

SIAM-2, C-4 Component
Environmental, Risk and
Resource Management

Disaster Insurance for Samoa

July 2006

Prepared for
**Ministry of Natural Resources, Environment and
Meteorology**

By
BECA International Consultants Ltd.

▪ draft report

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Ministry of Natural Resources, Environment & Meteorology
Apia
SAMOA

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Attention: Vitaoa Peleiupu Fuatai

Dear Sir

Disaster Insurance for Samoa

Attached please find the draft report on the Disaster Insurance Review from David Middleton and Richard Sharpe's recent visit to Samoa. We would be pleased if you could arrange to have this circulated for comment. We would like to receive comments by the end of August after which we will finalise the report for submission.

Yours sincerely
Graeme Roberts
Project Director - Planning



on behalf of

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Appendix A – A Possible National Insurance Scheme for Samoa

Appendix B - Organisations Consulted

1 Executive summary

This report on a possible national disaster response fund for Samoa has been prepared as part of Component 4 of the SIAM-2 project being undertaken by Beca International Consultants (Beca) for the Ministry of Natural Resources, Environment and Meteorology, Government of Samoa. The Terms of Reference were:

Conduct and report on a preliminary review of the feasibility of, and mechanisms for, implementing a national disaster response fund or disaster management insurance. This evaluation should consider any analysis and findings from the joint SOPAC/ World Bank/ AusAID "Catastrophe Insurance Pilot Project" currently set up in Port Vila.

David Middleton (General Manager, the New Zealand Earthquake Commission) and Richard Sharpe (Technical Director Earthquake Engineering, Beca) met with representatives of the insurance industry, government departments, aid agencies, relief agencies and financial organisations over four days in Apia in mid June, 2006.

The investigation found that:

- All the major public buildings and utilities are fully insured for natural disaster through the commercial insurance market.
- A significant proportion (25 %) of residential bungalows (but not fales) are insured for natural disaster, and a proportion of these homeowners have personal contents insurance.
- It is possible that there is already an embryonic disaster fund within the Government
- Samoa seems capable of dealing with small to medium disaster events through existing social and commercial mechanisms.
- There appears to have been no significant developments in the implementation of catastrophe insurance in Port Vila since the pilot project in 2001.

A national disaster insurance programme for major events that incorporates existing elements of Samoan society and commerce has been conceptualised and described in this report. A private/public partnership is proposed. There are several option points and a number of choices to be made to create the tower of risk. The result can be relatively simple or as complex as some overseas versions like that of the California Earthquake Authority. It does not explore the detail or do more than note what preparations and requirements there are for setting up a national scheme. More work and research is needed before decisions about which options to take can be backed by a sufficient amount of information.

It is suggested that the fund could be funded by a tax on remittances from abroad – administered through the banking/funds-transfer sector.

Alternatively or in addition, there is a small chance that countries which habitually donate aid at the time of a natural disaster may be persuaded to contribute.

Appendix A is a table summarising the main points of the conceptualised scheme.

2 Terms of reference

The consultant is required to:

Conduct and report on a preliminary review of the feasibility of, and mechanisms for, implementing a national disaster response fund or disaster management insurance. This evaluation should consider any analysis and findings from the joint SOPAC/World Bank/ AusAID "Catastrophe Insurance Pilot Project" currently set up in Port Vila.

The approach to this work has been to:

- Review both volumes of the SOPAC Report "Catastrophe Insurance Pilot Study, Port Vila, Vanuatu", dated December 2003 ("The SOPAC Report")
- Inquire about developments since the report was written and assess the report's findings for their relevance to Samoa
- Review various World Bank and other publications and articles, including the papers from the June 2003 conference, "Financing the Risks of Natural Disasters"
- Pay a four-day visit to Samoa to meet government officials, insurance industry managers, utilities managers and the client government department.
- Consider the feasibility of disaster management insurance for Samoa.
- Develop concepts for various forms of financial protection from the impacts of natural disasters, with some comment on implementation
- Note the further work and research required to advance to the next stage

3 Port Vila Project

The concept of a regional catastrophe insurance scheme for the Pacific was first aired at the third Pacific Island Forum Economic Ministers Meeting (FEMM3) in Samoa in 1999. Its inspiration was the World Bank study on risk transfer options for another group of Small Island Developing States, those in the Caribbean.

The next FEMM requested SOPAC, the World Bank and Australia to progress work on catastrophe insurance by examining various relevant factors and considering whether a pilot study of one Pacific Island country would be beneficial. Port Vila was chosen because it could be regarded broadly as a typical case and was one of the urban centres most advanced in a SOPAC hazard and risk assessment programme called Pacific Cities.

The pilot study was published in December 2003. It placed a lot of emphasis on the assembly and analysis of data on hazard and disaster events, arguing that this is a key input to developing full-scale risk modelling. In turn, this would enable actuarial pricing systems to be developed. (As is mentioned later, this type of exercise represents a considerable expense preparatory to the setting up of an insurance scheme).

The Port Vila project focussed on the creation of a regional (Pacific) disaster insurance scheme, involving at least five Pacific Island Countries, including Samoa. The report set out the prerequisites for such a scheme and conceded these were daunting. Others were equally pessimistic. For example, one of the authors (Kevin Lindsay of Risk Management International Consulting Ltd, Port Vila) noted:

“... while in theory such a scheme could be developed the evidence is that without a very big budget and fresh outside faces ... such a pool would not be workable.”

A World Bank policy note, “Not if but when – adapting to natural hazards in the Pacific Islands Region” (2006) stated that, whilst reasons for a regional insurance scheme were clear in that private insurance is unaffordable to most Pacific people and allying needs could bring both diversification of risk and economies of scale, in the short term a regional insurance programme in the Pacific does not seem feasible. Indeed, other attempts to create regional schemes have not got off the ground. Plans for the Caribbean and Central America foundered on such matters as cross-subsidy issues, inconsistency in information quality and cost of the programmes. With its better history of co-operation, the Pacific might fare better, but a regional scheme would not be an easy concept to bring to fruition.

This policy note also commented that the main impediment to disaster insurance is the generous post disaster financing provided by donors. With the entirely rational priority of encouraging economic development, it makes sense for Pacific Island Countries to rely on uncertain but inexpensive post disaster financing rather than incur the costs of a risk transfer programme. But a hidden cost of this approach is that unplanned post disaster financing crowds out other expenditure, whether that would have been funded by aid or internal means like taxation.

Our understanding is that there has been no further progress since the publication of the SOPAC report on the Port Vila project. However, the report does represent a substantial body of work and a useful reference, with contributions from world experts.

We conclude that it may be premature to be striving for a regional scheme, but individual countries like Samoa could achieve a programme for disaster compensation on a national scale, and this might be seen as a precursor for some sort of regional assistance scheme.

The conclusions to the SOPAC report that are relevant to a national scheme include the note that one in 100 year events have a 50:50 chance of occurring in a lifetime, so are good targets to plan for. Wind speeds of 160 kilometres per hour in Apia are about a 1 in 100 year event. For Samoa, the financial impacts could be measured in terms of several times the gross national annual expenditure. Meanwhile, lower level disasters sap continually the country's nation-building efforts, to the detriment of sustainable development.

The SOPAC report cites the figure of five capital cities in the Pacific that are vulnerable to disasters that could ruin the country's economy. It can safely be assumed that the writers had Apia in mind. It was also concluded that risk transfer and risk financing measures in place at present are insufficient to deal with the long-term threat of disasters.

4 Funding Disaster Recovery

Risk transfer means formal arrangements made before the disaster occurs, to spread financial liability for disaster damage at a cost that has to be met whether disaster strikes or not. Risk transfer through insurance or capital market securities is not the only way to provide relief to disaster victims, or the means to repair and reconstruct the built environment. In fact, it has been estimated by Swiss Reinsurance Company that only about 20 % of global disaster losses are insured. *Collective loss sharing* is post disaster provision by the state or global community, funded by current or future taxpayers and by charitable donations.

Risk transfer and collective loss sharing do not affect vulnerability. A community is just as susceptible to disasters no matter what its levels of financial protection. Insurance essentially is financial compensation following damage by a “peril” insured against (although many insurance companies these days provide assistance to claimants to repair property, and will even take over repairs). There are other forms of financial protection that provide funding that must then be applied to repairs and reconstruction by some authority. These and insurance are instruments of recovery, not of planning or response. However, the way in which disaster recovery is expected to be funded does impact on incentives, and has implications, for mitigation measures.

Financial protection and mitigation work together to make a community more resilient to disasters and their aftermath. The more effective the mitigation measures, the less danger to life and property and the less damage and disruption when disaster strikes. Sound mitigation should be recognised in lowered costs of the financial protection, such as insurance premiums. Mitigation is the fence at the top of the cliff, and financial protection the ambulance at the bottom. Both are necessary but an effective fence for all but the direst events is to be preferred.

Governments are heavily involved in reducing and absorbing losses from catastrophic events, for example by:

- Funding prevention measures
- Emergency response
- Repairing public infrastructure
- Compensating disaster victims

Around the world, various means of financing these responsibilities have been employed. One instrument is a post-disaster tax but this places a burden on an already stressed community and may have a high administration overhead.

Some countries have set aside catastrophe or calamity funds, notably several countries in South America. The pre-disaster cost of these funds is reflected in the foregone alternative use of the money and this must be weighed against the benefit of having resources immediately available to the government to apply to disaster relief. Building such funds to a level of sufficiency before they are required, or before they succumb to the political risk of diversion for other purposes, is largely a matter of luck. In New Zealand, for example, a

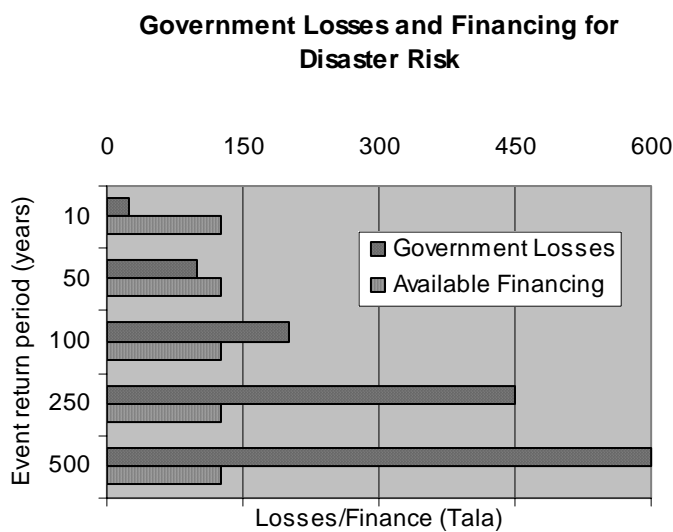
quiet seismic interval since the formation of the Natural Disaster Fund in 1945 has allowed the Fund to grow to a realistic amount relative to its liability, despite regular government appropriations until the last decade.

International loans and donations often assist a government’s reconstruction budget, but funds from this source are small, and reportedly declining, although the World Bank may be reconsidering its policies, according to a new examination of the Bank’s assistance for natural disasters by an independent evaluation group, called “Hazards of Nature, Risks to Development”.

Following disasters, governments have diverted funds from other budgeted items to cover their liabilities. This makes sense if the cost of diverting the funds is less than that of the debt that is the only alternative. These diversions may be from international loans for infrastructure projects, thus compromising a country’s future; the World Bank is concerned that almost a third of its infrastructure loans have been diverted for post disaster reconstruction.

So countries face choices of issuing debt, raising taxes post disaster or diverting funding from other projects. Before choices are made – even a choice to do nothing - an estimation of the resource gap between what could be available for post disaster relief and what could be required may be attempted. This need not involve full catastrophe modelling or the extensive exercises envisaged in the Port Vila Project, but a rough evaluation of historical data on floods, cyclones and earthquakes and the use of a simulation model (a computer spreadsheet), to gain an impression of the total costs. Then the availability of funds or capacity for the government to raise funds through borrowing, raising taxes or diversion from other projects could be analysed, and the amount of possible external aid and assistance added.

A possible result is illustrated in the following graph:



5 Samoa's Situation

5.1 Strengths

Samoa has strengths in the areas of mitigation and of financial protection that we believe should be built upon, rather than introducing something altogether new or importing a solution that may have worked in another country.

Strong social cohesion is provided by the family and village ties that are a feature of Samoan life. There is a cultural ethic of co-operation, mutual assistance and sharing, especially in an extended family. These count as mitigation measures because they will be important factors for the recovery of a community.

Assistance within families extends to substantial remittances by emigrant Samoans, back to their home villages and families. Foreign remittances are among the most substantial in the world and are estimated to comprise about 20 % of Samoa's GDP. At time of disaster, these remittances are increased in response to the heightened need.

Many Samoan families now live in enclosed "Western style" houses but the traditional fale style is still much in evidence. So villages retain an ability to construct fales. These structures are somewhat resistant to the battering of high winds and rain, and can fairly readily be built or repaired, using – or re-using - materials that are ready to hand. It can be assumed that, with their combination of communal living and own ability to construct fale-style shelters, Samoan communities are more highly resilient than other societies.

The general insurance industry in Samoa is healthy, with three established companies and a fourth just commencing. One company is an important subsidiary of a multi-national group and has been operating in Samoa for nearly thirty years. All companies offer disaster insurance. There are no official figures, but there was a quite consistent estimate given to us by the insurance companies of 50 % of homes insured, with half of them taking the disaster extension. Faes are not insured. About 25 % of households have contents insurance. Almost all businesses are insured, although business interruption cover is not so widespread and often inadequate. The Government shows a good example by insuring most of its property, the major buildings through a centrally administered policy.

By international standards, these are quite high take-up rates of insurance.

There are several government financial institutions and instruments that have been, or could be, involved in post disaster financial relief. These include the Samoan Housing Corporation, the National Provident Fund and the Insurance Operating Fund (a fund that was mentioned to us but we have been unable to find out more about its purpose or balance).

5.2 Needs

A review of the gap analysis criteria and Samoa's strengths leads to the following analysis of needs.

Households most vulnerable to natural disasters will be uninsured but have few possessions, anyway. Their needs will be met by the relief agencies that already operate in the country. Not all of these come under the National Disaster Council set up in the Prime Minister's Department in 1997 and transferred to the Ministry of Natural Resources, Environment and Meteorology in 2004. The churches have formed a Council of Churches. A more fully co-ordinated approach to relief provision and distribution would better ensure consistency of treatment and comprehensive distribution.

Although, as noted above, Samoa is ahead of other countries in the proportion of families that insure their houses and possessions, the majority are not insured against disasters like cyclones. There are three impediments to insuring:

- Inclination – people have other priorities for their expenditure
- Cost – the premium for an average value home (TL150,000) plus average value contents (TL50,000) could be TL1,500 per year or more for a fire plus all perils policy
- Two of the three insurance companies demand an engineering certificate that the building meets the minimum cyclone resistant construction standards before agreeing to insure against cyclone damage. This is an additional cost and inconvenience to the property owner. The other insurance company does its own inspections.

Samoa's society's resilience and the insurance of almost all businesses, most government property and a good proportion of housing and contents, can lead to the conclusion that smaller events will not cause unmanageable problems, and that we should concentrate on the larger, rarer events. For these, both home-owners and the insurance industry may need protection.

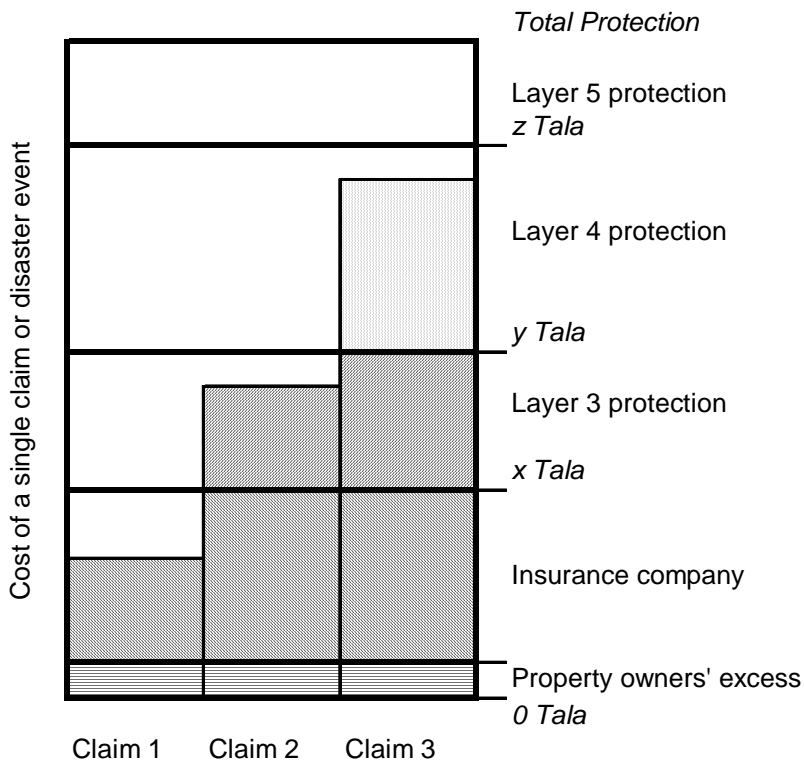
To build upon Samoa's strengths, the aim of a national natural disaster fund would be to promote the purchase of insurance policies by the majority of home-owners. This could be achieved by enabling companies to lower their premiums and providing the financial security to remove anxiety that insurance companies may be unable to meet all disaster claims. To these carrots could be added the stick that only those who have insurance will benefit by the existence of the Fund.

6 Structuring Risk Transfer

Transferring risk is most expensive for the transferor at “ground level”, i.e. from the first Tala of loss. As transferees (insurers) are excused from paying lower levels of claims, they can discount their premiums and the further they are from “ground level”, the greater the discount. In fact, insurers generally insist on an “excess” so they do not have to pay claims from absolute “ground level”. In Samoa, the excess for household disaster claims is 2 % of the amount insured, but can be as high as 10 % at the election of the insured person (to save premium), or for underwriting purposes (e.g. homes on the coast)

This suggests that risk can be transferred to various risk takers at different levels, creating a tower of building blocks, as in this diagram. Three claims are illustrated, to show how each building block, or layer, becomes involved once the costs of an insurance claim cross its threshold. For now, we consider a claim may be either an individual property (a home or commercial site) or an aggregate of all claims arising from one event, like a cyclone. We return to this point later.

We can label the first building block as the property owner’s excess and the second as the insurance companies’ capacity. We discuss possibilities for other building blocks below.



6.1 Layer 3 protection

In this tower of risk there is a layer of financial protection for property owners above insurance companies' payouts. This protection may trigger on exhaustion of the insurance policy - but that would present issues around influencing policyholder decisions and coverage for non-disaster perils like fire or impact - or it may provide protection for the insurance company on the occurrence of a disaster, allowing the insurance company to charge more affordable premiums, if it is not paying for the Layer 3 protection.

An ability to make savings on insurance premium costs, thus reducing regular family and business overheads, and to provide post disaster funding assistance, suggest a possible source of financing Layer 3 Protection and creating a National Disaster Fund.

Foreign currency remittances from Samoans living abroad run at about US\$85 million per year. In normal times, these remittances assist those at home to meet the cost of day-to-day consumables including, for those who insure their home and contents, their premiums. In time of disaster, custom sanctions appeals to expatriate Samoans for financial assistance, and this is so generously forthcoming that a scheme for partially transferring the costs of disasters could be seen as protection from impoverishment for both the home and expatriate communities.

If a levy were applied to overseas remittances, every one percent would yield about US\$850,000 per annum. Investing this for use in disaster recovery would enable a meaningful fund to be built up, with a mixture of prudential management (making it a sufficiently high level building block or layer) and luck (no events that wipe out the fund before it has achieved a critical mass).

Samoans at home and overseas may accept this levy as pre-payment of disaster relief that will mitigate the obligation and need to send home financial assistance following a flood, cyclone, earthquake or other natural disaster.

A layer of protection along the lines suggested would cap the liability of insurance companies for disaster claims payouts. It might be considered reasonable to charge insurance companies a premium for this protection, at least until the pool of funds has reached a viable amount. Care would be required with this approach, to ensure companies are still able to effect premium savings for their customers and thus preserve the moral justification for a levy on remittances.

Partnership between private enterprise and government for financing disaster losses recognises that neither private insurance nor public assistance can stand on its own. Other countries like Japan, Spain and New Zealand have legislated national insurance programmes that combine both. These are all developed countries, but Puerto Rico has developed a Reserve for Catastrophe Losses under which a portion of tax-deductible property insurance premiums is passed to a trust that reinsures companies directly providing property insurance in the country.

6.2 Other ways of funding a National Disaster Fund

New revenue generating methods like a tax on remittances should be related to the reason for raising them, i.e. disaster relief. Possible perverse reactions to new imposts would have to be anticipated, for example a tax on insurance premiums may dissuade property owners from purchasing cover.

Setting up a central scheme from current assets would require consideration of the trade-off between the reduction in funds available for current growth and the protection against future losses.

There are good arguments for international assistance with the costs of risk transfer, either by donors allowing transfer to themselves or funding the transfer to the insurance or capital markets.

- Existing donor countries may recognise such costs as protecting their investment in the Samoan economy.
- Risk transfer confers some stability on economic growth, excluding both the peaks and troughs that are evident when the costs and benefits of risk transfer are absent.
- Risk transfer instruments require planning for disasters and their use will force attention to be paid to prevention and mitigation along with post disaster needs.

However, our discussions with AusAid and NZAid in Samoa did not lead us to be optimistic that aid money would be forthcoming for disaster insurance purposes. Whilst by no means dismissing the suggestion, both agencies expressed the opinion that this type of expenditure would have a challenge meeting governments' requirements for visibility and immediate application of their aid moneys.

6.3 How a National Disaster Fund could work

Insurance companies sustain claims on the particular properties insured. In the event of a cyclone or earthquake, claims occur on many properties at once. This accumulation of risk is an issue insurance companies have to grapple with; they purchase their own protection against it and limit their sales in order to limit their accumulation.

The Fund could fit in this structure, providing cover in the event of a disaster and paying claims above a certain figure, or above a set percentage of the sum insured.

It would be necessary to define the "disaster" trigger. This could be in terms of describing a phenomenon, e.g.

- a category 4 cyclone or above crossing the coast,
- a tsunami of at least two metres striking the coast,
- earthquake felt-intensity of at least MM VI anywhere in Samoa

and so on for each type of disaster envisaged, or describing a situation, for example insurance claims totalling a minimum amount and all arising from the same disaster event. This is called an "industry loss".

Another possibility is for the insurance company cover and the Fund to merge in the event of a defined disaster event or industry loss, so that they are co-insurers. The private and public coverage would then apportion each claim between them on an agreed (pre disaster) basis that could alter as the balance of the Fund changes.

Example: on the occurrence of a defined event, insurance companies would pay 75 % of every claim and the Fund 25 %.

The relative number and amount involved in smaller claims render co-insurance more attractive for insurance companies than the excess loss alternative under which they fully pay all claims up to the attachment point of the Fund. They should therefore provide greater premium savings, though not as high as 25 % because they will still have to cope alone with disasters that do not reach the trigger.

It may be thought that such a scheme is merely benefiting insurance companies by reducing their risk. The aim of the Fund is to lower premiums that ought to lead to a higher incidence of insurance by home-owners. With respect to insurance company accumulation problems, co-insurance will grow the amount of insurance that companies will provide because they will no longer have to cover 100 % of the risk of large disasters.

There is a question of whether the Fund should be put at risk of a disaster payout at all, or used to purchase offshore protection. We describe the various means of offshore protection in the next section. The amount raised by taxing remittances and charging insurance companies could be transferred to risk-taking entities overseas. We think that at this quite low level in the building block tower, the cost of purchasing such cover would be high and would necessitate the expenditure of large amounts in studies the risk takers would require to define the level of hazard and assess their premiums.

Another way of protecting the Fund would be to provide for the total of its liability never to exceed its balance at the time of the disaster (see the Appendix).

7 Further levels of protection

The purpose of the Level 3 building block is to lift the attachment point of risk for the subsequent building blocks to a level at which affordable costs for transfer to overseas entities could be expected. Thus, the Samoan community would be self sufficient to recover financially from disasters with an insured cost of up to *Tala* (see diagram) and would have made arrangements to claim from offshore risk takers if costs ever exceeded this amount.

There are several methods of providing offshore risk transfer. The first is by reinsurance, which is the insurance of insurance companies. They take in risk, and pass it out – possibly repackaged – to overseas companies like the Swiss and Munich Reinsurance Companies, Lloyds of London or any of dozens of other reinsurance companies. Catastrophe reinsurance provides cover in case the insurance company's aggregate liability for all claims for damage arising from a single disaster exceeds an agreed figure. The higher the figure, the less the cover costs. In other words, catastrophe reinsurance forms a third or higher building block in the insurance company's tower of risk, after the individual policyholders' excess and the company's own retained risk.

Catastrophe reinsurance could be negotiated as the fourth level of protection in our tower of risk. If its attachment point is somewhere above the expected loss from a 1 in 50 year event, it could be affordable. Payment could come out of the Fund that comprises Layer 3 Protection or from another government source like the Insurance Operating Fund, or from both. Insurance companies may be required to contribute on the basis that their liability is being protected.

The effect of a catastrophe reinsurance agreement protecting the Fund would be to cap the Fund's (and therefore the insurance industry's) possible losses from a single disaster event. The government could collect the claim for any excess above the cap, and pass payments to insurance companies to reimburse their loss.

Over the past decade, financial instruments entailing some form of hedging transaction in the capital market have been developed as alternatives to insurance or reinsurance.

The entity requiring the financial protection issues debt, called "Catastrophe Bonds". These behave as normal capital bonds unless the defined event – the "trigger" – for example a cyclone of a certain force – occurs, when the bonds default and the issuer retains the proceeds. The bonds carry an investment grade appropriate to the probability of occurrence of the defined event. The issuer pays interest to investors for the duration of the bonds and can offset this expense by investing the principle in risk-free assets. The cost of the bond is the difference between the two interest rates.

These days there are several variations on this basic form, including instruments that indemnify, like an insurance policy, rather than provide a sum of money that has no direct relationship to the financial need created by the event (in other words, there is a "basis risk" of proceeds being either too little or over-sufficient). Bonds should release funding quickly, although in some quarters there is a concern about a possible tendency for disputation over whether the event does constitute a pulling of the "trigger". Catastrophe

bonds do eradicate the counter-party risk of inability to pay claims, if not the disinclination to, the bonds being fully collateralised.

Catastrophe bonds take time and money to set up, and require extensive hazard analysis in order to define the risk to the satisfaction of investors. This contrasts with taking out insurance or reinsurance and the cost of setting up a bond has been an impediment to their competing with the insurance market. But the reaction of the insurance market to the 2005 hurricane season in the Atlantic is making catastrophe bonds more competitive for writers of business in the affected areas.

Another risk transfer mechanism comes in the form of standby loans, or contingent credit facilities. A fee is paid for the creditor to set aside potential funding in the event of a disaster, and loans as negotiated are made available following the event. The standby fee is considerably less than an insurance premium, but the proceeds are a loan that must be repaid at the agreed market rates, if they are ever required.

The potential for insurance and the alternative instruments described above to transfer risk across the globe is enormous. The insurance/reinsurance market is currently capable of taking on hundreds of billions of dollars (US) of catastrophe risk. Capital markets have far greater financial resources (about 50 times more, by some estimates) than the insurance market and can be used to counter the notorious volatility in pricing of insurance/reinsurance covers.

There is therefore much scope to transfer risk offshore, where it is not possible or advisable to form viable pools of taxpayers or risk takers within a country's borders. For example, Level 4 Protection in our tower of risk could be a reinsurance agreement and Level 5 a standby loan facility.

8 Other Matters

8.1 Insurance Take-up

Another impediment to insurance take-up in Samoa is the (very reasonable) requirement by insurance companies that houses to be insured meet the minimum cyclone resistant construction standards (to withstand wind speeds of up to 210 kilometres per hour). This may be a cost to proposers for insurance. The test is probably not being applied consistently across the industry. If the government becomes involved in risk-taking on behalf of householders (through the Fund) it should discuss with insurance companies the consistent application of this standard, to the extent that a government certification system may be needed.

However successful attempts to increase take-up rates of insurance are, there will always be those who do not purchase insurance on their homes or their personal possessions. As mentioned already, the portion of the population that does not own homes and has few possessions are catered for by the relief agencies. If these are the “need not insures”, thought is required for the “won’t insures”. Perhaps reliance on their family’s remittances from offshore proves justified or perhaps they lose their gamble against nature. There will always be those who need charity or government aid.

As the take-up rate of insurance does increase, the liability of insurance companies and the Fund will increase also. Insurance companies will receive premium to compensate for their increased risk but the Fund’s income is not related to insurance policy numbers but to the level of remittances from overseas. There will need to be provision for altering the proportions in which liability is shared, or the attachment point of the Fund, as the relative balances of the private/public partnership changes.

8.2 Property Covered

The assumption in this paper is that any nationally provided financial protection would probably apply to physical damage to residential property only, at least in the initial stages. Cover could be extended to temporary accommodation expenses, and to cover infrastructure, government property and commercial property including business interruption expenses if the Fund succeeds in growing to a sufficient balance. It is the residential property sector that presents the lowest level of insurance purchase in Samoa. Enabling people to get back into their homes and to normal life is a prerequisite of an effective recovery.

8.3 Amount of cover required

Some work has been done on analysing the hazards for which planning would be prudent in Samoa (see the Pacific Cities study and Appendix 3 of the draft National Disaster Management Plan). To assess risk and vulnerability, it is necessary to investigate the probability of event’s occurring and their likely cost in terms of claims on insurance

policies. The latter will then guide decisions about the extent of financial protection required and where the levels in the tower of risk should be set.

8.4 Administration

A national fund will require administrative support to ensure the levy that forms its income is collected effectively and efficiently, to deal with the insurance industry over necessary information, agreements, returns and audits, to oversee negotiations of financial protections for the fund and to effect payments with proper checks and controls in the event of a disaster. A small team attached to an existing department should be all that is necessary.

For an industry loss basis to be effected, there would need to be in place an arbiter of insurance claims, to certify that the industry-wide loss had been reached. A robust system would also need good centralised data on insurance policy numbers and total sums insured, so that insurance companies could assess their own individual positions with regard to industry-wide losses and the government can keep an eye on the level of insurance purchases, as one of the aims of the scheme would be to encourage more people to insure.

9 Conclusion

Samoa seems capable of dealing with small to medium disaster events through existing social and commercial mechanisms. Current overseas aid partners are also standing by in case of a shortfall that, for such events, would not require large-scale diversion from existing projects.

The task is to build upon this capacity to develop a means by which the Samoan people and economy could become resilient to a major disaster. The goal is to protect the Samoan economy, which has benefited from reform and good management, from being set back years or even decades by a single disaster event, as has happened overseas. In this endeavour, it is recognised that continued reliance on overseas aid is both unsatisfactory for nation building and shortsighted in that such funding is often diverted from projects for sustainable growth.

This paper suggests a national disaster insurance programme that incorporates existing elements of Samoan society and commerce. It is a private/public partnership. There are several option points and a number of choices to be made to create the tower of risk. The result can be relatively simple or as complex as some overseas versions like the California Earthquake Authority.

The scope of this paper is conceptual. It does not explore the detail or do more than note what preparations and requirements there are for setting up a national scheme. More work and research is needed before decisions about which options to take can be backed by a sufficient amount of information. Nevertheless, in the interests of clarifying the type of structure suggested, the appendix is an illustration of what may eventuate.

10 Bibliography

Graham Shorten et al, *Site-Specific Earthquake Hazard Determinations in Capital Cities in the South Pacific*, SOPAC Technical Report 300, February 2001, Second Edition.

Graham Shorten et al, *Catastrophe Insurance Pilot Study, Port Vila, Vanuatu: Developing Risk-Management Options for Disasters in the Pacific Region*, SOPAC Joint Contribution Report 147, December 2003, Prepared for World Bank Office, Sydney, and AusAid, Canberra.

National Building Code for Samoa, Public Works Department, Government of Samoa, 1992

A Possible National Insurance Scheme for Samoa

Income	Levy on remittances from abroad, administered through the banking/funds transfer sector
Assets	Fund created by income less expenditure (administration costs and claims), plus investment income
Property covered	Insured residential property – homes and contents that have a valid subsisting insurance policy against the type of disaster that caused the damage. <i>(Note: commercial and government property in Samoa is mostly insured already and much of the risk is transferred offshore by internal insurance company mechanisms).</i>
Type of cover	Co-insurance with the insurance company. The proportions are in relation to the total in the Fund : total industry loss (after deducting their own policy excess and any recoveries they can make under own internal catastrophe reinsurance arrangements). <i>(Note that other types of reinsurance will need to be included in this protection because they will have a big influence on what the insurance company charges, depending on how heavily reinsured they are).</i> Example: The net industry loss from a cyclone is T 25 million. The balance in the Fund is T 5 million. All claims are therefore shared 80 % by the insurance companies and 20 % by the Fund.
Trigger	An insurance industry claims cost for residential property, arising from a single disaster, of at least T 20 million. <i>This amount could be adjusted periodically to reflect the amount in the Fund. As the Fund grows, it may accept greater liability, encouraging the insurance companies to lower their premiums.</i>
Administration	Claims handled by the insurance companies, who submit an application for reimbursement Government agency required to manage the Fund and its investments, collect information about insurance levels, maintain liaison with insurance companies and help with studies to quantify probable losses from disasters, agree co-insurance proportions and audit claims and submissions for reimbursement.

Organisations Consulted

Filomena Nelson	Principal Disaster Management Officer	Ministry of Natural Resources, Environment and Meteorology
Darryl Williamson	Managing Director	National Pacific Insurance Ltd
Mrs Tautala Mauala	Secretary General	Samoa Red Cross Society
Amanda Roberts	First Secretary	Australian Government (AusAID)
Steven Williams	Sales & Marketing Manager	Samoa Life Assurance Corporation
Tu'u'u Luafatasaga Dr Ietitaia Setu Taule'alo	Chief Executive Officer	Government of Samoa Ministry of Natural Resources, Environment & Meteorology
Peniamina Leavai	Principal Climate Change Officer (AVI Climate Change Tech. Officer)	Climate Change Office (part of Meteorology Bureau, MNREM)
William McGoldrick		
Annie Rasmussen Arthur	Chief Financial Officer	Samoa Ports Authority
Moananu Ioane O. Filemu	Managing Director	Progressive Insurance
John Moors	Buildings Division	Ministry of Works
Mrs Noumea Simi	ACEO Aid Coordination	Ministry of Finance
Soane Leota	Corporate Affairs	Ministry of Finance
Tony Hill	Commissioner of Fire, Emergency Svcs	Fire Service
Leota Sami Leota	General Manager	Pacific Insurance Underwriters Ltd
Tama plus 4 other officers		Ministry of Education
Peter Cox	First Secretary & Consul	NZ High Commission
Paulo Stowers	Manager for Property and Assets	SamoaTel

Company: **Ministry of Natural Resources,
Environment & Meteorology** Meeting Held: **2 pm, Tues 6 June &
4 pm, Fri 9 June 2006**

Contact Name: **Filomena Nelson** Our Ref: **6060030/PFD**

Principal Disaster Management Officer

Email Address: **Filomena.Nelson@mnre.gov.ws**

6 June

- Cyclone Hetta in 2004 turned away from Samoa at last moment.
- Last big earthquake was M 7.8 in 1986.
- Biggest current threat is an out-of-sea volcano 200 km away.
- Volcanic assessment was undertaken in February 2006 by Shane Cronin (Massey University, New Zealand).
- Flood model studies are being undertaken at the moment.
- Some studies were undertaken under SIAM-I (Beca developed some).
- National Provident Fund – made funds available after last cyclone, funded by increase from 5 to 7 % contributions.
- MNREM want project to expose people to new ideas.
- Samoa has a National Disaster Council and an Advisory Council (which is its operational arm). It also has a Ministry of Women and Community.
- MNREM about to submit a national disaster plan to government.
- Samoa's Ministry of Finance looks after insurance of Government buildings.
- Utilities include Samoatel, Electric Power Corporation (EPC), Samoa Water Authority (SWA), and Samoa Ports Authority (SPA).

9 June

- Trying to contact person in Central Bank of Samoa in charge of insurance fund.
- MNREM should have database of all up-to-date info on natural hazards.

Bank rate on average could be 5 %.

Company: **National Pacific Insurance Ltd** Meeting Held: **9.30 am, Wed 7 June 2006**
Contact Name: **Darryl Williamson** Our Ref: **6060030/PFD**
Managing Director
Email Address: **darryl.npi@samoa.ws**

- Samoan government no longer owns 40 % of National Pacific Insurance.
- NPI now falls into Tower re-insurance umbrella and has 3 (Pacific) country managers.
- No insurance commissioner in Samoa – Central Bank of Samoa takes this role.
- Cyclone insurance – only if engineers certificate produced. 300 Tala fee for certificate. (lasts 7 years) instead of previous 1000 Tala.
- Not all competitors require certificate.
- In Tonga, some don't require certificate, but others there do.
- NPI insure for earthquake (includes tsunami) and cyclone as optional extra.
- Total domestic insurance market estimated to be 9 million Tala with an estimated further 2-3 million insured offshore.
- Estimated that 20-30 % residential bungalows (not fale) insured for fire and general, and 50 % of these take cyclone, etc, cover as an extra.
- People with good quality houses insure them.
- NPI moving towards not paying for cyclone damage unless shutters installed.
- Contents – similar (50 % of those insuring houses) take-up.
- NPI do not offer medical insurance, but does offer liability insurance. Most don't take out personal accident insurance.
- 2006 Feb – biggest flood 'ever', central area and south Apia flooded, 8 weeks of rain.
- NPI do not cover those habitually flooded, and require damage to be mitigated (stock raised, for example).
- Government buildings and schools fully insured for cyclone.
- Utilities insured (not sure about Samoan Water Authority).
- Some churches give aid only to their own followers after a cyclone.
- A package on how to rebuild homes being developed (in conjunction with MWD).
- Might be more important to insure infrastructure.

Company: **Samoa Red Cross Society**
Contact Name: **Mrs Tautala Mauala**
Secretary General
Email Address: **samoaredcross@samoa.ws**

Meeting Held: **Wed 7 June 2006**
Our Ref: **6060030/PFD**

- Samoan Red Cross (SRC) looking at insuring:
 - volunteers
 - stocks of relief materials (new fully stocked centre in Savaii, and 6 other centres)
- SRC involved in awareness/mitigation as well as response - telling communities of building codes. Providing training for evacuation.
- Government has given SRC mandate for 1st Aid training.
- Transportation of casualties after a disaster is a problem.
- In the cyclone Hetta (2004), there were problems with lots of home fires.
- UN talking of giving Red Cross the leadership to provide shelter. SRC want to coordinate, but concerned about taking responsibility for providing high-class shelter.
- SRC has tried to introduce credit unions - but only ones that workplaces foster - such as staff clubs.
- Having family overseas is a form of insurance at the time of a disaster.
- Red Cross NZ do not see Pacific Islanders in NZ community helping raising money for Pacific.
- SRC take experts from PWD, Met. Office and Min. of Health on training courses.
- SRC have 7 satellite phones.
- Not all churches, service clubs (e.g., Rotary), etc., are under the umbrella of the National Disaster Council. SRC knows of disputes between groups.
- National Disaster Council established ad hoc in 1997, and transferred to Ministry of Natural Resources, Environment & Meteorology in 2004.

[REDACTED]

Company: **Samoa Life Assurance Corporation** Meeting Held: **11 am, Thurs 8 June 2006**
(WSLAC building, floor above Beca)

Contact Name: **Steven Williams** Our Ref: **6060030/PFD**
Sales & Marketing Manager

Email Address:

- Relinquished catastrophe insurance 4 years ago on advice from actuaries.
- WSLAC still covered for losses > \$30,000 by re-insurer.
- A Labour Department report in 2004 estimated a market of 20,000 people in Samoa.
- WSLAC has less than 10,000 policyholders (some have 2, 3, 4 policies each).
- Endowment policy popular – because of regular saving and access to lending.
- Average policy is 10,000 Tala, and there are 3-400 above that.
- It is a pre-condition on house mortgages that Fire, General and catastrophe insurance be taken out.
- National Provident Fund law requires that every person who works in Samoa contributes by way of a deduction from wages.
- There is a proposal for a national health insurance scheme, and NPF are being talked to about administering it rather than the private sector.
- WSLAC would have liked to run scheme.
- WSLAC is a mutual – no government ownership, but it follows most of government rules.
- WSLAC competes in Life Assurance with other commercial providers.
- Thinks earthquake rather than cyclone would be a bigger risk to WSLAC in terms of deaths.

[REDACTED]

Company: **Government of Samoa** Meeting Held: **2 pm, Wed 7 June 2006**
Ministry of Natural Resources & Environment

Contact Name: **Tu'u'u Luafatasaga Dr Ietitaia Setu** Our Ref: **6060030/PFD**
Taule'alo
Chief Executive Officer

Email Address: **tuuu.ieti@samoa.ws**

- Government had recently considered introducing health insurance via NPF with employer subsidy, but realised that it would not be workable.
- Samoan family ties are strong (no need for post-disaster refugee camps as in Fiji).
- After the 1991 cyclone, Australians helped develop a building code
- The Samoan Building Code is part of the Samoan Building Law.
- In recent years, decline in international aid to Samoa.
- After the 2004 cyclone (Hetta), the Samoan Government did not ask for food support.
- As part of the SIAM -1 project, Jeremy Gibb collated information on natural hazards – including from oral histories/memories.
- Remittances from overseas - "It is the Samoan family receiving the money". By and large, it is for immediate consumption (e.g., weddings, funerals and feasts).

Company: **Climate Change Office** Meeting Held: **3.15 pm, Wed 7 June 2006**
(part of Meteorology Bureau)

Contact Name: **Peniamina Leavai** Our Ref: **6060030/PFD**

Principal Climate Change Officer
William McGoldrick
(AVI Climate Change Tech. Officer)
Annie Rasmussen

Email Address:

- Officers described their objectives with respect to preparation for climate change.
- Convention on climate change – Kyoto protocol – discussed.
- Possible change in frequency of extreme events (cyclones) discussed.
- Climate Change team asked for opinion on whether disaster insurance could play a role in preparation for climate change.
- David Middleton gave a comprehensive description of world disaster insurance and the manner in which premiums are derived.

Company: **Samoa Ports Authority (SPA)**
Contact Name: **Arthur ???**
Client Financial Officer

Meeting Held: **9 am, Thurs 8 June 2006**
Our Ref: **6060030/PFD**

Email Address:

- All equipment and buildings are covered through local insurance company.
- Wharf not yet covered by insurance.
- Tug boats and other ports (5 altogether) covered by New Zealand broker.
- Employees have medical and life cover through Colonial Insurance.
- Developing port in Savaii and on south side of Upolu.
- Cruise ship coming to Savaii port in 1st week of July 2006.
- SPA understand the impact on quality of life of relevant communities if port facilities unavailable.
- Flooding in central Apia in February 2006 blamed on lack of clearing of rubbish from drains.

Company: **Progressive Insurance**
Contact Name: **Moananu Ioane O. Filemu**

Meeting Held: **10 am, Thurs 8 June 2006**
Our Ref: **6060030/PFD**

Managing Director

Email Address: **proins@samoa.ws**

- Progressive Insurance (PI) offers basically Fire and General plus add-ons, and has been in business 12 years.
- PI use own trained inspectors for adequacy of construction for cyclone.
- PI keep major part of Fire & General risk but pass Cyclone & Earthquake risk to Lloyds
- Both proportional loss and excel loss treaties.
- Most commercial premises in Samoa and most freehold properties around Apia are insured.
- Mortgagees require insurance (and insist on cyclone and earthquake cover).
- Financial institutions have been persuaded to have construction insurance and so PI are involved early via inspections.
- Insurance rates (including cyclone) have gone down significantly in last 10 years.
- Reinsurance has a 15 -ear recovery period.
- New Zealand government has relaxed rules on superannuation so more are returning with a culture of insurance.
- Most government-owned infrastructure only insured during construction period.
- During the last serious cyclone (Ofa, February 1990), most major losses were to infrastructure – wave damage to roads on coasts – seawalls installed after that.
- Excess here is 2 % of sum insured – fairly standard – same as National Pacific.
- Typical Apia house costs 150,000 Tala.
- Young couples building 3-bedroom homes, and most take out about 50,000 Tala contents insurance.
- Prices appliance cost almost 3 x New Zealand values. An average refrigerator costs 2000 Tala.
- A broker from Fiji visits – mainly for Vaillima Breweries owned by Carlton.
- In the last cyclone, 90 % of damage was from trees. PI has a requirement all tall trees to be removed from near insured buildings.
- PI would like to have cyclone shutters required at time of construction - it is the law in Fiji.
- Samoa has recommendations re cyclone resistance, but these are not in building code.

- Progressive would rather government take responsibility for cyclone/ earthquake cover as it costs > 50 % of fire premium and goes on cap re-insurance.
- Noted that there had been a similar visit from New Zealand Fire Service six months ago - for Samoan government.
- Yesterday, 1st invoice from fire service received for service to an insured property.
- In big catastrophe - insurance money will go to mortgagee.

(Note: Building Code is part of Samoan law – not advisory as suggested above re cyclone provisions)

[REDACTED]

Company: **Ministry of Works, Buildings Division** Meeting Held: **1 pm, Thurs 8 June 2006**
Contact Name: **John Moors** Our Ref: **6060030/PFD**
Email Address: **jmoors@mwti.gos.ws**

- Government owns housing units - mainly for government scholarship returnees.
- There is a Samoan Government Housing Board.
- Bridges believed to be insured, but not roads.
- MWD no longer undertakes works - contracted out to private contractors.
- MWD in process of renewing building code - last done 1992. Draft Code in the hands of consultant lawyer.
- Traditionally, fales had woven shutters, tied in place.
- Emergency stores - now encourage commercial approved contractors to hold supplies/equipment as required - government used to have items when MWD was Public Works Department.
- Believes Samoa amazingly resilient.
- After Cyclone Hetta (January, 2004), it took only two days for 50 % of electricity supply to be restored. The urban area kept going electricity-wise except for some blackouts.
- Electric Power Corporation (EPC) considering running lines underground to protect them from damage.
- Samoa achieved full recovery from Cyclone Hetta in less than a year.
- There is voluntary help from the community - including from contractors, NGOs and Red Cross.
- Chinese follow Samoan Building Code when donating buildings and sports facilities.

Company: **ACEO Aid Coordination**

Meeting Held: **2.10 pm, Thurs 8 June 2006**

Contact Name: **Mrs Noumea Simi**

Our Ref: **6060030/PFD**

Email Address:

- Disaster fund/SOPAC /Forum of Economic Ministers- not a new idea. Process always ends up with meeting of donors - but no takers.
- Big part of remittances from overseas Samoans is for immediate consumption. There is a mindset, even in times of normality, to “live for the day”.
- AusAID had a fund for adaptation - three small grant schemes towards mitigation of disaster that probably added up to 1 million Tala.
- It is a long time since Samoa requested food aid after a natural disaster.
- UNDP does not really feature in top donors list, but Samoa features in their global strategic disaster preparedness programmes.

Company: **Ministry of Finance**

Meeting Held: **2.10 pm, Thurs 8 June 2006**

Contact Name: **.....**

Our Ref: **6060030/PFD**

Email Address:

- Economic Planning Commission decides which buildings get cover. Major buildings insured- but not all buildings. Schools insured - but not all schools. Hospital covered. Government housing not covered because not up to necessary quality.
- Government requires only Ministries to have insurance, not other government bodies.
- Ministry of Finance operating an insurance fund with National Bank of Samoa that accumulates over the years. The fund has a 500,000 Tala provision in the budget - used to fund insurance premiums. Fund has some millions of Tala - being going for some time. Only government ministries covered by operating insurance fund.
- National Pacific Insurance (NPI) currently handling government insurance, but all government insurance should be put up for tender. Government was once a major owner of National Pacific Insurance. NPI requires a certificate for cyclone resistance.
- The financial security of insurance companies is of concern to the Ministry of Finance, and they choose accordingly.
- Village committees are responsible for getting their buildings up to scratch.

[REDACTED]

Company: **Pacific Insurance** Meeting Held: **Friday 9 June 2006**
Contact Name: **Leota Sami Leota** Our Ref: **6060030/PFD**
General Manager
Email Address: **ssleota@fpinsurance.ws**

- Pacific Insurance – Agency, Federal Pacific Insurance – underwriter, and underwriting handled by an Auckland group.
- Tranche of Car & Fire and General carried locally, and co-insure under a binder arrangement. Some clients might have multiple properties. For a large client, a majority will be put with underwriters.
- Residential insurance is normally comprehensive – insisted on by financial institutions.
- Probably less than 50 % of residences in Samoa have insurance. Of 50 % who have building cover, perhaps 50 % of them have contents insurance. Not much rental ownership.
- Re-insurers have requirements for adherence to Samoan national cyclone and seismic codes.
- Pacific Insurance have low discretion on standards – insist on new cover having an engineer’s certificate.
- 2-10 % excess for cyclone – depending on premium wanted to be paid by client.
- Co-insure the Electric Power Corporation with Progressive Insurance.
- Yes, would like to see uninsured covered for disaster.
- If there were a national disaster scheme, it could carry the first layer of disaster loss.
- Properties within 400 m of sea are subject to a 10 % excess.
- Average insurance cover for a house is 100-150,000 Tala, minimum 70,000 Tala, and properties under 40,000 Tala not worth looking at.
- Contents normally insured for 10-50,000 Tala, 10,000 Tala minimum. Expats generally insure for 10-15-30,000 Tala.
- Theft in Tonga is a problem – Pacific Insurance now asking for a contents list. Averaging is legal and is applied.
- SIAM-2 workshop by Beca attended some weeks ago.
- Group also has local franchises for Western Union and Cash Converters.

[REDACTED]

Company: **Ministry of Education (Hotel Teuila)** Meeting Held: **11 am, Fri 9 June 2006**
Contact Name: **Tama plus 4 other officers** Our Ref: **6060030/PFD**
Email Address:

- Preparation for cyclone is currently in curriculum. A unit is included in the secondary science curriculum.
- Ministry of Natural Resources & Meteorology (MNREM) could prepare additional hazard material.
- 3 levels of curriculum – pre (3-5), primary, secondary.
- Major review of curriculum every 5 years, but annual feedback.
- The revised secondary school curriculum is being implemented now.
- The primary curriculum review is about to start – it is a good opportunity for MNREM and Disaster Management office (DMO) to work with Ministry of Education (MoE).
- MoE would first look at material it has already.
- Attendees asked “What is link between Disaster Council and MNREM?”
- Kestrel group has talked to the Ministry of Education CEO.
- MDO already preparing kits/info for public. Ministry of Education keen to see material – it could be needed as additional material.
- MoE re-supplies schools every 5 years anyway, so a loss of materials because of a cyclone just brings forward process/expenditure.
- Cyclone-proof cabinets would be useful.
- People likely to shelter at churches rather than schools.

Company: **Samoatel**
Contact Name: **Paulo Stowers**
Manager for Property and Assets

Meeting Held: **3 pm, Fri 9 June 2006**
Our Ref: **6060030/PFD**

Email Address:

- Samoatel is 100 % owned by government .
- Samoatel is in National Council for Disaster – (represented by Manager, Cameron Weldon).
- Samoatel has insurance cover (all except 65 cars are with one company), paying premiums of around one million Tala per year.
- Has been dealing (cooperation/working with them/negotiation) with one insurance company for 5 years or so.
- Samoatel has a small amount of business disruption cover.
- Main business from Apia rather than rural.
- Certificates have been obtained for cyclone resilience of assets.
- Old buildings and towers are the main worry in a cyclone.
- Alcatel equipment has survived for 15 years.
- Upolu covered 80-85 % by buried fibre.
- 2-year maintenance cycle.
- No major fire in last 20-25 years.
- Cyclone plan – matter of priorities for restoration. Main satellite dish at back of headquarters site. Other routings possible if damaged in natural disaster.
- Hits to roadside cabinets are a major expense - not spelt out in cover.
- Samoatel GSM system a month away. Already 2 GSM competitors.
- Cellular more than 50 % of business.
- Going to invest heavily into broadband.

