Stakeholder Communication Form

(Version 01.0)

This form shall be used for any CDM-related communication with the UNFCCC secretariat or the CDM Executive Board. All the questions are mandatory unless otherwise indicated.

The completed form and any supplemental documents shall be submitted electronically to cdm-info@unfccc.int, or via fax to +49-228-815-1999 or via post to: Sustainable Development Mechanism (SDM) Programme, UNFCCC secretariat, P.O. Box 260124, D-53153 Bonn, Germany.

SECTION 1: COMMUNICATION HEADER

Please provide your contact information.

Title: Mr.	**First Name:** Nagendra	**Last Name:** Rao
Name of Organization: DANS Group		**E-mail Address:** nagendrarao@dansenergy.com
Postal Address: 5th Floor, Tower C, DLF Building no.8, DLF Cyber City, Phase II, Gurgaon **Country:** India		**Phone Number:** +91-124-4693100 /101 *Include country code (e.g. +49-228-815-1999)*
Stakeholder Type: CDM Project Participant (PP)		If other:

Please indicate from whom you would like to get an answer.

This communication is addressed to[1]: Chair of CDM Executive Board (normal track)

SECTION 2: PROJECT ACTIVITY OR PROGRAMME OF ACTIVITIES (POA)

If this communication refers to a specific CDM project activity/PoA, please answer questions in this section (otherwise proceed to Section 3).

Project/PoA Ref. Number	1326 *5-digit# format 01234*	If applicable, CPA Ref. Number: *8-digit# format 0123-4567*
Project Cycle Stage	Registration	If other:

If there is no specific CDM Reference Number, please answer the remaining questions in this section (otherwise proceed to Section 3).

Host Country(ies)	India	
Project/PoA Title	Jorethang Loop Hydroelectric Project, India	
Technology Type	Renewable electricity	If other:

SECTION 3: YOUR COMMUNICATION

Title/Subject *Maximum 250 characters*	Shift in Crediting Period Start date from 1 Jan 2010 to 30 Sept 2015
Communication Text *Include background, details, and conclusion (unlimited length)*	This is in reference to registered CDM Project 1326 : Jorethang Loop Hydroelectric Project, India. The Jorethang Loop Hydroelectric project (JLHEP) is developed by DANS Energy Private Ltd (DANS Energy) on the Rangit River in the state of Sikkim, India. The Rangit River is a tributary of the Teesta River, which is the main river traversing the state of Sikkim, India. The project has an installed capacity of 96 MW, which generates approximately 445GWh (gross) per annum. The Project is a run-of-river, renewable energy and greenhouse gas free project. The Project is amongst the most sustainable HEPs in the country. The Project did not involve the construction of any large dam but rather a small barrage to divert part flow from the river through a tunnel to the power house. The water from the power house is channeled back to the river. The diversion

[1] In accordance with the "*Procedure: Direct communication with stakeholders" (version 02.0)*, stakeholders may address communications either (a) to the secretariat, in order to seek a fast-track technical or operational explanation regarding the implementation of existing CDM rules, or (b) to the CDM Executive Board, in order to communicate to the Board their views on CDM rules and their implementation, or to seek official clarifications of CDM rules.

barrage is 108 m in length and 16m in height, creating a small reservoir of approximately 14.49 ha.

The powerhouse is 2 x 48 MW vertical shaft type Francis turbines, coupled with synchronous generators. The power generated by the project is rated at 11kV and then stepped up to 220 kV at the switchyard of the power house. The electricity is exported through double circuit 220 kV transmission line to the Melli sub-station on the Eastern Regional Grid.

The main purpose of the project is to use the hydro potential of the Rangit River to generate zero emission electricity. The electricity generated is being exported to the Eastern Regional grid through the Eastern Regional Load Dispatch Centre (ERLDC).

Project Specific Important Dates:
- Project Expected Construction Start Date: 1st Oct'2007
- CDM Project Registration Date: 28th Feb'2008
- 1st Crediting Period as per registered PDD: 1st Jan'10 to 31st Dec'16 (7 years, Renewable)

Commissioning date of project activity:
- Expected Commissioning Date as per registered PDD : 1st Jan'2010
- Actual Commissioning Date: 30th Sep'15

Reasons for Delay in Commissioning of Project:

a. Non accessibility in Powerhouse
The excavation in the powerhouse area started in the dry season of 2010-11 after the construction of cofferdam. However, after unduly heavy monsoon and flood in the river on 18th June'2011, the excavated pit of the powerhouse was flooded. The seepage due to high water elevation on the river exceeded the capacity of the dewatering pumps which resulted in stoppage of works in the powerhouse pit due to no accessibility.

b. Impact of Earthquake
There was a major earthquake in Sikkim of magnitude of 6.8 on Richter scale on 18th September'2011. This lead to blockage of access roads to the project site, to various project components within the site, exodus of major labour force, temporary suspension on use of explosive, non-availability of materials on site etc. It took months to get proper access to site again i.e. for the roads to start functioning properly again, for getting the situation under control and to enable the Contractor to remobilize the labour force and to start the work in full swing. The labour force also took time to gain trust and restart work.

c. Idling due to strikes, road blocks, landslides during monsoon, non-availability of explosives etc.
There were several strikes by political parties due to the issue of Gorkhaland (where a minority segment demanded a separate political state) and other strikes in Sikkim. Apart from this, there were various road blocks after the every monsoon period due to landslides which have led to ban on use of explosive for temporary period, transportation of raw materials, etc. which have affected the works at site whereby the actual construction time was longer than that was originally estimated.

d. Poor Geological Conditions In the HRT, during excavation, very poor rock (weathered phyllite) was encountered and there was ingress of high quantities of water in the HRT reported. At that time, the conventional Steel Support Tunnelling Method (ASSM) was being followed for excavation of HRT. The company encountered the following problems due to poor geological conditions being:
- No immediate support of the rock mass after excavation;
- The stability/ factor of safety of the system support/ rock mass was unknown;
- Due to the loosening and foyer-breaks, the intended excavation profile could not be upheld and backfilling with large amounts of concrete was required;
- Systematic rock bolting to strengthen the rock mass is not compatible with a stiff lining.
Thereafter, the civil contractor was asked to adopt acceleration measures to expedite the excavation work in the HRT as it is in the critical path. The civil contractor suggested considering the option of implementation of the New Austrian Tunnelling Method (NATM) in the HRT in order to speed up the work progress in HRT and also to improve the safety aspect.
The change in methodology, though beneficial for the project in the long run, took time to implement in terms of planning, arranging of resources, getting the methodology approved by the financial institutions involved etc.

e. Change in location of the Powerhouse
As per the initial project layout the power house was located into the hill as a semi underground power house parallel to river. However, the location of the Powerhouse had to be changed after consultation with Owner's Engineer and Detailed Designing Consultants as slope was very steep

	and stabilization would have been difficult and time consuming due to poor geology in the location as per the Preliminary Design. Power house was then relocated at the toe of the ridge where rock is exposed from river bed. The power house is now located at right angles to the river where it flows in a bend and a shoal is formed. However, the permeability test result at this location showed the possibility of seepage of water at the Working area of the Powerhouse. In order to prevent this seepage, Jet Grouting was undertaken around the proposed Power House area by drilling holes deep in the strata & then injecting Cement Grout under pressure through perforated PVC pipes inserted in drilled holes to make a well of cement slurry to seal the cofferdam and its foundation down to rock. The change in location of the powerhouse and the additional safety measures taken resulted in a delay in the construction of the powerhouse thereby leading to a delay in ultimate commissioning. f. Change in location of the Switchyard Originally, switch yard location was located near the toe of hill slopes. Due to high slope stabilization measures and time considerations, the location of the switchyard was shifted to just behind the power house. Summary: In view of above stipulations of delay which were majorly out of control of Project Proponent, the Project Proponent now wishes to request the Executive Board as follows: - to allow shift in start date of crediting period from 1 Jan 2010 to 30 Sept 2015 so that real emission reductions can be monitored and verified; - since end of first crediting period is on 31 Dec 2016, the CDM EB is requested to approve the shift in start date of crediting period, before 180 days from end of crediting period to avoid further potential lost of CERs.
Supplemental Documents *If applicable, list the title(s) of any attached file(s) or link(s)*	South Sikkim Earthquake Report
This communication may be made public	Yes

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Document information

Version	*Date*	*Description*
01.0	02 March 2015	This form supersedes and replaces the following: • F-CDM-RtB: *Form for submission of Letters to the Board* (version 01.2) • F-CDM-RtB-DOE: *Form for communication on policy issues initiated by AEs/DOEs* (version 01.1) • CDM-RtB-DNA: *Form for communication on policy issues initiated by DNAs* (version 01.1)

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South Sikkim
EARTHQUAKE
Report

Remember; when disaster strikes, the time to prepare has passed.

Steven Cyros

September 18 2011

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Message

I am pleased to know that the South District Administration is bringing out Magazine to document the various steps taken by the administration in dealing with the crisis caused by the earthquake of 18th September 2011. Historically, we were face to face with the greatest of natural calamity of our time, our grit and patience tested to the hilt. However, thanks to the incredible strength and forbearance, deep understanding and a sense of human compassion forthcoming from the fellow Sikkimese, we overcame the trauma in the shortest of time, working on immediate relief and rehabilitation and deliberate on the long-term program of prevention and mitigation.

Sikkim as it falls in the seismic zone has always been vulnerable to devastating earthquake. This time around, we could re-emphasise with a sense of increased urgency need to improve upon our technical program and upgrade our technological inputs. Learning from our shortcomings, it is time that we strengthen our resolve to evolve best practices of disaster management so that we are able minimize the after effects and raise the level of our safety and security measures, if ever we face such a catastrophe again in the future.

As we mark the passage of a year since the devastating quake a year ago, I commend the efforts of the State Government officials, relief workers, NGOs, volunteers and the cooperation of people to deal with the situation. Let me also congratulate the South District administration for bringing out this important publication to generate greater awareness among people about natural calamity.
With best wishes

Pawan Chamling
Chief Minister of Sikkim

September 18 2011

September 18 2011

MESSAGE

I am pleased to know that the South District administration is publishing a magazine cum report on the earthquake of September, 2011. No doubt, it will serve as a record for posterity to remember. The need of the hour being awareness.

Not having faced a disaster of such proportions, the State Government had to grapple with odds, yet emerged successful. A deep sense of certainty has prevailed in preparedness and confidence. Many measures are required to equip ourselves better. This requires the constant and consanguineous efforts of both the administration and concerned agencies, including community groups and NGOs.

While rehabilitation works are going on in full swing, effort at improving the overall awareness and resilence is being inculcated in the minds of the people that such disasters can be overcome. The South District Administration is fully conscious of the situation, and has taken all stringent measures to combat such disasters.
I wish them all success.

Karma Gyatso, IAS
Chief Secretary

MESSAGE

The earthquake of September 18th, 2011 in Sikkim brought State wide alertness and awareness on the importance of reducing the impact of disasters and the damage to environment and health. It was an eye opener for disaster preparedness. As per the lesson learnt many preventive measures have been initiated, many more are yet to be done and there is a need to provide a holistic framework for multi-hazard Disaster Management from village to state level.

I am glad to know that the District Collectorate, South is bringing out a magazine on earthquake of 18th September 2011. I am sure that this book will make the leaders well versed with the response phase and the action taken by the District Administration, South.

S.B.S. Bhaduria, IFS

Secretary -cum- Relief Commissioner
Land Revenue & Disaster Management
Department

September 18 2011

Foreword

One year has passed since the last earthquake of 6.9 magnitude hit Sikkim on 18th September, 2011 and we have been able to overcome the nightmare very effectively with support of all the sections of society inside and outside the State. As we all know, earthquakes cannot be avoided as they are natural calamities that will take place off and on, but damages can be. What is important is that man is prepared for such calamities. Lot many steps have been taken in last one year at the State and the District level for preparedness towards such disasters and many are underway.

High seismic risk in this region calls for an alert and sustained mitigation efforts. Prevention, mitigation and preparedness contribute to lasting improvement in safety and are essential to integrate disaster management. Therefore, the first step I this direction is to always be ready with effective plan to face such challenges. Since such plan cannot be effective as an isolated effort and it cannot start and end with each disaster, a continuous process of all the interlinked activities is necessary. We know that it is not the earthquake alone that kills people but landslides in a mountainous terrain like us and collapse of man-made structures which does most of the damage. Therefore, we need to take all the steps for preparedness towards seismic hazards. Preparedness for seismic hazards involves sound emergency evacuation, relief and rehabilitation plans to be effectively used during a damaging earthquake. This is a thing we are doing for years as landslide affected area and this is a regular phenomenon for us. But more attention is required to be given to awareness of public to keep them more vigil, ready and prepared to face such challenges.

It is true that creating awareness alone is not enough. We need to convert that awareness to action, where individuals and communities take adequate steps to reduce the impact of the hazard before it occurs and extend their active support to those who are empowered to respond effectively during a disaster and recover. Considering this fact we have taken many steps in this direction and many other proposals have been sent to the higher authorities for consideration. Further, reconstruction of damages and rehabilitation of crisis effected people being a most challenging task after any earthquake, there is a need to inform people about the steps taken by the Government in this direction. Reconstruction of Earthquake Damaged Rural Houses (REDRH) is such a model scheme getting executed all over the State.

The basic purpose of this booklet, which is basically a collection of reports, data and write ups, is to inform people about how the district administration responded to the last earthquake despite of all the challenges and taking a serious note from the lessons learnt what steps have been taken to keep ourselves more prepared towards such disasters. At the same time it is intended to make people aware about this natural phenomenon to make minds ready to face such challenges without coming under impression of misleading information and rumors. It is not possible to present exhaustive detail of all the steps taken by the Government of Sikkim for relief, reconstruction and rehabilitation after the last earthquake in this booklet, therefore, we

have tried to give a firsthand and handy progress report of the South District with a hope that this will encourage active community participation and better co-ordination among various agencies. That way this may be taken as one of our attempts to involve communities in earthquake preparedness since public awareness is at the heart of preparedness. And we are intended to take out a quarterly magazine on disaster preparedness on a regular basis from our side for this purpose. Miles to go……and we are gearing for that with a pray that such things never happen in our life.

Our efforts in responding to the earthquake of 18th September, 2011 have been appreciated by all the sections, outside agencies and our preparedness have been tested well in the crisis. At the outset, I want to extend my heartfelt thanks to all the officers, employees and civil societies for the hard work done by them during this crisis and active support extended to the district administration during and after the crisis. The police led by the Superintendent of Police, South Mr. Manoj Tiwari, IPS needs a special mention here who played an extraordinary role in communication and rescue operations during the earthquake. So is about all the BDOs led by the ADC, Development Mr. D. K. Pradhan, the Namchi Municipal Council, Jorethang Nagar Panchayat, NGOs coordinated by Mr Gagan Rai, Chairman, Temi Tea Board, other public representatives and power project companies apart from the then Sub-Divisional Magistrates Raj Kumar, IAS, Suman Thapa and P. K. Rai too for their special efforts in responding to the situation. My colleagues Gloria Namchu, SCS, SDM/Namchi, Karma Bonpo, IAS, SDM/HQ, Pempa Sherpa, District Project Officer, Abhishek Kharel, Training Officer have taken out time from their routine work to prepare this booklet and I want to extend my thanks to them.

I hope that this of our effort will meet its objectives and will prove useful and helpful for common public making them more ready to face such challenges.

A.K.Singh IAS
District Collector, South Sikkim

RESPONSE OF THE SOUTH DISTRICT ADMINISTRATION, DURING THE EARTHQUAKE CRISIS

DAY 01, 18th SEPTEMBER 2011

Panic prevailed all over Sikkim after 6:10 pm on 18th September, 2011. An earth quake of 6.8 magnitude on the Richter Scale had struck the entire state. There was immediate blackout as power supply was instantly disrupted. Telecommunication was impossible. People ran out of shops and residences and thronged the streets and open spaces. Fear writ large on their faces. This was it. This was the major quake we had been warned about all along. Three aftershocks followed, measuring 5.7, 5.1 and 4.6 in magnitude. People started running. But where to. No one can run away from an earthquake. It is a natural catastrophe which can be felt thousands of miles away even if one is not affected by it. It cannot be predicted and comes without warning. While the epicentre was located near Mangan, the tremors were felt up to Rajasthan, New Delhi, Assam and Nagaland. Parts of West Bengal and neighbouring countries of China and Nepal were also rocked by the quake. Loss of lives and property was reported all over. Over 100 people lost their lives out of which 63 is the figure for Sikkim.

Immediate reaction and response by DDMA, South District

As soon as the quake hit the South district, there was darkness all around and mobile phone lines got jammed. Since it was a holiday, many government officials were away. Coming to grips with the situation, in Namchi the DC (South), managed to contact the DPO and got the disaster management team together within minutes. The SP(South) also rushed to the DC's residence. Police personnel were instructed through WT in various outposts to commence rescue operations. Communication with the Relief Commissioner at the Head Office, Gangtok, could not be established. Other officials were also called to the line of duty.

The team sprung into action at once. It began assessing the situation. Reports were taken and instructions given through WT. An immediate inspection of Namchi Bazaar was undertaken where two buildings near the fountain at Central Park were found damaged. Orders for rescue operations were given. The presence of the DC and his team in the bazaar gave a sense of moral support to the people.

Liquor shops were shut down. Emergency lights were borrowed from the people. Rumour mongering was controlled at the start itself. The district hospital and key installations like the Nayuma LPG premises were surveyed and found safe. The Fire service personnel were instructed to stay alert for any untoward situation.

Evacuation of unsafe buildings was carried out and people shifted to safer locations.

Control Room

An emergency control room was set up in the District Collectorate which itself was found to have suffered cracks. It's functioning was crippled due to absence of a full fledged WT system and lack of electricity. An emergency meeting of government officials was held at the residence of the DC, at 9:00 pm. Later another control room was set up in the residence of the DC(South) as an alternate EOC during the night hours. The ADC (South) and ADC (Devt) were given charge of the EOCs . Officials assisting them were SDM(HQ), SDM(Namchi), DPO(SDZP), US (RMD), DPO(LRDM), TO(UNDP).

Communication

SP (South) took control of the wireless communication system. As the minutes ticked by, news from various quarters of the South district began to trickle in. A building had collapsed in Jorethang and 5 people were trapped inside. The police along with the help of the public were pressed into rescue efforts. Tragedy struck there as it later happened that a lady who had already been rescued ran inside to retrieve her cellphone and paid for it with her life. This was however the only human casualty in the South District.

Incident Command System

Envisaging the need for an Incident Command System, the DC(S), put in place a system which was made functional instantaneously. Himself at the helm of affairs as overall incharge, roles and responsibilities were assigned to responsible officials and departments for:-

- Incident Command Post, Communication and Reporting
- Rescue Operations
- Information and media management
- Finances
- Damage assessment
- Logistics
- Relief and coordination team for relief camps
- Finances
- Planning
- Counselling and awareness generation.

In addition to the collectorate officials, police, fire service officers, BDOs and responsible officials were given specific assignments under ICS. Departments like the police, health, rural development, urban development, municipalities, NGOs, panchayats and power developers were all roped in.

When the district hospital was checked on, the inpatients were found outside the building, in a state of panic. An increasing number of heart patients were being admitted and a request was sent to Gangtok to send a cardiologist. Unfortunately this could not materialise due to road blockages all over.

Assessment of dam sites was done through the power developers and found safe. Their resources of the power developers were also utilised for clearing up road blockages due to landslide triggered by the earthquake. Within two days of the earthquake teleconnectivity was restored by BSNL. Some school structures had collapsed therefore closure of all schools was ordered. Roads department was put to work for clearing of all road blockages, power department for restoring electricity and forest department for removing trees which had fallen on the roads. SDMs were made to procure relief material – tarpaulin sheets, emergency lights, batteries etc which the district administration was already facing shortage of. Anticipating shortage of fuel, a coupon system was started only for those vehicles having urgent work.

Just before midnight, a call came through from the Chief Secretary. The situation in the district was apprised to him by the DC.

Day 02 - 19th September 2011

Religious structures

Major religious sites were inspected. A portion of the statue of Lord Shiva at Siddeshwara Dham was damaged. Minor landslips were found on the roads leading to Samdruptse and

Solophok. The state of Guru Padmashabha at Samdruptse and Buddha Park at Rabongla were unscathed.
The hospital was revisited and the patients given moral support. There was 1 casualty and 20 injured.

BDOs and other departments

BDOs and panchayats were empowered to assess damages, procure relief material and shift victims to safe locations. The Block Development Officers were empowered with the powers of Special Magistrate for immediate relief & rescue operations.
Concerned departments were put on the job for alternative supply of water at Alley ground (PHED); taking stock of essential commodities and arrangements for more (Food and CS); ensuring availability of doctors (Health); damage assessment in urban areas (UDHD) and schools (Buildings). Helpline numbers were installed in the ICS, BDOs offices and SDM Rabongla's office. Updates were constantly taken.

Relocation

Temporary shelters were arranged for people in Turuk- Ramabong whose houses had collapsed. Power developers were asked to assist in setting up relief camps.
Volunteers from NYK, NSS and NYC were also brought in for local operations.

DAY 03, 20th SEPTEMBER 2011

Loss

News came in of the death of Munni Sharma, wife of Santosh Gupta, at Jorethang.

Motivation

Motivation camps were held in the bazaars and other parts of the district. Councillors from Namchi Municipal Corporation were also present in the camp held in the bazaar.
There were reports of more landslides, road blockages and collapse of houses.
BDOs were deputed to inspect relief camps.

Help for North

A relief team from Indian Himalayan Centre for Adventure and Ecotourism, Chemchey headed by Shri Kazi Sherpa was deputed to the remote and difficult areas of North Sikkim. It is reported that they rescued 1000 people trapped in tunnels.
The state government appointed the Secretary, Commerce and Industries Department, as Relief Commissioner for the South District, to take stock of damages.

DAY 04- 05, 21st AND 22nd SEPTEMBER

Recurrent landslides all over due to the heavy rainfall became a stumbling block for distribution of relief.
The quality of food in Turuk Ramabong relief camp was checked and a motivation camp conducted there.
Melli PHC being unsafe was shifted to a safer location.
Damages to monasteries and churches reported.
Road blockages at Melli-Jorethang road, Jorethang-Namchi road, Melli-Pheng road, Sikkip-Wok road, Melli-Turuk-Sadam-Bhanjyang road were reported.
On the request of SDM, Soreong, the BSNL was directed to restore telecommunication in that area.
SDM Rabongla informed about damages to government structures and houses in Rabongla. Relief camps were set up there.

DAY 06-07, 23rd AND 24th SEPTEMBER

Relief

On 23rd- 24th September, Hon'ble Chief Minister toured the affected areas and distributed relief to those affected by damaged houses, injured persons and to the next of kin of the deceased. Criteria for relief disbursement were as shown below:-

Sl No.	Criteria	Total Nos.	Amount/(Person/ House)	Total Amount
1.	Pucca House	1	50,000/-	50,000/-
2.	Kutcha	302	30,000/-	90,60,000/-
3.	Injured	9	50,000/-	4,50,000/-
4.	Deaths	1	5,00,000/-	5,00,000/-

DAY 08-16, 25th TO 3rd OCTOBER

The Hon'ble Area MLA, Namchi Singithang and the Chairman, Temi Tea Board visited affected areas in Tingrithang. Families were shifted from unsafe locations to relief camps and relief material distributed.

More affected areas were visited by the district administration officials and relief material distributed but road blockages hampered their intended reach.

The affected people in Jorethang were shifted to relief camps.

Landslides were covered with polythene sheets.

A tilted BSNL tower near Nabil Montessori School in Jorethang, was made to be dismantled.

Since schools needed to be reopened HRDD set about setting up temporary sheds as classrooms. The power developers were also asked for assistance out here. Motivation camps were also held in schools.

DAY 17 - 23 , 4th TO 10th OCTOBER

During Dusshera, the Hon'ble Chief Minister toured more parts of the district and distributed relief, so also the district officials.

Dysfunctional relief camps were closed.

10th OCTOBER ONWARDS

Inspection of schools was carried out by the district administration and motivation classes were held. The lessons needed to be imbibed by us due to the earthquake were emphasised on.

All relief camps were closed and temporary shelter arranged for those rendered homeless.

Although the conditions were adverse – initial power blackout, teleconnectivity problems, road blockages, lack of equipments, absence of a full fledged control room, shortage lack of relief material, panic, rumours, communication and mobility bottlenecks etc the South district administration came to terms with the situation and worked with full fervour to restore the situation to normalcy. As a goodwill gesture not only was a rescue team sent to the North district, assistance was rendered in clearing up road blockages and teleconnectivity problems in the neighbouring West district.

The State Control Room

After the devastating earthquake on 18TH September 2011 at 6:11 pm , the Hon'ble Chief Minister took charge and called an emergency meeting of all Heads of Departments at 10:00 pm. The Chief Secretary and Relief Commissioner took control of the State Control Room. Directives were given to all Districts to activate their Emergency Operation Centres. In South District, compliance to the direction was immediate. The State Control Room at Gangtok was setup straightaway so that communication could be made with all four Districts. Communication though could only be done through Wireless Telegram for the first two days. Launching of massive relief and rescue was the top most priority of the Government.

Ex-gratia disbursement was possible with instant release of funds from the Headquarter. All the four districts were directed to procure all the needful relief and rescue material as it was the need of the hour. The Headquarter frequently asked for reports of damages from the Districts.

For assessment of damages in South District the then Secretary, Commerce & Industries Department was deputed as District Relief Commissioner. He toured all around the District and submitted his report to the State Government. Similarly deputation of District Relief Commissioner in other three districts was also done. Frequent meetings were held with all the DCs, SDMs and BDOs to take stock of the situation and instructions given to tackle the crisis.

Hon'ble Chief Minister visited Namchi and Jorethang, he took stock of the situation and distributed relief to the victims. Later, he toured all around the State, consoled people, distributed relief, visited the damaged religious institutes and schools. All the Hon'ble MLAs visited their respective Constituencies to take stock of the situation and make assessment of the damages. The Chairman, Dy. Chairman and Nagar Panchayat President visited their respective municipalities/ councils and consoled the people.

The State Government provided the Districts with relief materials tents, blankets, cloths, mineral water etc in timely manner. This helped in setting up relief camps at various needful places. The NDRF team was send to South District to train the QRTs on setting up of tents for relief camps.

The State Government decided to construct a house for those whose houses were severely or completely damaged by the earthquake. In South District, 911 houses have been approved under Reconstruction of Earthquake damaged Rural Houses (REDRH).

The State Governments timely decisions helped the Districts to respond better to the calamitous situation. The Response to crisis by South District has been appreciated by Hon'ble Chief Minister as well the rest of the country.

INCIDENT COMMAND SYSTEM

Definition and Context

The Incident Response System (IRS) is an effective mechanism for reducing the scope for ad-hoc measures in response. It incorporates all the tasks that may be performed during DM irrespective of their level of complexity. It envisages a composite team with various Sections to attend to all the possible response requirements. The IRS identifies and designates officers to perform various duties and get them trained in their respective roles. If IRS is put in place and stakeholders trained and made aware of their roles, it will greatly help in reducing chaos and confusion during the response phase. Everyone will know what needs to be done, who will do it and who is in command, etc. IRS is a flexible system and all the Sections, Branches and Units need not be activated at the same time. Various Sections, Branches and Units need to be activated only as and when they are required.

IRS Organisation

The IRS organisation functions through Incident Response Teams (IRTs) in the field. In line with our administrative structure and DM Act 2005, Responsible Officers (ROs) have been designated at the State and District level as overall in charge of the incident response management. The RO may however delegate responsibilities to the Incident Commander (IC), who in turn will manage the incident through IRTs. The IRTs will be pre-designated at all levels; State, District, Sub-Division and Tehsil/Block. On receipt of Early Warning, the RO will activate them. In case a disaster occurs without any warning, the local IRT will respond and contact RO for further support, if required. A Nodal Officer (NO) has to be designated for proper coordination between the District, State and National level in activating air support for response.

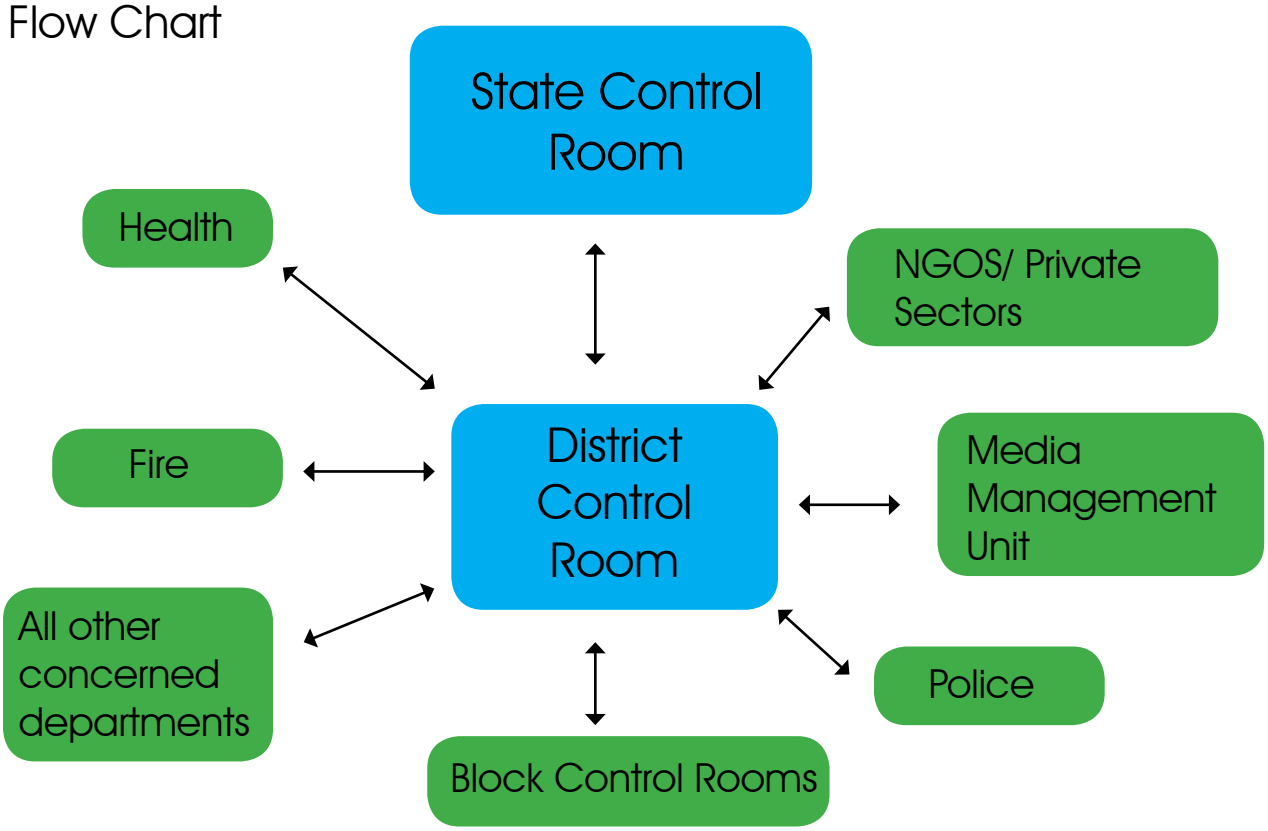
DISTRICT EMERGENCY OPERATION CENTRE

The District Control Room under the control of District Collector will operate round the clock and will be the nerve centre to:

- Monitor
- Co-ordinate
- Implement the actions/activities for Disaster Management.

In a disaster time, the District Control Room will operate under the central authority of the District Collector, exercising emergency power to issue directives to all departments to provide emergency response service. He will also co-ordinate with the State Response Machinery like: State Relief Commissioner. The Control Room should be manned round the clock.

Flow Chart



DISTRICT CONTROL ROOM/INCIDENT COMMAND POST DURING THE EARTHQUAKE

Personnel

Overall In-charge: **District Collector/South**

Duties/Role & Responsibilities:

1. ICP In-charge: Addl. District Collector, South & Addl. District Collector (Dev.)

2. Communication & Reporting to ICP:
   a) Superintendent of Police, South (In-Charge)
   b) Sub-Divisional Magistrate, HQ &
   c) OC, Communication.

3. Rescue Operations:
   a) Superintendent of Police, South(In-Charge)
   b) Sub-Divisional Magistrate, Namchi,
   c) Fire & Emergency Services,
   d) District Project Officer, LR&DMD,
   e) Block Development Officers,
   f) Hydro Power Developers and

4. Gram Panchayats

5. Information & Media Management:

a) Addl. District Collector (Dev.) &
b) Sub-Divisional Magistrate/HQ

6. Logistic Arrangement:
a) SDM, Namchi(In-Charge)
b) Sr. Account Officer,
c) District Civil Supplies Officer,
d) Chief Medical Officer, District Project Officer, Land Revenue & Disaster Management Deptt,
e) Joint Director, Sports & Youth Affairs.

7. Relief & Coordination team for Relief Camp:
a) Sub Divisional Magistrate, Namchi(In-Charge)
b) District Civil Supplies Officer,
c) Training Officer, UNDP-DRR Prog, Chief Medical Officer,
d) Health Department and
e) All Block Development Officers.

8. Finance Section: Sr. Account Officer(In-Charge) & Account Deptt, Land Rev. & Disaster Management.

9. Planning Section (Collecting, evaluating & dissemination of information):
a) Addl. District Collector (Dev.)(In-Charge)
b) District Planning Officer, South District Zilla Parishad,
c) Under Secretary, Rural Management & Development Department a
d) nd District Project Officer, Land Rev. & Disaster Management Deptt.

10. Damage Assessment Team:
a) Joint Director, Land Rev. & Disaster Management Deptt,
b) Superintending Engineer & Divisional Engineer, Rural Management & Development Department,
c) Divisional Engineer, Building & Housing,
d) Divisional Engineer, Roads & Bridges,
e) Asst. Engineer, Urban Development & Housing Department
f) all works Departments & BACs.

11. Counselling & Awareness Generation Team:
a) District Project Officer, Land Rev. & Disaster Management Deptt.(In-Charge)
b) NYK, Namchi,
c) Namchi Municipal Council,
d) Jorethang Nagar Panchayat,
e) Health Deptt.,
f) NGOs,
g) Power Developers & Gram Panchayats

12. SDM-Ravangla overall Incharge and reporting Officer for Ravangla Sub-Division.

RELIEF CAMPS SET UP IN THE SOUTH DISTRICT DURING THE EARTHQUAKE

The tremors had rendered many habitations and homes in the district unsafe. The affected people were in a vulnerable state and had to be relocated immediately. They had to be provided with a roof over their heads, accommodation for a number of days, ration, clothing, blankets and other essential items. We could not afford to waste time or effort in providing them immediate relief by bringing them to safer conditions.

1. Namchi- 11 camps
   a) Tingrithang
   b) Kholaghari
   c) Chemchey
   d) Pakchey
   e) Bhanzyang
   f) Sorok
   g) Mamley
   h) Gom
   i) Upper mamley
   j) Shyampani
   k) Chiyadara

2. Jorethang-8 camps
   a) Bhai School
   b) IPC Church
   c) Jorethang SSS
   d) Housing Colony
   e) SNT Bus
   f) Himalaya Crusade Church
   g) Montesseri Church
   h) PHE QTR

3. Ravangla- 7 camps
   a) Borong Phatam
   b) Tinkitam Rayaong
   c) Legship Hingdam
   d) Kewzing
   e) Ralong
   f) Barfung Zarong
   g) Ralong Sangmoo

4. Yangang- 7 camps
   a) Manzing
   b) Panchayat Ghar
   c) Samruk
   d) Upper Paiyong
   e) Middle Paiyong
   f) Kaw
   g) Lower Lingi

5. Sikkip-13 camps
   a) Upper Tingmoo
   b) Lower Tingmoo
   c) Lamten
   d) Subuk
   e) Chekim
   f) Rock Land
   g) Nallick

6. Sumbuk- 8 camps
   a) Beliing
   b) Maneydara
   c) Suntaley
   d) Daragoan
   e) Ramabong
   f) Ramabong Community centre
   g) Upper Sadam

7. Namthang- 8 camps
   a) Turung Mamring
   b) Tanzi Bikmat
   c) Chuba Perbing
   d) Maneydara
   e) Nagi Pamphok
   f) Rateypani
   g) Perbing Gumpa
   h) Perbing Dovan

8. Temi-Tarku- 13 camps
   a) Tea Garden
   b) Aifaltar
   c) Ganchung
   d) Peku
   e) Simkharka
   f) Manglay
   g) Upper Tanak
   h) Lower Tanak
   i) Tingley
   j) Namphing
   k) Challamthang
   l) Daring
   m) Pabong

Total no of relief camps: 75

MONETARY RELIEF

The state government was prompt in providing monetary relief to the affected persons and next of kin of the deceased. Finance Department wasted no time in transferring the relief amounts to the district and this enabled the district administration in timely distribution of monetary relief. The Hon'ble Chief Minister himself toured the affected areas, met with the people and handed over the relief to the people. Such a personal touch was an overwhelming gesture from our leader. The district administration and BDOs also left no stone unturned in disbursing monetary relief to those affected.

BAC wise relief disbursement to affected persons and relief expenditure during the earthquake

Sl No.	Block	Amount(Rs.)	Relief materials expenditure
1.	Jorethang	88, 00,000	80,667
2.	Sikkip	39, 54, 000	4,16,573
3.	Sumbuk	93, 61, 000	5,00,000
4.	Temi	1,79,98,500	7,07,020
5.	Namthang	1,7650000	4,57,769
6.	Ravangla	14689000	1,05,000
7.	Namchi	1, 22, 01, 000	13,85,823
8.	Yangang	1,88,08,000	10,00,000
8.	Jorethang Nagar Panchayat	47, 78, 000	Nil
9.	Namchi Municipal Council	55,50,500	Nil

CHALLENGES FACED AND STEPS TAKEN

It is worthwhile to look at our performance and see how we have tackled the odds. It is eventually the public who decide how the south district administration has performed. Yet we have done this self assessment to motivate ourselves further, as well as give ourselves room for introspection.
The DDMA had never dealt with a disaster of such proportions and faced a challenging situation yet it had to manage the crisis by maneuvering the situation, on various counts.

1. Breakdown of communication lines crippled us at many junctures -
Absence of a proper generator for alternative power supply and WT handsets were major hurdles. Absence of wireless set for the BDOs and DM team increased the dependency on WT lines under police control. A satellite phone in the Collectorate was found to be dysfunctional.

- Yet, despite the unavailability of telecommunication lines and power supply theemergency Control Room managed to get communication flowing. When all communication lines were snapped, the police WT provided invaluable service in the initial days of the earthquake crisis.

Daily updates from various parts of the district were collected and fed to the State Control Room.
Also, throughout the rescue and relief efforts, communication was kept with Ministry of Home Affairs, GoI, by DC/South.

2. Physical connectivity issues – road blockages
There were road blockages due to landslides all over. The entire district was cut off from the rest of the state as well as within itself. Mobility was seriously affected.

- The help of power project developers was garnered to clear the road blockages promptly and construction of temporary sheds for schools to conduct classes. Assessment and identification of resources in 2009, proved useful in mobilizing resources for rescue operations.
- Help was extended to West District and Naya Bazaar to clear the road blockage at Legship and Naya Bazaar so that the route to the neighbouring district could be cleared. Instructions were issued for their heavy machinery to be stationed near landslide areas in case road blockages were caused by any landslides. This was an excellent move, as the South district roads connecting with the state and rest of the country were opened within 48 hours.

3. Untrained manpower for tackling disaster -The Quick Response Force for disaster management is ill equipped, untrained and inadequate in numbers.

- The help of panchayats, Nehru Yuva Kendra volunteers, NGOs and police personnel had to be sought in rescue and relief operations.

4. Lack of a full fledged control room - The Emergency Operation Centre stationed below the DAC Annexe building is not in a condition to function as required, both in terms of manpower and location.

- An emergency control room was set up in the District Collectorate which itself was found to have suffered cracks. It's functioning was crippled due to absence of a full fledged WT system and lack of electricity. An emergency meeting of government officials was held at the residence of the DC, at 9:00 pm. Later another control room was set up in the residence of the DC(South) as an alternate EOC during the night hours.

5. Coordination among departments –
Ignorance about ICS in most of the departments was a hindrance.

- An ICS was put in place and made functional instantaneously. With the DC(South) as incident commander, roles and responsibilities were assigned to responsible officials and departments for - Incident Command Post, Communication and Reporting, Rescue Operations, Information and media management, Finances, Damage assessment, Logistics, Relief and coordination team for relief camps, Finances, Planning, Counselling and awareness generation.

6. Dealing with rumor mongering/panic

The job done by the Police was commendable. The WT personnel played an exemplary part in managing communication flow. Unnecessary reporting was avoided and important messages were channelized.
In the initial moment itself, the District administration officials rushed to the bazaar and hospital area to give moral support to the public and patients. Motivation camps were held there and also in the schools and relief camps.

7. Provision of shelter and distribution of relief material including edible items

Affected people had to be shifted to safer locations. This required setting up relief camps and distribution of blankets and other relief material.
The DRM and QRT personnel were taught how to put up temporary shelters, tents were acquired from the HQ and other relief material were required from various sources.

8. Reopening of schools

Many schools were damaged by the earthquake, yet classes had to resume after the Dusshera hols. Makeshift classrooms were set up, for conducting the classes. Initial help from power developers was also sought here.

FUTURE MEASURES

We managed to handle the crisis but our efforts were wrought with challenges. Operating under pressure, with limited resources and infrastructure is a big drawback. It has made us realise that we need to be in a state of readiness to deal with disaster of any shape, size and nature. Catastrophe, big or small can strike anytime and anywhere. On our part we need to be prepared.
What are the challenges that the district administration faces? How can we improve our situation, and be better prepared? It is pertinent to analyse our weaknesses and explore their possible solutions, as they will most likely, play a role in shaping the future disaster management policies of the state.

1. Equipments and funds
Availability of equipments in the district during the emergency was an issue of concern. Supply of modern equipments for disaster management system need consideration.
A certain degree of decentralization in procurement of equipments required in the field level is necessary. It will enable in maintaining a stock of essential equipments thereby making us better prepared. This has been well appreciated by the Head Office and the process for de-centralisation is underway.

2. Alternative communication system
Breakdown in telecommunication system was a major hurdle and made us largely dependency on WT lines under police control.
Setting up a communication system in the local community, other than telephonic network e.g. community ham radio, would be very effective in transmitting instant messages in different areas including rural localities. It would serve as an alternative mechanism for communication during emergencies. Since we have a difficult topography where it takes a long period to restore connectivity and communication lines, such radio service will be of great help for transmitting information.
The proposal for installing community radio services is being prepared.

3. Well trained disaster management team
The disaster management personnel including Quick Response Force for disaster management lack requisite training and are unprepared for talking major catastrophes.

The need of the hour is to establish disaster management cadres whose members are able to manage disasters and carry out rescue operations during disasters of any kind.
Periodic trainings and involvement in disaster management operations in other states as part of rescue missions could be given so that they are better exposed to practical situations and better prepared.
In this regard, the disaster management training institute to be established at Pakyong which is also purported to be a centre of excellence is a step in the right direction.

4. Full fledged control room
The Emergency Operation Centre stationed below the DAC Annexe building is not in a condition to function as required, both in terms of manpower and location. A fully equipped control room/Emergency Operation Centre to be set up in a centrally located area where efficient management of crisis with the presence of all government agencies can be undertaken.
A proposal has been placed before the appropriate authorities, for constructing and establishing a model EOC in the South District, approval of which has been assured to us.

5. Regular awareness programmes and mock drills
Regular awareness programmes to educate the public to be held throughout the year.
There is a need for regular mock drills involving Officers, Schools, Hospital Staffs, PRIs etc. MOCK DRILLS must be conducted at least once a year in every residential locality, school, offices and bazaar area.
This has been acknowledged at all levels and will be a reality in the days to come.

6. Community participation
Community involvement can be encouraged by including them in awareness activities and also providing them training. Various NGOs and citizen volunteers can be given training in disaster management. This can go a long way in building up community preparedness. NGOS and volunteers from the public should also form part of the disaster management system so that their services can be utilized if need arises.
Such programmes involving the local communities, NGOs and members of the public already has the support of the state government.

7. School safety programme to be adopted. The implementation of the programme is in the pipeline.

8. We are all aware of the panic created by rumors in the last earthquake and the steps taken by IPR to dispel them. Proactive dissemination of information to dispel rumor campaigns will avert such situations and pacify the public.

9. Proper Training on INCIDENT COMMAND/RESPONSE SYSTEM to all stake holders.

10. Early warning system to be set up at all places – for all kind of disasters.

11. Earthquake proof norms/standards to be made compulsory for all constructions.
The REDRH programme has incorporated earthquake safety measures in house reconstruction on the rural areas.

12. Emphasis on GIS/GPRS technologies and innovative mitigation measures.

13. Proper training on 'Road construction in Hills and Landslide prone areas to engineers.

14. Study on Light Weight construction and its implementation.

15. Sustainable developmental activities to be carried out in a synchronized way.

16. Hazard zonation mapping of all areas especially those in the vicinity of hydel projects and factories using chemicals.

17. Disaster Management to be made part of the school curriculum.

18. Cleanliness to be maintained at all places.

REHABILITATION AND RECONSTRUCTION REDRH

The Reconstruction of Earthquake Damaged Rural Houses (REDRH) project aims at reconstructing 7,972 houses damaged during the 18th Sept, 2011 earthquake. This project is funded under the Prime Minister's Special Package, Government of India.

1. Deliverables

- ❑ Construction of 7,972 rural houses with earthquake resistant features.
- ❑ Completing the house construction without compromising on the design, construction quality, budgetary ceiling and time frame
- ❑ Following a transparent, fair and non-arbitrary process

2. Challenges

- ❑ Social challenge: Out of 12,548 fully/severely damaged houses, 7,972 houses will be taken up. This prioritization approach will result in non-coverage of 4,576 households.
- ❑ Physical challenge: Constructing these 7,972 houses which are scattered in the highest and steepest mountain terrain with existing manpower (who are already implementing ongoing programs) is a formidable task.
- ❑ Economic challenge: The unit cost of Rs 4.89 lakh per house is based on a standard unit cost as per SPWD SOR of 2006. While construction is being undertaken in 2012-13, and the standard unit cost is to the tune of Rs 7 lakh as per SPWD SOR of 2012.

3. Why many traditional houses got damaged?

- Assessment of damage: 54,000 of the total 92,000 rural houses suffered various degrees of damage, but very few casualties.
- SWOT analysis: Superstructure of wooden framed houses with ekra walling and light iron sheet roof was mostly intact. But, the stone masonry load-bearing walls laid on mud-mortar and not having any reinforcement suffered maximum damage to the shear forces. Private houses with RC-frame structure with brick masonry infill and iron-sheet roof performed well, showing only non-structural damage.

4. How to make the new houses earthquake resistant?

- Earthquake resistant design: RC frame structure with 9 columns, plinth beam, roof beam and sill beam.
- Use of quality building material: Cement and 500D TMT bars of prescribed brands only to be used.
- Good workmanship: Simplifying the technical aspects by preparing easy to use IEC materials with adequate supervision by technical staff
- Concurrent monitoring: Regular and concurrent monitoring of the houses under construction

5. Salient features of the house

- The design of the house will be RCC frame with a slab roof and having a plinth area of 605 square feet. However, in few remote areas, option of CGI roofing will be provided.
- Size: Total floor area should not be less than 605 sq feet
- Foundation: RCC with 9 columns (1feet x 1 feet) and RCC beams of (1feet x 1 feet)
- Walls: should be half brick walling over RCC frame
- Flooring: should be Cement Concrete
- Roofing: RCC Slab 4 inches thick. Chajja or cantilever has projection of 2 feet 9 inches
- Sanitation: Minimum one toilet along with septic tank

6. Preparing the operational framework

- Operational Guidelines (47 pages) framed for the project
- Cabinet approval on the operational part of the project obtained
- Guidelines for management of Block Level Stores framed

- Inspection report format of State Level Monitors notified

7. Beneficiary selection

- Preparing transparent criteria for prioritizing 7,972 beneficiaries from the 12,548 fully/severely damaged houses based on the principle of prioritization based on degree of damage to house and economic status. Prioritization done in special gram sabha using these criteria.

- 5,800 beneficiaries prioritized of the total target of 7,972 in 140 Gram Sabhas. Beneficiary List has been placed in public domain and is also available at www.sikkimrmdd.gov.in web portal. Remaining to be completed shortly.

Capacity building and IEC

- Training of technical staff: The AE/JEs have been trained in the technical aspects of house construction and management of block level stores in various training workshops. Also the "Mason Training Handbook" has been prepared in both English and Nepali to simplify the technical aspects of house construction.

- Training of accounts staff to maintain accounts and management of block level stores by the store keepers has also been conducted.

- Record keeping: Record keeping at District, Block and Block Level Stores has been simplified by providing pre-printed registers and training has also been conducted

8. Why progress appears slow?

- Finalizing the technical house design took time: Consultation with experts from NDMA, People's Science Institute and others

- Finalizing the strategy for stock material purchase and management which is transparent and fair. 23 lakh bags of cement and 2 lakh quintals of TMT bars need to be not only purchased transparently, but also provided to 7,972 destinations as per requirement without leakage.

- Establishment of Block Level Stores for the first time

- Prioritization of beneficiaries: Prioritization 7,972 of the total 12,548 beneficiaries following a transparent criteria in special gram Sabhas

- Inadequate staff at Block level: Existing technical staff at the Block level (1AE and 3 JEs) are already constructing 6,000 houses under Rural Housing Mission and implementing flagship programs like MGNREGA, IAY, NRDWP, TSC, BRGF, NSAP and various other state programmes

- Shortage of masons and labour: Already 6,000 houses under Rural Housing Mission are under various stages of construction. There is an acute shortage of masons and labour to build the houses

9. Steps to accelerate progress

- Plan to provide greater role to beneficiaries in house construction in "Joint Implementation Model" along with the existing "Departmental Model"

- Supplementing manpower at block level:
  - Additional staff from line departments to be posted to RM&DD
  - Additional 50 JEs recruited and posted to the 29 Blocks

10. Monitoring and evaluation

- State Quality Monitors: 15 senior officers from RM&DD at the State Level have been assigned the task of concurrent monitoring of 2 Blocks each on a monthly basis

- District Level Monitoring: By District Level Committee headed by the District Collector

- Web based MIS: With the support from the Department of IT, a web-based MIS < www.sikkimrmdd.gov.in> has been developed in house with a backend database which has modules like beneficiary selection, physical progress, financial progress and e-stores.

(Dr. S.Thambe, Spl. Secy, RMDD)

REDRH in South District

Sl No.	BLOCK	GPU	No. of houses
1.	Sikkip	Wok Omchu	28
2.		Sanganath	14
3.		Lamten-Tingmoo	31
4.	Namthang	Perbing Dovan	13
5.		Chuba Phong	17
6.		Maneydara	18
7.		Nagi – Phamphok	11
8.		Turung Mamring	19
9.		Tanzi Bikmat	14
10.		Rateypani	31
11.	Jorethang	Salghari	20
12.		PoklokDenchung	54
13.		Tinik Chisopani	27
14.	Sumbuk	Sadam Suntaley	44
15.		Mellidara Paiyong	19

Sl No.	BLOCK	GPU	No. of houses
16.		Turuk Rambong	29
17.		Lungchok Kamarey	12
18.	Temi-Tarku	Ben Namprik	41
19.		Temi	22
20.		Tarku	12
21.		Namphing	37
22.		Barnyak Tokal	19
23.		Rameng-Nizrameng	27
24.	Yangang	Lingi	12
25.		Paiyong	16
26.		Lingmo Kolthang	9
27.		Niya Manzing	46
28.		Sripatam Gagyong	36
29.		Yangang Rangang	18
30.	Ravangla	Ravang Sangmoo	26
31.		Tinkitam Rayong	9
32.		Lekship	8
33.		Kewzing Bakhim	15
34.		Barfung Zarong	19
35.		Ralong Namlung	4
36.		Borong Phamtham	26
37.	Namchi	Rong Bull	7
38.		Maniram Singithang	8
39.		Mikhola Kitam	3
40.		Sorok Shyampani	3
41.		Assanthang	9
42.		Mamley Kamrang	21
43.		Tingrithang	48
44.		Damthang	9

POST EARTHQUAKE PREPAREDNESS ACTIVITIES

After the earthquake, the DDMA has undertaken a number of steps to increase overall awareness, improve disaster preparedness, improve the reporting system, strengthen of NGOs and various ground functionaries for dealing with disaster, establish an EOC, augment equipments and related activities.

Activities organized post earthquake in the South:

Sl no.	Date	Venue	Program title	Brief description of the programme	Participants	Remarks
1.	23/10/11-24/10/11	1. Namchi Sr. Sec School 2. Singithang Pri. School	Sensitization on Earthquake & Career Counseling	DC/S visit to various schools of South Sikkim post EQ 18th Sep, 2011 to generate awareness amongst students	Faculty members & students	
2.	11/4/12	Veterinary Ground, Namchi	Health Camp	Free Health Camp, Nukad Natak on Earthquake, First Aid training to RS/ ARS, School prefects of all schools of Namchi and NGOs / NSS/ NCC/NYK Volunteers	Attended by over 5000 public ,Govt. Empolyees alongwith NGOs/ Students.	Use of DRR fund
3.	4/7/12	Turuk Sec. School, Sumbuk	Sensitization Programme on Earthquake	Sensitization Programme with Turuk Child Development Society members and Students. Mock Drill on Earthquake conducted. Important nos. distributed. Dos & Donts of earthquake taught	Attended by 150 students and few parents	The programme was organized by Turuk Child Development Society.

Sl no.	Date	Venue	Program title	Brief description of the programme	Participants	Remarks
4.	24/7/12	Turuk Sec. School, Sumbuk	School Safety Programme	Training on Earthquake safety, Fire Safety. Mock Drill on Earthquake and Fire safety.	Students of class 7 and above and all the faculty members.	Programme organized by SMC

- Daily disaster reporting system has been started. Reports are taken from Revenue Surveyors (since we do not have disaster related personnel at that level) and also sent to SSDMA. The use of social media like facebook has also been started at our link "South District Disaster Management Authority".
- Strengthening of local level communities - NYK has been mobilized to strengthen its manpower at the grass root level.
- Proposal for setting up an EOC and requirement of equipments has been sent to the Head Office, for approval and sanction.
- Rescue points have been identified for evacuation. Points for helicopter landing and parking of rescue and relief vehicles have been identified.
- Resource mapping of all available equipments, manpower, vehicles etc with departments,power developers, major private firms and other organizations has been done.
- Vulnerability mapping of disaster prone areas has been done and map prepared.\
- Bharat Nirman volunteers from RMDD will also be engaged.

School Safety Programme – to be adopted

Contributed by Abhishek Karel, Training Officer

Primary Strategies under the programme are: School safety on the education agenda. The basic understanding that school safety is a community concern needs to be highlighted and it requires a community response. School administrators should facilitate and coordinate the efforts to promote safe schools.

Formation of School Safety Advisory Committee at the district level. The School Safety Advisory Committee shall be headed by the District Collector and convened b the District Education Officer and shall include Chief Fire Officer, Chief Medical Officer, Engineering section at BAC level, School Principals and Teachers (Municipal/Private), representative from the students, emergency response agencies/officials, key institutions, SMC representatives, committed youth groups, clubs, volunteers, representatives plans for each school in the system. Plans shall include systematic procedure for dealing with specific types of crisis ensuring safety of students and staffs. District-wide School Safety Plan to be developed by the School Safety Advisory Committee, and the School Preparedness and Emergency Response Plan is to be developed by an individual school Building-level School Safety Team.

The Building-level School Safety Team is appointed by the principal and shall include, but is not limited to, key administration teacher, parents, school personnel, community members, local law enforcement officials, local ambulance or other emergency response agencies/ officials, and any other representative of the School Board, any other body deems appropriate. Each school should prepare a School Building-Level Emergency Preparedness and Response Plan. Form an Incident reporting system during crisis management and also draw effective guidelines for safety regulations.

It is a "Safe House" programme organised by SMC and should involve community residents. On Campus meeting with the parents will be favourable for implementation of such programme in the society.

Establish disaster managers clubs in the schools and promote activities in the subject if disaster management and student volunteerism.

Remote-adopt-a-school "programme with the other schools which have already set up the School Preparedness and Emergency Response Plan. Business community can also be called in for support. The business partnerships can support for building repairs, sponsor programmes, develop necessary Support- PREPAREDNESS MONTH SCHOOLS".

WHAT IS AN EARTHQUAKE?

(SOURCE: Internet)

An earthquake is a sudden tremor or movement of the earth's crust, which originates naturally at or below the surface. Vibrations or shakings in the earth's crust are generally caused by sudden tectonic movements or volcanic eruptions. Earthquakes may also be induced by human activity, such as the removal of materials from the earth's crust or atomic explosions.

What causes an earthquake?

1. Tectonic movement- earthquake can be triggered by tectonic activity along the plate boundaries and fault. An earthquake of 9.3 magnitude at the west coast of northern Sumatra on 26 December 2004, was
caused by the thrust –faulting on the interface of the India and the Burma plates.

2. Volcanic eruptions- earthquake can be linked to an explosive volcanic eruption. In 1833 an earthquake generated by the eruption of the Krakatau Volcano at the straight of Sunda between Java and Sumatra
Islands triggered at least three tsunami waves that killed 36,000 people.

3. Human activities- Earthquake can be generated by human activities. Shock waves caused by the French nuclear tests generated some tremors in the past.

Effects of earthquakes

1. Destruction of buildings, infrastructures

2. Human casualties

3. Can generate tsunami

How are earthquakes measured?

There are two different ways of measuring earthquakes:
1. Magnitude (Richter scale)

2. Intensity (Modified Mercalli Intensity scale)

A rough estimation of the damage based on the experiences, however it largely depends on the nature of buildings and the location:
Less than 3.5 - Generally not felt, but recorded.
3.5-5.4 - Often felt, but rarely causes damage.
Under 6.0 - At most slight damage to well-designed buildings. Can cause major damage to poorly constructed buildings over small regions.
6.1-6.9 - Can be destructive in areas up to about 100 kilometers across where people live.
7.0-7.96 - Major earthquake. Can cause serious damage over larger areas.

8 or greater - Great earthquake. Can cause serious damage in areas several hundred kilometers across.

1. How do I protect myself in an earthquake? - Dos and DON'T

Things to do before an earthquake occurs

• At home, talk about earthquakes or possible disasters. Make sure every colleague/family member knows how to respond in case of an earthquake.

• Know the safe spots in each room (under a sturdy table or desks, against the interior wall or a column, or under door frame etc.)

• Identify the safest and nearest place from your house.

• Practice DROP, COVER and HOLD in each safe spot. Drop under a sturdy table or desk, hold on to its leg, and protect your eyes by pressing your face against your arms. Practicing will make these actions an automatic response. When there is an emergency, many people hesitate, forgetting what they are supposed to do.
Responding quickly and automatically will help to protect you from injury.

• Know the danger spots- near windows, mirrors, hanging objects, tall unsecured furniture, and shelves holding heavy objects.

• Locate safe places outdoors- In an open, away from buildings, trees, telephone and electric post and lines and overpasses.

• Locate gas, water, and electricity installations, and periodically check that they are in good condition. Use accessories with flexible connections, and make sure you know how to disconnect them.

• Identify exits and alternative exits- always know all the possible ways to leave your house and work place in emergency situations. Practice getting out of your home or building, check and see if he
planned exits are clear of obstacles.

• Keep in a handy place: emergency telephone numbers, first aid box, a portable radio, and torch with batteries.

• Always carry your I.D.

• Know the location of shut off valves for water, gas and electricity. Learn how to operate those valves.

• Learn first aid
Develop an emergency communication plan- in case family members are not together during the earthquake, that is, when adults are at work and children are at school.

• Make the home a safe place by doing the following:
- Secure heavy furnishing such as cup boards and book cases against walls to prevent them from falling over and injuring persons.

- Keep large, heavy objects and breakables on lower shelves to prevent you from serious injuries caused by falling objects.

- Store all flammables or hazardous liquids outside the house, in their proper containers, away from structures since earthquakes may trigger fires or explosions within the building.

- Hang heavy items such as pictures and mirrors away from beds, couches, and anywhere people sit.

- Pull down and close shutters or draw curtains, as protection from flying glass, especially for windows that are near the bed in the event of an earthquake occurring at night and people are asleep.

• Ensure that a stock of appropriate supply is kept: food and drinking water, first aid kit and essential medicine, flash light with extra batteries, portable radio with extra batteries. Radio will be the best
source of information following the earthquake especially when the electricity power is out.

Things to do during an earthquake
• Stay calm. If you are indoors, stay indoors. If you are outdoors, stay outdoors. Many injuries occur as people enter or leave buildings.

• If you are inside, move away from windows, doors, tall cabinets, breakables or heavy objects that could fall. Take cover under a desk or sturdy table and hold on or stay against and interior wall or column. Remember that most fatal injuries are head wounds, therefore, DROP, COVER and HOLD.

• If you must leave a building, do so in an orderly manner. Rushing to get out can result in injuries. Do not use the elevator. As a precaution against possible fires, use the stairs.

• If you are outdoors, move to a clear area away from the trees, signs, buildings, electrical wires and poles. DROP and COVER your head until the shaking stops.

• If you are in a vehicle, stop and remain inside until the shaking stops. Avoid buildings, overpasses, bridges, power lines and roads beside ravines and cliffs in which landslides may occur. Be cautious of possible road damage while you proceed.

• If you are in a building; once earthquake is over, leave the building. Remember: do not shout, do not run, and do not push. Avoid unstable items and buildings. Injuries and deaths during earthquakes are caused by falling objects and collapsing structures, and are largely avoidable. Take extra care in your home to ensure minimal damage or injury.

• Secure heavy items. Since falling objects pose the greatest danger during an earthquake, all tall or heavy furniture should be secured to the wall to prevent it from toppling over. TVs, stereos, heavy paintings, pots and plants should be tied down or placed on safety mantles.

• Remove all heavy items from the tops of shelves and cupboards.

• Be fire aware. Ensuing fires after an earthquake can cause havoc. Make sure you know where to switch off the gas supply to your apartment or building. Know the emergency exits in your building and make sure they are not obstructed in any way.

• Keep a regularly maintained fire extinguisher nearby and learn how to use it. Most fires start small and can be extinguished easily with quick action.

• Prepare an escape bag. Include in it a radio, flashlights, spare batteries, solid fuel for a cooker, candles, money and ID documents. Stock up at least 3 days of water and food. Keep an extra rotating supply of your prescription medications in the bag.

• Protect your most vulnerable areas. In the event of an earthquake, take all measures necessary to protect your head and neck, the most vulnerable parts of your body.

• Assume the "earthquake position". If you are indoors, drop down to the floor in the "earthquake position". Make yourself small, with your knees on the floor, and your head tucked down toward the floor. Take cover under a sturdy desk or table. Place one hand on a leg of the table (to keep it from shifting away from you) and one hand over the back of your neck. Alternatively get down low next to a solid sofa or armchair and cover your head and neck with a pillow. Stay clear of windows, fireplaces, wood stoves, and heavy furniture or appliances that may fall over. Stay inside to avoid being injured by falling glass or building parts.

• Keep children and pets safe. If you have children or pets, do everything possible to get them under the table with you. Make sure as much of their bodies are protected as possible.
Have shoes handy. To avoid stepping on broken glass and other objects, keep a pair of shoes and flashlight in a plastic bag tied to a foot of your bed so you don't need to grope in the dark. Take precautions wherever you happen to be.

• If you are in a crowded area, take cover where you are. If you are outside, get into the open, away from buildings and power lines. If you are at the beach, move quickly to higher ground or several hundred yards inland. If you are driving, stop if it is safe, but
stay inside your car. Stay away from bridges, overpasses and tunnels. Move your car as far out of the normal traffic pattern as possible. If possible, avoid stopping under trees, light posts, power lines, or signs.

• Try to remain calm. Wait for the earthquake to stop before moving from your spot.

Earthquake zones
Certain areas of the world are more prone to earthquakes tan others. The main areas are: the Pacific coast of North and South America; Japan; Southeast Asia; Indonesia; the east coast of China; Central Asia; and a band which stretches across the Mediterranean from Italy to Iran. But there is nowhere in the world that is entirely safe.

FASCINATING FACTS ABOUT EARTHQUAKES !!!

(Source: Internet)

- One interesting fact about earthquakes is that animals can sense or detect earthquakes before they occur.
- Moonquakes, seismographic activity on the moon, do occur, but less frequent than on earth. They have smaller magnitudes than earthquakes on the Earth too.
- Sometimes there are many small earthquakes before the big one. These small ones are called foreshocks.
- The shaking of the ground is not what kills most victims of earthquakes. The main killers in earthquakes are falling buildings, fires, landslides, avalanches and tsunamis.
- The deadliest known quake in history shook China in 1556, taking about 830,000 lives.
- Steel, reinforced concrete and wood are good building materials for an earthquake resistant house because they flex somewhat without breaking.
- An earthquake happens somewhere in the world once every thirty seconds.
- You may not notice a magnitude 2 quake.
- You would feel the ground shake in a magnitude 3 quake.
- The shape of a pagoda is known for resisting damage from earthquakes.
- Nearly 80% of Earth's largest earthquakes occur near the "Ring of Fire," which is a horseshoe-shaped region in the Pacific Ocean where many tectonic plates meet. The second-most earthquake-prone area is a region called the Alpide Belt, which includes countries such as Turkey, India, and Pakistan.
- The 2004 Indian Ocean earthquake lasted nearly 10 minutes—the longest on record.
- Japan's 9.0 earthquake in 2011 not only moved the island closer to the United States, it also shifted the planet's axis by 6.5 inches.

FIRST AID

First Aid is the temporary help given to an injured or sick person before professional medical treatment can be provided. This timely assistance, comprising of the simple medical techniques, is most critical to the victims and is often, life saving. Any layperson can be trained to administer First Aids, which can be carried out using minimal equipments.
Emergency First Aid: Typically Emergency First Aid is meant to achieve three goals.
Preserve Life: The overriding aim of all medical care, including first aid is to save life.
Prevent further harm: also sometimes called prevent the condition from worsening, or danger of further injury, this covers both external factors, moving a patient away from any cause of harm and applying First Aid techniques to prevent worsening of condition, such as applying pressure to stop a bleed becoming dangerous.
Promote recovery: First Aid also involves trying to start the recovery process from the illness or injury, and in some cases might involve completing treatment such as in the case of applying plaster to small wound.
There are various skills which are considered to be essential to the provision of First Aid, and are taught universally in one form or another. In particular, every person who has taken any kind of First Aid training has been taught the ABC's of the First Aid. The ABC's which focus on critical life saving intervention, must be rendered before treatment of less serious injuries.

ABC's of First Aid

• **Airway-** This is where a person performing first aid checks the airway of the person needing assistance to ensure it is clear. Choking is life, threatening emergency and in order to stay alive in all person need to have an open airway- a clear passage where air can move in through the mouth or nose, through pharynx and down in to the lungs without obstruction.

• **Breathing-** Is the person needing assistance breathing? Is recue breathing necessary? If there is no breathing, or the patient is not breathing normally, the First Aider would have to undertake the most recognised First Aid procedure-cardiopulmonary resuscitation or CPR, which involves breathing for the patient.

• **Circulation-** Assessment of circulation is done, carried out for patient who are not breathing, first aider now trained to go straight to chest compression (and thus prving artificial circulation) but pulse check may be done on less serious patient.

Once the ABC's are secured, first aider can begin additional treatment as required

(Courtesy: Health Family Welfare Deptt., South District, Namchi)

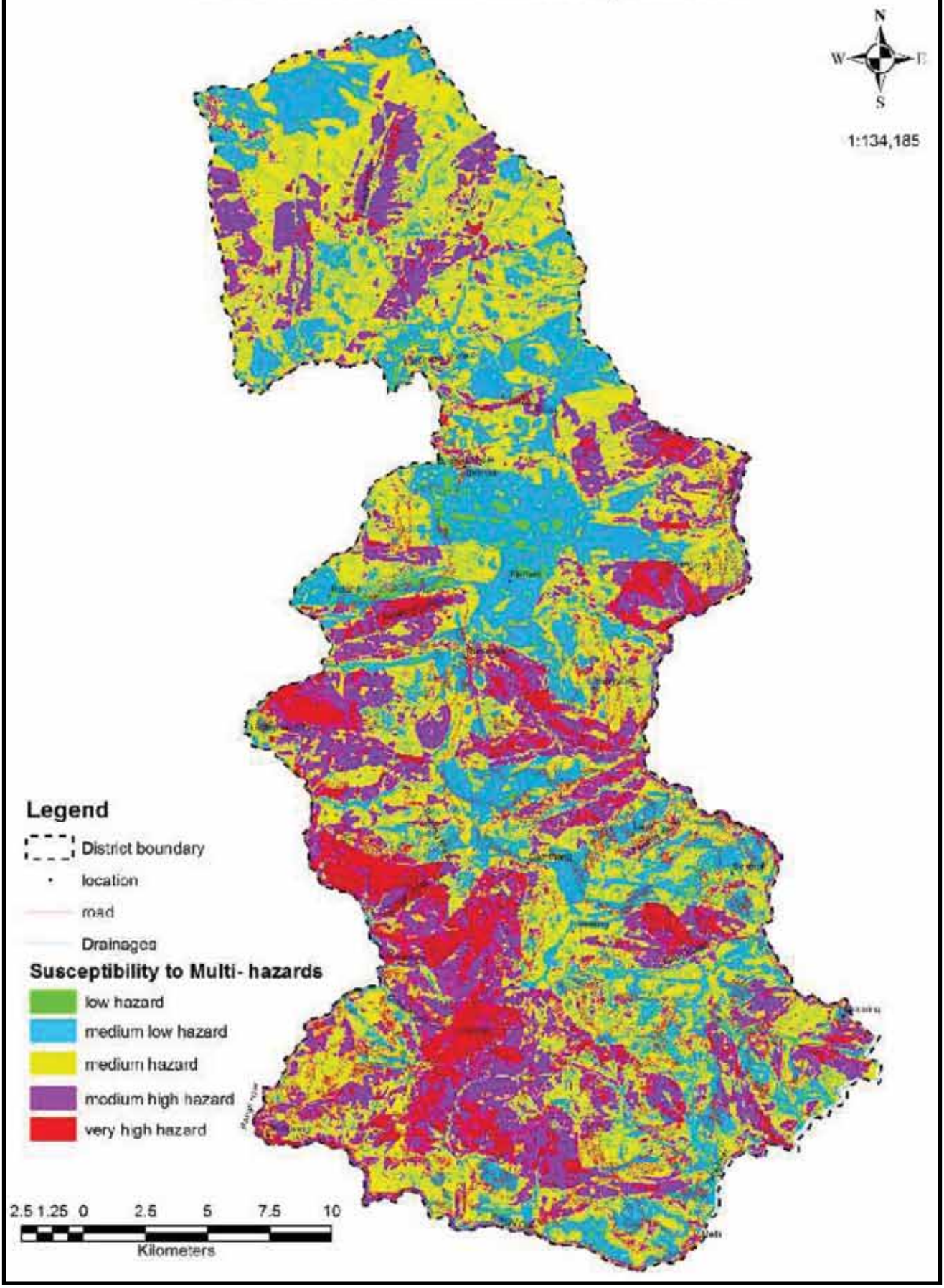
DISTRICT DISASTER MANAGEMENT AUTHORITY MEMBERS AND PHONE NUMBERS

District Collector/South:	9434201222
Addl. District Collector/South:	8016277137
Superintendent of Police/ South	9733344400
Chief Medical Officer/South	9434487167
Sub-Divisional Magistrate/HQ/South:	8116012999
Sub-Divisional Magistrate/Namchi:	9434037788
Pemba Sherpa, District Project Officer/South:	9593973686
Abhishek Karel, Training Officer, UNDP-DRR, Prog.	7602945676

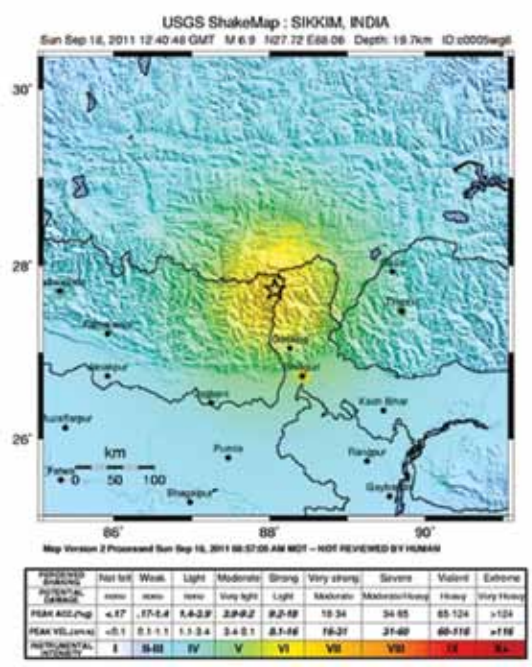
DISASTER MANAGEMENT HELP LINE NO – 264442
FIND US ON OUR FACE BOOK LINK AT SOUTH DISTRICT DISASTER MANAGEMENT AUTHORITY
EMAIL dmnamchi@gmail.com, ddmasouth@gmail.com

Sl No.	Designation	Department	Ph No.
1.	Joint Director	HRDD	03595-263759
2.	Divisional Forest Officer	Territory	9002135439
3.	Divisional Engineer	I & FC	8967832765
4.	Joint Secretary	UDHD	9733095534
5.	Joint Director	AH, LF & VS	9434026340
6.	Joint Director	Horticulture	9434063536
7.	Divisional Engineer	R& B Deptt	9474528286
8.	Divisional Engineer	B& H Deptt	9733017987
9.	Joint Director	Agriculture	9434722277
10.	Divisional Engineer	WS & PHED	9733051811
11.	Superintending Engineer	P & E Department	9647781565
12.	DCSO	Food & Civil Supplies	03595264565
13.	Assistant Director	Tourism	9775453611
14.	Dy. Municipal Officer	Namchi Municipal Council	9832484042

SUSCEPTIBILITY/VULNERABILITY TO MULTI-HAZARDS MAP OF SOUTH DISTRICT, SIKKIM



THE SIKKIM EARTHQUAKE



The small picturesque state of Sikkim was rudely shaken by a M6.9 Earthquake at 18:10 IST on 18th September 2011. This Earthquake today know as the Sikkim Earthquake had its epicenter according to the US Geological Survey (USGS) located at 27.72°N and 88.06°E, near India-Nepal border about 68 km NW of Gangtok and at a focal depth of 19.7 km. In the aftermath there were three aftershocks of magnitude 5.7, 5.1 and 4.6 within a span of 30 minutes. The northern Sikkim faced the maximum brunt of the earthquake with town like Chungthang and Lachung facing the maximum destruction from the earthquake. The tremors of the Sikkim Earthquake was also felt in other states like Assam, Meghalaya, Tripura, West Bengal, Bihar, Jharkhand, Uttar Pradesh, Rajasthan, Chandigarh and Delhi and also in the neighboring countries of Nepal, China, Bhutan and Bangladesh.

In total 63 deaths were reported from Sikkim. Due to the fragile ecology of the Himalayan state of Sikkim, the seismic activity caused more than 300 landslides in Sikkim completely disrupting the road connectivity in the State. The earthquake broke down power lines, water supply and telecom connectivity in the state. The earthquake also caused significant damages to the property and infrastructure in the state. Building and house collapses were reported from all over the state. It is hard to estimate the financial damages caused by the quake but the figure is estimated to be very large.

CAUSES OF EARTHQUAKES

Earthquakes are caused when two plates of the earth crust collide against each other. The Himalayas are young mountain range which has been formed by the collision of the Indian Subcontinent against the Eurasian continent. Since the Indian continent is continuously moving underneath the Eurasian continent, the movement creates stress under the Earth's crust. This stress is sometimes released in the form of Earthquakes. Thus the entire Himalayan ranges are high in seismic activity. Sikkim which falls in the Himalayan ranges is classified as Seismic IV zone and thus is very prone to earthquakes.

CAUSES OF THE SEPTEMBER 18 EARTHQUAKE

The September 18th earthquake is unique because according to geologists, it was not caused because of the usual phenomenon of one block of rock sliding above another (thrust motion) at the fault line but the earthquake was more like a strike-slip motion when two blocks slide past each other. The fault plane of the earthquake was also vertical to the Himalayas while in most case the fault plane is horizontal. The earthquake occurred closer to the populous region of the Himalayas and thus the damages to life and property was severe. According to Geologists, this is the first strike-slip earthquake to have occurred in the region.

PAST HISTORY OF EARTHQUAKES IN SIKKIM

The state of Sikkim is on the Himalayan range with two main thrust faults namely the Main Boundary Thrust (MBT) and Main Central Thrust (MCT) (Dasgupta et al. 2000). Since the Indo-Australian plate is continously thrusting against the Euarian plate, earthquake are a common occurance in Sikkim and there is a histroy of earthquake in Sikkim.
The most significant earthquakes in the recent past to have occurred in Sikkim are as follows

- 14 February 2006, Sikkim Earthquake had a magnitude of M5.3
- 19 November 1980 had a magnitue of M6.0
- 1 August 1988 (Bihar Nepal Earthquake) had a magnitue of 6.5

Historically Sikkim has been affected by four great eartquake which have occurred near its borders. The Shillong earthquake of 1897 of magnitude M8.0 caused wide damages in Sikkim. The Kangra Earthquake of magnitude 7.8 (1905), Bihar-Nepal Earthquake of magnitude 8.1 (1934) and Assam Earthquake of magnitude 8.5(1950) also affected the region of Sikkim and caused damages(Narula and Sharda 1997; Oldham 1899; Dunn et al. 1939). However between 1934 and 1950, Sikkim did not experience any major earthquake and this years represent a seismic gap for the state.

THE FUTURE

Since Sikkim is located on the Himalayan range with the two fault line, there is high possiblity of more earthquakes in the near future. The only hope is earthquake disaster prepardness in the state and to resort to safe building standards and practises. The state is currently on the rapid path to development but there is urgent need to focus on sustaining the development with better preparnedness to earthquake related disaster in the near future. There is a need to propage good construction practises and seismic codes needs to be enforced.

Karma Bonpo, IAS,
SDM HQ

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An afterthought

Gloria Namchu

18th September 2011 …….. will go down in our collective memory as a wakeup call for Sikkim. Many a fire side tale will be spun around it for generations to come, many will eulogise it in their poems, many will quote it, some will sing songs about it, many will pepper their conversations with it, many a lesson on it will be taught in classrooms but let us not forget the many who will recall and weep about it. The wake of death and destruction has left the majority of us unscathed but there are families whose lives have been shattered by it, especially in those places in the North district, which were located near the epicenter of the disastrous earth quake.

For a couple of days after the quake, we were left reeling with the shock. In succession, we took stock of our near and dear ones, kith and kin, friends, acquaintances and our material assets. We are indeed fortunate to be alive and unharmed but there are those who have been affected –precious lives lost, houses destroyed. 63 dead. Many injured. Thousands of houses damaged. Some severely. Most of us are physically safe and secure but our landmark public structures have borne the brunt. Tashiling Secretariat, the hotbed of state government decision making; where many have received their initiation into public service; where many civil servants like us have spent our formative years in the services; where many have toiled for a lifetime in government service and retired from it; where many a public set foot to get their grievances redressed; and so on was not spared. Religious institutions and schools all over the state have also been damaged. The entire North was cut off from the rest of the state. Well, for that matter, from the rest of the world. Chungthang was a picture of devastation. Our landscape and almost every house bears scars caused by the quake.

Shaken, we have all been. But, is our consciousness stirred??? Today we have slipped back into normal mode but as we mark the passage of a year after 18th September 2011, let us not allow complacency pull a hood over eyes. Move on we must, but forget we must not. We cannot continue in the same manner. Something somewhere has got to give.

We had not been through such a catastrophe, covering the entire length and breadth of our state. And after being through the crisis, stronger is how we would have emerged. As individual members of society and citizens of this state, we can introspect and make choices. Even if the next disastrous earthquake is a lifetime away, by making safer choices, we can avoid compromising on our own safety and that of future generations.

APPRECIATION

During the crisis, a number of personnel worked relentlessly to restore the situation to normalcy. For the efforts rendered by them, the district administration rendered them with Certificates of Appreciation, on 26th January, 2012 (Republic Day). They are as follows:-

Sl No.	Name & Designation
1	Shri. S.L Rai, ADC, South
2	Shri. D.K. Pradhan, ADC, Dev
3	Shri. B. B. Theengh, J.D, LR & DMD
3	Shri. Suman Thapa, SDM(HQ)
4	Shri. R.K. Yadav, SDM, Namchi
5	Shri. P.K. Rai, SDM, Ravangla
6	Shri. C.P. Rai , SE, P & E, Deptt
7	Shri. B.K. Rai, DE, P & E, Deptt
8	Mrs. Yangchen D. Tamang, DPO, SDZP
9	Mrs. Bimala Rai, J.D, HRDD,Namchi
10	Mr. J.B. Karki, Sr. A.O, LR & DMD
11	Ms. Bandana Chettri, US, RMDD
12	Mrs. Milan Pradhan, D.E, B & H
13	Mr. B.B. Subba, SDPO, Jorethang
14	Mr. Shenga Bhutia, P.I, Jorethang
15	Mr. Bisal Mukhia, BDO, Sikkip
16	Mr. S.K. Pradhan, BDO, Temi-Tarku
17	Mr. Mahesh Sharma, BDO, Yangang
18	Mr. Robin Sewa, BDO, Namthang
19	Mr. Dinesh Pradhan, BDO, SUMBUK
20	Mr. P.N. Sherpa,DPO, LR & DMD
21	Mr. Saran Das Kalikotey, OS, LR & DMD
22	Mr. Abhishek Kharel, TO/UNDP-DRR Prog
23	M/s DANs Energy Pvt Ltd, Jorethang
24	M/s LANCO Hydro Power Project Ltd, Mamring/Sirwani
25	Mr. J.P. Thapa, JE, BSNL
26	Mr. Sonam Nidup Bhutia, O/c Communiction, Namchi PS
27	Mr. Kashi Nath, Communication, ASI
28	Mr. Gokul Pradhan, ASI
29	Ms. Diki Doma Bhutia, EOC Staff
30	Mr. Kazi Sherpa, IHCAE,Chemchey
31	Mr. Chirag Rai, Driver, SDM(HQ)
32	Mr. Arjun, Driver, SDM(Namchi)
33	Ganga Psd. Rai, QRT
34	Birkha Bdr Gurung, QRT
35	Abhi Chandra Sharma, QRT
36	Kumar Bhatarrai

(Pics courtesy: DDMA, IPR(South))

September 18 2011

(Pics courtesy: DDMA, IPR(South))

September 18 2011

Relief Camps

(Pics courtesy: DDMA, IPR(South))

Chungthang, North Sikkim

(Pics courtesy: Tashi Choppel, former SDM Chungthang)

September 18 2011

(Pics courtesy: DDMA, IPR(South))

Awareness and Training Programme

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