scientists undertook their work in a culturally sensitive and appropriate way and (2) outputs were relevant to various ministries of the GoS. The guiding principle of the resulting 'UNESCO-IOC ITST Samoa' assessment was to be integrative of different disciplines and skill sets, collaborative between agencies and organisations, and respectful of the culture, practices, and needs of the Samoan people.

Importantly, and for the first time for a UNESCO-IOC ITST, a 'Terms of Reference' (ToR) (for the UNESCO-IOC ITST Samoa) were developed and agreed upon by the GoS and the team leaders (in discussion with overall survey participants). The ToR detailed the following key tasks:

1. Measure maximum inundation and maximum flood run-up. Such measurements are important inputs for running tsunami inundation models;
2. Collect geological samples of sediments left by the tsunami. This is so that we may characterise deposits left by the 2009 tsunami. Once completed, we might at a later date, explore the geological record of the coast to identify records of older tsunamis in the recent historic (e.g., the 1917 tsunami) or prehistoric (palaeotsunamis) past. Such work enables geologists to establish longer-term tsunami risk (Goff et al., 2011–this issue);
3. Collect and measure information about environmental and biophysical system impacts of the tsunami on the terrestrial and marine environment in selected locations;
4. Measure the type and severity of damage to different types of buildings and record what factors appeared to control damage levels;

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