

**TROPICAL CYCLONE GENE
NATIONAL TASK FORCE REPORT**



Damage and Rehabilitation Needs

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EXECUTIVE SUMMARY

The damages brought by cyclone Gene compounded area losses to infrastructure and utilities done by Cyclone Daman in December 2007.

The cost of damages to various sectors of the economy highlighted the need for a review of activities in emergency operations, relief and rehabilitation.

This report attempts to provide information on the nature and extent of damage caused by Tropical Cyclone Gene to affected communities, in terms of disruptions to the provision of public services, utilities and infrastructure, as well as the damages sustained by the main economic sectors of the nation.

In brief the report highlights the following key issues:

There's a need to:

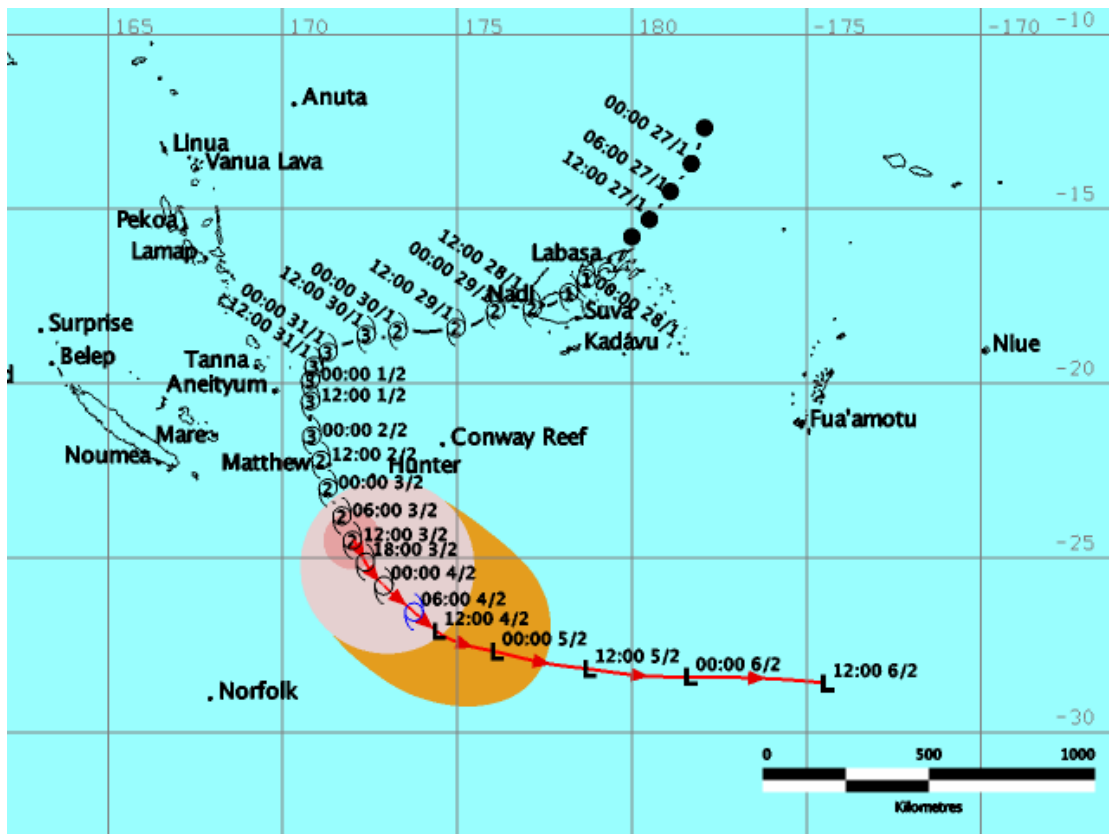
- review structures and processes for managing disasters and response to emergencies, so that the affected communities are attended to most effectively and the need to engage more effectively with all stakeholders.
- strengthen coordinated efforts of Government and communities efforts in assessing damage and monitoring rehabilitation
- invest in institutional back up systems for essential services.
- ensure compliance to building codes for public buildings and private dwellings in rehabilitation work for TC Gene.
- consider that climatic phenomena point to increase in frequencies of natural disaster and therefore a focus should be made in ensuring that structural designs for infrastructure to meet the challenge of climatic change.

In conclusion, the report urges attention on disaster mitigation in light of Global climatic trends and the likelihood of frequent occurrences of natural disasters.

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Mukesh Prasad
Deputy Secretary for Provincial Development
Controller of National Taskforce Cyclone Gene

1.0 INTRODUCTION

This report is based on the situation reports received from the divisions and sectors affected by TC Gene. The tropical cyclone Gene hit Fiji on the 28th January causing a widespread destruction flooding, and landslides. TC Gene was classed as Category 1 by the Nadi Meteorological Office. The path of the cyclone is shown below.



1.1 CLIMATIC CHANGES IN RELATION TO NATURAL DISASTERS.

Tropical Cyclone Gene was very unusual in its track and development. Usually cyclone formation develop around 5 south of the equator as tropical depression or low pressure system before it intensify and move south as it become a full cyclone.

However, in the case of cyclone Gene its development was not well detected especially when following the three stages of warning. This has resulted in many people caught off guard as the warning provided by the Fiji Meteorological Service focus only on strong wind warning. However, between 10.00 am and 11.00 am on Monday the 28th of January the system was named from tropical low pressure system to depression and then tropical cyclone Gene. This showed that Nadi Weather Office was not able to provide accurate and timely warning to the general public.

Climate scientists have predicted that the impacts of global warming increase the chances of more natural disasters such as tropical cyclone; extreme rainfall and flooding. The frequency of these natural disasters will continue to increase and becoming stronger as well.

Developing countries like Fiji will have great impacts on these natural disasters and would cost millions of dollars to the government in terms of damage, thus slowing down development projects. Development

fund will be diverted towards rehabilitation and reconstruction work. More lives will be lost as vulnerable communities population especially those residing in high risks areas such as flood prone areas continue to rise. In other words the poor are the most vulnerable community and likely to suffer much as they do not have proper housing structure to sustain strong winds and flooding.

There are already climatic extreme events happening that suggested that prediction made by climate scientist regarding increase in extreme weather is already affecting Fiji. The series of flood events that affected the Northern and Western division early last year (Feb 2007) cost millions of dollars to the country with four people lost their lives.

These floods are not generated by tropical cyclones. As we have known in the past, severe floods are directly associated with the tropical cyclone, however the recent severe flood that affected last year and the one in 2004 were caused by tropical depressions or low pressure system. This is an indication that the weather systems are changing and becoming stronger.

Since the prediction of extreme climatic events such as drought, flash flood and tropical cyclones will continue to increase its strength and frequency, it is important for the National Disaster Management Office to strengthen its disaster preparedness effort and formulate adaptive strategies to mitigate weather related loss to lives and economy.

Disaster preparedness is one area that always be neglected in terms of funding and assistance from government. The only time fund is generated to the Disaster Management Office is when there is a disaster. There is very little done in taking proactive measure as the focus is more towards reactive. There is a need to change this perception especially for decision makers as disaster is something that we cannot avoid however through disaster risk management we can mitigate its impacts to the economy.

One of the ways of strengthening disaster adaptation is to improve the Early Warning System.

Improving the Early Warning System of tracking cyclones. Some of the warning that were provided by the National Weather Forecasting Centre Nadi on tropical depression during 2007 that caused severe flooding in the north and the latest Tropical Cyclone Gene was not provided on time.

The Nadi Meteorological Office needs a Weather Radar surveillance to be strategically located at Labasa. The radar coverage can extend to the area north of Labasa which is the favorable area of tropical depression to form.

2.0 DECLARATION OF A STATE OF NATURAL DISASTER

The Prime Minister on the afternoon of 1st February, 2008 declared a state of natural disaster over the cyclone Gene and flood ravaged areas around the country. The period of thirty (30) days empowered the National Disaster Controller, Divisional Commissioners and DISMAC officials to co-ordinate the necessary emergency relief and restoration work.

3.0 ACTIVATION OF EMERGENCY OPERATIONS

Upon receipt of information from the Nadi Meteorological Centre the National Emergency Operations Centre as well as the Divisional Emergency Operation Centres were activated.

Public Advisories in all three languages were issued throughout the period from the formation of the low depression and the eventual cyclone.

Information on the above was sent to the Permanent Secretaries for Education and the Public Service Commission who advised their stake-holders of closure of Schools and Officers.

The Central Control Group under the chairmanship of the Permanent Secretary of Provincial Development was activated by the Prime Minister who is also the Minister of Provincial Development and they convened their meeting accordingly. Later a Taskforce Group was identified and convened to co-ordinate damage assessment information and compile the necessary report including the Cabinet Paper.

Divisional Commissioners had set in motion the mobilisation and deployment of their teams to undertake field assessments. This was essential for the confirmation of preliminary reports sent in by the District Emergency Operation Centres, members of the public and the media immediately after the cyclone. The surveys provided more detailed information about the nature and scope of the disaster and the status of the affected people. As well as the basis for the determination of the relief and rehabilitation programme such as provision of food, temporary shelter to those affected and the determination of the housing and agricultural rehabilitation programme that will follow.

4.0 RELIEF OPERATIONS

Evacuation Centres

Evacuation Centres were activated from Day 1 of the cyclone Monday 28th January as the adverse impact of the cyclone was experienced immediately. Firstly Village Community Halls and individual homes were established as Evacuation Centres, and later on school buildings were also utilised.

The occupation rate for most of the evacuation centres were 2 days and the only prolonged occupancy were in the 3 evacuation centres in the Central Division.

A total of 48 evacuation centres were activated as that covered 1452 people. In summary:

Central Division -	35	
Northern Division -	2	
Eastern Division -	3	
Western -	8	
Total -	48	

5.0 RELIEF RATION ARRANGEMENTS

During the disaster period, the activated evacuation centres were self-sustained, and it had been encouraging to note that the paradigm of government dependency had shifted to self-sustainability.

However the relief ration arrangement awaits the information gathered from the assessment surveys carried out in the divisions and Cabinet approval .

Total relief rations distributed as a result of the final data collected from field surveys stand at to date.

6.0 LOCAL ASSISTANCE

Donations in the form of food and clothing were received from the following private sector, civil society organisations.

SOPAC, Sun Insurance and Adventist Disaster Relief Agency (ADRA) – Provision of temporary shelter in the form of tents to the affected families particularly those with completely destroyed houses

TOTAL Event Fiji Ltd provided ration pack which included snacks and groceries worth \$25,000.00. Distributed to Central and Eastern Division: Groceries -330 packs, Snacks – 420 packs, FMF cracker-10 cartons, Punja flour-34 cartons, Punja tea – 9 cartons, Bongo-34 cartons

7.0 INTERNATIONAL DONOR AGENCIES

Interests were shown by various donor agencies and the task force headed by the Disaster Controller had the first consultation regarding areas of interests on the 30th January at the Ministry of Foreign Affairs.

On Wednesday 13th February, there was a second brief consultation held with the Diplomatic Corp to whom preliminary costs of damage and rehabilitation of \$45, 446,000.00m was presented.

8.0 SOCIOECONOMIC IMPACT

8.1 CASUALTIES

Tabulated below is a summary of casualties within the four Divisions that were related to Tropical Cyclone Gene and accompanying Flood.

Table 1. List of Casualties

	Name	Race	Sex	Age	Cause of Death	Place of Death	Division
1	Emori Koroi	Fijian	Male	38	Electrocution	Satya Place, Lautoka	Western
2	Sikeli Bali	Fijian	Male	47	Electrocution	Satya Place, Lautoka	Western
3	Nacanieli Raicibi	Fijian	Male	60	Dead at sea while fishing	Natawarau Ba	Western
4	Serupepeli Naqasima	Fijian	Male	80	Burnt to death	Vunuku Rewa	Central
5	Seini Likudrotini	Fijian	Female	20	Drowning		
6	Paulini Marama	Fijian	Female	13	Drowned while swimming	Rifle Range, Lautoka	Western
7	Alisi Adimaiyacata	Fijian	Female	16	Cancer Complication		
8	Nunia Vusolo	Fijian	Female	2 mths	Died in Sleep	Navutuvutu, Viani	Northern

Note:

It was confirmed by the Police Operation Centre that the two victims that were electrocuted (No. 1 & 2) are not directly related to Tropical Cyclone Gene or the Flood. Therefore the actual number of confirmed dead is six.

9.0 SURVEY AND ASSESSMENT REPORT BY SECTORS

9.1 SOCIAL SECTOR

HOUSING DAMAGE

Completely Destroyed

The NEOC started receiving reports of housing damage from the divisions. The number of completely destroyed houses reported in the preliminary report was 62.

The estimated cost of completely destroyed structures amounted to \$766,400.00 based on an average rate of \$10,450 per house. The rate for kitchen is \$1,500 and \$500 for toilet. When the final survey was completed, total rehabilitation costs for housing stood at \$5,187,615.00 for both partly damaged and full damaged housing.

Table 2 a: Summary of preliminary Completely Destroyed Structure

Division	House	Kitchen	Toilet	Total
Central	34	39	10	\$418,800.00
Eastern	27	30	20	\$337,150.00
Northern	1	0	0	\$10,450.00
Western	0	0	0	Nil
Total	62	69	30	

Estimated Costs	\$647,900.00	\$103,500.00	\$15,000.00	\$766,400.00
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table 2b: Summary of Actual Completely Destroyed Structure				
Division	House	Kitchen	Toilet	Total
Central	260	-	-	2,717,000.00
Eastern	68	-	-	710,600.00
Northern	3	-	-	31,350.00
Western	-	-	-	
Total	331			\$3,458,950.00

9.2 Partly Damaged

The total estimated cost of partly damaged structures is 317,684 based on an average rate of \$2,500 per house. This includes the actual cost of the Northern Division's Houses. The

Table 2c: Summary of Partly Damaged Structure

Division	House	Kitchen	Toilet	Total
Central	21	3	0	\$54,000.00
Eastern	12	13	8	\$36,900.00
* Northern	202 (\$226,784.00)	0	0	\$226,784.00
Western	0	0	0	Nil
Total	235	16	8	
	\$309,284.00	\$8,000.00	\$400.00	\$317,684.00

Table 3a: Actual Assessment Partly Damaged Structure				
Division	House	Kitchen	Toilet	Total
Central	489	Nil	Nil	733,500.00
Eastern	28	Nil	Nil	42,000.00
* Northern	187	Nil	Nil	280,500.00
Western				672,665.00
Total				\$1,728,665.00

Table 3b Summarised Actual Costs for Dwellings	
Completely Destroyed	3,458,950.00
Partly Destroyed	1,728,665.00
Total	\$5,187,615.00

9.1.1 EDUCATION SECTOR

The total cost of damage to schools in the preliminary report arrived at \$287,755. Damages include school buildings, teachers' quarters, water pipes, stationeries and equipments. The most damage was experienced in the Eastern division where school building, teachers quarters and dormitories were partly or fully destroyed amounting to a total cost of \$125,200.00. When the final reports from divisions were collated, the amount had reached \$621,155

More importantly in safeguarding our children during disasters it is more appropriate now to re-examine our policies on Building Codes in rural schools, due to the tendency of increase in adverse weather conditions in the future.

Table 3d: Education preliminary damage	
	Rehabilitation Cost
Eastern	\$125,200.00
Central	\$112, 900.00
Northern	\$21,600.00
Western	\$28,055.00
Total	\$174,855.00

Table 3e Education Actual Damage	
	Rehabilitation Cost
Eastern	\$125,200.00
Central	\$436,300.00
Northern	\$21,600.00
Western	\$28,055.00
Total	\$621,155.00

9.1.2 HEALTH SECTOR

The Ministry of Health in its preliminary report provided the costs of damaged incurred by TC Gene mainly on its buildings and equipments at a total cost of \$1,397,120.00. \$1million alone is the cost of repairing of the Fiji School of Nursing in Tamavua, while \$97,720 was for the damaged equipments in Navua.

During the cyclone there were two (2) reported cases of typhoid in Cakaudrove, Vanua Levu. When the final report was collated, the total cost of damage was \$5, 944, 310.00

C.1a Preliminary Health Rehabilitation Cost	
	Rehabilitation Cost
Eastern	125,200.00
Central	\$1,397,120
Northern	16,000.00
Western	NIL
Total	\$1,538,320.00

C.1b Actual Health Rehabilitation Cost	
	Rehabilitation Cost
Eastern	\$125,200.00
Central	\$1,510,020.00
Northern	\$16,000.00
Western	Nil
Total	\$1,651,220

Total preliminary expenditure for social sector					
	CENTRAL	WESTERN	NORTHERN	EASTERN	TOTAL
Health	\$1,361,120	NIL	\$16,000	\$20,000	\$1,397,120
Education	\$112,900	\$28,055	\$21,600	\$125,200	\$287,755
Rural Dwellings	1,499,900	NIL	\$226,785	\$312,150	2,038,835
Food Ration Needs	Included in total				\$1,660,000
Total	\$1,881,820	\$28,055	\$248,385	\$437,350	\$5,383,710.00

Total Actual expenditure for social sector					
	CENTRAL	WESTERN	NORTHERN	EASTERN	TOTAL
Health	\$1,361,120.00	NIL	\$16,000	\$20,000	\$1,397,120
Education	\$112,900.00	\$28,055	\$21,600	\$125,200	\$287,755
Rural Dwellings	3, 450,500.00		\$226,785	\$312,150	\$3,989,435.00
Food Ration Needs	Included in total				\$270,000
Total	\$4,924,520	\$28,055	\$248,385	\$437,350	\$5,944,310

10.0 INFRASTRUCTURAL SECTORS

10.1 WATER SUPPLY

As a result of the cyclone there was a total disruption costing \$5million. This figure includes the cost of damages to rural water supply, which is yet to be submitted.

One major cause to water disruptions experienced was the power outages, and it had many adverse effect in the delivery of services particularly patients welfare at hospitals and health care facilities.

The final report of the costs of damages to the Water Supply as tabulated below remain the same as preliminary assessment = \$5.4m

DIVISION	COST
Central/ Eastern	\$3.3 million
Western Division	\$1.3 million
Northern Division	\$0.4 million
TOTAL	\$5.0 million

Actual Assessment water supply rehabilitation cost

DIVISION	COST
Central/ Eastern	\$3.623,943
Western Division	\$1.3 million
Northern Division	\$439,800
TOTAL	\$5.4million

10.2 ELECTRICITY

FEA has about 5,700 km of transmission and distribution lines in the Viti Levu, and about 1300 km in Vanua Levu and Ovalau, in addition to about 750 km of underground cable.

During TC Gene, the whole of Viti Levu and most of Vanua Levu and Ovalau suffered blackouts. The Central and Eastern regions suffered much more damage than other regions.

Both the 132,000 volt power lines from Monasavu to the Central and Western regions were adversely impacted, thereby totally isolating the Monasavu hydro power station. Therefore FEA started operating the Kinoya and Vuda diesel power stations the day following the cyclone in order to provide any power demanded in the Central and Western regions respectively.

The 132,000 volt power line from Monasavu to the Central region was able to be re-energised on the second day after the cyclone by repairing damaged sections of the power line. The power line from Monasavu to the Western region could not even be inspected for 3 days following the cyclone due to adverse weather conditions in the region. Due to the inadequate power capacity of the Vuda power station to meet the power demand in the Western region, FEA implemented a “power sharing” scheme until the power from Monasavu was able to be transported to the West through the repaired power line.

FEA has developed a standard ‘priority list’ for restoring power during emergencies such as cyclone Gene aftermath. Priority is given to restoring power to essential and critical services such as hospitals, water & sewerage works and telecom.

Within 2 days after the cyclone, FEA restored power supplies to more than 90% of the Western & Northern Region and 60% of the Central & Eastern regions were re-energised.

Direct cost to FEA due to cyclone Gene is in the vicinity of \$1 million. About 75% of the costs are for labour and overheads and 25% is for replacement material. Cost of stolen wires is about \$20,000 and this was of concern to the FEA as it delayed restoration.

Indirect costs of about \$150,000 were incurred in running diesel generators to replace the economical Monasavu hydro power until the 132,000 volt lines were restored. An addition \$20,000 per day is estimated to be incurred due to lost generation from the Wainikasou hydro power station.

In the preliminary report, the cost of damage to rural electrification scheme was estimated to be \$300,000 while FEA cost of damages was an additional \$1million. This cost remains the same in the final report. These costs have been absorbed by the FEA.

Some lessons learnt are:

All essential and critical services must have their own standby generation capability available for emergency situations.

Vegetation management around power lines is essential and is the responsibility of every one.

FEA will review its resourcing levels, and will look at the justification to carry one or two more standby teams and use of contractors to handle such situations.

10.3 ROAD INFRASTRUCTURE

The Department of National Road provided the costs of damage to this sector to the tune of \$13.3 million as per breakdown as follows:

Eastern Division - \$1 million
 Central Division - \$3 million
 Northern Division - \$4.4 million
 Western Division - \$4.9 million

It should be noted from the preliminary report that \$4.4million cost of damage from the Northern Division included damage costs from Cyclone Funa and Daman.

Heavy road infrastructural damages included washed out crossings, culverts and bridge approaches, depressed road surfaces, road slips and landslides which were mostly attributed by flooding.

As with water and electricity, the final assessment of rad damage and rehabilitation remain the same as that reported initially.

10.3a Total Preliminary Damage Expenditure for Public Utilities

	CENTRAL	WESTERN	NORTHERN	EASTERN	TOTAL
Water	\$ 3,623,000	\$ 1,300,000	\$ 400,000	Included with central	\$ 5,000,000
Electricity	Included in total with rural electrification				\$ 1,300,000
Telecommunication	\$ 67,000	\$ 17,500	\$ 17,000	Included with central	\$ 101,500
Roads and Jetties	\$ 2,980,000	\$ 4,900,000	\$ 4,430,000	\$ 1,030,000	\$ 13,340,000
Total	\$ 6,347,000	\$ 6,217,500	\$ 4,847,000	\$ 1,030,000	\$ 19,741,500

10.3b Total Actual Damage and Rehabilitation

	CENTRAL	WESTERN	NORTHERN	EASTERN	TOTAL
Water	\$ 3,300,000	\$ 1,300,000	\$ 400,000	Included with central	\$ 5,000,000
Electricity	Included in total with rural electrification				\$ 1,300,000
Telecommunication	\$ 67,000	\$ 17,500	\$ 17,000	Included with central	\$ 101,500
Roads and Jetties	\$ 2,980,000	\$ 2,557,000.00	\$ 4,430,000	\$ 1,030,000	\$ 13,340,000
Total	\$ 6,347,000	\$ 6,217,500	\$ 4,847,000	\$ 1,030,000	\$ 19,741,500

11.0 ECONOMIC SECTORS

11.1 AGRICULTURE SECTOR

In the Agricultural sector an estimated 51,066 people were reported initially to be affected Fiji wide and to be provided with food rations. Population breakdown by divisions are as follows:

Western Division – 7,574
 Eastern Division – 5500
 Central Division – 15,960
 Northern Division – 22,032

These figures are preliminary at this stage, awaiting confirmation from the field surveys currently being carried out.

Total Cost for damages and rehabilitation is \$22,827,851.

Estimation of costs of damage to the sugar sector is yet to be received.

Ab Total Actual Cost of Assessed Damage

Division	Costs of Crop Damage
Eastern.	\$2, 388, 666.47
Central	\$10,182,926.00
Northern	\$6, 956, 852.46
Western	\$5, 615, 949.25
Total	25,144,394.18

The final cost of crop damage arrived at \$25, 144,394.18 after the divisional field survey teams carried our an assessment.

11.2 FORESTRY SECTOR

Highlighted in Appendix 8 is the impact of TC Gene on forestry sector in the Central and Northern division. Estimated cost of damage to the forestry sector is \$212,000, to which \$100,000 is for access roads.

Field verifications to determine damage costs to forestry plantations and measures to be considered are now being inspected and assessed.

11.3 TOURISM SECTOR

Cost of damages will be sustained within the industry.

Total Damage Expenditure for Economic Sector

	CENTRAL	WESTERN	NORTHERN	EASTERN	TOTAL
Agriculture	\$ 5,292,639	\$ 3,988,000	\$ 9,646,351	\$ 1,200,000	\$ 20,126,990
Forestry	\$ 100,000	\$ 112,000	Nil	N/A	\$ 212,000
Tourism	Minimal Damage				To be sustained within
Sugar	N/A	Cost Implications being determined		N/A	\$ -
TOTAL	\$ 5,392,639	\$ 4,100,000	\$ 9,646,351		\$ 20,338,990

Actual Total Damage Expenditure for Economic Sector					
	CENTRAL	WESTERN	NORTHERN	EASTERN	TOTAL
Agriculture	\$10,182,926.00	\$5,615,949.25	\$6,956,852.46	\$2,388,666.47	25,144,394.00
Forestry	\$100,000.00	\$112,000.00	nil	nil	212,000.00
Tourism	Minimal Damage				To be sustained within
Sugar	N/A	Cost Implications being determined		N/A	\$ -
TOTAL	\$10,282,926.00	\$5,727,949.25	\$6,956,852.46	\$2,388,666.47	\$25,356,394.00

12.0 NON GOVERNMENT ORGANIZATION/ DIPLOMATIC CORP

12.1 Fiji Red Cross (FRCS)

FRCS Divisions Services Centres fully coordinated assessments and response with Disaster Controllers in two divisions (North and West). In the Central Division, National Office liaised with and frequently updated the National Emergency Operation Centre and key response agencies of the society's relief efforts and offered its services in areas such as health awareness and supply of safe water to most affected areas. Further the FRCS assistance included

Deployment of emergency response teams.

Provision of relief items like temporary shelter, clothing, blankets cooking items and water storage containers to victims

Active participation of the Director General who is a member of the Central Control Group

Maintaining communication links with the Federation Regional Delegation in Suva and neighbouring National Societies in New Zealand and Australia.

13.0 RESTORATION

Restoration work for Electricity still continues for rural areas and some rural areas like Nadroga and parts of Tailevu. Telecommunication was fully restored within a week.

Restoration of water supply is being fully restored. The condition of roads in Vanua Levu interior of Viti Levu continues to pose a problem.

14.0 REHABILITATION

The rehabilitation of farmers with damaged crops are being addressed through the provision of seedlings and planting materials to affected areas and food ration for three months to affected farmers.

15.0 WAY FORWARD

15.1 CONSTRAINTS AND RECOMMENDATIONS

The major constraint faced with tropical cyclone gene was the inability of weather forecast to have early warning of the speedy development of the cyclone from the tropical depression.

It is recommended that:

the government considers installing a radar in the Northern Division to detect early warning signs

Another constraints faced in the compilation of the damage report was the trickling in of damage assessment reports from the communities affected through the divisional administrative framework.

It recommended that:

structures and processes be reviewed to use the potential in the civil service cadre in rural communities to coordinate initial survey and send reports in to the National Emergency Operation Centre.

Toll free telephones and fax machines need to be installed in all 25 emergency operation centres and people to be encouraged to use toll free phones to report damage.

The third constraint was the lack of awareness by the field staff of standard operating procedures to follow in case for disaster.

It is recommended that:

the draft standard operating procedures for disaster currently prepared by NDMO be adopted.

The Ministry mounts a rigorous awareness programs on the standard operating procedures with its field staff.

The fourth constraint was the lack of standard report format for reporting on damages and rehabilitation needs.

It is recommended that:

Such a template be designed and awareness of its application be made to field officers.

Another constraint is in the enormous amount of resources needed for rehabilitating homes, buildings structures, public utilities and infrastructure and food security.

It is recommended that:

continual review and awareness are made for processes in managing disasters and response to emergencies.

The need for investment in institutional back up systems for essential services.

The need to ensure compliance to building codes for public buildings and private dwellings in rehabilitation work for TC Gene.

The need to consider that climatic phenomena point to increase in frequencies of natural disaster and therefore a focus should be made in ensuring that structural designs for infrastructure meet the challenge of climatic change.

16.0 CONCLUSION

Global climatic trends indicate frequent occurrences in Natural disasters and this re-enforces the need to invest time and resources to disaster mitigation. This report urges National attention to addressing this area.

17.0 ACKNOWLEDGEMENT

In compilation of this report the effort of many people are acknowledged:

National Taskforce

Fiji Meteorological Services

Fiji Red Cross Society

Fiji Electricity Authority

National Fire Authority

Civil servants rostered for duty in various emergency operating centres.

Divisional Commissioners, Provincial Administrators and District officers

Divisional Road and Divisional Water engineers

Royal Fiji Military Forces and Fiji Police Force

Ministries of Health, Education, Agriculture and Forestry