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Preparing for the Worst: Disaster Preparedness Education in Samoa

Zoe Nemerever
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Preparing for the Worst: Disaster Preparedness Education in Samoa

Zoe Nemerever
Advisor: Dawn Tuiloma-Sua
Academic Director: Jackie Fa’asisila
S.I.T. Samoa Spring 2012
Abstract

In light of the 2009 tsunami, this study has compiled information about current initiatives that educate Samoans about the dangers of natural disasters and measures they can take to be safe during tsunamis and has assessed the strengths and weaknesses of these disaster education programs. The researcher examined the public education system, the media, the Women’s Committees and the Disaster Management Office’s new Community Disaster and Risk Management Program to learn about the different groups that disseminate disaster safety information to the larger community. In order to evaluate Samoa’s current level of awareness about natural disaster safety, the researcher conducted 100 surveys from a random sample of Samoan adults. The results from the survey found that the majority of Samoans know how to act in a tsunami in order to stay safe and that the most popular sources for learning this information are schools, television and radio. The study concluded that in addition to the programming of the Disaster Management Office, pre-established social structures, such as Women’s Committees and government schools, and the media are effective avenues for disseminating disaster information. A wide variety of disaster preparedness programming provides many different populations within Samoa the disaster mitigation and response education necessary for the country to be adequately prepared for the next natural disaster.

Contact List

Dawn Tuiloma-Sua
Disaster Risk Management Consultant
Home Phone: 29619
Mobile Phone: 758-4124
dawnpalesoo@samoaw.
dawnsua68@gmail.com

Filomena Nelson
Director, Disaster Management Office
filomena.nelson@mnre.gov.ws

Vaitoa Toelupe
Program Coordinator, Disaster Management Office
vaitoa.toelupe@mnre.gov.ws

Louisa Apelu
Assistant CEO-Division for Women
Ministry of Women, Social & Community Development
Office Phone: 27752/53/54
pcpsamoa@samoaw.
Glossary

*Aiga ma Nu’u Manuia*  Healthy Homes, Healthy Villages

*fa’asamoa*  the Samoan way

*nafanua*  protectors

*Sui tamaiti’i o le Nu’u*  Women Representatives of the Village

*matai*  chiefs

List of Acronyms

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Acknowledgements

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Many thanks to Jackie and Acacia for helping me to remove my “western goggles” and further my understanding of the fa’asamoa through this research project.
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Introduction

On Tuesday 29 September, 2009, a magnitude 8.3 earthquake occurred 200 kilometers south of Samoa, triggering a tsunami that hit the islands of Samoa, American Samoa, and the island of Niauatoputapu in Tonga. The tsunami hit hardest at the southeastern shore of Upolu. The tsunami affected more than 5,000 Samoans including 850 households in 52 villages. Over 300 victims with serious injuries and were referred to the national hospital and 143 Samoans passed away. Three thousand people completely lost their homes while 2,000 homes suffered severe damage. The tsunami affected 13% of the tourism sector which included 56 beach fale operations and 5 resorts. The tsunami damaged 4 primary schools and 2 secondary schools. Over 300 households lost their electrical connections when the tsunami destroyed 11 kilometers of overhead cables, power poles and street lights. In total, the recovery and reconstruction efforts from the 2009 tsunami cost over 68.7 million tala.1

Figure 1: Map of tsunami-affected areas, Upolu Island


Being adequately equipped to respond to natural disasters and empowering villages to mitigate the devastating effects of natural disasters is critical to Samoa because disasters disproportionately affect developing countries. Between 1991 and 2005, more than 90% of global natural disaster deaths and 98% of people affected by natural disasters were from developing countries. Samoa’s low-lying coastal areas make the country especially prone to severe flooding, most recently occurring in 1939, 1974, 1990 and 2011. There is not a long history of tsunamis in Samoa and the tsunami in 2009 was the largest in the nation’s history. Prior to 2009, an earthquake off the coast of Chile in 1960 caused the most recent tsunami for Samoa. The country is much more prone to cyclones. Between 1789 and 1932, 325 cyclones passed through the South Pacific. Approximately 8% of those cyclones occurred in Samoa. Based on observations from 1831-1989, it is predicted that Samoa can expect 6 cyclones every decade. Every 30 years a cyclone will cause considerable damage and one severe cyclone will occur every century. A combination of high-risk geographic attributes and low-levels of infrastructure make developing nations incredibly vulnerable to the effects of these natural disasters. Samoa’s location along tectonic plate boundaries and the Tonga trench and the geography of a small island nation give Samoa a high potential for catastrophic disasters, making it ever the more important that Samoans are prepared in the best ways possible. This project will evaluate the level of disaster awareness among Samoans, analyze several disaster preparedness efforts and recommend ways to increase Samoa’s capacity for dealing with natural disasters.

**Methodology**

The researcher used a variety of primary sources to collect data for this report. Several extensive interviews provided detailed information on government disaster preparedness programs.

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3 Samoan Observer. *Flood Awareness*.
4 Talmazan, Yuliya. *Samoan Islands: Location, Population and Tsunami Record*.
Surveys were conducted to quantify approximately how many Samoans feel prepared to respond to a natural disaster and the sources from which they learned this information. The survey consisted of seven questions, six yes/no questions and one open-ended question (see Appendix). The surveys were completed in Apia, on the USP campus, and in villages along the southeastern shore of Upolu. One hundred Samoans participated in the survey. Of the 100 respondents, 42 were female and 58 were male. The age range was 18 to 66 and the average age was 31.

The literature review included government documents and analytical reports prepared by consultants or NGOs and international aid agencies. Government documents included disaster-related legislation and previous disaster response reports. Furthermore, many of Dawn Tuiloma-Sua’s project reports provided comprehensive assessments of Samoa’s disaster preparedness and response efforts.

**The Government of Samoa’s Framework for Disaster Awareness**

The Disaster Management Office (DMO) was established under the Ministry of Natural Resources and Environment (MNRE) in 2005. Prior to 2005, the DMO was a branch of the Prime Minister’s office. In 2006, Samoa’s first National Disaster Management Plan (NDMP) for the years 2006-2009 was approved. One of the many purposes of the NDMP is to necessitate and make provisions for the development and implementation of public awareness programs on the national and local level. The NDMP prioritizes widespread disaster awareness and lays the framework for governmental plans that will ensure all communities and response agencies are ready to respond to any disaster.

One year after the NDMP was written, the Samoa Disaster Emergency Management Act (DEMA), which allocated resources to implement the National Disaster Management Plan (NDMP), was approved by Parliament. The DEMA established a disaster risk management framework that

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built on the organizational strengths of villages and placed responsibility with the local leaders of affected villages.9

The Disaster Advisory Committee (DAC), established under the NDMP 2006-2009 and the DEMA 2007, consists of sub-committees with representatives from other government agencies, NGOs, academia and the private sector. It is important for aid agencies and NGOs to participate in the DAC so that they are aware of the government disaster preparedness and response systems in place so their assistance doesn’t overlap with the preexisting programs. The DAC directs the DMO and is responsible for the national coordination, implementation and evaluation of the disaster management services.10 The DMO, with the oversight of the DAC, is responsible for the coordination, development, and implementation of awareness programs for Samoa.11 The primary awareness responsibilities of the DMO as outlined in the NDMP include:

- the identification of awareness needs, the identification of available resources (channels), the identification and analysis of the target audience and the selection of the most appropriate methods for communicating with that audience (e.g. radio, print, TV, signage, brochures etc), the development of a Community Disaster Awareness Strategy, the development and coordination of annual awareness programs and the implementation and on-going review of awareness programs.12

The DMO has created and implemented several programs and workshops that disseminate disaster information to communities and assist villages in their disaster mitigation efforts. Majority of the DMO village programs target an adult audience so schools have become the primary source of disaster information for Samoan youth.

**Disaster Curriculum in Samoa’s Education System**

Currently, disaster risk education is not mandatory in public schools.13 Ensuring disaster lessons become a mandatory component of the national primary and secondary school curricula would work towards promoting priority No. 3 of the international effort for disaster preparedness

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9 There is now a revised plan NDMP (2011-2014) and a DRM National Action Plan (2011-2016).
Hyogo Framework for Action (HFA), “Use knowledge, innovation and education to build a culture of safety and resilience at all levels.” If a mandatory and standardized national curriculum were implemented, additional training and practical guidance on the delivery of disaster risk education for teachers would help create a high-quality disaster curriculum that would work with Samoa’s youth population to create the “culture of safety” that is outlined by the HFA. Two studies have suggested that despite the non-mandate for disaster education in primary and secondary schools, Samoans do learn about disaster preparedness in the classroom.

In the survey administered as part of this report, ninety four percent (94%) of the respondents with children answered “yes” to the question “Have your children studied tsunamis in school?”. For the open-ended question about where the respondents learn tsunami information, ‘school’ was the second most popular answer listed by 23% of respondents.

A study conducted in 2009 at 25% of primary school and 51% of secondary schools assessed the prevalence of disaster education through lessons, assignments or discussions within Samoan government schools and measured teacher attitudes toward disaster curriculum. In the survey of government primary and secondary school teachers, 85% of respondents stated disaster risk content is currently included in current curricula materials, specifically in Health & Physical Education, Social Science and Science, which were the three most popular responses for the inquiry of which subjects most often include disaster material. Nearly all (98%) of the 37 teacher surveys, agreed disaster management and disaster risk reduction should be taught in schools. Their reasons for their responses included, in order of priority: safety, protection of oneself and others, to raise level of preparedness, lessen effects of disasters on people, property and the environment and to have an understanding of disaster hazards and the nature of the hazards. All of the respondents unanimously

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agreed that emergency drills conducted regularly at schools are effective for increasing disaster awareness and safety among students.  

Based on the outcomes of the curriculum review, the disaster risk management Teacher’s Resource Kit was developed and distributed to all primary and secondary schools in Samoa. The Resource Kit, intended for Years 1-13, consists of seven disaster risk modules which are: Be Disaster Safe, Tropical Cyclones, Earthquakes, Floods, Home Safety, Forest Fires and In the Aftermath. Within the curriculum review surveys and in a subsequent focus group of primary and secondary school teachers, teachers indicated that they wanted disaster lessons organized by subject matter in addition to the modules so that they could easily incorporate disasters into the preexisting curriculum. For example, disaster risk reduction fits in well with environmental science curriculum because environmental degradation increases the intensity of natural hazards and is often the factor that transforms the hazard into a disaster. In the National Curricula, Outcome 6.2 of the Year 6 science curriculum is “Students describe changes in climate so they can explain how these changes influence living conditions on Earth.” This would be an opportune place in the curriculum to incorporate disaster risk reduction and preparedness. 

The Teacher’s Resource Kit was presented and distributed in compact disc format to teachers through five training workshops conducted in March 2010 which were attended by 319 principals and teachers, representing 183 of Samoa’s 196 government schools. The schools that did not attend the workshops received the compact disc containing the curriculum. The compact disk format is appealing to teachers because digital copies of the curriculum and lesson plans can be easily tailored to the needs of specific classes or school locations. The compact disc also contains supplemental learning materials.

Although the compact disc format for distributing the curriculum has several important benefits, lack of access to computers in schools and limited computer skills among teachers creates

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an obstacle for implementation of the new modules. A study completed in March 2011 found that only 38% of schools have computers that are available for teaching purposes and many teachers possess little or no computer knowledge or skills. Provision of computers for teaching purposes and teachers in-service computer training would make the digitized curriculum module more accessible to educators. Grants from NGOs and aid agencies could provide the funding necessary to purchase the computers and other necessary equipment, such as air conditioning units, electrical converters, etc. One such group of people that would be qualified to assist with computer trainings for educators would be the Information Technology students at the University of the South Pacific Alafua Campus. These students could hold workshops for teachers at the beginning of each school year using the computer labs on campus, making disaster education more accessible to educators.

Dawn’s curriculum review of disaster education revealed a strong interest from students to include disaster safety in school lessons. Nearly 3,900 Samoan primary and secondary students participated in the surveys. Half of students had not learned how to escape from a disaster and 87% wanted to learn about disasters. These statistics highlight a need and desire amongst Samoan primary and secondary students to become active in their country’s disaster preparedness efforts. Of the students that have been educated on disaster risks and safety, 70% reported that they discuss what they learned at school with their family members. Given that school children currently make up one-third of Samoa’s population, this statistic indicates that structured disaster education of primary and secondary school students could be an effective mean through which the DMO could disseminate information to the community at large.

The Ministry of Education, Sports and Culture and the DMO should engage students in helping to mobilize Samoan villages around disaster preparedness and response. The ability of the children to act to reduce their vulnerabilities and risk of disasters has been largely ignored, which is

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unfortunate for several reasons. Firstly, over half of the population of Samoa is below the age of 15.\textsuperscript{20} This large demographic should be addressed and utilized in disaster management measures. Secondly, on average, children form a disproportion fraction of the death tolls in a disaster.\textsuperscript{21} Over half of the deaths in the 2009 tsunami were children.\textsuperscript{22} Disaster education for the current youth population of Samoa foster a high level of disaster conscientiousness among the next generation of this country’s leaders and will help Samoa continue to expand its disaster mitigation efforts. The willingness and enthusiasm of Samoan students to learn about disaster preparedness and the overwhelming support from teacher is an advantageous opportunity that should be capitalized upon by the Government of Samoa. Incorporating Samoa’s student population into the nation’s disaster preparedness efforts is a logical and essential step to increasing the disaster capacity of each Samoan community. Another method for increasing disaster knowledge throughout the country is the widespread dissemination of disaster information via the media.

**Disaster Information Dissemination Through Media and Technology**

Lack of information sharing is an obstacle in Samoa. It is difficult to ensure that information reaches everyone and that the message is clear and consistent. In addition to schools and government programming, this study examined the other ways that information about natural disasters is disseminated. In the survey conducted for this study, 30\% of the respondents learned information about disasters from television. Radio was listed by 19\% of respondents. Other media-related sources of information that were mentioned in the surveys were newspaper, which was listed by 8\% of respondents and “internet” and “media” which were each listed by 2\% of respondents. Eight percent (8\%) of respondents listed advertisements either on the radio or the television. In interviews with three adult Samoans, they all cited television and radio as a source of information about natural disasters.


\textsuperscript{22} Tuiloma-Sua, Dawn. Draft comments. March 8, 2012.
Television and radio programming have many benefits that make it an efficient way to dissemination. Uniformity in disaster education is hard to achieve when there are several organizations all doing this same project separately (Samoan government, Australian and New Zealand Red Cross programs, etc.). Samoa’s small size is advantageous because it is feasible for the DMO to coordinate the efforts of all the NGOs in order to implement a cooperative national disaster information dissemination program. In addition to coordinating the messages spread by NGOs and the government, it is very difficult to ensure that accurate information is shared when Samoans talk to each other about disasters. Disaster preparedness strategies and plans from one village may not be applicable to another, so unintentional misinformation or irrelevant advice is a danger of disaster advice being spread between friends and family.\textsuperscript{23} Whereas you cannot control the information that Samoans disseminate to their friends and family, you can control the quality of information released in public service announcements. Television and radio programming can help to deliver a consistent message because once a public service announcement is produced it can be continuously broadcasted on television or radio channels for a long period of time without requiring much additional labor or funding. Additionally, television programming can have subtitles which make it useful for the hearing-impaired, an audience that radio does not adequately meet the needs of. Bilingual subtitles or bilingual radio programming can convey messages about disaster safety to an even larger population than single-language programming.

Although the surveys suggest that the media is a popular and effective mean for the dissemination of disaster information, there are limitations to the extent to which disaster messages in the media reach all Samoan communities. According to the 2006 Population Report of the Samoa Census Bureau, there are 23,813 households in Samoa. Nearly 93\% of these households consistently have access to and use electricity. While close to 90\% of Samoan households own an operating radio,

only 62% of households own an operating television. Even less households have computers or internet access. When SIT stayed with host families in Lotofaga, there was a wide range of the amounts of technology present in the homestay households. None of the homestays had computers or internet access. About half of the families had access to a television, either in their own home or the home of an extended family member. For the homestay families that did not have access to a television, several households routinely listened to the radio. One homestay family had neither a television nor a radio, severely limiting their potential to receive disaster preparedness information disseminated by the media. While television and radio are the most popular sources of disaster information, relying alone on these mediums would leave many Samoans without access to important early warning messages and disaster preparedness and safety information. More of SIT’s homestay families had cellular phones than televisions or radios. Some families had multiples cellular phones in the household. Cellular phones have become very popular in Samoa within the past decade. Text messages sent to the masses would be an efficient way to spread small amounts of information over a large population. Television, radio and cellular phones are three ways that the adoption of modern technology could increase disaster information dissemination but there are also ways that information sharing can be improved without relying on modern technology.

Samoa can utilize pre-existing lines of communication to educate people about disaster preparedness. Private business owners can hold workshops and trainings for their employees. Firms within the tourism industry, such as resorts or beach fales, can inform their guests about their disaster procedures. These two examples would not only be advantageous ways to utilize existing structures that do not rely on technology to spread information, but are also important settings for disaster preparedness to be discussed. A natural disaster can happen at any time, so Samoans should be aware of the disaster procedures at their workplace. Additionally, tourists that come to Samoa from areas of

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the world where there are no tsunamis should be informed of what to do if a tsunami occurs during their visit.

Before business owners and fale operators can share their disaster knowledge, they need to acquire it somewhere. As part of the village-specific disaster preparedness and response plans, the Government of Samoa needs to build disaster information systems that are accessible and that have community-specific information.\(^\text{25}\) The accessibility of this disaster information to all members of society is crucial. In theory, the application of modern technology could help in the development of a comprehensive system for monitoring, archiving data and disseminating information from a national to local level. However, in practice, comprehensive databases, either on a computer or on paper, may not be appropriate forms of information sharing for Samoa. Even if all villages had access to computers where they could read and contribute to digital or even online databases of information about preparing for and recovering from disasters, this method of information dissemination and retrieval may not be culturally applicable to all villages. A 2006 program to give village computers was not successful because the new technology was not welcomed into the communities.\(^\text{26}\) Villages must receive information in a format that they know how to use or feel comfortable learning how to use and most importantly, that they want to use. If information is provided in hard-copy form it would be accessible by many Samoans but may be well received because Samoa is not a reading culture. Samoa has very strong oral history and storytelling traditions. The DMO should work within the culture of oral information to devise a way that current and standardized disaster safety information can be disseminated to large groups of people without relying on computers or reading long documents. With the cooperation of NGOs and village input, a line of communication from the DMO to the masses that works within the \textit{fa’asamoa} (the Samoan way) could greatly increase levels of disaster awareness among Samoans. The Women’s Committees are one long-standing social institution that use their buy-in with the community to increase disaster awareness.

\[^{25}\text{Tuiloma-Sua, Dawn. Samoa National Action Plan Overview. p14.}\]
\[^{26}\text{Fa’asisila, Jackie. Draft Comment. April 6, 2012.}\]
The Role of Women in Disaster Preparedness and Response

For a very long time, Samoan men used to be the nafanua (protectors) of the villages but as social patterns and relations have evolved over time, women have become entrusted with many of the important and protectant duties in the villages. More often than not, women are the ones charged with caring for the young and elderly, feeding their families, ensuring access to clean water and sanitary toilet facilities and maintaining home safety and cleanliness. This shift in roles has also affected the ways in which villages prepare for and respond to disasters. In fact, several testimonies from survivors of the 2009 tsunami said that it was the women, not the men, that helped to evacuate old, young and disabled members of the village. While it is important to educate and prepare everyone, not just the village protectors, about disaster safety, the critical role of women has merited women-specific disaster preparedness measures.

The Ministry of Women, Community and Social Development (MWCSD) has facilitated disaster risk reduction and promoted public awareness for disaster safety. The NDMP outlines the responsibilities of the MWCSD to be coordinating disaster mitigation and preparedness programs/activities and for coordinating response activities including initiating community response, information dissemination, shelter management, damage assessment and relief coordination.

One of the ways that the MWCSD fulfills the objectives outlines in the NDMP is by commissioning Sui tamaiti‘i o le Nu’u (Women Representatives of the Village). This position and its duties were created by a legal mandate in disaster preparedness legislation. These representatives work on three-year contracts that provide them with a temporary allowance. Women are nominated to fulfill the position by members of their village’s Women’s Committee. There are currently 186 Sui tamaiti‘i o le Nu’u working for the MWCSD, representing three-quarters of Samoan villages. Part of the role of the Sui tamaiti‘i o le Nu’u is to reinforce the objectives of the Aiga ma Nu’u Manuia (Healthy Families, Healthy Villages) program. The representatives fill out forms reporting which

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aspects of *Aiga ma Nu’u Manuia* were discussed at the monthly Women’s Committee meetings. When the *Sui tamaiti’i o le Nu’u* perform safety and sanitation inspections within the community and lead discussions on disaster topics at their monthly Women’s Committee meetings, they are ensuring that disaster preparedness is sustained at the village level.\(^{29}\)

*Aiga ma Nu’u Manuia* is an initiative of the MWCSD to create healthier and stronger Samoan households. This program is important to disaster preparedness because communities that are healthy, safe and have steady supplies of clean water and nutritious food will be more resilient to the impacts of a natural disaster. Populations typically affected the worst by natural disasters include the young, the elderly, the sick and disabled and those living in poverty. *Aiga ma Nu’u Manuia* addressed the needs of these populations, thus strengthening their capacity to survive in disaster situations. The *Aiga ma Nu’u Manuia* program promotes personal hygiene, safe food handling and preparation, injury prevention, first aid training, access to nutritious food and clean water, the construction of sanitary toilet facilities, and injury prevention through maintaining safe home environments. The *Sui tamaiti’i o le Nu’u* perform regular checks for home improvements that also function as disaster mitigation techniques, such as water tanks, sanitary toilets and vegetable gardens. Building community resilience is dependent on increasing the capacity of the village to deal with disasters. All of the activities of the *Aiga ma Nu’u Manuia* will help families and villages minimize the devastating effects of natural disasters and recover as quickly as possible.\(^{30,31}\)

Another way the Women’s Committee prepares communities for disasters is by assisting with the implementation of disaster preparedness workshops and drills. Although 4% of respondents of the surveys for this study specifically mentioned learning disaster information from the Women’s Committees, 5% replied “my village” and 11% listed government or DMO programs, which could include activities contributed to by the Women’s Committees. Government disaster workshops

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would not be possible without the cooperation of the village women. The women help to select which
members of the village participate in the workshops and coordinate the workshop logistics by
arranging a date and place for the workshop to occur and feeding the participants during the multi-
day workshops. Within the DMO program, the women are responsible of assuming the advocacy role
for the elderly and the children. It is the responsibility of the women to mainstream youth, geriatric
and gender issues into the village disaster plans.

Disaster simulation drills conducted by the DMO give villages the opportunity to practice the
actions outlined in their village disaster plans. In the two drills that were conducted in 2011, Vaialia
Iosua, the Principal Community Development Office of the Division of Women at MWCSD, testified
that while the women ran to elevated ground per the instructions, the men stayed back and laughed.
The support and cooperation of women in completing the disaster drills makes them valuable disaster
role models for the community. For the most part, women take disaster preparedness seriously and
levels of disaster preparedness and awareness are high among women. The knowledge from the drills
and workshops can boost the confidence of the women which plays a part in helping them be the first
ones to resume ordinary daily functions after a natural disaster occurs.

The DMO benefits from working with the MWCSD because it has the coverage, perimeter
and mandates of a large, well-funded ministry. Additionally, it is very appropriate because women
have many responsibilities within the home. They are the caretaker of the children and elderly, food
provider, counselor, peacemaker, and ensure that sanitation, water, food and laundry are all taken
care of. Many of the daily functions of villages and households (eating, drinking, hygiene) are
threatened by the arrival of a natural disaster so involving women heavily in disaster preparedness
and mitigation efforts will help communities resume healthy lifestyles as quickly as possible after a
natural disaster. Ensuring that the well-being and health of families in maintained in the immediate
aftermath of a disaster can be a very daunting task. The MWCSD Division of Women supports their
psychological needs and stress in times of disaster because they have so much on their plates. By improving the well-being of their families, women are helping their loved ones to be safe during a natural disaster event. While disaster preparedness is an indirect result of Aiga ma Nu’u Manua, the DMO has initiated programs with the primary objective to strengthen communities against disasters.

**The Community Disaster and Risk Management Program**

The Community Disaster and Risk Management Program (CDCRM) was established through the Samoa National Action Plan 2011-2016 to reduce the social, economic and environmental costs of disaster in Samoan communities. The DMO recently received a financial commitment from the government to start up a Disaster Training and Resource Center which will certify community facilitators and mobile teams to implement the CDCRM program. Partner agencies, such as NGOs, will assist with the implementation and maintenance of the Community Training Toolkits. The mobile team will ensure the quality delivery of the Community Training Toolkit and provide input and suggestions to the partner agencies if necessary. Regular monitoring of community progress through spot checks, evaluation the impacts of the program and the provision of ongoing support and mentoring to village leaders will be the responsibilities of the mobile teams. There are five modules within the CDCRM program: Situation Analysis, Prioritizing and Action Planning, Disaster Risk Management Structure and Planning, Training and Resourcing Response Teams, and Simulation Exercises and Drills.

This new programs derives much of its strength from its ability to be tailored to the unique needs of individual villages. The first module identifies specific risks within the each village, such as an eroding coastline or poorly-constructed buildings. Then in the second and third modules the villages develop and submit plans that address what they will do in a disaster, how they are going to allocate resources, the responsibilities of specific village members and other detailed and village-specific plans. The mobile teams will monitor the communities’ progress through spot checks, evaluations and meetings with village leaders and provide input and suggestions to the partner agencies if necessary.

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specific procedures. The village response plan establishes response teams, such as the Evacuation Team, Warning Team, and Counseling Team. Village members are assigned to response teams based on their skills and strengths. Although the development of the plans are headed largely by each village’s Disaster and Climate committee, the information in these plans should be shared with the entirety of the village and agreed-upon by village members. The delivery of the CDCRM workshops can be tailored to learning styles and needs of the specific villages. Differences in age, literacy and education levels and previous experience with disasters need to be taken into account when delivering a disaster preparedness program to a village. The partner agencies can work with each village’s unique demographics and traits to find a delivery method that will help the village members retain disaster preparedness information.

The CDCRM trial runs were well-received by villages because they allowed for the adoption of traditional disaster preparedness practices into the new mitigation and response techniques. Disaster management is not a new concept to Samoa. Samoans have been implementing disaster mitigation techniques and practicing safe disaster response habits for hundreds of years. Only recently has the government begun to organize and structure these efforts into legislation and programming. In order to be sustainable and have a wide coverage, the DMO relies heavily on adapting existing initiatives that have proven to be effective in communities. A consulting report for the DMO completed in March 2011 found that most villages possess a basic understanding of the Government’s role in disaster management and disaster risk reduction but that Samoans prefer that their own local leaders fulfill most of the disaster mitigation requirements and responsibilities before and after natural disasters. Workshop facilitators ask the village members in attendance for their perceptions of disasters and try to reconcile the gap between their traditional knowledge and technical knowledge. For example, in some villages, tsunamis are associated with breadfruit falling

The linkage between traditional knowledge about disaster safety passed through generations of Samoans and modern mitigation practices is important for creating awareness of past practices and reintroducing traditional practices and applying those which are relevant to people today. The CDCRM program in conjunction with efforts of Aiga ma Nu’u Manuia, Sui tamaiti’i o le Nu’u, the media and educators have created a very high level of disaster awareness among Samoans.

**Survey Findings**

In the survey that was administered to one hundred Samoan adults, 94% of respondents said that they know what to do to be safe during a tsunami. However, only 79% of the respondents said that they know the location of the evacuation route nearest to their home. The discrepancy between these two figures could be because some of the respondents live at a high enough elevation that it would be not necessary for them to evacuate in the occurrence of a tsunami. The number of Samoans that testified that they know what to do to be safe during a tsunami is impressively high given that there is no mandatory curriculum in schools, the CDCRM program has only had trial runs in 24 villages and only 75% of villages have Sui tamaiti’i o le Nu’u. It is possible that the extremely high levels of disaster preparedness are a result of traditional practices and techniques and less from the relatively new government initiatives.

Following the first question, respondents were asked an open-ended question, “Where did you learn this information?” The two most popular answers were television which, was listed by 30% of respondents, and school, which was listed by 27%. Radio was written on 18% of the surveys. Thirteen percent (13%) of respondents replied that they had learned their information about disaster preparedness from government or DMO programs. Newspaper was a source of disaster preparedness information for 8% of respondents. Five percent (5%) of respondents listed that they learned their

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information from their village and 4% listed their village’s Women’s Committee. Responses that were only listed twice include parents, the internet, religion, media, common sense, disaster drills, and observation. The answers that were reported once each include children, didn’t learn any information, First Aid Course, the Red Cross, Fire Rescue Squad, in the workplace, program at beach fales, phone, and from friends. Fifteen respondents did not answer this question.

![Figure 2: Survey Results, “Where did you learn information about tsunamis?”](image)

Of the fifty respondents that have children, 94% replied that they have talked to their kids about tsunami safety and 94% replied that their children have studied tsunamis in school. Although these numbers are the same, only 3% of the survey respondents said that they learned their disaster safety information from their parents, while 23% mentioned school as one of their sources for disaster preparedness information. Although disaster curriculum is not mandatory in primary and secondary schools, the survey shows that schools are one of the more common sources of disaster information for Samoans. This suggests that teachers are already incorporating some aspects of the disaster risk management Teacher Resource Kit into their lessons and that it would not be a large inconvenience for teachers if they were required to teach about disasters.
The final question on the survey was, “Do you feel that most of your family knows how to be safe during a tsunami?”. Twelve percent (12%) of respondents replied “No” to this question. If this figure is accurate, it means that slightly over one-tenth of the Samoan population still needs to be educated on disaster safety procedures. In a conversation with a 60 year old Samoan man, he explained he doesn’t believe that all of his family members would know what to do if a disaster struck. The fact that 12% of respondents were aware that their family members are unprepared for a disaster is good because if Samoans can help identify unprepared members of the community, such as people in their family, then these village leaders, such as the matai (chiefs) or Women’s Committee, know where to target their disaster education efforts.

**Analysis**

The tsunami in 2009 tested the effectiveness of Samoa’s disaster management programs and shed light on unmet disaster awareness needs. Louisa Apelu, Assistant CEO of the MWCSD Division of Woman, thinks that Samoa did a “pretty good job handling this natural disaster given that it was [their] first experience”. She said that the large tsunami was “a wake-up call for villages and call to action for the government”. This study and others have shown that villages and the government have responded well to the wake-up call. It is evident that the media, the DMO, the MWCSD and the media are all putting forth large efforts to achieve and maintain high levels of disaster awareness in Samoa. The survey found that the majority of Samoans are aware of disaster safety and now the biggest challenge is incorporating newer and more effective disaster preparedness measures into the fa’asamoa. Mobilization of the whole country to be prepared for natural disasters is accomplished by a cultural acceptance of disaster preparedness and disaster risk reduction efforts. Cultural adaptations cannot be forced by DMO programming, but the DMO and other NGOs have provided the Samoan communities with a diverse array of options for helping themselves and their villages become prepared for natural disasters.

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In an interview, Dawn Tuiloma-Sua said that villages need to rely first on their own sources for disaster preparedness. She designed the CDCRM program with the intention of fostering self-reliant communities because she feels that is the only way villages can truly get what they want and need in terms of disaster preparedness plans that are tailored to community-specific needs. Even though the CDCRM program provides the framework for creating village disaster plans, a village’s decision to dedicate time and resources to preparing themselves for imminent disasters is a matter of village priorities, not resources. In the interview Dawn pointed out that almost every village has the fiscal resources to implement these programs made evident by the fact that whenever the church needs money, the funds always appear. While Samoans do take their religious commitments very seriously and place a high priority on church obligations, Dawn believes that disaster preparedness should be prioritized over church affairs because it is a matter of life and death. However, Samoans have been surviving on these islands for centuries without allocating large amounts of their income to disaster mitigation techniques and may not believe that the allocation of large funds to disaster management is necessary for their survival. While the CDCRM program can set the framework and provide assistance to villages developing their disaster management plans, it is up to the villagers to prioritize disaster preparedness as they see fit.

Adoption of the most effective disaster mitigation techniques needs to be sustainable and long-lasting, not just occurring in the shadow of large and recent events, such as the 2009 tsunami. Even though CDCRM workshops and lessons in school are isolated events, the effect they have needs to be permanent and perpetuated by the younger generations. Public awareness and education is a continuous commitment. Sustainability requires an actively involved and prepared community, heightened education and awareness must not only take place in the years following a major disaster. The commitment and diligence of the Sui tamaiti’i o le Nu’u and the Women’s Committees will help to sustain high level of preparedness within their communities through consistent safety checks and

disaster information reviews. Furthermore, utilizing existing village social structures, such as the Women’s Committee’ is an effective and well-received way to mainstream disaster risk reduction into the village development planning processes. Incorporating disaster mitigation into village development will help perpetuate disaster preparedness techniques into the lifestyles of future Samoans. Knowledgeable and resourceful village leaders that already have the respect of the community can motivate their community to become involved in disaster preparation. Working within existing village social structures is an effective and well-received way to mainstream disaster risk reduction into the village development planning processes. The more cohesive the village is, the higher the likelihood success for a community-based disaster preparedness program. Utilizing the matai, one of Samoa’s oldest and most important social structures, will help guarantee that disaster preparedness becomes an integral part of village activities. The education system is another consistent social structure that can be entrusted to carry the message of disaster safety into the future. Schools are already one of the most popular sources of disaster information for Samoans and if educators continue these efforts then new generations of Samoan youth will become disaster-conscious village leaders. Streamlining modern approaches to disaster preparedness into fundamental aspects of the fa’asamoa such as matai, Women’s Committees and schools will increase the capacity of Samoa to deal with natural disasters for many years to come.

**Conclusion**

The islands of Samoa appear to be paradisiac but their location makes them extremely vulnerable to many different natural disasters such as earthquakes, tsunamis and cyclones. Samoa has many different techniques to prepare for and respond to disasters that have worked for centuries but are sometimes undervalued because they are different than the practices utilized by the western world. Generations of Samoans have prepared for and recovered from disasters but it is only recently that the Government of Samoa has taken responsibility for the issue of disaster mitigation and preparedness. The most effective recent disaster preparedness efforts
have been the ones that have been able to work with the fa’asamo as opposed to changing or adding to it.

The CDCRM program recognizes traditional disaster mitigation techniques and uses them as a foundation for improving disaster preparedness. CDCRM workshops are easily tailored to the specific needs of each village. As a result, the village disaster plans that created draw on the strengths of each community to develop specific disaster response procedures that are within the capabilities of the village members. Additionally, village leaders that already have the respect of their community play a crucial role in the promotion of disaster preparedness.

The Women’s Committees, Sui tamaiti’i o le Nu’u and educators have all played important roles in promoting the DMO’s new disaster preparedness efforts within their communities. The Aiga ma Nu’u Manuia program promotes the health and prosperity of villages which increases their capacity for dealing with natural disasters. The Women’s Committees help to organize and facilitate disaster preparedness workshops for their village while the Sui tamaiti’i o le Nu’u ensure that disaster preparedness knowledge and techniques are maintained through revisiting disaster safety at Women’s Committee meetings and conducting spot checks for village safety and sanitation. Although there is no mandatory disaster curriculum, 85% of teachers surveyed already cover issues of disaster safety in their lessons. In the same survey there was overwhelming enthusiasm from both educators and pupils to include disaster safety in the curriculum. The willingness of educators to include disasters in their lessons and the resources in the disaster risk management Teacher’s Resource Kit will help to create awareness among the Samoan youth population, which holds the key to Samoa’s future safety.

Another important method of information dissemination had been media outlets such as television, radios, newspapers and advertisements. Televisions and radios, while not accessible to all Samoan households, have been a key source of disaster information for many of the survey
respondents and interview informants. It is very likely that the number of households with
televisions and radios will increase with time but until then the DMO needs to find other avenues
for information dissemination that reach the entire population.

As time passes technology and knowledge will increase, contributing to the development
of even more modern and innovate disaster preparedness systems and techniques. The on-going
development of Samoa will give the country access to modern disaster mitigation techniques but
this does not mean that the villages should discontinue using traditional disaster preparedness
practices. The Samoan people hold great respect for their elders and should not forget that this
country’s ancestors have survived many natural disasters. This vibrant nation is a living
testimony to the resilience and strength of its people to recover from natural disasters and
modern disaster mitigation and education methods can only add to this capacity.
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Appendix: Survey
Su’esu’ega o le Sunami

Tausaga:               Ali’i po’o  Tama’ita’i

1. E te iloa o ā mea e te faia ia e saogalemū mai se sunami?   Ioe po’o   Leai

2. O fea na e iloa mai ai ia mea?

3. E te iloa le ala fa’asao mo le sunami e lata i le tou fale?   Ioe po’o   Leai

4. E iai sau fanau? Ioe po’o   Leai

5. Ua e faamatala i lau fanau mea e tatau ona fai peʻāsaup se sunami? Ioe po’o   Leai

6. Ua a’oa’oina e lau fanau e faatatau i le sunami i le a’oga? Ioe po’o   Leai

7. E te talitonu ua iloa uma e tagata o lou aiga mea e tatau one fai peʻā tupu se sunami?   Ioe po’o   Leai

Fa’afetai le fesoaoani!

Tsunami Survey

Age:               Female or Male

1. Do you know what to do to be safe during a tsunami?   Yes   or    No

2. Where did you learn this information?

3. Do you know the location of the tsunami evacuation nearest to your home? Yes  or   No

4. Do you have children? Yes  or    No

5. Have you talked to your children about what to do if a tsunami occurs?    Yes  or    No

6. Have your children studied tsunamis in school? Yes  or   No

7. Do you feel that most of your family knows how to be safe during a tsunami? Yes or No

Thank you for your answers!