

Report On

Tsunami Mock Drill

Date

11th March 2016



Organized by

**Kerala State Disaster Management Authority &
Ministry of Home Affairs, Govt. of India**

Airdropping of relief materials demonstrated at Alappuzha, during mock drill by Air Force.



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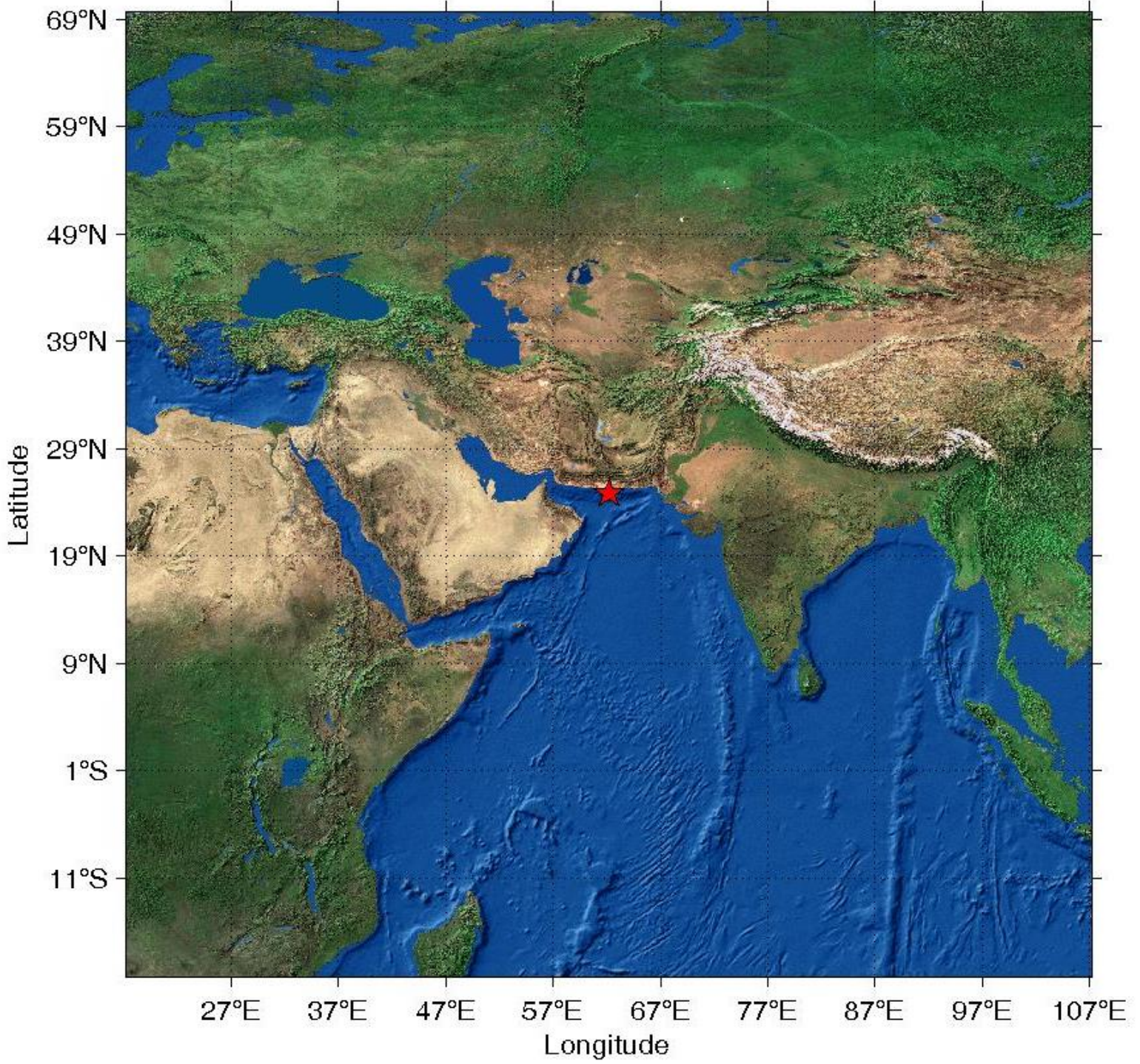
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Epicenter Location Map (Off Coast of Pakistan)



Source: INCOIS

Introduction

The word Tsunami is derived from the Japanese word meaning "harbor wave", which is a series of waves in a water body caused by the displacement of a large volume of water, generally in an ocean. Earthquakes, volcanic eruptions and other underwater explosions (including detonations of underwater nuclear devices), landslides, glacier calving, meteorite impacts and other disturbances above or below water all have the potential to generate a Tsunami.

Tsunami waves do not resemble normal sea waves, because their wavelength is far longer. Rather than appearing as a breaking wave, a tsunami may, instead, initially resemble a rapidly rising tide, and for this reason they are often referred to as *tidal waves*. Tsunamis generally consist of a series of waves with periods ranging from minutes to hours, arriving in a so-called "wave train". Wave heights of tens of meters can be generated by large events. Although the impact of tsunami is limited to coastal areas, their destructive power can be enormous and they can affect entire ocean basins; the 2004 Indian Ocean tsunami was among the deadliest natural disasters in human history with at least 230,000 people killed or missing in 14 countries bordering the Indian Ocean.

Tsunami Mock Drill

Vide letter no: 40-6/2013-NDM-I (A) dated 27.01.16, Disaster Management Division, Ministry of Home Affairs, Govt. of India has directed to conduct mock drill of Tsunami in Kerala on 10th & 11th of March 2016. National Disaster Response Force (NDRF) has been assigned the role of being the nodal agency for conducting the mock drill with the technical input from Indian National Centre for Ocean Information Services (INCOIS). The mock drill was first of its kind in the state of Kerala which was coordinated and facilitated by State Emergency Operations Centre, KSDMA. The drill involved Army, Navy, Airforce, NDRF, SDRF, Coast guard, ITBP, Coastal Police, Local Police, Fire & Rescue Services, Health Department.

The drill was to test the capability of the state and district administration in quickly disseminating the warnings and congregating the likely affected areas in pre-destined place. Based on the simulation scenarios provided by INCOIS a full scale exercise involving all the nodal departments of the state was decided. A beach in every coastal district of Kerala (i.e. 9 districts) was identified to conduct the drill by the respective District Disaster Management Authorities.

Details of the Location

Sl. No:	Coastal District	Beach	Taluk
1	Thiruvananthapuram	Shangumugham	Thiruvananthapuram
2	Kollam	Chavara	Karunagappally
3	Alappuzha	Alappuzha	Alappuzha
4	Ernakulam	Fort Kochi	Kochi
5	Thrissur	Kara Kadappuram	Kodungalloor
6	Kozhikode	Bey pore	Kozhikode
7	Malappuram	Chappappadi	Thirurangadi
8	Kannur	Payyambalam	Kannur
9	Kasargod	Kasargod	Kasargod



COASTAL DISTRICTS OF KERALA

Prepared for Tsunami Mock Drill on 11th March 2016



Affected Districts

STATE EMERGENCY OPERATIONS CENTRE (SEOC)
DEPARTMENT OF DISASTER MANAGEMENT, GOVT. OF KERALA
Tel/Fax: 0471-2364424. Email: seoc.gok@gmail.com

External boundaries of the districts are not verified
for reference purpose only



Objectives of the Drill

- a) To understand the preparedness level of State Emergency Operations Centre & District Emergency Operations Centre in the State.
- b) Evaluate the process of dissemination of bulletins/messages by the State Emergency Operations Centre to other responsible agencies within the area and to the respective districts.
- c) Hone the organizational decision making process about public warnings and evacuation.
- d) Identify proper communication methods that would be used to notify and instruct the public.
- e) Record and assess community preparedness: the response time, methodology adopted, the arrangements made and conduct of evacuation of public from vulnerable areas.

Process Followed

A) Advance Coordination Meeting

Ref 1: Letter No. 1-17018/Trg/DG NDRM/2016/2013; dtd. 18th Feb 2016

Ref 2: Letter No. 12082/K1/2016/DMD; dtd. 19th Feb 2016

Ref 3: Email No. SEOC/GEN/2014/2016; dtd. 29th Feb 2016

In order to ensure the successful conduct of the mock drill, an ‘Advance Coordination meeting’ was held on 24th February 2016 at ILDM, PTP Nagar, Thiruvananthapuram. Shri S.S Guleria, DIG (Ops & Trg) chaired the meeting and all other stakeholder departments attended the orientation. Presentation was done by Shri S.S S.S Guleria on the expectation and processes to be followed to make the mock drill a great learning experience. Dr Sekhar L. Kuriakose, Member Sec’y, KSDMA and Head (Scientist), SEOC gave instructions to the participants on the Standard Operating Procedures (SOP) during Tsunami. The SOP was made available to all the district administration and departments of the state through a handbook on disaster management (Vol-2) prepared with the support of ‘GoI – UNDP project on enhancing institutional & community resilience to disasters & climate change’. He also explained the functions & responsibilities of SEOC & other departments participating in the drill.

Shri B Ajay Kumar, Scientist INCOIS Hyderabad presented on the functions of INCOIS in issuing Tsunami Alert. A manual on Tsunami Mock Drill was circulated by INCOIS. The scenario of the drill was also explained by Shri Kumar.

Proposed Scenario

- Magnitude: 9.0 Mw; Lat / Lon : 24.8 N 62.2 E; Depth : 10 km
- Origin Time : 12:30 (IST); Date: March 11, 2016
- Region: Off Coast of Pakistan

Sl. No.	Time of issue (IST)	Bulletin
1	12.30	Earthquake Occurs
2	12.35	Type-I EQ Bulletin (8.8 M)
3	12.40	Type-II EQ + Scenario Results (9.0 M)

4	13.00	Type-III EQ + Scenario Results (9.0 M) + WL Obs
5	13.45	Type-III EQ + Scenario Results 01 (9.0 M) + WL Obs
6	14.45	Type-III EQ + Scenario Results 02 (9.0 M) + WL Obs
7	15.45	Type-III EQ + Scenario Results 03 (9.0 M) + WL Obs
8	16.45	Final Bulletin
9	16.45 to 18.30	Debriefing

Outcome: 30 participants attended the advance coordination meeting. Based on the discussions in the meeting, it was decided to conduct the Tsunami Mock Drill on 10th & 11th of March 2016 wherein, 10th being organized for table top exercise and 11th, the actual drill. The conduct of the mock drill was notified to Hon'ble Chief Minister of Kerala *inter alia* Chairperson of State Disaster Management Authority and all other ministers of the state.

Participants			
Sl.No	District/Dept	Details of Participants	Contact Details
1	State Police Kerala	Mr. S Surendran IPS, Assistant Inspector General, Coastal Police	9497996910
2	SDRF, Kerala	Mr. A V George IPS, Commandant, RRRF and SDRF Kerala	9497920110
3	Fire & Rescue, Kerala	Mr. Dileepan. P, Assistant Divisional Officer, Thiruvananthapuram	9497996964
4	SDRF, Kerala	Mr. Ajith Kumar, AC, HQ, RRRF	
5	Directorate of Health Services	Dr. B Sreelatha, Additional DHS (Mdl)	8301838148
6	Directorate of Health Services	Dr. K Venugopala, Additional DHA, DMOH, Tvm	9946105472
7	Directorate of Health Services	Dr. Bindhu Mohan, Dy DHS	9447343238
8	Indian Army	Maj.A mohanthi, Canal Cadre(Pangod)	9596620579
9	Indian Army	Capt.V.S Shukla	9446654186
10	Indian Navy	Cdr.Jitendhra dixit,CPL 0II/HQ snc	9013692625
11	Public Relations Department	Mr. Praveen S R, Information Officer, I& PRD, Directorate	9496003237
12	NDRF	Mr. G. Vijayan, Dy Comndt, 4th BN, Arakkonam	9489615800
13	INCOIS, Hyderabad	Mr. B. Ayay Kumar, Scientist, INCOIS, Hyderabad-500090	9440226856, 9030175452
14	Indian Air Force	Group Captain K.R Chadra, Southern Air Command	8714191257
15	Indian Air Force	Wing Commander DB Nair, Southern Air Command	9447300271
16	ITBP, Alappuzha	Mr. Utpal, Assistant Commandant G.D, 27 th B.N, Nooranad, Sanitorium, Alappuzha, Kerala, ITBP Police	209940004

17	Office of KSDMA	Mr. Siji M Thankachan, Section Officer, Office of SDMA	4712331345
18	SEOC, Kerala	Dr. Sekhar L Kuriakose, Member, KSDMA & Head SEOC	9400202927
19	SEOC, Kerala	Mr. Pradeep G S, JRF, SEOC	9895817557
20	Indian Coast Gaurd	Mr. P Manu Adhikari, OPS Room incharge, ICGS Vizhinjam Harbour Road, Vizhin jam	9400456655
21	UNDP	Mr. Joe John George, State Project Officer, GoI-UNDP Project	9947756700
22	District Collectorate, Ernakulam	Mr. Akhil Raj, Section Clerk, Disaster Management, Collectorate, Cochin	9497120904
23	District Collectorate, Ernakulam	Mr. Saran K.S, Subject Expert, DM Cell, Collectorate, Ernakulam	9567440533
24	District Collectorate, Ernakulam	Mrs. Maggi Simmayanthi, Deputy Collector, DM	8547610077
25	District Collectorate, Kollam	Mr. Anil.S. Nair, Deputy Collector	8547610029
26	District Collectorate, Alappuzha	Mr. D. Balamurali IAS, Sub Collector	9447495002
27	District Collectorate, Kozhikode	Mr. B. KrishnaKumar, Dy.Collector (DM), Kozhikode	9447330342
28	District Collectorate, Kannur	Mr. N. Sasikumar, Dy.Collector(DM)	8547616034
29	District Collectorate, Thrissur	Mr. E.N. Raju, J.S DM, Collectorate.	944783345
30	District Collectorate, Thrissur	Mr. Firosh A.B, Senior Clerk	9447126004



Advance Coordination meeting in progress

B) Video Conference

Ref: Letter No. 12082/K1/2016/DMD; dtd. 2nd March 2016 from Addtnl. Chief Secretary to District Collectors

A video conference was also held on 3rd March 2016 to ensure compliance and to take a feedback of the decisions taken regarding the preparedness of the mock drill. Additional Chief Secretary, Revenue & DM chaired the meeting and Member Secretary, KSDMA reviewed the progress. All the respective DDMA officials and other department representatives participated in the conference. This helped the districts to understand better the procedures to be followed at the District Disaster Management Authority & State Emergency Operations Centres.

Attendees of the Video Conference

SI No	Name	Designation
1	Dr Vishwas Mehta IAS	Additional Chief Secretary, Dept. of Revenue & Disaster Management
2	M.C Mohanan Das IAS	Commissioner Land Revenue
3	Dr Sekhar L. Kuriakose	Member Secretary, KSDMA
4	Arunkumar Sinha	ADGP
5	DG Nair, Wing Commander	Wing Commander, HQ Southern Air Command
6	Major Ambarish mehntha	Pangodu Military stations
7	K.Manoj Kumar	ADF Director, I&PRD
8	Dy.Commandant George Baby	Executive Officer ,Coast guard station,Vizhinjam
9	B.Unnikrishnan	Administrative officer, ILDM, Tvm
10	Anjana .M	SDMA
11	Dr.Anil.V	Assistant Director(PH),DHS office,TVM
12	P.G Unnikrishnan	Dy. Secretary, Revenue Dept.

During the Video conference, the stakeholder departments were requested to follow the Emergency Support Functions Plan given in the Handbook on Disaster Management Vol – 2.

Emergency Support Functions Plan during Tsunami

Source of Information – INCOIS: http://www.incois.gov.in/Incois/tsunami/eqevents.jsp		
	Warning	<p>Most vigil - Actions to be taken and sustained till warning is withdrawn in the villages/taluks/districts predicted to be affected by the tsunami</p> <ul style="list-style-type: none"> • SEOC – Telephonically verify the certainty of the warning from INCOIS • SEOC & DEOC – Emergency time functions activated • State-District-Taluk Control Rooms of Revenue and Police – 24 hours functioning • NDRF, SDRF and Coastal Police – deployed to the coastline • Army, Navy, Air Force and other central forces in the state – deployed to the coastline • BSNL and Police – deploy emergency communication systems • Hospitals, CHCs and PHCs in the districts predicted to be affected by the cyclone – function at full strength 24 hrs as per requirements by making necessary human resource arrangements from district level. Medical teams should be kept ready for field level disaster management. Ensure control measures for epidemic prevention • Tahasildar – evacuate public within 250 m from the coastline to the relief camps and other safe higher ground and start the relief camps • Local Self Governments – evacuate public within 250 m from the coastline to the relief camps and other safe higher ground • Department of Ports and Harbour Engineering – Move all seafaring vessels to deep ocean • KSEB & PWD – Emergency repair teams to be ready for deployment • District Officers of KSEB, PWD, Health, Irrigation, Transport, Ports and Harbour Engineering – to be available at the respective district collectorates • Police – Stop vehicular traffic other than that of emergency services to the area predicted to be affected; ensure strict oneway system for vehicle movement • Declare holiday for all educational institutions in the taluks predicted to be affected by the event • All mass gatherings and social events in the taluks predicted to be affected by the event to be stopped

		<ul style="list-style-type: none"> • Public within 250 m from the coastline to move to higher ground and further inland • Tourism Department – Close all resorts within 250 m of the coastline and low lying areas in river-mouths/coastal estuaries and evacuate public to safer areas
	<p style="text-align: center;">Alert</p>	<p>Be prepared - Actions to be taken and sustained till warning is withdrawn, in the villages/taluks/districts predicted to be affected by the tsunami</p> <ul style="list-style-type: none"> • SEOC – Telephonically verify the certainty of the warning from INCOIS • SEOC & DEOC – Emergency time functions activated • State-District-Taluk Control Rooms of Revenue and Police – 24 hours functioning • SDRF & Coastal Police – deployed to the coastline • Army, Navy, Air Force and other central forces in the state – on high alert and standby • BSNL and Police – ready to deploy emergency communication systems along the coastline • Hospitals and PHCs on higher ground outside 250 m from coastline in the districts predicted to be affected – function at full strength 24 hrs as per requirements by making necessary human resource arrangements from district level. Medical teams should be kept ready for field level disaster management. Ensure control measures for epidemic prevention • Tahasildar – be prepared to start relief camps and evacuate public to higher ground outside 250 m from coastline • Local Self Governments – Advice public within 250 m from the coastline to prepare for moving to higher ground • Department of Ports and Harbour Engineering – Move all seafaring vessels to deep ocean • KSEB & PWD – Emergency repair teams to be ready for deployment • District Officers of KSEB, PWD, Health, Irrigation, Transport, Ports and Harbour Engineering – to be available at the respective district collectorates • Police – Regulate vehicular traffic other than that of emergency services to the area predicted to be affected • Declare holiday for all educational institutions in the taluks predicted to be affected by the event • All mass gatherings and social events in the taluks predicted to be affected by the event to be stopped • Public within 250 m from the coastline to be ready to move to higher ground

		<ul style="list-style-type: none"> • Tourism Department – Alert all resorts within 250 m of the coastline and low lying areas in river-mouths/coastal estuaries that they may have to close if the warning is increased to alert status
	Watch	<p>Be updated - Actions to be taken and sustained till warning is withdrawn, in the villages/taluks/districts predicted to be affected by the tsunami</p> <ul style="list-style-type: none"> • SEOC & DEOC – Keep checking the tsunami bulletins from the INCOIS website • State-District-Taluk Control Rooms of Revenue and Police – 24 hours functioning • All concerned district administrations and nodal departments listed above to be on alert mode
	Threat Passed	<p>SEOC – cross check with INCOIS that the threat has passed DEOC – cross check with SEOC that the threat has passed</p>

C) Tabletop Exercise

A tabletop exercise was held on 10th March 2016 at ILDM, PTP Nagar, Thiruvananthapuram. Shri P K Mohanty IAS, Chief Secretary, Govt. of Kerala inaugurated the event. Shri C Mohandas IAS, Commissioner, Land Revenue; Director ILDM and Shri S P Selvan, DIG, NDRF were other dignitaries present on the dais.

Dr Sekhar L. Kuriakose, Member Secretary, KSDMA presented on various functions of the stakeholder departments which are as follows:-

a) Functions of SEOC

- a) Tsunami by default is an L2 event
- b) All the powers of SDMA under Section 24 of the DM Act 2005 is vested with the SEOC at the time of emergencies
- c) The Head, SEOC will be the Responsible Officer of SEOC and will report to the State Incident Commanders (Prl.Secy, Revenue & DM and Chief Secretary)
- d) The State EOC will monitor, direct DEOCs and all Central Forces
- e) For this mock drill, only Revenue, Coastal Police, Local Police, Fire & Rescue Services, Health Department, State Disaster Response Force, Army, Navy, Air Force, Coast Guard and ITBP will be involved
- f) One Grade 1 officer of these departments shall reach SEOC and report to Head, SEOC immediately on receiving the warning from SEOC to the HoD of the concerned department.
- g) One of these officers will be posted as independent evaluator by the Head, SEOC and he/she shall prepare a report on the important gaps noticed

b) Functions expected from HoDs of Land Revenue, Police, Coastal Police, SDRF, Fire & Rescue Service and Health Services

- a) On receiving the warning and allied instructions from State Emergency Operations Centre, the HoD shall immediately instruct one Grade 1 officer to State EOC to report to Head, SEOC
- b) He/she shall report to SEOC with the Annexure II: Form No. ESF-1 and Annexure III: Form No. ESF-2: Rate-contract fixation form of the Handbook on Emergency Operations filled and certified. Handbook can be accessed at www.disasterlesskerala.org
- c) The district level officers of the above departments shall be directed to function as per the direction of the District Emergency Operations Centre
- d) They shall also be asked to refer to the Handbook on Emergency Operations

c) Functions expected from the State DM Control Room at CLRs office

- a) On receiving the warning and allied instructions from State Emergency Operations Centre, the Assistant Commission (DM) shall assume the role of the responsible officer of the control room
- b) All instructions as received from SEOC shall be forwarded to the RDOs and Tahsildars of the Coastal Taluks in the State (all messages related to the mock drill should clearly indicate that this message is part of the mock drill as given in subsequent pages).
- c) Direct Taluks to setup Control Rooms in Taluk Offices
- d) Monitor the status of shelter camp operations and compile a report on the activities taken by RDOs and Tahsildars for the purpose
- e) Record all outgoing and incoming messages and communicate with SEOC for updated instructions every 30 minutes
- f) One officer from Commissionerate shall be an independent evaluator of the operations of the Control Room & he/she shall prepare a one page report on the important gaps noticed

d) Functions expected from DDMA

- a. Immediately convene a meeting of the DDMA (on or before 3rd March 2016) and identify a beach to conduct the mock drill
- b. Report the identified beach and the minutes of the DDMA to the SEOC
- c. Advertise the mock drill in the selected beaches at least a week before through posters
- d. Issue press release to all media in the district about the mock drill at least a week before and one day before the event
- e. Intimate all departments & institutions in the district about the mock drill
- f. Intimate all DDMA members about the mock drill

e) Functions expected from DEOC

On receiving the warning

- a) The District Incident Commander (DIC) [District Collector] should immediately reach the DEOC to take total control of the situation
 - b) All members of DDMA shall be directed to reach the DEOC and a Crisis Management Committee meeting shall be convened to evaluate the threatening disaster situation
 - c) DEOC should access the coastal erosion/tsunami prone map and list of villages that will be affected by coast erosion as provided by SEOC earlier
 - d) All instructions as received from SEOC and DIC should be transmitted to all concerned departments as given in page 5. The Deputy Collector (DM)/ADM will be the responsible officer of the DEOC
 - e) 25% beds of the hospitals (public and private) in the affected Taluk shall be immediately reserved for the injured from the event & this information should be passed to the on-site medical team
- f) Functions expected from Revenue**
- a) The Revenue Divisional Officer or Tahsildar will immediately start the operations of a Taluk Control Room (TCR)
 - b) Taluk Control Room will monitor the
 - c) loss of life
 - d) organize food and provisions for operating camps from Food & Civil Supplies and other Governmental Sources
 - e) The Village Officer shall immediately proceed to the site
 - f) All necessary arrangements for rescue shelter operations will be taken by the Village Officer and the Tahsildar
 - g) The Tahsildar/VO will report to the on-site incident commander
- g) Functions expected from Coastal Police**
- a) Coastal Police is a District Level Resource
 - b) On receiving the alert from DEOC, they shall immediately do the needful to reach the selected beach and warn the public to move away from the beach (approximately 250 m from the coast line)
 - c) The Coastal Police SI/CI will report to the on-site incident commander
- h) Functions expected from Local Police**
- a) Local Police is a District Level Resource
 - b) On receiving the alert from DEOC, they shall immediately reach the site and regulate one-way traffic to & from the beach through two separate access roads identified
 - c) Police shall ensure that vehicles of Revenue, Health, SDRF, Fire & Rescue, Army, Navy, Air Force, ITBP and Coast Guard reach the sites through the selected onward route to the beach without hindrance
 - d) The SI/CI/DySP shall report to the on-site incident commander
- i) Functions expected from Fire & Rescue Services**
- a) Fire and Rescue Services is a district level resource
 - b) On receiving the alert from DEOC they shall immediately do the needful to reach the selected beach through the selected onward one-way for search and rescue operations

- c) The Fire Officer/Leader deployed shall report to the on-site incident commander
- j) **Functions expected from Health**
 - a) Health Department officials in the district is a district level resource
 - b) On receiving the alert from DEOC, one emergency medical team shall immediately proceed to the identified beach through the selected onward one-way to the beach
 - c) Triaging camps for injured shall immediately be setup near the affected area
 - d) Hospitals and availability of beds shall be ascertained from the DEOC and cases based on medical priority shall be sent to the hospitals with the desired treatment facility
 - e) The Medical Officer concerned shall report to the on-site incident commander
- k) **Functions expected from I & PRD**
 - a) I & PRD of the respective district shall do the needful for meticulous documentation of the mock drill
 - b) An information officer shall immediately proceed to the selected beach
 - c) He/she shall take statements about the emergency operations every 30 minutes from the on-site incident commander and report to the media regarding field operations every 30 minutes
- l) **Functions expected from State Disaster Response Force**
 - a) SDRF is as state resource and will report to SEOC directly regarding field operations every 30 minutes
 - b) Will respond in Thiruvananthapuram, Ernakulam, Thrissur and Kannur
 - c) Deploy a fast rescue team to the beach selected in these districts
 - d) The team shall be a small reconnaissance team to assess the damage
 - e) Once SDRF assess the damage inflicted by the event, it shall report to the SEOC regarding the men and machinery that SDRF intent to deploy for search and rescue operations
 - f) Based on the requirement assessment report of SDRF, SEOC will direct the concerned DEOC regarding their deployment
- m) **Functions expected from Army**
 - a. Army is as state resource and will report to SEOC directly regarding field operations every 30 minutes
 - b. Deploy a fast rescue team to the beach selected in Thiruvananthapuram
 - c. The team shall be a small reconnaissance team to assess the damage
 - d. Once Army assess the damage inflicted by the event, it shall report to the SEOC regarding the men and machinery that Army intent to deploy for search and rescue operations

- e. Based on the requirement assessment report of Army, SEOC will direct the concerned DEOC regarding their deployment
- n) **Functions expected from Navy**
- a. Navy is as state resource and will report to SEOC directly regarding field operations every 30 minutes
 - b. Deploy a fast rescue boat team to the beach selected in Ernakulam
 - c. The team shall be a small reconnaissance team to assess the damage
 - d. Once Navy assess the damage inflicted by the event, it shall report to the SEOC regarding the men and machinery that Navy intent to deploy for search and rescue operations
 - e. Based on the requirement assessment report of Navy, SEOC will direct the concerned DEOC regarding their deployment
- o) **Functions expected from Air Force**
- a. Air Force is as state resource and will report to SEOC directly regarding field operations every 30 minutes
 - b. Deploy a helicopter to the beach selected in Thiruvananthapuram
 - c. The team shall be a small reconnaissance team to assess the damage
 - d. Based on the requirement assessment report of Air Force, SEOC will direct the concerned DEOC regarding their deployment
 - e. In addition Air Force will utilize this mock drill to simulate helicopter rescue and will train SDRF and Fire & Rescue men in the protocols for helicopter air lifting
- p) **Functions expected from Coast Guard**
- a. Coast Guard is as state resource and will report to SEOC directly regarding field operations every 30 minutes
 - b. Deploy a fast rescue boat team to the beach selected in Ernakulam and Thiruvananthapuram
 - c. The team shall be a small reconnaissance team to assess the damage
 - d. Once Coast Guard assess the damage inflicted by the event, it shall report to the SEOC regarding the men and machinery that Coast Guard intent to deploy for search and rescue operations
 - e. Based on the requirement assessment report of Coast Guard, SEOC will direct the concerned DEOC regarding their deployment
- q) **Functions expected from ITBP**
- a. ITBP is as state resource and will report to SEOC directly regarding field operations every 30 minutes
 - b. Deploy a fast rescue team to the beach selected in Alappuzha

- c. The team shall be a small reconnaissance team to assess the damage
- d. Once ITBP assess the damage inflicted by the event, it shall report to the SEOC regarding the men and machinery that ITBP intent to deploy for search and rescue operations
- e. Based on the requirement assessment report of ITBP, SEOC will direct the concerned DEOC regarding their deployment

List of Participants for the Table Top Exercise of Tsunami Mock Drill on 10th March 2016

Sl No	Name of Participants	Dept./District	Mob. No.	Email Address
1	Shri P K Mohanty IAS	Chief Secretary, Kerala		
2	Shri C Mohandas IAS	Land Revenue Commissionerate	9747542020	lrcommissioner@gmail.com
3	Shri Biju Prabhakar IAS	Collector, Thiruvananthapuram	9447700222	dctvpm14@gmail.com
4	M Dileep Khan	State Police	9497961341	shotplyalp.pol@kerala.gov.in
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6	Dileepan	Fire & Rescue	9497920110	adotvm.frs@kerala.gov.in
7	Col. Abraham MV	Indian Army	9447101034	som_abam@yahoo.co.in
8	Dr. Anil V	Directorate of Health Service	9846021483	dr.anilv@yahoo.co.in
9	Ajith Kumar B	SDRF Kerala	9497990304	ajithswim@gmail.com
10	KR Chandra	Indian Airforce	8714191257	aviator.south@nic.in
11	DG Nair	Indian Airforce	9447300271	aviator.south@nic.in
12	SI/GD Aravindakshan	ITBP Alappuzha	0479 2382014	itcell27thbn@itbp.gov.in
13	Arun J L	DEOC, Thiruvananthapuram	0471 2462006, 9447700112	tahsildartvpm@gmail.com
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21	K Gopalakrishnan IAS	DEOC, Kozhikode	9446649655	rdokkd@gmail.com
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24	SP Selvan	NDRF, Arakkonam	9444192963	dig.ss.ndrf@nic.in
25	Ms. Rekha	NDRF, Arakkonam	9442105169	rekhanam@gmail.com
26	Siji M Thankachan	Secretary SDMA	9447759655	keralasdma@gmail.com

27	Dr.Kesav Mohan	Director, ILDM	9447026400	ilmsecretary@yahoo.com
28	Dr. Sekhar L Kuriakose	Head, SEOC	9400202927	seoc.gok@gmail.com
29	Pradeep.G.S	SEOC, Kerala	9895817557	seoc.gok@gmail.com
30	George Baly	Indian Coast Guard	9447429380	georgebaly4148@gmail.com
31	N.Raja	Indian Coast Guard	9629534544	natarajan.raja0127812@gamil.com
32	Girish K	Indian Coast Guard	9495958138	girishetta@gmail.com
33	Sreekanth.T	DEOC, Trivandrum	9497445933	
34	Joe John George	SPO, GoI - UNDP	9947756700	mailstojoeg@gamil.com
35	S.Sumesh Kumar	Coastal Police	9497987478	shovizhtvm.pol@kerala.gov.in
36	Dr. Jamuna Varghese	Health	9495408483	dmohalppy@yahoo.co.in
37	Suja.P.S	Health	9447018977	dmohalppy@yahoo.co.in
38	Surendran IPS	Coastal Police	9497996910	ssurendran.sp@gmail.com
39	Pradeep Kumar.S.K	Revenue Collectorate, Tvm	9895288915	pradeepkarakulam@gamil.com
40	K.V. Thanuja	Revenue	8547610103	
41	Vinod Raj	DEOC, Tvm	9447587314	dreams9275@gamil.com
42	Ramu.S	Revenue Tvm	9633374484	Ramusivas@gmail.com
43	Biju.C	Kannur Collectorate	9446522061	
44	P.N. Purushothaman	Maalppuram Collectorate	9597049116	
45	Ajeesh.K	Palakkad Collectorate	9895419185	ajeeshamvi@gmail.com
46	Rajan.N	Revenue Trivandrum	9447700112	
47	Dr. Arun J.O	Malppuram Revenue	8547615500	rdotirur@gamil.com
48	R.Vijayakumar	Revenue, Trivandrum	8547610015	deputycollectordmtvpm@gmail.com



Chief Secretary, Govt. of Kerala Inaugurating the Tabletop Exercise on 10th March 2016



Photographs of Tabletop exercise on 10th March 16

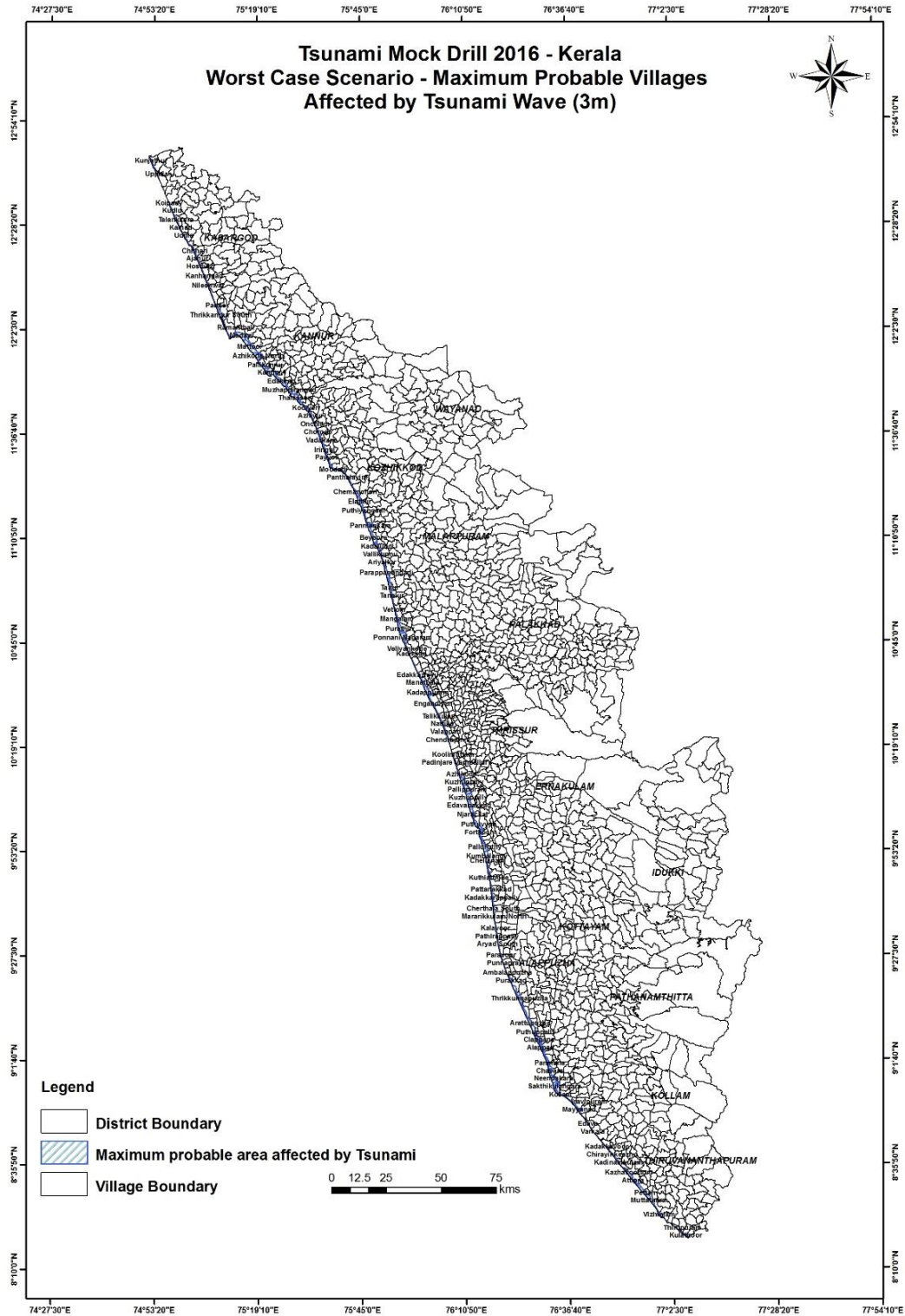
D) Tsunami Mock Drill Exercise

On 11th March 2016, the Tsunami Mock Drill Exercise was held. As planned the first Test message from INCOIS was received by State Emergency Operations Centre (SEOC) at 12:30pm.

Time	Action
12:30	Test Message from INCOIS received by SEOC
12:35	Warning Issued
12:36	1st bulletin received
12:37	SEOC confirms the event with INCOIS
12:38	Head, SEOC informs State Incident Commander, takes permission to undertake necessary operations
12:40	Telephone desk makes the 1st call to the districts

12:40	2nd bulletin received
12:48	NDRF officials reports at SEOC
12:48	First email message goes
12:48	5 maps of affected villages prepared and passed by geo-informatics desk
12:51	All department heads have been asked to assemble at SEOC office in 30m
12:51	HAM radio team passes the message on DDMA meetng
12:53	Remaining district maps passed to email team
12:55	Data on affected population passed over
12:57	Message passed to 8 collectorates
12:58	Coast guard representative arrives
12:59	Representative from commissionerate
13:01	3rd Bulletin from INCOIS received
13:02	Emails sent to TVM & Kollam districts
13:06	Alappuzha collector called the Head (SEOC)
13:14	Representative from Army arrives
13:20	9 districts sent (Email information)
13:33	L3 event being declared, message goes to Army, Navy, Airforce, ITBP
13:35	Telephone communication passed to all districts
13:46	4th Bulletin from INCOIS received
13:55	Representative of Health (DHS) reports, delay caused due to some inconvenience
13:48	2 districts reports back along with coast guard
	HAM covers all the 9 districts
14:20	Telephone desk calls all the districts to know the progress
14:21	Camp opened at Malappuram
14:43	AirForce says handwritten message is needed for further operations.
14:46	5th Bulletin from INCOIS received
14:59	Road/Route map is asked by Army, Geo-Informatics group hands it over.
15:00	Mail received from Coast guard
15:03	SEOC gives feedback to INCOIS via phone.
15:14	Army reached the site, operations started
15:26	SEOC requests Alappuzha to be ready for airdropping
15:45	6th bulletin received
16:49	7th Bulletin received from INCOIS
16:49	Threat passed
17:00	Debriefing

The area affected map was prepared by the Geo-Informatics group along with the district wise affected population details. This helped the district authorities to understand the severity of the waves.



District-wise Vulnerable Population and Area Affected

Sl.No	District	Wave Height	Total Area Affected (km)	Total Vulnerable Population
1	KLM	2.1	38	122752
2	TVM	2.5	27	37204
3	ALP	2.5	35	61403
4	ERN	2.7	54	164105
5	TSR	2.7	25	42893
6	KNR	2.6	75	240213
7	KAS	2.7	22	54278
8	MLP	2.7	31	141205
9	KZK	2.5	47	250086
TOTAL			354	1114139

Communication systems used in the mock drill

a) VHF Network

Department of Revenue and disaster management, Government of Kerala has VHF Radio connectivity in all the 14 Districts, 63 Taluk Offices and 279 selected village offices. A week prior to the mock drill, VHF Telecommunication office at Institute of Land and Disaster Management (ILDm) started giving roll call to the collectorates of 3 coastal districts such as Thiruvananthapuram, Kollam and Alappuzha. The objective of the roll call was to ensure the presence of operators near the radio stations as well to get acquainted with the radio operations.

On the previous day of mock drill (10/03/2016), the radio communication with these 3 collectorates were tested successfully. On the day of mock drill, Mr. Sreekumar S, Mr. Priyan Sagar and Mr. Sanjay B, VHF Technical Assistant, ILDM were positioned at State Disaster Management Authority (SDMA), State Emergency Operation Centre (SEOC) and ILDM VHF Base respectively to coordinate the communication among the stakeholders. The alert from INCOIS was received from SEOC time to time and these alerts were disseminated to respective stakeholders to inform the public about the Tsunami warning and to evacuate them to a safer place.

The advantage of the VHF Telecommunication over the conventional systems like landline phones and mobile phones was clearly visible that the message can be conveyed to all the collectorates in a single call rather than dialing each numbers/stations separately. The activities was well recognised by the administrations as well as the public. Lack of training in handling VHF radio Emergency Communication system was seen as a concern.

b) Ham Radio

HAM Radio Stations set-up for Tsunami Mock Drill on 11-Mar-2016

- 1 VU2IT SUWILKUMAR W S SEOC & TVM co-ordinator
- 2 VU3SQG Saji K George SEOC
- 3 VU2EEI Anilkumar V SEOC
- 4 VU3REG Reji P K Collectorate
- 5 VU2ARZ Nizamudeen B S Collectorate
- 6 VU3MOP Maneesh Collectorate
- 7 VU3DDE Joseph Daniel Public Office -Revenue
- 8 VU3RLW Rajesh Lawrence Public Office -Revenue
- 9 SWL Vishnu Prasad A Public Office -Revenue
- 10 SWL Anand Raj Public Office -Revenue
- 11 VU2AEU Sreekumaran Nair V Beach
- 12 VU2AJO Ajithkumar S R Beach
- 13 VU3BRD Binoy R Beach
- 14 VU3OOH DR.ZAKHEER HUSSAIN Beach

List of independent observers

Sl. No.	District	Independent Observers	Designation
1	KSDMA	Siji M Thankachan	Section Officer, KSDMA
2	SEOC	Joe John George	State Project Officer, GoI-UNDP Project
2	Thiruvananthapuram	Praveen	Station Officer, Kerala Fire & Rescue Services
		Maju Balakrishnan	Executive Engineer, Major Irrigation Division
3	Kollam	B Pradeep	Junior Superintendent, Revenue, Collectorate
4	Alappuzha	J Girija	Deputy Collector (General) & ADM
5	Ernakulam	Lathika C	ADM, Ernakulam
6	Thrissur	Sreelu NS	Deputy Director, Fisheries
7	Malappuram	P Jayantha Kumar	Deputy Director of Agriculture (E & T)
8	Kozhikode	O Hamsa	Tahsildar, Kozhikode
9	Kannur	N Sasikumar	Deputy Collector (DM), Revenue
10	Kasargod	E Devadasan IAS	District Collector, Kasargod

E) Debriefing & Lessons Learnt

Debriefing session was followed after the ‘Threat Passed’ message in each of the district and at SEOC. During the session, experience was shared by the stakeholders and the observation was shared by the independent observer. The following points were shared as lessons learnt. Ref. Annexure 1.

List of Officials Present in SEOC for emergency operations & debriefing

Sl No	Name	Designation & Department	Mobile Number	E-mail
01	S.P Selvan	DIG, NDRF Arakkonam	944419263	dig.rr.ndrf@nic.in
02	Ms.Rekha Nambiar	Battalion Commandant, NDRF Arakkonam	09442105169	tn04-ndrf@nic.in
03	Ajithkumar.B	ACC, SDRF	9447587544	ajithswim@gmail.com
04	S.Surejndran IPS	AIG Coastal Security	09497996910	ssurendransp@gmail.com
05	HIthesh Yadav	Indian Airforce	9495711512	aviator.south@nic.in
06	Manik Molla	Indian Airforce	8089350827	manikmolla3290@gmail.com
07	K.S Padmakumariyamma	Asst. Commissioner Land Revenue	8547610002	
08	N.Raja	Asst. Commandant Indian coast guard	09629534544	natarajan.raja01278@gmail.com
09	Col.Abraham M.V	Army Pangod	9447101034	meetunni2749@yahoo.co.uk
10	Dr.Binoy S Babu	DHS Office Health	9947063911	drbinoysbabu@gmail.com
11	P.M Raj	CPI Indian Airforce	9037370793	pmravn@gmail.com
12	Suwilkumar.W.S	VU21T, HAM	9447755333	suwil@keralaenergy.gov.in
13	Amalraj.M	Assint. Professor, ILDM	9847984527	souparnikaillam@gmail.com
14	Alexander.P	VUTPAG,HAM	9447461195	Vu2pag@gmail.com
15	Priyan Sagar	VU3VTF, HAM	9037393245	Vu3vtf@gmail.com
16	Anilkumar.V	VU2EEI, HAM	9995030586	veeanil@yahoo.com
17	Saji.K.George	VU3SQG, HAM	9895926358	Vu3sqg@gmail.com

ANNEXURES

Annexure 1 - Lessons Learnt & Feedback

Districts/Dept.	Difficulties faced	Learning From Mock Drill	Suggestions for improvement
Thiruvananthapuram	A) Lack of communication systems, Emergency rescue vehicles. B) Lack of Crisis management team in fire & Rescue department	(1) How to conduct search & rescue when multiple forces come in a disaster event. (2) Importance of incident command system	1.Public/Community should have a role in in any mock drill, 2.Proper announcement should be done at regular intervals, 3. Only 3 depts participated in DDMA meeting, 4.First aid team should be kept near to the incident
Kollam	It took 35 min to reach the site,because of heavy traffic in the route	The DDMA acted very well to tackle the critical situation	At the time of disaster steps have to be taken to reduce traffic blocks, so that rescue operations can be made easily accessible and fruitful
Alappuzha	During the mockdrill there is a time lag in receiving instruction from SEOC ie, the team reached the spot at 1 pm and the evacuation could be started only at 2.20 pm	a) Quite able to build self confidence in meeting a disaster situation, b) The mockdrill held was highly successful,the feed back information from the field level unit reveals that all the Govt.machinery of the District ,works together very well in managing the crisis.if the Co-Ordination and operation of the various departments and agencies like this happended in the real situation also,it is easy to manage any crisis in this Districts	a) This type of mockdrill is to be conducted at least once in a year so that all departments will be acquainted with all activities to be done in a disaster situation, b) Distribution of Food packets from the helicopter may be done more conveniently in small packets c) Time lag between alert and evacuation is to be reduced so as to get the effect of actual situation.The Helicopter which dropped food packets also caused much dissatisfaction among the crowd.The Crowd expected the Helicopter to remain at spot for some more time.
Ernakulam	1) Sufficient Ambulance service was not available 2) Communication Facility was disturbed in the initial time	1) All line Dept. could evaluated plans,policies and procedures and clarified their roles & Responsibilities in the pre,post during and post phases of disaster. 2) The exercise facilitated to	All the Gov. departments attached with disaster management were actively participated in the exercise.this mockdrill was a perfect platform for the SWOT

	3) Couldnt prioritized the Community vulnerable groups	augment the knowledge ,skills and enthusiasm to participate in emergencies. 3) 3.NGO s /Local community groups may be involved in the exercises 4) Regularized the Natural calamity exercises.Assess plan coverage for a specific risk area. 5) Organize awareness campaign in the shelters after evacuation	analysis of the disaster preparedness in the districts.Most of the departments were timely responded to the warning issued.Navy,Coast Guard ,coastal Police has played a vital in the drill.However ,some resource gap have noticed during the exercise and which were addressed in the assessment meeting also.on base of the assessment,the DDMA is looking forward to enhance the capacity of the departments/NGO,s/Local task forces for tackling the emergency situations in future.
Thrissur	Nil	Communication and related informations are well handed by Ham radio operators and PRD Departments	Facilities provided in the shelteres were not satisfactory (Drinking water availability and sitting facility)These type basic facilities have to be improved.
Malappuram	45 min taken to reach the site. But information gathered from the agricultural officer ,who was in site from 1 pm onwards	The agencies involved in the Disaster management system acted very well to tackle the critical situation .The incident Commander gave timely information and took wise decisions, information was communicated through loud speakers, to evacuate all from site,and also the times of the task	1) The supporting agencies involving in the mockdrill was not completely aware that who is the onsite incident commander. Hence the name ,phone number and designation of the onsite incident commander is to be passed to the team leaders sufficiently early. 2) The police personnel of coastal police station require more people to co-ordinate rescue operations. 3) Youthclubs, Youngsters, Volunteer groups could be engaged in this drill through DDMA.
Kozhikode	To make the public aware about the intention of the drill was very difficult. But the real difficulty faced was in removing the spectators	Mockdrill turned out to be a success.	
Kannur	Nil	Self experience in reacting the such an urgent situation, Awareness to public and inhabitance	Warning alert should be more precise, Helpful to the public to manage disaster situation

Kasargod	Closing of railway gate in pallam caused delay while evacuating.	Prepared the concerned staff and the public to face any disaster occurred in future	Sufficient number of staffs as well as equipments to be provided to police, fire force etc. Dinji of fire and rescue force is in damaged condition. P.A system also was not functional. Overall the drill was a great success.
KSDMA	1.No Alternate Fax, Computer and Printer Available. 2. Need of a Digital Clock in the Control Room 3. Only one Broadband Connection, which was very slow.	1) Proper Training Should give to all control room staffs and DM section staffs on all aspects including handling of email and equipment. 2) Ensure staffs in Control room having Good Computer Awareness. 3) Layout of the control room should be changed urgently aiding maximum communication between officials and facilitating easy movements. 4. Controll room Should be equipped fully adhering to handbook on emergency operations	1.Unfamiliarity of using communication equipments of staffs. 2.Lack of training 3. Less utilization of VHF Equipments 4.poor responses from the DEOC 5.No field level information communicated to SEOC
SEOC	Slight confusion was there on Tsunami hitting the coast time. Connectivity issues were faced by email team.	Advance planning has helped in executiong, Task was very clear with each one (Role clarity), Information was passed on to the districts & DEOCs of all the districts without much delay. Area affected map was created and sent to all the districts. Inter-departemental coordination was seen in the operations including central forces. Private players offered help voluntarily (eg. In Kollam Pvt ambulances were used for victims)	Switching roles to achieve the target was not seen. Email communication was delayed due to some technical issues. Some control rooms had issues of connectivity. The Tsunami mock drill warning messages could have been floated through social media & SDMA websites. Request for written letter by Airforce delayed the operations for a while.
NDRF	Appreciated the SEOC team for the well planned operations and timely action. Even if the drill was first of its kind, the role played by each team member is praiseworthy. District Disaster Management Plans were available in each district unlike other states and well defined Emergency Support Funtions Plan was also available in the state. People, communities should be educated along with the drill. Sharing real time experiences will also help in such situations. The state has achieved the inter-departmental coordination very well. Post disaster planning shall also be part of the mock drill, this will help the stakeholders assess the preparedness level after any disaster.		

Annexure 2 | Bulletins issued by INCOIS

ITEWC INCOIS TEST Notification (EqInfo) for 8.8 TEST Earthquake at Off Coast of Pakistan

Tsunami Mock Drill 2016

tsunami@incois.gov.in

to ITEWC_INTERNAL, ITEWC_NTWC_COM, chandra, dssstandby.dell, patanjali.ch, seismicinfo.in, tsunami.incois

TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST

TEST NOTIFICATION MESSAGE 1
INDIAN TSUNAMI EARLY WARNING CENTER (ITEWC)
ISSUED AT: 1236 IST Friday 11 March 2016

TO: NATIONAL NTWC BULLETIN RECIPIENTS
FROM: ITEWC

*** THIS IS A TSUNAMI MOCK DRILL OF THE INDIAN TSUNAMI EARLY WARNING SYSTEM ***
*** THIS IS NOT A REAL TSUNAMI EVENT ***

NOTIFICATION:
ITEWC INCOIS HAS JUST ISSUED TEST BULLETIN 1 (PRELIMINARY EARTHQUAKE INFORMATION)
FOR THE INDIA, BASED ON THE FOLLOWING TEST EARTHQUAKE EVENT:

MAGNITUDE: 8.8 M
DEPTH: 10 km
DATE: 11 Mar 2016
ORIGIN TIME: 1230 IST
LATITUDE: 24.8 N
LONGITUDE: 62.2 E
LOCATION: Off Coast of Pakistan

TO VIEW THE TEST BULLETIN GO TO ITEWC INCOIS WEBSITE AT:
www.incois.gov.in/incois/tsunami/COMM_ntwlogin.jsp

NTWC IS A SERVICE OF ITEWC, INCOIS FOR PROVIDING TSUNAMI ADVISORIES FOR INDIA.

GENERAL PUBLIC INFORMATION FOR THIS TEST EVENT IS AVAILABLE FROM:



INDIAN TSUNAMI EARLY WARNING CENTER (ITEWC)
INDIAN NATIONAL CENTRE FOR OCEAN INFORMATION SERVICES (INCOIS)
ADDRESS: "OCEAN VALLEY", PRAGATHI NAGAR (BO), NIZAMPET (SO),
HYDERABAD - 500 090, INDIA.
PHONE: 91-40-23895011
FAX: 91-40-23895012
EMAIL: TSUNAMI@INCOIS.GOV.IN
WEB: WWW.INCOIS.GOV.IN

YOU ARE RECEIVING THIS "TEST NOTIFICATION MESSAGE" VIA DSS_1_0 (MANUAL (INTERACTIVE))
CONFIGURED TO SEND MAIL FROM tsunami@incois.gov.in

END OF TEST NOTIFICATION MESSAGE

TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST

2 Attachments

from: tsunami@incois.gov.in
to: ITEWC_INTERNAL@incois.gov.in, ITEWC_NTWC_COM@incois.gov.in, chandra@incois.gov.in, dssstandby.dell@gmail.com, patanjali.ch@gmail.com, seismicinfo.incois@gmail.com, tsunami.incois@gmail.com, tsunami@incois.gov.in
date: Fri, Mar 11, 2016 at 12:36 PM
subject: ITEWC INCOIS TEST Notification (EqInfo) for 8.8 TEST Earthquake at Off Coast of Pakistan
mailed-by: incois.gov.in
encryption: [incois.gov.in did not encrypt this message Learn more](#)

tsunami@incois.gov.in
 to ITEWC_INTERNAL, ITEWC_NTWC_COM., chandra, dssstandby.dell, patanjali.ch, seismicinfo.in., tsunami.incois

TEST TEST TEST TEST TEST TEST TEST TEST

TEST NOTIFICATION MESSAGE 2
 INDIAN TSUNAMI EARLY WARNING CENTER (ITEWC)
 ISSUED AT: 1240 IST Friday 11 March 2016

TO: NATIONAL NTWC BULLETIN RECIPIENTS
 FROM: ITEWC

NOTIFICATION:
 ITEWC INCOIS HAS JUST ISSUED TEST BULLETIN 2 (TSUNAMI INFORMATION)
 FOR THE INDIA, BASED ON THE FOLLOWING TEST EARTHQUAKE EVENT:

*** THIS IS A TSUNAMI MOCK DRILL OF THE INDIAN TSUNAMI EARLY WARNING SYSTEM ***
 *** THIS IS NOT A REAL TSUNAMI EVENT ***

MAGNITUDE: 9.0 M
 DEPTH: 10 km
 DATE: 11 Mar 2016
 ORIGIN TIME: 1230 IST
 LATITUDE: 24.8 N
 LONGITUDE: 62.2 E
 LOCATION: Off Coast of Pakistan

TO VIEW THE TEST BULLETIN GO TO ITEWC INCOIS WEBSITE AT:
www.incois.gov.in/incois/tsunami/COMMIT_ntwc/login.jsp

NTWC IS A SERVICE OF ITEWC, INCOIS FOR PROVIDING TSUNAMI ADVISORIES FOR INDIA.

GENERAL PUBLIC INFORMATION FOR THIS TEST EVENT IS AVAILABLE FROM:
 INDIAN TSUNAMI EARLY WARNING CENTER (ITEWC)
 INDIAN TSUNAMI EARLY WARNING CENTER (ITEWC)
 INDIAN TSUNAMI EARLY WARNING CENTER (ITEWC)
 ADDRESS:"OCEAN VALLEY", PRAGATHI NAGAR (BO), NIZAMPET (SO),
 HYDERABAD - 500 090, INDIA.
 PHONE: 91-40-23895011
 FAX: 91-40-23895012
 EMAIL: TSUNAMI@INCOIS.GOV.IN
 WEB: WWW.INCOIS.GOV.IN

YOU ARE RECEIVING THIS "TEST NOTIFICATION MESSAGE" VIA DSS_1_0 (AUTOMATIC (S_PRIMARY_NEW))
 CONFIGURED TO SEND MAIL FROM tsunami@incois.gov.in

END OF TEST NOTIFICATION MESSAGE

TEST TEST TEST TEST TEST TEST TEST TEST

from: **tsunami@incois.gov.in**
 to: ITEWC_INTERNAL@incois.gov.in,
 ITEWC_NTWC_COMMT@incois.gov.in,
 chandra@incois.gov.in,
 dssstandby.dell@gmail.com,
 patanjali.ch@gmail.com,
 seismicinfo.incois@gmail.com,
 tsunami.incois@gmail.com,
 tsunami@incois.gov.in
 date: Fri, Mar 11, 2016 at 12:40 PM
 subject: ITEWC INCOIS TEST Notification (TsunamiInfo) for 9.0 TEST Earthquake at Off Coast of Pakistan
 mailed-by: incois.gov.in
 encryption: [incois.gov.in did not encrypt this message Learn more](#)



tsunami@incois.gov.in
 to ITEWC_INTERNAL, ITEWC_NTWC_COM., chandra, dssstandby.dell, patanjali.ch, seismicinfo.in., tsunami.incois

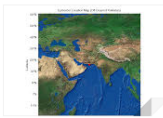
TEST TEST TEST TEST TEST TEST TEST TEST

TEST NOTIFICATION MESSAGE 3
 INDIAN TSUNAMI EARLY WARNING CENTER (ITEWC)
 ISSUED AT: 1300 IST Friday 11 March 2016

TO: NATIONAL NTWC BULLETIN RECIPIENTS
 FROM: ITEWC

NOTIFICATION:
 ITEWC INCOIS HAS JUST ISSUED TEST BULLETIN 3 (TSUNAMI INFORMATION)

from: **tsunami@incois.gov.in**
 to: ITEWC_INTERNAL@incois.gov.in,
 ITEWC_NTWC_COMMT@incois.gov.in,
 chandra@incois.gov.in,
 dssstandby.dell@gmail.com,
 patanjali.ch@gmail.com,
 seismicinfo.incois@gmail.com,
 tsunami.incois@gmail.com,
 tsunami@incois.gov.in
 date: Fri, Mar 11, 2016 at 1:00 PM
 subject: ITEWC INCOIS TEST Notification (TsunamiInfo) for 9.0 TEST Earthquake at Off Coast of Pakistan
 mailed-by: incois.gov.in
 encryption: [incois.gov.in did not encrypt this message Learn more](#)



tsunami@incois.gov.in
 to ITEWC_INTERNAL, ITEWC_NTWC_COM., chandra, dssstandby.dell, patanjali.ch, seismicinfo.in., tsunami.incois

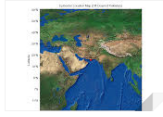
TEST TEST TEST TEST TEST TEST TEST TEST

TEST NOTIFICATION MESSAGE 4
 INDIAN TSUNAMI EARLY WARNING CENTER (ITEWC)
 ISSUED AT: 1345 IST Friday 11 March 2016

TO: NATIONAL NTWC BULLETIN RECIPIENTS
 FROM: ITEWC

NOTIFICATION:
 ITEWC INCOIS HAS JUST ISSUED TEST BULLETIN 4 (TSUNAMI INFORMATION)

from: **tsunami@incois.gov.in**
 to: ITEWC_INTERNAL@incois.gov.in,
 ITEWC_NTWC_COMMT@incois.gov.in,
 chandra@incois.gov.in,
 dssstandby.dell@gmail.com,
 patanjali.ch@gmail.com,
 seismicinfo.incois@gmail.com,
 tsunami.incois@gmail.com,
 tsunami@incois.gov.in
 date: Fri, Mar 11, 2016 at 1:45 PM
 subject: ITEWC INCOIS TEST Notification (TsunamiInfo) for 9.0 TEST Earthquake at Off Coast of Pakistan
 mailed-by: incois.gov.in
 encryption: [incois.gov.in did not encrypt this message Learn more](#)



tsunami@incois.gov.in
 to ITEWC_INTERNAL, ITEWC_NTWC_COM., chandra, dssstandby.dell, patanjali.ch, seismicinfo.in., tsunami.incois

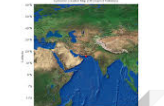
TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST

TEST NOTIFICATION MESSAGE 5
 INDIAN TSUNAMI EARLY WARNING CENTER (ITEWC)
 ISSUED AT: 1445 IST Friday 11 March 2016

TO: NATIONAL NTWC BULLETIN RECIPIENTS
 FROM: ITEWC

NOTIFICATION:
 ITEWC INCOIS HAS JUST ISSUED TEST BULLETIN 5 (TSUNAMI INFORMATION)

from: **tsunami@incois.gov.in**
 to: ITEWC_INTERNAL@incois.gov.in, ITEWC_NTWC_COMMT@incois.gov.in, chandra@incois.gov.in, dssstandby.dell@gmail.com, patanjali.ch@gmail.com, seismicinfo.incois@gmail.com, tsunami.incois@gmail.com, tsunami@incois.gov.in
 date: Fri, Mar 11, 2016 at 2:45 PM
 subject: ITEWC INCOIS TEST Notification (TsunamiInfo) for 9.0 TEST Earthquake at Off Coast of Pakistan
 mailed-by: incois.gov.in
 encryption: incois.gov.in did not encrypt this message [Learn more](#)



tsunami@incois.gov.in
 to ITEWC_INTERNAL, ITEWC_NTWC_COM., chandra, dssstandby.dell, patanjali.ch, seismicinfo.in., tsunami.incois


TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST

TEST NOTIFICATION MESSAGE 6
 INDIAN TSUNAMI EARLY WARNING CENTER (ITEWC)
 ISSUED AT: 1545 IST Friday 11 March 2016

TO: NATIONAL NTWC BULLETIN RECIPIENTS
 FROM: ITEWC

NOTIFICATION:
 ITEWC INCOIS HAS JUST ISSUED TEST BULLETIN 6 (TSUNAMI INFORMATION)

from: **tsunami@incois.gov.in**
 to: ITEWC_INTERNAL@incois.gov.in, ITEWC_NTWC_COMMT@incois.gov.in, chandra@incois.gov.in, dssstandby.dell@gmail.com, patanjali.ch@gmail.com, seismicinfo.incois@gmail.com, tsunami.incois@gmail.com, tsunami@incois.gov.in
 date: Fri, Mar 11, 2016 at 3:45 PM
 subject: ITEWC INCOIS TEST Notification (TsunamiInfo) for 9.0 TEST Earthquake at Off Coast of Pakistan
 mailed-by: incois.gov.in
 encryption: incois.gov.in did not encrypt this message [Learn more](#)



tsunami@incois.gov.in
 to ITEWC_INTERNAL, ITEWC_NTWC_COM., chandra, dssstandby.dell, patanjali.ch, seismicinfo.in., tsunami.incois

TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST

TEST NOTIFICATION MESSAGE 7
 INDIAN TSUNAMI EARLY WARNING CENTER (ITEWC)
 ISSUED AT: 1648 IST Friday 11 March 2016

TO: NATIONAL NTWC BULLETIN RECIPIENTS
 FROM: ITEWC

NOTIFICATION:
 ITEWC INCOIS HAS JUST ISSUED TEST BULLETIN 7 (TSUNAMI INFORMATION)

from: **tsunami@incois.gov.in**
 to: ITEWC_INTERNAL@incois.gov.in, ITEWC_NTWC_COMMT@incois.gov.in, chandra@incois.gov.in, dssstandby.dell@gmail.com, patanjali.ch@gmail.com, seismicinfo.incois@gmail.com, tsunami.incois@gmail.com, tsunami@incois.gov.in
 date: Fri, Mar 11, 2016 at 4:48 PM
 subject: ITEWC INCOIS TEST Notification (TsunamiInfo) for 9.0 TEST Earthquake at Off Coast of Pakistan
 mailed-by: incois.gov.in
 encryption: incois.gov.in did not encrypt this message [Learn more](#)



Annexure – 3 | Reports from Operations Desk

A) Report from Information Desk (Telephonic Communication)

Team:-

1. Mr Rajeev.T.R, Hazard Analyst, SEOC
2. Mrs Anjali Parameswaran, Hazard Analyst, SEOC
3. Mrs Sruthi Ravindran, Hazard Analyst, SEOC

Steps taken in response to the message from INCOIS

The above mentioned team members of information desk were assigned to disseminate the information through telephone. A total of five landline connections from BSNL were provided for the task. The mock drill commenced at 12.30 pm with the startup message from INCOIS.

Message-1 Email of preliminary earthquake of magnitude 9.04 in the off coast of Pakistan

On receiving the message of preliminary earthquake of magnitude 9.04 in the off coast of Pakistan, Mr. Pradeep G S, Hazard Analyst, State emergency Operations Centre (SEOC) validated the message from INCOIS. Upon validation, Dr Sekhar L. Kuriakose, informed about the event to Chief Secretary to the Government, who is the State Incident Commander (SIC). SIC deputed Dr Sekhar L Kuriakose, as the Responsible Officer and directed him to take necessary actions. Accordingly, the Head, SEOC instructed the team to pass the message to all District Collectors (DCs) of nine coastal districts (Thiruvananthapuram, Kollam, Alappuzha, Ernakulam, Thrissur, Malappuram, Kozhikode, Kannur, Kasaragod) and the Heads of the Departments including state forces (Health, Fire & Rescue, Coastal Police, Local Police, State Response Force (SDRF)).

The District Collectors *inter alia* Chairperson of DDMA of all nine coastal districts were requested to convene DDMA meeting and to follow the Standard Operating Procedures (SOP) and Emergency Support Functions (ESF) plan included in the handbook of Disaster Management. The task took 18-20 minutes to complete the first stage of information dissemination.

Message-2 Potential Tsunami threat

As per the direction from the Head, SEOC, we informed all the state forces and line departments that one of the representatives (not below the grade of a Grade 1 Officer) from their department should reach the SEOC within 30 minutes for further operations.

Subsequently, Mrs Parvathy S (Technical Expert, SEOC) and Mr. Pradeep G S, (Hazard Analyst, SEOC) gave the information of wave characteristics, expected hitting time of Tsunami waves along the Indian Coast, vulnerable area and vulnerable population of all 9 nine coastal districts, which was also communicated to the nine District Emergency Operations Centre (DEOCs), State Control Room, Heads of all the departments including State forces.

Besides, state level departments, namely, Revenue, Coastal Police, Local police, Fire & Rescue Services, SDRF and Health Department were directed to send their team to the coast for undertaking the ESFs assigned to the respective departments.

Furthermore, all the Central Forces (Army, Navy, Airforce, Coast Guard, Indo-Tibetan Border Police) were informed the scenario that they are to be in heads-up position. We started the second round of telephonic communication at 1.05 pm and the duration of the information dissemination was about 20-25 minutes.

Message-3 Confirmation of Tsunami threat from INCOIS

Based on the information from INCOIS it has been decided to scale the event to L3, the same was intimated to respective District Collectors. The team informed that one of the representatives of the NDRF & Army, Coast Guard shall report to SEOC and Indo-Tibetan Border Police (ITBP) and Navy to Alappuzha Collectorate and Ernakulam Collectorate respectively. They were requested to respond and conduct reconnaissance search and rescue. They were requested to report back to this office every 30 minutes.

Moreover, two teams of NDRF were requested to be pressed into service, one in Thiruvananthapuram and the other in Alappuzha. Contact numbers were also given to the force.

Furthermore, Navy force were requested to send sufficient boats to the open seas in Cochin and to maintain these along until the Tsunami waves retreat for conducting off the coast search and rescue. Airforce was requested to provide necessary air assets for monitoring the status of preparedness and further conduct of air dropping of relief materials in Alappuzha Coast. Site information with latitude (9°29'38.96'' N) and longitude (76°19'11.06''E) was also given to them. The third round of information dissemination started at 1.32 pm. It took almost **15 minutes** to inform concerned departments.

Message 4 Confirmation of Tsunami threat from INCOIS

The team requested all the nine districts and heads of the departments to take measures as given in the Standard Operating Procedures (SOP) for Tsunami in the handbook on the disaster management as appropriate for alert status. The task started by almost **2.14 pm** and it took **10-15 minutes** to disseminate the information.

Message 5 Confirmation of Tsunami threat from INCOIS

On receiving the 5th message at **2.38 pm**, the team informed all the stakeholders that INCOIS has issued the warning status and gave direction to follow SOPs and take necessary actions. We completed the 5th round of communication within 12-15 minutes.

We informed Alappuzha DEOC (**at 4.15 pm**) to take necessary precautions during the air dropping of relief materials in Alappuzha coast which was expected to occur at 4.46pm

Message 6 Threat pass message from INCOIS

As soon as we got the Threat pass message from INCOIS at **4.50 pm**, we passed the information to all DEOCs and line departments and requested them to debrief the mock drill before dispersing.

Response of stakeholders during the mock drill

Response from DEOCs, State Control Room, and Coast Guard were quite appreciable. They timely updated their status of the mock drill. Districts namely Thiruvananthapuram, and Alappuzha not only reported to SEOC but also to the State Control room. There was an effective to and fro communications between SEOC and Central and State forces especially SDRF on the status of the mock drill. Evacuation details collected from the DEOCs are depicted below.

Evacuation details from the 9 nine coastal districts

Sl.No	District	Evacuation details	Medical Assistance	Reported time
1	Thiruvananthapuram	300 persons to Kananthura LPS		2.50 pm
2	Kollam	127 persons including 62 children		
3	Alappuzha	1250 persons	16 persons in General Hospital	3.16 pm
4	Ernakulam	500 persons	9 persons	3.12pm
5	Thrissur	21 persons		
6	Malappuram	30 families		3.05 pm
7	Kozhikode	500 persons to Parappil HSS		2.35 pm
8	Kannur	43 persons (35 males, 2 females, 6 children) to MTM school		2.55pm
9	Kasaragod	150 families		2.50 pm

Bottlenecks identified

1. There was a communication gap within the information desk (emails team and telephone handled team)
2. Five land line phones were simultaneously active in most of the times which delayed in responding the incoming calls
3. VHF and HAM radio teams were very cooperative. But the found difficulties in communicating with them timely as the telephone desk was engaged in responding to the return calls from DEOCs and various line departments
4. Shifting of control room in Kasaragod Collectorate to taluk office was not informed to SEOC

B) Report from Information Desk (Geo Informatics)

Team:-

1. Ms Parvathy S, Technical Expert, SEOC
2. Mr Pradeep G.S, Hazard Analyst, SEOC

12:35 :- Earthquake of magnitude 9 occurred at Makran, off coast of Pakistan at 12:30 PM – First Test Bulletin & Email alert were issued by INCOIS.

12:40 :- 2nd Bulletin was issued with Tsunami Alert for Indian coast including Kerala.

12:41 :- logged in to the INCOIS site using password and user id provided by the INCOIS.

12:43 :- The 2nd Bulletin issued by INCOIS provided the details of maximum wave amplitude that can hit the Kerala coast, which was 2.7m. Using geo-informatics techniques (Arc GIS), the team clipped out the contour with 3m elevation from Digital Elevation Model, considering 3m as the maximum probable height up to which the wave can affect. Then it was overlaid by 3m elevation layer upon the village layer and clipped out the areas which comes under 3m elevation. Further, the vulnerable population which will be affected in each village of the 9 coastal districts using the Census data, 2011 was calculated.

12:50 :- Transferred the first set of data in excel format with information regarding vulnerable population and vulnerable area to Information desk (email).

13:00 :- 3rd Bulletin was issued by INCOIS.

13:05 :- 2nd set of data in excel format was also handed over to the information desk (email). The details were also handed over to the Information desk (communication). Also submitted the printed copy regarding the maximum area affected and maximum population affected in 9 coastal districts to the Incident Commander.

13:44:- 4th Bulletin was issued by INCOIS

13:56 :- Maps were generated using geo-informatics tools showing the vulnerable area in Kerala State which can be affected by the Tsunami and worst case scenario of Kannur district.

14:44:- 5th Bulletin was issued by INCOIS.

15:44:- 6th Bulletin was issued by INCOIS- Last bulletin issued by INCOIS.

C) Report from Information Desk (Email Communication)

Team:-

1. Ms Anupama N, Hazard Analyst, SEOC
2. Ms Aswathi P, Hazard Analyst, SEOC

Email alert was given to the District Collectors and the stakeholders.

- At 12:30 pm, a Tsunami Mock Drill start up message was sent from Indian Tsunami Early Warning Centre (ITEWC) INCOIS. At 12:32 pm State Disaster Management Control Room intimated their readiness towards the eventuality. At 12:36 pm ITEWC INCOIS has issued Test Bulletin 1 (primary earthquake information). At 12:40 pm the warning validated by SEOC was sent to the District Collectors and the stake holders. Action taken report was sent from NDRF at 12:53 pm, State Disaster Management Control Room at 1:27 pm, Army at 12:38 pm and District Emergency Operation Cell (DEOC), Kasargod at 1:38 pm. From Kasargod DEOC, they also intimated about their Control Room shifted to Taluk Office and about the action being taken to evacuate affected people to safe places. Remaining Departments have not responded for the message.
- At 12:50 pm, the second message indicating the wave height in meter, total area affected in square kilometer and total vulnerable population of 9 coastal districts were sent to respective DEOCs separately. The details were as follows:

District	Affected Area(Sqkm)	Population	Wave Height(M)
Thiruvananthapuram	27 sqkm	37,204	2.5m
Kollam	38 sqkm	1,22,752	2.1m
Alappuzha	35 sqkm	61,403	2.5m
Ernakulam	54 sqkm	1,64,105	2.7m
Thrissur	25 sqkm	42,893	2.7m
Malappuram	31 sqkm	1,41,205	2.7m
Kozhikode	47 sqkm	2,50,086	2.5m
Kannur	75 sqkm	2,40,213	2.6m
Kasargod	22 sqkm	54,278	2.7m

Detailed Village wise expected population to be hit and area expected to be affected was given by Mr.Pradeep GS and Mrs.Parvathy S which was attached in the email. A copy of this message was also sent to State level responding departments. At 1:53 pm, State Disaster Management Control Room communicated all messages to 9 Coastal District Collectors, RDOs and Tahsildars. At 1:42 pm, Kasargod DEOC reported that Medical team, Police and Fire force rushed to the spot & about medical facilities arranged in Taluk hospital and other 2 private hospitals.

- At 01:40 pm, the third message on the services of line departments such as ITBP, Army, NDRF, Navy, Coast Guard and Airforce were requested to respond and conduct reconnaissance, search and rescue crisis due to possible Tsunami on Kerala Coast. A copy of the message was also sent to 9 District Collectors and also other Stakeholders. Except Navy, NDRF responded at 1:48 pm, SDRF responded at 2:12pm, State Disaster Management Control Room reported at 2:00 pm intimating that DEOC Kollam convened a meeting at IRE, Chavara at 1:10 pm and not by DEOC Alappuzha, at 2:41 pm Army Coln moved to Shanghumugham beach for the needful. At 2:36 pm Thiruvananthapuram DEOC

reported that Taluk Control Room have activated and evacuated public to higher ground outside 250 m to coast line.

- At 02:13 pm, the fourth message on alert was sent to 9 District Collectors and the stake holders and was asked to follow the Standard Operating Procedures (SOPs) for Tsunami in the handbook on Disaster Management. NDRF responded at 2:15 pm, State Disaster Management Control Room reported at 2:23 pm by intimating the message – “erroneously conveyed that tsunami will be erupted and corrected it as actually it was an earth quake warning. Tsunami will be hitting as the result of earth quake with 9.01 richter scale depth 10 kms origin time 12.30 IMT Latitude 24.8 Longitude 62.28E. coast of Pakistan”. At 2:39 pm Kasargod DEOC reported that 150 families evacuated to rescue camp. Direction given to fishermen not to go sea for fishing. Accommodation facilities arranged to the NDRF team at Govt. College, Kasaragod. Nodal officer is also appointed for NDRF team. Two persons injured and they have been taken to Taluk Hospital. At 4:42 pm, DEOC Kozhikode reported that 18 people were evacuated to the hospital and 500 people were shifted to the shelters and also provided food and other facilities. At 4:46 pm DEOC Alappuzha reported that - Hand of a Fireman badly injured, KSRTC cooperated well two buses provided 750 people shifted to recreation ground, 500 people were being rehabilitated. At 4:48 pm DEOC Thrissur reported 66 people being shifted to relief camps, 21 people were shifted to Taluk hospitals.
- At 02:25 pm, the fifth message on warning was sent to 9 District Collectors and the stake holders and was asked to follow the Standard Operating Procedures (SOPs) for Tsunami in the handbook on Disaster Management. Accordingly, the Coastal Districts evacuated people to the rescue camps. All the Central forces have responded for this message.
- Finally, at 4:45 pm the sixth message on threat was passed to 9 District Collectors and the stake holders and was also asked to conduct the briefing before dispersing.

ANNEXURE – 4 | PHOTO DOCUMENTATION



Tsunami Drill at Alappuzha District



Community Awareness & Demonstration during Tsunami Mock Drill





Tsunami Drill at Ernakulam District

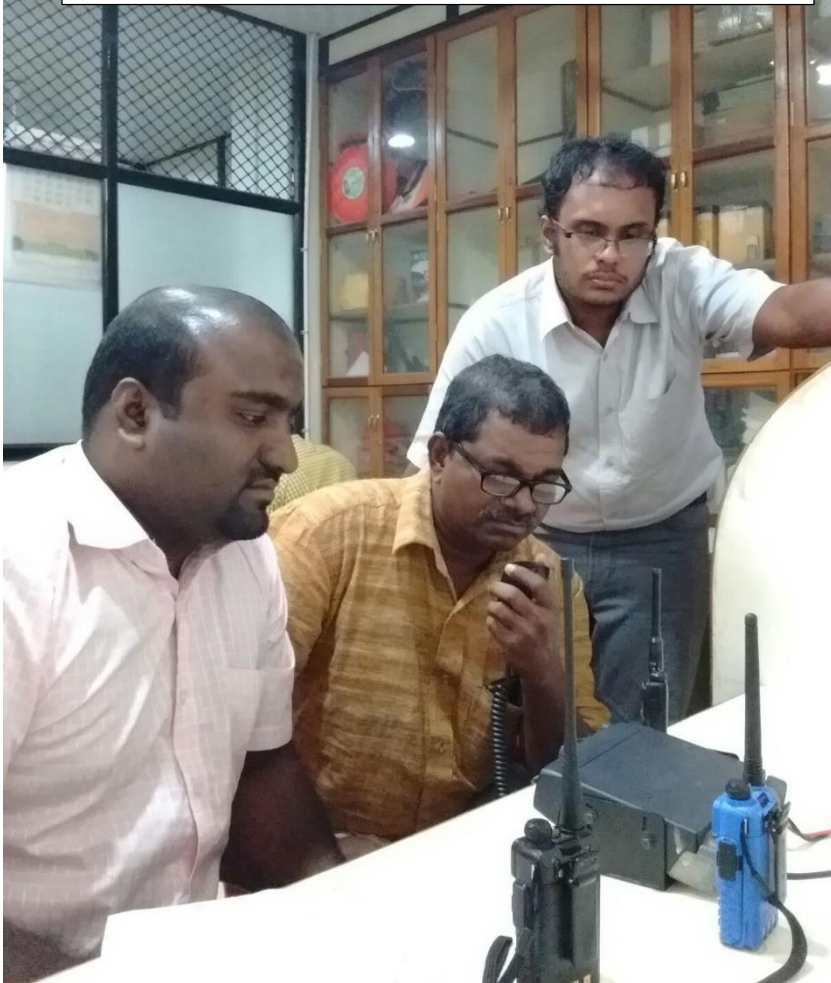


Operations at SEOC





Telecommunication systems used across the State during the mock drill.



Under directions from the State Disaster Management Authority, the district administration is conducting a mock tsunami drill on the Karithura Beach near Neendakara from 12.30 p.m. to 6.30 p.m. on Friday. The mock drill is to assess the preparedness of the district in case of being hit by a tsunami. The district had suffered major loss of life and property in the 2004 tsunami.

District Collector A. Shainamol called upon people living in Karithura to cooperate with the mock drill.

The drill will be held under the supervision of the Collector and City Police Commissioner P. Prakash. Fire and Rescue Service, police, revenue and health departments and the KSEB will join the drill. The Collector has informed that all arrangements have been made for the successful conduct of the drill.

The drill will commence with the disaster management personnel alerting fishermen at sea of a tsunami threat.

The Marine Enforcement Wing and the Coastal Police will then be alerted. The police will then direct the residents to move to safer areas towards the east. Police vehicles will then rush to the area to take part in the evacuation. The fire force and the district medical team will be put on alert.

The Collector and the Police Commissioner will be supervising the operation from the guest house of the Indian Rare Earths. The KSEB will snap power supply to the area during the drill period.



Summary: Eleven years after tsunami waves wreaked havoc on the Kerala coast, the state witnessed a mock drill on the rescue operations for the catastrophe. All coastal districts in the state participated in the exercise and the mock drill in capital was conducted on the Shankumgumham beach. A meeting headed by Jawahar Janardh assessed the rescue operations and submitted a report to the district administration. Based on the message from SEOC, the District Disaster Management Authority headed by District Collector Biju Prabhakar launched safety measures on a war footing. As the alert was on, people in 2.5 m height area in a 25 m radius was evacuated.

Eleven years after tsunami waves wreaked havoc on the Kerala coast, the state witnessed a mock drill on the rescue operations for the catastrophe.

MOCK DRILL FOR TSUNAMI ALERT TURNS A DRILL WITHOUT THRILL



Police and Fire and Rescue Services personnel evacuating residents from Kasaba beach as part of a mock drill for tsunami alert in Kasargod on Friday | EXPRESS

Express News Service

Kasargod: The scenario: An earthquake measuring nine on the Richter scale struck off the coast of Pakistan at 12.30 pm, triggering a tsunami alert in Kasargod. Between 3.30 pm and 6.30 pm, monstrous tides would hit the Kasargod shores.

At 12.45 pm, a patrol jeep of Kasargod police reached the densely populated Kasaba beach. Using a public address system, an officer asked the fisherfolk to move 250 m away from the beach. Young boys came out of the Gully Guys Club, a thatched hut, and were amused.

Men playing cards in another shack looked up, acknowledged the cops, and played their hand. Masons renovating a temple went on with their work.

They knew it was a mock drill. Fire and Rescue Services personnel, who reached the beach soon after, said they did not have a protocol to follow, and were waiting for instructions. Coastal

THE SCRIPT AND THE SCENARIO

An earthquake measuring nine on the Richter scale struck off the coast of Pakistan at 12.30 pm, triggering a tsunami alert in Kasargod. Between 3.30 pm and 6.30 pm, monstrous tides would hit the Kasargod shores.

...BUT, THEY KNEW IT WAS A MOCK DRILL

Young boys came out of the Gully Guys Club, a thatched hut, and were amused. Men playing cards in another shack looked up, acknowledged the cops, and played their hand. Masons renovating a temple went on with their work.

THE MACHINERY KICKS IN, THOUGH

As soon as the 'tsunami alert' came in, an emergency meeting of the District Disaster Management Authority was called at the chamber of collector E. Devasadan. The authority ordered the evacuation of 1,000 persons from 150 families on Kasaba beach.

150 families on Kasaba beach. Collector declared holiday for educational institutions. Control rooms were set up on Kasaba beach and Kasargod taluk. The district police chief, A. Srinivas, ordered restriction on traffic towards and from the beach to avoid jams. They were implemented on the ground.

Fishermen who went out to the sea were called back. Sub-collector took over the operations at the taluk office. The authority also roped in the amateur radio club and a ham radio station was set up at the collectorate.

The Health Department too rushed in with ambulances and medical aid to the Kasaba beach.

"The inter-department coordination was impeccable. There was no delay in the arrival of ambulances and rescue services," said inspector Kumar after the drill. Officials from Revenue, Police, Health, Fire and Rescue Services, and Fisheries were part of the mock drill, he said.

കടലോരത്ത് രക്ഷാപ്രവർത്തനവുമായി സുനാമി മോക്ഡ്രിൽ

കോഴിക്കോട്: ബീച്ചിൽ മുഖവാദി ഭാഗത്ത് നന്നരയോടെയാണ് സുനാമി മുന്നറിയിപ്പ് ഉയർന്നത്. കെട്ടുപാതി കോക്കത്താലിൽ പലരും പല വഴിക്ക് ചിതറി. അപ്പോഴേക്കും അഗ്നിശമനസേനയും, ആംബുലൻസും സമരഭരണക്ക് കൃതിച്ചെത്തി. പാക്കറ്റുകൾക്കിടയിൽ നിന്ന് കുട്ടികൾ ഉൾപ്പെടെയുള്ളവരെയാണ് ആംബുലൻസിലെത്തിച്ചു. കുപ്പി തിരഞ്ഞെടു വിടുക ഉൾപ്പെടെ സുരക്ഷിത ഇടങ്ങളിലേക്ക് മാറ്റി. അതിനിടെ കടലിൽ ആളുകൾ അകപ്പെട്ടിട്ടുണ്ടെന്നായി. രക്ഷാപ്രവർത്തകർ എത്തിച്ചേർന്നു ഉയർന്നു നിൽക്കുന്നതിനോടൊപ്പം ആകാശത്തു നിന്നു അമ്പലക്കുഴി.

അതിനിടെ കൂടിനന്നരയിൽ നിന്ന് ആരോ പറഞ്ഞു, 'പൊതുജന സമ്പർക്ക വകുപ്പിന്റേതല്ല. വിഭാഗം നേതാക്കൾക്ക് അറിയിപ്പ് ലഭിച്ചതിനെത്തുടർന്ന് കേരളത്തിലെ സുനാമി മോക്ഡ്രിൽ നടത്തിയത്. ആശയവിന്മയ സംവിധാനമെന്ന നിലയിൽ ഹാട്രോഡിയോ ഉപയോഗിച്ചാണ് എക്സോപന നടത്തിയത്. മോക്ഡ്രിൽ നേതാക്കളെ നന്നര അറിയിപ്പ് നൽകിയതിനാൽ പലർക്കും പൊലീസും ഫയർഫോഴ്സും ആംബുലൻസും മെല്ലെ എത്തിയപ്പോൾ രക്ഷാജോയിന്റ് എന്ന് അറിയിപ്പും മറ്റും സന്ദർശനത്തിന് എത്തിയവർ ആയും അമ്പലക്കുഴി തന്നെ ചെയ്തു. സുനാമി ഉണ്ടാവുന്ന പക്ഷം പോലീസ്, അഗ്നിശമന സേന, തീരദേശ പോലീസ്, ആരോഗ്യ വകുപ്പ്, റവന്യൂ വകുപ്പ്, വിവര-



സൗത്ത് ബീച്ചിൽ നടന്ന സുനാമി മോക്ഡ്രിൽ

പൊതുജന സമ്പർക്ക വകുപ്പിന്റേതല്ല. വിഭാഗം നേതാക്കൾക്ക് അറിയിപ്പ് ലഭിച്ചതിനെത്തുടർന്ന് കേരളത്തിലെ സുനാമി മോക്ഡ്രിൽ നടത്തിയത്. തിരുവനന്തപുരത്തെ സ്പെറ്റ് എമർജൻസി ഓപ്പറേഷൻ സെന്ററിൽ നിന്നുള്ള അറിയിപ്പ് ലഭിച്ചതിനെത്തുടർന്ന് കേരളത്തിലെ സുനാമി മോക്ഡ്രിൽ നടത്തിയത്. തിരുവനന്തപുരത്തെ സ്പെറ്റ് എമർജൻസി ഓപ്പറേഷൻ സെന്ററിൽ നിന്നുള്ള അറിയിപ്പ് ലഭിച്ചതിനെത്തുടർന്ന് കേരളത്തിലെ സുനാമി മോക്ഡ്രിൽ നടത്തിയത്. തിരുവനന്തപുരത്തെ സ്പെറ്റ് എമർജൻസി ഓപ്പറേഷൻ സെന്ററിൽ നിന്നുള്ള അറിയിപ്പ് ലഭിച്ചതിനെത്തുടർന്ന് കേരളത്തിലെ സുനാമി മോക്ഡ്രിൽ നടത്തിയത്.

തിരുവനന്തപുരത്തെ സ്പെറ്റ് എമർജൻസി ഓപ്പറേഷൻ സെന്ററിൽ നിന്നുള്ള അറിയിപ്പ് ലഭിച്ചതിനെത്തുടർന്ന് കേരളത്തിലെ സുനാമി മോക്ഡ്രിൽ നടത്തിയത്. തിരുവനന്തപുരത്തെ സ്പെറ്റ് എമർജൻസി ഓപ്പറേഷൻ സെന്ററിൽ നിന്നുള്ള അറിയിപ്പ് ലഭിച്ചതിനെത്തുടർന്ന് കേരളത്തിലെ സുനാമി മോക്ഡ്രിൽ നടത്തിയത്. തിരുവനന്തപുരത്തെ സ്പെറ്റ് എമർജൻസി ഓപ്പറേഷൻ സെന്ററിൽ നിന്നുള്ള അറിയിപ്പ് ലഭിച്ചതിനെത്തുടർന്ന് കേരളത്തിലെ സുനാമി മോക്ഡ്രിൽ നടത്തിയത്.

മോക് ഡ്രില്ലെങ്കിലും അതിവേഗം, കിറുകൃത്യം നടപടികൾ

ആലപ്പുഴ • പാലക്കാട് നിലവിലുള്ള കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദ്രതടങ്ങളിലെ സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്. കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്. കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.



ആലപ്പുഴയിൽ നടത്തിയ സമുദായ മോക് ഡ്രില്ലിന്റെ ഭാഗമായി 'ഡ്രൈവ് ഡൗൺ' പരിപാടിയിലാണ് ഇവർ.

സമയം 12.58
 മരിച്ചവരുടെ സർവ്വീസ് നൽകുന്നതിനായി സമുദായം തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്. കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.

ഉച്ചയ്ക്ക് 12.30
 സമുദായ മേൽനോട്ടം നൽകുന്നതിനായി സമുദായം തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.

സമയം 12.33
 മരിച്ചവരുടെ സർവ്വീസ് നൽകുന്നതിനായി സമുദായം തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.

സമയം 1.45
 മരിച്ചവരുടെ സർവ്വീസ് നൽകുന്നതിനായി സമുദായം തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.

സമയം 2.26
 മരിച്ചവരുടെ സർവ്വീസ് നൽകുന്നതിനായി സമുദായം തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.

സമയം 2.39
 മരിച്ചവരുടെ സർവ്വീസ് നൽകുന്നതിനായി സമുദായം തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.

സമയം 2.54
 മരിച്ചവരുടെ സർവ്വീസ് നൽകുന്നതിനായി സമുദായം തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.

സമയം 4.00
 മരിച്ചവരുടെ സർവ്വീസ് നൽകുന്നതിനായി സമുദായം തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.

സമയം 4.54
 മരിച്ചവരുടെ സർവ്വീസ് നൽകുന്നതിനായി സമുദായം തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.



മോക് ഡ്രില്ലിന്റെ ഭാഗമായി പാലക്കാട് സമുദായം തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.



പാലക്കാട് തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.

വേടി, അമ്പലമുക്ക്, കൂതുകുറുപ്പി
 മരിച്ചവരുടെ സർവ്വീസ് നൽകുന്നതിനായി സമുദായം തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.

വിതരണം ചെയ്ത ഭക്ഷണ കിറ്റ് ഉപയോഗശൂന്യമായി

ആലപ്പുഴ • മോക് ഡ്രില്ലിന്റെ ഭാഗമായി പാലക്കാട് സമുദായം തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.

കണ്ടുപിടിക്കാൻ വിദ്യാർത്ഥികളും

ആലപ്പുഴ • സമുദായ മേൽനോട്ടം നൽകുന്നതിനായി സമുദായം തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.



മോക് ഡ്രില്ലിന്റെ ഭാഗമായി പാലക്കാട് സമുദായം തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.

സമയം 12.30
 സമുദായ മേൽനോട്ടം നൽകുന്നതിനായി സമുദായം തീരത്തു നിന്ന് വേർപെട്ട് കടലിടിമുഴക്കം മൂലം മരണപ്പെടാനുള്ള സാധ്യതയുള്ള സമുദായങ്ങൾക്ക് അതിവേഗം നടപടികൾ സ്വീകരിക്കേണ്ടതുണ്ട്.

Tsunami Mock Drill Turns Fort Kochi Beach into a 'Disaster Zone'



Coast Guard officials 'rescuing' stranded people on Fort Kochi Beach as part of Tsunami Mock Drill | RATHISHI SUNDARAN

Express News Service
Kochi: The Tsunami Mock Drill conducted by the State Emergency Operations Centre and the District Disaster Management Authority on Fort Kochi beach on Friday, in association with various government agencies and disaster response units, was a true assessment of the preparedness of the disaster relief mechanism in the district.
 The mock drill commenced with alert of a 9-magnitude tsunami tremor that 'originated' in Pakistan at 12.30 pm.
 As soon as the Disaster Management Authority issued the warning, a meeting of deputied officers of the Navy, Coast Guard,
 Coastal Police, Healthcare Department, Fire and Rescue Services Department and various government agencies was convened at the office of Sub-collector S Suhaz.
 On being warned that the Tsunami would hit the Fort Kochi beach by 3.00 pm, the Coastal Police started 'evacuating' people from the beach.
 The police, meanwhile, made way for the rescue teams to reach the 'disaster site' on the beach without hassle, by imposing one-way traffic on selected outward routes. The Navy deputied helicopters and crafts for the rescue operation.
 By 3 pm, in a joint operation, the agencies started evacuating the 'tsunami-af-
 fected' public to temporary shelters, including the seven casualties reported 15 minutes later.
 As directed by the control rooms at the Sub-collector's office and in Thiruvananthapuram, Fire and Rescue teams and ambulances arrived.
 The injured were shifted to a nearby hospital, where they were provided medical aid. A team from INS Dronacharya also joined the rescue operations.
 "The mock drill was a test to gauge our preparedness 12 years after a massive Tsunami hit the Kerala coast. We are satisfied that we could commence the rescue operation without any delay," said Captain Varghese Mathew who led the mock drill.

The calm sea & the beach at
Shangumugham, Thiruvananthapuram,
Kerala after evacuating the public on the
occasion of **Tsunami Mock Drill** on
11th March 2016



“We cannot stop disasters from happening, but we can dramatically reduce their impact, if the right disaster risk reduction measures are taken in advance” – Ban Ki Moon.