



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

**Disaster Management
Simulation Exercise
'Cyclone Pele'
25 August 2005**

September 2005

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

by
BECA International Consultants Ltd.

BECA

BECA

▪ report

Disaster Management Simulation Exercise 'Cyclone Pele' 25th August 2005

September 2005

Prepared for

Ministry of Natural Resources, Environment
and Meteorology

By

Beca International Consultants Ltd

September 2005

Ministry of Natural Resources, Environment and Meteorology

13 September 2005

Private Bag

Apia

SAMOA

Attention: Vitaua Peleiupu Fuatai

Dear Sir

Disaster Management Simulation Exercise 'Cyclone Pele'

Please find enclosed a summary of the Simulation Exercise conducted on the 25th August 2005 for the Disaster Management workstream. This report contains a summary of key points from the simulation and includes the simulation documents, participant feedback and attendance list.

Yours faithfully

Graeme Roberts

Manager, Planning



on behalf of

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Revision History

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A	K Stephens	Report on Disaster Management Simulation Exercise 'Cyclone Pele' held on 25 th August 2005	5 September 2005

Document Acceptance

Action	Name	Signed	Date
Prepared by	Karen Stephens, Kestrel Group Ltd		5 September 2005
Reviewed by	Michele Daly, Kestrel Group Ltd		7 September 2005
Approved by	Graeme Roberts, Beca International		13 September 2005
on behalf of	Beca International Consultants Ltd		

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1 Introduction

1.1 Background

As part of the Disaster Management workstream of SIAM-2, component C4, the first of two simulation exercises was conducted on Thursday 25th August. The participants were members, or their representatives, of the Disaster Advisory Committee (DAC) and the staff of the National Disaster Management Office (NDMO).

Objectives:

The objectives of the simulation were:

- To exercise the national disaster management structures, specifically the advisors to the National Disaster Council (NDC).
- To exercise the national disaster management warning, activation and preparation processes.
- To determine the communication linkages required between the NDC and agencies with a role in disaster response.
- To further define the role of the NDMO in co-ordinating the implementation of NDC decisions.
- To provide opportunities for NDMO personnel to develop skills in simulation planning and delivery.

This report contains a brief summary of the simulation and key feedback. Attendance list, simulation documents and participant feedback are included in Appendices A, B & C.

1.2 Definitions

The following definitions and abbreviations are used in this report:

CEO	Chief Executive Officer
DAC	Disaster Advisory Committee
NDC	National Disaster Council
NDMO	National Disaster Management Office (part of MNREM)
EOC	Emergency Operations Centre
NDMP	National Disaster Management Plan
NGO	Non-Governmental Organisation (e.g. Red Cross)
MNREM	Ministry of Natural Resources, Environment and Meteorology
MWTI	Ministry of Works, Transport and Infrastructure
SIAM-2	Samoa Infrastructure Asset Management Project Phase 2
SOPAC	South Pacific Applied Geoscience Commission
UNDP	United Nations Development Programme
ISP	Institutional Strengthening Project
MCIT	Ministry of Communication and Information Technology

2 Simulation Overview

2.1 Participants

The simulation was attended by members, or their representatives, of the Disaster Advisory Committee and staff of the NDMO. A full participant list is attached as Appendix A.

2.2 Inputs

The scenario was designed to meet the objectives mentioned in 1.1 and to take into account other elements of the project:

- National Disaster Management Plan Review
- Agency Response Plans
- NDMO Communication needs
- Disaster Management Structure (part of the NDMP review)

Feedback from the Agency Workshops conducted in June 2005 was also incorporated into the design.

Scenario:

The scenario was a developing cyclone (Cyclone Pele) which was forecast to affect Samoa. Realistic meteorological reports were produced for use in the simulation, these are attached in Appendix B. Participants were provided background on the sequence of events that had already occurred, this included the fact that a 'blue' alert as described within the current NDMP was in place following a Storm Warning the previous day.

Exercise Structure:

The exercise was conducted in three phases.

Phase 1 An updated Hurricane Watch (Warning 2 – Appendix B) was provided to participants with the instructions that the Chairman of the DAC had requested a meeting to discuss the developing situation. Participants were then requested by the Chairman of the DAC to provide details of the actions their agency would be taking in preparation for a potential cyclone (Agency Actions Warning 2 – Appendix B).

Participants worked individually or within teams to complete the Agency Actions report. These reports were then provided to the NDMO who consolidated the information into a Situation Report (Situation Reports Produced – Appendix C). The Chairman of the DAC provided an overview of the situation to the DAC and the NDC. The NDC were not in attendance and the facilitators assumed that role.

Phase 2 A Hurricane Warning (Warning 3 – Appendix B) was provided to participants. The Chairman of the DAC requested agencies to now provide details of the actions their agency would be taking in final preparation for the arrival of the

cyclone (Agency Actions Warning 3 – Appendix B).

Participants again worked individually or within teams to complete the Agency Actions report. These reports were provided to the NDMO who consolidated the information into a second Situation Report (Situation Reports Produced – Appendix C). The Chairman of the DAC provided an overview of the situation to the NDC. The NDC were simulated by the participants and a number of questions were asked of the Chairman of the DAC for clarification on the Situation Report.

Phase 3 The final phase of the exercise was to gather feedback. A form was distributed to participants (Feedback Form – Appendix B). Each participant was asked to talk about one thing they had learned from the exercise. Full detail of the feedback is attached as Appendix D.

2.3 Participant Feedback – Key Points

The following are summaries of the key learning points as stated by participants, broken into specific headings relevant to the overall project:

1. *NDM Structures & Processes*

- There is no consistency in attendance of DAC meetings by agencies. Agencies need to be properly represented during meetings and workshops. These sessions are important to ensure a disaster can be handled, and they need to have a high priority.
- The Chairman of the DAC should co-ordinate disaster management with relevant agencies taking a 'lead agency' role with respect to emergencies and response activities.
- Simulation exercises are essential to strengthen the roles and responsibilities of the DAC and NDMO in case of a real life emergency or disaster.
- The reporting process from agencies to the DAC and through to the NDC will improve communication and decision making.

2. *Plan Format & Content*

- The development of an efficient National Disaster Management Plan is an exceedingly complex process that requires an exceptional amount of consultation and collaboration.
- The NDMP should include pre-hurricane season preparations e.g. stormwater drains cleaned out, residential bush and tree trimming and removal of large trees and roadside trees, outreach to villages, awareness planting of root crops to fall back on for feed after hurricanes (should be all community driven).
- A clear understanding of the strategy for foreign aid within the context of natural disasters should be developed as part of the NDMP. Although foreign governments respond accordingly to the consequences of natural disasters, it would be worth also including them in the NDMP so that they can harmonise that with their own individual agency disaster / emergency plans.

- The NDMP should include clear roles and responsibilities to ensure there is clarity between government and non government agencies.
- The current NDMP refers to a cyclone warning system which is not understood by agencies and caused confusion during the simulation. The warning system requires review and agreement for inclusion into the new NDMP.
- The NDMP wording should take into account translation into Samoan.

3. *Emergency Operations Centre*

- A communication system between key agencies and other stakeholders is essential.
- The suggested Emergency Operations Centre was considered to be inappropriate due to its location and facilities. For example the meeting room was considered too small and the air conditioning inadequate. There are also concerns regarding the structural integrity of the building and its contents during cyclone or earthquake events.
- In a response situation the EOC will need staff in addition to the current NDMO staff, to support the DAC and to manage communications and situation reporting.

4. *Legislation*

- There was overall support for the review of the current legislation, particularly around the responsibility for declaring status of emergencies.
- Legislation should clearly state the agencies represented on the DAC and the seniority of the representative of the agency e.g. CEO

5. *Agency Response Plans*

Ten of the fourteen agencies represented indicated they had response plans. Key comments include:

- After discussions during the simulation more ideas have arisen regarding closer co-operation and sharing of common personnel e.g. those who have done Red Cross courses for the hotels to be identified to the Red Cross volunteers in their area of the country. (Samoa Hotel Association)
- Our plan needs to be reviewed. It was a useful tool during Cyclone Heta but there had been unrealistic actions that need reviewing. (Red Cross)
- We have a standard procedure that everybody follows. After today I feel we need to start putting these procedures on paper. (Samoa Water Authority)
- We will be developing a plan as part of our training environment and with the assistance of a standard template being introduced as part of the project. (Samoa Polytechnic)
- The opportunity to look into other agencies preparations will assist in finalising our own disaster response plan.

6. *Community Awareness*

- A large number of public messages were identified during the simulation. This will require the development of a process to ensure these messages are delivered in an efficient and effective way.

- There is currently no one identified to manage the delivery of key messages to the community during emergencies. In the past each agency has managed their own messages. There is a risk that there will be too many, or duplication of messages being delivered.

7. *Other Key Points*

- It was encouraging to see the co-operation of core agencies and supporting agencies in an emergency crisis.
- Gaining an understanding of the role and actions of other agencies during disasters and the dependencies between agencies was extremely valuable. However there is some confusion over responsibilities, which needs to be considered during this project.
- The simulation was well organised. This session was great to have us think about our roles and responsibilities. More simulations will provide additional understanding of how the agencies work together and the actions required by each agency.

2.4 **Facilitator Observations**

The following details the facilitators' observations where they differ from or are additional to those of the participants:

- Consolidating the agency action reports into the Situation Report took approximately 30 minutes. This was in part due to the process being new to the NDMO staff and the number of agencies represented on the day. However, in any future reporting processes and expectations, sufficient time should be allowed for the production of the Situation Report to ensure it contains accurate and complete information, particularly recommendations to the NDC and any decisions required.
- The meeting location for the NDC and DAC should be clarified. Will they attend the NDMO (EOC) or will the DAC be expected to move to another location?
- Cyclone alert levels currently within the NDMP were not known by participants, including representatives of the Meteorological Division of MNREM. It is essential that alert levels and criteria are defined as quickly as possible for incorporation into the NDMP and the Community Awareness Programme currently under development.
- The collation of agency information into SITREPS and using this as the basis for a report to the NDC seemed to work well and was well supported by participants. There was support for the Chair of DAC being the person who reported this information to the NDC. This aspect of the structure will be developed further in the November simulation.
- There was no central point for the development and delivery of key messages to the public. An agency should be nominated with this responsibility to ensure that the messages prior to, during and following emergencies are accurate and delivered in the most efficient manner. Without this central point of co-ordination it is possible that the public will be overwhelmed with the number of agencies providing advice and instructions. There is also the risk of duplication or conflicting information being distributed.

2.5 Recommendations

As a result of the simulation the following are recommendations which will need to be addressed to improve Samoa's disaster management capability. Most of these are outside the scope of the current project and will need to be addressed as part of the ongoing NDMO work programme.

- Revising the current cyclone warning system and incorporating the procedure into the community awareness programme.
- Identification of support staff to the NDMO during activation of the EOC (rostered operations, communications and administration staff, activation procedures, training etc).
- The legislation review must identify who has the authority to upgrade alerts and declare a state of emergency. There should also be consideration of delegated authority in the event the nominated person or position is not available.
- A back up EOC location should be nominated as a matter of some urgency. There was confirmation of an offer of the use of the NCC by the Deputy Police Commissioner during the simulation debrief and this should be formalised.
- Nomination of an agency responsible for co-ordination of key public messages to ensure accuracy and efficient distribution of these messages prior to, during and following emergencies.

2.6 Next Steps

- Meetings of Disaster Advisory Committee to discuss the project in preparation for the Agency Response Workshops (October)
- Agency Response Workshops (October)
- Next simulation (November) to coincide with National Disaster Awareness Day.

- Appendix A

Workshop Attendance Lists

Simulation Exercise 'Cyclone Pele' 25th August 2005

Name	Organisation	Email
Nynette Sass	Samoa Hotels Association	nsass@samoa-hotels.ws
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Laulu A Tevaga	Ministry Women Community Social Development	
Filifilia Iosefa	UNDP	Filiz.iosefa@undp.org
Tamasoalii Saivaise	Ministry Education	tamaypj@yahoo.com
Sala Maresi Isaia	Samoa Polytechnic	s.misaia@sampol.edu.ws
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Mavaega Mupo	Samoa Port Authority	
Tony Hill	Fire Service	rthill@lesamoa.net
Tasha Shon-Maiai	US Embassy	Shon-maiait@state.gov
Ben Leavai	MNREM	pleavai@meterology.gov.ws
Anne Rasmussen	MNREM	arasmussen@meterology.gov.ws
Charlie Va'ai	SamoaTel	Charlie.vaau@samoatel.ws
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Taulealeausumau L. Malua	MWTI (PUMA)	laavasa@mow.gov.ws
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Karen Stephens	Project team	ks@kestrel.co.nz
Michele Daly	Project team	md@kestrel.co.nz
Debbie Cunningham	Project team	dc@kestrel.co.nz

Name	Organisation	Email
Bill Smith	Project team	bill@consultel.co.nz
Ted Wells	Project team	twells@ipa.com.ws

- Appendix B

Simulation Documents

August Simulation: Cyclone Pele

25 August 2005

PLEASE READ THE FOLLOWING AND THEN FOLLOW THE INSTRUCTIONS AT THE END.

Warning 2: Storm Warning issued at 4:00am 5th Jan 2006

SPECIAL WEATHER BULLETIN NUMBER TWO FOR SAMOA
ISSUED BY METEOROLOGICAL DIVISION OF THE MINISTRY OF NATURAL
RESOURCES, ENVIROMENT AND METEOROLOGY AT 4.00 AM 4th JANUARY 2005

HURRICANE WATCH FOR SAMOA
STORM WARNING FOR SAVAII,
STORM WATCH FOR APOLIMA, MANONO AND WEST OF UPOLU
GALE WARNING FOR APOLIMA, MANONO AND WEST OF UPOLU

Issued every three hours when average wind speed are expected to reach storm force winds of 48 to 63 knots or 55 to 70 mph within the next 24 hours.

Tropical Cyclone Pele was located at 11.7 South 173.0 West or 110 nautical miles North-West of Savaii and 151 nautical miles from Apia at 2:00am local time on Jan 4th 2005. Pele was moving at about six (6) mph in the last six hours and is expected to slow down to four to five mph and continue moving southeast in the next 12 to 18 hours and may turning eastward within next 18 to 24 hours.

Tropical Cyclone Pele is gradually intensify and may reach hurricane force within the next 3 to 6 hours. Storm force winds of 55 to 65 knots or 65 to 75 mph are within 60 nautical miles from centre and radius of Gale force winds of 35 to 47 knots or 40 to 55 mph is within 90 nautical miles in the northeast to southeast quadrant and within 70 nautical miles in the south-southeast to southwest quadrants.

Destructive storm force northerly winds of 55 to 65 knots or 65 to 75 mph with gusts to 90 knots or 105 mph now affects the western and northern side of Savaii, and will affect all of Savaii in the next 3 to 6 hours.

Damaging gale force east and northeast winds of 34 to 47 knots or 40 to 55 mph with gusts to 60 knots or 70mph will affects Apolima, Manono and northeastern side of Upolu in the next 6 to 12 hours and rest of Samoa within 12 to 18 hours.

If TC Pele continue on its projected Track and intensified to a Hurricane force, destructive hurricane force winds of 75 knots or 85 mph will affects north of Savaii in the next 12 to 15 hours and rest of Samoa in the 15 to 24 hours

Forecast positions for Tropical Cyclone Pele:

- at 12.4 South 172.7 West or 90 miles West of Savaii at 7:00am local time Jan 4th 2005
- at 13.5 South 172.0 West or 55 miles South-West of Savaii at 1:00 pm local time Jan 4th 2005.

Occasional rain, heavy showers with squally thunderstorms continues and lowland flooding is possible.

Destructive storm surge and high surf of 16 feet affects the western and northern coastal areas of Savaii and northern coastal area of Upolu and it is expected to increase to 24 feet from later today. Storm surges will flood some of the northern low lying coastal areas.

The public is advised to take necessary precautions for safety.

YOUR INSTRUCTIONS

You have been called to a DAC meeting to be held at the NDMO. Please report to the meeting room at 10.15am.

Warning 3: Hurricane Warning issue at 7:00am local time 5th January 2006

**SPECIAL WEATHER BULLETIN NUMBER THREE FOR SAMOA
ISSUED BY METEOROLOGICAL DIVISION OF THE MINISTRY OF NATURAL
RESOURCES, ENVIROMENT AND METEOROLOGY AT 7.00 AM 4th JANUARY 2005**

**HURRICANE WARNING FOR EAST OF SAVAIL, APOLIMA, MANONO ISLANDS AND
ALL OF UPOLU.
STORM WARNING FOR REST OF SAVAIL**

Tropical Cyclone Pele has intensified into Hurricane force in the last three hours and is expecting to accelerated in the next three to six hours and was located at 13.1 South 172.1 West or 43 miles North East of Salelologa and 47 miles northwest of Apia at 5:30 am local time 4th Jan 2005. It is expected to move South South-East in the next 6 to 12 hours.

Hurricane force winds of 75 to 90 knots or 85 to 105 mph with gusts to 120 knots or 140 mph within 30 miles from center expecting radius of hurricane force winds to increase to 50 nautical miles from centre. Storm force winds of 55 to 65 knots or 65 to 75 mph are within 70 nautical miles from centre and radius of Gale force winds of 35 to 47 knots or 40 to 55 mph is within 100 nautical miles in the northeast to southeast quadrant and within 80 nautical miles in the south-southeast to southwest quadrants.

Destructive northerly winds of 55 to 65 knots or 65 to 75 mph continue affecting Apolima, Manono and Upolu increasing to very destructive northerly to northwest winds of 70 to 90 knots or 85 to 105 mph with gusts of 140 to 90 knots or 90 to 105 mph in the next 3 to 12 hours.

Very destructive southerly to southeast winds of 70 to 80 knots or 80 to 90 mph with gust to 100 knots or 115 mph will affects Eastern side of Savaii in the next 3 to 9 hours and destructive storm force southerly to southwest winds of 55 to 65 knots or 65 to 75 mph with gusts to 90 knots or 105 mph will continue affects rest of Savaii in the next 3 to 18 hours

The eye of Hurricane Pele will pass over Mulifanua & Manono, Aana District, west of Tuamasaga, Lefaga, Falealili and south of Aleipata District in the next 3 to 18 hours. At this time, there will be a short period of clear sky and calm winds. All public living at these areas are strongly advice to stay inside very strong and stable building as very destructive southerly hurricane winds is immediately after these fine conditions.

Forecast position for Tropical Cyclone Pele:

- at 13.6 South 171.8 West or 33 miles Southeast of Salelologa or 12 miles southwest of Apia at 1:00pm local time Jan 4th 2005.
- At 14.0 South 171.4 West or 51 miles South East of Savaii and 22 miles south of Apia or over Falealili District.

Occasional rain heavy showers with squally thunderstorms continue and lowland flooding is possible.

Destructive storm surge and high surf increasing to 24 feet affects the western and northern coastal areas of Savaii and northern coastal area of Upolu. Very destructive storm surges of 15 to 20 feet will affects most of the northern coastal areas of Upolu and southwest coast areas of Savaii and Upolu some of the northern low lying coastal areas.

The public is advised to take necessary precautions for safety.

NOTE:

DISTANCE - NAUTICAL MILE (NM) AND STATUTE MILE (M)

$$1 \text{ NM} = 1.151 \text{ M}$$

SPEED : 1 KNOT = 1 NM / HR = 1.151 M/HR

Agency Actions

Warning 2

Please use the headings (in bold) and write your report on the large paper provided

Readiness actions

What do you need to do before the cyclone hits:

- Assets (e.g. deployment/protection)
- Staff

Public messages

What do you want to tell the public?

Agency disaster structure and location

Who manages own agency actions and where from?

Communication and interdependencies

What other agencies are you dependant on to carry out response actions?

How do you communicate with these agencies?

How do you communicate within your agency?

How do you communication with the NDMO/national DM structures?

Predicted development of incident

What are the likely impacts that may develop (for your agency)

Alert Status:

What alert status should be declared? If so why? (Refer National DM Plan)

Issues

Note any issues which may affect your agency's ability to respond

NDMO

Situation report to NDC

Please use the headings (in bold) and write your report on the large paper provided

Current Situation Overview:

- Facts about the current situation

Key roles

- What key roles have been identified and who is carrying them out

Actions taken

- Co-ordination actions taken
- Agency actions undertaken

Resources

- What has been deployed?
- Are there any known gaps?

Predicted incident development

- What is likely to happen? What will the consequences be (for your agency)?

Public information

- What has been released and how was it distributed?

Critical issues

- Any problems or issues being monitored

State of Readiness

- Is there still more to be done?

Recommendations and decisions required:

- List of recommendations eg Alert level
- Decisions required

Agency Actions

Warning 3

Please use the headings (in bold) and write your report on the large paper provided

Priority actions (cyclone due approx 12 hrs)

What additional actions do you need to do before the cyclone hits:

- Assets (e.g. deployment/protection)
- Staff

Evacuations

Do you consider that evacuations are required? If so where?

Public messages

What do you want to tell the public?

Communication and interdependencies

What other agencies are you dependant on to carry out response actions?

What are your staff instructed to do when the cyclone hits?

What are your staff instructed to do when the all clear is given?

Alert Status:

What alert status be declared? If so why? (Refer to National DM Plan)

Issues

Note any issues which may affect your agency's ability to respond

August Simulation: Cyclone Pele
25 August 2005
Feedback Form

Name	Agency

What was one thing you learned today?

What went well?

What could be improved?

Was the National Disaster Management Plan useful?

Does your agency have an emergency plan YES / NO (please circle)? If YES how useful was it today.

If you have any other comments please write them on the reverse of this sheet.

- Appendix C
**Situation Reports
Produced**

Cyclone Pele
Situation Report 1
11:00am 5 January 2006

Current Situation Overview

- A Hurricane Watch has been issued for all of Samoa.
- The Disaster Advisory Committee met at 10:15am this morning.
- Cyclone Pele is intensifying and may reach hurricane force within the next 3-6 hours.

Key Roles

- The Chairperson of the DAC will report to the NDC on behalf of the DAC members.

Actions taken

- Agencies have been securing their facilities, and advising staff of the potential for a cyclone to hit Samoa.
- Some agencies have sent staff home before the cyclone so they can ensure their families and homes are safe.
- MNREM Met Division are monitoring the cyclone progress, other agencies are receiving regular updates.
- Alternative facilities are being considered by most agencies, in case their offices are damaged.
- Backup generators and supplies are being secured and check to see they are available if needed.
- Advice has been given to villages, fishermen and farmers that a cyclone is possible.
- Embassies have been advised and have briefed staff and secured their assets.
- A Ship Safety Berth Alert has been issued.
- Students have been advised to return home and not attend school tomorrow.

Predicted development

- We might need to evacuate residents of low-lying coastal areas especially western and eastern coast of Upolu and West Coast of Savaii.
- Expected arrival time onshore of Tropical Cyclone Pele is 3-6 hours.
- Communications are likely to be lost, and infrastructure and utilities severely damaged.

Critical issues

- Water supply shut off is likely
- Communications disruptions are likely
- Deaths and injuries possible/likely
- There will be a delay in the ability of people returning to work, so response agencies may have less staff than needed, and families may be without income.
- Staff shortages are likely
- Quality information is needed about the threatening cyclone, and then about the impacts of the cyclone when it hits.

Public information required

The public should be told:

- Store emergency supplies such as food, fuel, radio, lantern, candles, kerosene, first aid kit and medication
- Store water in case the water supplies are cut off
- Don't go out in a fishing boat
- Trim your crops
- Secure your buildings to stop things flying around. Tie down loose objects
- Schools are to close tomorrow, teachers should secure school properties in case they are needed for emergency shelters.
- If you are not from Samoa, please let your embassy or high commission know where you are staying.
- Stay Calm
- If cyclone comes then evacuate to higher ground
- Stay inside and listen to the radio and TV
- Contact the Police or Fire by calling 22222 if the phones are working
- If the cyclone hits you can expect water supplies to be cut off, roads and fords to be damaged, airport and port to be closed.

Recommendations and Decisions Required

1. Recommend that a Yellow alert be evacuated.
2. Red alert should be considered.

Cyclone Pele
Situation Report 2
12:00am 5 January 2006

Current Situation

- A Hurricane Warning was issued at 7:00am this morning for all of Samoa.
- The Disaster Advisory Committee met at 11:15am.
- It has been confirmed that Cyclone Pele will affect Samoa. Cyclone effects are already being felt (high winds, rough seas)
- Currently on Red Alert

Actions Taken Since Last Report

- Agencies have place emergency staff on call to respond to the cyclone effects. Rosters are being established to make sure enough staff are available for 24hr operations.
- All agencies have established contact with the NDMO
- Met Division continue to monitor the situation and release weather bulletins
- SamoaTel have made emergency calls free on public phones
- Agency staff in villages are camped on-site, having secured supplies and checked equipment.
- Staff have transferred from premises that are likely to be damaged, into alternate facilities.
- Public information messages have been transmitted by SBC and other media.
- Fishing boats have been moored.
- Agency vehicles are on standby for operations.

Priority actions after cyclone hits

- Activate agency disaster response plans
- Agency staff who were at home return to work
- Establish communication with other agencies
- Assess situation and report to DAC
- Provide information to the media organisations
- Make infrastructure safe
- Secure resources for recovery activities
- Prevent more damage to properties
- Clean up, rebuild
- Co-ordinate donor funding and assistance
- Distribute relief supplies

Predicted Development

- Cyclone effects are expected to last for 48 hours
- International telecommunications gateway will be shut down.
- Roads may be damaged and closed for 1 week.

Issues

- People and villages may be cut-off
- May be a shortage of food supply after the cyclone

- Communications are not possible between many villages.

Public Information Required

- Go to a strong building now
- If necessary move to higher ground
- Stay inside
- Remain calm
- Shut off power, gas and water supply
- The Airport and Ports are shut
- Children should stay home from school.

Recommendations and Decisions Required

- Continue to monitor situation, and respond when weather conditions allow safety of response agencies personnel.
- Confirm Red Alert Status

- Appendix D

Participant Feedback

APPENDIX D - PARTICIPANT FEEDBACK

What was one thing you learned today?

- The process and how to go about it.
- The importance of working together (all agencies)
- That stakeholders are capable of sitting down at the same table and discuss emergency issues in a relatively timely manner.
- That there are still lots of aspects that need improvement.
- Actions required during cyclones by many of the agencies
- Development of an emergency plan that can be implementable.
- The need to have a disaster Response Plan drawn up for our organisation ASAP.
- Different approaches on how to deal with cyclones.
- Other agencies responses and interdependencies.
- A good system of reporting to the NDC/DAC on the progress of our actions taken should the disaster occur in the future.
- How to complete situation reports
- In a real situation current NDMO staff would not be able to do everything.
- Communication among agencies
- The co-operation of core agencies and supporting agencies in an emergency crisis.
- What other agencies have i.e. assets and plans that are relevant to disaster management.
- All sectors are interested and willing to contribute to making the disaster plan successful.
- Colour coding system was new – had been unaware of its development. This system needs more work and remains unresolved.
- In a disaster plan you have different agency responses depending on what stage the disaster has reached.
- Need to back-up data back at each agency.
- The importance of a plan in times of chaos. The rationale on which the plan is based removes uncertainty and allows all stakeholders to be aware of the big picture.
- The diplomatic/ donor agencies have similar disaster response plans.
- Everyone seems to be on the same wavelength.
- How the different stages of issuing warnings (colour coding system – Red, Blue etc) does not necessarily comply with the Met Weather forecast system.
- Thinking about what would have happened in the real situation.
- That the development of an efficient National Disaster Management Plan is an exceedingly complex process that requires an exceptional amount of consultation and collaboration.
- Importance of a coordinated approach to preplanning for disaster management.
- Importance of communications for disaster management.
- Confirmed the idea of the key role of DAC to manage disaster management and the importance of getting the relevant agencies to take the lead with respect to various response activities.
- The effectiveness of having a discussion exercise (simulation) to strengthen the roles and responsibilities of the NDMO in case of a real life emergency or disaster.

What went well?

- The ideas given can be used to develop a variety of emergency plans leading up to the NDMP
- The teamwork and frank discussions.
- Opportunity to look into other agencies preparations which will assist in finalising our own Disaster Response Plan

- The brainstorming and discussion of how to deal with different situations.
- Simulation exercises on reporting to the DAC, consolidated actions taken in likely stages of cyclone.
- Working in groups reassured our roles and likely sharing of resources during disasters.
- Presentations and simulation, written exercises
- Reports from various agencies were completed and submitted on time.
- Everybody was on to it.
- Most probably, all went well. I am most impressed with the different actions different agencies can do regarding preparations for cyclones. Simulation input was great.
- The facilitation process
- Agencies respective knowledge of what they were doing.
- Better communication between utility co-ordinator and utility service providers
- There was talking among members.
- Agency reports and responses.
- Individual sectors seem to know their basic plans well enough.
- Knowing and learning what other agencies do for disasters and what other agencies and resources they rely on.
- It was well organized. This session was great to have us think about our roles and responsibilities.
- The response from (core) agencies.
- Group discussion, information sharing and support from group members of the group I was in.
- The exchange of essential information in an event of a cyclone.
- The different agencies' responses to events leading up to and during cyclones.
- The procedure of taking actions prior to the strike of the cyclone and reporting of DAC to NDC.
- Identifying partnership agencies to work with; working well in multi-agency groups/ sharing of ideas.
- Information gathering/ sharing.
- Information integration.
- Everything went well, particularly getting the various agencies to relate their responses.
- The input of other leading agencies in order to see what recommendations are needed afterwards.

What could be improved?

- A different way of extracting knowledge instead of asking for value answers. Value can be built up from knowledge but it will take time.
- Streamlining inter-organisational communication protocols in the event of emergency
- Identify other skills of the DAC members which can be tapped into to assist during a disaster.
- Psychological analysis of the DAC personnel (do they work well under pressure)
- Reporting – communications protocols. Dissemination of information both to and from organisations.
- More input is always appreciated.
- Communications system with other stakeholders especially Police, EPC, MNRE (NDMO), MoH, MWTI, Met Office
- How to make sitrep short as there is a lot of information reported by each agency
- Make sure all key response agencies attend.
- The sending of warning to the community in rural areas

- Nothing I can think of
- Realistic nature of emergency conditions
- Specific roles of NDC, DAC and emergency agencies
- Definitions of technicalities e.g. Blue/Yellow/Red
- Publicity and notification of warnings in relation to administration and financial arrangements.
- Better realism of the simulation, and description or discussion of each agencies response(s) at conclusion.
- There still seems to be confusion as to the interactions between agencies, i.e. there needs to be a few more simulations and SWOT analysis on current preparedness.
- Simulation of what agencies need to do after a disaster. Enforcing that all agencies need to form and submit a draft disaster plan so that the simulations can be used to see if the plans are practiced.
- No consistency in attendance by agencies. Agencies need to be properly represented during meetings and workshops. These sessions are important to ensure we can handle a disaster, and they need to have a high priority.
- More interaction between agencies. This will improve if more of these sessions are held. Must have the right people attending.
- Need a bigger (training) room with better air conditioning.
- Better coordination as some agencies could have made assumptions or do other activities better suited to other agencies.
- Use high tech equipment to visualize real scenario (e.g. cyclone winds)
- More interaction with other government ministries.
- Communications availability and accessibility before and during a cyclone.
- The handling of the public messages, i.e. how to deliver it to the public in a way that they will respond effectively.
- An update of the necessary legislation in place. The chairman of DAC should advise the PM on whether to declare Stage Red.
- The actual "simulation" environment – it could be made more conducive for learning (away from distractions).
- More group participation in presentations.
- Assistance in developing interagency communication protocols.
- Having all stakeholders here.
- The process needing to change depending on the nature of the hazard/scenario given.

Was the NDMP useful?

- Yes, should be developed further
- Only got a chance to look at it prior to the simulation.
- Highlighted areas were useful.
- Very useful as when the scenario does happen we all have a general idea of what is going to happen.
- Yes, we still need to familiarise ourselves with the contents and steps taken for each stakeholders to ensure its roles are well implemented.
- Yes, to decide what alert to issue at what time
- Yes, the NDMP has given us more information on how to go about when there is an emergency
- Quite useful
- To an extent, there are still many areas that need revision
- NDC and DAC roles are relevant
- OK

- *No.* Never saw one around the room, nor was handed a copy. Noted that agency leaders also did not consult it or reference it.
- *Yes.* It is there to show us what we must do as an agency and how we can work together with other agencies.
- *Yes.* Didn't have a copy immediately available but did refer to bits displayed on wall – this was helpful.
- *Yes.* It raises issues not previously thought of. However, there needs to be continuous updating to reflect current needs and it has to be readable.
- *Yes* (3)
- *Yes.* It was useful as a national guide of procedures.
- *No.* Our group did not consult the NDMP during the simulation.
- *Yes.* It was useful in terms of helping with the development of the status report and of raising the awareness of issues.
- *Yes.* Generally, but we need to review parts to reflect the current thinking on institutional arrangements and responsibilities.

Does your agency have an emergency plan YES/NO? If Yes how useful was it today.

- *SUNGO:* No, we should be developing one for ourselves.
- *Samoa Hotel Association:* No, after discussions during the simulation more ideas have arisen regarding closer co-operation and sharing of common personnel e.g. those who have done Red Cross courses for the hotels to be identified for the Red Cross volunteers in their area of the country.
- *SamoaTel:* Yes, It was useful in the form that other organisations were aware of our services provided.
- *Red Cross:* Yes, It needs to be reviewed. It has been a useful tool during Cyclone Heta but there had been unrealistic actions that need changes.
- *MWCSD:* No, our agency has no emergency plan
- *MESC:* Yes/No. We don't actually have an emergency plan however schools must practice emergency precautions such as first aid as part of the Health & Physical Educations curriculum, and as a component of their other curriculum such as Social studies and Science. Schools should be encouraged to practice these.
- *MNREM Met Division:* Yes, in reality a plan is a document. Finding the actual resources (capital/financial) in the event of an emergency is the ultimate challenge.
- *MNREM Met Division:* Yes, useful towards cyclone hit in less than 12 hours. Not in worst case scenario. Need enough resources to implement the plan at all levels.
- *MWTI:* Unwritten plans, scattered in each Division's mandate.
- *MNREM – Met Office:* Yes – at least for the Met Office. Previous practice has led to a formation of a more or less formal preparedness strategy for Tropical Cyclones.
- *Samoa Water Authority:* No – but we have a standard procedure that everybody follows. After today I feel we need to start putting these procedures on paper.
- *Police, Fire, Prisons:* Yes – it was useful as I had knowledge of it rather than possession of a hard copy.
- *MCIT:* No – it does not require one as it will be immediately shut down and staff withdrawn. This is conditional to standard procedures carried out such as a full shut down of IT systems, backups, evacuation plan etc.
- *United Nations:* Yes – it very useful in terms of completing the exercise and applying it to the disaster scenario.
- *Samoa Airport Authority:* Yes.
- *MNREM:* Yes – it was useful being able to apply it in a worst case scenario.

- *Samoa Polytechnic*: No – we will be developing one as part of our training environment and with the assistance of a standard template being introduced as part of the project.
- *US Embassy*: Yes – found it semi-useful.
- *SamoaTel*: Yes – it is currently up for review and update.
- *MNREM*: No (except for Met) – this is because MNREM was never a key part of the NDC in the past, not even a member of the present NDC.
- *MNREM – Met Office*: Yes. Emergency plan and procedures could be very useful in today's simulation for other agencies to understand how things can be done by using the existing plans under NDMO.

Comments:

- The NDMP should include pre-hurricane season preparations e.g. stormwater drains cleaned out, residential bush and tree trimming and removal of large trees and road side trees, outreach to villages, awareness planting of root crops to fall back on for feed after hurricanes (should be all community driven)
- Would like to see more simulations in the near future to fine tune action plans.
- Work well done. Looking forward to working with the NDMO and other stakeholders for future development.
- The simulated conditions need to incorporate more realistic conditions and address them.
- 4:00am weather bulletin – is the DAC going to meet at 5:00am to brainstorm and plan?
- If a red alert is imminent and 2:00am in the morning will the PM wake up at 2:10am to make the decision of weather to issue the alert – without the NDC meeting first?
- Please provide more information on the development of the colour code alert system, and its pros and cons. The Met Office, based on what it understands is the experience in other countries, would like to raise concerns over its use.
- For the next simulation – suggest a remote location away from town so participants can fully engage in group work without the distractions from work.
- For the next simulation – also consider holding a one day workshop (or 2 days) in Savaii or a rural area in Upolu – the advantages to doing this are numerous.
- Morning tea was healthy!
- Suggestions/comments about the legislation:
- It is assumed that members of the NDC and the Head of State do not have the expertise to make proper decisions and make necessary declarations in the event of disasters. Therefore these decisions should be made on the advice of DAC (who do have the expertise).
- Community awareness needs to be effectively and efficiently relayed.
- If there isn't one already, the NDC/DAC/NDMO should develop a strategy for foreign aid within the context of natural disasters. Although foreign governments respond accordingly to the consequences of natural disasters, it would be worth also including them in the NDM Plan so that they can harmonise that with their own individual agency disaster/ emergency plans.
- We need to be able to uphold the DM Plan in order for our roles and responsibilities to be transparent between govt. and non-govt. agencies.
- Plan could be on the web-site and translated into Samoan.