POST-DISASTER RECONSTRUCTION STRATEGY: OPPORTUNITY OR OPPORTUNISM?

2009 TSUNAMI IN SAMOA AS A CASE STUDY

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By

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ABSTRACT

Reported natural disasters have significantly increased over the last fifty years. Because of their high exposure to natural hazards and limited economic capacity, developing countries are recognized by the international aid community to be the most vulnerable to disasters. In 1990, the International Decade for Natural Disaster Reduction was created to promote ideas of disaster reduction, identifying vulnerability as one of the priorities. The idea that vulnerability reduction is a matter of development is the mainstream discourse of agencies involved in disaster response.Within this general discourseissues of vulnerability depend on adaptive capacity, technical knowledge, awareness and good governance. For the international aid community, lack of capacity and knowledge can be overcome by means of policy learning transfer from industrialized countries to developing nations. However, there are contrasting views,as some affirm that this approach reflects a top-down, technocratic and Western expert approach that is based on socio-cultural belief and perceptions of 'man' and 'nature'. Others state that most agencies have used vulnerability in the way that best fits their practices, and that this concept is utilized as a justification by developed countries to intervene in the affairs of developing nations.In 2009, a tsunami hit Samoa, resulting in considerable damages and mobilising the international aid community. Through this case study, this research explores how the mainstream use of the concept of vulnerabilityshapes the post-disaster management.The reconstruction of housing, land transport infrastructure and tourist accommodationand the utilisation of vulnerability reduction and risk mitigation measures arecritically observed.Moreover, the role that different agencies play in shaping the decision making process is analysed, and the recovery strategy is explored and criticized. A qualitative research was undertaken, using a range of techniques including semi-structured interviews, scoping and observations on the field, and the analysis of policy documents. Findings show that international aid partners have an influence on shaping the policy carried out by the government of Samoa. The research qualifies the recovery approach as technocentrist and develops the argument that the strategy used has been lacking in considering the socio-cultural aspects inherent to the Samoan society.

KEY WORDS: *Vulnerability; Natural Disasters; Reconstruction; International Aid; Western Discourse; Samoa.*

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CHAPTER I

INTRODUCTION

1.1 NATURAL DISASTERS AND THE VULNERABILITY OF DEVELOPING COUNTRIES

Natural disasters have significantly increased for the last 40 to 50 years. In 1992, more than 368 natural disasters were reported, affecting 170,478,000 people. In 2001, this number more than doubled with 712 disasters reported and 344,873,000 people impacted (IFRC, 2002: 185-7 quoted in Bankoff et al, 2004). The increase of natural hazards and the growing population worldwide are pointed out as the causes for the augmentation of natural disasters. A majority of scientists and organizations such as the Intergovernmental Panel on Climate Change (2001; 2007) stress that the increase of natural hazards results from global climate change, and predict that extreme events including cyclones, droughts, storm surges and floods, will be more severe and more frequent during the next decades to come (Mitchell et al., 2001; Bettencourt et al., 2006). In addition, the augmentation of natural hazards is predicted to be particularly more important in developing countries, with studies showing that a quarter of the poorest countries were hit by two to eight important disasters in each of the past 15 years (Freeman, 2004: 430). Moreover, of the 49 poorest countries, 24 have a high level of risk to experience a disaster (Freeman, 2004: 430).

Reports show that the augmentation of natural catastrophes also means a significant increase of economic damage. The global direct cost related to natural disasters is predicted to attain $300 billion/year by 2050 (Munich Re, 2002 quoted in Freeman, 2004). Experts from development agencies and multilateral organizations raise the problematic aspect of this trend for developing countries which are economically more vulnerable. Since 1980, 141 million people lost their house and experienced 3,559 natural catastrophes. From those homeless, 97.7% were residing in developing countries (Freeman, 2004). Moreover, the per capita cost of natural disasters is 20 times higher in developing nations than in industrialized countries (Gilbert and Kreimer, 1999). In a report for the World Bank, Benson and Clay (2000: 16) observe that for the last 30 years, low-income countries had a slower development of their economy than less-hazard prone countries which had the same per capita income.

1.2 POST-DISASTER RECONSTRUCTION IN DEVELOPING COUNTRIES: INCREASING RESILIENCE AND PROMOTING DEVELOPMENT

The high level of disaster risk characterizing developing countries, added to their great economic vulnerability, has become a growing concern for the international aid community. Today, it is widely accepted by majority of scientists and agencies involved in disaster response that vulnerability reduction is a matter of development (Schilderman, 2004; Lyons, 2008). Calculation of indicators of vulnerability established by academics and international organizations reflect this statement. They compile socio-economic and environmental variables such as GDP, adult literacy, debt service ratio, public expenditure on health, and human development index, presenting them though mapping or scores, so vulnerable regions of the world are highlighted as geographic hot spots (O'Brien et al., 2006).

Development agencies (World Bank, 2005b), international organizations (UNFCC, 2008) and scientists (Parry et al., 2001; Brooks and Adger, 2003; Davidson et al., 2003; Adger et al., 2003; Schipper and Pelling, 2006) argue that issues of vulnerability to natural disasters and development depend on adaptive capacity, technical knowledge, building capacity and good governance. According to them, this lack of capacity and knowledge can be overcome by means of policy learning transfer from industrialized countries to developing nations. The need for external aid is validated by international organizations such as the World Health Organization (2008) which emphasizes that disasters surpass the ability of the affected community or society to cope using its own resources. Moreover, the intervention of industrialized countries in regions 'victim' of disasters, with the objective of helping them cope with climate change related hazards, is legitimated by an increase of the Western media coverage (Furedi, 2007; Doulton and Brown, 2009; Sampei and Aoyagi-Usui, 2009; Manzo, 2010).

External assistance covering post-disaster reconstruction costs has more than quadrupled from the 1950s to the 1990s (Freeman, 2004: 429), including multilateral agencies, non-governmental organizations (NGOs), financial institutions and donor countries, qualified as aid partners. Nevertheless, some researchers have shown that aid partners may have an influence on the recovery policy carried out by the government experiencing a disaster

(Kardam, 1993; Stone, 2000; Annisette, 2004). Agencies involved in disaster response have adopted an approach in which natural catastrophes must be put in the context of building sustainable development and avoiding to reproduce existing vulnerabilities or even create new ones (Lewis, 1999; Wisner et al., 2004). With a focus on vulnerability reduction, the idea of "build back better" has emerged in the last few years (Bradshaw, 2002; Ingram et al., 2006; Kennedy et al., 2008). In addition, academics and international organizations increasingly perceive the reconstruction phase as an opportunity for development (Benson and Clay, 2000). Some even talk of an opportunity for radical changes in order to re-write the history of development in the affected region (Delaney and Shrader, 2000:6).

1.3 CRITIQUE OF THE DISCOURSE ADOPTED BY INTERNATIONAL AID IN DISASTER RESPONSE

Some authors have put forward critiques concerning the approach of policy learning transfer and opportunity for development promoted by the majority of agencies involved in disaster response. Hewitt (1983; 1997) indicates that policy learning promoted by scientists and agencies based on transfer of technology, adaptive capacity, technical assistance and knowledge sharing have rendered disaster as a problem that could only be resolved by experts. Hewitt (1983:8)affirms that this perception of vulnerability reduction and disaster risk mitigation reflects "a top-down, technocratic and Western expert vision" that is based on socio-cultural belief and perceptions of 'man' and 'nature', being often more part of the problem than the solution. O'Riordan and Turner (1983) assert that development and the emergence of 'sustainable development' were strongly influenced by technocentrist models which have a utilitarian view of science.

Annelies Heijmans (2004) points out that agencies involved in post-disaster reconstruction have growingly utilized the concept of vulnerability in order to analyze the processes that lead to disasters. However, she explains that, while no exact definition of the concept exists most agencies have used vulnerability in the way that best fits their practice. They have principally focused on the physical and economic aspects of vulnerability, ignoring social, historical and cultural elements of vulnerability of the communities. Bankoff (2001: 28) states that: "Natural disasters form part of a wider historical discourse about imperialism,

dominance and hegemony through which the West has been able to exert its ascendancy over most people and regions of the globe". Moreover, for Bankoff (2001) post-disaster reconstruction, which is presented as an opportunity to reduce vulnerability, is used as a justification by Western countries to intervene in the affairs of developing nations (Bankoff, 2001:27). In addition, Bankoff (2001) affirms that developed nations use the concept of vulnerability is an opportunistic way for perpetuating their model of development based on neo-liberal values. This analysis is close to the work of Naomi Klein (2005; 2007) who recently demonstrated the emergence of international development institutions that use natural and human disasters as an opportunity for influencing government's reconstruction policy and promoting neo-liberal values that she defines as "the rise of disaster capitalism".

Reconstruction policy and strategic choices may reflect values and a certain vision for the future (Olshansky, 2005; Smith, 2010). However, very little consideration has been given to the cultural values of the discursive framework within which vulnerability is presented, and which according to Bankoff (2001: 2) is dominated by the hegemony of the Western model. To more deeply explore these ideas, this thesis used the tsunami that impacted Samoa in 2009 as a case study to observe how the Western concept of vulnerability has been utilized to inform and guide the reconstruction policy.

1.4 SAMOA AS A CASE STUDY

On the 29th of September 2009 a tsunami hit Samoa, killing 143 people and leaving 5300 people homeless, approximately 2.5% of the country's population. Apart from the human impact, the physical damage was estimated to be US$85 million representing 14% of the GDP of Samoa (World Bank, 2010). The main zones affected were the southern, eastern and south-western coasts of Upolu. This region has among the lowest per capita household expenditure, 18.5% below the national average (PNDA, 2009). It is also one of the Samoan most popular destinations for tourism, which is one of the most dynamic economic sectors of the country. Samoa is one of the SIDS from the Pacific region recognized as very exposed to natural hazards, particularly cyclones (IPCC, 2007; Bettencourt et al., 2006). After the relief efforts, international aid partners supported the government of Samoa (GoS) with the recovery and influenced the reconstruction policy. The central idea behind the reconstruction strategy has been to reduce vulnerability of coastal populations to potential natural

catastrophes, with a ‘build back better’ (TTRP, 2010; GoS, 2010) and ‘building back and relocating’ approach for the affected households (PDNA, 2009).

All decisions and outcomes from the reconstruction process in Samoa have been influenced by international actors but also by Samoan values and culture. Samoa has a very traditional organizational structure and strong cultural codes that shape the political and socio-economic aspects of the society. Hence, in order to have a better understanding of arguments developed further in this research it appears indispensable to provide with some contextual information about the country. The importance of the structural organization of Samoan community and government is outlined in the following sections. In particular, the significance of the religious structure and land tenure system in shaping the outcomes of coastal development are highlighted.

1.4.1 Samoa’s Characteristics

In 1962 Samoa became the first Pacific Island Country to gain independence from New Zealand. The country has a population of 182,000 inhabitants living on the two main islands(Figure 1), Upolu (76%) and Savaii (24%). The country consists of a large number of villages with a concentration of settlements along the coast. About 70% of the population lives on coastal areas reinforcing exposure to coastal hazards such as cyclones, tsunamis, flooding and storm surges (Sutherland 2005; PNDA, 2009). However, Sutherland (2005) noted a trend showing that the population is moving to Apia, the capital of Samoa. The Samoan economy is principally based on agriculture and fishing (40% of GDP) and heavily rely on remittances from Samoans living overseas (22% of GDP) mainly in New Zealand, Australia, American Samoa and the US. Foreign aid represents from 7% to 17% of GDP (depending on estimations) and tourism accounts for 14% of GDP (World Bank, 2010; GoS, 2009). Cultural tradition is very strong in Samoa and 80% of lands are under customary ownership, sustaining about 70% of the active population and about half of GDP (PNDA, 2009).

Figure 1: Map of Western Samoa (source: Bukisa.com, 2011)

1.4.2 Samoan Organizational System

The Samoan way of life - *the fa'a Samoa* - needs to be outlined in order to understand the elements shaping institutions and influencing government policy. The Samoan society is structured on a chiefly system called *matai* (chief titleholders) system based on a 'gift-giving' kinship commitment between the *aiga* which is the extended family and is strongly linked to religion (Thornton et al., 2010). Kinship is based on a material and financial support that is

exchanged and shared within the *aiga*. There are 25,000 matai in Samoa, and approximately 5% of them are women. The *matai* decides on the collection of resources and guarantees their fair allocation to the *aiga*, including land distribution. The *matai* system and the kinship are part of the Samoan constitution (Macpherson, 1999) and play an important role in the decisions made at local and national level. In Samoa, the parliamentary democracy with a unicameral legislative assembly (fono) is constituted of 49 members from whom 47 are elected *matai*, and 2 represent the non-Samoan population, serving 5 year terms (Strategy Samoa 2008-12). The 47 matai are elected by Samoans from territorial districts. Only title holders (matai) can be elected. There are different levels of fono (sub-village, village, district), which is an institution that reflects the hierarchical social structure of the Samoan society, from matai to untitled, between chiefs and orators (Duranti, 1990). Duranti (1990) explains that about 30% of village title holders attend fono, which was a problem, highlighted by participants of fono themselves. Even if women can have the title of matai, generally only men participate in fono. The fono also have the responsibility of choosing the prime minister.

1.4.3 The Importance of Religion in the Samoan Society

Traditionally, *matai* titles are related to land accumulation. The bigger is the aiga, the more land are owned, engendering more titles and therefore more influence (Thornton et al., 2010). However, nowadays the significance of a *matai* title is somehow defined by its ability to pressure the *aiga*to donate as much to the church as possible (Thornton et al., 2010:6). Financial and material support is provided to the pastors and their property (Samoa National Human Development Report, 2006: 41). Large churches are symbol of wealth and important status for a village (Muliaina, 2006). Hence, kinship and Christianity are slightly linked and shape all political, economic and social organizations (Thornton et al., 2010).Brown and Ahlburg (1999: 334) show that of 63% of Samoan families that utilize remittance for 'social uses' 41% are generally allocated to sustain churches. It is very common that Samoan working overseas own a bank account on behalf of a church (Brown and Ahlburg, 1999). This contribution is used to support the church in Samoa, representing sometimes over 30% of Samoan income (International Religious Freedom Report, 2006). Also, the Samoa National Human Development Report (SNHDR) highlights that households paid about 52 million *tala* annually for cultural (e.g. weddings, funerals, title bestowals) and church obligations. Government officials are exclusively *matai* and at the same time church leaders

(Samoa National Human Development Report, 2006: 137). Therefore, the church is inter-connected with the state and influence village life and public policy-making considerably (Thornton et al., 2010). This organizational scheme is an important part of the Samoan society and is reinforced by the village *fono* (*matai*council).

1.4.4 Traditional Land Tenure System in Samoa

Land tenure is an essential element "shaping the forms and distribution of settlement and land use in Samoa" (Ward and Ashcroft, 1998). The type of tenure defines who is able to use a certain area, for what purpose, and under what system of management. In Samoa more than 80% of lands are under customary ownership (ADB, 2006). A village *fono* has control on village lands. The different *aigas* hold a number of plots or pieces of land within the village, and have the right of occupation and control over it under the leadership of the *matai* (Ward and Ashcroft, 1998). The Alienation of Customary Land Act (1965) rules the leasing of customary land, and for example it is not legal to lease a customary land for agricultural or pastoral activity to a Samoan without *matai* title (Tiavolo, 1992:46 quoted in O'Meara, 1995). For the last two decades a change in land tenure has occurred and village lands are now held by individuals rather than *aiga*, which means that those individuals' children inherit the land. This affects the acquisition of land on which the *matai* system is based (O'Meara, 1995).

The traditional land tenure system is directly connected to the *fa'a Samoa* with important influence on socio-economic and political aspects of the society. Some researchers argue that traditional land tenure imposes constraints on development (Ward and Ashcroft, 1998; O'Meara, 1995). The main problem is linked to the exclusive control exerted by the village *fono* over the customary land while the central government has no say in such matters (Ward and Ashcroft, 1998). The Government must engage in consultations with families and at the village level when requiring access to customary land for development activities (Hay and Sueasi, 2006). Consequently, it is very complicated for the government to interfere with a decision taken by the village *fono* in land issues. In addition, a change in title holder could affect the repartition of land made by the previous *matai*, which creates uncertainties. Hay and Sueasi (2006: 7) declare that uncertainties related to the tenure of customary lands, with ownership and boundaries engender disputes tending to discourage "moving towards productive and environmentally sound use of the land, by both traditional owners and

lessees". These issues have been discussed by researchers (Ward and Ashcroft, 1998) and are certainly reinforced in a globalised world which is more open to external actors and influences. Ward and Ashcroft (1998) state that: "As practices within Samoan society and tenure of customary land change to meet new social and economic requirements, the need to bring the legal aspects of tenure, including that over customary land, into accord with today's common practice becomes more urgent". Hay and Sueasi (2006) observe that despite becoming more aware of the economic potential of their property, most customary land owners and users do not have enough capacity for implementing decisions that would permit more "productive and sustainable use of their resources".

1.5 RESEARCH OBJECTIVES AND JUSTIFICATION

The main objective of this thesis is to explore, through the case study of the tsunami of 2009 in Samoa, how the mainstream use of the concept of vulnerability shapes the post-disaster reconstruction policy. While no exact definition of vulnerability exists, this concept and its application depend on different factors such as the perception and interest of its users (Heijmans, 2004). In order to provide an insight on how the concept of vulnerability has been applied to the reconstruction actions, it is essential to comprehend the reconstruction policy as a whole and consider the local political context in which this response has emerged from. By taking into account the current academic debates, the analysis of approaches of reconstruction in three different sectors, housing, tourist accommodation and land transport infrastructure, allows comparisons of experiences and critical investigation of the factors that have shaped particular outcomes.

In order to accomplish the general objective, this project will seek to address four specific objectives:

- To analyze the role and responsibility of agencies involved in the post-tsunami decision making process;
- To explore how pre-tsunami approaches to quantifying vulnerability and risk of coastal communities have informed the post-tsunami response.

- To characterize the strategies adopted for the reconstruction of housing, tourism and land transport sectors and to critically consider how these responses are shaped by the discourses of vulnerability and development.
- To investigate the nature of the relationship between international aid agencies and the government of Samoa, and to examine to what extent this relationship influenced the reconstruction strategy.

1.6 THESIS STRUCTURE AND CHAPTER OUTLINE

The following section describes the structure of the thesis and shortly outlines the content of each Chapter. Chapter Two provides a review of the academic literature surrounding the concept of vulnerability. The aim of this Chapter is to explore the key ideas emerging from the literature of vulnerability and risk, natural hazards and disaster. The first section describes the diverse factors that create or increase vulnerability of an individual or group. The global discourse of vulnerability and risk related to natural disasters is observed, with a focus on Small Island Developing States. In sections three and four, the shift of perception related to natural disasters and the evolutions of reconstruction approaches is analysed, by considering the tools and methods that agencies use in order to reduce vulnerability.

Chapter Three outlines the methodology utilised for this project. The different components considered within the qualitative research process are described. The use of a range of techniques including semi-structured interviews, scoping and observations on the field, and the analysis of governmental and non-governmental policy documents are portrayed and such choices are explained and discussed.

Chapter Four provides a contextual knowledge within which the post-disaster decision-making took place. It analyses the risk assessments undertaken over the Samoan coastlines before the tsunami. This section presents the method and recommendations of these studies. The results of Chapter Four allow for building a critique of the reconstruction policy adopted, discussed in the subsequent Chapters.

Chapter Five provides results related to the recovery plans of the housing, land transport infrastructure and tourism sectors. Moreover, the role of agencies involved in elaborating the recovery policy of each sector is highlighted. The decision making process and reconstruction strategies are identified and criticized.

Chapter Six critically discusses the global reconstruction policy adopted by the GoS. The influence of international aid partners on the reconstruction strategy is explored and the recovery approach is analysed. In addition, by taking into account the Samoan socio-cultural context, the last sections of this Chapter examines and discusses the potential risks and limitations related to the recovery strategy used.

Chapter Seven summarises the findings and main arguments developed throughout this project, and conclusions are made by addressing the objectives fixed. A critical observation of the limitations of the study is made, and recommendations for further research in this field of study are given.

CHAPTER II

CONSIDERATIONS OF THE POST-DISASTER RECONSTRUCTION PROCESS: DEBATES AND DISCOURSE

In 1990, the International Decade for Natural Disaster Reduction (IDNDR) was created to promote ideas of disaster reduction within the international community. Reducing vulnerability to natural disasters was presented as one of the main goals: "requiring concerted and coordinated efforts of governments, UN-system organizations,t he world's scientific and technical community, volunteer organizations and educational institutions, the private sector, the media, and individuals at risk. Vulnerability assessment…[is] essential" (United Nations IDNDR, 1992 in Heijmans, 2004: 2). The international community was alerted that, in order to define adapted strategies and limit the impacts of natural disasters, identifying vulnerability was one of the priorities (Anderson, 1995).Thus, the purpose of this Chapter is to review the key ideas that emerged from the literature of vulnerability, natural hazards and disaster, by means of which agencies manage the post-disaster reconstruction. The first section of this Chapter outlines the main reasons that lead or increasethe vulnerability of an individual or group. The second section analyses the general discourse built around vulnerability and risk of disaster related to developing countries, and more particularly SIDS. Section three and four observe the shift of approach adopted by agencies in post-disaster management, including the ideas of "build back better" and "opportunity for development" used within the reconstruction phase. These two sections also critically review the means and methods by which international aid agencies and academics have been seeking to reduce the vulnerability of disaster prone countries.

2.1 VULNERABILITY: CONCEPT AND PERCEPTION

Nowadays, the majority of agencies involved in post-disaster response use the concept of 'vulnerability' to define the different elements and processes causal of disasters (Heijmans, 2004). Special attention is given to developing countries identified as more vulnerable by the

'international community' and representing a growing field of research for academics. Nevertheless, 'vulnerability' is certainly not understood similarly by all agencies involved in disaster management (Cutter, 1996), and as Heijmans (2004: 1) remarks, defining vulnerability principally depends "on the user and its role in society". The concept of vulnerability is generally utilised within the literature of risk, hazards and disasters (Hewitt, 1983; 1997), and is growingly applied to studies in development, global change and environment (Cutter, 1996). The term is generally used to designate a system at risk (Wisner et al., 2004), and a situation with a potential of loss of security (Adger, 2000). Within this general meaning, Heijmans (2004) identifies that agencies involved in disaster response perceive three main causes creating or increasing vulnerability: (1) natural events, (2) economic factors and (3) societal capacity, which are further explained in the following sections.

2.1.1 Nature as Cause

A first field of study identifies that vulnerability originates from a pre-existing situation that places people at a certain level of risk. The United Nations (2004) define risk as the expected losses resulting from interactions between natural or human induced hazards and vulnerable conditions. Thus, vulnerability depends on exposure to a biophysical hazard which relates to hazardous conditions and whether or not people live in a risky area (e.g. coastal zones, floodplains, seismic area), to a degree of loss (e.g. life, house and land) linked to the occurrence of an event (e.g. cyclone, tsunami, earthquake) and its magnitude, duration and occurrence (Cutter, 1996).

The International Federation of the Red Cross and Red Crescent Societies declares that the number of reported natural disasters have more than doubled from 1,100 in the 1970s affecting 700 million people to 2,742 in the 1990s, impacting about 2 billion people (Freeman, 2004: 429). For the IFRC (2002: 185-7 in Bankoff et al, 2004) there were 368 reported disasters in 1992 affecting 170,478,000 people and 712 disasters in 2001 affecting more than 344,873,000. Despite this disparity of data, there seems to be a consensus on that the number of disasters increased and the augmentation of frequency and severity of extreme weather events is shown as one of the factors for this trend (Freeman, 2004). The Intergovernmental Panel on Climate Change (IPCC) (2001) explains that global warming will lead to this

increase of natural hazards resulting in more floods, cyclones and droughts. Scientists highlight issues of sea level rise based on observations of the last few decades (Mitchell et al., 2001). The IPCC (2007) also states that climate change results in an aggravation of erosion, an increase of storm surges and inundations and that this trend is expected to augment for the next 50 years (Bettencourt et al., 2006).

However, there is also literature indicating that these changes might be due to natural oscillations of the Earth's temperature and that the lack of long term data on these factors does not allow for such predictions to be made (Gardiner, 2004; Grundmann, 2007). Despite scientific debates concerning climate change and related issues (Carvalho, 2003), Western media largely propagate images of catastrophic events including floods, droughts, earthquakes and make the link with climate change (Doulton and Brown, 2009; Sampei and Aoyagi-Usui, 2009).

Furthermore, the international community including scientists, international organizations relayed by the media agree that developing countries are the most impacted by this increase of extreme events, being the first victim of disasters. Of the 49 poorest countries, 24 are exposed to an elevated rank of disaster risk, and a quarter of the poorest countries were hit by two to eight important disasters in each of the past 15 years (Freeman, 2004: 430). Since 1980, 141 million people lost their house experiencing 3,559 natural catastrophes. From those homeless, 97.7% were residing in developing countries (Freeman, 2004). Particularly at risk is Latin America where 90% to 99% of floods and droughts are predicted to be more frequent over the next 50 years (Freeman, 2004). It is said that sea level rise could cause the Pacific islands to be reduced in size or even disappear and climate change will engender an intensification of tropical cyclones (Bettencourt et al., 2006).

On the other hand, Bankoff (2001) states that the accent put on the particular exposure of developing countries to natural hazards result in the classification of particular regions of the globe that need to be perceived by the public opinion as more dangerous than others. This approach separates the world in two zones, one where disasters occur repeatedly, particularly countries close to the equatorial belt, and another one where disasters a less frequent, Europe and North America (Hewitt, 1995: 121-2). In fact, the idea is to highlight that 'they' are different to 'us' (Bankoff, 2001). Consequently, developing countries are portrayed as the most vulnerable to extreme events related to climate change effect (Parry et al., 2007),

becoming a major focus of initiatives for vulnerability reduction and adaptation policies (Doulton and Brown, 2009).

2.1.2 Economic cost as cause

Economic capacity to deal with disasters is also identified as a cause of vulnerability. Therefore, the macro-economy of financial sectors and government financial policy are presented as factors of vulnerability (Benson et al, 2000). Developing countries are the most socio-economically affected by natural disasters. Between 1990 and 1998,97% of death resulted from natural disasters in developing countries (World Bank, 2000). Because of the increase of natural hazards and the growth of population in vulnerable areas, the economic losses linked to natural disasters have considerably augmented (Figure 2). Also, Munich Re, the largest insurance company in the World, projects that the global direct cost of natural disasters will attain $300 billion/year by 2050 (Munich Re, 2002 in Freeman, 2004).

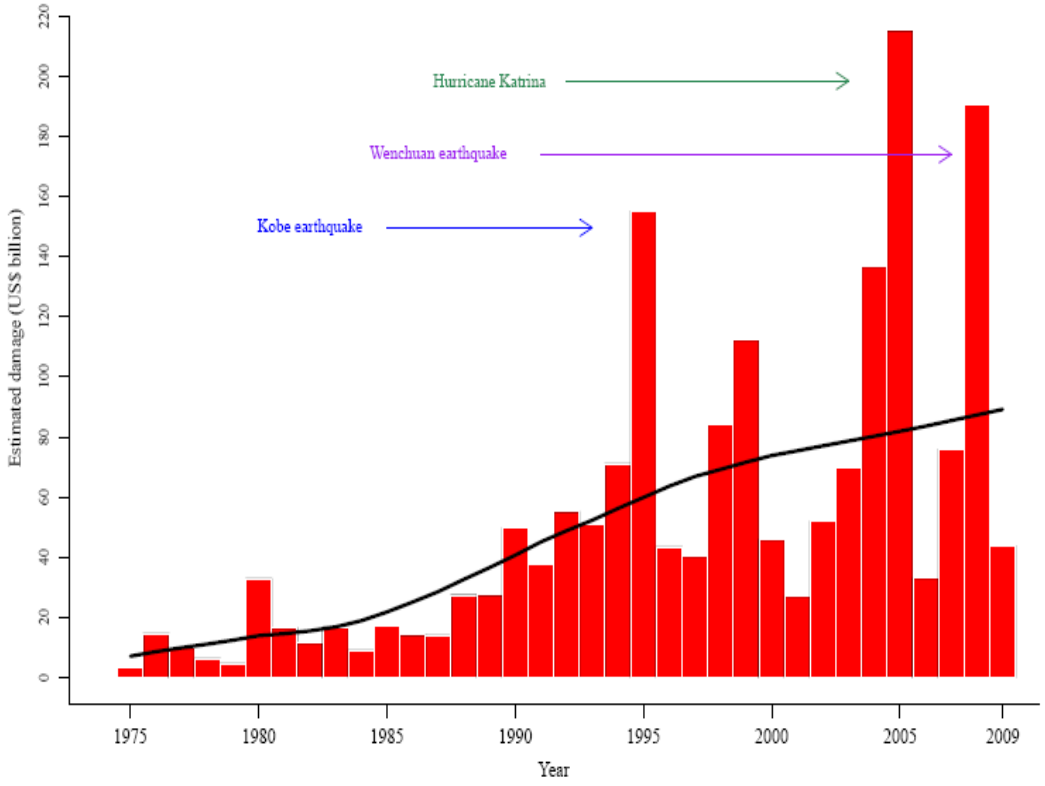

Figure 2: Estimated damage (US$ billion) caused by reported natural disasters 1975 − 2009 (Source: OFDA/CRED International Disaster Database, 2010).

During the period 1985-1999, direct losses caused by disasters amounted to 57.3% in industrialized countries accounting for 2.5% of their combined gross domestic product (GDP). At the same time, developing countries represented only 24.4% of the losses, but which was 13.4% of their combined GDP. Also, when considering the massive disparity in the GDP between industrialized and developing countries, Gilbert and Kreimer (1999) identify that the per capita cost of natural disasters is 20 times higher in poor countries. Benson and Clay (2000: 16) state that for the last 30 years, low-income countries had a slower development of their economy than less-hazard prone countries which had the same per capita income. For example, Cyclone Ofa hit the coast of Niue in the South Pacific in 1990 with damage estimated at US$ 4 million, but which represented 40% of their GDP (UNDHA/SPDRP, 1997). In comparison, the most important storm that France experienced was in December 1999, engendering losses of US$ 8 billion, but only affected the country by 0.56% of its GDP (CRED, 2010).

Natural disasters have direct, indirect and intangible macroeconomic impacts on a country or a community (Figure 3). If reconstruction of physical assets represents an important component of total rebuilding cost, disasters have larger systemic impacts on regional or national economies (Vermeiren, 1991; Buckle et al., 2000). However, the importance of economic damage is usually underestimated, and secondary effects are usually not taken into account, such as fiscal policy changes and long term reallocation of investment resources (Benson, 2000). Also, short and long term effects on macro-economic performance depend on socio-economic context of the country at this time (ECLAC, 1999). Hence, disaster losses do not only include the visible damage (e.g. housing and infrastructure), but also indirect impact such as the production of goods and services, transport, employment and sectors such as tourism (Benson, 2000). For developing countries already subject to fiscal constraints, funding reconstruction is difficult as it means raising taxes, increasing borrowing or relocating existing budgets (Freeman, 2004). In addition, production for export goods tends to diminish, while demand for imports increases. Consequently this tends to increase inflationary pressure and deteriorate public debt, engendering the need for external borrowing for public and private sectors (Freeman et al., 2003).

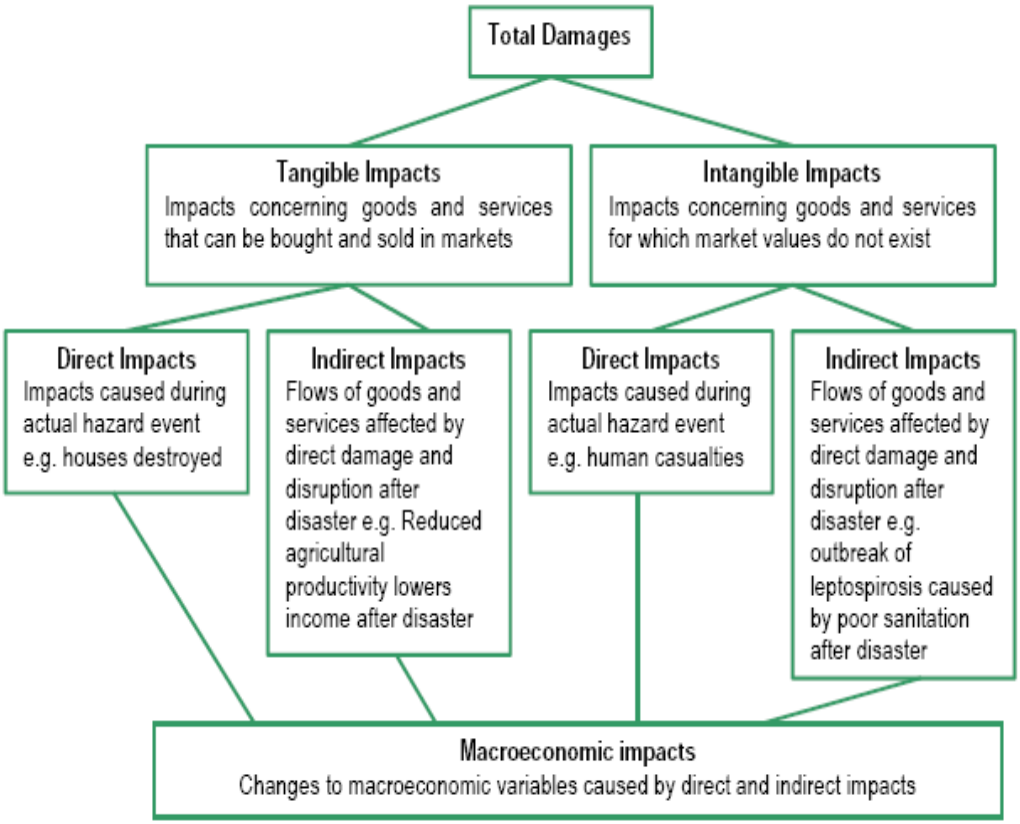

Figure 3: Direct, indirect, intangible and macroeconomic impacts of natural disasters. (Source: AusAID, 2005).

Freeman (2004: 429) highlights that the number of 'great' natural disasters, which requires for a country to receive the support of external assistance in order to cover the cost of reconstruction and recovery, has more than quadrupled from 20 in the 1950s to 89 in the 1990s. Vulnerability is progressively more expressed via the economic rhetoric and ideas of economic growth. In its mission of reducing poverty, the World Bank propose loans, expertise and advice, and resources to more than 100 developing countries to accompany them 'onto a path of stable, sustainable, and equitable growth' (Benson, 2000: 2). Also, economists develop financial solutions by calculating where and how to reduce vulnerability (Heijmans, 2004) including the use of safety nets, insurance systems and calamity funds (World Bank, 2001:135). Nevertheless, some authors critique the efficiency of those instruments, arguing that client countries may enter in a cycle of debt and dependence on financial institutions (Kardam, 1993; Annisette, 2004).

2.1.3 Societal Capacity as Cause

The level of vulnerability also depends on societal structure and capacity of response (Heijmans, 2004). In social science, Wisner et al. (2004) define vulnerability as the characteristics of an individual or community and its situation that influence its capacity to anticipate, deal with, resist and recover from the effect of a natural hazard. Vulnerability is contingent on social factors, such as distribution of power, cultural practices, institutional organization, access to information, education, security, good governance (Klein, 2003), social capital and social networks (Wisner et al., 2004; Dolan and Walker, 2004; Sutherland, 2005). Societal characteristics are defined by historical, cultural, social and economic processes that create capacities to deal with disasters and to efficiently respond (Cutter, 1996). Therefore, if societal structure is perceived as a cause of vulnerability, solutions for its reduction are political: "Reducing the vulnerability of the poor is a development question and such a question must be answered politically" (Cuny, 1983:7).

Vulnerability is usually perceived as a property but not as a product of social relations (Blaikie et al., 1994; Bankoff et al., 2004). However, vulnerability is not fixed, and results from social and economic processes making a historical knowledge essential for its comprehension. Heijmans (2004: 4) declares that a major problem with most disaster management agencies and governments is their ignorance of the socio-political origin of disasters. Lack of understanding of the construction of vulnerability comes from the lack of understanding of historical perspectives where roots and contexts may be causal to disaster (Oliver-Smith, 1986), with for example the structural role played by external and internal colonialism in determining those disasters (Bankoff et al., 2004: 4).

Heijmans (2004) states that government's 'development' projects such as mining exploitation, construction of dams or creation of recreation areas for commercial use might be beneficial for national or global actors but not for local communities. Heijmans (2004) also mentions that often without being consulted and displaced from their original land, local groups lose access to natural resources and resettle in unsafe places, creating new forms of hazards or leading to pollution. These policies are qualified by Heijmans (2004), as 'development aggression'. For example, the phenomenon of urbanization makes that in many developing countries a part of the population lives in risky areas highly exposed to natural hazards. Since 1960, the number of people living in cities has more than doubled, with about

40% of the world's population now residing in urban zones (Freeman, 2004). This tendency is expected to be amplified by 55% in 2030, and 70 of the world's 100 major cities may experiment a strong earthquake at least once every 50 years (Freeman, 2004). Urbanization and development of communities living in unsafe areas often result from pressures related to socio-economic, political and historical processes (Bankoff, 2001). Moreover, increase of local unsafe situations engendering an augmentation of vulnerability may come from government policies and issues of power relations reflected in the 'disaster pressure model' of Blaikie et al (1994).

The different approaches of vulnerability presented are generally combined by practitioners and decision makers of agencies involved in disaster response. International agencies participating on post-disaster reconstruction in developing countries usually perceive vulnerability as a consequence of external shocks and little economic capacity (Heijmans, 2004; Freeman, 2004). Societal structure as a cause of vulnerability is principally supported by environmentalists and activists (Heijmans, 2004). The way practitioners perceive vulnerability and risk gives rise to a discourse that guides actions and approaches used to manage the post-disaster reconstruction. However, Hewitt (1983) states that the general discourse is often associated with a Western cultural perception. Hence, the different aspects related to the discourse on vulnerability and risk will be analysed and discussed in the following section.

2.2 THE DISCOURSE OF RISK AND VULNERABILITY

> "The entire global south is a zone of vulnerability in need of Western intervention and rescue. Vulnerability, in other words, must be contextualised and politicised as well as connoted through images of suffering, disaster and hazard". Manzo (2010: 105).

The number of natural disasters has been increasing for the last few decades. Also, developing countries have been recognized by academics and development agencies to be the most vulnerable to climate change and related augmentation of natural hazards. Particular attention has been given to Small Island Developing States including the Pacific islands with

for example the IPCC (2007) arguing for the necessity for these regions to be more resilient to extreme events. Similarly, the Western media increasingly relay information on natural disasters (Manzo, 2010). Nevertheless, some argue that the Western media and the growing attention of the international aid community contribute to build a discourse where certain regions of the world are shown as unsafe (Bankoff, 2001) and in need of external aid intervention (Bankoff et al., 2004; Ferudi, 2007; Manzo, 2010).

2.2.1 Measuring Countries' Vulnerability

While there are different perceptions of vulnerability and little consistency in its definition (Cutter, 1996) international agencies, NGOs and researchers actively tried to measure vulnerability. Academics and agencies established indicators of vulnerability, including the United Nations Development Programme, Emergency Management Australia, South Pacific Applied Geosciences Commission (SOPAC) and the European Commission Humanitarian Office's (ECHO) Composite Vulnerability Index. A frequent method used is the calculation of "indicators" or "indexes" of vulnerability by compiling socio-economic and environmental variables generally within a country. The results are usually presented though mapping or scores in order to obtain a ranking of vulnerable regions of the World defined as geographic hot spots (O'Brien et al., 2006). These indices are composed of different elements such as GDP, adult literacy, debt service ratio, public expenditure on health, and human development index.

Nevertheless, a valid question is whether vulnerability is quantifiable or not, and to what extent the established indicators are appropriate and efficient to measure vulnerability. Also, varied authors declare that these indicators are useful but present limitations concerning their design and measurement system. First, their selection and calculation is commonly based on untested suppositions that relate to elements and processes that engender vulnerability (Brooks et al., 2005). In addition, selection of variables depend on a conceptual framework of vulnerability, which is cultural dependent (Ziervogel and Downing, 2004). Hoffman (1999) and Wisner et al. (2004) affirm that indices of vulnerability under-emphasize the cultural, emotional and subjective aspects of disasters. Lack of data, particularly important in developing countries, are often replaced by estimations and assumptions which lead to uncertain and inaccurate calculation (Villa and McLeod, 2002). Finally, indicators are poorly

tested and hardly ever validated. Fraser et al. (2003) declare that national indexes do not reflect intra-country disparities and do not take into account local contextual variations.

Another limitation comes from the difficulties to capture the dynamics and interactions that occur within a system. 'Vulnerability' can be defined by a number of variables including interactions and cumulative effects. Therefore, isolated indicators may miss the potential of multi-disciplinary approaches. Wisner et al. (2004: 332) considers that vulnerability should not only be measured at the time of the hazard occurrence, but also taking into account damages to future livelihoods stating that "the processes that generate 'vulnerability' are countered by people's capacities to resist, avoid, adapt to those processes, and to use their abilities for creating security, either before a disaster occurs or during its aftermath". Therefore, these indexes present a helpful framework for highlighting aspects of vulnerability, but may be used carefully due to the high level of uncertainty linked to natural events and human's interaction and behaviour. This emphasizes the necessity to develop the scope of existing frameworks, methods and tools (Ziervogel and Downing, 2004; Fussel and Klein, 2006). Despite the limitations of these indexes, they are commonly used to highlight the importance of foreign aid in highly vulnerable countries and to justify changes on local policies.

2.2.2 SIDS as Risky Places and the Necessity to be Resilient

For international organizations and academics, understanding the socio-economic and ecological components of a system permits the identification of key vulnerable sectors and provides a stronger basis for designing adaptation strategies and orientating policy and decisions for sustainable management (IPCC, 1998; Downing, 2003). Small Islands Developing States (SIDS) are subjects to a range of bio-physical and anthropogenic stresses that may exacerbate their socio-economic and environmental assets. Academics and experts list a range of factors of vulnerability intrinsic to SIDS, such as their small size and remoteness, limited natural resources, loss of traditional coping mechanism (Benson and Clay, 2000), level of unemployment, poor hazard forecasting abilities, small economies, high sensibility to external market changes, high import content (Briguglio, 1995; Pelling and Uitto 2001; Mimura et al., 2007) and their dependence on international aid for development (Bettencourt et al., 2006).

For these reasons, SIDS have been recognized by the international community to have limited capacity to cope with climate change effects by the international community, and Article 4.4 of the United Nations Framework Convention on Climate Change (UNFCCC) makes explicit commitments to the most vulnerable developing countries: "The developed country Parties shall assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects." This international commitment was reaffirmed at the Eighth Conference of the Parties (COP) to the UNFCCC with particular attention paid to small island developing states. The Hyogo Declaration and the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters was adopted at the World Conference on Disaster Reduction (WCDR) in 2005 in Hyogo, Japan. The HFA was negotiated and signed by 168 countries shifting the paradigm for disaster risk management from post disaster response to a more comprehensive approach that includes prevention and preparedness measures to reducing vulnerabilities and risks to hazards and emphasizes the necessity for building community resilience to disasters (Table1).

Table 1: Main priorities of the Hyogo Framework for Action 2005-2015.

1. Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.
2. Identify, assess and monitor disaster risks and improve early warning.
3. Utilize knowledge, innovation and education to build a culture of safety and resilience at all levels.
4. Reduce the underlying risk factors.
5. Enhance disaster preparedness for multi-level effective response.

Source: Hyogo Framework for Action 2005-2015.

For developing countries "enabling international environment is vital to stimulate and contribute to developing the knowledge, capacities and motivation needed to build disaster resilient nations and communities" (HFA, 2005: 13). The HFA highlights that States should cooperate with regional institutions, international financial institutions, donor agencies, nongovernmental organizations and international organizations on disaster risk reduction issues.

According to the HFA (2005: 17), building resilience of disaster prone countries can be done via "development of indicators (...) dissemination of best practices, lessons learned, available technologies and programmes, to support disaster risk reduction". States should also provide "periodic reviews on progress towards achieving the objectives and priorities of this Framework for Action" and could also, on a voluntary basis, financially contribute to the United Nations Trust Fund for Disaster Reduction. On the other hand, bilateral and multilateral agencies should support disaster-prone developing countries through "financial and technical assistance, addressing debt sustainability and technology transfer" (HFA, 2005: 17). As a result, disaster risk reduction measures could be mainstreamed into development assistance programmes, "including those related to poverty reduction, natural resource management, urban development and adaptation to climate change" (HFA, 2005: 18). In addition, developing international partnerships would lead to expand the insurance coverage and increase financing for post-disaster reconstruction and recovery. This cooperation could help to promote "an environment that encourages a culture of insurance in developing countries, as appropriate" (HFA, 2005: 19).

Similarly, the Mauritius Strategy Implementation (MSI) provides a framework for specific actions to be taken at the national, regional and international levels in support of the sustainable development of SIDS. The MSI acknowledges in paragraph 6 that, considering their high level of vulnerability, SIDS are committed to promoting sustainable development and improving the livelihoods of peoples by the implementation of strategies that build resilience and capacity to address the unique and particular vulnerabilities (MSI, 2010). The MSI declares that, because of "the particular vulnerabilities and insufficient capacities of least developed countries to respond to and recover from disasters" (HFA, 2005: 13) international support is required for carrying out adequate programmes and developing institutional mechanisms. These mechanisms include financial and technical assistance in the aim to build capacity to cope with disasters. Hence, these international agreements are part of a global discourse that, in the name of vulnerability reduction, underscores the intervention of developed countries in SIDS's affairs as a necessity. These approaches are linked and share same perception of vulnerability, same goals or risk reduction, same tools and measures to attain 'best practices', and emphasize the need for involving international organizations and financial institutions in the policy carried out.

2.2.3 Risk and Vulnerability as Western Discourse

The international community has reached the consensus that 'risk' is an essential element for managing vulnerability and certain zones of the globe (here SIDS) are highly vulnerable places. SIDS include Caribbean islands and Pacific islands, both situated in different hemispheres but sharing similar problems: exposure to natural hazards and limited socio-economic capacities. For some researchers, this discourse principally focuses on the situation or state of those populations by tending to highlight the considerable concentration of vulnerability and risk in certain regions of the globe, rendering them unsafe and dangerous places (Bankoff, 2001; Bankoff et al., 2004). Hewitt (1983: 6) talks about 'geography of risk' and Bankoff (2001) explains that the discourse presenting particular zones highly exposed to extreme events linked to climate change and with little capacity of adaptation generates a responsibility for the Western nations to help them to be safer places to live.

This discourse on vulnerability of particular regions of the world is greatly relayed by the Western press and television. For the last decade, natural disasters, ideas of risk and vulnerability of certain zones of the globe caught the attention of Western media that show reports on earthquakes, droughts, cyclones, famines, floods and tsunamis almost on a daily basis. Doulton and Brown (2009) observed climate change and related natural hazards coverage within the United Kingdom 'quality' newspapers. They conclude that coverage of such themes has regularly increased, which in 2004 reached a level that has more than doubled compared to any previous peaks (Boykoff and Rajan, 2007). Studies of Sampei and Aoyagi-Usui (2009) corroborate this finding when analysing Japanese newspaper coverage of global warming from the period of 1998 to 2007. They find a correlation between public concern about this issue and increase of media coverage during this particular period.

Also, what Furedi (2007: 487) qualified as 'the recently emerged cultural narrative of vulnerability', transmitting ideas of danger and vulnerability (Manzo, 2010) make that intervention of external aid partners is progressively accepted by the general opinion (Doulton and Brown, 2009; Sampei and Aoyagi-Usui, 2009). In this optic, Manzo (2010: 105) declares that "the entire global south is a zone of vulnerability in need of Western intervention and rescue. Vulnerability, in other words, must be contextualised and politicised as well as connoted through images of suffering, disaster and hazard". Bankoff et al (2004) declares that vulnerability has progressively been integrated within mainstream development

jargon to categorize people particularly in need of interventions and which has been increasingly adopted by experts.

2.2.4 Risk Reduction as a Norm: Building the Public Opinion

The 'international community' represented through The United Nations Framework Convention on Climate Change, the Mauritius Strategy Implementation and the Hyogo Declaration and the Hyogo Framework for Action 2005-201, express the perception of vulnerability and risk reduction policies that is adopted. This perception is reflected within the media, development programs of organization such as the World Bank, but also within the academic research with areas of focus such as disasters related to climate change (e.g. Brooks and Adger, 2003; Schipper and Pelling, 2006), adaptation and vulnerability of the poor (e.g. Adger et al., 2003; Parry et al., 2001), and mitigation strategies (e.g. Chandler et al., 2002; Davidson et al., 2003). Also, the necessity for SIDS to mitigate risk and reduce their vulnerability becomes the norm. Norms are defined as 'collectively held ideas about behaviour (Finnemore, 1996a, 23) and show governments the adequate position to adopt in a particular situation. This norm is built within a network of entities that are mainly Western, producing a 'consensual knowledge'. Networks bring together non-governmental entities with international organizations representatives, the public sector including politicians and government officials, the media and the private sector. The norms and values have a considerable impact on the elite opinion and in orientating the public debate (Stone, 2000).

While the majority of actors involved in disaster and risk mitigation recognize that developing nations are the most vulnerable, none of them explicitly refer to the way people at risk perceive and understand disasters. Nevertheless, both populations affected by a disaster and managers involved in disaster response react to disaster risk differently in function of their personal understanding, codes and cultural belief (Heijmans, 2004). Therefore, the majority of aid agencies make hypothesises on people needs and see them as beneficiaries of their programs, but not as creative actors of disaster response and vulnerability reduction (Heijmans, 2004). Also, Heijmans (2004: 6) states that "it is important that outsiders understand both sides that make up local people's perception of risk, rather than analyzing and measuring their vulnerability with outside criteria".

Nevertheless, norms and consensual knowledge resulting from the Western perception of risk influence governments and international organizations in the development of their policy. According to True and Mintrom (2001), international norms such as mainstreaming of 'best practice' partly explain how nations that often have divergent interests use similar policy approaches where there is no apparent need for it. The connection between political leaders, bureaucrats and experts increase legitimacy and credibility of policies recommended (Stone, 2000). Also, vulnerability and risk reduction policies are very based on technical, scientific and institutional learning transfer, approach that is observed in the next section.

2.3 POLICY LEARNING TRANSFER: APPROACH, TOOLS AND MEASURES

> "While the consequences of disasters are not entirely preventable it is often technically possible to mitigate them (...) Both the typically recurrent nature of disaster and the availability of technological, social, and organizational remedies make disaster response an area where mitigation – policies and actions that are intended to reduce the impact of the next disaster – must be an integral part of a strategy of both recuperation and pre-disaster planning" (World Bank, 2005b:1).

In general, policy promoting learning transfer comes from an advocacy union that comprises international organizations, researchers, journalists, experts, political leaders and bureaucrats who have common values, vision and philosophy (Bennett and Howlett, 1992: 284).Policy orientated learning is driven by scientists and experts who produce a discourse that shares common policy language and rhetoric (see the concept of 'discourse community' (Hansen et al., 2000) and 'discourse coalitions'(Hajer, 1993)) generally validated by decision makers, and which provide them with legitimacy and authority over certain issues. International organizations, NGOs, foundations, training institutes, experts that are all knowledge actors diffuse policy ideas via persuasion and advocacy, as well as via cooperative approach with officials (Stone, 2000). For example, within its development programs, the World Bank increasingly uses the discourse of technical knowledge and learning, and institutional capacity and good governance, targeting developing countries and vulnerable communities (Stone, 2000).

Nevertheless, varied authors have criticized the policy orientated learning approach and its technical rhetoric. For Hewitt (1983:8) this approach means that 'disaster risk' becomes a matter of experts characterized as "a top-down, technocratic and Western expert vision". Developing countries are therefore perceived to have incapacities to deal with disasters and to protect their own citizens. Thus, industrialized countries offer them to transfer their knowledge based on engineering and other scientific capacities (Bankoff, 2001). Some authors declare that this vision tends to reproduce colonial perception when the North was bringing knowledge to the South countries (Bankoff, 2001; Manzo, 2010). The following sections describe Western disaster management policies that are transferred to other countries and highlight their strengths and weaknesses.

2.3.1 Disasters Are Not Natural

The World Health Organization (2008: 1) defines disaster as "a serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources". The organization identifies natural disasters as "events brought about by natural hazards that seriously affect the society, economy and/or infrastructure of a region. Depending on population vulnerability and local response capacity, natural disasters will pose challenges and problems of a humanitarian nature"(World Health Organization, 2008: 1)

Traditionally, disasters have been seen as a result of the degree, frequency, and speed at which natural hazards impact a particular region. Thus, disaster shocks have been interpreted as exceptional and single events operating outside 'normal' development strategy and practice (Benson and Clay, 2000; Pelling, 2002). It is only since the last few years that disaster vulnerability has started to be considered has a necessity for being integrated into development planning (Pelling, 2002; HFA, 2005). Academics (Benson and Clay, 2000) and international organizations (World Bank, 2005c) explain that rather than a single and isolated event, disasters must be considered as a series of successive random shocks having long term impact on the development of exposed countries. Studies on weather events related to climate change show that geographical areas are regularly visited by similar kind of hazards

(Bettencourt et al., 2006). Therefore, it is argued that an efficient strategy for managing disaster risk must begin with an identification of the hazards and what is vulnerable to them (Benson and Clay, 2000). Measuring the probability of stresses to occur and analysing aspects of a coastal system at risk is said to be determinant for populations to adapt, reduce vulnerability, diminish damage and offer opportunities (Evans et al., 2006).

The literature growingly emphasizes the important recognition of natural disasters exposure and their impact as a component of long-term development planning for vulnerable countries (Freeman, 2000). However, after providing solutions mainly based on the natural environment, the perception has been shifting by rejecting the idea that a disaster is 'natural' and that it simply and only results from an external natural event. Rather, disaster depends on the relationships and interconnection between ecological systems and human societies (Wisner et al. 2004; Adger 2006). Disasters and the importance of damage caused are function of physical, technological, socio-economic and institutional capacities of a country (Geis, 2000; McEntire, 2004). This approach of disaster denotes the need for reducing socio-economic and ecological vulnerability and improving 'resilience' of particular communities and environmental systems (Bankoff et al.,2004; Wisner et al. 2004; Brooks, Adger et al. 2005; Parks and Roberts 2006). Consequently, the idea of 'building back better' recently emerged (UNICEF, 2005; USINFO, 2005; Clinton, 2006), adopting an approach in which natural catastrophes must be put in the context of building sustainable development for communities and avoiding to reproduce existing vulnerabilities of even create new ones (Lewis, 1999; Wisner et al., 2004).

2.3.2 The 'Building Back Better' Approach

The 'build back better' approach emphasizes the need for preventing new disasters (Flint & Brennan, 2006; Helsloot and Ruitenberg, 2004; Ogawa, Fernandez, & Yoshimura, 2005). 'Building back better' refers to rebuild in order to attain a state that is said to be less vulnerable than before (Kennedy et al., 2008). This approach can certainly be associated with the concept of resilience that relates to the functioning and interaction of the systems rather than the stability of their components or the ability to maintain or return to an equilibrium state which would leave it at the same degree of vulnerability as it was before being impacted by an event (Walker et al., 2004; McFaden et al., 2008). Instead, in its proactive

interpretation, resilience means accepting and integrating the inevitable character of changes with the objective to enhance systems capacity to adapt (Handmer and Dover, 1992; Carpenter et al., 2001) through anticipation measures and learning (Downing, 2003; McFaden et al., 2008). However, Kennedy et al. (2008) explain that there is to date no consensus around this approach and the way to apply it. Hence, Kennedy et al. (2008) question whether 'better' means safer and earthquake or tsunami proof, more resistant to extreme events, more aesthetic, more environment friendly, more modern, tending to improve livelihood, or a mix of these.

Following the tsunami of 2004, Bill Clinton (2006), the former US president, suggested 10 focus points in the aim to define the 'build back better' concepts (Table 2). Ideas of responsibility of individual households, government preparedness, capacity building, sense of data, complex nature of international aid-government partnership, role of non-state agencies and resilience were enounced. These recommendations are very similar to those of the Hyogo Framework for Action or of the Mauritius Strategy in the sense that they promote more intervention of non-state actors such as NGOs, multilateral agencies and the private sector, which is very reflective of neoliberal values where states play a limited role.

While no precise definition exists concerning the meaning of "building back better" an attempt is made to produce international 'best practice' policies. In the literature of post-disaster reconstruction this is reflected with ideas of adaptive capacity, building capacity, technology transfer, technical assistance, knowledge sharing, learning and sustainable development (Hewitt, 1983; 1995). These ideas are present in the discourse of the international scientific community and international frameworks for disaster risk reduction such as the HFA (2005). The Hyogo Framework for Action (2005: 13) promotes a cooperation between States and international organizations and financial institutions (see section 2.2.2) that should give rise to "common practices", increase of advocacy, exchange of information and experience, scientific monitoring of hazards and vulnerability, and improvement of institutional capacity development in order to deal with disaster risks.These ideas are also reflected within the approach adopted by international organizations such as the World Bank. They believe in helping developing countries to overcome their lack of knowledge and capacity which the organization considers to be a synonym of underdevelopment (World Bank, 2005b:1).

Table 2: Clinton's propositions defining the 'build back better' approach.

Proposition 1: Governments, donors, and aid agencies must recognize that families and communities drive their own recovery.
Proposition 2: Recovery must promote fairness and equity.
Proposition 3: Governments must enhance preparedness for future disasters.
Proposition 4: Local governments must be empowered to manage recovery efforts, and donors must devote greater resources to strengthening government recovery institutions, especially at the local level.
Proposition 5: Good recovery planning and effective coordination depend on good information.
Proposition 6: The UN, World Bank, and other multilateral agencies must clarify their roles and relationships, especially in addressing the early stage of a recovery process.
Proposition 7: The expanding role of NGOs and the Red Cross/Red Crescent Movement carries greater responsibilities for quality in recovery efforts.
Proposition 8: From the start of recovery operations, governments and aid agencies must create the conditions for entrepreneurs to flourish.
Proposition 9: Beneficiaries deserve the kind of agency partnerships that move beyond rivalry and unhealthy competition.
Proposition 10: Good recovery must leave communities safer by reducing risks and building resilience.

Source: Kennedy et al., 2008

The World Bank (2005: 1) states that the typically recurrent character of disaster and the "availability of technological, social, and organizational remedies" means that mitigation policies seeking to reduce impacts of the next disaster have to be integrated within the strategy of reconstruction. The international community affirms that vulnerability reduction and development are attainable through transfer of technology, transfer of knowledge, cooperative research and adaptations measures (UNFCC, 2008). 'Disaster prone' countries are recommended to increase their knowledge about hazard risks via education and training, and to improve land use planning skills, warning systems, building capacity, engineering and construction codes, insurance models and the use of technology (Mileti, 1999; Raschky and Schwindt, 2008; UNFCC, 2008). Finally, the approach and rhetoric used by Bill Clinton, the UNFCC and the World Bank all converge and can be defined as policy orientated learning.

2.3.3 Pre and Post Disaster Data as a Tool for Reconstruction

In many developing countries the lack of data available on key variables is said to be problematic (Pelling and Uitto, 2001). Limited information such as rural and urban service provision, quality of housing infrastructure and adherence to construction codes, insurance coverage, and emergency services tend to increase difficulties to inform policy decision making (IPCC, 2001; 2007; Nicholls et al, 1999). Thus, Smith (2010) advocates that protocols of pre and post event data collection should be part of the planning for post-disaster reconstruction. Data collection should include standard geo-referenced databases with information about existing and projected housing stock, public infrastructure and facilities, their location, square footage, contents, building type, year of construction, codes and standards utilized and other additional characteristics available. From this, pre and post-disaster data enables evaluating community's vulnerability and assesses the effects of policy and decisions aiming to promote development and disaster resilience objectives (Smith, 2010).

The involvement and collaboration of all stakeholders, decision-makers, disaster risk managers, the scientific community, civil society and local communities is needed to efficiently monitor and disseminate pre and post disaster information (SEM, 2006). In addition, planning recovery and anticipatory measures necessitates a sound base to orientate policy and development approach (Berke and Campanella, 2006). Also, as disaster cost is highly variable, a cost/benefit analysis is essential to guide decisions (Dedeurwaerdere, 1998; Cooper et al., 2008). A report from the World Bank (2004) recommends the needs for constituting weather data indexes to facilitate disaster assistance in order to provide valuable information to both public and private decision makers about the risk exposure to different extreme natural events in different areas of a country (Varangis et al., 2002). At the same time, Smith (2010) points out the importance of collecting post-disaster data such as the assessment of damages following an extreme event (e.g. importance, type, special distribution of damages) which helps highlighting zones that require management improvement. Generally, assessment are carried out according to the disaster cycle model where damage and needs assessments seek to identify economic, physical and social impact and for guiding the reconstruction policy (Heijmans, 2004). Nevertheless, authors explain that after a disaster rapid decisions are made with often incomplete and poor information that is subject to change over time. For example, data about a cyclone impact including wind

speed and rising water on a structures before being repaired or demolished can be unclear, but used as a frame for reconstruction.

Nevertheless some critiques arise from this approach. First, this vision of disaster response is again very technocratic and makes that vulnerability reduction is represented as an issue that can only be resolved by disaster specialists (Hewitt, 1983). It requires costly instruments and technological advances (Heijmans, 2004) hardly affordable for developing nations. For Hewitt (1983:8) it reflects a top-down approach based on socio-cultural belief and perceptions of 'man' and 'nature'. In addition it may guide reconstruction in function of pre-decided outcomes. Another critique comes from the perception of risk that may differ from external managers and planners to the perception of risk from 'victims' of natural disasters. Historically societies have always experienced, dealt with and even been built on catastrophic events, but did not rely much on external assistance (Heijmans, 2004). Via this experience societies have constructed a certain perception of risk and vulnerability that agencies involved in disaster response tend to ignore.

2.3.4 Mitigation Strategies and Institutional Capacity

Academics and international organizations notice that despite the imposition of building codes and preventives measures at a early stage of the reconstruction process, the main problem is often related to agencies and national governments poor monitoring of these norms through time (Burnside and Dollar, 2000; OECD (2004). For example, following the Turkish earthquake of 1999, The United Nations agency pointed out problems of urbanization, inconsistent application of construction regulations, and inappropriate location of industrial facilities going against environmental protection regulations as main elements responsible for the considerable impact (UNISDR, 2002). Monitoring and enforcement of legislation concerning building codes and standards failed to prevent the damage of the earthquake, highlighting problems of good governance (OECD, 2004). The report concludes that the site of construction highly exposed to hazard risk should be avoided and regulations should encourage relocation, using subsidies or other incentives if necessary (OECD, 2004).

Similarly, in Jamaica, Hurricane Gilbert destroyed 30,225 homes. Hence, poor preparedness of the housing sector has been highlighted as the main reason for such losses, partially as a

result of structural adjustment policies that encouraged poor maintenance of rental property and noncompliance with building standards (Ford, 1987, quoted in Blaikieet al., 1994). The United Nations Framework Convention on Climate Change (2006) affirms that poor monitoring of norms and construction standards can be overcome with the collaboration between the government, the insurance industry, donors and the civil society that will be required to share the burden when disasters occur.

For Bankoff (2001) showing problems of inadequate monitoring and regulation of building standards and codes in developing nations, is another way for industrialized countries to blame those for their lack of institutional capacity. However, building codes and standards generally come from industrialized country systems which have been introduced to developing nations. Despite their legal existence, it is usual that the population does not use them, frequently living in traditional houses resulting from ancestral knowledge and using local material. However, construction codes and application of standards may be imposed and the use of traditional material may be prohibited resulting in a technology that is only accessible to large businesses (Schilderman, 2004). Due to a lack of connections, information and coordination small scale actors are rarely involved in national level decision making processes. In developing countries, local businesses generally cannot compete with foreign companies and/or multinationals (Lyons, 2008). Thus, rather than many small-scale projects offering development opportunities for local actors (Schilderman, 2004), imposition of building codes and other technical aspects usually involve international companies as main actors of large projects, which own greater capital, better logistical capacity and possess a big influence on governments (Lyons, 2008). For Stone (2000), this approach partly contributes to reinforce the idea of a global governance system where norms and codes are fixed at an international level and make difficult for national or local scale actors to participate in the recovery process.

2.3.5 Land Use Planning Policy

Land use planning tools including zoning, subdivision regulations, and financial investments in community infrastructure are said to be useful to manage the location, type and density of development by avoiding vulnerable hazard areas, or influencing development patterns after a disaster (Smith, 2010). The International Strategy for Disaster Reduction (ISDR, 2002)

recommends the strengthening of a range of actions such as legislation, covering land use regulation, building codes and links to environmental protection. The ISDR (2002) also suggests the adoption of comprehensive urban development strategies and land use plans with local governments playing a role with regard to components such as building standards, land and property markets, land and housing taxation, planning processes and infrastructure construction and management. Despite some voices suggesting that such planning tools may be used in ways that exacerbate the vulnerability of a system (Burby, 1998; Smith & Wenger, 2006), the World Bank (2004) states that land use planning can provide significant risk reduction benefits by for example banning or freezing construction in areas prone to natural hazard risks. The UNFCCC recommends the creation of land use plans and enforcement strategies based on infrastructure and settlements vulnerability assessment in order to enhance institutional capacity and impose, if required, land zoning restrictions with for example beach setbacks for construction. This has been observed for example in Sri Lanka after the tsunami of 2004, where the government imposed a coastal buffer zone of 100 to 200 meters prohibiting construction within this perimeter (Jayasuriya et al., 2005; Ingram et al., 2006).

Nevertheless, some authors assert that the absence of comprehensive coastal zone management, planning laws and practices can 'inadvertently' (or not) increase vulnerability. For example, policies that engender the destruction of natural settings that protect the environment and coastal communities (e.g. mangroves), the construction of sea defences which may alter natural beach processes (e.g. seawalls) (Tompkins et al., 2005), or strategic choices that may give advantage to certain groups already in situation of power (Klein, 2005). Moreover, one of the policies often used by planners along the reconstruction phase is the resettlement of populations that are too exposed to potential risk of another disaster. However, for many reasons exposed within the next section, such decision does not prevent them from being exposed to new disasters, engendering a possibility for vulnerability augmentation.

2.3.6 Resettlement as Risk Mitigation Option

Resettlement as a mitigation action in the face of potential risk is nothing new and the human history in marked by population movements (Quarantelli, 1984). Resettlement programs following a disaster is an option often recommended by officials (Oliver-Smith, 1996) and

has been a wide field of study and debates confronted policy makers, planners, and social researchers (Cernea, 1997). However, even if in some cases this option presents positive outcomes, imposed or involuntary relocation is generally unsuccessful (Oliver-Smith, 1982, 1986; Shanmugaratnam, 2005; World Bank, 2005a), and often makes the population affected more vulnerable (Ingram et al, 2006).Commonly, disaster victims insist in staying at the place that has been destroyed, mainly because of the strong human-land relationship described as 'the maternal roots" (Zwingmann, 1973), and material concerns (Oliver-Smith, 1977; Coburn et al., 1984). Partridge (1989: 375) declares that "from the perspective of displaced people, forced resettlement is always a disaster", and some researchers estimate that relocation should be avoided or minimized along the recovery phase (Cernea, 1991: 26).

The main reason cited for adopting resettlement plans is the vulnerability to natural hazards, factor of risk for development on the long term (Oliver-Smith, 1991). Even though safety issues exist, Oliver-Smith (1991: 14) declares that earthquakes and other natural disasters represent "convenient pretexts for population concentration (and control), the conglomeration of population groups for national or regional development plans or the national integration of minorities". Also, some authors state that relocation may hide economic reasons such as land access (Aysan and Oliver, 1987: 31; Klein, 2005). Thus, relocation programs may be used as an 'alibi' to attain pre-defined political goals.

Relocation programs disrupt the functioning of a society that have generally involved centuries of cultural practices and tradition (Oliver-Smith, 1991), and are hardly successful as they require complex processes of adaptation (Scudder and Colson, 1982). Political factors including organizational structures and territoriality; economic components such as soil fertility, available resources, and employment or labour; cultural aspects that are the environment-religion relationship, world perception, values, and identity are different elements to consider when carrying a resettlement program. For Coburn et al. (1984: 52) success or failure of resettlement depends on the physical environment of the new location, the connection to the old village and the intrinsic community capacity to adapt and develop. The outcomes can be estimated by the extent to which the group or community "became self-reliant in its own right or a viable partner to its original village". Poor choice of new location (Ingram et al., 2006) often due to "speedy choices" (Coburn et al., 1984; Razani, 1984), distance from employment and social services (UNDRO, 1982: 47), lack of cultural or social networks (e.g. neighbours, religion) considerations (Razani, 1984; Kronenburger, 1984), and

housing design are few of the many factors commonly highlighted as a failure or rejection of post-disaster relocation programs. Furthermore, unsuccessful policies have been showed to be due to poor consultation of planners with affected populations (Oliver-Smith, 1986; Lamping, 1984; Razani, 1984).

Furthermore, Cernea (1988: 19) declares that the main objective of a resettlement program should be to ensure that relocated population have "opportunities to become established and economically self-sustaining in the shortest possible period". Thus, resettlement should consider aspects of development by taking into account social and physical infrastructure (e.g. hospitals, schools, roads, and water service), job access, cultural and social values, and knowledge of the local environment (Oliver-Smith, 1991; Cernea, 1997). All this requirements are costly and take time so, researchers that have worked for years on issues of relocating affected populations, recommend for this choice to be made only as the last option, and with every effort done in order to rehabilitate original sites (Aysan and Oliver 1987: 31; Oliver-Smith, 1991).

2.4 THE DEBATE OF RECONSTRUCTION AS AN OPPORTUNITY FOR DEVELOPMENT

Post-disaster reconstruction and reduction of vulnerability are slowly being associated and presented as an opportunity for development or 'sustainable development' (Benson and Clay, 2000). During the World Summit on Sustainable Development held in Johannesburg in 2002, the United Nations International Strategy for Disaster Reduction (UNISDR) presented disaster reduction as an issue for consideration in the 'sustainable development' agenda and a crosscutting concern relating to the social, economic, environmental and humanitarian sectors (UNISDR, 2002).

2.4.1Disaster as an Opportunity for Anticipatory Actions

International organizations recommend that every development project should take into account risk assessment at the appraisal stage and Environmental Impact Reviews should

automatically contain a section on hazard proneness and apply appropriate disaster risk reduction measures when required, with careful attention to the protection of lifeline infrastructure and critical facilities (ISDR, 2002; World Bank, 2004). Varied studies have shown the positive outcomes of taking anticipatory actions, which are more costly on the short term, but valuable on the longer timeframe. As an illustration, a report from the UN concerning the Caribbean region, stands that it is less expensive to design and construct a structure to standards that would resist maximum expected wind or seismic forces in a specific location, rather than building to inferior standards and suffer bigger damages (UNISDR, 2002). Similarly, the US Federal Emergency Management Agency (FEMA) calculates that a dollar spent on mitigation saves two in coping with disasters (World Bank, 2001). Also, a report sponsored by the World Bank concludes that the cost of reconstructing infrastructure impacted by a natural disaster often approaches 20% to 40% over the original infrastructure cost, much more than taking preventive measures at the design stage (Bettencourt et al., 2006).

Anticipation measures and investment in better quality infrastructure in order to reduce vulnerability appear as evident and very consensual. However, these initiatives represent a great cost that developing countries with their limited financial resources can hardly cover. While this 'consensual knowledge' may be based on ethical motivations, some suggest that it may be used for more pragmatic reasons strongly linked to economic and bureaucratic interests and traducing political opportunism (Hann, 1995; Stone, 2000; Bankoff, 2001). Nevertheless, developing country leaders may go after 'best global practice' as it is often part of loans and structural adjustment requirements of the IMF, World Bank or other international financial institutions (Kardam, 1993; Annisett, 2004; Heijmans, 2004).

2.4.2 Disasters as an Opportunity for Economic Development

The OECD (2004:6) supports the idea that policies of reconstruction and risk management must seek to reduce vulnerability by means to enhance adaptive capacity and consider natural disasters as an opportunity to promote long term development. Some researchers claim that it is a great opportunity for a country or a region to boost its economy and create contracts and employment (Schilderman, 2004).

Others argue that natural disasters engender economically productive behaviour (Skidmore, 2001) and that disasters tend to promote investments (Chand, 2000). In addition, Delaney and Shrader in a report for the World Bank (2000:6) define disasters as an opportunity for radical changes and for re-writing the history of development in the region being affected.

Naomi Klein (2005) explains that behind the positive rhetoric of 'opportunity' and 'development' it is more a matter of opportunism where international development institutions use natural and human disasters for propagating neoliberal values highly based on maximizing the role of the private sector in determining the political and economic priorities of the state. A study on Honduras, Stonich (2007: 27) confirms the "accelerated expansion of neoliberal capitalism" following Hurricane Mitch. Growth of international tourism and industrial sectors occurred within the reconstruction phase, but did not contribute to ameliorate their social and ecological vulnerability. The economic vulnerability of the population was not better, and remittances were the real "growth sector" of the Honduran economy (Stonich, 2007: 26). In fact, for developing countries economic decisions related to the funding of reconstruction generally take place in a framework where donor countries and international financial institutions influence the decision making process. Understanding of this aspect of the reconstruction process is essential and will be review in the subsequent section.

2.4.3 Financing Reconstruction: International Aid and Developing Nations

In industrial countries, post-disaster recovery is usually funded through a combination of private insurance arrangements and public resources from taxation system. For developing countries funding sources tend to be more diverse, with generally a major role played by international partners (World Bank, 2004). Reconstruction costs and recovery of affected sectors often exceed developing countries' economic capacities. They generally require foreign assistance, and if developing countries benefit from the financial and technical support from donor countries and non-governmental agencies, funding for reconstruction is usually in the form of loans (Smith, 2010; Annisette, 2004). And as a general rule, the lower the per capita income of a country, the greater international assistance is required (OECD, 2004). Main international financial institutions are the World Bank, Asian Development Bank, International Monetary Fund, as well as some regional development banks. These

institutions provide developing countries with loans, financial guarantees, but also technical assistance for development projects to their borrowing nations (Annisette, 2004). Within the field of development lending, the World Bank is by far the larger development-finance institution in the world (Annisette, 2004). The World Bank has financial and intellectual hegemony (Payer, 1982), and grants itself the social mission of 'promoting sustainable economic development' (World Bank Annual Report,2000).

Many writers show that international agencies have an important influence on the development agenda on their lending countries (Kardam, 1993; Annisette, 2004; Butkiewicz and Yanikkaya, 2004). Dependence on banks and donor partners limits governments' control over the reconstruction process (Lyons, 2008). Loans usually oblige structural adjustment to the borrowing nations and affect the way they shape their domestic policy (Kardam, 1993; Annisette, 2004). In the long term, loans may affect national debt (Pelling, 2002) and governments frequently have to reallocate budgetary resources by commonly cutting back on funding for sectors such as health and education.

In fact, recovery process involves making choices in order to allocate funding to affected sectors. Investment can be made to prioritize infrastructure (e.g. roads, bridges, hospitals), housing, productive sectors (e.g. agriculture, tourism, commerce), and/or risk mitigation measures (e.g. warning systems, human made protections). As it will be discussed in the next section, one of the main debates in disaster management in developing countries when allocating economic resources to the reconstruction is whether to give preference to housing or to infrastructure recovery.

2.4.4Infrastructure versus Housing

The World Bank shows that while funds provided for post-disaster issues remain constant between 1980 and 2001, the share of loans sustaining housing reconstruction was greater, particularly from 1996 to 2001 (Gilbert, 2001). Varied scientists claim that the housing sector has a great potential for economic and social development through its impact on employment rate, savings, investment, and labour productivity (Harris and Arku, 2006). Since the 1970s, the housing sector has been seen as a factor of growth with social and economic effects.

On the other hand, many authors and international organizations support the idea that a typical failure in the post-disaster reconstruction process has been to allocate an important proportion of rebuilding funds to housing rather than other sectors crucial to socio-economic development (Freeman, 2004; Lyons, 2008).

It is argued that a country's economic growth highly depends on its infrastructure such as transportation systems (i.e. roads, harbors, airports, and bridges), energy systems (i.e. energy production and distribution), and social services (i.e. sanitation, healthcare and education facilities), and that the capacity to rebuild infrastructure is the principal factor of development (Freeman, 2004). Moreover, the World Bank and the Swiss Reinsurance Company affirm that from a macro-economic point of view, the main variable determining the long term effect of a disaster on a country was its capacity to re-construct infrastructure (Freeman et al., 2002). Therefore, priority must be given to reconstruction of infrastructure and economic sectors conditional to the development of a country (Freeman, 2004; World Bank, 2004). Some critique the intervention of states supporting housing reconstruction, by emphasizing its non-developmental character and arguing that it does not participate to the macro-economic recovery (Freeman, 2004). The main reason given is the fact that government intervention discourages private sector to invest in risk mitigation. For Freeman (2003) when governments assume the risks of the private sector, it is generally a result of market failure, as private risk-bearing tools did not work properly for the private sector.

Some authors critique these policies that are mainly economically based and directly linked to productivity and return on investment and may give little space for socio-cultural and other non-quantifiable matters (Kardam, 1993). Others explain that the huge budgets involved in post-disaster reconstruction often render central planning essential (Lyons, 2008). As a result, local governments already affected by loss of lives, property and business are frequently in a situation of dependence on central governments and/or other external agencies managing funds. This debate highlights different perspectives in disaster management where the economic aspect is a central variable of reconstruction. Many researchers and organizations such as the World Bank tend to prioritize the role of the private sector over the intervention of states within the reconstruction process. In addition, these recommend allocating funding in sectors engendering economic activity such as transport and energy. This approach is very reflective from the neoliberal principles that seek to maximize the role of the private sector in determining the political and economic priorities of the government.

In the same optic, private insurance systems are one of the many mechanisms proposed by financial institutions and development agencies for reducing risk and helping the vulnerable to develop, this is analyzed in the following section.

2.4.5 Insurance Tools and Risk Management

The OECD (2004) argues that if strategies focus on mitigation, there will be a need for diversifying natural hazard risk with system such as private insurance to prevent from such risks. Insurance tools can contribute to mitigating loss and managing "funding gaps" (Freeman, 2003; ISDR, 2002; OECD, 2004; World Bank, 2004). Insurance models can provide liquidity immediately in the aftermath of the disaster, and engender significant improvements in countries' risk management and allow economic development. In fact, Varangis et al. (2002) affirm that weather risk markets are among the "newest and most innovative of markets" for transferring community economic risks.

In a report from the World Bank, Gurenko (2004) affirms that evolutions in science, engineering, and computational techniques led to some attempts in quantifying the potential risks of natural disasters. Therefore, Gurenko (2004) states that because modern corporations learned to manage this kind of risk transfer models, governments should as well (Figure 4). Also the World Bank declares that "in highly vulnerable areas of the developing world the certainty of disaster precludes the laying-off of financial risk outside the vulnerable area" (World Bank, 2005b:1). In fact, for the last few years insurance systems became more available in developing countries. For example, El Salvador has seen an increase of many middle-class urban families purchasing earthquake insurance (Freeman et al., 2003). China has developed flood insurance programs in the Yangtze River Basin (Fox, 2003). Turkey established an insurance program under the new Turkish Catastrophe Insurance Pool, where all homeowners residing in hazard-prone municipalities must purchase insurance.

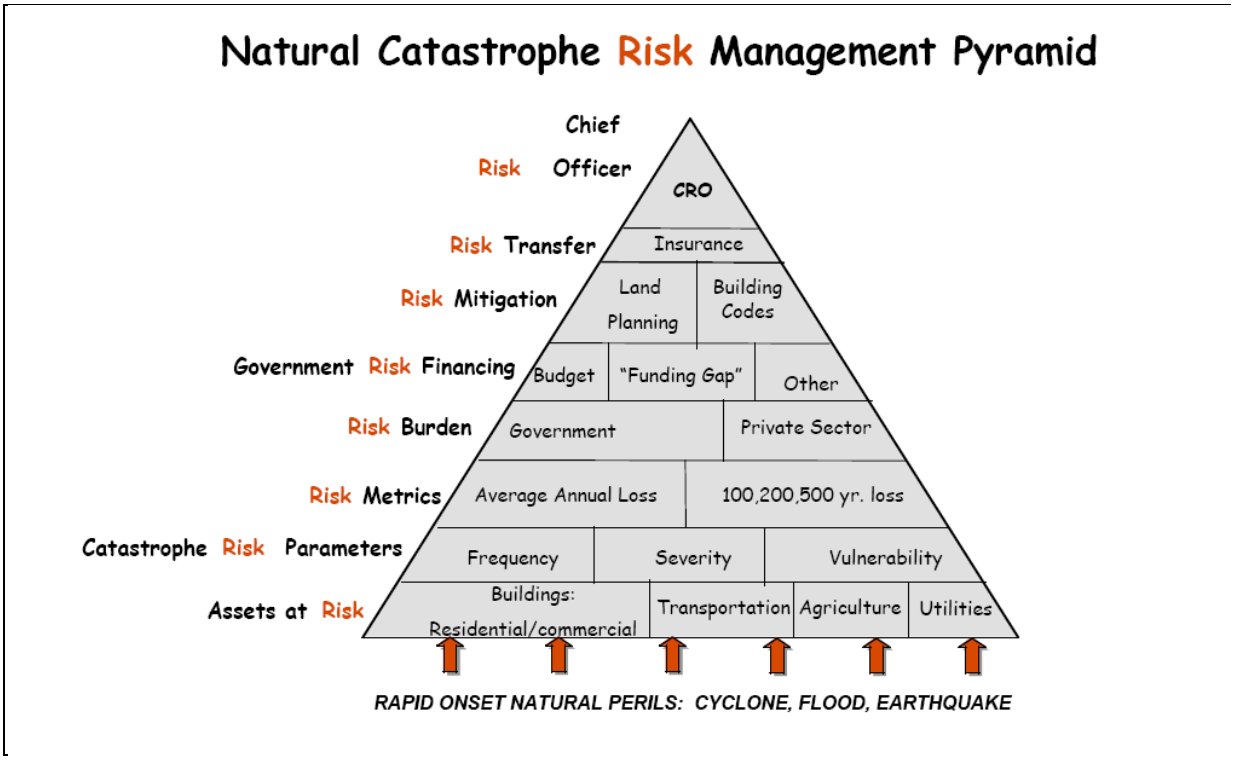

Figure 4: Country Risk Management Model (Source:Gurenko, 2004).

According to the World Bank (2000), insurance programs tend to reduce governments' dependence on donors following major events. However, some authors argue that the multiplication of insurance programs results from adjustment plans imposed by financial institutions and conditional to obtaining loans (Annisette, 2004). In addition, Browne and Hoyt (2000) in a study concerning flood insurance highlight the fact that people with higher income are more likely to take advantage of insurance programs. Their conclusions suggest that for the low income segment of the population, insurance system might not be the best approach to providing disaster protection. Moreover, many authors showed that in many countries society is based on different familial or even tribal models were mechanisms are diverse, not necessarily easily measurable but efficient. For example, Sutherland (2005) shows the importance of remittance in Pacific islands as a coping mechanism in case of natural catastrophe. Similarly, Stonich (2007) explain how following hurricane Mitch, the Honduran population relied on remittance rather than any insurance system or Government intervention.

2.5 SUMMARY

Natural disasters have significantly increased for the last fifty years. This trend is said to principally be the result of an augmentation of natural hazards. The international community constituted of scientists, development organizations and donor countries highlights that developing countries are particularly vulnerable to extreme events. Small Island Developing States are included within this general discourse and the HFA (2005: 13) considers that they are"located among the most vulnerable regions in the world in relation to the intensity and frequency of natural and environmental disasters and their increasing impact". Moreover, because of their limited economic capacity, developing countries are disproportionally affected by natural catastrophes.

Nowadays, it is widely accepted by the majority of scientists and agencies involved in disaster response that vulnerability reduction is a matter of development (Schilderman, 2004; Lyons, 2008). In fact, disasters are not perceived as natural, but are rather depending on adaptive capacity, technical knowledge, economic and institutional capacity of a country (Geis, 2000; McEntire, 2004). The global discourse stresses that for developing countries, building resilience to natural disasters must be a priority. In addition, there is a consensus on that risk mitigation strategies must be integrated to governments planning (Benson and Clay, 2000; HFA, 2005).

As a consequence, agencies participating to disaster response advocate that the lack of capacity and knowledge characterizing developing countries can be overcome by means of policy learning transfer from industrialized countries to disaster prone regions. The need for intervention of external agencies to help nations regularly experiencing natural catastrophes is the mainstream discourse present in the academic literature and development agencies reports. This global discourse is reinforced through the Western media coverage where certain regions of the world are portrayed as 'victim' of disasters requiring external help.

This Chapter demonstrates that the perception of vulnerability and risk guide the approach utilised to develop risk mitigation strategies. Thus, some researchers explain that the majority of aid agencies have been focusing on biophysical and economic factors of vulnerability, and have lacked in considering the cultural, social and historical aspects that have engendered communities' vulnerability (Heijmans, 2004).

It is claimed that there is no universal response adaptable to every disaster, and that "best practice" might not fit with particular socio-cultural contexts, where perception of vulnerability and risk differ.

Nevertheless, most agencies have used vulnerability in the way that best fits their practice (Heijmans, 2004), and policies based on transfer of technical capacity and knowledge sharing have made that disaster response became a matter of experts(Hewitt, 1983; 1997). For Bankoff (2001: 28) "natural disasters form part of a wider historical discourse about imperialism, dominance and hegemony through which the West has been able to exert its ascendancy over most people and regions of the globe". Hence, goals of vulnerability reduction and risk mitigation strategy might often be used as a justification for Western countries to intervene in the affairs of developing nations and propagate their model of development (Bankoff, 2001: 27).

Overall, the aim of this Chapter has been to highlight two different visions and approaches of vulnerability applied to disaster reconstruction. One approach observed in this Chapter is the dominant discourse present within development agencies reports and guidelines. The other approach emphasizes that agencies involved in disaster response lack in considering particular socio-cultural and historical context of a country or a region, where the "one size fits all" method might not necessarily be appropriate. The case study of the 2009 tsunami in Samoa has been analysed in the following Chapters using these contrasting visions to analyse the reconstruction process, hence, the methodology used will be described in the following Chapter.

CHAPTER III

METHODOLOGY

3.1 INTRODUCTION

In order to meet the objectives of this thesis, it was essential to gain an in depth understanding of the different agencies and institutions involved in the reconstruction process, including the framework within which they act, their relationships and interactions. Therefore, qualitative research was carried out, using a range of techniques including semi-structured interviews, scoping and observations on the field, and the analysis of governmental and non-governmental policy documents. This method is referred as 'triangulation' (Longhurst, 2009). Rather than relying on a single form of evidence for constituting the basis of results, triangulation is used to verify a finding by means of other independent measures that confirm it (Miles and Huberman, 1994). Hence, triangulation has been defined by Denzin (1978: 291) as "the combination of methodologies in the study of the same phenomenon."

Each method design presents advantages and weaknesses and most researchers emphasize the need for mixing those approaches (Jicks, 1979). Qualitative researchers have a tendency to collect information in natural settings. They are used to understand the meaning of behaviors and actions of a range of actors. Therefore, qualitative studies are based on perceptions, observations, and interpretations that tend to generate theories rather than test them (Brockington and Sullivan, 2003). Thus, qualitative research process and methods engender noteworthy philosophical debates about "the nature and implications of subjective experiences" (Brockington and Sullivan, 2003:57). Thereafter, as no exact answer can be provided, the multiplication of sources of information and techniques seeks to reduce errors and help to support a range of ideas and arguments (Brewer & Hunter, 1989; Denzin, 1978, 1989). Jick (1979) explains that collection of varied data bearing on the same phenomenon provides researchers with multiple viewpoints, allowing an improvement of their judgments. In addition, triangulation facilitates finding out similarities and divergences between information collected during interviews and what is done in practice (Bauwens, 2010). In a qualitative research study about probation in Belgium, Bauwens (2010:39) concludes that

"using method of triangulation is a valuable approach that does not merely duplicate data, but also offers complementary insights and understandings, and can reveal some important discrepancies that might have remained uncovered through reliance on interviews alone".

For this research, it was essential to observe the reconstruction choices made in different sectors that are subject of debates in the literature of disaster response and where the global discourse clearly recommends a particular strategy. For this reason, the policies applied to housing, land transport infrastructure and tourism sectors were analyzed. In addition, this approach permits comparisons and critical investigation between the different sectors' policies, and allows understanding the reconstruction policy as a whole. The collection of data was done by means of three information sources. First, semi-structured interviews involving agencies in charge of the reconstruction policy were conducted. Second, policy documents such as reports, studies, and national documents were analyzed. Third, observations on the field and informal talks were carried out. Also, these three different methods for collecting data are discussed in the data analysis section of this Chapter. This Chapter will describe the primary research process undertaken for this project.

3.1.1 Scoping: Pre-Fieldwork Observational Trip

The decision was made to travel to Samoa prior to starting interviews. With some experience of places impacted by natural catastrophes, but with Pacific islands knowledge being mainly academic, it was important to improve my personal understanding of cultural and physical context of Samoa. I went to Samoa for a period of six weeks, from mid June to the end of July 2010, traveling to Upulu and Savai'i islands, and principally staying in families' houses. This initiative quickly appeared as productive and indispensable in order to understand the different cultural aspects, people's perceptions, local issues and having a better idea of some of the post-tsunami response provided. Day by day this experience included sharing traditional meals, participating to house tasks, going to church on Sunday and having informal conversations with many different villagers. For example, by staying few days with a family where the matai was also the village chief, came out to be very instructive by becoming aware of some of the land tenure issues, social groups' interaction, traditional beliefs and religious influences.

3.2 THE PRIMARY RESEARCH PROCESS

The primary research process was gathered in the form of in-depth, semi-structured interviews. In-depth, semi-structured interviews are verbal interchanges where the interviewer seeks to obtain information from another person by asking predetermined questions that tend to unfold in a conversational manner (Longhurst, 2009). This method makes possible to investigate more deeply and clarify some complex and sometimes sensitive topics (Barriball and White, 1994). This process requires the researcher to prepare questions, select and recruit participants, decide of a location, conduct interviews, and transcribe the data obtained.

3.2.1 Sample and Recruitment

The primary research was conducted in Apia, Samoa, during the month of October 2010 where twelve interviews were carried out (table 3). The one to one interviews involved six officials from the GoS, two officials from a multilateral organization, two officials from an external donor country, one manager from an NGO and one experienced project manager who decided to remain anonymous. While quantitative methods reach its goal of objectivity by choosing a random or representative panel, the aim of a qualitative scheme is to select participants on the basis of their experience related to the research topic (Longhurst, 2009). Therefore, a decision was made to interview project managers in order to get the most relevant information. In order to understand the relation and interaction between the GoS and external actors an attempt was made to purchase a sample of a balanced number of people between governmental officers and managers of international governmental and non-governmental organizations. Also participants reached are between the main decision-makers and/or executive managers of projects involved in the post-tsunami reconstruction process.

Potential participants were contacted prior to starting the interviews. An important part of the recruitment was done through identifying key individuals via internet research using government or multilateral agencies websites or reports. A smaller fraction of participants was obtained along the previous scoping trip where I had the chance to meet some officials. In addition, recruitment of the participants was facilitated by a networking technique refereed as ‘snowballing’ and based on the fact that along the research process participants tend to recommend other potential interviewees (Sixsmith, 2003; Dogra and Wass, 2006).

Key persons were highly suggested by some that already accepted to be part of the study. Permission was received by every participant for undertaking the research. Each of the participants was contacted via email and appointments were set up for those based in Samoa.

Table 3: list of interviewees

1/10/2010	Official A	Pacific Region Manager Habitat for Humanity
4/10/2010	Official B	Manager New Zealand Aid Program, NZ High Commission Apia
8/10/2010	Official C	Assistant Manager Disaster Management Office, MNRE
12/10/2010	Official D	ACEO Land Transport Division, MWTI
12/10/2010	Official E	Assistant Chief Executive Officer-Asset Management Building Division, MWTI
14/10/2010	Official F	Principal Urban Management Officer-Planning and Urban Management Agency (PUMA), MNRE
16/10/2010	Official G	Assistant Manager New Zealand Aid Program, NZ High Commission Apia
18/10/2010	Official H	Pacific Adaptation to Climate Change Project Coordinator, MNRE
18/10/2010	Official I	Assistant CEO Finance, Aid Coordination/Debt management, MF
19/10/2010	Official J	Samoa Tsunami Early Recovery Program Officer, UNDP
19/10/2010	Official K	Anonymous
19/10/2010	Official L	GEF Small Grants Program/Program Associate, UNDP

One interview with an official from the World Bank based in Australia was supposed to be done via Skype, but the interview never occurred. Contacting key people and obtaining positive answers for an interview was a difficult exercise, time consuming, and demanded some perseverance, as it requires sending many emails with most of the time no answers.

Other researchers refer to this complexity including Longhurst (2009:580) who suggests that "contacting interviewees to set up appointments can be demanding and time consuming". This idea is generally reinforced in an overseas context, particularly in developing regions. For example Chacko (2004:53) states that "good planning is critical, but even with careful arrangements and organisation, successful fieldwork requires flexibility, a capacity to adjust to unexpected situations". Also, the long distance between the researcher and potential interviewees enhances this difficulty.

Therefore, the 'on site' recruitment technique (Longhurst, 2009), which consists in making contact at a place where potential participants can be met, turned out to be the most efficient way to obtain appointments. Also, after having further email contact with an official from the UNDP based in Samoa, who knew the difficulties of this process, she invited me to the United Nations Development Programme CEF Projects Quarterly Review held on the 13 of October at the CBS Building. This meeting involves representatives from different ministries such as the Ministry of Environment and Natural Resources, the Ministry of Finances, and varied project managers from the UNDP. My participation in the United Nations Development Programme CEF Projects Quarterly Review remained passive. However, being introduced by one of the members of the UNDP, I gained a certain legitimacy which helped considerably to recruit participants normally hardly accessible. Each official and representative had to present the outcomes of their project. The recommendations of my UNDP contact helped me choosing the most appropriate interlocutor to deal with post-tsunami reconstruction and related issues. In addition, later on along the interviewing process, some of the interviewees recognized me as a participant of this meeting. This appeared to be very useful in order to gain interviewees' confidence and to obtain some information that required a certain trust from their part.

3.2.2 Choosing a Location

The location of an interview can make a major difference in terms of information delivered, and it is essential that both the interviewee and the interviewer feel comfortable (Longhurst, 2009). All the interviews took place in the organization or institution premises, which is logistically the easiest form of meeting participants and presents the advantage for the researcher to observe the working environment of the interviewee.

A potential inconvenience is related to the fact that a participant can feel uncomfortable to speak freely about the organization or institution within which he/she works or work with (Longhurst, 2009). Hence, semi-structured interviews are more likely to be successful with a relatively neutral, comfortable, quiet, and accessible setting (Longhurst, 2009). Nine of the twelve interviews were done in a separate room offering complete privacy. This quiet environment was a technical plus allowing a better quality of the recording and facilitating free speaking. On the other hand, interviews realized in open space were for me and the interviewee less comfortable for critically talking about reconstruction actions. This was very true when dealing with issues such as inter-ministerial communication and coordination of operations, or more generally, pointing out the difficulties encountered within the recovery process. Moreover, the later phase of data analysis showed that interviews done in open space were often hardly audible, making the transcription very difficult or even impossible.

3.3 INTERVIEWING

All the interviews were audio-taped, which presents the advantage for the researcher to fully concentrate on the conversation and response of the participants rather than feeling the pressure when taking notes to miss any important information (Whiting, 2007). Using audio equipment allows a later transcription, reducing possible errors for data collection (Barriball and White, 1994). In addition it provides the researcher with the general tone of the interview or anything that might have been interesting or surprising during the conversation and that will help for a better analysis of the data (Longhurst, 2009). However, some people audio-taped can feel uncomfortable and more careful about what they say, which offers the potential disadvantage of having transformed information (Longhurst, 2009). Generally most of the participants were paying attention to the microphone during approximately the first fifteen minutes, showing sometimes some signs of stress and speaking very formally. But very quickly interviewees forgot that they were recorded and were speaking more openly on sensitive topics. The researcher has here an important role to play by putting people at ease. This requires to attentively listening responses, acting in a supportive way that engenders confidence, but without being convincing or influential on participants responses (Longhurst, 2009). Certainly, these skills get developed with repetition of interviews. In addition, asking different participants similar questions diminishes the researcher dependence on pre-wrote questions and notes, allowing a better flow of the conversation, making the researcher more

reactive on certain issues, increasing confidence, and sometimes making him more able to 'bring' the interviewee on a particular topic.

The length of the interviews was an average of forty five minutes. The shortest interview lasted twenty five minutes, and the longest was of one hour twenty minutes. Interviews were done in English, which was for two of the participants their maternal language, and for nine of them English was their second language. This aspect of the research was not a barrier at all as every participant is part of an international agency, NGO or the GoS, and is used to work in an English speaking environment. Nevertheless, in some cases academic vocabulary may be inappropriate. Thus, in order to increase the probability of an accurate response, rephrasing questions was necessary to ensure a good level of understanding by the participants.

Each interview followed a similar procedure, dealing with common topics to all interviewees such as the relation between GoS and international organization, reconstruction of the tourism and housing, and adaptation and risk mitigation measures keeping a focus on reduction of vulnerability of communities and coastal assets. However, every in-depth, semi-structured interview requires an adaptation to the participant depending on their position and role in the recovery process. The vision and approach of an officer from the MNRE differs from one of the Ministry of Finances, and thus, necessitate for the researcher to have an adequate background and knowledge of the issues involved.

3.3.1 Ethical issues and Power relations

Prior to the interviewing process an ethic approval was granted by the University of Auckland Human Participants Ethics Committee (UAHPEC) with reference 2010 / 435. Obtaining the ethic approval requires to inform the UAHPEC about the nature of the research, the objectives of the project, and ensuring that a number of ethical issues such as data storage and their destruction, and anonymity and confidentiality are respected. Every participant was informed of such concerns by means of the Participant Information Sheet (PIS) advising that their participation was voluntary. Permission was solicited to the general manager to be able to interview staff members. Once this permission was granted, permission was also asked to potential interviewees.

The PIS was accompanied by a Consent Form (CF) where interviewees attest of their understanding of the research and give their agreement to be audio-recorded or not.

Confidentiality and anonymity are essential aspects of a qualitative research with human participants. The researcher must ensure the participants that the information provided during the research project is kept in a secure storage and remains confidential. The option was given to decline to answer any specific question and have the possibility to withdraw from the research at any time and without explanation. Also, unless they give their permission to be identified on the Consent Form, every possible effort must be made to guarantee that the identity of participants remains anonymous. It is a central aspect of ethical concerns to respect anonymity decision, as some information or commentary delivered may have important consequences for an employee career within an institution or agency (Flicker and Guta, 2008). However, due to the nature of the research there is always a potential risk for participants of being identified in a final publication, particularly for participants working on a particular project. Hence, participants were made aware of this prior to their participation in the PIS, in the CF and orally. Nevertheless, with the exception of one interviewee, participants showed confidence and accepted for their name and position to appear in the final research.

A possible explanation of this result is suggested by the conclusions of Sabot (1999) who observes that foreigners generally obtain more information and trust than local researchers, as they generate confidence in local elites. Interviewees have an important role within the GoS and other international agencies. They pertain to the higher social classes and can therefore be classified as ‘elites’. Thus, the existing power relation certainly affects the trust in the researcher, the tone of the interview and the information gathered. While some advocate adopting a business-like or ‘insider’ approach to access elites (Yeung 1995; Welch et al.2002), I rather share the opinion of Rice (2009: 74) who recommends to “creating a space for intellectual dialogue and reflection which enable the elites to learn about up-to-date academic and policy orientated literature, which they themselves often have little time to read”. During many interviews there was a very interesting exchange of ideas with participants, where ones were concerned about getting information of some of my academic readings, or debates concerning particular topics resulting from my field observations and comparison with other case studies.

For example many interviewees were not aware, but very interested in the project of the World Bank to include Samoa within a Pacific funding system allocated for natural catastrophes, based on the model of the Caribbean islands. Globally, discussions were done in an "intellectual and open conversation" way, where issues such as the relation between foreign aid and GoS, external agencies role, sand mining, post-tsunami reconstruction response and other themes were debated. Being a French citizen and non-native English speaker, I did not feel three were any problematic subjects but on the contrary, I believe that my position of outsider probably allowed opening some doors and obtaining information on varied sensitive topics.

On the other hand, Sabot (1999) argues that foreign researchers are not necessarily the best to understand and utilize the information collected most effectively, because they are neither natives of the place and do not completely understand the local context. Sabot (1999) brings up the issue of cultural context being another ethical aspect that the researcher must consider carefully. Longhurst (2009:583) notices that 'First World' researchers investigating 'Third World' topics must be highly aware to local codes of conduct. In addition, she states that "how people position themselves in relation to ethnicity, gender, sexuality, class, age, and so on during interviews has implications for the interview overall and for interpreting interview data". This notion relates to 'positionality' which is defined by a range of social, political, ethnical and sexual factors that constitute a relation of power which one influences the way people understand the world, and thus may affect the interpretation of data collected (Longhurst, 2009). As a foreign student I was sensitive to cultural issues in a country where there is a word to designate white people, 'Palangi'. Considering the elites interviewed and the issues dealt with, the model of "open-ended interviews" (Schoenberger, 1991 in Sabot) helped overcoming these difficulties and contributed to a better understanding of the circumstances and interplay among policies related to reconstruction strategy.

"Conventional elites" who estimate that academic research is valuable for society and easily accept participating, and "defensive elites" who do not cooperate are two different categories of elites identified by Moyser and Wagstaff (l987:185). Difficulties were experienced in obtaining appointments with the second category that apparently did not feel comfortable with the nature of the issues to be discussed, particularly funding management. Several visits to their office had to be done, talking to few intermediaries, sometimes providing pre-written questions, to finally not be able to perform the interview.

Not all the participants intended to be interviewed could be reached. This includes one of the World Bank experts and officials from the Samoa Tourism Authority (STA) and Samoa Hotel Association (SHA) both involved in the Tourism Tsunami Rebuilding Programme (TTRP).

It is worth noting that some important information where cultural and contextual knowledge is essential might have been missed.Smith (1996) shows the complexity of researching in a foreign language and highlights the problem of interpreting meanings which depend on social, situational or historical contexts. As an example, few days before the interviews started, a journalist did a report for the New Zealand TV, very critical about the way the Samoan government was managing aid funding designated to post-tsunami reconstruction. Therefore, questions about international aid and allowance of resources for the rebuilding were sometimes received as another attempt to critique them. Some questions were not well understood, interpreted as an attempt to find cases of corruption, as this is what the TV report was apparently arguing. Therefore, I sometimes had the feeling to be perceived as suspicious. As an illustration, I even got asked by participants if I was a journalist rather than a student.

3.4 DATA ANALYSIS

Transcribing interviews is the first stage for analyzing data collected. For technical reasons such as interviews done in a noisy environment, and because English was for most of the participants not their first language, transcribing involved playing and listening back several times. Stereo amplifier was utilized for better audibility, but in some cases parts of sentences were not understandable which is referred as ‘dross’ by Field and Morse (1985). Hence, rather than interpreting what interviewees said, which represents a possibility for inaccurate data, the choice was made to leave a blank. In addition, even if sentences of interviewees were not always expressed in ‘perfect’ English, the choice was made to exactly transcribe what they said in order to not change the meaning of their answers. A computer program called ‘Dragon Naturally Speaking’ which types the words and phrases that the researcher dictates to it was used for the transcribing. While the normal time length for transcribing a 45 minutes interview is about six hours, ‘Dragon Naturally Speaking’ allows to make it in about three hours. This program therefore represents a considerable gain of time and is, from this perspective, highly recommendable.

However, there are two limiting factors. First, 'Dragon Naturally Speaking' is much more efficient for persons whose English is maternal language. Second, when re-reading transcripts I realized that some minor errors of phrasing occurred. Consequently, potential users should be very attentive of what the program really transcribes as it means having to re-listen and analyze the audio taped interview.

A difficulty in this kind of work is to present the findings in an honest and reliable way. In the aim to remain close to the original information of the transcription, identifying categories permits to 'make sense' of the data (Burnard, 1991). An objective for the researcher is to look at similarities and differences in the answers of interviewees and thus, a categorisation system eases the presentation of the findings from the information collected (Burnard, 1991). When transcribing was completed, a number of 'category systems' also known as 'open coding' (Berg, 1989) were defined according to the themes of interest in this study. These areas of focus were defined in function of the argument and ideas that this thesis tends to support. In addition, Burnard (1991) recommends that in order to facilitate the analysis of a considerable amount of data, subthemes need to be created and then regrouped in broader categories. The more data, the clearer and well organized subthemes should be. Nevertheless, for this research the 'category systems' worked efficiently enough. This is probably due to the 'reasonable' size of data collected, that allows knowing exactly what and where this information was, making it easier to use when developing arguments.

Any researcher analyzing qualitative information faces the problem of what to leave out and what to keep (Burnard, 1991). It is then necessary to consider the validity of categorization system and Burnard (1991: 464) suggests that "the researcher should attempt to offset his own bias and subjectivity that must creep through any attempt at making sense of interview data". What is said in an interview is context dependant and extracting a sentence from the larger discussion presents the risk to alter the message delivered. Also, the findings resulting from the semi-structured interviews were analyzed in function of field observations and informal talks with different citizens. In addition, declaration of participants, explanations about the motivation of a project, its management, outcomes, success and failure were compared to national policy documents, and external reports.

3.5 FIELD OBSERVATION AND INFORMAL TALKS

Observation on the field is indispensable as what is said by officials may be totally different to what occurs in practice. Therefore, while conducting interviews in the capital of the country, during weekends I stayed in the house of a family based in Salani village, which was one of the areas affected by the tsunami. Being positioned in this village during the first scoping trip and staying there again three months later allowed me to develop relations with locals and matais. Second, the evolution of reconstruction work was observed, including the building of a 600 metre seawall completed when I left. Third, the reconstruction of new and impacted houses, committee houses and churches in this village but also in the neighbouring coastal areas was witnessed. Interacting with villagers made possible to obtain additional information about such reconstruction. Informal talks must always be considered with care. But at the same time, informal talks may provide with information that can help getting a more global picture of the reconstruction work done, and give elements that help understand some of the complexities of certain issues. While officials tend to represent the national or international scale, talking to the populations contributes to having a more local point of view, and helps obtaining a more comprehensive understanding of policy adopted. Also, as stated by Glaser and Strauss (1965: 7), for qualitative methods, the multiplication of comparison groups helps developing more confidence in the emergent theory.

3.6 POLICY DOCUMENT ANALYSIS

Policy documents from the GoS as well as reports from international organizations were selected and analyzed. These policy documents were selected in function the themes of interest for this thesis. Thus, as one of the objective of this project is to observe the interaction and influence that exist between GoS and international aid, it was essential to analyze (1) policy documents from multilateral agencies and external experts giving recommendations and options for the reconstruction strategy; (2) policy documents from the GoS explaining the final recovery choices adopted and long term reconstruction commitments. In order to narrow this very large body of literature and to fit it with the aim of this project, documents about coastal assets that are land transport infrastructure, housing and tourist accommodation were taken into account. In addition, documents with an emphasis on vulnerability reduction issues were prioritized.

Experts from organizations such as the World Bank utilize a particular and generally identifiable vocabulary (Stiglitz, 2000). The rhetoric and wording used in both sources (international aid experts and the GoS) of document policy were compared.

Content of reports were also evaluated by focusing on the recommendations expressed within external policy documents and comparing with final decisions enounced in GoS reports. This approach allows identifying the relationship or potential influence between the GoS and external agencies. For example, the Post Disaster Needs Assessment (PDNA, 2009) produced few weeks after the tsunami and with the World Bank as leading agency stipulates that "the success —or failure— of communities' and governments' efforts to reduce vulnerability to natural risks by establishing resettlement areas, is highly dependent on whether basic services can be provided quickly and sustainably to relocated people" (World Bank, 2009; GoS, 2010:23).

This sentence is written with exactly the same words in page 23 of the final report produced by the GoS in September 2010, explaining the strategy of the post-tsunami recovery plan. While this kind of similarity must be considered with care, it is possible to affirm that the final report of the GoS express a vision that originates from the experts of external agencies. In addition, considering the chronology of production of documents was essential in order to obtain a better understanding of the thinking evolution and positions on a particular project or program.

3.6.1 External Policy Documents and Expert Recommendations

The Post Disaster Needs Assessment (PDNA, 2009) was scrutinized as a basis for understanding recommendations from external experts (working jointly with the GoS) in order to orientate the reconstruction policy. This document is based on the post-disaster Damage and Loss Assessment (DaLA) conducted by the World Bank with the Disaster Management Office (DMO), Ministry of Work Transport and Infrastructure (MWTI) and Ministry of Women Community and Social Development (MWSCD) and which seeks to estimate the impact of the tsunami concerning physical assets destroyed, economic impact on affected sectors and households. Generally carried out just after the emergency response, it is considered by international organizations as a useful tool to orientate the reconstruction

strategy. Thus, this document informed UN Agencies, Asian Development Bank (ADB) and the World Bank (WB) working jointly with the Government of Samoa to produce the Post Disaster Needs Assessment (PDNA, 2009). The PDNA emphasizes macro-economic concerns and is used to define recovery strategy and to develop coordinated actions at the international, national and local level (JhaAbhas, 2010). This document reflects the recommendations of multilateral agencies' experts and was used by the GoS to orientate its reconstruction policy. Thereafter, analysis of this policy document was indispensable in order to understand the ideas informing the decision-making process. As a complement, documents from the different external aid partners involved in the recovery plans were analyzed. These aid partner documents were selected in function of their position giving them with a potential of influence on the decision making process. Thus, criteria were mainly defined by their participation to recovery actions of interest in the form of donation or loans, their inclusion to committees created to define reconstruction strategy. Finally, selection was guided by information obtained along the interviewing process. This selection principally includes policy documents produced by the World Bank, the International Monetary Fund (IMF), the Asian Development Bank (ADB), and the New Zealand Aid Program (NZAID).

3.6.2 Policy Documents from the Government of Samoa and Strategy Adopted

The GoS produced a final report about the reconstruction work carried out, strategic choices adopted and long term recovery engagements taken. Also, this policy document is compared with recommendations of external experts and show whether expert advice has been followed. Secondly, in order to understand the ideas guiding global reconstruction strategy, documents related to the Infrastructure Asset Management Project (IAMP) initiated in 1999 and Coastal Infrastructure Management (CIM) plans were attentively investigated. This included the recognition of project funders and the analysis of how data was collected and of the recommendations. With a central focus on reducing vulnerability to potential natural hazards within the reconstruction process, interviewees have indicated that the IAMP and CIM plans were used to inform decision makers and constituted a basis to orientate their policy. The analysis of IAMP and CIM plans pre-tsunami studies and reports, where vulnerability plays a central role, allows a better contextual understanding within which post-disaster reconstruction choices have been defined. For these reasons, investigation of these policy documents is provided in Chapter Four.

3.7 CONCLUSION

Methodological approach for this project tends to respond to what qualitative researches demand: "creativity from its user, ingenuity in collecting data and insightful interpretation of data" (Jicks, 1979: 610). Drawing together the findings from the different qualitative methods provides an insight to understand how the concept of vulnerability has been used to inform and guide the post-tsunami reconstruction policy. Through the process of analysis exposed in this Chapter, the research provides a solid basis for comprehending the elements and actors influencing reconstruction strategic choices. In 1971, Phillips (1971: 175) declared that "we simply cannot afford to continue to engage in the same kinds of sterile, unproductive, unimaginative investigations which have long characterized most research". Also, Smit (2003) explains that in the past policymakers tended to ignore qualitative research, mostly relying on quantitative data analysis. As mention before, using a wide range of information sources contributes to increase understanding of the focus area and reinforce confidence in the theory developed (Glaser and Strauss, 1965). Through the selected approach, the research objectives will be answered by means of varied qualitative techniques, acting to sustain the conclusions of this study.

CHAPTER IV
VULNERABILITY ASSESSMENTS AND PRE-TSUNAMI STUDIES IN SAMOA

4.1 INTRODUCTION

Vulnerability reduction has been a central idea of the recovery strategy following the tsunami of 2009 in Samoa. The recovery policy was guided by the risk assessments undertaken with the Infrastructure Assets Management Program (IAMP)before the tsunami. Therefore, the aim of this Chapter is to provide information concerning this vulnerability assessment and related recommendations, in order to gain some knowledge of the context within which the post-disaster decision-making process took place. The following sections outline the aim of the IAMP. The method used for assessing Samoan coastal vulnerability is described and the recommendations of the program are underscored. Aspects related to the construction of infrastructure as well as the implementing agency in charge of regulating such development are explored. Finally, the IAMP suggestions linked to coastal resources management and hazards risk mitigation are critically analysed.

4.2THE WORLD BANK IAMP AND CIM PLANS

Studies and programs regarding vulnerability of Samoa's coastal assets initiated with the World Bank Infrastructure Asset Management Project (IAMP) published in 1999. The main goal of the IAMP is to support the GoS in the management of basic infrastructure and to improve key agencies capacity in air transport, road transport and coastal protection sectors (World Bank, 2003). The project highlights the vulnerability of these areas and emphasizes the necessity for "safe and reliable" infrastructure, land transport and coastal activities on which Samoa's economy depends (World Bank, 2003: 4). Recommendations for upgrading inland roads and building new infrastructure have been provided in order to give communities access to agriculture lands, which at the same time of reducing vulnerability would stimulate the country's economy.

Within the IAMP, Coastal Infrastructure Management (CIM) plans were carried out by the Planning and Urban Management Agency (PUMA) from the Ministry of Natural Resources and Environment (MNRE) in partnership with implementing agencies. CIM plans are District integrated development frameworks that provide options for resource use and outlines visions, goals, policies and objectives for coastal infrastructure management (IAMP 2).

4.2.1 Biophysical Vulnerability of Samoan Coastlines

CIM Plans were developed for 15 districts under the IAMP. Districts were selected in function of two main criteria, *representativeness* and *vulnerability*. Representativeness included land ownership, economic activity, sites of cultural significance, socio-economic groups (World Bank, 2003). Vulnerability was defined in function of Coastal Sensitivity Index (CSI) developed in a previous vulnerability mapping, giving rise to a Samoa coastal sensitivity index ranking map (Figure 5).

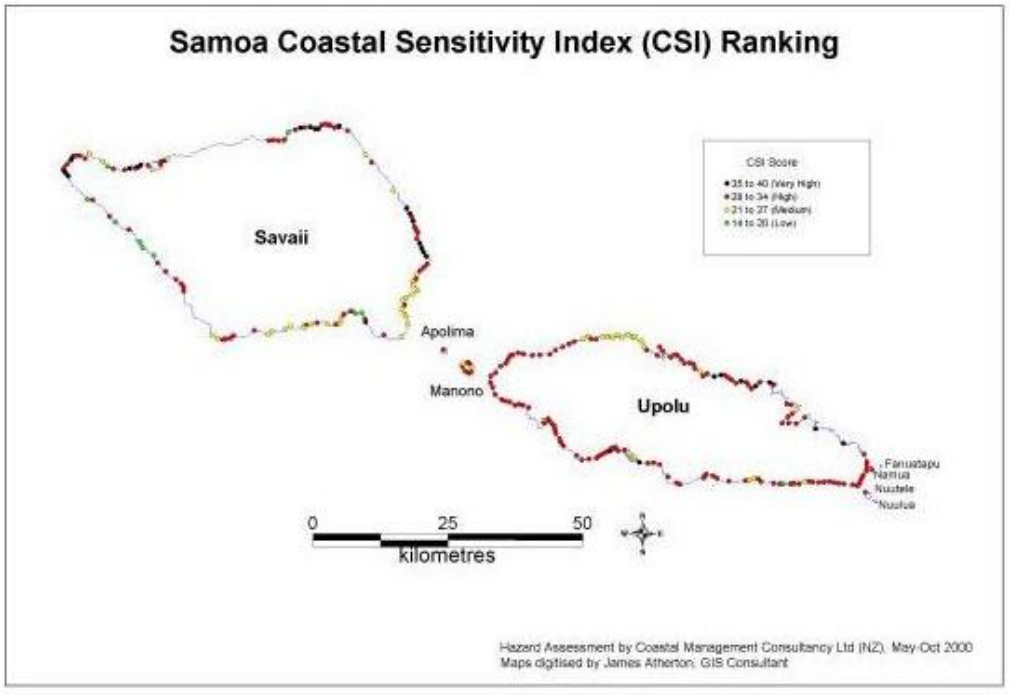

Figure 5: Samoa coastal sensitivity index ranking map (Source: Bismarck Crawley Consultant, 2000).

The assessment of coastal sensitivity index was based on different biophysical parameters including elevation, storm wave run up, gradient, tsunamis, lithology, natural landform, long-term shoreline trend, short-term shoreline trend, and by means of field surveys (276 stations

established), orthophoto maps (1999, 1954), and village interviews (347 interviews conducted). The assessment of Coastal Sensitivity Index allowed defining a Coastal Hazard Zone (CHZ) delimiting the area of vulnerability to natural hazards (Figure 6).

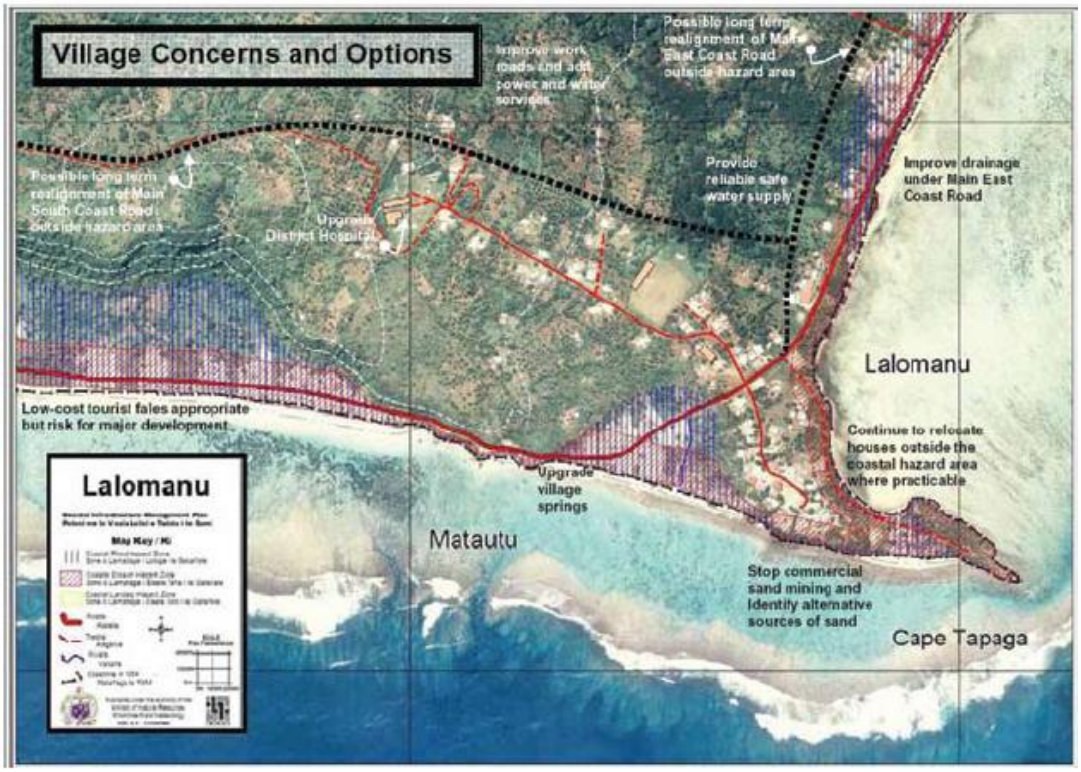

Figure 6: Lalomanu village CIM Plan (Source: PUMA, CIM Plan, 2006).

The CHZ is used to guide future management of coastal assets with a wide range of solutions from soft to hard engineering options, coastal planting, relocation of houses, realignment of roads and/or stop issues related to sand mining.

4.2.2 Economic Considerations of Vulnerability Assessment

The CIM plan (2006: 3) defines vulnerability or 'susceptibility' (i.e. the Samoan phrase for both susceptibility and vulnerability is the same (CIM plan, 2006)) as "the degree to which infrastructure at risk is likely to be damaged by coastal hazards and how easy/difficult, expensive/cheap it is to replace". The methodology for the vulnerability assessment of IAMP-2 was also based on an economic analysis "for possible options via a cost benefit

analysis approach" (IAMP-2: 4). In addition, the report of the IAMP-2 explains that this cost benefit analysis would be used for orientated policy and actions on the long term: "Not all the solutions may be actioned immediately but the plan will ensure that issues and options are identified for the long-term improvement of resilience of both infrastructure and communities" (IAMP-2: 4). Hence, the economic aspect of vulnerability, estimated via a cost/benefit ratio, is one of the factors highly considered for providing planning solutions for the next years to come. However, many individuals and organizations declare that this approach would suit developed countries but do not reflect Samoan cultural social values (Hay and Sueasi, 2006: 7).

4.2.3 Social Aspects of Vulnerability Assessment

CIM Plans were based on a community consultation and participatory approach (Table 4).The reason for this is that actions related to infrastructure assets and natural resources within the village are the responsibility of the village and District (CIM plan, 2006). Hence, IAMP did consultation work at and between these two scales. Concretely CIM plans used 'pulenuu' (i.e. mayor of a village which is also a 'matai') networks with village meetings followed by site visits. The IAMP-1involved 347 interviews over 140 villages (World Bank, 2003). The IAMP-2 carried consultations with pulenuu in about 300 villages involving approximately 10,000 inhabitants (IAMP-2). The original idea was to integrate matai, women and youth within the consultation process. However, a report of the IAMP states that village meetings were *"*largely attended by male matai, with a few women and youth present, usually at the fringes*"* (World Bank, 2003: 6).

Between 20 to 30 citizens per village attended meetings (IAMP-2), and the World Bank (2003) recognizes that while fa'a Samoa cultural and social norms stipulate that the final decision is taken at the village fono or matai level, women and youth should have the chance to participate in the decision-making processes. In addition, the IAMP-1 (2003) concludes that this failure in the participative process creates issues concerning the representativeness of consulted stakeholders, and questions whether the information obtained reflects with adequacy the community views. In the IAMP-2, the report emphasizes that social assessment and consultation framework assessment procedures of the IAMP-1 were appropriate, but point out customary practice as responsible for a certain lack of participation "ensuring that

views are sought and taken into account from parts of the community who, due to customary practice, do not necessarily participate in the community consultation processes" (IAMP-2: 5).

Table 4: Cycle of village to district consultation, IAMP-1

Cycle of village to district consultations, IAMP-1
♦NATIONAL LEVEL.
Initial project discussions are carried out with the pulenuu (village mayor) of villages likely to be affected, through the Ministry of Internal Affairs (MIA), which coordinates the pulenuu network and is responsible for rural affairs.
♦VILLAGE
The pulenuu return to their villages, discuss project details and arrange for a village –project consultation. The village consultation takes place and three representatives are chosen to attend the District meetings to follow.
♦DISTRICT
The project is discussed at District level by village representatives, who then report these details back to their villages for further discussion. A series of district-nuu consultations takes place until agreement is reached.

Source: IAMP 1, 2003.

Nevertheless, Duranti (1990) emphasizes that in Samoa, even if some women are matai, men are usually the only one to participate in meetings dealing with decisions at the village level. One Samoan official from the UNDP interviewed for this research confirmed this statement. In addition, Duranti (1990) states that while mostly matai male took part of the consultation process, they still represent the interest of the families of each village. This system is inherent to Samoan society and reflects the structural organization of this culture. These contrasting approaches demonstrate that the point of view of the World Bank is very representative of the occidental perception of democracy and related participative process. It also highlights the non-acceptation of cultural aspects in their decision making processes and further analysis. Nevertheless, and despite differences with the occidental norms and belief, Samoan organizational model is part of the fa'a Samoa. It reflects values of this society and must be taken into consideration.

4.2.4CIM Plans and Best Solutions

CIM Plans aim to identify actions and solutions and provide both communities and the GoS with practical tools to implement the strategy (CIM, 2006). These plans are part of the CIM Strategy, which has the objectives to improve resilience of coastal infrastructure and communities to natural hazards. PUMA via the CIM Plans aspires to provide a strategic orientation including best solutions for the management of public and private infrastructure within the coastal area by considering the natural environment, local land and use of resources (Table5).

Main recommendations of the CIM plans emphasize the resettlement of houses outside of the Coastal Hazard Zone, to extend coastal protections such as seawalls, to relocate inland principal coastal roads and to encourage low cost beach fale accommodation instead of costly investments. The benefits pursued by this strategy are more safety and resilience of houses and roads, better use of economic resources, more potential for tourism, and more sustainable use of the natural environment. Moreover, recommendations for the Aleipata District presented in table 4 are quite representative of the solutions proposed for other districts of the country.

Nevertheless, the “best solutions” provided by the CIM plans adaptable to all districts of Samoa, share similarities with the idea of “best practices”. The “dissemination of “best practices” is part of the rhetoric used by the Hyogo Framework for Action (HFA, 2005) and the Mauritius Strategy Implementation (MSI, 2010).Some researchers have criticised aspects related to dissemination of “best practices”, by explaining that this approach is very technocentrist and cannot be adapted to every system (Stiglitz, 2000; True and Mintrom, 2001).

Table 5: CIM Plan implementation strategy for the Aleipata Itupa i Luga District (including villages of Ulutogia, Vailoa and Lalomanu which are located along the east coast)

Sector	Best Solutions	Other Benefit
Housing	- Where reclamations or other major coastal works are proposed Government and village to manage processes by requiring villagers to get the appropriate permits and consent. - Relocate outside or set back from CEHZ and CFHZ when buildings require replacement. - Alternatively, ensure any investment in structures located within the hazard zones takes into account the potential for damage from coastal erosion and flooding.	- More resilient to natural hazards quicker recovery in the event of cyclones. - Safer houses, less damage. - Better use of economic resources
Land Transport	- Relocate the main roads inland from the coast to improve resilience and reduce risk from natural disasters (long term). - Upgrade and extend seawalls at selected locations	- Improved access to elevated areas. - Improved coastal protection. - Safer village houses and roads. - Improved tourism potential. - Improved sustainability of natural resources.
Tourism	- Consider building foundations at a level that takes into account the CFHZ. - Encourage investment in low-cost beach-fale accommodation and amenities and discourage costly investments in view of the high erosion and flooding hazards.	- Improved resilience and rate of recovery.

Source: CIM Plan, IAMP 2, 2006.

In the case of Samoa, the CIM plans' "best solutions" to be applied to the 15 districts of the country do not seem to fit with cultural and traditional practices of the population. In fact, this approach is not well accepted by individuals and politicians of Samoa, which will be outlined and discussed in section 4.4.

4.3 THE PUMA ACT AND THE DEVELOPMENT CONSENT

As developed previously, PUMA has been the leading body carrying out CIM Plans within the 15 Samoan Districts. The Planning and Urban Management Agency is also in charge of regulating and controlling development under the PUMA Act (2004). The PUMA Act defines the way Samoan environment and land use planning is managed. The main role of the agency is to protect the environment with a planning system that puts in place a comprehensive framework of policy and controls to orientate decisions concerning new use and development via the Development Consent process (PUMA, 2004):

> "The provision of this act guides the development that relates to all stakeholders with regards to climate change and environmental issues. (...) For vulnerability and adaptation to climate change in the planning perspective we have developed these plans with the CIM. We are developing the development consent process where we analyse and evaluate and look at where the locations of the development are and then we issue the contents. So that is what PUMA is trying to control and assist, and it is part of our effort to make sure that those risks are addressed" (PUMA: F).

The development consent is a legal document giving authorization to develop or use a piece of land in Samoa. In the Act, 'development' includes "the use of land (whether for a long term or temporary purpose), the erection of a building or other structure, the carrying out of a work, subdivision, and any other activity regulated under the Act" (PUMA Act, 2004: 75). Obtaining a Development Consent is necessary when an individual or a group want to carry out an activity or development that may affect the environment. Therefore, being granted with a Development Consent requires going through the development assessment process (Figure 7).

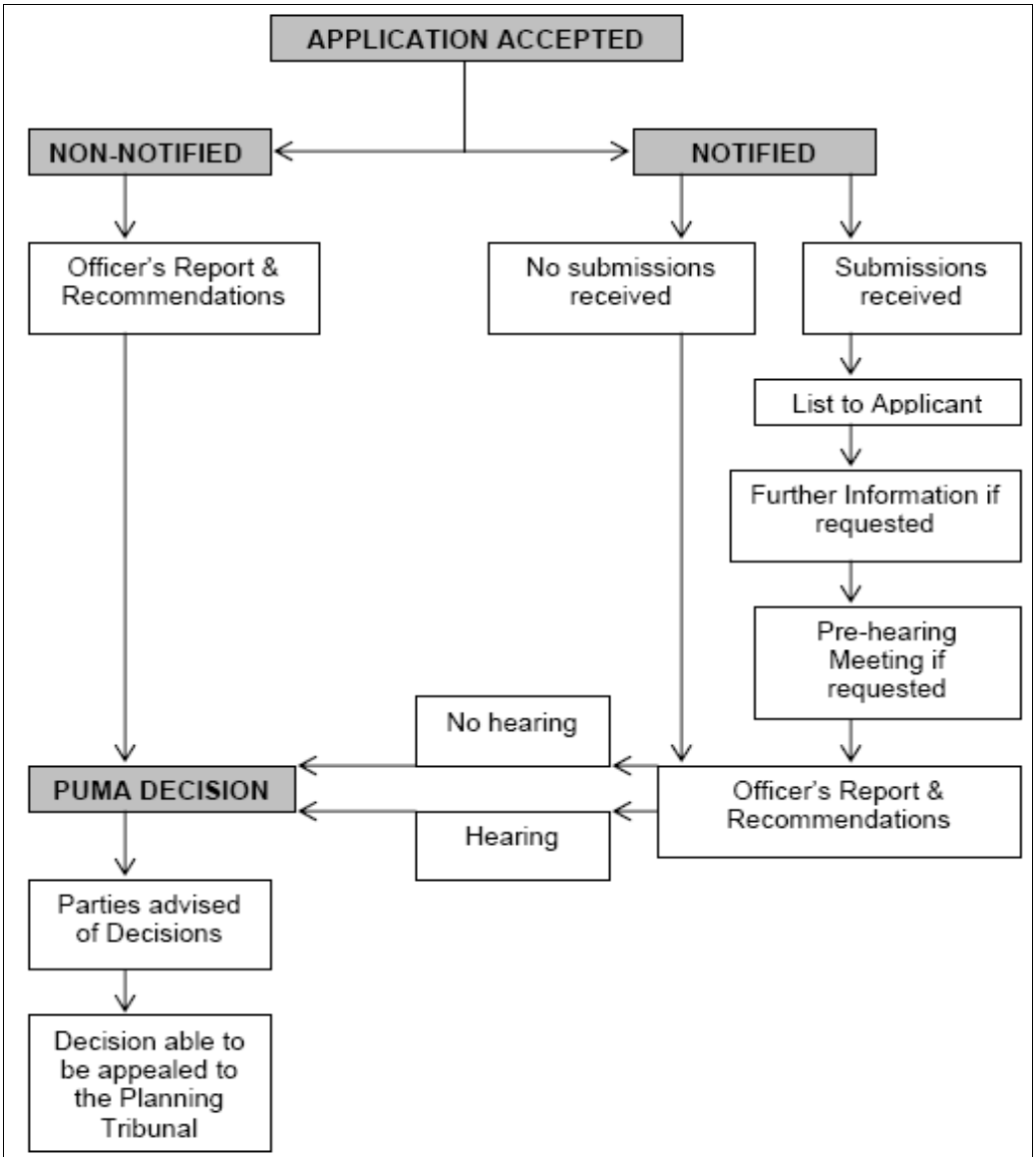

Figure 7: Development Consent procedure (Source: The Planning and Urban Management Act, 2004)

Further aspects related to Development Consents will be applied to the reconstruction plans of the housing and tourism sectors described in sections 5.2 and 5.4 of Chapter Five.

4.4 NON ACCEPTATION OF PUMA'S ROLE AND CIM STRATEGY

The framework within which the CIM strategy must be done includes four different steps (Figure 8). A first aspect is based on defining coastal hazards, improvement of data collection methods and dissemination of economic data on coastal infrastructure. The second phase

aims to “raise community awareness, to develop capacity for infrastructure service provision and to provide on-going education in plan preparation and implementation”. The management and use of land and resources consideration seeks to “incorporate the impacts of resource/land use in decision making, ensure set back of important land use from coastal hazard zones and recognise the economic value of the coast and implementation”. Finally, the intervention actions will be undertaken by incorporating environmental, social and economic impacts in the decision making process.

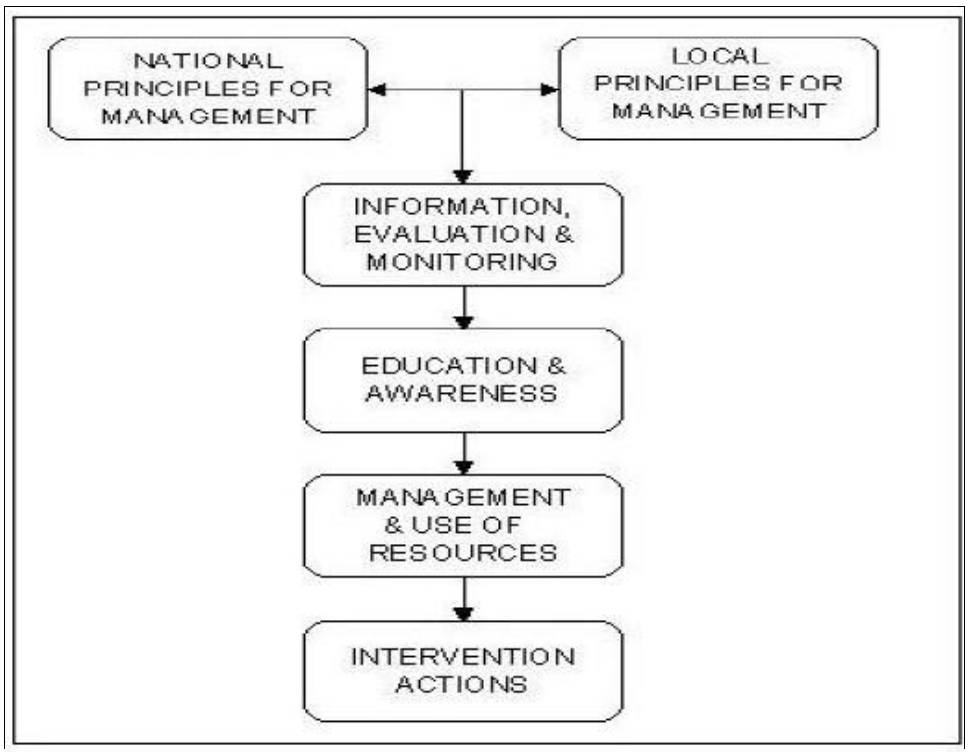

Figure 8: Framework for CIM strategy at national level (Source: Bismarck Crawley Consultant, 2000).

The framework for carrying out the CIM strategy is based on policy learning including enhancement of technical capacity, increase of education and community awareness, and augmentation of economic consideration of coastal assets in order to orientate the decision making process. This rhetoric and approach reflect the global discourse of development agencies that suggest helping developing countries to more resilience via transfer of knowledge and technical tools (Hewitt, 1983; Bankoff, 2001) as previously explained in section 2.3.However, PUMA struggles to be accepted by local councils and villages. In a report for the Asian Development Bank, Hay and Sueasi (2006: 7) explain that PUMA was originally intended to be confined to the Apia municipality. The agency’s role was then

extended to the whole country, including customary lands, without appropriate consultation, legislative review or consideration of the larger social and cultural potential effects (Hay and Sueasi, 2006). This document makes many other statements against this agency and these are outlined below:

- A majority of individuals and organizations estimate that the development planning and the regulation of development carried out by PUMA is too complex for Samoa, and that this approach would better suit a developed country.
- Citizens and politicians do not like the role that PUMA is playing, and many of them recommend a change in PUMA's mandate and methods to guarantee that the planning and regulatory processes better reflect Samoan cultural and social systems.
- They declare that "this will require extensive consultations at community and other levels if the desired improvements in consistency, certainty, transparency, equity and timeliness are to be achieved while also ensuring that good environmental outcomes are not compromised. A comprehensive framework will be needed to guide any changes in the legislation and associated regulations"(Hay and Sueasi, 2006: 7).

Furthermore, an official from PUMA explained that some issues were encountered at ministry level. Thus, PUMA faces difficulties with compliance of land and resource use that it is trying to regulate via the development consents and the CIM plans recommendations. While the development consents are part of the PUMA Act which has been legally approved by the Government of Samoa (GoS), CIM plans are not legal documents. They only reflect a certain vision for management of coastal infrastructure and communities to be resilient to natural hazards, and therefore, can only be used as guidance:

> "The challenge for us is that we cannot instruct the people to move away from a hazard zone but we can only advise them that they are building on a hazard zone. The reason for that is that the CIM plans are not legally binding" (PUMA: F).

The unpopularity and difficulties encountered by PUMA and the CIM plans are not related to a lack of stakeholders' awareness of their vulnerability.

This non-acceptation is rather linked to the values inherent to the Samoan society, strongly attached to customary lands and lifestyle close to the ocean as it is outlined by one official from PUMA:

> "Some of the projects just go on before we give them the consents and some without the consent. So here is the problem of public acceptance with what PUMA is trying to do by trying to regulate. The problem is that you have to consider Samoa's profile and the values because the Samoan people have different perceptions of this and we have the Samoan tradition that is very strong. So we have the approach that we have to satisfy the matai system and the chief which are the highest people in the community, so they don't listen to what we say". (…)"I think that this is part of the mentality of the public as it is very difficult for us to actually change what they think and that's why we keep this program. But it takes time" (PUMA: F).

In addition, the leading agency claims to have very little empowerment support from the GoS, and problems of acceptance between partner agencies that affect PUMA legitimacy among the public:

> "I think we usually just step up with some ministries or our own internal divisions do not notify us of the development consents". (...) "There are some problems with agencies in the country. There are internal problems with the land management division because for example it just builds a seawall without our consent" (PUMA: F).

Finally, the lack of experienced staff is also a reason given for not permitting efficient results with regulation:

> "We have a compliance monitoring team (...) but this is also one of the constraints which are the lack of staff, the short staff. There are not so many people in the agency, as you can see there are only few of us and it is a young team" (PUMA: F).

4.5 SUMMARY

The World Bank who supports community development dealing with infrastructure losses has expressed the need for disaster planning and climate change related hazards to be included at the country assistance strategy level (Burton and van Aalst, 1999). The Natural Disaster Hotspots study from the World Bank establishes that Samoa is the 30th country most exposed to three or more hazards worldwide, and that more than 70% of coastal population are vulnerable to coastal hazards including cyclones, tsunamis, flooding, and storm surges (PDNA, 2009: 19). Thus, CIM plans' recommendations for resettling inland household located within the CHZ, extending seawalls and developing tourist beach 'fales' rather than costly investments, are solutions that seem to fit with goals of vulnerability reduction and development of the World Bank.

The framework within which the CIM strategy aims to improve coastal communities and infrastructure resilience is based on the improvements of data collection methods that require technical capacity. It is also based on cost/benefit ratio and other economic considerations for planning, as well as the increase of community awareness via more education and participation in the decision making process. However, analysing the fact that the IAMP 1 and 2 have been initiated and funded by the World Bank, considering the unpopularity of PUMA with the CIM plans' solutions and with development consents, it is questionable whether CIM strategy is no more than the projection of the World Bank vision, and if as some argue, it really reflects Samoan cultural and social systems (Hay and Sueasi, 2006: 7). Despite difficult acceptation by the public and politicians of the CIM strategy, this approach and related "best solutions" have been used to inform and guide decision makers in defining the recovery plans of the housing, land transport infrastructure and tourism sectors that are explored in Chapter Five.

CHAPTER V

ANALYSIS OF THE RECOVERY PLANSOF HOUSING, LAND TRANSPORT INFRASTRUCTURE AND TOURIST ACCOMODATION

5.1 INTRODUCTION

The tsunami that hit Samoa in 2009 severely impacted the social infrastructure (health, education, cultural heritage), productive sectors (agriculture, fisheries, commerce, tourism), economic infrastructure (housing, water, energy, transport, communication), and the natural environment. From all sectors affected by the tsunami, the reconstruction process of housing, land transport infrastructure and tourist accommodation were elected as the most important. This was mainly because, critically analyzing and comparing post-tsunami choices of these three sectors was indispensable to obtain an understanding of the reconstruction policy as a whole.

On this Chapter, the context within which the decision making process occurred is briefly outlined. Given their importance, the recovery strategies of housing, land transport infrastructure and tourist accommodation are observed. Additionally, the pre and post disaster information for each sector was considered. The role of agencies involved in this process is highlighted and the utilization of risk mitigation measures and tools are described and discussed.

5.1.1 Decision-Making Framework

After the relief phase, a reconstruction plan for the affected sectors has been defined by the Government of Samoa (GoS). The decision making process is shaped by a number of actors at different scales. Ministries from the GoS, local and international Non-Governmental Organizations (NGOs), multilateral agencies, a private company and donor countries took part of the different committees created to decide of the recovery policy.

Most of the different actors involved in the reconstruction process usually work together, including United Nations (UN) agencies and donor countries such as New Zealand and Australia who fund development projects throughout the year. Officials from agencies who were part of the different committees (e.g. Disaster Advisory Committee, Shelter Committee) explain that being involved gave them a more global vision of the policy developed and recognize the comprehensive character of the decision making process. The GoS monitored the overall recovery effort through the Cabinet and at an operational level via the Disaster Advisory Committee and the Shelter Committee. The different agencies and departments that have a responsibility under the reconstruction plans were carrying out site visits and reported on evolutions to these committees. Thus, the Ministry of Finances (MOF) coordinated and provided financial reports on a quarterly basis, while the budget support finances were audited by the Samoan Audit Office. Officials from agencies that were part of the different committees (e.g. Disaster Advisory Committee, Shelter Committee) explain that being involved gave them a more global vision of the policy developed and recognize the comprehensive character of the decision making process.

The policy agenda of a country is very often influenced by groups of interests or a certain elite and the role that power plays in the aid relationship is complex (Hyden, 2008). Hence, the decision making process was guided by objectives of reducing vulnerability of coastal communities and infrastructure, and used Coastal Infrastructure Management (CIM) plans from the World Bank Infrastructure Assets Management Program (IAMP)to guide land use planning choices:

> "The decision-making was also based on existing plans such as the CIM plans, essentially looking at the long-term strategy but also relocating people away from the coast" (NZAID: G)

In addition, the reconstruction strategy was based on recommendations of the Post Disaster Needs Assessment (PDNA) undertaken by the World Bank as leading agency, Asian Development Bank (ADB), and UN Agencies working with the Government of Samoa (GoS) with the financial support of the Government of Australia:

> "The Post-Disaster Needs Assessment (PDNA), also known as damage assessment, was conducted conjointly by the World Bank, the Asian development bank and the UN escape in association with the government. So our role was to put up the recovery plan, what we did, and after completed the recovery plan using the assessment frameworks, we then called a consultation with our donor partners and discussed how we would going to fund the recovery phase" (MOF: I).

A Post Disaster Needs Assessment usually gives proposals for guiding the reconstruction strategy. In the case of Samoa, the PDNA (2009) emphasized the needs for reducing risks to potential natural hazards, and provided the option of "building back and relocating" to the population affected by the tsunami. Similarly, the High Commission of New Zealand, involved in funding the reconstruction, stressed the necessity for reducing vulnerability of tourist coastal accommodation via the "build back better" model. "Building back better" was the approach adopted by the GoS for the recovery. Consequently, a critical insight of the recovery plans for housing, land transport infrastructure and tourist accommodation is presented in the following sections.

5.2 HOUSING RECOVERY PLAN

The recovery of the housing sector was supported by the Shelter Committee composed of ministries, multilateral agencies, NGOs and donor countries. In this section, aspects of the housing reconstruction process are discussed, including allocation of financial resources, the 'Owner Driven Reconstruction Program' and the technical and institutional support provided by the GoS.

5.2.1 Funding the Housing Sector

The GoS decided that it would assist communities with the rebuilding of private properties. The total absence of private insurance system, the fact that the area affected is one with the lowest economic income of the country and the kinship commitment inherent to Samoan society, are the main reasons why the GoS made the choice to financially support communities to rebuild their damaged or destroyed properties:

> "The housing programme, if you have access to what they called the PDNA, was done by the agencies that I mentioned before (WB, ADB and UN agencies) and recommended to, or stated that the rebuilding back of housing was a private cost. The government has made the decision that it will support the reconstruction of homes" (MOF: I).

Experts from the PDNA (2009) recommended that the reconstruction of properties from the affected communities should be covered by households. In addition, interviewees explain that the World Bank advocated the development of an insurance system at the national level. Insurance systems are perceived by international organizations and some academics as efficient tools to mitigate losses and manage risks (Freeman, 2003; OECD, 2004; World Bank, 2004). However, some authors explicate that private insurance schemes may not be necessarily appropriate to low income populations (Browne and Hoyt, 2000). Samoa has mechanisms inherent to the society, using a mix of government intervention, remittances from families living overseas and religious support via NGOs. Hence, the majority of participants for this research explained that the low income of a majority of the population does not permit citizens to afford an insurance system, and that Samoan society owns other mechanisms in order to cope with disasters. These mechanisms include a national fund for natural disaster funded by the Samoan tax system:

> "There is a study undertaken by the World Bank and ADB, which aims to see if we can set up a risk financing fund. My colleague already looked at an insurance system project two to three years ago, but we have other mechanisms. We have the national providence fund mechanism, and if we are affected by a cyclone or natural disaster we all, as contributors, get a certain amount of that fund for assistance" (DMO: C).

In addition, remittance from Samoan families living overseas represents an efficient source of funding to cope with natural catastrophes and support families impacted:

> "We also have remittance from overseas. You know, Samoa is a communal society, this is our culture" (DMO: C).

> "Half of the population is living in New Zealand. The money transferred from overseas from families is one of the major economic boosts for us" (MWTI: D).

The housing program represented a total cost of $SAT 9.4 million, with funding provided by the GoS and with contribution of New Zealand as donor country. In addition, a number of NGOs and one private company helped the GoS to fund the rebuilding of houses (Table 6).

Table 6: Financial support of housing recovery

Funders	Number of Houses funded	%
Caritas	70	13.94
Digicel	50	9.96
Latter Day Saints	40	7.97
Catholic Archdiocese	9	1.79
Tear Fund	4	0.80
Sir Howard Morrison	3	0.60
Habitat Samoa	2	0.40
Others	3	0.60
Total Donors	181	36.06
Government	321	63.94
Total	502	

Source: GoS tsunami final report, 2010.

All of the NGOs involved in the funding of the housing reconstruction are Catholic. Kinship and Christianity are strongly correlated in Samoa (Thornton et al., 2010).Of 63% of Samoan families using remittance for 'social uses', about 41% are allocated to support churches(Brown and Ahlburg, 1999: 334). The population contribution to church can represents over 30% of Samoan income (International Religious Freedom Report, 2006). Thus, most of these NGOs operate in Samoa on a regular basis, with church ministers living

in villages and playing an important social role within Samoan society. Thus, religious leaders and Catholic NGOs have been actively involved in the reconstruction process and represent one of the mechanisms inherent to the fa'a Samoa (Samoan way of life).

In the last few years, development of insurance system in Samoa has been advocated by the World Bank. However, Samoan society has its own mechanisms, which according to interviewees are effective. Hence, as indicated by an official from the GoS, this option has never been adopted. Academics highlight that development of insurance programs in developing countries often result from adjustment plans imposed by financial institutions, which are provisional to get loans (Annisette, 2004). Nevertheless, the aid coordinator from MOF indicated that the World Bank plans to include Samoa within an insurance system at the regional level. This insurance system is based on a similar scheme developed in the Caribbean, and would include other SIDS from the Pacific region:

> "I know that they (the World Bank) are starting something in Vanuatu. But I think that this is a program that they would address at regional level. The example that has been given to us is the Caribbean. Of course we have similar circumstances to other small islands like the Caribbean, with probably the same vulnerabilities to disasters. I don't know what the term would be, but we are exploring every avenue. In fact we have ongoing discussion with the World Bank on how this can be done. We are asking for it because of the impact of the tsunami. But also, with the regularity of cyclones in this part of the world, it is something that we must consider" (MOF: I).

Developing an insurance scheme is presented by the World Bank as an adequate tool for managing risk and fits with the organization policy to reduce the impact of potential disasters (World Bank, 2005b:1). Such financial tools developed for the Caribbean are said to be appropriate for other regions of the world (here Samoa) that share similar biophysical characteristics. This approach is characteristic of the "one size fits all" model described by Stiglitz (2000), where a solution perceived as good must be adapted to other cases. Nevertheless, in the face of natural hazards and extreme events, remittances have been shown to be current and efficient coping mechanism in the Pacific islands (Sutherland, 2005). And overall, in light of the mechanisms already in place in Samoa, it is questionable whether or not such insurance model is appropriate for the country.

5.2.2 Limitations of the Damage Assessment as a Basis for Funding Reconstruction

The $SAT 9.4 million allocated for the housing recovery plan supported the reconstruction of 862 houses including 502 new homes and 360 repaired. The Damage Assessment of the housing sector was used as a basis to financially support affected communities. Religious leaders and village mayors were also involved in the evaluation of damage of this sector, being a source of information for the agency in charge of this assessment. Assessments of damage greatly changed over time with results depending on method, data and sources used(Table 7). This task was perceived as a major difficulty for officials carrying out the evaluation of houses impacted, with uncertainties linked to the location and the numbers of properties destroyed:

> "It was quite hard to assess at the time because of the fact that most of the house were gone. We never had a shot of the houses before and after so we were definitely relying on village mayors to give us information. It is quite a tough thing to do but we managed to give about 860 houses" (MWTI: D).

Table 7: Assessments of Housing Damage

Sources	Houses destroyed	Houses damaged	Total
DaLa	685		**685**
Village chiefs	742	64	**806**
Families claim	908		**908**
DMO field verification survey	405	161	**566**
Housing program final assessment	502	360	**862**

Source: PNDA, 2009.

Lack of pre-disaster data was pointed out by officials in charge as a main problem to undertake the assessment:

> "It (the difficulty) was actually determining the location of the houses, because it was hard for us to say: was that house really there? Because we do not live there, but we depend on the Chief of the village along with the assistance of the church minister to confirm to us where the houses were located" (MWTI: D).

Moreover, post-tsunami information related to the location of new houses rebuilt does not exist:

> "With housing I don't think that we develop a system. We do not have gone that far where we list all the houses existing" (MWTI: D).

In the aftermath of the tsunami, populations of the impacted area went to their plantation situated inland and on higher ground. After the tsunami, experts in charge of the PDNA carried out a study concluding that 95% of the population was traumatized and wanted to stay upland, far from the shore. While no mapping of new houses has been developed, the majority of interviewees estimate that between 70% and 90% of families resettled inland, in less exposed areas:

> "I think it will take a while for everybody to move where they were originally along the coast (...). One of the thing that we found is that it was up to 70% and in some cases 80% of houses that we built, were constructed in a different area apart from where they were originally, higher well above the coastal road" (Habitat for Humanity: A).

Lack of data has been highlighted by academics and organizations as a problematic issue in Pacific islands (Pelling and Uitto, 2001; IPCC, 2001; 2007). Difficulty for the GoS to have a detailed record of coastal houses comes from the fact that construction of properties at village level is under village responsibility. Consequently, a gap exists between national information system and local practices. On the other hand, with the PUMA's development consent, information concerning housing stock prior to the tsunami should be available.

Nevertheless, this is apparently not the case, and officials from PUMA have stressed that it is very common in Samoa that building construction occur without a development consent being granted.

This reinforces the idea that PUMA as planning agency is not accepted by a wide majority of Samoan citizens. Moreover, the findings demonstrate that information related to the location of new houses is not available. Planners studying resettlement argue that new location is often the result of a rapid choice that may not be adequate concerning risk exposure and issues of vulnerability reduction (Coburn et al., 1984; Razani, 1984). This lack of data is problematic because the resettled communities might be exposed to new hazards (Charny and Martin, 2005). Thus, it is recommended for the GoS to carry out a study in order to establish a mapping of the new houses. By compiling this data with the topographical maps and GIS based land image information obtained during IAMP-2, it would allow, if resettlement of populations is permanent, to evaluate to what extent relocation sites are exposed to natural hazards.

5.2.3 The Owner Driven Reconstruction Program

The GoS provided families having their house destroyed with SAT$ 18,000 in order to buy construction material from local private suppliers. A decision was made by the Shelter Committee that communities should be involved in the reconstruction process in order to develop a sense of ownership and add a value to the final result. As a consequence, site preparation, labour cost, and project management was at the population's expense:

> "It was not just about giving something, but there is a Samoan thinking that says that you throw a stone to help building the foundation, so it actually helps to create a sense of ownership"(MWTI: E).

This model is known as Owner-Driven Reconstruction (ODR) model; communities who lost their house are provided with a combination of cash, vouchers and technical assistance to rebuild their house. However, some people decided to rebuild themselves, but no information is available concerning the amount and location of these houses. Within this recovery plan framework, the NGO habitat for humanity offered to help the GoS to assist citizens in the reconstruction of destroyed and damaged houses, and was selected as main builder for the

recovery of the housing sector. The NGO contributed to the construction of 637 houses, which represents the majority of properties built:

> "Habitat was appointed as principal builders by the Samoan Government and provided the workforce and expertise with 600 New Zealand volunteers. The Habitat model is specifically designed internationally and not just in Samoa or New Zealand to help to give skills to those people who do not have skills… We came as building specialists" (Habitat for Humanity: A).

Habitat started to rebuild immediately only 4 to 6 weeks after the Tsunami. With 502 homes built and 360 repaired, the GoS affirms that about 95% of housing recovery has been completed (Final report, 2010).

Recent post-disaster cases show that traditional approach of top-down housing reconstruction has been shifting toward an approach that incorporates an active participation of population affected within the decision making process. This model has been used in Gujarat (Duyne Barenstein, 2006; 2008) and the Jammu and Kashmir regions (Kutch Nav Nirman Abhiyan, 2005) in India after the earthquake of 2001, as well as in Sri Lanka and the Aceh region in Indonesia after the tsunami of 2004 (Lyons, 2008), and in Pakistan after the earthquake of 2005 (Causton and Saunders, 2006). Villages rebuilt by professional companies most of the time consist of standardized houses, with little concern about social organization of communities affecting restoration of livelihood and their social capital (Downing 1996; Duyne Barenstein, 2008). One of the consequences is a low occupancy rate of new homes constructed by external contractors as people refuse to move in and generally choose to repair their old damaged property (Davis, 1997) which has a sentimental value. This phenomenon has been confirmed in Samoa, as the head manager from Habitat declares that houses remained unoccupied:

> "Actually you can see that some houses are still vacant, houses that have been rebuilt but remain unoccupied" (Habitat for Humanity: A).

Researchers maintain that involving locals in the rebuilding of their house contributes to promote development via re-establishing or strengthening socio-economic networks (Oliver-Smith, 1991; Barakat, 2003; Duyne Barenstein, 2006; 2008). Under the Owner-driven Reconstruction Program (ODRP) communities rebuilt their house and external agencies have the limited role to provide financial and technical assistance. ODRP have been said to be cost effective, with higher occupancy rates, leading to a better restoration of confidence after a traumatic experience, keeping people occupied after the disaster, allowing them to rebuild according to personal preferences, strengthening building capacity, and conserving local culture identity (Duyne Barenstein, 2006; 2008). For example, a study carried in Sri Lanka analyzes different outcomes between ODRP and Donor assisted Program (DAP) and concludes that ODRP performed better on both quantitative and qualitative criteria. Houses were produced faster, of better construction quality and at lower cost.

Infrastructure, services, and amenities were more readily provided to ODRP sites against DAP which lead to a "culture of dependency", and accompanied by longer delays in temporal shelters (Lyons, 2008). However, the success of the ODR approach is criticized and not necessarily guaranteed (Van Leersum and Arora, 2011). A wide range of configurations for participation may take place, categorized by Davidson et al. (2006) from "manipulation" where at one extreme householders are integrated in the project only as the labour force, to "empowerment" where community actively take part to decision-making process and programme management. Nevertheless, level of participation of locals within the recovery process is not the main topic of this research and has not been evaluated. On the other hand, compliance with national building codes and standards is a fundamental issue that needs to be considered within the reconstruction process, and more particularly to the ODR programmes.

5.2.4 Standard Design and Technical Support

In Samoa, adherence to national codes and building standards was one of the concerns raised by external agencies:

> "Certainly the issue around building standards is something that we were mindful of. So, respect of building codes was the responsibility of the government to make sure that the houses will be reconstructed to meet their own building codes.

> So we played the role of asking the government: "Are you really applying the codes? And if you're not how can we assist in supporting you in meeting that?" (NZAID: G).

In Samoa, national building codes are a combination of the Australian wind regulation and the New Zealand building codes that were defined in 1992 with the assistance from the Australian government, after some very important cyclones hit Samoa. The Shelter Committee elaborated a standard size open beach fale respecting national building codes and including disaster risk considerations:

> "The design was done by engineers in Samoa, with resistance to cyclones, flooding, and of course earthquake and tsunami" and "allowing space for a wave to go through and also come back to the ocean"(DMO: C).

Most of the participants interviewed confirmed that open traditional houses, called 'fales', resisted more than European style houses and that the social aspect of the design was important to restore livelihood. Therefore, a house design of 10 X 5.2 meters based on Samoan traditional lifestyle was defined, that interviewees qualified as "appropriate design house to what all Samoan people are used to" and "culturally accepted" (MWTI: E). In addition, the majority of participants assert that new houses are much more resilient to natural disasters than previous ones:

> "The new housing is far superior than it was. Structurally houses are far sounder and they are cyclone resistant" (Habitat for Humanity: A).

Nevertheless, aside from the involvement of the NGO Habitat for Humanity, it can be estimated that owners who self-built and repaired their home represent 26% of the total amount of properties reconstructed. Interviews suggest that adherence to Samoan codes may not always be accomplished. This is particularly the case with houses that were self-built by home owners and did not use the assistance of the mentioned NGO:

> "There are lots of people who self-build and I have got to say that these were not up to code" (Habitat for Humanity: A).

> "I think in housing that is another area where there is a difference between the houses that have been built by NGOs or volunteers who have that professional supervision of the built, and with houses that have been built by families themselves. I think that it is probably an outstanding question as well. The reality is that in Samoa most of the houses are simply built by families, and so there are problems with planning consents and everything that was part of the house programme. There is variability within Samoa and overall that is something else to monitor I suppose, the quality of the overall rebuilt for housing. But you have to recognize that you are working in an environment where people take some responsibility themselves, so it is impossible for the government to set an absolute standard and then require everybody in Samoa to make that" (NZAID: B).

A study from Van Leersum and Arora (2011) concludes that ODR model necessitates constant training and technical advice to householders and artisans in order to comply with building codes and standards. Hence, in absence of appropriate regulatory framework, technical assistance and supervision reduction of vulnerability may not be attained (Duyne Barenstein, 2008). However, these support mechanisms are seldom provided because of the high speed of reconstruction (Van Leersum and Arora, 2011). In addition, training programmes and technical supervision represent a cost that external donors are frequently reluctant to fund (UN-Habitat, 2007a). While construction design may reduce vulnerability by including risk hazard components and building codes, it is crucial for leading agencies to ensure compliance with established norms and standards (Burnside and Dollar, 2000 in OECD; OECD, 2004). Indeed, the OECD (2004) notices that despite the imposition of building codes and preventives measures at a early stage of the reconstruction process, the main problem is often related to agencies and national governments poor monitoring of these norms through time. Analyzing the earthquake that occurred in Turkey in1999, the OECD (2004) identified problems of insufficient monitoring and enforcement, and inadequate regulations. Building codes, regulation or supervision of technical and professional standards, and legal liability failed to prevent damages.

Furthermore, concerning houses built by Habitat for Humanity, monitoring of building codes adherence apparently did not occurred and thus, self-monitoring applied:

> "We have our internal control. We never take short cut. We build according to what the local building standards are. So the GoS did not tend originally to have building inspectors (...) but we welcome any sort of inspection as Habitat houses are built for life" (Habitat for Humanity: A).

Providing institutional support and monitoring reconstruction of new houses and their adherence to national codes and building standards on the long-term appears as an essential aspect for the programme's success. As it is emphasized by the United Nations Framework Convention on Climate Change (2006) respect of construction norms and national standards requires better control and monitoring. It is the responsibility of the government (Burnside and Dollar, 2000; OECD (2004) and it may be supported by aid partners (UNFCC, 2006).

5.3 SUMMARY

This section has outlined that the PDNA (2009) and organizations such as the World Bank and ADB recommended that the housing recovery should be paid by affected households. Neo-liberal economists and other agencies involved in disaster response have emphasized that the intervention of governments in supporting housing reconstruction was generally a result of market failure, and that it tended to discourage the private sector to invest in risk mitigation private sector (Freeman, 2003; 2004). Also, recommendations from the PDNA (2009)reflect the neo-liberal approach stating that risk mitigation must be assumed by individuals rather than by the public sector. In addition, disaster is presented as an opportunity to stimulate the private sector by recommending an insurance system. Nevertheless, the findings demonstrate that the Samoan society owns diversified mechanisms to cope with this matter inherent to their culture and associated to their values of kinship. Also, the reconstruction of households affected by the tsunami has been financially supported by the GoS, Catholic NGOs and remittance from their families living overseas. Very little data informed the rebuilding of new houses and the lack of technical support along the ODR program might have led to inconsistency in the application of standards and national codes.

Overall, it appears that because of the trauma caused by the tsunami, about 70% to 90% of the population has resettled inland to their plantations. While resettlement might be temporal (resulting from an emotional shock), it has been accompanied by the construction of road networks in order to give relocated population access and services in order to make this shift back permanent. This aspect was observed in the subsequent section.

5.4 LAND TRANSPORT AND SEAWALLS RECONSTRUCTION

The recovery of the housing and tourism sectors is strongly related to the reconstruction of infrastructure. In addition, many economists outline that the capacity to rebuild infrastructure after a disaster is the principal factor of development as the country's economic growth mainly relies on transportation systems, energy systems, and social services (Freeman, 2004; Lyons, 2008). This section observes the policy adopted for the reconstruction of land transport infrastructure. The reasons and cost of the strategy adopted are explored and the construction of seawalls as mitigation risk actions are analysed.

5.4.1 Tsunami Impact on Land Transport Infrastructure and Seawalls

The impact of the tsunami was concentrated on coastal roads of the southeast coast and Aleipata East/South coast roads on Upolu Island. With a total length of 30.6 km, roads that need to be repaired account for 24.5% of total road stock in the affected zones and 4.6% of total public roads in Upolu Island (PDNA, 2009). None of the seawalls of the impacted area resisted to the tsunami and required to be partially or completely repaired (PDNA, 2009).Damage to the roading system (including road, seawalls and bridges) is estimated to be over SAT$ 61.55 million with 79% of recovery cost attributed to roads and about 21% to seawalls (Table 8). This represents about 30 km of roads and 6.4 km of seawalls (PNDA, 2009).

Table 8: Land transport's early and medium to long term recovery needs

Sub-sector	Early recovery needs (SAT$M)	Medium to long-term reconstruction needs (SAT$M)	Total (SAT$M)	Total (US$M)
Road	48.5	81	129.5	51.8
Seawall	12.8		12.8	5.12
Bridge	0.25		0.25	0.1
Total	61.55	81	142.55	57.02

Source: PNDA, 2009

5.4.2 The "Building Back and Relocating" Option

Before the tsunami impacted the South coast of Upolu, the World Bank, through the IAMP, was indicating the vulnerability of this area and highlighted the need for *"safe and reliable"* land transport infrastructure essential for the economy of the country (World Bank, 2003: 4). In the aftermath of the tsunami, experts from the PDNA (2009) consider that the temporal resettlement of communities in their plantation should be supported via infrastructure networks, in order to make this resettlement permanent:

> "In the case of Samoa affected people have resettled currently in traditional plantation areas, where infrastructure networks (water, electricity, roads) are non-existent, or of poor quality. To support a more permanent upland resettlement of villages that have been destroyed by the tsunami, additional investments will be needed to create the necessary infrastructure networks and facilities needed to provide services at the new locations. This is the option (ii) labeled "build back and relocate" (PDNA, 2009: XIV).

This option of "building back and relocating" fits with the IAMP approach seeking to improve road networks with a focus on access to remote villages and resilience of infrastructure to natural hazards, and with technical and advisory assistance of the World Bank (World Bank, 2007).

Prior to the tsunami, the IAMP had the objective to support this strategy, as a report of the World Bank (2007: 1) states:

> "The infrastructure sector has been the core focus of the World Bank's support for Samoa, including urgent rehabilitation of structures and facilities which are vital to the continued growth of the country's economy—such as airports and roads".

Thus, a program called 'access road' was part of the long term planning of the GoS with the goal to encourage people to live inland:

> "We built up some criteria about four years ago where these villages will be entitled to have these roads sealed. Those criteria were first, people have to move inland, and if people were moving inland the village road would be a priority" (MWTI: D).

Therefore, the tsunami that occurred in Samoa in 2009 appears as an opportunity for the experts from the PDNA (2009) to put this strategy on the table and is defined by MOF as the 'right choice' :

> "One of the priorities of the recovery plan for the transport sector is the construction of access roads from the coastline mains to all upland areas" (...)"What we have tried to do is to explain to the public the cost of doing the things and the importance of them making the right choices" (MOF: I).

What the aid coordinator from MOF describes as the "right choice" reflects the "best solutions" of the CIM plans, from which one of the principal recommendations related to the road network, was the realignment further inland of coastal main roads that were located within the CHZ. The building back and relocating" strategy has been used to make the resettlement of affected population inland permanent, also part of the "best solutions" provided by the CIM plans. Hence, the "building back and relocating" option advocated by the PDNA (2009)and adopted by the GoS was an opportunity for advancing the agenda highlighted within the IAMP and CIM plans, which will be deeper discussed in section 6.3.

5.4.3 "Building Back and Relocating": A Costly Investment

The "building back and relocating" plan suggests upgrading two inland routes and ten access roads to inland area for providing access to resettled zones. However the cost of such investment is considerable (Table 9) and for Samoa very challenging to afford without foreign aid:

> "The recovery has been very expensive exercise for the government because it not only meant restoration of services to the now half abandoned villages along the coastline that it also meant additional cost taking the same services to the relocated communities"(MOF: I).

The Recovery and Reconstruction Needs emphasized in the PDNA estimates that "Building Back and Relocating" would have a cost of SAT$ millions 417.41, which represents an increase of 144% of the cost for relocating at the same place. This difference is mainly due to the elevated cost of building infrastructure inland with an augmentation of SAT$ millions 106.76, being about 159% for the sector. From this amount, only SAT$ millions 2.72 would be covered by the private sector, while the public sector would have to finance 97.5% of the total work. A year later, the GoS stipulates that the 5.3 km road that links the resettled population from Lepa to Lalomanu is completed, which my personal observations confirm. In addition, the new arterial road inland connecting Samusu to Lepa should be finished within two to three years, highlighting the long term commitment of the GoS in reforming its land transport system by choosing the "build back and relocate" option (GoS, 2010).

Table 9:Summary of Recovery and Reconstruction Needs (SAT$ Million) with sectors discussed in this thesis highlighted in blue.

Sector	Sub-sector	Build Back			Build Back and Relocate		
		Public	**Private**	**Total**	**Public**	**Private**	**Total**
Social Sectors	Health	8.67	0	8.67	18.62	0	18.62
	Education	11.12	0	11.12	21.13	0	21.13
	Sub-total	19.79	0	19.79	39.75	0	39.75
Private Sectors	Agriculture	0	8.54	8.54	0	8.54	8.54
	Commerce	0	2.22	2.22	0	2.22	2.22
	Tourism	1	78.1	79.1	1	78.1	79.1
	Sub-total	1	88.86	89.86	1	88.86	89.86
Infrastructure	Housing	1.01	39.59	40.6	1.01	39.37	40.38
	Community	0	49	49	0	49	49
	Water	7.56	0	7.56	15.53	0	15.53
	Electricity	1.72	0	1.72	28.75	0	28.75
	Transport	75.26	2.85	78.11	139.73	3.7	143.43
	Communication	2.44	1.61	4.05	7.01	3.7	10.71
	Sub-total	87.99	93.05	181.04	192.03	95.77	287.8
Cross-sectoral	Environment	1.52	0	1.52	2.02	0	2.02
	Disaster Risk Management	4.53	0	4.53	6.03	0	6.03
	Sub-total	6.05	0	6.05	8.05	0	8.05
Total		108.78	181.91	290.69	232.78	184.63	417.41

Source: PDNA, 2009.

Overall, the option of "building back and relocating" is reflected from international organizations such as the World Bank and academics with an emphasis on economic aspects of reconstruction. This discourse stresses that the economic growth of a country is strongly linked to investments in infrastructure such as transportation networks and social services, and that ability to carry out this kind of investment is a prominent element of development (Freeman, 2004). Also, some authors point out the fact that developing countries often have to accept structural adjustment requirements that are part of the requirements for loans from international financial institutions such as the IMF or the World Bank (Kardam, 1993; Annisette, 2004; Heijmans, 2004).

While the extent to which the GoS had freedom of choice is unknown, it can be affirmed with certainty that the "building back and relocating" option is very costly for Samoa, probably engendering an increase of the national public debt.

5.4.4 Seawalls as a Response to Mitigate Risks from Natural Hazards

The totality of seawalls located within the affected area were damaged, being completely or partially destroyed (PDNA, 2009). Nevertheless, since the tsunami hit, the Land Planning Division of MNRE used seawalls as a systematic response for reduction of coastal vulnerability. The agency more than doubled the amount of seawalls in the country, which represents a total cost of SAT$6.6 million:

> "We will be executing another additional 21 seawalls on top of already 18 existing seawalls. In Samoa, I think we have up to 41 seawalls now since the tsunami hit" (MNRE: H).

Seawalls have been criticized and subject to controversy, including visual impact (Griggs, 1986), reduction of beach access, potential loss of sand supply, possibility of passive erosion (Fletcher, et. al., 1997), and high cost of building and maintenance (Tompkins et al., 2005; Griggs, 1986, 1995; Smith, 1983).The PDNA (2009) reports that large boulders that were parts of existing seawalls were moved large distances by the tsunami and caused significant damage to housing, structural beams, foundation platforms and building walls. While studies comparing costs of relocation and reconstruction to coastal protection demonstrate that on the long-term relocation is generally less expensive (Griggs, 1986, 1995; Smith, 1983), nevertheless, seawalls have been built extensively to reduce vulnerability to natural hazards in many places (Griggs, 2005). However, the Damage Assessment report demonstrates that none of the seawalls in the area resisted the tsunami impact, making their efficiency questionable. The problem is, communities generally perceive these engineering structures and policies as safer, providing them with what Deegan (2005) calls the 'false sense of security'.

Moreover, as a UNDP official indicates:

> "Those villages believe that they need those seawalls, and so they want seawalls" (UNDP: J).

This technocratic strategy is often motivated by economic and political interests (Griggs, 2005).Typically, following a disaster, political leaders use resources allocated to the reconstruction to rapidly provide visible response to the affected populations that are also their electorate (Gurenko and Lester, 2004). Rapid and visible results within reconstruction efforts are politically beneficial for government image (Freeman, 2004). According to some interviewees, in Samoa, seawalls represent a great opportunity for local politics to gain some credit with their electorate:

> "If it is election season, which it is right now, you will find that some village get attention were others not because for members of parliament they (seawalls) could possibly be a little bit... you know much more of a heavyweight. So you have to consider all these different things to understand the vulnerability of one village over another or one population over another. I think that this aspect takes a huge part in Samoa because it is very much based on political. Government officials they have to please their constituency and so those (seawalls) I think are part of that". (...) "The politics of this whole disaster has been you know: "you want to get in the parliament don't you? Okay, then you need to build this seawall!" that is as simple as that" (UNDP: J).

In Samoa, it has been reported that quick construction of seawalls sometimes overcome essential considerations such as environmental and risk assessments. Also, their immediate construction following the tsunami occurred without obtaining development consent from the planning agency that is PUMA:

> "For seawalls, in my own view I think, and what I understand, there should be an assessment first to see if it is relevant. Of course all the communities will say: yes we need a seawall. But there should be an assessment and doing consultations to make sure that it is properly developed". (...) "With the seawalls they are some problems with agencies in the country. There are internal problems with the land

> management division because it just builds a seawall without our consent. There should be conditions; minimal conditions to ensure that they do not disturb the coast also do not destroy the amenity of the communities" (PUMA: F).

Local problems require local solutions and seawalls as an automatic response for risk mitigation might not be the appropriate solution to all hazard risk issues:

> "I think that what should be done is a consolidated plan or strategy to support these efforts and see where it is relevant". (...) "Those projects should look at identifying alternative methods instead of cement or rocks with maybe some other options that may be considered and that can be adapted to suit the conditions in Samoa" (PUMA: F).

The efficiency of seawalls is subject of debate and related positive and negative outcomes have been widely discussed (Smith, 1983; Griggs, 1986, 1995; 2005; Tompkins et al., 2005). From a technical point of view, in tropical coastal ecosystems restoration of habitats such as coral reefs, mangroves and sea grass beds provide better outcomes than other conservation options (Yap, 2000). In addition, when constructing seawalls, planners should consider social and ecological aspects that are generally ignored (Jones et al., 2010). The impact that reconstruction actions can have on other sector activities and communities should also be taken into account. For example, the visual impact of those concrete structures might be damageable for the tourism sector and recreational purposes. Finally, maintenance cost of seawalls built today may increase economic vulnerability to the next generations as in this case, where all existing seawalls located in the impacted zone were destroyed or damaged. Repairing them has had an important cost that the public sector had to bear. Thus, actions aiming to protect coastlines should consider the larger scales of strategic perspective and objectively analyze the potential long-term effects.

5.5 SUMMARY

This section has outlined the policy related to land transport infrastructure and seawalls reconstruction. Samoa has been investing in risk mitigation actions, and seawalls have been

significantly expanded. In order to reduce vulnerability of communities affected, the option of "building back and relocating" recommended within the PDNA (2009) has been elected by the GoS. The central objective of this strategy is to make the resettlement of impacted communities permanent, in order to protect them from another extreme catastrophe. For this reason, existing services along the coast have been rehabilitated and new roads have been built inland, which was very costly for Samoa. However, the efficiency of seawalls and relocation strategy are questionable and this is further discussed in Chapter Six. In addition, it is also of interest to observe what land use planning decisions have been made concerning tourist accommodation in order to get a holistic idea of the reconstruction process.

5.6 THE TOURISM RECOVERY PLAN

With about US$ 123 million of annual revenue, which represents more than 20% of total GDP, tourism is one of the most important economic sectors in Samoa. Before the tsunami, tourism accounted for approximately 10% of Samoan employment. Success of tourism in Samoa is mainly linked to the spectacular white sand beaches and to the beach fales, that are traditional accommodation located few meters from the ocean. The area affected by the tsunami is one of the most touristic of Samoa. Tourism in this region is economically important for local families, for the whole country, and at international level for countries like New Zealand. Therefore, the reconstruction process of tourist accommodation, particularly beach fales, is outlined and discussed throughout this section. The extent of the damage on tourist accommodation and the program put in place to support affected business owners are underscored. Moreover, the "build back better" approach used for the recovery is analysed and criticized.

5.7 IMPACT ON TOURIST ACCOMMODATION

After transport and housing, tourism has been the third largest sector affected, with losses estimated at US$ 9.6 million. The tsunami occurred in one of the most popular areas for tourism, and resulted in a loss of 23% of Samoan bedding capacity. The DaLa observes that nearly all the tourism facilities in the zone affected were located close to the beach and were

therefore considerably damaged. While accommodation categories including budget (10.2%), standards (5.1%), superior standards (8.3%) and deluxe (12.4%) account for limited bed capacity losses, beach 'fales' has been by far the most affected group with a total loss of 73.2% (overnight) and 75.2% daytime (visit) (Figure 9).

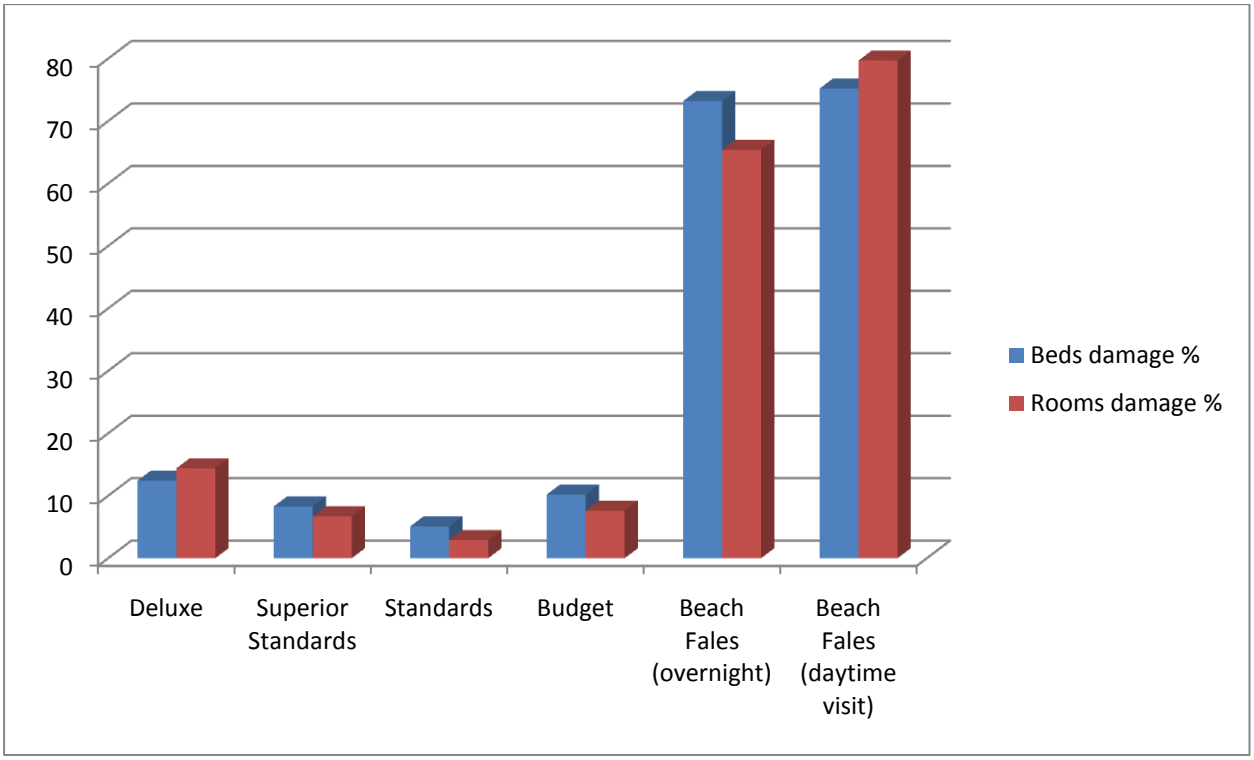

Figure 9: Damaged tourism accommodation facilities considering beds and room capacity before and after the tsunami (Source: Samoa Tourism Authority, 2010)

5.8 THE TOURISM TSUNAMI REBUILDING PROGRAMME (TTRP)

While most of the accommodation categorized from standards to deluxe were insured, beach fales and budget tourist accommodation, being the most affected, did not contracted private insurance system. Beach fales were largely owned by families who have their own resources, which aspect is developed in section 4.9.5, TTRP: Fulfilling Requirements. Nevertheless, in order to support the recovery of the tourism sector, the Tourism Tsunami Rebuilding Programme (TTRP) was set up. The program is essentially funded by the Government of New Zealand with NZ$ 2 million (SAT 3.5 million) through the New Zealand Aid Programme (NZAID) over a period of two years.

The NZAID program aims to support sustainable development in developing countries, with particular attention to the Pacific region (NZAID, 2011). NZAID is also committed to contribute to aid effectiveness principles including the Millennium Development goals by 2015. Thus, development programmes are decided in function of the needs of developing partner countries including support growth, livelihood, education, health, governance and strategic sectors (NZAID, 2011).Tourism is one of the most important sectors in Samoa, and low budget accommodation generates considerable income and employment for the country. Hence, rapid recovery of tourism activity was therefore essential:

> "The focus on tourism reflects the fact that there is a very significant amount of employment on the southern coast that is driven from tourism and entrepreneurial income. This area has been devastated and there was a loss of confidence, external confidence in Samoan tourism industry, so it was also important from the wide development perspectives to build back quickly" (NZAID: B).

The TTRP provides grants for eligible projects up to SAT 100,000 for a maximum of twelve beach fales rooms or unit (TTRP, 2010). The program asks for a kind-contribution of the applicants including labour and sand (TTRP, 2010). The key theme for the rehabilitation of this sector was based on 'build back better' criteria which aims to rebuild according to national standards, considering fales size, adapted material and to be better situated than before (GoS, 2010; NZAID, 2011).

A TTRP Steering Group composed of ministry staff was created in order to manage the program and defining guidelines and 'build back better' requisites to be elected by the TTRP:

> "In the tourism rebuilding area, basically the decision making body for that funding is a Samoan based body so bring together people from the private sector, people from the public sector and ourselves as the donors. But the processes that go through are the government of Samoa process". (NZAID: B)

The Samoa Hotel Association (SHA) had the role to evaluate applications for eligibility including the respect of 'build back better criteria'. The Samoa Small Business Enterprise Centre (SSBEC) provided business training to the successful applicants. In addition, the DMO gave disaster risk reduction training.

Via regular site visits, SHA, the Samoa Tourism Authority (STA) and PUMA assessed improvement and compliance with the 'build back better' requirements and reported their finding to the TTRP Steering Group and New Zealand Aid Programme. In addition, the GoS and SHA provided six monthly reports to the New Zealand Aid Programme (Figure 10).

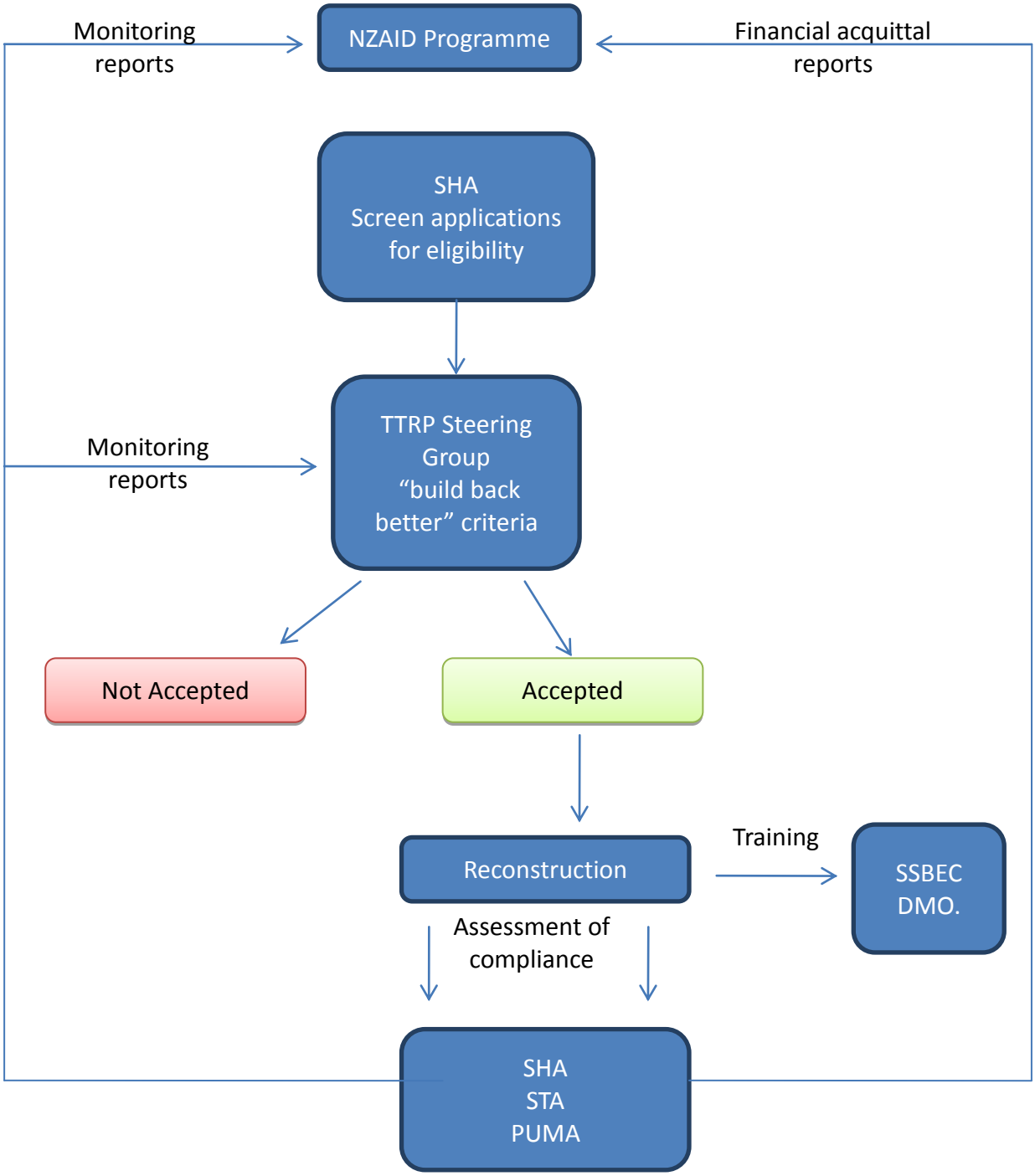

Figure 10: Tourism Tsunami Rebuilding Programme (TTRP)

5.8.1 Building back better?

One of the TTRP expected outcomes is to reconstruct safer tourist infrastructure based on a "build back better" criteria that seeks to reduce risk to natural hazards via an improvement of construction methods and materials compliant with the national building code, PUMA environmental safeguards and Samoa Accommodation Standards (see Table 10). Of the 56 beach fale businesses recognized as impacted by the tsunami, only 24 (about 43%) have applied for assistance of the TTRP (GoS, 2010). To date, the GoS (2010) declares in its final report that 63% of the $ 3,500,000 allocated for the TTRP has been used.

Generally interviewees agreed about the improvement of construction material quality used for new beach fales. However, one of the kind-contributions mentioned by the TTRP is that business owners must provide sand for the reconstruction. Sand mining has been highlighted as an important problem in Samoa by most of interviewees and CIM plans. Even if sand mining is legal with obtaining a permit, illegal practice was said to be frequent and diminishing natural protection features. Hence, the way business owners obtained sand and the probability that it is taken from the beach represents an important concern as it may imply exacerbating vulnerability of the ecosystems and the rebuilt area. Therefore, control of sand provenance for the rebuilding of tourist accomodation requires regular monitoring of the government and responsible agencies. Similarly to housing reconstruction and respect of construction codes, it is a problem of governance.

Despite utilisation of better construction material, less consensus exists concerning issues of vulnerability reduction of beach fales. At the difference of the housing sector and the option of "build back and relocate", observations on the field and interviews confirm that these properties were rebuilt at the same place as before (Figure 11 A and 11B):

> "The beach fales and resorts have been rebuilt in same locations following approval of their developments by our office by granting them with development consent" (PUMA: F).

Rebuilding location may be an issue when considering that it was demonstrated to be one of the main reasons for these considerable damages on this particular accommodation category. Hence, a possible strategy for reducing vulnerability to natural hazards is to build escape

routes for evacuation during extreme events. In fact, this strategy was part of the conditions imposed by international institutions and donors to get funding for tourist accommodation reconstruction:

> "For the tourism sector, part of the agreement for getting the assistance, part of the conditions for assistance is the rebuilding back of those beach fales which involves the construction of what they call escape routes from the coastline up into the hill" (MOF: I).

However, a year after the Tsunami, it seems that some of this work is still latent:

> "We are working with them (tourism businesses) we haven't started yet but hopefully within two weeks' time to look at constructing evacuation option. Because, if you look at Lalomanu, Saleopaga and Tafua, there is no way of getting out. So the idea is to see if we can construct a platform for evacuation and then getting up steps. Part of it is to identify evacuation areas to evacuate tourists in the case of disaster" (DMO: C).

Figure 11A: Destroyed structures in the aftermath of the tsunami (Source: divinationpower.com)

Figure 11B: Beachfale accommodation rebuilt at the same place (Source: Samoan Observer, 16/08/2010).

Nevertheless, eleven months after the Tsunami, the Samoa Observer had already communicated on the reestablishment of tourist accommodation and stated that they are ready as before to receive overseas visitors by commenting: "Rebuilding Paradise: Same style. Same colour. Same everything. Yet changed forever: The Taufua family has rebuilt their traditional beachside fale resort in south-eastern Samoa almost exactly as it was before last September's tsunami smashed it to splinters" (Samoan Observer, 2010).

5.8.2 The Need to Quickly Recover

The results demonstrate that more than 75% of affected tourism businesses (in beds capacity) were beach fales that are structures is built on the beach. Location of beach fales have been showed by PUMA as vulnerable and defined by the PDNA (2009) as principal reason for being the most affected accommodation category. Nevertheless reconstruction occurred at the same place as before the disaster occurred. Interviewees attest that rapid recovery of one of the most prosperous sector of the country was a priority for business owners, the GoS and New Zealand. On the 6of October 2009, in an interview given to the New Zealand Herald, the South Pacific Tourism Organization chief executive Tony Everitt insisted on the importance of tourism for both Samoa and New Zealand by saying that up to a quarter of Samoa's GDP relied on tourism and New Zealand was its largest visitor market. In addition, Tony Everitt claimed that recovery of the sector would be very quick:

> "There is a lot of Samoa that is quickly going to be back in business as usual" (...) "The good thing about tourism, always, is that it can disappear quickly when something happens but it can come back really quickly as well. As long as visitors start coming, cash gets back into the economy quickly again" (NZ Herald).

Quick recovery of tourism was a priority even in detriment of building compliance stipulated in the TTRP scheme:

> "It was also important from the wide development perspectives to build back quickly. A number of operators started to build back prior to the scheme being publicized. What do you do in that retrospective if people have built back? So there has been a tricky area there" (NZAID: B).

In addition, PUMA who granted development consent to beach fales and resorts explains that some projects that are developed without their acceptation:

> "I think that some of the problems are related to compliance and some of the projects just go on without the development consent" (PUMA: F).

Beach fales have been rebuilt at the same place as before being impacted, highly exposed to natural hazards. In addition, results show that some development did not obtain acceptation of PUMA. Nevertheless, the rapid recovery of one of the most important economic sector for the country was a priority for Samoa and for New Zealand as economic partner.

5.8.3 TTRP: Fulfilling Requirements

Of the 56 beach fales impacted, only 43% applied or were able to apply for assistance of the TTRP. In interviews given to the Samoan Observer nearly a year later (16/08/2010), beach fales operators claim that the TTRP grant process is too long and requires many conditions that are very hard to fulfil as stated by a beach fale owner: "The tourist office made us work so hard to get that fund out. We are still waiting on it" (Samoa Observer, 2010).On the other hand, some operators that have been reimbursed by the TTRP have used the opportunity to

upgrade their beach fales, such as families further investing in a 4-5 star Hotel Resort (UNDP, 2010). In addition, declarations within a UNDP report of Ms. Matatamalii Sonja Hunter, CEO of the Samoa Tourism Authority, leads to think that more than vulnerability reduction, the main goal pursued by the TTRP is to attract higher-paying tourists:

> "The minimum distances of 3 meters between beach fales and of 5 meters between the beach fale and the road guarantee that guests enjoy a higher level of privacy and tranquillity. This will enable tourist operators to meet the demands of more sophisticated, higher-paying clients"(UNDP, 2010).

Criteria to access the TTRP (see Table 10) include a disaster mitigation/management plan, site development plan and architectural plan, in addition to a business plan showing viability of the business.

Table10: TTRP "build back better" criteria

- A site development plan and architectural plan – confirmation from PUMA and MWTI, compliance with preliminary environmental assessment report (PEAR) or environmental impact assessments (EIAs), building code, and Samoa Accommodation Standards 2009.
- A disaster mitigation/management plan to ensure the safety of operators and their families, employees and tourists in the event of fire emergencies and natural disasters such as cyclones, earthquakes, tsunamis.
- A business plan to demonstrate that the business will be commercially viable.
- Written confirmation of land ownership from the Lands and Titles Court or registered land lease agreement from MNRE for location of business.

Source: TTRP, 2010.

These criteria require technical and financial capacity that the most vulnerable do not have. It has been observed that reconstruction often reproduces inequalities, not only between 'poor' and 'rich' but also within poor communities (e.g., Bradshaw, 2002; Quarantelli, 2005). It can sometimes be difficult for the affected population to fit within eligibility criteria (Duyne Barenstein, 2008). Hence, post-disaster phases might give "opportunities" for those already in

position of power and with economic interests (Vale and Campanella, 2005). In Samoa, 43% of operators getting assistance from the TTRP represent 63% of total budget of the programme. Therefore, analysis and understanding of the mechanisms in place to access the TTRP could be subject to further research. In addition, TTRP criteria seem to have focused more on aesthetic aspects than risk reduction objectives. For this reason, it is questionable whether "build back better" model attained its goals of vulnerability reduction, and to what extent it was a priority for the TTRP.

5.9SUMMARY

With a focus on vulnerability reduction, this Chapter has analyzed some aspects of the reconstruction process related to coastal assets that are housing, land transport infrastructure, seawalls and tourist accommodation. In order to give an idea of the context within which post-disaster decision making took place, the programs and studies, including IAMP and CIM plans, dealing with risk reduction and coastal resilience of Samoan coastal communities were described and critiqued. Moreover, the decision making process for the sectors of interest in this research were portrayed, highlighting the role and responsibility of the different actors involved, and showing what choices that have been made. The findings emphasize some of the issues related to the recovery and to vulnerability reduction. These issues include areas of focus such as the cost of rebuilding plans particularly with the option of "build back and relocate", compliance with building codes and national standards related to housing sector and the ODR program, lack of data on relocation sites (for housing) and concerning new constructions (for seawalls). The findings also show that Samoan society has its own mechanisms to cope with natural catastrophes. These mechanisms include remittance from families living overseas, a national fund for natural disaster, and the kinship inherent to the fa'a Samoa including religious leaders and Catholic NGOs.

Overall, this Chapter outlines the components that allow the understanding of the different reconstruction policies conducted in each sector, and how and to what extent ideas of vulnerability reduction have been integrated. The results demonstrate that, on one hand the option recommended by the experts of the PDNA (2009) of "rebuilding back and relocating" has been elected. On the other hand, quick economic recovery was a priority for the

reconstruction, and rebuilding of tourist accommodation at the same place occurred. These diverse strategies can, to some extent, be explained by the influence that external aid partners exert on the decision making process, and this power relationship will be observed and discussed in Chapter Six. Secondly, vulnerability seems to be a malleable concept which depends on different factors, including the perception and interest of its users (Heijmans, 2004). Also, while the GoS has mainly focused its reconstruction efforts on social aspects, external agencies have provided options of disaster response that were essentially based on economic and physical characteristic of vulnerability. Thus, the reconstruction choices made may reflect values and a certain vision for the future (Olshansky, 2005; Smith, 2010), and therefore revising the rebuilding policy as a whole is required and will be discussed in Chapter Five.

CHAPTER VI

RECONSTRUCTION POLICY AS A TECHNOCRATIC RESPONSE

6.1 INTRODUCTION

The recent years have seen the emergence of a body of academic research dealing with disasters related to climate change (e.g. Brooks and Adger, 2003; Schipper and Pelling, 2006), adaptation and vulnerability of the poor (e.g. Adger et al., 2003; Parry et al., 2001), and mitigation strategies for developing countries (e.g. Chandler et al., 2002; Davidson et al., 2003). Academics and multilateral agencies adopt a discourse that links vulnerability reduction and development (Benson, 2000; Manzo, 2010). The reconstruction phase following a disaster is presented as an opportunity for affected countries to reach these two objectives (World Bank, 1999; Evans et al., 2006; Lyons, 2008). Also, the idea that vulnerable communities need to be helped in the name of resilience to climate change related hazards and economic growth is increasingly reflected on the Western media coverage (Doulton and Brown, 2009; Sampei and Aoyagi-Usui, 2009). For example, after Hurricane Mitch, reconstruction plans translated this idea of opportunity for change based on vulnerability reduction by using catch phrases such as ‘‘Transforming El Salvador to Reduce its Vulnerabilities” and ‘‘The government invites you to transform Nicaragua together” (Bradshaw, 2002: 871). As discussed in Chapter Four, more recently the aid community has adopted the term of “building back better” (Government of Sri Lanka & the United Nations Report, 2005) where the central vision of the rebuilding process is vulnerability mitigation and improvement of former infrastructure (Ingram et al., 2006).

In a globalised world where post-disaster reconstruction is often generated under urgent pressures, policies may be very reactive and show little success in addressing “the root causes of vulnerability” (Ingram et al., 2006). These pressures are the media, the international aid community, donors and lenders that in fact all represent Western opinion and interests on how to best manage resources. Therefore, an outstanding question is whether the concept of vulnerability and development are no more than a way for some countries to perpetuate their

vision of development related to their cultural codes embedded in neo-liberal values and technocratic models (Hewit, 1993; Bankoff, 2001; Manzo, 2010). In fact, very little consideration has been given to the cultural values of the discursive framework within which vulnerability is presented that as Bankoff (2001) affirms, is dominated by the hegemony of the Western model (Bankoff, 2001: 2).

In this Chapter, the extent to which the recovery policy carried out by the GoS has been influenced by international aid, in particular by multilateral agencies that funded the reconstruction, is explored. Thereafter, the way disaster has been used as an opportunity to advance the coastal assets management agenda is analyzed. Also, a discussion on how the recovery reflects the Western neo-liberal and technocratic vision of management is presented. Hence, whether the development discourse and what Furedi (2007: 487) calls the 'cultural narrative of vulnerability', is in fact no more than the contemporary approach for Western nations to propagate their model and values is debated. Finally, by considering the Samoan historical and socio-cultural context, the last part of this Chapter critically examines the potential risks and limitations of the global reconstruction policy.

6.2 INFLUENCE OF INTERNATIONAL AID PARTNERS ON GOS POLICY

The findings of this research show that the reconstruction plan carried out by the GoS has been highly influenced and guided by international actors who helped to fund the recovery. On one hand, the New Zealand AID (NZAID) programme funded the tourism sector via the Tourism Tsunami Rebuilding Programme (TTRP). While it is difficult to evaluate to what extent NZAID has influenced the reconstruction, it is certain that economic interests have encouraged a quick recovery of the sector and fast reconstruction of physical structures. Criteria of "building back better" focused on vulnerability reduction, but also influenced selection of participants who got financial support to rebuild. Moreover, the World Bank, the Asian Development Bank (ADB) and the International Monetary Fund (IMF) helped the GoS to fund the reconstruction of housing and land transport infrastructure (Table 11). Around the world, the two principal financial institutions are the International Monetary Fund (IMF or Fund) that deal with developmental ''crisis'' and adjustment lending, and the International

Bank for Reconstruction and Development (World Bank or Bank) that is involved in developmental loans (Butkiewick and Yanikkaya, 2004).

Table 11: Donor Economic Crises Response Funding for Samoa

Donor	Aid description	Funding (US$m)
IMF	Exogenous shocks facility	9.0
ADB	Economic recovery support program	26.8
NZAID	Emergency response	4.5
	Tourism reconstruction facility	2.8
	Education support facility	0.7
AUSAID	Emergency response	4.5
	Reconstruction	3.2
	Education support facility	1.8
EC	Expedited funds through water sector support	5.5
World Bank	Economic crisis recovery support credit	20.0
	Post-tsunami reconstruction	11.0
	Agriculture competitiveness enhancement project	8.0
	Additional financing for health	3.0
Total funding		100.8

Source: World Bank, 2010.

Representing considerable sources of capital funds for developing countries, many authors show that multilateral agencies including the IMF, World Bank, and ADB have great power on the development agenda of their lending countries (Kardam, 1993; Annisette, 2004; Butkiewicz and Yanikkaya, 2004). Kardam (1993) declares that generally loans impose structural adjustments to the borrowing nations changing their domestic policy. This is what the IMF supports within the Request for Disbursement Under the Rapid-Access Component of the Exogenous Shocks Facility addressed to Samoa by stating that"New activities are likely to center around a joint donor budget support operation to assist the Government in its generally effective tsunami response program and to help encourage medium-term fiscal sustainability and continued structural reforms" (IMF, 2010: 5).As explained by interviewees, Coastal Infrastructure Management plans (CIM) were used as a base for establishing the recovery plans. CIM plans are part of World Bank IAMP and tend to recommend relocating people and land transport infrastructure inland. The relocation strategy was also given as the best option by UN Agencies, ADB and the World Bank through the PDNA (2009) immediately after the tsunami Damage Assessment.

The PDNA (2009) provides a reconstruction strategy for Samoa and recommends to "build back and relocate" affected population in safer areas:

> "The Option I which offers the highest level of safety, recommends the permanent relocation of the people in the lands they have spontaneously relocated inland. This proposal has strong support from the environmental actors, those responsible for disaster management, and settlement planners both inside and outside the government. Despite the negative experience in countries in Asia affected by the Indian Ocean tsunami that attempted to impose a build free zone along the coast, where people refused to relocate themselves or consented under pressure but returned later to their lands of origin, the proposal can be supported in Samoa for several reasons" (PDNA, 2009:43).

Reasons given by the experts of the PDNA (2009) in order to support relocation inland are the following:

- "The topography and lay of the land is such that the cliffs are physically close to their former sea settlements, which make it unnecessary for most of them to move into a distant land.

- The proximity of their new settlements will enable them to continue their family, community church affiliations which are strong in Samoa. They could therefore continue to benefit from traditional family support systems and mutual help which under normal circumstances is a strong disincentive to voluntary relocation.

- Large majority of the persons affected had their livelihoods in the rural subsistence economy primarily in agriculture and fisheries. Even the fishermen will not be seriously inconvenienced from continuing their trade with the relocation.

- Even for those who were informally employed in the tourist sector, the relocation will not be impediment for finding work in the industry.

- Initial surveys have indicated that 95% of the affected persons have indicated a preference to stay in the safety of their farmlands. If the decision is voluntary, their decision needs to be supported" (PDNA, 2009:43).

The findings demonstrate that the policy advised by development experts from multilateral agencies was adopted by the GoS. Aid coordinator from MOF of Samoa attests that the choice of relocation accompanied by a plan of new infrastructure work represents a cost that the country alone cannot cover and might mean revisiting its priorities (e.g. health, education and other earmarked budgets). Nevertheless, carrying this complete recovery plan with a focus on risk reduction is conditional to obtaining the World Bank support:

> "The recovery has been a very expensive exercise for the government (...) because it not only meant restoration of services to the now half abandoned villages along the coastline, but it also meant additional cost taking the same services to the relocated communities. This is something that we cannot do on our own. (...) I think that the Bank and outside agencies looked at a total budget of 124 US million-dollar. And the resources that we have, the help of our partners, cover only 1/3 of that. But it is commitment on the government to be sure that the full recovery plan is done. So how we do it is another issue that we are looking at right now. It is not impossible because it might mean reprioritization of our priorities in order to see that the recovery plan is done and/or to integrating the recovery needs into existing products and finances available to the government" (MOF: I).

In the request to IMF for disbursement under the rapid-access component of the Exogenous Shocks Facility, the Minister of Finances of Samoa explains its close relation with international donors in order to shape the recovery plan and highlights its commitments on disaster risk reduction measures:

> "We are committed to closing any remaining Tsunami-related fiscal financing gap through external grants and concessional borrowing. Our government is working closely with international donors on designing and implementing a recovery framework that focuses on access to basic social services, infrastructure

rehabilitation, resettlement, and investments in disaster risk reduction" (IMF, 2010: 21).

Commitments on vulnerability reduction are emphasized in a report from the World Bank, declaring that Samoan investments in disaster risk reduction are expected to be 21% of the country's GDP for the next three to four years (World Bank, 2010). Moreover this statement has been confirmed by the aid coordinator of the MOF. The engagement of the government in carrying out infrastructure work as part of the "build back and relocate" option is also considered in this percentage. Nevertheless, this investment represents a significant part of the GDP of the country, slightly equivalent, for example, to the tourism sector income. It can therefore be assumed that disaster risk reduction investments will be an important weight on the national economy, certainly affecting the public debt.

6.3 DISASTER: AN OPPORTUNITY TO ADVANCE THE AGENDA

As developed in Chapter Four, CIM plans recommendations and the implementing planning agency PUMA struggled to be accepted by local communities and politicians. However, the catastrophe caused by the tsunami appeared as an opportunity for decision makers to address this strategy:

> "To some extent I think Samoa has a long term plan around disaster risk reduction to progressively shift infrastructure where the risk of disaster is reduced. And I think to encourage people to shift in lower risk areas. There will be a lot of shifting and changing and building in new areas. So in some sense there was an opportunity to advance that agenda somewhat which is what happened" (NZAID: B).

This view is supported by an official from MWTI:

> "There are some proposals where the government aims to push people inland. I think that after the tsunami we can now send this message again. No better time to send this message again" (MWTI: D).

A survey carried out in the aftermath of the catastrophe showed that 95% of communities impacted had a preference for moving backward (PNDA, 2009). Hence, the trauma caused by the tsunami is the main reason for the population movement further inland (PNDA, 2009), which is emphasized by interviewees such as the aid coordinator of MOF:

> "The psychology of all of this and the fear that people have of something that will occur in the future is enough to keep them up there" (MOF: I).

Interviews confirm that the trauma was used as an opportunity to highly encourage resettlement inland. In addition, providing communities with infrastructure and services quickly was used as a way to accompany this shift back on a permanent term:

> "In many ways it (resettlement) dictated how fast we have tried to provide services for those who have been relocated. Because we thought that if we left it too late they (resettled communities) would be again coming down where the services are, because we have also been looking at restoration of services" (…) "I think the only obligation; the only commitment that they needed to let the government know is that they had made the decision to relocate. The location was very important on how we finance all these, particularly infrastructure services. That was the only commitment they needed to make" (MOF: I).

Following the tsunami, the World Bank expertise (2009), PDNA (2009) and then the GoS (2010) declared that the success of efforts to keep resettled people inland was dependant on the speed at which the GoS would provide them with public services and infrastructure:

> "the success (or failure) of communities' and governments' efforts to reduce vulnerability to natural risks by establishing resettlement areas, is highly dependent on whether basic services can be provided quickly and sustainably to relocated people" (PDNA, 2009; GoS, 2010: 23).

In the case of resettlement, Cernea (1988: 19) affirms that to be successful such a program must ensure that the population relocated has the "opportunity to become established and economically self-sustained in the shortest possible period". In the aftermath of the tsunami

populations moved to their plantations, far from the tsunami impacted area. Interviewees confirm that this situation has been used as an opportunity to advance the agenda of the World Bank IAMP recommending the long term resettlement of communities located within the coastal hazard zone. Considering that the IAMP approach was not accepted by the general public before the tsunami, it is questionable whether this strategy reflects what the Samoan population wants.

6.3.1 Opportunity for Development: A Western Vision

The tsunami has been used as an opportunity for reducing risks from potential natural hazards, and rebuilding safer infrastructure. However, some suggest that the concepts of vulnerability is a modern way for developing nations to perpetuate over the World their model of development based on neo-liberal values (Hewit, 1993; Bankoff, 2001; Manzo, 2010). Considering the influence of external agencies such as the World Bank over GoS recovery plan, it is uncertain whether disaster provides an opportunity for them to enforce a certain vision of resource management.

Academics, international agencies, and particularly the World Bank have increasingly linked disasters to development (World Bank, 1999; Delaney and Shrader, 2000; Bankoff, 2001; Shilderman in Lyons, 2006; Lyons, 2008). Since the 1990's the post-disaster phase has been seen as an opportunity for reducing vulnerability and promoting development (Delaney and Shrader, 2000; Lyons, 2008). For example following Hurricane Mitch in Honduras and Nicaragua, a report for the World Bank emphasized that: "the tremendous scale of the disaster creates an opportunity to literally re-write the history of development in the region. The high profile of specific vulnerabilities, such as gender and environment, provides government and civil society with a unique opportunity to address the root causes of environmental degradation and gender inequity." (Delaney and Shrader, 2000:6).

Recently, Naomi Klein demonstrated the emergence of international development institutions in using natural and human disasters in order to propagate the neo-liberal model (Klein, 2005; 2007). By using a shock, which creates a state of trauma, she described how multilateral

agencies use this situation as an opportunity for transformation by carrying out policies that promote neo-liberal values and what she defines as "the rise of disaster capitalism" (Stonish, 2007). In addition, some authors make clear that in situations of uncertainty or crisis such as natural disasters, war or election changes that may have an incidence on the established policy, ideological forces or knowledge actors are presented as a 'window of opportunity' to redefine the policy context (Kingdon, 1984; Gofas, 2001).

While 'vulnerability' and 'development' seem to have the same meaning for everyone, Bankoff (2001:20) states that it is important to place the historical context within which this discourse took place, and consider how it reflects cultural values and particular perceptions from those producing this discourse over other regions of the world. Development has been used by a number of experts from the World Bank in order to influence country policies and to define strategies based on objectives of economic growth (Kardam, 1993). Nevertheless, these policies let little space for non-quantifiable issues that are not directly related to efficiency and cannot be translated by cost-benefit ratios. In a vision of development where sociological issues do not really fit with the goals and philosophy of the World Bank, Kardam (1993) declares that for the development experts of the World Bank, socio-cultural considerations must be somehow correlated to economic productivity and returns on investment. O'Riordan and Turner (1983) affirm that development and the emergence of 'sustainable development' were strongly influenced by technocentrist models which have a utilitarian view of science. This implies technocratic management, regulation and rational utilization in order to solve human problems. In addition, Adams (1990:91) states that the success of sustainable development relates to the symbiosis between "technocratic, managerial, capitalist and modernist ideology drawn from northern environmentalism with Western economic development theory and development practices".

Many writers argue that the IMF and the World Bank are no more than the projection of US foreign policy (Amin, 1995; Payer, 1982; Wade, 1996) and that the neo-classical economic model prevails (Wade, 1997; Annisette, 2004). The World Bank's Director of the Environment explains that concerning the environment, conceptual approach did not change much and it is "grafting environmental concerns onto business as usual" (quoted in Fox and David-Brown, 1998; 9). Jordan (1997) remarks that the staff of the environmental department and many other departments in the World Bank are mainly composed of economists, from

which according to Wade (1996) 80% are certified by US and UK Universities representing the neo-classical development paradigm (Annisette, 2004).

Stiglitz (2000) declares that the language used by leading World Bank in its official documents reveals this economic and technocratic approach. It is the apolitical rhetoric of 'knowledge sharing' next to the technical or neutral terms of 'best practice' and 'bench-marking'. This Western neo-liberal vision of development is reflected in reports of the PDNA (2009) and IMF (2010) when providing recommendations for reconstruction. While the discourse of multilateral agencies asserts that the tsunami is an opportunity for Samoa to reduce vulnerability via resettlement, the terms 'new basis' and 'reforms' appear to be more a matter of promoting a particular perception of development very based on economic growth. For them, the tsunami represents a potential for increasing the land values of households and could be beneficial for private investors in the tourism sector:

> "The resettlement of coastal villages provides an opportunity for planning the economic and tourism development of the areas on a new basis, potentially increasing the land value of households. Such opportunities need to be examined in consultation with communities to develop an appropriate recovery and reconstruction strategy for the area" (PDNA, 2009: 17).

> "The Samoan Government has requested support from the Bank to undertake reforms to strengthen the competitiveness of the agricultural sector and to increase opportunities for the private sector to access the tourist market" (IMF, 2010: 5).

Even though safety issues exist, Oliver-Smith (1991: 14) argues that natural disasters represent "convenient pretexts for the conglomeration of population groups for national or regional development plans". In some cases, policies are used for more pragmatic reasons that are strongly linked to economic and bureaucratic interests, translating political opportunism (Hann, 1995). In 1987, Meleisea (1987: 18 in O"Meara, 1995) stated that "The foundation of the Samoan economy and fa'a Samoa was subsistence agriculture based on descent group tenure and ownership of land, and for social and political institutions to have changed, the system of land tenure would have had to change".

Some authors state that relocation may hide economic reasons often related to land access (Aysan and Oliver, 1987: 31; Klein, 2007). Also, promoting high-end international tourism over local population rights has been identified as one of main means by which neo-liberal model advances its agenda, with for example the reconstruction policy carried out in Honduras in 1998 following Hurricane Mitch (Stonich, 2007), or the policy planning followed in Sri Lanka after the tsunami of 2004 (Ingram et al., 2006; Klein, 2007).

Western neo-liberal values are also identifiable in the recommendation of the IMF and the World Bank, supported by experts on disasters and development, by advising the GoS to not fund housing reconstruction (see section 4.7.1). They express that this should normally be the duty of insurance systems, and instead suggest them to invest in infrastructure for economic growth (Freeman et al., 2002a; Freeman, 2004; Lyons, 2008). Thus, the general opinion, aid community and scientists agree that disaster prone regions must reduce this vulnerability and give access to development. But the wide majority of these producers of knowledge represent western countries, reinforcing an ethnocentric discourse on disaster and vulnerability that is highly linked to particular cultural values and economic model and which may be used as a way to impose their hegemony over the Third World. Such global public policy networks are not simply a means for transferring ideas or norm-building but are also new global governance structures (Stone, 2000).

6.4 USING THE CONCEPT OF VULNERABILITY: A NEW FORM OF COLONIALISM?

Even though there is a consensus that poorer countries are disproportionally affected by climate-related hazards (O'Brien et al. 2006: 64), authors declare that poverty is different to vulnerability. Vulnerability is based on the assertion that hazards are natural but disasters are not, being rather a function of social, technical and economic capacities. Disaster risk reduction has been a concern for ameliorating climate prognostic, engineering preparedness, and risk management. According to the international aid community, these goals would be attained via cooperative research, technology transfer, technical assistance, knowledge sharing and learning, developing and disseminating methods and tools, scaling up adaptation actions (UNFCC, 2008).

Hewitt (1983:8) states that this approach means that disaster risk has been treated as a problem that could only be resolved by experts and affirms that is reflects "a top-down, technocratic and Western expert vision".It renders developing countries culpable and incapable to deal with disasters, having failed with the opportunity to reduce their vulnerability to potential risks (Bankoff, 2001). Therefore, rather than poverty, vulnerability is related to adaptation, risk mitigation strategy, building capacity and good governance where Western countries have the role of transferring their knowledge to developing countries.

The thought that vulnerability reduction requires technocratic solutions appears as the dominant ideology of multilateral agencies (Bankoff, 2001), influential in national and international decision making spheres (Cannon, 1994:16-17). Bankoff (2001:27) states that post-disaster reconstruction presented as an opportunity to reduce vulnerability is used as a justification by Western countries to intervene in the affairs of developing nations. Obviously things are never shown so frankly, and official discourse is adapted to the time and age. But, utilization of rhetoric and language is always political and comes from cultural schemes shared by particular social and ethnic groups (Gee, 1999: 1, 81). Concerning the Western discourse on disasters, Hewitt (1983: 8) explains that it is "a socio-cultural construct reflecting a distinct, institution-centred and ethnocentric view of man and nature". Thus, the discourse on natural disasters and the vision of vulnerability is very dependent on cultural knowledge, and presents a large region of the world as 'disaster prone' using a language of victimization. For example, the World Bank's Natural Disaster Hotspots study classifies Samoa as the "30th country in the world most exposed to three or more hazards" and states that 70% of coastal population is exposed to "coastal hazards such as cyclones, tsunamis, flooding and storm surges" (PDNA: 19, 2009). It therefore shows the high level of risk to which Samoa is exposed, and emphasizes the need to help the coastal population to be more resilient.

The academic discourse is greatly deployed by the media legitimating international aid intervention in disaster prone regions. Images of 'fear, misery and doom' (Boykoff 2008, 549) and 'danger and catastrophe' (Hulme, 2007: 6) are constantly propagated. In the era of globalization, media largely perpetuate the uncertainty and controversy theory arguing that global warming is due to greenhouse gas emissions that are a result of human activity, the Western capitalist and consumerism model being the main cause (Manzo, 2010). Also, the

general discourse about development and 'the recently emerged cultural narrative of vulnerability' (Furedi, 2007: 487), is directly associated with 'contemporary climate action campaigns' (Manzo, 2010). This discourse creates a moral debt for industrialized countries among disaster prone regions and legitimates actions for 'saving' vulnerable populations in order to make these areas safer for investment and tourism (Bankoff, 2001:27). Thereafter, these kinds of messages tend to reproduce the colonial perception of 'a superior global north and an inferior south' (Manzo, 2008).

Bankoff (2001) repositions the concept of disaster and vulnerability in its historical context, arguing that between the 17th and early 20th centuries official discourse was presented as 'tropicality' and Western intervention was known as 'colonialism'. After the Second World War, it was a matter of 'development' and Western involvement in the Third World was known as 'aid'. From the 1990s, the concept of 'vulnerability' started to be used and Western actions are now called 'relief' (Table 12).

Table 12: Dangerous regions as Western discourse

Concept	Period (century)	Condition	Cure/technology
Tropicality	17th-19th/early 20th	Disease	Western medicine
Development	Post World War 2	Poverty	Western investment/aid
Natural disasters	Late 20th	Hazard	Western science

Source: Bankoff, 2001.

Science has played a central role in the articulation of colonial discourse (Adams, 1990; Mackenzie, 1991) and Bankoff (2001: 28) affirms that: "Natural disasters form part of a wider historical discourse about imperialism, dominance and hegemony through which the West has been able to exert its ascendancy over most people and regions of the globe". In fact, as for 'tropicality' or development, the discourse of vulnerability pertains to a "knowledge system formed within dominant Western liberal consciousness" that reflects the values and model of this culture (Bankoff, 2001). For Hewitt (1997: 118) the Western expert discourse lacks in taking into account socio-cultural and environmental contexts, which according to Nedley (1999: 1) comes from the 'myopia' in that the literature is primarily Western, ignoring the experiences and lessons to be drawn from developing countries, and 'inhibiting the opportunity for genuine global dialogue' (Nedley, 1999: 1).

This top-down and technocratic vision is often more part of the problem than the solution (Hewitt, 1997). This lack of socio-cultural considerations has been highlighted in section 4.4 via the CIM strategy and resulting in a non-acceptation of the public and decision makers in Samoa. This approach presents some limits and risks and may even increase vulnerability instead of reinforcing communities' resilience, as suggested in the next section.

6.5 REACTIVE AND TECHNOCENTRIST RECONSTRUCTION POLICY: LIMITS AND RISKS

Rebuilding houses, tourist accommodation and seawalls occurred immediately after the tsunami with little data informing the reconstruction. These policies were very reactive and influenced by economic and political factors. They also reflected an opportunity to advance the World Bank IAMP agenda, promoting resettlement inland of infrastructure and houses. However, Ingram et al. (2006) observe that reactive policies generated under urgent pressures are generally unsuccessful in order to address "the root causes of vulnerability" and, within a long time frame, may even augment the social, economic and environmental weaknesses that allow natural hazards to turn into disasters. Hence, by comparing with the recent and similar (in its reactive, technocratic and neo-liberal management of reconstruction) post-disaster policy carried out in Sri Lanka, and by taking into account cultural and contextual aspects of Samoa, this section points out and discusses some of the risks and limits linked to the recovery plans.

6.5.1 The Possibility of Shift Back Along the Coast

Recent examples such as the Indian Ocean tsunami affecting Asian countries in 2004 showed little success in forced or highly encouraged resettlement of population. Only few days after the tsunami hit Sri Lanka, the government declared a 'no construction' coastal buffer zone of 100m to 200m. Little information was used to define this buffer zone, with sometimes no correlation with exposure to natural hazards (Jayasuriya et al., 2005). Ingram et al. (2006) observe that the government's argument to justify the buffer zone policy was that "it needed to act quickly before people moved back to risk-prone areas" (Jayasuriya et al., 2005). While

no home owners were allowed to rebuild on their land, hotels that suffered less than 40% of structural damage could reconstruct at the same place. Wealthier hoteliers and the tourism industry rapidly expanded and benefited of this policy, but local population that were mainly fishermen, had to remain inland (Rice, 2005) for their safety. As a result, this reconstruction plan increased inequalities and the impact on the environment, leading to more vulnerability of population displaced rather than decreasing it (Ingram et al, 2006). Later, communities tried to make the government review this policy in order to go back to their pre-event location.

Within Samoa, past experiences demonstrate that a shift back is very possible. The phenomenon of moving inland has been observed when cyclones Ofa and Val hit the country in the early 1990s and most of the families have then returned to the places impacted (PNDA, 2009). Samoan lifestyle is highly connected to the ocean with more than 80% of the population living along the coast. Social organization, customary land structure, relation to the village church and social practices, emotional aspects due to traditional customs, and restoration of public facilities along the coast are many factors that could play in favor of a progressive come back at the same location as pre- tsunami. While the PDNA (2009: 43) states that "95% of the affected persons have indicated a preference to stay in the safety of their farmlands" and that "if the decision is voluntary, their decision needs to be supported", there are some signs showing possibilities of a shift back of communities. Many interviewees state that in addition to their resettled home, people rebuild their damaged house and that the probability for them to build back where they were living before is high:

> "The local residents are moving inland now but they will not be permanently I think" (PUMA: F).

> "We advise them and give recommendation not to build anymore where they were hurt before. But it is sad when we actually goes there and see people constructing where they were hurt before" (MWTI: E).

In addition, some of the houses rebuilt after the tsunami still remain unoccupied:

> "Actually you can see that some houses are still vacant, houses that have been rebuilt but remain unoccupied" (Habitat).

Low occupancy rate of new homes built has been observed by other researchers (Davis, 1997; DuyneBarenstein, 2008). It is often the result of little concern about social organisation of communities (Downing 1996; DuyneBarenstein, 2008). In fact, people refuse to move in houses built by contractors and usually choose to repair their old damaged property (Davis, 1997). Despite complex issues and difficulties posed by resettlement, this option is often recommended by officials (Oliver-Smith, 1991). The main reason cited for adopted resettlement plans is the vulnerability to natural hazards factor of risk for development on the long term (Oliver-Smith, 1991). However, researchers conclude that imposed or involuntary relocation is generally unsuccessful (Oliver-Smith, 1982, 1986; Shanmugaratnam, 2005; World Bank, 2005a), and often make population affected more vulnerable (Ingram et al, 2006). Usually, victims of disasters insist in staying or tend to come back at the place where they originally lived. Their attachment to their land (Zwingmann, 1973), poor choice of new location (Ingram et al., 2006) frequently resulting from "speedy choices" (Coburn et al., 1984; Razani, 1984), and lack of cultural or social networks consideration such as neighbouring and religious aspects (Razani, 1984; Kronenburger, 1984) are few of the many elements that commonly result in unsuccessful post-disaster relocation programs and engender a come from affected communities to their original place.

Personal observations confirm that many people have started to rebuild on their land. Churches (Figure 12) and 'committees houses' (Figure 13) where village representatives regularly meet have been reconstructed close to the shore, and sometimes even on the seawalls.

Figure 12: Tsunami impacted village, Southern coast of Samoa: reconstruction of a church, on the newly built seawall (Source: By author).

Figure 13: Rebuilding of the committee house in Salani village, October 2010: same structure, same place and close to the recently finished seawall (Source: By author).

Political considerations such as organizational structures and territoriality, and cultural factors including the environment-religion relationship, values and identity are different elements to consider when carrying a resettlement program. Lack of consideration of socio-cultural values and knowledge of the local environment is usually blamed for rendering long term relocation planning unsuccessful (Oliver-Smith, 1991; Cernea, 1997). Religion and the structural organization are pillars of faa Samoa and shape population daily life. Hence, those socio-cultural leaders have an important influence on Samoan society and could highly play in favour of a shift back close to the shore.

This statement is reinforced by conversations sustained with locals and matais, who despite knowing that they are vulnerable to natural hazards emphasize their strong attachment to their ancestral land. And, when talking to a village chief who has a bigger, newer and safer house in his plantation inland, and asking him why he and his family remain living close to the shore, he simply answered that their social life was there, which was very important in the Samoan lifestyle, and making them moving inland impossible.

6.6 QUESTIONING VULNERABILITY REDUCTION

The reconstruction policy was informed by very little data. While decision makers intend to protect people from a potential future tsunami, the exact location of new houses remains unknown. This means that no study on resettlement sites has been undertaken and may therefore expose communities to new hazards. New location often results from rapid choices and may not be appropriate (Coburn et al., 1984; Razani, 1984). Charny and Martin (2005) note that in Sri Lanka communities have resettled in wetland areas making them vulnerable to other natural events such as flooding. When interviewing an official from Habitat for Humanity about such issue, he answered that Samoa was a multi-risk area and suggested that building in another location did not mean reducing this risk:

> "Samoa is a volcanic island, not only subject to tsunami but also cyclones and earthquake damage, and there is no real safe place to build. (...) So anywhere you build in Samoa it will be risky" (Habitat for Humanity: A).

The strategy was designed to prevent damage from another tsunami, and so relocation inland may limit human impact on coastal resources. However, it can also be argued that pressures on natural resources are only displaced to resettlement sites and may threaten inland ecosystems (Ingram et al., 2006). In addition, by financing reconstruction of tourism accommodation on the beach and promoting development of the sector, pressures from human activity over the natural environment may not be reduced but amplified. Similarly, multiplication of seawalls may have unexpected effects on ecosystems and neighbouring populations (Griggs, 1995; Fletcher, et. al., 1997). In the case of extreme events such as a tsunami or an earthquake there is a possible risk for rocks to collide on structures.

In addition to their uncertain efficacy, those seawalls engender an aesthetic deterioration of the coastline, affecting the touristic attributes of Samoa (Figure 14):

> "If I would be a tourist I would not like to go out there supposedly a beach, a prime beachfront to find rocks. I think that they are some communities that also say that they don't want to see seawalls. And I think that there are also some technical opinions who say that seawalls do not always provide the answer to the problem. But that's why there is this cross sectorial consultation on this issue that suggests that tourism can express their view across the broad construction efforts that are going on" (MOF: I).

Figure 14: Multiplication of seawalls, affecting aesthetics of Samoan coast (Source: By author).

For the tourism sector, results demonstrate that recovery has been more a matter of "meeting the demands of more sophisticated higher-paying clients" (UNDP, 2010), rather than reducing vulnerability. Tourist accommodation, particularly beach 'fales,' may not be more resilient than before the tsunami struck. In fact, for business owners that have reinvested to upgrade while rebuilding at the same place, economic vulnerability might even be greater. Moreover, on the national scale a similar event engendering destruction of coastal tourist accommodation would be terrible for the country's image of safety.

Images of another catastrophe would make it hard to attract foreign customers and the time for the economy to recover would certainly be greater.

Finally, reconstruction planning and the focus on vulnerability reduction is a very expensive exercise. While the aid coordinator of MOF states that government resources only cover 1/3 of reconstruction cost, the World Bank declares that investment in disaster risk reduction is expected to be 21% of GDP for the next three to four years (World Bank, 2010). This commitment will certainly have consequences on Samoan public debt and will add more dependence over external financial institutions and aid partners. Researchers demonstrate that generally loans imposed to borrowing nations have significant consequences on their economy (Kardam, 1993: Anisette, 2004; Butkiewicz and Yanikkaya, 2005). Thus, reducing vulnerability is an important aspect of the recovery strategy, but policies should consider contextual and cultural components of the country. Great investments in risk reduction present uncertain outcomes considering the lack of information for reconstruction and possible shift back of populations along the coast. It might decrease certain aspects of vulnerability but in change increase others including economic, social and cultural aspects.

6.7SUMMARY

This Chapter aimed to demonstrate the influence of international aid partners such as donor countries and financial institutions on the reconstruction approach adopted by the GoS in the housing, tourism and land transport sectors. It has been demonstrated that the tsunami and the fact that the population moved inland to be safer was used as an opportunity to make this shift back permanent. Also, resettlement of communities living close to the shore and identified as vulnerable by the coastal studies, was part of the IAMP agenda that was not previously accepted by the Samoan population. Therefore, this Chapter has questioned whether the strategy carried out was reflecting the Samoan communities' wish, or if it was rather the vision of development wanted by Western external experts, such as the World Bank, ABA or IMF. As a consequence, this Chapter has raised questions concerning the utilisation of the concept of vulnerability that in the case of Samoa seems to have been used as an alibi to promote Western model of development. In addition, after having characterized the reconstruction policy as technocentrist, this Chapter has discussed the risk and limits that

this approach may engender, including the potential for a shift back of communities along the coast. Finally, the objectives of vulnerability reduction pursued throughout the global reconstruction policy have been questioned, suggesting that goals might not be attained, and vulnerability of communities or even at national scale (economic vulnerability) might even be greater.

CHAPTER VII

CONCLUSION

7.1 INTRODUTION

Through the case study of the 2009 tsunami in Samoa, this thesis has observed the reconstruction process of housing, land transport infrastructure and tourist accommodation. Aspects of the rebuilding process have been explored such as the policies adopted for each sector, the influence of different actors on the decision making process and the utilisation of the concept of vulnerability in shaping the recovery strategies.

The mainstream discourse of vulnerability applied to disaster response has been analysed through the exploration of the post-tsunami reconstruction of assets and infrastructure in Samoa. It has been argued that the objectives of dominant approaches to vulnerability are to improve resilience of communities to disasters by means of technical capacity, knowledge sharing, and education transfer. The discourse of vulnerability and the associated responses are observed as the dominant practice of development agencies in disaster response. However, some researchers have criticized this discourse by saying that it is technocratic and based on a Western perception of man and nature. As Castel (1991 in Hewitt, 1995: 115) states, "The modern ideologies of prevention are overarched by a grandiose technocratic rationalism dream of absolute control of the accidental, understood as the interruption of the unpredictable...It pretends to eradicate risk as though one were pulling up weeds". These observations of the dominance of particular approaches to reconstruction are observable in the findings of the post-tsunami reconstruction in Samoa.

This chapter reviews the main results and arguments developed in this thesis by discussing the objectives pursued. A reflection on the limitations of this study is outlined. Finally, recommendations and further research requested on this field of study are suggested.

7.2ADDRESSINGTHE OBJECTIVES

A mixed method qualitative approach was undertaken to address the four objectives outlined in Chapter One. Through the exploration of policy documents and analysis of commentary that arose from a number of semi-structured interviews with key stakeholders, insight into the mechanisms that shaped the post-tsunami reconstruction were explored. To provide a context for the discussion, the roles and responsibilities of government and non-government agencies in post-tsunami decision-making were identified. This insight provided an overview of the structure and function of the different agencies, while interviews with key stakeholders shed light on the factors that shaped the reconstruction process.

In Chapter Four, the World Bank Infrastructure Assets Management Program (IAMP) and Coastal Infrastructure Management (CIM) strategy were outlined to provide the context for how the vulnerability of coastal communities was quantified prior to the tsunami. The central objective of these programs is to improve resilience of coastal communities to natural hazards. The vulnerability assessment appears to be based on an economic and biophysical perception of vulnerability. The rhetoric and goals pursued are very reflective of the mainstream discourse on risk mitigation and development promoted by agencies involved in disaster response. Nevertheless, the "best solutions" and other coastal land use reforms suggested by the IAMP and CIM plans are not accepted by the local populations and some politicians. Rather than a lack of vulnerability awareness of Samoan communities, as expressed by an official from PUMA, this non-acceptation is mainly due to a difference of perceptions with goals of IAMP and because of the strong traditional practices inherent to Samoa. As shown in Chapter One, Samoan communities have lived for generations on their family land. They have strong attachment to nature and to the aiga (extended family) and have repeatedly experienced natural catastrophes. Hence, issues of vulnerability reduction might not be perceived by Samoans as by occidentals, and neither be a priority over their cultural and traditional practices.

However, Chapter Five demonstrates that ideas of vulnerability reduction coming from the World Bank Infrastructure Assets Management Programme (IAMP) recommendations and the "building back better" model have been central in the strategy for the recovery of housing, land transport infrastructure and tourist accommodation. The different agencies involved in

the decision making process, as well as their role and responsibility have been identified. The decision making process has been facilitated by the established relationship existing before the tsunami between the GoS and external agencies such as the United Nations and New Zealand Aid. The research has demonstrated that international financial institutions and donor countries, to different degrees, had an influence on the final policy undertaken by the GoS. For example, the experts from the World Bank, ADB, and UN Agencies, via the Post Disaster Needs Assessment (2009) have provided strategic options such as "building back and relocating", that have been, in majority followed by the GoS. Furthermore, the "best solutions" recommended by the CIM plans of the IAMP, funded by the World Bank, have been used as a basis for "looking at the long-term strategy, but also relocating people away from the coast" (NZAID: G). These different approaches are part of a global discourse on vulnerability and development increasingly shared by Western development agencies.

Moreover, by examining the Samoan case study, this research has explored the utilisation of the concept of vulnerability in post-disaster management. Chapter Five has highlighted the differences in applying ideas of risk mitigation to diverse sectors with land use planning decisions varying for housing and tourist accommodation. For the key economic sector that is tourism, the reconstruction of accommodation occurred at the same place as before the tsunami impacted. The rebuilding was done with better building material, using escape routes as mitigation measures, but the findings show that goals of vulnerability reduction are questionable and it appears that the recovery of tourist accommodation has been more a matter of reaching "higher-paying clients" (UNDP, 2010). On the other hand, households impacted have been strongly encouraged to rebuild far from the coast in the name of vulnerability reduction. In addition, new roads and infrastructure services have been built to support the resettlement on the long term. However, as demonstrated in Chapter Six, the GoS needs foreign financial assistance in order to afford such investment.

Chapter Six demonstrates that the tsunami and related movement of populations inland have been used as an opportunity to make this resettlement permanent, advancing the IAMP and CIM plans agenda. The literature on disaster and relocation demonstrates that natural disasters can be used as "convenient pretexts for the conglomeration of population groups for national or regional development plans" (Oliver-Smith, 1991: 14). In addition, the recent cases of Honduras after Hurricane Mitch in 1998 and of Sri Lanka following the tsunami of

2004 have shown that decision makers may utilise disasters and vulnerability reduction as an excuse for reorganizing land use (Klein, 2005; 2007; Stonish, 2007).

In the case of Samoa, traditional land tenure was said to impose constraints on development of the private sector (O'Meara, 1995; Ward and Ashcroft, 1998; Hay and Sueasi, 2006). In 2005, Naomi Klein theorized the "rise of disaster capitalism" by demonstrating the emergence of international development institutions using natural and human disasters as an opportunity for change in order to propagate neo-liberal ideas. Moreover, after the tsunami the IMF (2010: 5) used phrases as "opportunities for the private sector to access the tourist market" and the PDNA (2009: 17) affirms that "The resettlement of coastal villages provides an opportunity for planning the economic and tourism development of the areas on a new basis, potentially increasing the land value of households (PDNA, 2009: 17)".Researchers state that relocation may sometimes hide economic reasons often related to land access (Aysan and Oliver, 1987: 31; Klein, 2007) and using local populations' lands for developing high-end international tourism has been identified as one of main means by which the neo-liberal model advances its agenda (Ingram et al., 2006; Stonich, 2007; Klein, 2007).

Asserting that the recovery strategy undertaken in Samoa has been used as an opportunity to develop tourism and promote development of the private sector remains a hypothesis. However, the findings of this research tend to converge with the statement of Heijmans (2004) who argues that vulnerability is a malleable concept that depends on the perception and interest of its users, and that most of the agencies have used the concept in the way that best fits their practice. The results also find a certain echo with the declaration of Bankoff (2001: 27) explaining that the post-disaster reconstruction phase, which is presented as an opportunity to reduce vulnerability, is used as a justification by Western countries to intervene in the affairs of developing nations. Hence it has been questioned whether the strategy was reflecting the Samoan communities' will or rather the vision of Western external experts, such as the World Bank, ADB or IMF.

Finally, Chapter Six has studied the disaster response conducted and defines it as technocentrist, lacking to take into account the historical and socio-cultural components of the Samoan society. Moreover, the limits and risks related to the approach used for the reconstruction policy have been explored and objectives of vulnerability reduction pursued have been questioned.

7.3LIMITATIONS OF THE STUDY

While this research makes a critique of the disaster solutions advocated by the PDNA, having the opportunity to interview experts of the World Bank or ADB would have been useful and given more weight to the argument developed in the discussion from Chapter Four to Six. In addition, this would have permitted to gather additional information concerning the long term vision of the strategy recommended, and adopted.

This research compares the reconstruction policy of three different, but interlinked sectors that are housing, land transport and tourism. However, and despite many solicitations, obtaining interviews with national officials managing the Tourism Tsunami Rebuilding Programme (TTRP) was not possible. This would have given a stronger basis for critically analyzing reconstruction actions and risk mitigation measures taken (e.g. "build back better" approach), provided with a better understanding of the relationship with external aid partners such as the NZAID programme, and allowed for further investigating the TTRP fulfilling requirements. Overall, this would have permitted obtaining more information about the policy applied on the recovery of the tourism sector and related development projects on a longer timeframe.

Another limitation of this research comes from my lack of 'practical' socio-cultural and historical knowledge of Samoan society. As developed in Chapter Three, being an outsider was certainly an advantage for certain aspects of the interviewing process. However, this thesis focused on the perception and use of vulnerability, power relationships, and different political and economic interests that affect the decision making process. Hence, having a deeper knowledge of the Samoan culture and practices would have been useful.

Finally, this study presents limitations related to the short time spent on the field for scoping the evolution of the reconstruction process including the shift back of population along the coast. Monitoring on the longer term the advancement of the recovery actions and the population movement would be necessary. However, at the moment that I am finishing this project, I have anecdotal feedback from a Samoan student from the University of Auckland suggesting that people are slowly moving back where they were living before the tsunami.

7.4RECOMMENDATIONS AND FURTHER RESEARCH

The findings of this research add another piece to the recent body of literature critical of the agencies involved in disaster response and linking disaster, vulnerability and development. Conclusions show similarities with other case studies described by Klein (2005; 2007) and Stonich (2007). Overall, this project allows for:

- Investigating a field of research that should be more critical concerning the global discourse and mainstream practices of agencies involved in disaster management.
- Exploring how the recovery policy carried out after tsunami 2009 is perceived by communities residing in affected area.
- Monitoring on the longer timeframe the progress of reconstruction of infrastructure, development of tourist accommodation and the population movement.
- Evaluating the exposure of resettled communities to potential natural hazards and assessing the restoration of their livelihood.
- Monitoring the environmental impact of tourism development over natural resources.
- Investigating the consequences of the strategy adopted in terms of outcomes for the Samoan society, based on Samoan criteria, and analyzing the dependence of the GoS on external financial institutions.

7.5 CONCLUDING STATEMENT

The reconstruction policy used in Samoa after the tsunami of 2009 proved to be a useful case study to highlight the Western influence of disaster management in a non-Western context. This case study highlighted opportunities that arose during the post-tsunami reconstruction process to implement recommendations from the World Bank initiated asset management plans. The tensions between discourses of vulnerability reduction and development were observed. The findings also demonstrated that vulnerability reduction is directly related to the perception of the practitioners and of the affected populations. There is no universal method adaptable to any given situation, so decision makers should systematically take into account the cultural, social, and historical context within which they are operating.

REFERENCES

Adger, W.N., 2000: Social and ecological resilience: are they related? Progress in Human Geography 24 (3), 347–364.

Adger, W.N., 2006: Vulnerability. Global Environmental Change 16 (3), 268–281.

Adger, W.N., Huq, S., Brown, K., Conway, D., Hulme,M., 2003: Adaptation to climate change in the developing world. Progress in Development Studies 3 (3), 179.

Adams, W. M, 1990: Green Development Theory? Environmentalism and sustainable development.Chapter 4, in Power of Development by J.S. Crush.

Amin, S., 1995: Fifty years is enough. Monthly Rev 1995; 46(11):8–50.

Annisette, M., 2004: The true nature of the World Bank. Department of Business Administration, University of Carlos III de Madrid, Madrid, Spain.Critical Perspectives on Accounting 15 (2004) 303–323.

Ashcroft, P. and Ward, R. G., 1998: Samoa: mapping the diversity. Suva, Fiji: Institute of Pacific Studies, University of the South Pacific; Apia, Samoa: National University of Samoa.

Australian Government, AusAID, 2005: economic impact of natural disasters on development in the pacific. Volume 2: Economic Assessment Tools

Aysan, Y. and Oliver P., 1987: Housing and Culture After Earthquakes. OxfordPolytechnic, Oxford.

Barriball, K. and While, A., 1994: Collecting data using a semi-structured interview: a discussion paper. Journal of Advanced Nursing,19: 328-335.

Bankoff, G., 2001: Rendering the world unsafe: 'vulnerability' as western discourse. Disasters 25(1), 19–35.

Bankoff, G., Frerks, G. and Hilhorst, D., 2004: Mapping vulnerability: Disasters, Development and People. Earthscan, London.

Barakat, S., 2003:Housing Reconstruction after Conflict and Disaster. Oversee Development Institute HPN Network Paper No. 43, London.

Bauwens, A., 2010:The use of method triangulation in probation research. European Journal of Probation University of Bucharest www.ejprob.ro Vol. 2, No. 2, 2010, pp 39 –52.

Baxter, J. and Eyles, J., 1999: The utility of in-depth interviews for studying the meaning of environmental risk. Professional Geographer 51, 307--320.

Benson, C. and Clay, E., 2000: Developing countries and the economic impacts of natural disasters, in A. Kreimer and M. Arnold (eds.): Managing Disaster Risk in Emerging Economies. Disaster Risk Management Series No. 2, Washington, DC, World Bank.

Bennett, C. J. and Howlett, M., 1992: 'The lessons of learning: Reconciling theories of policy learning and policy change', Policy Sciences, 25(3): 275-94.

Bettencourt, S., Croad, R., Freeman, P., Hay, J., Jones, R., King, P., Lal, P., Miller, G., Pswarayi-Riddihough, I., Simpson, A., Teuatabo, N., Trotz, U., Van Aalst, M., 2006: Not If But When: Adapting to Natural Hazards in the Pacific Region: A Policy Note. The World Bank, Washington, DC.

Berg, B. L., 1989: Qualitative research methods for the social sciences. Allyn and Bacon, New York

Berke and Campanella, 2006: Philip R. Berke and Thomas J. Campanella, Planning for post-disaster resiliency, Annals of the American Academy of Political and Social Science604 (1) (2006), pp. 192–207.

Bismarck Crawley Consultant: Samoa Coastal Management Project Case Study: "Resilience-Coastal Infrastructure and CommunitiesResilient to Natural Hazards".http://www.napapana.org/files/workshops/samoa/crawley.pdf

Blaikie, P., Cannon, T., Davis, I. And Wisner, B., 1994: At risk: natural hazards, people's vulnerability and disasters. London: Routledge.

Blaut, J. M., 1993: The coloniser's model of the world: geographical diffusionism and Eurocentric history The Guilford Press,London

Börzel, T., 1998: 'Organizing Babylon -- on the different conceptions of policy networks', Public Administration, 76 (summer): 253-73.

Boykoff, M.T., Boykoff, J.M., 2007: Climate change and journalistic norms: a casestudy of US mass-media coverage. Geoforum 38, 1190–1204. C 2008 ds le text, changer la date!

Boykoff, M.T., Rajan, S.R., 2007: Signals and noise. Mass-media coverage of climate change in the USA and the UK. European Molecular Biology Organisation Reports 8 (3), 207–211.

Bradshaw, S., 2002: Exploring the gender dimensions of reconstruction processes post-Hurricane Mitch. Journal of International Development, 14(6), 871–879.

Briguglio, L., 1995: Small Island Developing States and Their Economic Vulnerabilities. World Development, Vol. 23, No. 9, pp. 1615-1632.

Brockington, D., Sullivan, S., 2003: Qualitative Research. Chapter 4 in Develpoment Fieldwork: A Practical Guide. Scheyvens, R. and Storey, D., 2003. Sage Publication, London.

Brooks, N., Adger, N. W., Kelly, M. P., 2005: The determinants of vulnerability and adaptive capacity at the national level and the implications for adaptation, Global Environmental Change Part A15 (2) (2005), pp. 151–163.

Brooks, N., Adger, W.N., 2003: Country Level Risk Measures of Climate-related Natural Disasters and Implications for Adaptation to Climate Change. Tyndall Centre for Climate Change Research.

Brown, R. and Ahlburg, D., 1999: Remittances in the South, International Journal of Social Economics 26(1/2/3): 325–344.

Browne, M. J. and Hoyt, R. E., 2000: The Demand for Flood Insurance: Empirical Evidence. Journal of risk and uncertainty.Volume 20, Number 3, 291-306.

Burby, R. J., 1998: Natural Hazards and Land Use: An Introduction. Chapter 1 in Cooperating with nature: Confronting Natural Hazards with land-use planning for sustainable communities. Joseph Henry Press, Washington D.C.

Buckle, P., Mars, G. and Smale, S., 2000: New approaches to assessing vulnerability and resilience,Australian Journal of Emergency Management2000 (2000), pp. 8–14.

Burnside, C. and Dollar, D., 2000: Aid, policies, and growth. American Economic Review, 90(4), 847–868.

Burnard, P., 1991: A method of analysing interview transcripts in qualitative research. Nurse Educatron TO&Y (1991) 11,461-466

Butkiewicz, J. L. and Yanikkaya, H., 2005: The Effects of IMF and World Bank Lending on Long-Run Economic Growth: An Empirical Analysis. World Development Vol. 33, No. 3, pp. 371–391, 2005

Cannon, T., 1994: Vulnerability Analysis and the Explanation of 'Natural Disasters'. In A. Varley (ed) Disasters, Development and Environment. John Wiley and Sons, Chichester.

Carpenter, S.R., Walker, B.H., Anderies, J.M., Abel, N., 2001: From metaphor to measurement: resilience of what to what? Ecosystems 4, 765–781.

Carvalho, A., 2003: Reading the papers: ideological cultures and media discourses on scientific knowledge. Paper presented at a conference entitled Does Discourse Matter? Discourse Power and Institutions in the Sustainability Transition, Hamburg, Germany. pp. 11–13.
Causton, A and Saunders, G., 2006: 'Responding to Shelter Needs in PostearthquakePakistan: A Self-help Approach' in Humanitarian Exchange No34, June, pp 10–25. London: HPN/ODI.

Cernea, M., 1991: "Sociologists in a development agency: Observations from the World Bank," World Bank Reprint Series No. 403 (Washington, DC: World Bank, 1991).

Cemea, M., 1991: "Knowledge from social science for development policies and projects," in Michael Cernea (Ed.) Putting People First: Sociological Variables in Rural Development, second edition (Oxford: Oxford University Press, pp. l-41

Cernea, M. M., 1997: The risks and reconstruction model for resettling displaced populations. World Development, 25(10), 1569–1587.

Chacko, E., 2005: Positionality and Praxis: fieldwork experiences in rural India. Singapore Journal of Tropical Geography, 25(1): 51-63.

Chand, S., 2000: "Coups, Cyclones and Recovery: The Fiji Experience", Pacific Economic Bulletin, Vol. 15.

Chandler, W., Schaeffer, R., Dadi, Z., Shukla, P.R., Tudela, F., Davidson, O., Alpan-Atamer, S., 2002: Climate Change Mitigation in Developing Countries. Brazil, China, India, Mexico, South Africa, and Turkey, Pew Center on Global Climate Change, Arlington, VA (United States).

Charny, J., Martin, S., 2005: Sri Lanka: tsunami survivors yearn for permanent housing and employment. Refugees Int. Bull., http://www.refugeesinternational.org/

Checkel, J.T., 1999: 'Norms, Institutions, and National Identity in Contemporary Europe', International Studies Quarterly 43: 83–114.

Clinton, W.J., 2006: Lessons Learned from Tsunami Recovery: Key Propositions for Building Back Better, United Nations Secretary-General's Special Envoy for Tsunami Recovery, United Nations, New York.

Coburn, A.W., J.D.L. Leslie and Tabban, A., 1984: Reconstruction and Resettlement 11 Years Later: A Case Study of Bingo1 Province, Eastern Turkey. In Schupisser, S. and Studer, J. (eds.) Earthquake Relief in Less IndustrializedAreas. A.A. Balkema, Rotterdam, pp. 49-58.

Cooper, P.J.M., Dimes, J., Rao, K.P.C., Shiferaw, B. and Twomlow, S., 2008: Coping with better with current climatic variability in the rain-fed farming systems of sub-Saharan Africa: a dress rehearsal for adapting to future climate change – agriculture, Ecosystems and Environment126 (2008), pp. 24–35.

CRED, 2010: Centre for Research on the Epidemiology of Disasters (CRED). http://www.emdat.be/

Cuny, F.C., 1983: Disasters and development. New York: Oxford University Press.

Cutter, S. L., 1996: Vulnerability to environmental hazards. Progress in Human Geography 20, 4 pp. 529-539.

Dayton-Johnson, J., 2004: Natural disasters and adaptive capacity. OECD development centre. Research programme on: Market Access, Capacity Building and Competitiveness OECD Development Centre Working Paper No. 237. DEV/DOC (2004)06

Davidson, O., Halsnaes, K., Huq, S., Kok, M., Metz, B., Sokona, Y., Verhagen, J., 2003: The development and climate nexus: the case of sub-Saharan Africa. Climate Policy 3 (S1), S97–S113.

Davidson,C. H., Johnsona, C., Lizarraldea, G., Dikmena, N., Sliwinskia, A., 2006: Truths and myths about community participation in post-disaster housing projects. Habitat International.

Deacon, B., 1999: 'Towards a Socially Responsible Globalization: International Actors and Discourses', GASPP Occasional Papers, September.

Dedeurwaerdere, A., 1998:Cost - benefit analysis for natural disaster management : A case - study in the Philippines. Brussels; Belgium.Center for Research on the Epidemiology of Disasters (CRED);UniversitèCatholique de Louvain (UCL); Jan. 1998. 87 p. ilus, tab. (CRED Working Paper, 143).

Deegan MA., 2005: Extreme event policy design: aconceptual model to analyze policies and the policy process for natural hazards. Proceedings of the 23rd International System Dynamics Society, Boston, MA.

Delaney, P. L., Shrader, E., 2000: Gender and Post-Disaster Reconstruction: The Case of Hurricane Mitch in Honduras and Nicaragua. LCSPG/LAC Gender Team The World Bank. Decision Review Draft.

Denzin, Norman K. 1978: The Research Act, 2d ed. New York: McGraw-HI.

Dogra, N., and Wass, V., 2006: Can we assess students' awareness of cultural diversity? A qualitative study of stakeholders' views, Medical Education. 40: 682–690. Chacko, E., 2005. Positionality and Praxis: fieldwork experiences in rural India. SingaporeJournal of Tropical Geography, 25(1): 51-63.

Dolan, A. H. and Walker, I. J., 2004: Understanding vulnerability of coastal communities to climate change related risks. Journal of Coastal Research, SI 39 (Proceedings of the 8th International Coastal Symposium), pg – pg. Itajaí, SC – Brazil, ISSN 0749-0208

Doulton,H. And Brown, K., 2009: Ten years to prevent catastrophe? Discourses of climate change and international development in the UK press. Global Environmental Change 19 (2009) 191–202

Downing, T. E., 1996: 'Mitigating social impoverishment when people are involuntarily displaced' In Understanding impoverishment, ed. C. McDowell, Bergham Books, Oxford

Duranti, A., 1990: Politics and grammar: agency in Samoan political discourse. American Ethnologist.Volume 17, Issue 4, pages 646–666.

DuyneBarenstein, J. 2006: Housing reconstruction in post-earthquake Gujarat. A comparative analysis. Oversee Development Institute, HPN Network Paper No. 54, London.

DuyneBarenstein J., 2008: From Gujarat to Tamil Nadu: Owner-driven vs. contractor-driven housing reconstruction in India. Building resilience achieving effective post-disaster reconstruction

Economic Commission for Latin America and the Caribbean (ECLAC), 1999: Manual for Estimating the Socio-Economic Effects of Natural Disasters, New York, UN Secretariat of the International Decade for Natural Disaster Reduction.

Evans, E. P., Ashley, R. M., Hall, J., Penning-Rowsell, E., Saul, A., Sayers, P., Thorne, C., Watkinson, A., 2004: Foresight. Future Flooding Volume 1 - Future risks and their drivers. London: Office of Science and Technology.

Evans, M. and Davies, J., 1999: 'Understanding Policy Transfer: A Multilevel, Multi-disciplinary Perspective', Public Administration, 77 (2) 361-385.

Field P. A, Morse J. M., 1985: Nursing research: the application of qualitative approaches. Croom Helm, London

Finnemore, M., 1993: 'International Organizations as Teachers of Norms: The United Nations Educational, Scientific, and Cultural Organization and Science Policy', International Organization 47(4): 565–597.

Finnemore, M., 1996b: 'Norms, Culture and World Politics: Insights from Sociology's Institutionalism', International Organization 50(2): 325–347.

Flicker, F. and Guta, A., 2008: Ethical Approaches to Adolescent Participation in Sexual Health Research. Journal of Adolescent Health, 42: 3–10.

Flint, C. and Brennan, M., 2006: 'Community Emergency Response Teams: From Disaster Responders to Community Builders', Rural Realities, Volume 1, Number 3, pp. 1–9.

Freeman, P.K., 2001: Hedging natural catastrophe risk in developing countries. Geneva Papers on Risk and Insurance: Issues and Practice, 26(3), 372–385. 2000 ds le texte

Freeman, P.K., 2003a: Natural hazard risk and privatization, in A. Kreimer, M. Arnold and A. Carlin (eds.): Building Safer Cities: The Future of Disaster Risk, Washington, DC, World Bank.

Freeman, P.K., 2003b: Disasters, in P. Demeny and G. McNicoll (eds-in-chief): Encyclopedia of Population, New York, Macmillan.

Freeman, P. K., 2004: Allocation of post-disaster reconstruction financing to housing. Building Research and Information, 32(5), 427–437.

Freeman, P. K., Martin, L., Mechler, R., & Warner, K., 2002: Catastrophes and development: Integrating natural Catastrophes into development planning. Washington DC: World Bank.

Fussel, H. and Klein, R., 2006: Climate change vulnerability assessments: an evolution of conceptual thinking. Climatic Change 75 (3), 301–329.

Furedi F., 2007: The changing meaning of disaster Area 39 482–9

Gardiner, S. M., 2004: Ethics and Global Climate Change. Ethics 114: 555–600. University of Chicago.

Gallopın, G.C. 2006: Linkages between vulnerability, resilience, and adaptive capacity. Global Environmental Change 16 (2006) 293–303

Geis, D., 2000:"By design: the disaster-resistant and quality of life community", Natural Hazards Review, Vol. 1 No. 3, pp. 151-60.

Gee, J., 1999: An Introduction to Discourse Analysis. Theory and Method.Routledge, London and New York.
Glaser B G, Strauss A L 1967 The discovery of grounded theory. Aldine, New York

Gilbert, R., 2001: Doing more for those made homeless by natural disasters. Disaster risk management series no. 1. Washington, DC: World Bank.

Gilbert, R. And Kreimer, A, 1999: Learning from the World Bank's experience of natural disaster related assistance. Urban and Local Gorvernment Working Paper Series no. 2. Washington, D.D.: World Bank.

Gofas, A., 2001: 'Ideas and Interests in Public Policy: The Case of European Monetary Cooperation', Paper presented to the British International Studies Association meeting, University of Bradford, December.

GoS, 2005-2008: Infrastructure Asset Management Project-Phase II.

Government of Sri Lanka and the United Nations Report, 2005: National post-Tsunami lessons learned and best practices Workshop Report. Colombo, Sri Lank, June 8–9, 2005.

Government of Samoa, World Bank, Global Facility for Disaster Reduction and Recovery, 2009: Post Disaster Needs Assessment.

Griggs, G.B., 1995: Relocation or reconstruction of threatened coastal structures: a second look. Shore andBeach 63:2: 31-36.

Griggs, G. B., 2005: California's retreating coastline: where do we go from here?

Grigorescu, A., 2002: 'European Institutions and Unsuccessful Norm Transmission: The case of Transparency', International Politics 39: 457–489.

Grundmann, R., 2007: Climate change and knowledge politics. Environmental Politics.Volume 16, Issue 3: Pages 414 - 432

Gurenko, 2004: Building effective catastrophe insurance programs at the country level: a risk management perspective. An Adaptation Mosaic - A sample of the Emerging World Bank Work in Climate Change Adaptation - Final Draft - World Bank Global Climate Change Team.

Gurenko, E. and Lester, R., 2004: Rapid onset natural disasters: the role of financing in effective risk management. Insurance and Contractual Savings Practice Financial Sector Operations and Policy Department.World Bank Policy Research Working Paper 3278.

Haas, P. and Haas, E., 1995: ‘Learning to Learn: Improving International Governance’, Global Governance 1: 255–285.

Hajer, M., 1993: "Discourse Coalitions and the Institutionalization of Practice: The Case of Acid Rain in Great Britain", in F Fischer and J Forester (eds.) TheArgumentative Turn in Policy Analysis and Planning, London, UCL Press.

Hall, P., 1990: "Policy Paradigms, Experts and the State: The Case of Macroeconomic Policy Making in Britain", in S. Brooks & A-G Gagnon (eds.) Social Scientists, Policy and the State, New York, Praeger

Hansen, Hans Krause., Salskov-Iversen, Dorte.andBislev, S., 2001: ‘Transnational Discourse Communities: Globalizing Public Management’ in M. Ougaard& R. Higgott (eds.) Understanding the Global Polity, London, Routledge forthcoming.

Handmer, J.W., Dovers, S.R., 1996: A typology of resilience: rethinking institutions for sustainable development. Industrial and Environmental Crisis Quarterly 9 (4), 482–511.

Hann, A., 1995: ‘Sharpening up Sabatier: Belief Systems and Public Policy’, Politics, 15(1): 19-26.

Harris, R. and Arku, G., 2006: Housing and economic development: The evolution of an idea since 1945. Habitat International, Vol. 30, Issue 4, Pages 1007-101.

Hay, J., N. Mimura, J. Cambell, S. Fifita, K. Koshy, R.F. McLean, T. Nakalevu, P. Nunn, and N. deWet., 2003: Climate Variability and Change and Sea-level Rise in the Pacific IslandsRegion. A Resource book for policy and decision makers, educators and other stakeholders. South Pacific Regional Environment Programme (SPREP), Apia, Samoa, 94 pp.

Hay, J. E., and andSueasi, T., 2006:Samoa, Country Environmental Analysis.Mainstreaming Environmental Considerations inEconomic and Development Planning Processes.Regional: Mainstreaming Environmental Considerations in Economic and Development Planning Processes in Selected Pacific Developing Member Countries. Asian Development Bank.

Heijmans, A., 2004: Mapping vulnerability. Disasters, Development and People.Bankoff, G., Frerks, G., Hilhorst D. (ed). London, Earthscan, 2004. Chapter 8 From Vulnerability to Empowerment

Helsloot, I. and Ruitenberg, A. (2004), ‘Citizen Response to Disasters: A Survey of Literature and Some Practical Implications’, Journal of Contingencies and Crisis Management, Volume 12, Number 3, pp. 98–111.

Hewitt, K.,1983: The idea of calamity in a technocratic age”, in Hewitt, K. (Ed.), Interpretations of Calamity: From the Viewpoint of Human Ecology, Allen &Unwin, Boston, MA, pp. 3-32.

Hewitt, K., 1995: Sustainable Disasters? Perspectives and Power in the Discourse of Calamity. In J. Crush (ed) Power of Development, Routledge, London and New York.

Hewitt, K. 1997: Regions at risk. Harlow: Longman.

Hoffman, S. M., 1999: The Worst of Times, the Best of Times: Toward a Model of Cultural Response to Disaster. Chapter 7 of The angry earth: disaster in anthropological perspective / edited by Oliver Smith, A. and Hoffman, S. M., 1999.. Routledge, New York.

Hulme, M., 2007: Newspaper scare headlines can be counter-productive. Nature 445 (7130), 818. Changer la date c 2008 ds le text.

Hyogo Framework for Action 2005-2015: I S D R International Strategyfor Disaster Reduction International Strategy for Disaster Reduction. www.unisdr.org/wcdr Building the Resilience of Nations and Communities to Disasters

Ingram, J.C., Franco, G., Rumbaitis-del Rio, C. and Khazai, B., 2006: Post-Disaster Recovery Dilemmas: Challenges in Balancing Short-Term and Long-Term Needs for Vulnerability Reduction. Environmental Science and Policy, Volume 9, pp. 607–613.

International Religious Freedom Report, 2006: Released by the Bureau of Democracy Human Rights and Labor. Retrieved 22 June 2007, from Website: http://www.state.gov

IPCC(Intergovernmental Panel on Climate Change), 1998: Managing Uncertainty in National Greenhouse Gas Inventories. IPCC/OECD/IEA Progr.on National Greenhouse Gas Inventories, 13–15 October 1998, Paris, France, http://www.ipcc-nggip.iges.or.jp/public/mtdocs/pdfiles/paris1.pdf.

IPCC (Intergovernmental Panel on Climate Change), 2001: Climate change 2001: synthesis report; a contribution of Working Groups I, II, and III to the third assessment report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, UK.

IPCC(Intergovernmental Panel on Climate Change), 2007: Working Group II Fourth Assessment Report. Geneva: IPCC. Fiji Meteorological Service 2004.'List of Tropical Cyclones in the South West Pacific 1969/70 — Present.' Information Sheet No. 121, Fiji Meteorological Service, Nadi, 8pp.
Jayasuriya, S., Steele, P., Weerakoon, D., 2005: Rebuilding capital assets and infrastructure. Post-Tsunami Recovery: Issues and Challenges in Sri Lanka, Discussion Paper No: 39, 10 November 2005. The Institute of Policy Studies of Sri Lanka and Asian Development Bank Institute in Tokyo, Japan in collaboration with The Asian Economics Centre, University of Melbourne, Australia.

Jha, Abhas K, 2010: The World Bank: Safer Homes, Stronger Communities. Global Facility for Disaster Reduction and Recovery. The International Bank for Reconstruction and Development / The World Bank.

Jick, T. D., 1979: Mixing Qualitative and Quantitative Methods: Triangulation in Action. Administrative Science Quarterly, Vol. 24, No. 4, Qualitative Methodology.(Dec., 1979), pp. 602-61 1.

Jones et al., 2010: Kim Jonesa, XubinPana, Abel Garzaa, John Lloyd-Reilleyb Multi-level assessment of ecological coastal restoration in South Texas. Ecological Engineering 36 (2010) 435–440

Jordan, L., 1997: Sustainable rhetoric vs. sustainable development: the retreat from sustainability in World Bank development policy. Available at: http://www.ecouncil.ac.cr/rio/focus/report/english/bankinfo.htm.

Kardam, N., 1993: Development Approaches and the Role of Policy Advocacy: The Case of the World Bank. WorldDevelopment, Vol. 21, No. 11, pp. 1773-1786, 1993.

Kennedy, J., Ashmore, J., Babister, E. And Kelman, I., 2008:The Meaning of 'Build Back Better': Evidence from Post-Tsunami Aceh and Sri Lanka. Journal of Contingencies and Crisis Management. Volume 16 Number 1

Kingdon, J., 1984:Agendas, Alternatives and Public Policies, Boston, Little Brown & Co.
Klein et al., 2003: Richard J.T. Kleina, Robert J. Nicholllsb, Frank Thomallaa, Resilience to natural hazards: How useful is this concept? Environmental Hazards 5 (2003) 35–45

Klein, N., 2005: "The rise of disaster capitalism." Nation 280(17): 9-11.

Klein, N., 2007: The Shock Doctrine. The rise of Disaster Capitalism.Knopf Canada, Toronto.

Knoepfel, P. and Kissling-Näf, I., 1998: 'Social Learning in Policy Networks', Policy and Politics, 26(3); 343-367.

Kronenberger, J., 1984: The German Red Cross in the Earthquake Zone of Turkey-Regions of Van and Erzurum. In Schupisser, S. And Studer, J. (eds.) Earthquake Relief in LessIndustrialized Areas, A.A. Balkema, Rotterdam, Lamping, Heinrich

Lamping, H., 1984: The Use of Indigenous Sources for Post-Disaster Housing-Some Geographical Aspects. In Schupisser, S. And Studer, J. (eds.) Earthquake Relief in Lesslndustralized Areas. A.A. Balkema, Rotterdam..

Lewis, J., 1999: Development in Disaster-Prone Places: Studies of Vulnerability, Intermediate Technology Publications, London.

Longhurst, R., 2009: Interviews: In-Depth, Semi-Structured. University of Waikato, Hamilton, New Zealand.

Lyons, M., 2008: Building back better: the large-scale impact of small-scale approaches to reconstruction. World Development, 37, 385e398.

Mackenzie, F., 1991: Development from Within. Routledge.

Macpherson, C., 1999: Changing contours of kinship: The impacts of social and economic development on kinship organization in the South Pacific, PacificStudies 22(2): 71–95.

Manzo, K., 2010: Imaging vulnerability: the iconography of climate change. Department of Geography, University of Newcastle, Newcastle upon Tyne NE1 7RU. Area (2010) 42.1, 96–107

Mauritius Strategy Implementation, 2010: National Assessment Report. Government of Samoa.

McEntire, D. A., 2004: Development, disasters and vulnerability: a discussion of divergent theories and the need for their integration. Disaster Prevention and Management Volume 13 · Number 3 · 2004 · pp. 193-198. www.emeraldinsight.com/researchregister.

McFadden L., Nicholls, R. J., Penning-Rowsell, E., 2008: Managing coastal vulnerability. Chap 2 Vulnerability Analysis: A Useful Concept for Coastal Management? Emerald Group Limited.

Mileti, D.S., 1999: Disasters by Design: A Reassessment of Natural Hazards in the United States, Joseph Henry Press, Washington, DC.

Mimura, N., L. Nurse, R.F. McLean, J. Agard, L. Briguglio, P. Lefale, R. Payet and G. Sem, 2007: Small islands. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge UniversityPress, Cambridge, UK, 687-716.

Ministry of Natural Resources and Environment , 2004: Planning and urban management act, 2004. (http://www.mnre.gov.ws).
MNRE, 2009: Reducing the Vulnerability of Coastal Communities in Samoa: A Partnership Approach

Ministry of natural Resources and Environment, 2006: Coastal Infrastructure Management Plan AleipataItupa i Luga District. Implementation guideline.

Mitchell, T. D., Carter, T. R., Jones, P. D., Hulme, M. and New, M. (2004) A comprehensive set ofhigh-resolution grids of monthly climate for Europeand the globe: the observed record (1901-2000)and 16 scenarios (2001-2100). Tyndall Centre Working Paper 55

Moyser G. and Wagstaff M., 1987: Research methods for elite studies, Unwin Hyman Ltd. London.

Muliaina, T., 2006: The role of the church in development in Samoa: Does the church do enough at the community

Munich Re, 2002: Topics: Annual Review of Natural Catastrophes 2002, Munich, Munich Re.

Nedley, A., 1999: 'Policy Transfer and the Developing-Country Experience Gap:Taking a Southern Perspective'(http://www.york.ac.uk/depts/poli/esrc/papers/nedley.htm).

NZAID, 2011: http://www.aid.govt.nz/what-we-do/

Ogawa, Y., Fernandez, A.L. and Yoshimura, T., 2005: 'Town Watching as a Tool for Citizen Participation in Developing Countries: Applications in Disaster Training', International Journal of Mass Emergencies and Disasters, Volume 23, Number 2, pp. 5–36.

Oliver-Smith, A., 1977: Traditional Agriculture, Central Places and Post-Disaster Urban Relocation in Peru. American Ethnologist.

Oliver-Smith, A., 1986: The Martyred City: Death and Rebirth in the Andes. The Universityof New Mexico Press, Albuquerque.

Oliver-Smith, A., 1982: Here There is Life: The Social And Cultural Dynamics of Successful Resistance to Resettlement in Post- Disaster Peru. In Hansen, Art and Oliver-Smith, Anthony (eds.) lnvoluntary Migrationand Resettlement: The Problems and Responses ofDislocated Peoples. Westview Press, Boulder

Oliver-Smith, A., 1991: Successes and failures in post-disaster resettlement. Disasters, 15(1), 12–23.

Oliver-Smith, A., 1996: 'Anthropological Research on Hazards and Disasters'. Annual Review of Anthropology, Vol 25: 303-328.

Olshansky, R. B., 2005: How do communities recover from disaster? A review of current knowledge and an agenda for future research. Paper presented at the 46th Annual Conference of the Association of Collegiate Schools of Planning, Kansas City, October 27, 2005.

O'Brien, K. (Ed.), 2000. Developing Strategies for Climate Change: The UNEP Country Studies on Climate Change Impacts and Adaptations Assessment, Report 2000-02.CICERO, Oslo, Norway.

O'Brien, G., O'Keefe, P., Rose, J. and Wisner, B.,2006: Climate change and disaster management Disasters 30 64–80

OECD, 2004:Mobilising Public Opinion Against Global Poverty, Policy Insights No. 2, OECD, Paris.

O'Meara, J. T., 1995: From Corporate to Individual Land Tenure in Western Samoa. Chapter 4 in: Land Custom and Practice in the South Pacific, 1995. Cambridge University Press.

O'Riordan, Y. and Turner, R. K., 1983: (eds) An Annotated Reader in Environmental Planningand Munugement(Oxford, UK, Pergamon Press, 1983).
Park, S., 2006: Theorizing Norm Diffusion Within International Organizations. International Politics, 2006, 43, (342–361)

Parks, B. and Roberts, J. T., 2006: Globalization, Vulnerability to Climate Change, and Perceived Injustice. Source:Society and Natural Resources, Volume 19, Number 4, Number 4/April 2006 , pp. 337-355(19).

Parry, M., Arnell, N., et al., 2001: Millions at risk: defining critical climate change threats and targets. Global Environmental Change 11 (3), 181–183.

Payer, C. The World Bank, 1982: a critical analysis. New York: Monthly Review Press.

Pelling, M. and Uitto, J.I., 2001: Small island developing states: natural disaster vulnerability and global change. Global Environmental Change Part B: Environmental Hazards, Volume 3, Issue 2, 49-62 pp.
Pelling, M., Özerdem, A. And Barakat, S., 2002: The macro economic impact of Disasters. Progress in Development Studies 2,4 (2002) pp. 283 305

Philipps, D. L., 1971: Knowledge from what?: Theory and Methods in Social Research. Chicago. Rand McNally.

Quarantelli, E. L., 1984: Social problems of adjustment and relocation: some questions and some contents. Proceedings of the international conference on disaster mitigation program implementation. Ochorios, Jamaica.

Quarantelli, E. L., 2005:Catastrophes are different from disasters: some implications for crisis planning and managing drawn from katrina. Disaster Research Center (DRC) University of Delaware.

Razani, Reza, 1984: Earthquake Disaster Reconstruction Experience in Iran. In Schupisser, S. and Studer, J. (eds.) EarthquakeRelief in Less lndustrialized Areas.A.A. Balkema, Rotterdam, pp. 79-86.

Rice, A., 2005: Post-tsunami reconstruction and tourism: a second disaster? Tourism Concern, London. http:// www.tourismconcern.org.uk/pdfs/Final%20report.pdf.

Rice, G., 2009: Reflections on interviewing elites. Volume 42, Issue 1, pages 70–75

Sabatier, P., 1991: 'Political Science and Public Policy', PS: Political Science and Politics, 24(2): 144-156.

Sabot, E., 1999: Dr Jekyll, Mr Hide: the contrasting face of elites at interview, Geoforum, 30: 329-335.

Samoa observer, 2010:http://samoaobserver.ws/index.php?view=article&id=25352%3Arebuildingparadise&option=com_content&Itemid=82).

Samoa National Human Development Report, 2006:Sustainable livelihoods in a changing Samoa. Apia: Centreof Samoan Studies, National University of Samoa.

Sampei Yuki and Aoyagi-Usui M., 2009: Mass-media coverage, its influence on public awareness of climate-change issues, and implications for Japan's national campaign to reduce greenhouse gas emissions. Global Environmental Change 19 (2009) 203–212

Scudder, T. and Colson, E., 1982: From Welfare to Development: A Conceptual Framework for the Analysis of Dislocated People. In Hansen, A. and Oliver-Smith, A. (eds.) lnvoluntay Migration and

Resettlement:The Problems and Responses of Dislocated People. Westview Press, Boulder, pp. 267-88.

Schilderman, T., 2004: Adapting traditional shelter for disaster mitigation and reconstruction; experiences with community-based approaches. Building
Research & Information, 32, 414e426.

Schipper, L., Pelling, M., 2006: Disaster risk, climate change and international development: scope for, and challenges to, integration. Disasters 30 (1), 19–38.

Schoenberger, E., 1991: The corporate interview as a research method in economic geography. The Professional Geographer 43, 180--189.

Sem, G., 2006: Vulnerability and adaptation to climate change in small island developing states.

Shanmugaratnam, N., 2005: Tsunami victim's perceptions of the proposed buffer zone and its implications in Eastern Sri Lanka. Eldis in affiliation with Department of International Environment and Development Studies, Norwegian University of Life Science.http://sacw.insaf.net/free/ SriLankaTsunami_Reflections.pdf (accessed 3 February 2006).

Sixsmith, J., Boneham, M., and Goldring, J., 2003: Accessing the Community: Gaining Insider Perspectives From the Outside. Qualitative Health Research, 13(4): 578-589.

Skidmore, M., 2001: "Risk, Natural Disasters, and Household Savings in a Life Cycle Model", Japan and the World Economy, Vol. 13.

Smit, B., 2003: Can qualitative research inform policy implementation? Evidence and arguments from a developing country context.Forum Qualitative SocialResearch, 4 (3), Art 6:1-11.

Smith, O.P., 1983: Reconnaissance Report on Coastal Erosion at Fort Ord, California, Misc. Paper CERC 83-10, Coastal Engineering Research Center, Vicksburg,Miss. 63p.

Smith, F.M., 1996: Problematising language: limitations and possibilities in 'foreign language' research. Area, Volume 28 number 2, 160-166.

Smith,G., 2010: Lessons from the United States: Planning for Post-Disaster Recovery and Reconstruction. The Australasian Journal of Disaster and Trauma Studies ISSN: 1174-4707. Volume : 2010-1.

Smith, G. and Wenger, D., 2006: Sustainable disaster recovery: Operationalizing an existing agenda pp. 234-257 in H. Rodriguez, E. Quarantelli, and R. Dynes eds. Handbook ofDisaster Research. New York: Springer. Subcommittee on Disaster Reduction (SDR). 2005. Grand Challenges for Disaster Reduction. National Science and Technology Council, Executive Office of the President of the United States. Found at http://www.sdr.gov/SDRGrandChallengesforDisasterReduction.pdf.

Stiglitz, J., 2000: 'Scan Globally, Reinvent Locally: Knowledge Infrastructure and the Localization of Knowledge', in D. Stone (ed.) Banking on Knowledge: TheGenesis of the Global Development Network , London, Routledge.

Stonich, S. C., 2007: Capitalizing on Catastrophe: The Globalization of Humanitarian Assistance. International Tourism, Vulnerability, and "Natural" Disasters: The Case of Hurricane Mitch in Honduras. Globalization and the Environment Altamira Press, Lanham, MD Forthcoming: October 2007

Stone, D., 2000: 'Non-Governmental Policy Transfer: The Strategies of Independent Policy Institutes', Governance 13 (1): 45-70.

Sutherland, K., Smit, B., Wulf, V. and Nakalevu, T., 2005: Vulnerability to climate change and adaptive capacity in Samoa: the case of Saoluafata village. Tiempo, 54, 11-1
Tompkins, E.L., 2005: Planning for climate change in small islands: insights from national hurricane preparedness in the Cayman Islands. Global Environ. Chang.,15, 139-149.

Thornton, A., Kerslake, M. T., and Binns, T., 2010:Alienation and obligation: Religion and social change in Samoaapv. _1410 Asia Pacific Viewpoint, Vol. 51, No. 1.

Tourism Tsunami Beach Fale Re-Building Program (TTRP), 2010: Simplified guidelines and process for applicants information.

Trenberth, K.E., Jones, P.D., Ambenje, P., Bojariu, R., Easterling, D., Tank, A.K., Parker, D., Rahimzadeh, F., Renwick, J.A., Rusticucci, M., Soden, B., Zhai, P., 2007. Observations: surface and atmospheric climate change. In: Solomon, S., Qin, D., Manning, M., Chen, Z., Marquis, M., Averyt, K.B., Tignor, M., Miller, H.L. (Eds.), Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom, New York, NY, USA, pp. 235–336.

True, J. and Mintrom, M., 2001: 'Transnational Networks and Policy Diffusion: The Case of Gender Mainstreaming', International Studies Quarterly 45: 27–57.

Turner, B.L., Kasperson, R.E., Matsone, P.A., McCarthy, J.J.,Corellg, R.W., Christensene, L., Eckleyg, N., Kasperson, J.X.,Luerse, A., Martellog, M.L., Polsky, C., Pulsipher, A., Schillerb, A., 2003: A framework for vulnerability analysis in sustainability science. Proc. National Acad. Sci. 100 (14), 8074–8079.

UNDP, 2004: Disaster Risk Management Report, South Pacific Geoscience Commission and Secretariat for the Pacific Regional Environment Programme. Apia, Samoa

UNISDR, 2002: Living With Risk: A Global Review of Disaster-reduction Initiatives, International Strategy for Disaster Reduction, Geneva.

UNDRO, 1982: Shelter after Disaster, Guidelines for Assistance, UNDRO (United Nations Disaster Relief Organisation), New York.

UNICEF, 2005: Building Back Better: A 12-Month Update on UNICEF's Work to Rebuild Children's Lives and Restore Hope since the Tsunami, UNICEF (United Nations Children's Fund), New York.

USINFO, 2005: Tsunami Relief Done Well Becomes Future Model, Clinton Says, U.S. Department of State's Bureau of International Information Programs, Washington, DC, http://usinfo. state.gov/gi/Archive/2005/Apr/26-105009.html

United Nations Framework Convention on Climate Change, 2006: Background paper for the expert meeting on adaptation for small island developing States.

UN Habitat, 2007: Building back better in Pakistan. UN Habitat, Nairobi. Available at: http://www.unhabitat.org/downloads/docs/4627_75789_GC%2021%20Financing%20Field%20Report%20Pakistan.pdf

UNDHA/SPDRP, 1997: The economic Impact of Natural Disasters in the South Pacific with Special Reference to Papua New Guinea, Western Samoa and Niue, Suva: United Nations Department for Humanitarian Affairs/South Pacific Program Office.

UNFCC, 2008: Action Pledges: Making a difference on the ground. The Nairobi work programme on impacts, vulnerability and adaptation to climate change. A synthesis of outcomes, good practices, lessons learned, and future challenges and opportunities.

UNDP,2010:http://www.undp.org.ws/FocusAreas/CrisisPreventionandRecovery/BuildingBackBetter/tabid/5482/language/en-US/Default.aspx

Vale, L.J. and Campanella, T.J., 2005: eds. The Resilient City: How Modern Cities Recover fromDisaster. : Oxford University Press, .xiv + 376 pp. Illustrations, notes, index. Published by H-Urban (June, 2005)

Van Leersum, A. and Arora, S., 2011: Implementing seismic-resistant technologies in post-earthquake Pakistan: A process analysis of owner driven reconstruction. Habitat InternationalVolume 35, Issue 2, April 2011, Pages 254-264

Varangis, P., Skees, J.R. and Barnett, B.J., 2002: "Weather Indexes for Developing Countries." In R. S. Dischel, ed. Climate Risk and the Weather Market: Financial Risk Management and Weather Hedge. London: Risk Books, Risk Water Group, Ltd., pp. 279–294.

Villa, F. And McLeod, H., 2002: Environmental Vulnerability Indicators for Environmental Planning and Decision-Making: Guidelines and Applications. Environmental Management Vol. 29, No. 3, pp. 335–348

Vermeiren, J.C. 1991: Natural disasters: linking economics and the environment with a vengeance. In Girvan, N.P. and Simmons, D.A., editors, Caribbean ecology and economics. Barbados: Caribbean Conservation Association, 127–41.

Webster, P. J., Holland, G. J., Curry, J. A. and Chang, H. R., 2005: Changes in Tropical Cyclone Number, Duration, and Intensity in a Warming Environment. Science 16 September 2005: Vol. 309 no. 5742 pp. 1844-1846

Welch, C., Marshan-Piekkari, R., Penttinen, H., and Tahvanainen, M., 2002: 'Corporate elites as informants in qualitative international business research'. International Business Review, 11 (5), 611-28.

Whiting, L., 2007: Semi-structured interviews: guidance for novice researchers. Nursing Standard.22: 35-40.

Wisner, B., Blaikie, P., Cannon, T. and Davis, I., 2004: At Risk: Natural Hazards, People's Vulnerability and Disasters (2nd edn), Routledge, London.

World Health Organization: http://www.who.int/hac/about/reliefweb-aug2008.pdf
World Bank, 1999: Learning from the World Bank's Experience of Natural Disaster Related Assistance. Disaster Management Facility Working Paper No. 2.

World Bank, 2000: 'Managing Economic Crisesin Natural Disasters'. In World Development Report 2000/2001: Attacking Poverty, 161–76. Oxford University Press.Washington D. C.

World Bank, 2003. Financing Rapid Onset Natural Disaster Losses in India: A Risk Management Approach. Report No. 26844. The World Bank, Washington, DC.
World Bank, 2004: the independent state of Samoa technical annex for a proposed credit for a cyclone emergency recovery project.

World Bank, 2005a: Tsunami recovery: snapshots of the road to reconstruction in Sri Lanka. http://www.worldbank.lk.

World Bank, 2005b: Lessons from Natural Disasters and Emergency Reconstruction. The World Bank Group, Operations Evaluation Department.

World Bank, 2005c: Commodity and Weather Risk Management Programs to be Expanded. World Bank News & Broadcast, May 24, 2005.

World Bank, 2006: Hazards of Nature, Risks to Development: An IEG Evaluation of World Bank Assistance for Natural Disaster. The World Bank, Washington DC.

World Bank, 2007: Samoa Second Infrastructure Asset Management Project (Supplemental): Assisting the Government of Samoa to improve urban, rural and remote access to safe, efficient and reliable infrastructure services. http://siteresources.worldbank.org/INTPACIFICISLANDS/Resources/SamoaInfrastructureProjectBrief090610.pdf

World Bank, 2010: IDA program document for a proposed economic crisis recovery support credit to the independent state of Samoa. Poverty Reduction and Economic Management Unit East Asia and Pacific Region.

Yap, H.T., 2000: The case for restoration of tropical coastal ecosystems. Ocean Coast Manage. 43, 841–851.

Yeung, H. W. C., 1995: 'Qualitative personal interviews in international business research: some lessons from a study of Hong Kong transnational corporations'. International Business Review, 4 (3), 313-39.

Ziervogel, G. and Downing, T.E., 2004. Stakeholder networks: Improving seasonal forecasts, Climatic Change, 65: 73–101.

Zwingmann, C., 1973: The Nostalgic Phenomenon and its Exploitation. In Zwingmann, Charles and Pfister-Ammende (eds.) Uprooting and After.Springer-Verlag, New York, pp. 19-47.

APPENDIX I

THE UNIVERSITY OF AUCKLAND
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Te Whare Wānanga o Tāmaki Makaurau

School of Environment

The University of Auckland

Private Bag 92019, Auckland

PARTICIPANT INFORMATION SHEET

Governmental Agencies/NGO Manager

Project title: Analysis of the Extent to Which Post-Disaster Management Promotes Reduction of Community Vulnerability and Development: Samoa as a Case Study.
Researcher:Loic Le De

My name is Loic Le De. I am a student at The University of Auckland, enrolled in a Master of Science in Environmental Management 2010/2011. I am conducting my thesis to explore the extent to which post-disaster management reduces community vulnerability and contributes to development. An important part of this study is talking with a number of key people who are involved in the post-tsunami reconstruction process. I will interview representatives from government and non-government agencies. I will also study the mechanisms that drive the decision making process of Governmental Agencies and International Aid inthe recovery of public infrastructure, housing, risk disaster reduction (e.g. sea wall, mangrove restoration) and tourist resorts.

Research description
The purpose of this research is to analyze the decision making process related to the post-disaster management. I would like to talk with people about how community vulnerability, natural hazard risk reduction and development are considered in the recovery process. Of particular interest are the governance structures and programs that have been established to coordinate actions of Governmental Agencies and International Aid. This project focuses on the rebuilding of housing, public infrastructures (e.g. roads, bridges), risk disaster reduction (e.g. sea wall, mangrove restoration) and tourist resorts.

Staff participation
I request your permission to interview your staff members and share their experience and expertise in the efforts to include vulnerability assessment and development strategy in the post-disaster reconstruction phases. To conduct these interviews, however, I must first have your assurance that the decision of your employees to participate or not in this research will not affect their employment status. This assurance can be given by signing the Consent Form. The information obtained from this project will be used for the purposes of Masters research and possible future academic publications. For those interested in the result of this research, my thesis will be available from the Library of the University of Auckland upon completion at http://www.library.auckland.ac.nz.

Anonymity and confidentiality
All information collected about participants will be kept confidential. Personal information about participants will be excluded from the Masters research and possible future academic publication. Every possible effort will be made to ensure that the identity of participants remains anonymous unless they give their permission to be identified on the Consent Form. Your employee may choose not be identified by name within the research, although with specific approval, a generic job title may be used. Although names will not be mentioned in my research, being identified by a generic job title may nonetheless mean that individuals may become identifiable.

Project procedure
Participation to this interview is voluntary. This interview might be audio recorded by means of a digital voice recorder; however recording is optional and will result only with your employee's consent. Even if participants agree to being recorded, they may choose to have the recorder turned off at any time. Recording will later be transcribed by me. A copy of the transcript will be provided for editing on request. This interview would be during work time, unless a time outside of working hours would be more convenient for your employee. I anticipate that this interview will require approximately 1 hour of your employee's time.

Data storage/retention/destruction
To ensure confidentiality of the information provided, the data collected during this research project will be kept in a secure storage in a locked cabinet of university premises. In the case of electronic data they will initially be safeguarded by passwords and then deleted from all computerized storage spaces and hard drives on the 30 of July 2011. Interviews transcripts and other hard copies of data will be shredded on the 30 of July 2011.

Withdrawal
Participants may decline to answer any specific question and may withdraw from involvement in this research and withdraw their authorization for the use of information they have provided to the project up to three (3) weeks following the completion of their interview.

Thank you very much for your support of this project. If you have any queries or wish to know more about this activity, please contact me.

Contact details

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For any queries regarding ethical concerns you may contact the Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Office of the Vice Chancellor, Private Bag 92019, Auckland 1142. Telephone (09) 373-7599 ext. 83711.

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 21/2010 FOR (3) YEARS, REFERENCE NUMBER 2010/435

APPENDIX II

THE UNIVERSITY OF AUCKLAND
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PARTICIPANT INFORMATION SHEET

Governmental Agencies/NGO Employee

Project title: Analysis of the Extent to Which Post-Disaster Management Promotes Reduction of Community Vulnerability and Development: Samoa as a Case Study.
Researcher:Loic Le De

My name is Loic Le De. I am a student at The University of Auckland, enrolled in a Master of Science in Environmental Management 2010/2011. I am conducting my thesis to explore the extent to which post-disaster management reduces community vulnerability and contributes to development. An important part of this study is talking with a number of key people who are involved in the post-tsunami reconstruction process. I will interview representatives from government and non-government agencies. I will also study the mechanisms that drive the decision making process of Governmental Agencies and International Aid inthe recovery of public infrastructure, housing, risk disaster reduction (e.g. sea wall, mangrove restoration) and tourist resorts.

Research description
The purpose of this research is to analyze the decision making process related to the post-disaster management. I would like to talk with people about how community vulnerability, natural hazard risk reduction and development are considered in the recovery process. Of particular interest are the governance structures and programs that have been established to coordinate actions of Governmental Agencies and International Aid. This project focuses on the rebuilding of housing, public infrastructure (e.g. roads, bridges), risk disaster reduction (e.g. sea wall, mangrove restoration) and tourist resorts.

Your participation
You are invited to participate in this project and to share your experience and expertise in the efforts to include vulnerability assessment and development strategy in the post-disaster reconstruction phases; however you are under no obligation to accept. The information obtained from this project will be used for the purposes of Masters research and possible future academic publications. For those interested in the result of this research, my thesis will be available from the Library of the University of Auckland upon completion at http://www.library.auckland.ac.nz.

Anonymity and confidentiality
All information collected about participants will be kept confidential. Personal information about participants will be excluded from the Masters research and possible future publication, and every possible effort will be made to ensure that the identity of participants remains anonymous unless you give your permission to be identified on the Consent Form. You may choose not be identified by name within the research, although with specific approval, a generic job title may be used. Although names will not be mentioned in my research, being identified by a generic job title may nonetheless mean that individuals may become identifiable.

Project procedure
Participation to this interview is voluntary. This interview might be audio recorded by means of a digital voice recorder; however recording is optional and will result only with your consent. Even if you agree to being recorded, you may choose to have the recorder turned off at any time. Recording will later be transcribed by me. A copy of the transcript will be provided for editing on request. This interview would be during work time, unless a time outside of working hours would be more convenient for you. I anticipate that this interview will require approximately 1 hour of your time.

I have obtained permission from your manager and gained his/her assurance that the decision of employees to participate or not participate in this research will not affect their employment status.

Data storage/retention/destruction
To ensure confidentiality of the information you provide me, the data collected during this research project will be kept in a secure storage in a locked cabinet of university premises. In the case of electronic data they will initially be safeguarded by passwords and then deleted from all computerized storage spaces and hard drives on the 30 of July 2011. Interviews transcripts and other hard copies of data will be shredded on the 30 of July 2011.

Withdrawal
Participants may decline to answer any specific question and may withdraw from involvement in this research and withdraw their authorization for the use of information they have provided to the project up to three (3) weeks following the completion of their interview.

Thank you very much for your support of this project. If you have any queries or wish to know more about this activity, please contact me.

Contact details

Researcher
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Postal address: School of Environment,
The University of Auckland,
Private Bag 92019,
Auckland, New Zealand

For any queries regarding ethical concerns you may contact the Chair,The University of Auckland Human Participants Ethics Committee, The University of Auckland, Office of the Vice Chancellor, Private Bag 92019, Auckland 1142. Telephone (09) 373-7599 ext. 83711.

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 21/09/2010 FOR (3) YEARS, REFERENCE NUMBER 2010/435

APPENDIX III

THE UNIVERSITY OF AUCKLAND
NEW ZEALAND
Te Whare Wānanga o Tāmaki Makaurau

School of Environment

The University of Auckland

Private Bag 92019, Auckland

CONSENT FORM

Governmental Agencies/NGO Manager

THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Project title Analysis of the Extent to Which Post-Disaster Management Promotes Reduction of Community Vulnerability and Development: Samoa as a Case Study.
Researcher:Loic Le De

I have read the Participant Information Sheet, have understood the nature of the research and why I have been selected. I have had the opportunity to ask questions and have them answered.

I understand that my staff may withdraw themselves and any information traceable to them from this study during the interviews or any time with three weeks from the dates of the interviews. I understand that my staff will not have to provide reason for their withdrawal from this study and that any information traceable to them will be destroyed.

I understand that although staff will be identified by a generic job title, that nonetheless this may mean that they may be identifiable.

I understand that interviews expected to take approximately one hour of my staff's time. Also, I understand that the information given will be kept in a secure place until the 30 of July 2011, after which it will be destroyed. I understand that the result of this research will be available from the Library of the University of Auckland upon completion at http://www.library.auckland.ac.nz.

- I understand that my staff's participation in this research will be voluntary.
- I agree for my staff to take part in this study during work hours.
- I agree with my staff's preference for the interview to be/not be audio-taped and understand that, even if they agree for the interview to be recorded, they may choose to have the recorder turned off at any time.
- I understand that participation or non-participation in this research will not affect my relationship with my staff or their employment status.

Name _____

Signature _____ Date _____

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 21/09/2010 FOR (3) YEARS, REFERENCE NUMBER 2010/435

APPENDIX IV

THE UNIVERSITY OF AUCKLAND
NEW ZEALAND
Te Whare Wānanga o Tāmaki Makaurau

School of Environment

The University of Auckland

Private Bag 92019, Auckland

CONSENT FORM

Governmental Agencies/NGO Employee

THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Project title: Analysis of the Extent to Which Post-Disaster Management Promotes Reduction of Community Vulnerability and Development: Samoa as a Case Study.
Researcher:Loic Le De

I have read the Participant Information Sheet, have understood the nature of the research and why I have been selected. I have had the opportunity to ask questions and have them answered.

I understand that I may withdraw myself and any information traceable to myself from the interviews any time within three weeks from the dates of the interviews. If I do decide to withdraw from this study, I will not have to provide a reason, and if I choose to do so, any information pertaining to myself will be destroyed. Withdrawal or participation in this study will not affect my employment status or relationship.

I understand that the information given will be kept in a secure place until the 30 of July 2011, after which it will be destroyed.

I understand that the result of this research will be available from the Library of the University of Auckland upon completion at http://www.library.auckland.ac.nz.

- I agree to take part in this research.
- I agree/do not agree for the interview to be audio-taped.
- I agree/do not agree to my name being used in the research.
- I agree/do not agree to my job title being used in the research. I understand that although I will be identified by my job title, this may nonetheless mean that I become identifiable.

Name _____

Signature _____ Date _____

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 21/09/2010 FOR (3) YEARS, REFERENCE NUMBER 2010/435