



सत्यमेव जयते

NATIONAL DISASTER MANAGEMENT GUIDELINES

ACTION POINTS FOR IMPLEMENTATION BY STATES/ UTs



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INTRODUCTION

NDMA has been mandated to prepare national guidelines on the basis of which national and state plans are to be prepared. NDMA has so far released 24 National Guidelines covering different disasters and some cross-cutting themes. A nine-step process has been followed that includes review of the present status and assessment of critical gaps. This has been done by taking on board the nodal agencies, ministries/ departments of GoI and State Governments/ UTs, academic, scientific and technical institutions and NGOs and obtaining feedback from public representatives.

The Action Points of the guidelines have been summarized at the end of the Chapters/Guidelines as separate chapter along with the name/s of the agency responsible for their implementation.

However, an agency-wise list of Action Points has been prepared. This will help both implementing agencies and NDMA to review their implementation. We have put together the Action Points for implementation by States/ UTs in respect of some of the guidelines to facilitate easy follow up and compliance. It may be noted that, while some Action Points are to be implemented only by the States/ UTs/ State level agencies, there are some action points for which there are other agencies also responsible for implementation (along with the States).

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MANAGEMENT OF EARTHQUAKES

S.No.	Issues	Details of Action Point	Reference Section & page no.	Other Participating Agencies	Timeline as per Guidelines
1.	General	The India Disaster Resource Network (IDRN) database of resource inventories in the districts will be strengthened by the states through regular updating. States will also integrate this database with their DM plans.	Section 1.9.1, pg.13	NIDM, NIC and District Administrations	With immediate effect from release of Guidelines (April 2007)
2.	General	The state governments/SDMAs will set up State Earthquake Management Committees (SEMCs) and designate a nodal officer responsible for seismic safety. The SEMCs will consist of specialists with field experience in earthquake management, as well as representatives of the various stakeholders. These committees will assist the SDMAs in preparing their DM plans and in developing appropriate implementation and monitoring mechanisms.	Section 1.10.2, pg.13	SDMA	With immediate effect from release of Guidelines (April 2007)
3.	General	State governments will prepare DM plans , which will have specific components on earthquake management, based on these Guidelines . These plans will cover all aspects of the entire DM cycle, be reviewed and updated at periodic intervals and	Section 2.2.1, pg.14	SDMA/DDMA/Line Departments	One Year and 8 Months (April 2007-December 2008)

S.No.	Issues	Details of Action Point	Reference Section & page no.	Other Participating Agencies	Timeline as per Guidelines
		implemented through appropriate, well coordinated and time bound actions as laid down in these Guidelines.			
4.	General	Nodal agencies at the central and state levels will encourage all stakeholders to set up appropriate institutional mechanisms to ensure that the national earthquake safety agenda is not only implemented but also closely monitored vis-à-vis specific targets. Such nodal agencies will identify appropriate agencies and institutions to develop standardized training modules, to prepare public awareness resource materials and to monitor the implementation of the DM plans based on these Guidelines.	Section 2.2.2, pg.14	SDMA, Directorate of Technical Education, State Council of Vocational Training, PWD, Engineering and Architecture Colleges	With immediate effect from release of Guidelines (April 2007)
5.	Earthquake Resistant Design and Construction of New Structures	State governments will facilitate the implementation and enforcement of relevant standards for seismically safe design and construction of buildings, bridges, flyovers, ports and harbours, and other lifeline and commercially important structures falling within their administrative control.	Section 3.3.1, pg.17	Department of Urban Development, PWD	One & half Years (June 2007-December 2008)
6.		Faculty members in engineering colleges, architecture colleges, Industrial Training Institutes (ITIs) and polytechnics will also be provided adequate exposure to earthquake-resistant design and construction techniques, so that students are made aware of earthquake-resistant design and	Section 3.2.2, pg.17	SDMA, Directorate of Technical Education, State Council of Vocational Training, PWD, Engineering and Architecture Colleges	One & half Years (June 2007-December 2008)

S.No.	Issues	Details of Action Point	Reference Section & page no.	Other Participating Agencies	Timeline as per Guidelines
		construction.			
7.		The designs of all new buildings and structures specified in the model bye-laws will be scrutinized by the competent authorities through a general compliance review and mandatory technical audit process by qualified professionals as recommended in the model techno-legal regime developed by an expert group set up by the Ministry of Home Affairs (MHA), GoI. This review process will be carried out using a checklist of all computational and non-computational verifications, before issuing building approvals. A detailed peer review or third party audit of the design and construction of major construction works will be undertaken by qualified accredited agencies for ensuring compliance with the techno-legal regime.	Section 3.4.1, pg.17	Hazard Safety Cell, PWD,SDMA, DDMA's, Department of Urban Development/Municipal Administration, Urban Local Bodies,	With immediate effect from release of Guidelines (April 2007)
8.	Seismic Strengthening and Retrofitting of Lifeline and Priority Structures	State governments will draw up phased programmes for seismic strengthening and retrofitting of selected existing structures duly prioritized and implement them through ULBs and PRIs. Like all new construction, any structural modification of existing buildings will also require compliance with seismic safety regulations.	Section 4.2.1, pg.19	Line Departments, Department of Urban Development, Panchayati Raj, Department of Health & Family Welfare	One & half Years (June 2007-December 2008)
9.		State governments/SDMAs and professional bodies will organize knowledge sharing workshops to disseminate the methodology	Section 4. 4.1, pg.21	SDMA	To be continued with immediate effect from release of Guidelines

S.No.	Issues	Details of Action Point	Reference Section & page no.	Other Participating Agencies	Timeline as per Guidelines
		and important experiences of seismic strengthening and retrofitting of lifeline structures to the professional community.			(April 2007)
10.		State governments will carry out structural safety audit of all dams, bridges and flyovers , and undertake phased retrofitting of all weak structures. They will also support private agencies to develop their capacity to conduct seismic evaluation and strengthening of existing privately owned structures.	Section 4.4.1, pg.21	Department of Irrigation, PWD,	One & half Years (June 2007-December 2008)
11.		Insurance companies will be encouraged to introduce innovative insurance schemes in moderate and high earthquake risk zones in consultation with the ULBs and respective Disaster Management Authorities (DMAs)	Section 4.5.3, pg.22	Department of Urban Development/Municipal Administration, DDMA	With immediate effect from release of Guidelines (April 2007)
12.		State governments will mainstream DM efforts in their development plans. In the annual plans, specific allocations will be made for carrying out disaster preparedness efforts , as well as disaster mitigation measures including retrofitting of selected lifeline structures. Wherever necessary and feasible, the central ministries and departments and ULBs in the states may initiate discussions with corporate sector undertakings to support the retrofitting measures of selected lifeline structures as a part of PPP efforts and Corporate Social Responsibility (CSR) .	Section 4.6.1, pg.22	Department of Finance and Line Departments	With immediate effect from release of Guidelines (April 2007)

S.No.	Issues	Details of Action Point	Reference Section & page no.	Other Participating Agencies	Timeline as per Guidelines
13.	Regulation and Enforcement	State governments/SDMAs will, in consultation with their SEMCs and Hazard Safety Cells (HSCs), establish the necessary techno-legal and techno-financial mechanisms . This is to ensure that all stakeholders like builders, architects, engineers and government departments, responsible for regulation and enforcement adopt earthquake-safe construction practices and provide for seismic safety in all design and construction activities in such a way that acceptable safety benchmarks are satisfied.	Section 5.1.1, pg.24	Department of Urban Development, Department of Panchayati Raj, Department of Rural Development, Department of Finance, PWD, SEMC, HSC	With immediate effect from release of Guidelines (April 2007)
14.		All state governments/SDMAs will adopt the model techno-legal framework for ensuring compliance of earthquake-resistant design and construction practices in all new constructions. State governments will update the urban regulations by amending them to incorporate multi-hazard safety requirements. State governments will review, revise and update the town and country planning Acts, land use and zoning regulations, building bye-laws and DCRs, and this process will be repeated at least once every five years.	Section 5.2.1, pg.25	Department of Urban Development, Department of Panchayati Raj, SEMC	One & half Years (June 2007-December 2008)
15.		All professionals dealing with safety aspects	Section 5.3.1,	Directorate of	With immediate effect

S.No.	Issues	Details of Action Point	Reference Section & page no.	Other Participating Agencies	Timeline as per Guidelines
		of buildings and structures will be certified through a licensing process . Such certification requirements, in accordance with the criteria evolved by the model techno-legal regime, will be incorporated in the Development Control Regulations. Architects and engineers working with the GoI and state government organizations will also be subject to this licensing.	pg.25	Technical Education, Department of Urban Development, State Council of Vocational Training	from release of Guidelines (April 2007)
16.		All artisans involved in both public and private construction projects will be certified for their skills in ensuring seismic safety. State governments will follow a five year licensing cycle, wherein the certification is renewed every five years. State governments will also develop a scheme for setting up training centres for artisans in earthquake-prone areas . These training centres will demonstrate prototypes of earthquake-resistant construction, and will also assist the appropriate dissemination of materials for creating larger public awareness on earthquake resistant construction techniques.	Section 5.3.3, pg.26	State Council of Vocational Training, NGOs, Building Centres	With immediate effect from release of Guidelines (April 2007)
17.		A procedure will be developed by each state government/SDMA for undertaking third party audit or external compliance review by accredited agencies for ensuring	Section 5.4.3, pg.26	Department of Urban Development, PWD, HSC,	One & half Years (June 2007-December 2008)

S.No.	Issues	Details of Action Point	Reference Section & page no.	Other Participating Agencies	Timeline as per Guidelines
		the review of a structural safety audit. In particular, the external compliance review of lifeline buildings and infrastructure in earthquake-prone areas will be undertaken according to the recommendations of the expert group set up by the MHA, GoI.			
18.	Awareness and Preparedness	State governments and knowledge institutions will, in collaboration with professional bodies of engineers, architects and urban planners, initiate programmes to sensitize their members on the importance of undertaking earthquake-resistant design and construction practices.	Section 6.2.1, pg.29	SDMA, DDMA's, Department of Public Relation	One & half Years (June 2007-December 2008)
19.		State governments/SDMA's will, in collaboration with their SEMC's, HSC's and Non- Governmental Organisations (NGO's), organize awareness programmes for specific target groups of stakeholders on various aspects of earthquake management.	Section 6.2.2, pg.30	SDMA, DDMA's, Department of Public Relation, SEMC, HSC	With immediate effect from release of Guidelines (April 2007)
20.		All public health facilities will develop their own DM plans, with the scope for enhancing their surge capacity in the event of disaster. Training exercises and mock drills will be carried out regularly by doctors as well as paramedical staff. The medical preparedness plans will also include identification of trained trauma and psycho-social care teams, with nursing and paramedical staff. In high-risk earthquake-	Section 6.4.4, pg.31	Department of Health & Family Welfare	One & half Years (June 2007-December 2008)

S.No.	Issues	Details of Action Point	Reference Section & page no.	Other Participating Agencies	Timeline as per Guidelines
		prone areas, mobile hospitals and Quick Reaction Medical Teams (QRMTs) will be developed as a part of the health-care delivery system of the states, to manage patients with minor injuries at the incident site.			
21.	Capacity Development (Including Education, Training, R&D and Documentation)	State governments must endeavour to strengthen earthquake education by incorporating the best available technical and non-technical inputs on seismic safety in educational curricula.	Section 7.1.1, pg.33	Department of Education/Higher Education, Directorate of Technical Education,	One & half Years (June 2007-December 2008)
22.		State governments will encourage knowledge institutions to undertake research, teaching and training, which will further contribute to improving earthquake education in India.	Section 7.1.2, pg.33	Department of Education/Higher Education, Directorate of Technical Education	With immediate effect from release of Guidelines (April 2007)
23.		State governments/SDMAs will, in collaboration with their boards of intermediate education, ensure that the subject of disaster safety and disaster preparedness is introduced at the intermediate education level (Class XI and XII or, their equivalents), as well as at the degree level in the non-technical disciplines. Universities and autonomous institutes will introduce DM (which will include earthquake management) in various educational programmes.	Section 7.2.2, pg.33	Department of Higher Education	One & half Years (June 2007-December 2008)

S.No.	Issues	Details of Action Point	Reference Section & page no.	Other Participating Agencies	Timeline as per Guidelines
24.		Industrial Training Institutes (ITIs), polytechnics and universities in the states will develop adequate technical expertise on the various subjects related to DM. State governments will introduce a five year quality improvement programme for teachers and professionals engaged in teaching the subjects related to earthquakes (namely earth science, architecture and earthquake engineering)	Section 7.2.3, pg.34	State Council of Vocational Training, Directorate of Technical Education	With immediate effect from release of Guidelines (April 2007)
25.		State governments will proactively support application oriented research and development activities to address current challenges, offer solutions, and develop new techniques, for instance by undertaking base isolation of new hospital buildings with a view to improving their earthquake resistance.	Section 7.5.1, pg.35	Department of Science and Technology	With immediate effect from release of Guidelines (April 2007)
26.		State governments will make available earthquake safety related materials in multiple formats, so that different groups of stakeholders can gather the information relevant to them. State governments/SDMAs will set up websites and portals to disseminate all earthquake safety related information to stakeholders.	Section 7.6.1, pg.37	Department of Public Relation	With immediate effect from release of Guidelines (April 2007)
27.		Systems will be institutionalized by the Disaster Management Authorities, at various levels, for coordination between the various	Section 8.1.2, pg.38	SDMA, DDMAs, Department of Urban Development/Municip	With immediate effect from release of Guidelines (April

S.No.	Issues	Details of Action Point	Reference Section & page no.	Other Participating Agencies	Timeline as per Guidelines
		agencies like central government ministries and departments, state governments, district administration, ULBs, PRIs and other stakeholders for effective post-earthquake response.		al Administration, Panchayati Raj Institutions	2007)
28.	Response	On the ground, the NDRF battalions will assist the state government/ district authorities in training communities. They will be further assisted by the Civil Defence, Home Guards, fire services and NGOs. State governments will develop procedures for formally recognizing and certifying such trained search and rescue team members; they will also provide suitable indemnity to community level team members for their actions in the course of emergency response following an earthquake. Youth organizations such as the National Cadet Corps (NCC) and National Service Scheme (NSS) and Nehru Yuva Kendra Sangathan (NYKS) will provide support services to the response teams at the local level under the overall guidance and supervision of the local administration.	Section 8.2.2, pg.38	Civil Defence, NCC, NSS, NYKS, State Home Guards,	With immediate effect from release of Guidelines (April 2007)
29.		The fire services in the Urban Local Bodies (ULBs) of various states are being used as an emergency-cum-fire services force. The	Section 8.7.2, 8.7.3 & 8.7.3, pg.40	Department of Urban Development/Municipal Administration,	One & half Years (June 2007-December 2008)

S.No.	Issues	Details of Action Point	Reference Section & page no.	Other Participating Agencies	Timeline as per Guidelines
		<p>fire services will develop adequate capacity to respond to various disasters, in addition to managing fires. The police play a very important role after an earthquake in maintaining law and order, assisting in search and rescue, and in the transportation and certification of casualties. The Home Guards serve as an auxiliary arm of the police force and support the district administration in various tasks. The Civil Defence is being reoriented to assist in handling DM. Members of these organisations will be trained in tasks like search and rescue and evacuation, protection of assets in evacuated areas, and management of relief camps and aid distribution centres.</p>		<p>Urban Local Bodies, Home Guards, Civil Defence at State/UT level</p>	
30.		<p>Specialized heavy earthmoving equipment and search and rescue equipment are required immediately following an earthquake to clear debris and to carry out search and rescue of trapped people from collapsed structures. State governments will compile a list of such equipment and identify suppliers of such specialized equipment and enter into long-term agreements for their mobilisation and deployment in the event of an earthquake. The IDRN, which is a web based resource inventory of information on emergency</p>	<p>Section 8.9.1, pg.40</p>	<p>Department of Irrigation, NIC at District Administration, Department of Urban Development/Municipal Administration</p>	<p>One & half Years (June 2007-December 2008)</p>

S.No.	Issues	Details of Action Point	Reference Section & page no.	Other Participating Agencies	Timeline as per Guidelines
		equipment and response personnel available in every district, will be revised and updated frequently.			
31.		The setting up of relief camps for the people whose houses have been damaged by an earthquake and the provision of basic amenities in such camps involve complex logistics of mobilizing relief supplies, tents, water supply and sanitation systems, transport and communication systems, and medical supplies. The DM plans at the state and district levels will address this issue in detail.	Section 8.9.2, pg.40	Department of Disaster Management, SDMA, DDMA	One & half Years (June 2007-December 2008)
32.		The emergency medical plan will identify the requirement of enhanced manpower, medical stores and the requirement of blood and its components for various levels of earthquakes. After an earthquake, information centres will be set up to provide medical response information to the public, relatives of victims and media. The designated hospitals will also identify the surgical teams that can be deployed in the field at short notice and arrange for their transport, medical equipment and supplies. State governments will coordinate with the hospitals, both government and private, in order to facilitate effective and adequate hospital response after earthquakes.	Section 8.10.2, pg.41	Department of Health and Family Welfare	One & half Years (June 2007-December 2008)

MANAGEMENT OF CHEMICAL (INDUSTRIAL) DISASTERS

S.No.	Issues	Proposed Activities	Page No.	Para No.
1.	Preventive Measures	DM plans through an extensive consultative approach covering all stakeholders and in consultation with their district level plans. The SDMAs and DDMAAs, shall forge a mutually reciprocal relationship for the effective implementation of the national Guidelines on chemical disasters in a focused way. The relationship between the NDMA and state authority/SDMAs need to be interactive and complimentary.	62	7
2.		DM plan and keep the state authority/SDMA informed. The state departments/authorities concerned will implement and review the execution of the DM plans at the district and local levels along the above lines.	63	7.1.1
3.	Institutional Mechanisms and coordination at State and District Levels	The DM Act, 2005 envisages the constitution of SDMAs at the state level. The Chemical Disasters Management constituted as required under the CA(EPPR) Rules, 1996 notified under the Environment (Protection) Act, 1986, shall act as the advisory committee/subcommittee of the SDMA in the field of CDM.	64	7.1.3
4.		the DCGs and the LCGs shall function as the advisory committee/subcommittee of the district administration/DDMAs and local authorities respectively for the management of chemical disasters. The state shall also allocate and provide the necessary finances for efficient implementation of the plans.	64	7.1.3
5.		Since most activities of the NDMA Guidelines for chemical disaster management are community centric, requiring the association of professional experts for planning, implementation and monitoring, the SDMAs shall formulate suitable mechanisms for their active involvement with the various stakeholders.	64	7.1.3

S.No.	Issues	Proposed Activities	Page No.	Para No.
6.		the SDMAs need to designate officers in-charge of CDM safety matters. Recognising the enormity and criticality of CDM, the SDMAs are required to preferably identify and enlist officers with sole charge of matters related to chemical disaster risk management as a first step towards ensuring effective implementation of the CDM guidelines. It is essential that officers handling risk management aspects in the SDMAs need to have a reasonable term of office which is required in getting the best out of their experience and do justice to the office and responsibilities they are holding.	65	7.1.3
7.	District Level to Community Level Preparedness Plan and Appropriate Linkages with State Support Systems	state governments need to evolve mechanisms through mock drills, awareness programmes, training programmes etc., with a view to sensitise and prepare officers concerned for initiating prompt and effective response.	65	7.1.4
8.	Financial Resources for Implementation	The state governments will mainstream DM efforts in their development plans. In the annual plans, specific allocations will be made for carrying out disaster preparedness efforts as well as disaster mitigation measures.	65	7.2
9.		Wherever necessary and feasible, urban local bodies in the states may initiate discussions with the corporate sector undertakings to support the retrofitting measures of vulnerable storage sites and chemical industry buildings as a part of PPP and corporate social responsibility efforts.	65	7.2
10.	Implementation Model	<ul style="list-style-type: none"> i. The important issues for the formulation of the CDM Action Plan for the States / UTs are as follows: ii. Strengthening of institutional framework for CDM and its integration with the activities of the NDMA, state authority/SDMA, district administration/ DDMA and other stakeholders. 	66	7.3

S.No.	Issues	Proposed Activities	Page No.	Para No.
11.		<ul style="list-style-type: none"> <li data-bbox="716 253 1566 326">iii. Implementing a financial strategy for allocation of funds for different national and state/district-level mitigation projects <li data-bbox="716 326 1644 505">iv. Establishing an information networking system with appropriate linkages with state transport departments, state police departments and other emergency services. The states will ensure proper education and training of the personnel using information networking system. <li data-bbox="716 505 1566 615">v. Establish post-disaster documentation procedures, epidemiological surveys and minimum criteria for relief and rehabilitation. 	66	7.3

MEDICAL PREPAREDNESS & MASS CASUALTY MANAGEMENT

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
			Page	Para		
12.	Preparedness: Preventive Measures	Proper implementation of immunization programmes	33	4.2 (i)	MoHFW / DDMAAs	14/11/2012
13.		The Integrated Disease Surveillance Programme (IDSP) will be fully operationalised in all the districts shortly with the help of computer-aided information	33	4.2 (ii)	MoHFW	14/11/2012
14.		Develop disaster-specific models of the Early Warning System and ensure integration with the medical response plans of the districts	33	4.2 (iii)	DDMAAs	14/11/2012
15.		Defined reporting and simple feed-back mechanism of surveillance data in a standardized manner will be developed	33	4.2 (iv)	MoHFW	14/11/2010
16.		Dedicated communication systems within states and a standardized system of reporting from district to state and national level will be strengthened	33	4.2 (vi)	MoHFW / DDMAAs	14/11/2010
6.	Preparedness: Emergency Medical Response	Medical teams will be fully trained and equipped to handle all kinds of emergencies resulting from natural or man-made disasters	33	4.3.1	DDMAAs	14/11/2010

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
			Page	Para		
	(EMR)					
7.		Development of infrastructure including EOCs, GPS based control rooms and other networks, training of specialized responders and their interaction with MFRs, equipping them with the latest state of the art equipment	34	4.3.1(i)	DDMAs	14/11/2010
8.		SOPs for carrying out activities like triage, resuscitation and treatment at the incident site and preparedness/mitigation plans will be developed	34	4.3.1 (iii)	MoHFW / DDMAs	14/11/2010
9.		The standards for detection, decontamination and decorporation, BLS (Air way maintenance, ventilation support, control of hemorrhage, anti-shock treatment and preparation for transportation) will be laid down	34	4.3.1 (iv)	DDMAs	14/11/2010
10.		Emergency Medical Response plans will be integrated with the public health system of the district under the single unified command and control of the CMO	34	4.3.1 (vi)	DDMAs	14/11/2010
11.		List of all resources and emergency risk medical inventory including drugs, equipment etc., will be prepared and made available online and integrated with the IDRN network	34	4.3.1 (viii)	MoHFW / DDMAs	14/11/2010
12.		Periodic mock drills for checking the response timings and reducing them to the base minimum	34	4.3.1 (x)	MoHFW	14/11/2010
13.	Transportation and Evacuation	District disaster management plan will have an evacuation plan with indentified routes, types of	34	4.3.2 (i)	MoHFW / DDMAs	14/11/2010

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
			Page	Para		
	of Casualties (EOC)	ambulances that are to be sued during different levels of disaster and a resource inventory of paramedics, doctors, QRMTs and drivers				
14.		There will be an Integrated Ambulance Network(IAN)	34	4.3.2 (ii)	MoHFW / DDMAAs	14/11/2010
15.		SOPs for regular maintenance of the ambulance and its medical equipment will be laid down	34	4.3.2 (iii)	DDMAAs	14/11/2010
16.		ESI ambulance network will be integrated into the District Disaster Management Plans	34	4.3.2 (xii)	State Govts / DDMAAs	14/11/2012
17.		Public awareness campaigns will be undertaken in regard to ambulance services of the city, helpline numbers and their appropriate usage during emergencies	34	4.3.2 (viii)	State Govt	14/11/2010
18.	Preparedness: Mobile Hospitals and Mobile Teams	Full-fledged containerized mobile hospitals will be acquired and attached with hospitals earmarked by centre/states/districts	35	4.3.3 (i)	MoHFW / DDMAAs	14/11/2010
19.		Mobile hospitals will be located at strategic locations earmarked by states/districts and will be attached to designated hospitals	35	4.3.3 (ii)	DDMAAs	14/11/2010
20.		The stocking of emergency medical stores will be done by the state governments 'Bricks' of medical stocks	35	4.3.3 (iv)	DDMAAs	14/11/2010
21.	Preparedness:	All hospitals will be connected with the Integrated Ambulance Network, QRMTs/MFRs and various	35	4.3.4 (i)	MoHFW / DDMAAs	14/11/2010

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
			Page	Para		
	Communication and Networking	emergency functionaries of ICS through a dedicated communication network.				
22.		All the communication systems within the medical set-up will be linked to the national communication network.	37	4.3.4 (viii)	MoHFW / DDMA s	14/11/2010
23.	Preparedness: Capacity Development	State/district authorities will ensure the availability of specialists in DM in accordance to disaster risks of the particular region	37	4.4 (i)	DDMA s	14/11/2010
24.		MFRs will be trained in triage and BLS ambulance services will be developed at all levels to evacuate casualties from the site of disaster	37	4.4 (ii)	MoHFW / DDMA s	14/11/2010
25.		Updating of medical stores will be done periodically on the basis of the risk analysis of the region	37	4.4 (v)	MoHFW / DDMA s	14/12/2012
26.		Necessary mechanism will be developed for emergency purchases of drugs and other medical equipment by the CMO	37	4.4 (vi)	MoHFW / DDMA s	14/11/2010
27.		Facilities for storage of dead bodies will be in place and the system for rapid identification and disposal as per religious norms will be strengthened	37	4.4 (vii)	MoHFW / DDMA s	14/11/2012
28.		Mechanism to store rare blood groups and prompt availability during disasters will be developed	37	4.4 (viii)	MoHFW	14/11/2010
29.		A resource directory will be prepared by various hospitals at centre state and district levels specific for disaster management	38	4.4 (ix)	MoHFW / DDMA s	14/11/2010

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
			Page	Para		
30.		The concept of crisis expansion of beds will be dovetailed into the existing medical system	38	4.4 (x)	MoHFW / DDMA's	14/11/2010
31.		Arrangement between various private hospitals and the government will be developed for treating casualties during disasters and cost sharing factors will be worked out in the pre-disaster phase	38	4.4 (xi)	MoHFW / DDMA's	14/11/2010
32.		Hospitals on national highways passing through disaster prone areas, will have specialized care facilities	38	4.4 (xii)	DDMA's	14/11/2010
33.		The infrastructure and facilities under the NRHM will be utilized for increasing community participation	38	4.4 (xiii)	MoHFW / DDMA's	14/11/2012
34.		The Civil Defence, home guards, Nehru Yuva Kendra (NYK) and community will be trained in first aid and will be able to provide public health services	38	4.4 (xiv)	DDMA's	14/11/2012
35.		Training of the fire and emergency services for management of CBRN disasters will be strengthened	38	4.4 (xv)	DDMA's	14/11/2012
36.		The medical and paramedical staff will be trained in management of mass casualty events including CBRN disasters	38	4.4 (xvi)	MoHFW / DDMA's	14/11/2012
37.		The concept of supply chain management with minimum standards for all essential items like food, water, drugs, fluids, blood etc., will be developed in collaboration with corporate sector	38	4.4 (xvii)	MoHFW / DDMA's	14/11/2012

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
			Page	Para		
38.		The assets available under the NRHM will be integrated with DM plans to make use of these resources during a crisis.	38	4.4 (xix)	MoHFW / DDMA's	14/11/2012
39.	Preparedness: Training and Education	Paramedics, nurses, emergency medical technicians, ambulance drivers, QRMTs, the National Disaster Response Force (NDRF) and MFRs will be trained in various aspects of disaster medicine starting from BLS to specialized care including CBRN medical management as a part of the medical preparedness plan	38	4.4.1 (i)	MoHFW / DDMA's	14/11/2012
40.		All medical professionals will be trained to perform Cardio Pulmonary Resuscitation (CPR)	38	4.4.1 (ii)	MoHFW	14/11/2012
41.		Selected hospital will develop training modules and standard clinical protocols for specialized care including CBRN management and will train other hospitals in these programmes.	39	4.4.1 (iii)	MoHFW	14/11/2012
42.		Condensed specialized courses for developing specialized human resources in DM will be held for medical officers	39	4.4.1 (iv)	MoHFW / DDMA's	14/11/2012
43.		DM related topics will be covered in the various CME programmes and workshops by educational institutions in the form of symposia, exhibition, demonstration, medical preparedness weeks. The VRC model being developed by ISRO may be adopted by all 241 multi-hazard district with appropriate modalities suitable to local	39	4.4.1 (v)	DDMA's	14/11/2012

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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		requirements in 21 states for imparting education and training to the community.				
44.		Disaster medicine related education will be given in different vernacular languages through simple exercise models in course curriculum and through awareness programmes	39	4.4.1 (vi)	DDMAs	14/11/2010
45.		Training modules for first responders will be made available in all regional languages	39	4.4.1 (viii)	State Govts.	14/11/2012
46.		First aid training will be given to all school students at appropriate levels	39	4.4.1 (ix)	State Education Boards, DDMAs	14/11/2010
	Preparedness: Community Preparedness	The community will be trained to deal the disasters during the pre-disaster phase. This will be done by identification of task forces constituted from different community groups like resident Welfare associations, vyaparmandals, PRIs, NGOs, local health care providers and others, for varied tasks of DM	39	4.5	DDMAs	14/11/2010
48.	Preparedness: Hospital Preparedness	Hospital planning will include both internal hospital planning and be a part of the regional plan for disasters and mass casualties. Hospital disaster planning will consider the possibility that a hospital might have to evacuate, quarantine or divert patients to other health care facilities.	40	4.6	MoHFW / DDMAs	14/11/2012
49.		Based on the risk assessment each hospital will develop the disaster plan specific for their hospital	40	4.6 (iv)	MoHFW / DDMAs	14/11/2012

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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50.		A hospital disaster management plan should plan for the increased requirements of beds, ambulances, medical officers, paramedics and mobile medical teams.	40	4.6 (v)	MoHFW / DDMAAs	14/11/2012
51.		New hospital buildings will be made disaster resistant. Structural safety of the existing tertiary and secondary health care facilities will be evaluated to withstand high intensity earthquakes and at least one government hospital in each district will be retrofitted, if found necessary.	40	4.6 (vi)	MoHFW / DDMAAs	14/11/2012
52.		The Biomedical Waste (Management and Handling) Rules 1998 (BMW (M&H) as amended will be enforced and all the biomedical waste generators will strictly comply with the rules at the hospital and incident site.	40	4.6 (vii)	DDMAAs	14/11/2010
53.	Preparedness: Trauma Centers	On the basis of need assessment analysis or trauma risk profile, the various district, zonal or apex traumacentres will be developed to strengthen the existing facilities within the hospitals.	41	4.7.1	MoHFW / DDMAAs	14/11/2012
54.		At the state level, there will be an Apex Trauma Centre (ATC) with independent departments of orthopaedics, surgery, neurosurgery, cardiac surgery, urology and replantation medicine etc., Out of the total bed strength which the state hospital has i.e approximately 600 beds, 100 beds will be designated specifically for trauma victims during disasters.	41	4.7.1	MoHFW	14/11/2012

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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55.		Zonal Trauma Centre: The zonal trauma centre will have 25 beds. It will provide resuscitation and stabilization.	41	4.7.1		14/11/2012
56.		The regional trauma centre will have a capacity of 10-15 beds with appropriate infrastructure and manpower in far flung areas with difficult terrains. The will also be evenly located along national highways. These will have linkages with the ATC or zonal trauma centres. The facilities and infrastructure will be at par with the zonal hospital.	41	4.7.1		14/11/2012
57.		The district hospital should have at least 10 beds for trauma patients. It will have at least one general surgeon, orthopaedic surgeon, anaesthetist and radiologist. Arrangements will be made for the availability of a neurosurgeon from the private sector, zonal hospital or ATC	41	4.7.1	DDMAs	14/11/2012
58.		SOPs including 30 minutes by pass protocol, pre-hospital major trauma protocol, training of paramedics and emergency medical technicians, nurses and doctors will be developed and integrated into the state disaster management plan	41	4.7.1	MoH& FW, DDMAs	14/11/2012
59		Trauma centres will cover all the accidents on highways, nearby rail tracks and natural and manmade disasters. States which are vulnerable to earthquakes of magnitude six and above on the Richter scale and other types of disasters will ensure the development of all these centres.	42	4.7.1	DDMAs	14/11/2012

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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60.	Preparedness:	All medical colleges will have a burn centre with at least 30 beds	42	4.7.2 (i)	MoH& FW	14/11/2012
61.	Burn Centres	All the tertiary care hospitals having 200 surgical beds and above will create 30 bed burn centres	42	4.7.2 (ii)	MoH& FW, DDMAAs	14/11/2012
62.		The total burn centres will be developed with 30 beds in the districts having more than 10 Major Accident Hazard (MAH) units	42	4.7.2 (iii)	MoH& FW, DDMAAs	14/11/2012
63.	Preparedness:	Based upon the need assessment analysis all major blood banks in the country will have a plan to raise the required number of 'units' through volunteer donation and mobilization from other blood banks of non affected areas for DM	42	4.7.3 (ii)	MoH& FW, DDMAAs	14/11/2012
	Blood Banks and their networking					
64.		The National Blood Bank transfusion services will be networked with regional, zonal, district, state and central facilities for blood collection, separation of components and storage.	42	4.7.3 (iv)	MoH& FW	14/11/2012
65.		All blood banks will maintain a resource inventory of rare blood groups. The service network will be prepared for a seven day backup system for tracking any MCF	42	4.7.3 (v)	MoH& FW, DDMAAs	14/11/2012
66.	Preparedness:	The existing laboratory facilities and their staff will be assessed and mapped	43	4.7.4 (i)	MoH& FW	14/11/2012
	Laboratory Network for Management of MCE					
67.		The laboratories at the hospitals and medical colleges will be upgraded in accordance with the requirement of the particular area.	43	4.7.4 (ii)	MoH& FW, DDMAAs	14/11/2012

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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68.		A network of bio-safety laboratories level-II and III will be established in the country	43	4.7.4 (iii)	MoHFW	14/11/2012
69.		The national laboratories including laboratory networks of ICMR, NICD, Council of Scientific and Industrial Research (CSIR), DRDO, Department of Science and Technology (DST), Department of Biotechnology (DBT) will be developed as the central decision making laboratories of the National Laboratory Network.	43	4.7.4 (iv)	MoHFW , ICMR, NCDC, All Medical Colleges, CSIR, DST, MoD / DRDO	14/11/2012
70.		The list of tests to be performed at each level of laboratories for priority diseases, determined by the local situation will be defined.	43	4.7.4 (vii)		14/11/2012
71.		The supplies for collection transport and storage of clinical samples will be ensured	44	4.7.4 (ix)		14/11/2012
72.		Laboratories for radio biodosimetry will be established at specified hospitals and research centres to assess the effect of radiation exposure to an individual	44	4.7.4 (xi-a)		14/11/2012
73.		Mobile laboratories will be developed for monitoring CBRN agents, State Government will also take the help of DRDO, BARC, NICD and PIC in establishment of these laboratories	44	4.7.4 (xi-b)	MoHFW, DAE, DRDO	14/11/2015

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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74.	Preparedness: Preservation and Identification of the Dead	At the district level, all hospitals including private hospitals will develop adequate mortuary facilities	44	4.9 (i)	DDMAs	14/11/2010
75		Each hospital will make plans to surge their temporary facility in a pre-identified zone	44	4.9 (ii)	DDMAs	14/11/2010
76.	Preparedness: Preservation and Identification of the Dead	Each state will define and develop a few laboratories which will be upgraded in a phased for forensic anthropology & DNA finger printing in a manner so that they can be of help in case of any major disaster.	45	4.9 (C)	MoH& FW, DDMAs	14/11/2012
77.		The system of appointment of medical examiner / coroner in the pre-disaster phase under whom all the mass casualty matters concerned thereof will be carried out	45	4.9 (Pg.45)	DDMA	14/11/2010
78		At the disaster site, the chemical and biological samples have to be collected after properly documenting the number, date, time and description into a logbook or database and after appropriately labeling the specimen container (e.g test tube, bag, etc.). SOP will be laid down for all these procedures	45	4.9 (Pg.45)	DDMA	14/11/2010

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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78		The type of samples to be collected include blood, soft tissue (deep red skeletal muscle, organ tissue, skin) and hard tissue (bones and teeth) for the use of DNA extraction or other identification procedures	45	4.9 (Pg.45)	DDMA	14/11/2010
80.		Definite and clear-cut procedures for issuing of death certificates, disposal of remains, return of personal effects and development of records keeping legal, cultural and operational concerns are already there, though the practical aspects of these procedures in MCE will be tested regularly.	45	4.9 (Pg.46)	DDMA	14/11/2010
81.		A few developed countries have Disaster Victim Identification Cells (DVICs), established at a few places which are prone to disasters. Such models, will be taken up as a pilot project and adopted if found suitable.	45	4.9 (Pg.46)	NDMA, DDMA	14/11/2010
82.		Psychosocial support and mental health services will be an integral component of general health and relief services. This will be imparted through simple techniques by personnel at the grass-root level.	46	4.10 (i)	MoH&FW, DDMA	14/11/2010
83.		Appropriate training in psychosocial support and mental health services will be given to the identified target groups such as primary health care workers, medical doctors, nurses, anganwadi workers, social workers, administrators, police, fire, local youth organizations, PRIs, resident welfare associations, school teachers, national	46	4.10 (ii)	MoH&FW, DDMA	14/11/2010

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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		cadet corps, community volunteers and local community organizations, students and staff of the departments, students and staff of the departments of social work, psychology.				
84.	Preparedness: Psycho-social & Mental Health Services	CLWs will be trained to help in the management of patients with psychosocial disorders	46	4.10 (iii)		14/11/2010
85.		Advance planning should take place at the state and district levels for provision of mental health services and psychosocial support	46	4.10 (iv)		14/11/2010
86.		Special care for vulnerable groups like women, children, elderly and disabled people will get due consideration while planning mental health services in disaster affected areas.	46	4.10 (v)		14/11/2010
87.		Research and Development (R & D)	Major hospitals and institutions will have an R & D unit at the back end to fulfil the gaps identified in the subject area	47	4.11 (i)	
88.	R & D will focus on testing different models and table top exercises at each level for quick response and decision making		47	4.11 (ii)		14/11/2012
89.	Development of PPE, diagnostic and treatment modalities for CBRN and upgrading of technology. Research activities involving development of CBRN sensors, detectors, specific CBRN biomarkers, biological dosimeters, genetic mapping, special equipment and drugs required for effective management of CBRN disasters will be encouraged		47	4.11 (iii)	Moh&FW – NIHFW, DDMAAs, MHA , NIDM	14/11/2012

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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90.		Model mitigation projects including specific CBRN ward development, mobile hospitals, mobile and fixed decontamination facilities, tele-medicine services and ambulances will be developed	47	4.11 (iv)	MoH& FW, ICMR, BCDC, MOD/ DRDO, All Medical Colleges, DST, DBT, Industry	14/11/2012
91.	Response, Rehabilitation & Recovery: Response	Medical Response plan will be based upon various disaster specific risk factors identified at various levels. The plans responders and service providers including the private sector; factors governing the identification of sites of ICR relief centres, medical units and hospital care,; and various coordination protocols. The medical response plan will be prepared by the CMO of the district as a part of the DDMP under the supervision of the district collector.	49	5.1	DDMA	14/11/2010
92.	Response, Rehabilitation & Recovery: Alert / Warning System	The medical response plan will have an adequate mechanism for proper planning, coordination with different responders / service providers, and operation and logistics management. In addition, a well-rehearsed alert/warning system will also be established.	49	5.1.1	MoH& FW , NIHFW, DDMA's, MHA / NIDM	14/11/2012
93	Pre-Hospital Care	A well established system of triage for classification of trauma patients will be practiced by the ORMTs.	50	5.1.3	MoH& FW, ICMR, Medical Colleges	14/11/2012
94.	Safe Translocation of the Population	Specific plans will be prepared for safe translocation of the population if the intensity of disaster needs complete evacuation.	50	5.1.4	DDMA's	14/11/2012

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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95.	Response, Rehabilitation & Recovery: Role of Specialised Forces (NDRF, SDRF)	For robust medical preparedness to deal with MCE every Bn will have 36 trained paramedics and 18 doctors equipped with state of the art medical and life saving devices.	51	5.1.5 (ii)	NDMA, NDRF, State Govts., SDRF	14/11/2012
96.	Response, Rehabilitation & Recovery: Hospital Care	Hospital care will be initiated by activation of the hospital DM plan on receipt of specific information about the occurrence of a disaster. The staff will be briefed about the expected number of casualties and advised to prepare the available medical-aid resources in an appropriate way before the arrival of the first casualty.	51	5.1.6	MoH& FW, DDMA's	14/11/2012
97	Response, Rehabilitation & Recovery: Integration of Print and Electronic Media	The role of the print and electronic media also needs to be integrated for (a) proper dissemination of information about the dead and injured; (b) Helping in development of an effective alert system; (c) Informing the community about various evacuation routes, public guidance, etc; (d) Dissemination of disaster related specific information to avoid unnecessary panic	51	5.1.7	DDMA's	14/11/2010
98	Aftermath of Disasters	The Medical Response Plan will include identification and disposal of the dead, containment of infection and psychosocial support.	52	5.1.8	MoHFW / DDMA's	14/11/2010

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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99	Minimum Standards for Food, Water, Shelter, Environmental Sanitation and Personal Hygiene	It is essential to lay down minimum standards for food, nutrition, water, sanitation, hygiene and shelter. The recommendations of sphere based upon the humanitarian character and the minimum standards in disaster response can be adopted with some modifications till the complete guidelines are issued by the National Authority	52	5.1.9	NDMA / MoHFW / DDMA's	14/11/2012
100	Community Participation	The community itself plays a vital role in the overall management of MCE usually as the first responder as it is the biggest human resource available in the aftermath. It is essential to make best use of this vast resource. Community based DM plans should be made at the local and district levels.	53	5.1.10	DDMA's	14/11/2010
101	Response, Rehabilitation & Recovery: Special Care to Vulnerable Groups	The database of the Vulnerable Groups will be made online and should be updated regularly. This database will be very useful for mobilizing resources and providing medical care to these groups.	54	5.1.11 (i)	MoHFW / DDMA's	14/11/2010
102		Provisions for providing special care will be made for children especially orphans. Special care will also be provided to pregnant women and those suffering with chronic disabilities or diseases like HIV/AIDS.	54	5.1.11 (ii)	DDMA's	14/11/2010
103		Relief and compensation will be ensured especially to families where the head of the family has	54	5.1.11 (iii)	DDMA's	14/11/2010

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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		perished in the disaster. The natural principle of equality will be the guiding factor in the distribution of relief.				
104		Special attention will be paid to the health care workers who provide psychosocial support and mental health services to disaster victims.	54	5.1.11 (iv)	DDMAs	14/11/2010
105	Mental Health Services and Psychosocial Support	The guidelines for mental health services and psychosocial support also need to be followed in the response and recovery phases after the disaster.	54	5.1.12	DDMAs	14/11/2010
106	Public – Private Partnership	The insurance sector will also be involved so that mutual trust between the various stakeholders can be developed. Suitable legislation, rules and regulations, or appropriate modifications in the existing regulations will be made to accommodate all the fair demands posed by victims of MCE.	55	5.2 (ii)	DDMAs	14/11/2010
107		Private health care providers and deemed medical universities will be used in the capacity building of the community with regard to disaster preparedness, first aid and Basic Trauma Life Support (BTLs) training through organized campaigns.	55	5.2 (iii)	MoH& FW, DDMAs	14/11/2012
108		NGO task forces will be developed at the district level to be used for different operations and functions during emergency medical response.	55	5.2 (iv)	MoH& FW, DDMAs	14/11/2010
109	Rehabilitation and Recovery	State district authorities will make adequate provisions of relief to affected people based on the	56	5.3 (i)	DDMAs	14/11/2010

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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		assessment of loss of life and damage to property.				
110		Mechanism for rehabilitation will be developed for disaster victims who are staying in temporary dwellings.	56	5.3 (ii)	DDMAs	14/11/2010
111		The DM plan will include medical rehabilitation as an important area, with special attention to- psychosocial care, special care for the disabled due to trauma, long term medical care for vulnerable groups and vocational rehabilitation.	56	5.3 (iii)	DDMAs	14/11/2010
112		Rehabilitation and recovery will also be part of the hospital DM plan.	56	5.3 (iv)	DDMAs	14/11/2010
113		Medical documentation will begin at the site. During triage the victims will be given an identification number.	56	5.4 (i)	DDMAs	14/11/2010
114		A concise report of the different casualties along with relevant documents will be sent to the relief management team of the district for taking necessary action. It will also include those who don't requirement hospitalization but are suffering from psychosocial trauma so as to ensure availability of relief for them.	56		DDMAs	14/11/2010
115		The DDMA will ensure proper documentation activity-wise, through the appointed agency during the period of response, rehabilitation and recovery.	56	5.4 (iii)	DDMAs	14/11/2010
116	Response, Rehabilitation & Recovery:	Vital information can be provided by the media, such as the names of injured and dead persons, requirement of blood especially the rate blood	57	5.5	DDMAs	14/11/2010

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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	Media Management	groups, mobilization of resources, dos and don'ts for public awareness. Etc.,				
117		The media plan will be worked out in coordination with different district, state and national authorities. There should be earmarked personnel at all levels who will interact with the media.	57	5.5 (i)	NDMA, MoHFW, DDMA's	14/11/2010
118		The medical authority will make use of the media in providing information about the patients. The medical officer so identified should be aware of the informational needs of the media.	57	5.5 (iii)	MoHFW, DDMA's	14/11/2010
119	Response, Rehabilitation & Recovery:	DDMA's will pool all the medical resources available in their jurisdiction including those of the armed forces, MoR, ESI hospitals and the public and private sectors with mutually agreed, predetermined arrangements for sharing costs, etc.	57	5.6	MoH& FW, Ministries of:- Defence, Railways, Labour& DDMA's	14/11/2010
120	Aspects of the District Disaster Management Plan (DDMP)	The plan will be community-centric and also define the active participation of the community in DM.	58	5.6 (ii)	DDMA's	14/11/2010
121		Vulnerability analysis of the areas followed by assessment of medical needs of the areas will be done to identify high, medium and low risk zones.	58	5.6 (iv)	DDMA's	14/11/2010
122		Resource inventory of all hospitals (government and private), which will define their stockpile and capacity to surge for DM	58	5.6 (v)	DDMA's	14/11/2010
123		Provisions for usage of aerial surveys for fast analysis of the situation on the ground will be	58	5.6 (vi)	DDMA's	14/11/2010

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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		made in the district DM plans.				
124		The mechanism for fulfillment of the assessed requirement in terms of manpower, equipment, vaccines, antidotes, ventilators, personal protective equipment, water filtration units, disaster-specific medicine bricks etc., will be worked out in development plans and the immediate requirement.	58	5.6 (viii)	DDMAs	14/11/2010
125		Infrastructural development, planning of integrated ambulance services, safe evacuation system, supply of safe food and water will be carried out under the overall supervision of the medial officer in the district.	58	5.6 (ix)	MoH& FW & DDMAs	14/11/2012
126		Specific protocols for rapid evacuation of victims from the incident site will be prepared.	58	5.6 (x)	DDMAs	14/11/2010
127		The linkages of medical systems to all other emergency functionaries earmarked hospitals who are required to be in direct contact with the district administration for two-way information dissemination.	58	5.6 (xiii)	DDMAs	14/11/2010
128		The SOPs for medical response mechanism using different simulation models of worst case scenarios of different types of disasters and their domino effects will be prepared	58	5.6 (xiv)	MoH& FW, NDMA, DDMAs	14/11/2012
129		The locations of relief camps, incident command posts, earmarked hospitals nursing homes, primary health care centres with their responsibilities and command control centre will be prepared in	58	5.6 (xv)	DDMAs	14/11/2012

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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		tabulated form for ready reference for decision making during MCE.				
130		Directory of all the medical officers, paramedics, nursing staff, ambulance drivers and medical inventory will be prepared for ready reference. This should be available in electronic mode and should supplement the information available on the IDR database.	59	5.6 (xviii)	DDMAs	14/11/2012
131		Additional beds and their equipment will be stocked in identified district hospitals in highly disaster prone districts. Indoor bed surge capacity should be strengthened by combining public and private medical sectors while planning in the pre-disaster phase.	59	5.6 (xxiv)	DDMAs	14/11/2012
132		On the lines of the NDRF, districts will create district disaster response teams and states will build SDRFs that will act as specialized responders during mass casualty emergencies.	59	5.6 (xxvi)	NDMA, DDMAs	14/11/2012
133		At the state level, buffer stocks of medicines and vaccines will be stockpiled on the basis of the vulnerabilities of all the districts in the state.	59	5.6 (xxvii)	DDMAs	14/11/2012
134	Response, Rehabilitation & Recovery: Aspects of the District Disaster Management	CBRN specific module, based on threat perception will earmark the underground shelters for collective protection. Comprehensive medical management to combat CBRN agents will be delivered by specific tertiary health care facilities fitted with CBRN filters and power backups with the provision to deal with enhanced requirement of	59	5.6 (xxiv)	NDMA, DDMAs	14/11/2012

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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	Plan (DDMP)	beds.				
135		Earthquake specific module will earmark the retrofitting of the major health care facilities, enhanced requirement for trauma care, injuries and measures to prevent the occurrence of epidemics due to loss of sanitation facilities'. The earthquake DM plan will cater to worst case scenarios where there are large numbers of casualties.	60	5.6 (xxx)	DDMAs	14/11/2012
136		Cyclone, tsunami and flood specific modules will earmark the health care facilities, roles of local medical professional, mechanism for prevention of prevailing zoonotic, water-borne diseases and epidemics in the area, community professionals trained in psychosocial care and medical support linkages with other districts.	60	5.6 (xxxii)	DDMAs	14/11/2012
137		Landslide and avalanche prone areas are vulnerable to cold burn injuries in addition to trauma. The medical system will be supplemented with enhanced supplied of woolen clothes, evacuation routes and medical professionals trained to deal the such patients. Specialized treatment facilities will be created in earmarked hospitals.	60	5.6 (xxxii)	DDMAs	14/11/2012
138		Mechanism for providing care and management for psychosocial trauma for all types of disasters will be laid down.	60	5.6 (xxxiii)	DDMAs	14/11/2012
139	Medical Preparedness	Medial preparedness for CBRN management will analysis the effects of CBRN agents and focus on	61	6.0	NDMA, DDMAs	14/11/2012

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	for CBRN Management	their management – injuries, burns, illness, psychosocial trauma and public health problems that emerge in the aftermath of CBRN accidents / terrorist attacks. The medical preparedness plans will include problem-solving exercises based upon the past – experience of disasters and will become an integral part of the ‘all hazard’ DM plan at the national, state and district level.				
140		All medical and paramedical staff will be made aware about the types of illnesses, injuries, burns and other health problems caused by CBRN agents and their preventive and therapeutic measures.	63	6.2 (i)	MoH& FW	14/11/2010
141		Medical, paramedical staff and all other health care workers will be educated about the signs and symptoms produced by CBRN agents.	63	6.2 (ii)	MoH& FW	14/11/2010
142		Education at each level will be imparted using symposia, CME, workshops or refresher course.	63		DDMAs	14/11/2010
143		Specialised training of doctors, medical first responders (MFRs), team of specialists and paramedical staff will be based upon competence based training as per the stipulations laid out under section 6.3 of the Guidelines for medical preparedness.	63	6.3	MoH& FW, MoD / DRDO, DDMAs	14/11/2012

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
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144		Competence based training schedules will be tested with on-site mock drills to build the confidence levels of the responders.	63	After 6.3 (d)	NDMA, DDMA's, MoD / DRDO	14/11/2012
145	Research and Development	The areas of applied research for the development of clinical facilities for the management of CBRN casualties will be indentified. There is need for a national institute for CBRN management.	64	6.5	MoH& FW, ICMR, All Medical Colleges, DDMA's	14/11/2015
146	CBRN Casualty Management at the Incident Site	At least one mobile radiological laboratory unit will be made available in each district and minimum of two units in each metropolis to support the functions of detection, protection and decontamination.	65	6.6	MoH& FW, NDMA, DDMA	14/11/2012
147	Personal Protective Equipment (PPE)	Personal protection is the foremost and most important element of CBRN management. All the responders will be given Personal Protective Equipment in addition to the buffer stock for enhanced requirement. Urgent control measures must be instituted to limit the exposure of MFRs by the use of protective clothing, respirators and by limiting the time of exposure at the incident site.	65	6.6 (A)	DDMA's	14/11/2012

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
			Page	Para		
148	Hospital Disaster Management Plan	The state disaster management plan will identify and earmark certain hospitals for development of specialized facilities for the management of CBRN casualties.	66	6.7	DDMAs	14/11/2012
149	Decontamination	All the persons transported to hospitals from an accident scene should already have been decontaminated but it must be expected that many will make their way to the hospital on their own and will still be contaminated. Prior to admission at the hospital any person exposed to CBRN agents should be decontaminated. Fixed decontamination facilities will be developed which are able to decontaminate a large number of patients.	66	6.7 (ii)	DDMAs	14/11/2015
150	Hospital Disaster Management Plan : CBRN Stores	Specified hospitals for CBRN treatment will stock all the drugs, decorporation agents and other specialized items for treatment of CBRN casualties as per the stipulations laid out in section 6.7 (Pg.68) of the Guidelines.	68	6.7	DDMAs	14/11/2012
151	Medical Preparedness for CBRN Management:	The tertiary care hospitals will be identified and progressively upgraded for CBRN management in satellite and nearby towns based on the vulnerability analysis.	69	6.8 (i)	DDMAs	14/11/2012
152	Critical Infrastructural Development	Both ends of the underground metro station will be cordoned off by a shutter fitted with CBRN filters.	69	6.8 (ii-a)	All Metro Rail Projects, DDMAs	14/11/2012
153	Medical Response to CBRN Disasters	Activation of Medical First Responders will be carried out by an inbuilt triggering mechanism for prompt emergency medical response at the site,	70	6.10	Delhi MetrorailCorpn (DMRC), DDMAs	14/11/2012

S.No.	Broad Area	Proposed Activities	Reference		Other Participating agencies	Time-line
			Page	Para		
		during evacuation and treatment of casualties at the hospital.				

MANAGEMENT OF FLOODS

SL. No.	Action Point	Section of the guidelines	Main Agency	Collaborating agencies	Action taken till March 31, 2011
1	Flash Floods	1.4	IMD/Central Water Commission (CWC)/National Remote Sensing Agency (NRSA)/state governments/SDMAs	state governments/State Disaster Management Authorities (SDMAs)/ District Disaster Management Authorities (DDMAs)	
2	Areas Prone to Floods	1.5	Ministry of Water Resources (MOWR) and the state governments/SDMAs/DDMAs	NRSA and Survey of India (SOI)	
3	Damages Caused by Floods	1.6	state governments		
4	Drainage Congestion and Water-logging	1.7	MOWR	MOA and the state governments	
5	River Erosion	1.8	MOWR	State governments	
6	Snow-melt / Glacial Lakes Outbursts, Formation and Subsequent Bursting of Landslide Dams	1.11	MOWR/CWC and the state governments	NRSA	
7	Cloudbursts	1.13	IMD and CWC	State governments	

8	Implementation of the Recommendations of the Experts Committees/Working Groups/Task Forces.	1.16	MOWR and the CWC	State governments	
9	Establishment of River Basin Organisations	2.2.14	MOWR	state governments	
10	Establish State Disaster Management Authority	2.3.2	State governments		
11	Constitute State Executive Committee	2.3.3	State governments		
12	Establish District Disaster Management Authority	2.3.6	District administration		
13	capacity building of the officers of Local Authorities/DM Plans	2.3.7	PRIs and ULBs		
14	State Disaster Response Force	2.3.8	State governments/SDMAs		
15	Intra-state Multi-sectoral Coordination	2.3.9	State governments/SDMAs		
16	State Plans	2.5.2	State governments		
17	Centrally sponsored/Central Sector Schemes	2.5.3	MOWR,	State governments	
18	Allocation of District	2.5.4	District administration		

	Planning and Development Council Funds				
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MANAGEMENT OF CYCLONES

S No.	Details of Action Points	Reference Section and Page No.	Other Participating Agencies	Timeline as per Guidelines
1.	State-level technical capacities will be enhanced to develop local-scale cyclone impact assessment tools for hazard mapping of wind damage and storm surge inundation. Such a capability at the state level will help in appropriate development planning for cyclone risk mitigation and emergency response and preparedness planning. All coastal states and UTs will work with the appropriate central government ministries in collection, transmission and archiving of regional scale observations. States will also work with Survey of India (SoI) and DoS towards developing spatial and non-spatial data sets at the micro level in support of cyclone vulnerability mapping.	2.5, 2.6 (24, 25)	SoI, DoS AND MoES	
2.	Efforts by central and state government agencies for generating customised sector specific multi-lingual cyclone warning for facilitating community based emergency response will be institutionalised on priority.	2.8.4, 2.10 (30, 32)	NGOs and Civil Defence Groups	
3.	A robust system of locating cyclone shelters and cattle mounds will be established based on the vulnerability profile of the regions	4.2.2, 4.2.5, 4.2.7 to	SDMAs	

	along with the prescribed structural safety standards. Necessary mechanism will be built to account for the basic needs and maintenance requirements along with special design considerations.	4.2.10 (54, 56, 57-60)		
4.	Local communities will be encouraged to follow prescribed cyclone resistant structural design standards for construction of private houses.	4.2.4.3, 56	ULBs/ PRIs	
5.	Housing schemes under different central/ state government programmes will obtain clearance from competent authorities, who will take into consideration all DM related aspects.	4.2.6.1, 57	ULBs/PRIs	
6.	The following maintenance aspects of cyclone shelters and other safe places at the ULB/PRI level will be institutionalised: i) Making adequate provision for maintenance of shelters by states and UTs and ensuring its multi-purpose utilisation. ii) A periodical assessment system of the conditions of existing cyclone shelters by the line departments. iii) Adequate maintenance arrangements for schools, hospitals and places of worship by the local committees with the assistance of the government.	4.2.5, 4.2.7 (56, 57)	ULBs/PRIs	

	<p>iv) Making adequate provisions of amenities in cyclone shelters such as drinking water, bathing and toilet facilities for large number of people during the disaster phase taking into consideration requirements of women, children, aged and physically challenged people.</p>			
7.	<p>All-weather road links will be built to all coastal habitations, between habitations and cyclone shelters/cattle mounds covering all 84 coastal districts vulnerable to cyclones, along with a regular mechanism to review the conditions of critical road links, culverts and bridges every quarter.</p>	4.3, 60	MoRD	
8.	<p>Full carrying capacity of main drains and canals, along with feeder primary/ secondary/tertiary channels will be maintained. In addition, drains will be widened for additional carrying capacity.</p>	4.4, 62	CWC, Command Area Development Authorities and Local Area Development Authorities	
9.	<p>Actions for effective cyclone risk reduction through management of coastal zones include:</p> <p>i) Mapping and delineation of coastal wetlands, patches of mangroves and shelterbelts, identification of potential zones for expanding bio-shield spread based on remote sensing</p>			

	<p>tools.</p> <p>ii) Regulating infrastructure and development activities in coastal zones.</p> <p>iii) Monitoring of water quality as well as the carrying and assimilative capacities of open waters with institutionalized remedial measures.</p> <p>iv) Developing Integrated Coastal Zone Management (ICZM) frameworks for addressing the sustainability and optimal utilisation of coastal resources as also cyclone impact minimization plans.</p> <p>v) Evolving eco-system restoration plans for degraded ecological zones.</p> <p>vi) Developing delta water management and freshwater recharge/management options.</p> <p>vii) Coastal bio-shields spread, preservation and restoration/regeneration plans.</p> <p>viii) Implementing coastal flood zoning, flood plain development and flood inundation management and</p>			
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	<p>regulatory plans.</p> <p>ix) Groundwater development and augmentation of freshwater requirement in coastal urban centres.</p> <p>x) Development of Aquaculture Parks in the identified potential zones.</p>			
10.	<p>Responsibility for taking appropriate steps to ensure protection of the shoreline from erosion will be entrusted to the agency responsible for construction of a structure along with monitoring shoreline changes for a period of at least one year with regard to the preservation of natural barriers.</p>	<p>5.2.4, 5.2.6, 5.2.7 (69, 73, 74)</p>	<p>Ministry of Agriculture, MoEF</p>	
11.	<p>Delta water management and freshwater storage/management options will be encouraged in coastal zones for optimal utilisation of water resources. Aquaculture will be regulated even beyond the CRZ with a view to protecting fresh water.</p>	<p>5.2.6, 5.3.1, 5.4 (73, 77, 80)</p>	<p>Coastal Development Authorities</p>	
12.	<p>Economic well-being of the fishermen and farming communities along the shoreline will be enhanced through an integrated bioshieldprogramme. ICZM plan development will address the optimum utilisation of coastal resources like land and water, economic development, protection of environment, reduction of cyclone disaster impacts (storm surges, high winds and rainfall</p>	<p>5.3, 77</p>	<p>MoEF, MoES and MoWR</p>	

	induced flooding) and evolve impact minimisation strategies. States will be supported by concerned ministries of the Central government to build state-level technical capacities for implementation of ICZM plans.			
13.	State governments/UTs could consider the constitution of State Level Coastal Ecosystem Advisory Committees with representatives of the concerned departments and experts in the field to undertake conservation activities in a coordinated, scientific and sustainable manner. Separate budgetary provision under MAPs for coastal districts of the country will be provided as part of the cyclone impact mitigation efforts.	5.4.2, 80	MoEF	
14.	<p>Implementation of the following initiatives for the best land use practices will be institutionalised:</p> <ul style="list-style-type: none"> i) Policies and incentives for afforestation to safeguard ecological and income security. ii) Adoption of science-based and traditional, sustainable land use practices. iii) Giving necessary incentives for reclamation of wasteland and degraded forest land covering both public and privately owned lands by conferring rights over the produce, 	5.6.4, 83	MoEF, MoRD and MoWR	

	<p>provision of alternate land or compensation, etc.</p> <p>iv) Encourage agro-forestry, organic farming, environmentally sustainable cropping patterns, and adopt efficient irrigation techniques.</p>			
15.	All coastal states and UTs will complete the spread, preservation and restoration/ regeneration of bio-shields during the Eleventh Plan period.	5.7, 84	MoEF	XIth plan period
16.	<p>Following are some other important actions:</p> <p>i) MoEF and state government departments will jointly commission a state-wise survey of conserved areas which would be appropriately designated as community reserves. Respective state governments will notify them and prepare management plans.</p> <p>ii) Local communities living in and around forest areas will be trained in ecotourism activities, which will not only help ensure their livelihood security but could also facilitate their involvement in forest conservation.</p> <p>iii) Annual mapping of shelterbelt plantation zones covering up to 5 km of coastline by utilising high resolution remote</p>	5.7.4, 85	MoEF and SDMAs/DDMAs	

	<p>sensing satellite images from CARTOSAT type satellites will be undertaken to monitor coastal shelterbelt plantations.</p> <p>iv) Training will be imparted to forest officers, including IFS, in coastal and marine biodiversity conservation and management.</p> <p>v) Training will be imparted to police/ Coast Guards for enforcement of the Wild Life (Protection) Act, 1972.</p>			
17.	A regulatory framework for flood plain zoning and flood inundation management in coastal areas associated with cyclones, will be formulated in six months. State governments will constitute task teams jointly with CWC, comprising officials and experts, to address the issue of land use regulation in different flood zones and develop specific guidelines for flood zoning based on scientific studies.	5.8, 86	CWC	
18.	Groundwater development will be regulated strictly in addition to the launch of appropriate groundwater recharge schemes. ULBs/PRIIs will set up desalination plants to meet their ever increasing freshwater requirements.	5.9, 87	MoWR/ CGWB, MoES and Ministry of Panchayati Raj and Rural Development	
19.	The following initiatives will be taken for effective coastline	5.10, 88	Ministry of Shipping and	

	<p>protection:</p> <p>i) The changes in shoreline/coastal erosion will be monitored manually and through satellite imageries. The shoreline changes will be studied regularly by using CARTOSAT data and involving DoS or other state/central agencies engaged in remote sensing.</p> <p>ii) Information regarding various factors such as wave height and period, water levels, currents at a number of points in the sea, beach cross-section, type of beach material, silt discharge, etc., will be collected on a continuous basis for the planning and design of shore protection works.</p> <p>iii) Causes of erosion will be properly identified so that the most effective remedial measures are adopted. The causes of coastal erosion can be accounted for largely by collecting necessary data about waves/tides, sea level changes and by monitoring monsoon vagaries and human interference.</p> <p>iv) The impact of coastal protection works on the existing conditions will be studied prior to their planning and implementation. Similarly, infrastructure development will</p>		<p>Transport</p>	
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	<p>also be subjected to environmental impact assessment. Care will be taken to preserve and protect ecological, aesthetic, historic and archaeological resources.</p> <p>v) The impact of coastal protection works on the natural sediment transport system will also be taken into consideration as negative, down drift impact on the local and regional sediment budget.</p> <p>vi) Any remedial measures will be taken up after proper investigation and scientific studies to assess their techno-economic viability and suitability of site. It will be ensured that protection measures do not shift erosion problems from one site to another.</p>			
20.	<p>Launching Community Based Disaster Management (CBDM) activities similar to the DRM Project initiatives of MHA in all villages of the 84 districts vulnerable to cyclones that have not yet been covered.</p>	7.11, 120	SDMAs in Coastal States/UTs	2011-12
21.	<p>Strategies will be evolved for protecting standing crops.</p>	5.12.2, 90	Ministry of Agriculture, ICAR, MoRD and State Agricultural Universities	

22.	<p>The following strategies will be evolved for protecting cultivable land from salinity:</p> <p>i) Restrictions will be imposed on utilisation of agricultural lands for aquaculture, which will be confined to brackish water areas identified for that purpose.</p> <p>ii) Pumping of brackish water into fresh water areas for aquaculture will not be permitted.</p> <p>iii) Pumping of groundwater for fresh water aquaculture will be restricted to avoid depletion of fresh water resources.</p>	5.12.3, 91	MoEF	
23.	<p>A regular mechanism of providing due assistance to weaver community of coastal states/UTs need to be established by the Ministry of Textiles. State Governments of coastal states will consider construction of some cyclone shelters in weaver community dominated villages situated in coastal low lying areas, with their ground floor to serve as community weaving facility.</p>	5.13, 92	Ministry of Textile	
24.	<p>Community preparedness based on cyclone early warning</p>	6.3, 100	MHA, Local Bodies and NGOs	2009-10
25.	<p>Awareness raising with regard to emergency response to cyclone</p>	6.2, 99	MHA, Local Bodies and NGOs	2010-11

	warning communication and dissemination			
26.	Awareness raising with regard to the structural safety measures	6.2, 99	MHA, Local Bodies and NGOs	2011-12
27.	Awareness raising with regard to coastal zone protection and preservation	6.2, 99	MHA, Local Bodies and NGOs	2011-12
28.	Developing integrated hazard mitigation framework taking into account cyclone and associated storm surge, wind hazard, rainfall-runoff, river flood and Geographical Information System (GIS) models for estimating possible areas of inundation along with the depth of inundation (levels), possible damage to infrastructure, crops, houses, etc., evaluating not only the vulnerability but also the changing profile of vulnerability from time to time.	7.4, 106	SoI, and NRSC	
29.	Integrate ongoing efforts of the Survey of India, Department of Space under National Spatial Data Infrastructure, National Database for Emergency Management and MoEF initiatives for speedy completion of digital spatial data generation to cover 84 coastal districts that are vulnerable to cyclones, for evolving holistic cyclone risk reduction strategies on priority. High resolution (at least 0.5 m interval) coastal Digital Elevation Models (DEMs) are to be developed for micro-scale delineation of cyclone	7.4, 106	SoI, DoS, NRSC and MoEF	

	risk, hazard and vulnerability.			
30.	An integrated hazard mitigation framework will be developed for cyclone storm surge, wind hazard, rainfall-runoff and river flood modelling on a GIS platform for estimating possible areas and depth of inundation, possible damage to infrastructure, crops, houses, etc., evaluating vulnerability and its changing profile from time to time. A Village Information System will be developed using high resolution satellite images/aerial photographs and socio-economic data covering natural resources and infrastructure facilities on an appropriate scale at survey number level using remote sensing and GIS techniques.	7.4.2, 7.5, 7.7.1 (107, 108, 109)	MoES, DoS, CWC and SRSACs	
31.	Telemetric networks with 1 to 5 automated scientific surge recorders will be established for each coastal district depending upon the past recorded surge variability data. Graduated chemical-coated poles will be installed in all low lying coastal villages to serve as additional surge recorders.	7.4.3, 108		
32.	The following coordinated actions will be carried out for managing DSSs: i. Developing the database required for mapping different district/sub-district level attributes and making it accessible	7.8.1, 7.8.2 (110, 110)		

	<p>to all departments/ agencies/stakeholders.</p> <p>ii. . Ensuring integrations between hardware and software ensured for compatibility and interoperability of computing, visual and networking infrastructure nodes at the centre and state/district levels.</p> <p>iii. Ingesting traditional/local wisdom into the risk analysis framework.</p> <p>iv. Building institutional and technical capacities appropriately to work out risk minimisation options</p> <p>v. Working out micro-level analytical tools with appropriate interfaces to DSSs for planning and executing suitable risk reduction activities.</p>			
33.	Establishing a comprehensive Cyclone Disaster Management Information System (CDMIS) covering all phases of DM to provide on-line services to the Departments of Disaster Management in the states.	7.9, 112	Directorate of Economics and Statistics, Depat. of Information and Communications, Coastal Area Development and Irrigation and Command Area and Command Area	2008-09 to 2009-12

			Development Authorities, SRSACs, DM Departments of States/UTs	
34.	The functions of DM departments in states/ UTs will be totally re-oriented to bring them to the centre-stage of all DM related activities to steer DM related programmes, schemes and plans of the respective line departments and also to be closely involved in planning and monitoring the implementation of specific DM related multi-sectoral projects. The role of the DM departments will be redefined to institutionalise such a change. DM departments will be strengthened with adequate manpower, on the basis of the redefined roles and responsibilities.	7.15, 126	MHA	
35.	SDRFs will be set up by the states.	8.1.3, 130	NDMA, NDRF	
36.	DM activities of various responder groups from government and community will be integrated for triggering appropriate crisis management actions through stakeholder roundtables/inter-departmental committees.	8.2, 130	MHA, NIDM, ATIs, NGOs and Volunteer Groups	
37.	Institutionalising specific Emergency Response (ER) Actions for Cyclone Disaster Management.	8.4, 8.5 (134, 135)		

38.	A system to determine the safety of relief and relocation infrastructure, capacities of the emergency evacuation machinery and integrated support of emergency health care, night rescue, restoration of energy and food supply, etc., will be institutionalised.	8.5, 135	ULBs/ PRIs	
39.	Risk knowledge will be linked with local scale response plans by organizing necessary support systems from national agencies in accordance with the needs of the local authorities and community stakeholder groups.	8.4, 134	MoEs, NIDM, SDMAs/ DDMAAs and Local Authorities	
40.	Institutionalised multi-agency collaboration will be developed with clarity of roles and responsibilities from national to local levels and periodic updating of SOPs at different levels based on experience gained.	8.4, 8.5.1 (134, 135)		
41.	Greater emphasis will be given for public awareness and education for early warning response.	8.5.2.1, 135	NDMA, NIDM, ATIs and NGOs	
42.	Facilities for refuelling of helicopters will be set up for continuous emergency rescue operations.	8.5.2.1, 135		
43.	Periodic simulation exercises and mock drills will be organised and made mandatory on the lines of pilot initiatives of NDMA for ensuring effective, functional ER along with the inventory of	8.6, 136	NDMA and NGOs	

	community resources and assets.			
44.	Emergency evacuation plans will be developed with an institutional checklist of emergency actions.	8.7, 137	NDMA, NIDM, ATIs and NGOs	
45.	Local scale emergency medical response systems will be established to deal with medical preparedness, emergency treatment, mortuary facilities and disposal of bodies and carcasses, public health issues including trauma and control of epidemics.	8.8, 137	MoHFW, MCI, NGOs and Corporate Sector	

MANAGEMENT OF BIOLOGICAL DISASTERS

The National Guidelines on BDM have been formulated as part of an integrated national 'all hazard' approach for the management of disasters. The objective is to develop a national community that is informed, resilient and prepared to face disasters with minimal loss of life while ensuring adequate care for the survivors. Therefore, it will be the endeavor of the central and state governments and local authorities to ensure its implementation in an efficient, coordinated and focused manner. This can be accomplished by forging reciprocal relationships as envisaged by the institutional mechanism set up through the DM Act, 2005, viz., the NDMA, SDMAs and DDMAAs.

- 1. Nodal Ministries:** The National Guidelines on Biological Disaster Management identified four ministries (MoH&FW, MHA, MoD&MoA) as nodal ministries. The concerned ministries would evolve plans for prevention, mitigation, preparedness and response to biological disasters based on the guidelines prepared by the national authorities.
 - a. Ministry of Health & Family Welfare (MoH&FW):** as the nodal ministry, will foresee the implementation of the guidelines at the national level. Besides, it will prepare a comprehensive National Action Plan for medical management of Biological Disaster.
 - b. Ministry of Home Affairs (MHA):** is the nodal ministry for Bioterrorism (BT) and partners with MoH&FW in its management. MHA is responsible for assessing threat perceptions, setting up of deterrent mechanisms and providing intelligence inputs.
 - c. Ministry of Defence (MoD):** is the nodal ministry for coordinating war related matters and they have also the capacity for managing the aftermath of Biological War (BW).
 - d. Ministry of Agriculture (MoA):** is the nodal ministry for all actions to be taken for biological disasters related to animals, livestock, fisheries and crops.
- 2. Line Ministries:** Besides the aforementioned Nodal Ministries, the guidelines also prescribe a set of support actions to be taken by concerned ministries or departments.
 - a. Ministry of External Affairs (MEA):** acting as an important line ministry to facilitate international exchanges on these guidelines.

- b. **Ministry of Civil Aviation (MoCA):** to regulate safe & secure air transport of biological material, enforce quarantine and facilitative transportation of RRTs and logistics during a biological crisis.
 - c. **Ministry of Trade & Commerce (MoT&C):** to regulate international trade in valuable biological material (VBMs).
 - d. **Ministry of Shipping, Road Transport & Highways (MoSRT&H):** to regulate safety & security of transportation of Valuable Biological Material (VBMs).
 - e. **Ministry of Railways (MoR):** to facilitate transportation and mass casualty management through its extensive network of hospitals and health infrastructure.
 - f. **Ministry of Labour and Employment (MoL&E):** to mass casualty management through its extensive network of Employees State Insurance Corporation (ESIC) hospitals and health infrastructure.
 - g. **Ministry of Science & Technology (MoS&T):** to regulate biosafety & biosecurity in R&D laboratories of CSIR and Biotech Industries.
 - h. **Ministry of Environment & Forest (MoE&F):** environmental monitoring, waste management and pollution control in respect to biohazard material.
 - i. **Ministry of Consumer Affairs, Food & PDS:** Safety and security of public distribution supply chain and emergency supply.
 - j. **Ministry of Food Processing Industries:** regulation of biosafety and biosecurity in food processing industry.
- 3. Implementation Approach:** The BDM approach aims to institutionalise the implementation of initiatives and activities covering the entire continuum of the disaster management cycle.
- a. Implementation of the Guidelines at the national level will begin with the preparation of a detailed **action plan** (*involving programmes and activities*) by MoH&FW that will promote coherence among different BDM practices and strengthen mass casualty management capacities at various levels. Other nodal and line ministries such as MoD, MoR, MoL&E, MHA, and MoA, etc., will also prepare their respective preparedness plans as part of ‘all hazard’ DM plans and action plan.
 - b. The existing DM plans at various levels (SDMAs & DDMAs) will be further revamped / strengthened to address biological disaster preparedness.

- c. All concerned ministries of GoI, the state governments, UT administrations and district authorities will allocate appropriate financial and other resources, including dedicated manpower and targeted capacity development, for successful implementation of the Guidelines.
- d. Planning, execution, monitoring and evaluation are four facets of the comprehensive implementation of the Guidelines. If desired, the nodal ministry can co-opt an expert nominated by the National Authority during the planning stage so that the desired results are achieved through the action plan.

Action Points on Biological Disaster Management

S. No	Broad Areas	Issues	Action Point	Nodal / Line Ministry and Department	Guidelines (sections)
1.	Legislative Framework	Legal Framework	Implementation of IHR (2005) which is needed for prevention, mitigation and control of the spread of diseases internationally.	MoH&FW	4.1.1
			Legal instruments required to support the operational framework for managing prevailing and foreseeable public health concerns such as BT attacks, use of biological weapons by adversaries and cross-border issues.	MHA	4.1.1
			Legal power to the central government, state governments and local authorities to act with impunity, notify the affected area, restrict movements or quarantine the affected area,	MoH&FW, MHA, State Governments	4.1.1

			enter any premises to take samples of suspected materials and seal them.		
			Act to establish controls over biological sample transfer, biosecurity and biosafety of materials / laboratories.	MHA , MoH&FW, MoA, MoD, MoS&T, MoE&F,	4.1.1
		Policy Programmes & SOPs	All concerned ministries to evolve plans for prevention, mitigation, preparedness and response to biological disasters based on the guidelines prepared by the national authorities. The programmes and plans to achieve the objectives set in the policy to be laid down with appropriate budgetary provisions	All nodal & line ministries.	4.1.2
			All the states will develop their own policies, plans and guidelines for managing biological disasters in accordance with the national guidelines and those laid down by SDMAs.	State Governments	4.1.2
		Institutional and Operational Framework	A management structure needed for intelligence and deterrence required for handling BT to be identified and strengthened. This may be in the form of an appropriate crisis management structure, committees, task forces and technical	MHA	4.1.3

			expert groups within the ministry.		
2.	Prevention	Capacity Development	A biological disaster response plan to be evolved based on this strategic approach by the nodal ministry.	MoH&FW, MHA, MoA, MoD& line ministries.	4.2
			Vulnerability analysis and risk assessment at the macro and micro levels for existing diseases with epidemic potential, emerging and re-emerging diseases, and zoonotic diseases with potential to cause human diseases, etc.	MoH&FW , MoA, Mod	4.2.1
			Infrastructure for medical countermeasures, creating awareness among the public, raising human resources, logistic support and R&D for evolving novel technologies.	MoH&FW	4.2.1
		Environmental monitoring	Regular survey of all water resources, drinking water systems, vector control and disposal of dead.	MoH&FW	4.2.2
		BT / BW	A coordinated action plan of the intelligence agencies, MHA, MoH&FW and MoD to be developed and put in place to gather intelligence and develop appropriate deterrence and defence strategies.	MHA	4.2.3

	Disease Surveillance	<p>The existing IDSP programme to be expanded and state/district IDSP units to be equipped with trained personnel for data collection, standard case definition, and its integration with the information received from GOARN, WHO, FAO and OIE.</p> <p>The surveillance programme to be integrated with the chain of laboratories of GoI including DRDO, ICMR, AFMS, and state governments / private laboratories.</p>	MoH&FW&MoA	4.2.4
		<p>Surveillance at airports, ports and border crossings to be strengthened with appropriate controls.</p>	MHA, MoCA, MoSRT&H	4.2.4
	Pharmaceutical Interventions	<p>Manufacturers of antibiotics, chemotherapeutics and anti-virals to be listed and their installed capacity ascertained.</p>	MoH&FW, MoD, MoA and State Governments	4.2.5
	Emergency Medical Supply	<p>Drugs for mass chemoprophylaxis, vaccines, laboratory reagents, diagnostics, PPEs and other consumables to be stocked.</p> <p>Medical stores / organizations /depots to be identified in each state.</p>	MoH&FW, MoA, MoD& State Governments	4.2.5

			First responders and health care workers to be equipped with gloves, impermeable gowns, N-95 masks, powered air-purifying respirators and other PPEs.	MoH&FW, MoD, MoA and State Governments	4.2.5
		Non - pharmaceutical interventions	Action plans and SOPs on social distancing measures, quarantine and containment to prevent spread of infection, epidemic or pandemic.	MoH&FW, MoA, MHA, MoD and State Governments	4.2.6
			Access control, security and protection of important buildings and infrastructures against biological agents.	MHA	4.2.8
3.	Preparedness	Command & Control	Incident command system to be instituted at all levels and supported by logistics, finance, and technical teams etc.	All nodal & line ministries, state government & district administration	4.3.1
			Emergency Operation Centers (EOCs) to be established in all the state health departments with an identified nodal person as Director (Emergency Medical Relief) for coordinating a well orchestrated response.	State Government	4.3.1

4.	Capacity Development	HRD & Training	Shortfall of public health specialists, epidemiologists, clinical microbiologists and virologists to be filled over a stipulated period of time.	MoH&FW, State Governments	4.3.2
			Various training modules to be developed standardized and implemented at each levels by nodal/line ministries, district and state authorities.	MoH&FW, MoA, MHA, MoD and State Governments	4.3.2
			Selected hospitals to develop training modules and standard clinical protocols for specialised care, and will execute these programmes for other hospitals.	MoH&FW, MoD and State Governments	4.3.2
			Table-top exercises using different simulations to be used for training at different levels followed by full-scale mock drills twice a year.	MoH&FW, MoD and State Governments	4.3.2
		Community Preparedness	Public sensitization regarding threat and impact of potential biological disaster through awareness and media campaign.	MoH&FW, MoA, MoE&F, SDMAs and DDMAAs	4.3.2
		R&D	Establishment of a National Institute of Biodefense Research to undertake and coordinate research on natural and manmade	MoH&FW, MHA & MoD	4.3.2

			biological disaster.		
		Development of Critical Infrastructure	<p>A network of laboratories will be created / existing laboratories strengthened at the local, state, regional and national levels to support IDSP and to enhance diagnostic skills.</p> <p>The laboratory network will also be supported by biomonitoring techniques based on advanced molecular and biochemical techniques.</p>	MoH&FW& State Governments	4.3.3
			<p>Up-gradation of the existing emergency communication network, health network, including IAN and mobile tele-health, print and electronic media channels, networking of NGOs and international organizations.</p>	Nodal & line ministries and SDMAs/DDMAs	4.3.3
		Medical Preparedness	<p>a. Hospital disaster management planning, up-gradation of earmarked hospitals, development of mobile hospitals and mobile medical teams supported by adequate medical logistics including essential medicines, antibiotics, vaccines, PPEs, etc.</p> <p>b. Line ministries having health care facilities and departments of health at the state/district levels will provide an integrated framework to manage public health emergencies.</p> <p>c. Various response protocols, including</p>	MoH&FW, line ministries and State governments	4.4.1

			<p>emergency medical response will be developed and practiced through regular mock drills in a simulate environment.</p> <p>d. Nodal ministry will incorporate the cross-cutting issues to be implemented throughout the country through national programmes identified in their DM plans.</p>		
		Public Health Response	<p>a. A response mechanism will include outbreak investigation by RRTs, standard case definition, surveillance, follow up, collection of biological samples and transportation to the nearest laboratories for analysis.</p> <p>b. The various pharmaceutical and non-pharmaceutical interventions so required will be instituted immediately.</p> <p>c. Provision of risk communication and modes to provide psycho-social care, media management, inter-sectoral coordination to be integrated in district DM plans for managing biological disasters of multiple origins.</p>	MoH&FW, SDMAs & DDMAAs	4.5
		Pandemic Management	<p>a. A properly functioning epidemiological mechanism will be used to prepare an action plan for the management of pandemic flu and similar incidences to effectively combat the inherent risks.</p>	MoH&FW,	4.6

			<p>b. Various international best practices will be tested and incorporated in the DM plans by the nodal and line ministries to prevent the spread of biological disasters across international boundaries.</p> <p>c. Monitoring of human and logistics functioning across the borders.</p>	MHA & MoD	
		International Cooperation	Interactive forums will be developed to evaluate the common problems and identify viable solutions for prompt and effective management of biological emergencies through resource sharing, stockpiling of medical logistics at the regional level, joint international mock exercises and knowledge management systems.	MoH&FW	4.7
5.	Biosafety & Biosecurity	Classification of Microorganism	Risk based classification of organism and biologics with specific Biosafety & Biosecurity guidelines will be developed.	MoH&FW, MoA, MoE&F, MoS&T, MoD, MHA (ICMR, ICAR, CSIR & DoBT)	5.2 & 5.3
		Laboratory Biosafety	<p>a. Formulation and strict enforcement of Biosafety rules & regulations.</p> <p>b. Specific training in procedures of handling high-risk pathogens and understand the function</p>	ICMR,	5.4

			<p>of various biosafety equipment and design of the laboratory.</p> <p>c. the two-person rule should apply, whereby no individual works alone within the laboratory.</p> <p>d. A system shall be set up for reporting laboratory accidents and exposures, employee absenteeism and medical surveillance of laboratory associated illnesses.</p>	<p>ICAR,CSIR</p> <p>&</p> <p>DoBT</p>	
		Laboratory Biosecurity Plan	<p>a. A comprehensive programme of accountability for VBMs</p> <p>b. Institutional Laboratory Biosecurity Protocol & SOPs, that includes incident notification, reporting, investigation, oversight and guidance.</p> <p>c. Roles and responsibilities of public health and security authorities in the event of a security breach should also be clearly defined.</p>	<p>ICMR, ICAR, CSIR, DoBT, MoH&FW and MHA</p>	5.5
		Transport of biohazard material	<p>Transport security endeavours to provide a measure of security during the movement of biological materials outside of the access-controlled areas in which they are kept until they arrive at their destination.</p>	<p>All nodal & line ministries</p>	5.6.2
		Training	<p>a. Laboratory biosecurity training, complementary to laboratory biosafety training and commensurate with the roles,</p>	<p>ICMR, ICAR, CSIR, DoBT,</p>	5.6.2

			<p>responsibilities and authorities of staff, should be provided to all those working at a facility, including maintenance and cleaning personnel, staff involved in ensuring the security of the laboratory facility and to external first responders.</p> <p>b. The biorisk management plan should ensure that laboratory personnel and external partners (police, fire brigade, medical emergency personnel) participate actively in laboratory biosecurity drills and exercises, conducted at regular intervals, to revise emergency procedures and prepare personnel for emergencies.</p> <p>c. A national system of periodically validated certification of personnel will be desirable.</p>	MoH&FW and MHA	
		Capacity Development	<p>National code of Practice for Biosafety & Biosecurity should be prepared and promulgated.</p> <p>Existing BSLs will be upgraded and new ones developed at various levels based on the need and threat assessment.</p>	MoH&FW, MoA, MoE&F, MoS&T, MoD, MHA (ICMR, ICAR, CSIR & DoBT)	5.6.5
6.	Livestock Disaster Management	Risk and Vulnerability Assessment	<p>Development of ‘multi-hazard’ risk and vulnerability mapping of the districts. Development of demographic maps of areas with dense/scarce population of livestock.</p>	MoA, SDMAs & DDMAAs	6.6.1

		Mitigation	<p>a. Mitigation measures will be developed based on the risk assessment analysis, to control the spread of such diseases.</p> <p>b. Surveillance mechanisms will be set up to detect exotic microorganisms to prevent outbreaks and high priority diseases that may lead to national emergencies.</p> <p>c. The vaccination status of all livestock will be periodically checked.</p> <p>d. Strict quarantine inspection and testing will be undertaken for any form of imported germplasm prior to release.</p> <p>e. Check on the unhindered movement of animals across the states.</p> <p>f. Diseases like HPAI with an inherent zoonotic potential will be kept under constant surveillance.</p>	MoA, SDMAs & DDMAAs	6.6.1
			Human disease surveillance data and probabilities of shift from livestock to humans or vice versa will be mapped to define the areas that require adoption of appropriate mitigation strategies.	MoA&MoH&FW	6.6.1
		Capacity Development	a. Immediate relief in terms of emergency aid through Veterinary Assistance Teams (VATs), temporary makeshift shelters and emergency	MoA, SDMAs & DDMAAs	6.6.2

			<p>provision for water and feed packages.</p> <p>b. Infrastructure for disposal of dead animals: Burial/disposal methods of animal carcasses and other products.</p> <p>c. Infrastructure for containment of epidemics.</p> <p>d. Organised rehabilitation packages for livestock livelihood.</p> <p>e. Building infrastructure for disease forecasting & Disease surveillance.</p> <p>f. Training of farmers on mitigation of disaster losses.</p> <p>g. A well-organised training programme of veterinary professionals as well as administrative officials in livestock emergency management.</p> <p>h. Enhancement of the capabilities of emergency field and laboratory veterinary services, especially for specific high-priority livestock disease emergencies.</p> <p>i. The national network of animal health laboratories will be strengthened for a more efficient livestock health system and augmentation of its capacity to respond effectively to livestock health disasters.</p>		
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			<p>a. Appointment of drafting teams for the preparation, monitoring and approval of contingency plans. Implementation of simulation exercises to test and modify animal health emergency plans and preparedness are also necessary.</p> <p>b. Central/state governments will develop / establish an adequate number of R&D and biosafety laboratories in a phased manner for dealing with animal pathogens.</p> <p>c. A dedicated establishment, preferably under DADF, may be entrusted with the overall monitoring of the national state of preparedness for animal health emergencies.</p> <p>d. A computer-based national grid of surveillance and disease reporting should be developed for timely detection and containment of any emergent epidemic.</p>	MoA, SDMAs &DDMAs	6.6.7
		Interdepartmental Support	<p>a. Veterinary professionals of the Army and various forces guarding the border, viz., Assam Rifles, Border Security Force (BSF), Indo-Tibet Border Police (ITBP) and SashastraSeemaBal (SSB) will be trained and co-opted in the containment of TADs</p> <p>b. Defence forces and various paramilitary forces will be equipped and entrusted to provide necessary logistics and communication backup in case of emergency.</p> <p>c. A uniform policy for compensation that has necessary legislative backing will be</p>	MoA, MoD, MHA	6.6.3

			entrusted to the Revenue Department to ensure implementation.		
		Emergency Management	A comprehensive animal emergency management plan that includes response, relief, rescue and rehabilitation.	MoA, SDMAs & DDMAs	6.6.6
		R&D	Research institutions of ICAR, defence organisations, ICMR, DBT and CSIR will identify areas of potential threat and disasters in livestock and fisheries and readjust their research priorities to address these concerns to be in readiness for any eventuality.	ICAR, ICMR, DBT, CSIR	6.6.8
7.	Agro terrorism	Preparedness	Provisions for emergency control and treatment, development of national standards on phyto-sanitary measures and other related activities.	MoA	7.5.4
		Capacity Building	<p>a. SOPs for documentation.</p> <p>b. Newer R&D activities to mitigate the impact of such situations and strengthen support mechanisms.</p> <p>c. Accreditation of laboratories and development of linkages of local level initiatives with national/state programmes.</p>	MoA	7.5.6

MANAGEMENT OF NUCLEAR AND RADIOLOGICAL EMERGENCIES

Name of the Ministry/Department/States/UTs

S.No.	Action Point	Reference Section & page no.	Concerned Agencies	Timeline as per Guidelines
1.	The preparation of an action plan to handle nuclear and radiological emergencies at macro level will be carried out by NEC with technical assistance from DAE & approved by the NDMA.	2.4, 15 9.2, 89	NEC	6 months
2.	All the concerned central ministries/departments, will make their own DM plans which are to be approved by the NDMA.	2.4, 15 9.2, 89	Line Ministries	1 Year
3.	A reliable and dedicated communication system, with adequate redundancy and diversity, will be established through the National Disaster Communication Network of NDMA that will provide the last-mile connectivity in the disaster effected site.	3.11.5, 28 6.3.10.1, 51 10.4, 99	NDMA	3 Years
S.No.	Action Point	Reference Section & page no.	Concerned Agencies	Timeline as per Guidelines

4.	Four battalions of NDRF are being specially trained by NDMA with assistance from DAE/DRDO/Army to provide specialised first response during a nuclear/radiological emergency.	6.3.4, 47 6.3.5, 47 10.4, 99	NDMA	3 Years
5.	Additional ERCs (AERCs) in police lines with the necessary trained personnel equipped with appropriate radiation detection instruments, personal protective gear (PPG) and a mobile monitoring van, are to be set up in all metro cities. (with population of 10 lakhs)	6.3.9.1, 50	NDMA with help of BARC	3 Years
6.	Number of Emergency Response Centres (ERCs) will be established to cover all the metros and the other vulnerable areas in the country by both DAE as well as State Governments.	3.5.2, 21 3.11.1, 26 3.17, 30	DAE	3 Years
7.	As the nodal technical agency, DAE to coordinate with other agencies in providing services of radiation experts for capacity building in the area of radiation measurement and protection.	9.6.4, 95	DAE	3 Years
8.	DAE will facilitate training of CPMFs, civil defence personnel and fire service personnel in areas of radiation measurement and protection and emergency response.	9.6.3, 95	DAE	3 Years
9.	To arrange comprehensive training programmes for medical professionals in the treatment of radiation injuries.	9.6.5, 95	DAE	5 Years

10.	Additional IERMON systems to be installed for strengthening real time surveillance and early warning systems to monitoring enhanced radiation levels in various metros and vulnerable areas.	6.3.9.3, 51	DAE	5 years
11.	To strengthen the system from the security of radioactive sources at radiation facilities and during their transportation.	3.12, 28 4.6, 38	DAE	3 Years
12.	The “Intervention Levels” of radiation dose for various actions by the members of rescue and relief teams and the “Action Levels” to control the consumption of contaminated food items in the effected areas to be generated.	3.10.3, 26 6.10, 58	DAE & AERB	1 Year
13.	Mock-drills and emergency preparedness exercises will be conducted by SDMAs/DDMAs, on regular basis. Since such mock-drills may create panic in the public, it should be conducted as part of other emergency preparedness exercise.	6.9, 58	DAE, State Govts	8 Years
14	AERB to establish regional regulatory centres/ authorities to handle the increased volume of regulatory work.	7.7.1, 68	AERB	3 Years
15.	Database of RSOs be prepared/maintained and made available at the DDMA, SDMA and national level by the AERB.	10.5, 101	AERB	

16.	MHA will work for the establishment of additional ERCs, ERTs and fire services capability throughout the country. In addition, it has to build shelters/camps with provision of food, water, fuel, medicine, sanitation facilities, etc.	9.6.1, 94	MHA	5 Years
17.	Building up of hospitals and their infrastructure to handle large numbers of radiation patients. Provision and stocking of appropriate medicines.	9.6.4, 95	MoH& FW	5 Years
18.	Specialized response teams will be raised, specially trained for nuclear/radiological emergency/disaster and fully equipped at the state (by the SDMAs/SECs/DDMAs) as well as at the central levels (by MHA).	6.3.4, 47 6.3.5, 47 104, 99	State Govts., MHA	3 Years
19.	To prevent illicit trafficking of radioactive materials monitors at entry/exit points of the country will be installed by MHA	3.12, 28 4.6, 38	MHA	3 Years
20.	Action for setting up of at least one mobile radiological laboratory unit in each district and at least two such units in each metropolis to support detection, protection and decontamination procedures in consultation with DAE and DRDO.	6.8.3.4, 56	MoH& FW	8 Years
21.	Establishment/upgradation of primary, secondary and tertiary care hospitals which can handle sufficient number of people affected during a nuclear emergency will be taken up with help of DAE.	6.8.3.1, 55	MoH& FW, DAE	5 Years

22.	To maintain a national database of medical professionals who are conversant with treatment of radiation injuries and of Radiological Safety Officers (RSOs) so that their services can be tapped even for smaller level of emergencies.	9.6.4, 95	MoH&FW	5 Years
23.	To network medical professionals and training them in the management of radiation injuries.	9.6.4, 95	MoH& FW	3 Years
24.	A model CBRN Research and Treatment Centre to be established in one of the major tertiary care hospitals in the country. The facility to be replicated subsequently in at least four geographically well separated locations.	6.8.9, 58	MoH& FW	8 Years
25.	Training programme for the medical professionals in treatment of radiation injuries, formation of Quick Reaction Medical Teams (QRMTs)/Medical First Responders (MFRs) along with maintaining sufficient stock of essential medicines and data base of the experienced medical professionals to be taken up.	6.8.3.3, 56 9.6.4, 95	MoH& FW	8 Years
26.	Services of the Indian Railways and Ministry of Civil Aviation will be sought, particularly for transportation of the emergency response teams as well as the affected people.	9.6.5, 96	Min. of Railways & Min. of Civil Aviation	3 Years
27.	The Ministry of Urban Development (MUD) and the Central Public Works Department (CPWD) will construct various emergency command centres and shelters. Whenever needed, they will restore communication links and other urban infrastructure.	9.6.5, 96	Min. of Urban Development	3 Years

28.	To make arrangements for storing the necessary Petroleum, Oil and Lubricants (POL) reserves and ensure their availability throughout the country.	9.6.5, 96	Min. of Petroleum	5 Years
29.	Setting up of state- and district-level Emergency Command Centres (ECCs) and ERTs. Procuring the necessary radiation monitoring instruments, personal protective gear and maintaining comprehensive GIS. To upgrade and augment services to restore power, make available fuel, and enhance medical preparedness	9.6.2, 97	State Govts./UTs	8 Years
30.	With the help of specialists from DAE and in consultation with the district/local authorities, the states/UTs will make their own detailed implementation plan.	2.4, 15 9.2, 89	State Govts./UTs	1 ½ Years
31.	To establish a coordination mechanism with all the agencies viz. MHA, DAE, fire & emergency services, civil defence, etc.	9.6.2, 97	State Govts./UTs	3 Years
32.	The roads and transport network will be strengthened by SDMAs/DDMAs of the various State Govts/UTs for effective and quick response.	3.11.6, 28 6.3.10.2, 52	State Govts	5 Years
33.	The places of shelters in large metros are to be identified by the various state governments/UTs, to house the evacuated persons in event of any nuclear/radiological emergency.	3.11.7, 28 6.3.10.3, 52	State Govts	3 Years

34.	Sufficient inventory of radiation monitoring instruments and protective gear will be built-up by all the SDMAs & DDMAAs in order to ensure their availability during emergencies.	6.3.5.1, 48 6.3.9.2, 51	State Govts	5 Years
35.	Education and awareness generation programmes of the community.	7.2, 64 7.3, 66	NIDM, SDMA	3 Years, 5 Years, 8 Years
36.	The National Remote Sensing Agency (NRSA) and the India Meteorological Department (IMD) have key role in the evaluation of the magnitude of the event, monitoring any large-scale fallout and keeping track of the same, and providing their assessments to national- and state-level authorities.	9.6.5, 95	NRSA & IMD	5 Years
37.	The Collectors/Magistrates of the districts will prepare detailed off-site emergency preparedness and response plans with the help of the nuclear plant authorities in their districts.	3.3, 19 10.2, 28	Dist Collectors	1 ½ Years
38.	Training of the various first responders in DM at various levels of administration at regular intervals by NIDM and NDRF trainers.	7.4, 67	NIDM, NDRF	3 Years

MANAGEMENT OF LANDSLIDES & SNOW AVALANCHES

SL. No.	Action Point	Section of the guidelines	Main Agency	Collaborating agencies	Action taken till March 31, 2011
1	Avalanche Control Strategies	1.7.6	The MoM/GSI in consultation with the TAC	SASE, BRO, central government, and state governments	
2	Search and Rescue Operations	1.7.7	SDMAs	DDMAs, NDRF	
3	Landslide Inventory	2.2	The MoM-GSI	State DGMs; WIHG; NIDM; NRSC; SRSCs; BRO	
4	LHZ Mapping (i-iv)	2.31. 2.3.3 2.3.3 2.3.4	The MoM/GSI in consultation with the TAC The MoM/GSI in consultation with the TAC The BIS The SoI	NRSC; BIS; DST; CBRI; CRRI; WIHG; IITs, universities, and other academic institutions NRSC; BIS; DST; CBRI; CRRI; WIHG; IITs, universities, and other academic Institutions GSI; IITs, universities, and other academic institutions IMD; MoM-GSI; NRSC; CWC	
5	Seismic Landslide	2.3.5	The MoM/GSI in consultation	IMD; DST; CDMM; WIHG; IITs, universities,	

	Hazard Zonation		with the TAC	and other academic institutions	
6	Prioritisation of Areas for LHZ Mapping (i-iii)	2.3.6 2.3.6 2.4.1	SDMAs/state governments SDMAs/state governments The BIS	TAC; MoM-GSI; NRSC; DST; BRO; WIHG; PRIs; CRRI TAC; MoM-GSI; NRSC; DST; BRO; WIHG; PRIs; CRRI The MoM-GSI	
7	Geological Investigations	3.2.2	The BIS	The MoM-GSI; DST; IITs, universities and other academic institutions	
8	Geotechnical Investigation (i-iv)	3.3	The BIS The DST The BIS The MoM/GSI in consultation with the TAC	The NIDM; DST; CDMM; MoM-GSI; CBRI; CRRI; WIHG; CoA; IITs, universities and other academic institutions The TAC; IGS; engineering project authorities The CDMM; CoA; IITs, universities and other academic Institutions The IMD; DST; CDMM; IITs, universities and other academic institutions	
9	Culture of the	3.3.1	The NIDM	The CDMM; CoA; IITs, universities and other	

	Observational Method of Design and Construction			academic institutions	
10	Pilot Projects for the Investigation of Major Landslides	3.5	The MoM/GSI in consultation with the TAC	The MoM-GSI; BRO; CBRI; CRRI; DST; CDMM; WIHG; BIS; IITs, universities and other academic institutions	
11	Landmass Improvement Techniques	4.2.1	The MoM/GSI in consultation with the TAC	The MoM-GSI; BRO; CBRI; CRRI; DST; CDMM; IITs, universities and other academic institutions	
12	Mitigation Measures for Landslide Dams (i-vi)	4.4	The CWC The SDMAs The CWC The CWC The CWC The CWC	The NRSC; MHA; SDMAs; BRO; IMD The BRO The MoM-GSI; BRO The SDMAs; District Administration The MoM-GSI; NRSC; SDMAs	
13	Human Settlements in Landslide	4.5	The MoM/GSI in consultation with the TAC	The SDMAs; MoM-GSI; MoEF; ASI; CoA	

	Prone Areas				
14	Protection of Heritage Structures	4.6	The ASI	The INTACH; state governments; SDMAs; CoA	
15	Monitoring and Warning Systems (i-iv)	5.3.2	The DST The MoM/GSI in consultation with the TAC The MoM in consultation with the TAC The MoM/GSI in consultation with the TAC	The NIDM; WIHG; CDMM; IITs, universities, and other academic institutions The MoM-GSI; SDMAs; CSIO; WIHG; IITs, universities, and other academic Institutions The IMD; MoM-GSI; DST; CWC; IITs, universities, and other academic institutions The CSIO; CDMM; CBRI; CRRI; IITs, universities, and other academic institutions	

16	Pilot Studies for Instrument Based Early Warning (i-iii)	5.4	The MoM/GSI in consultation with the TAC The IMD The IMD	The SDMAs; BRO; MoM-GSI; DST; District Administrations; IITs, universities, and other academic institutions The NCMRWF; MoM-GSI; DST; CDMM; CBRI; CWC; IITs, universities, and other academic institutions The MoM-GSI; DST; CDMM; CBRI; CWC; IITs, universities, and other academic institutions	
17	Introduction	6.1	State governments/SDMAs;	The district administrations; the CoA	
18	Model Town Planning and Land Use Bye-Laws	6.2	The MoM/GSI in consultation with the TAC	The BIS	
19	Indian Standard Codes (i-iii)	6.3	The BIS		
20	Techno-Legal	6.4	State governments	The SDMAs; district administrations	

	Regime				
21	Licensing and Certification	6.5	The MoM/GSI in consultation with the TAC The AICTE	The central ministries The IITs, universities and other academic institutions; the CoA; IIA; urban planners	
22	Compliance Review	6.6	District administrations	The urban planners; ULBs; CoA; IIA; PRIs	
23	Techno-Financial Regime	6.8	The MoM/GSI in consultation with the TAC	The central ministries; state governments; the Planning Commission	
24	Awareness (i-ii)	7.1	SDMAs/state governments; the MoM-GSI SDMAs/state governments; the MoMGSI	NIDM; CDMM; IITs, universities and other academic institutions; PTI; DAVP; PrasarBharti; private broadcasters The academic institutions and the media	
25	Creation of Public Awareness on Landslide Risk	7.1.1	SDMAs/ state governments; the MoM-GSI	The academic institutions and the media	

	Reduction				
26	Awareness Drives for Specific Target Groups (i-iv)	7.1.2	SDMAs/state governments; the MoM-GSI; SDMAs/state governments; the MoM-GSI; The MoM-GSI SDMAs/state governments	district administrations; NGOs district administrations; NGOs The GSI	
27	Landslide Preparedness (i-iii)	7.2	The MoM/GSI in consultation with the TAC DDMAs/SDMAs State governments/SDMAs	The SDMAs; district administrations The PRIs and NGOs	
28	Medical Preparedness (i-ii)	7.2.2	SDMAs SDMAs/DDMAs	The state health and medical departments, and private hospitals The state health and medical departments and private hospitals	
29	Introduction (i-iii)	8.1	The MoM/GSI in consultation with the TAC The SDMAs/DDMAs	The MoM-GSI BRO; CoA; NGOs; central and state education departments; IITs, universities and other academic institutions	

			The MoM/GSI in consultation with the TAC	The MoM-GSI; MoES; DST	
30	Landslide Education (i-iii)	8.2	The SDMA/state governments; SDMA/state governments Central ministries	The MHRD The MHRD The NDMA; SDMA/ state governments	
31	Education of Professionals (i-v)	8.2.1	The MoM/GSI in consultation with the TAC SDMA/state DGMS; state governments; The MoM/GSI in consultation with the TAC The AICTE The MoM/GSI in consultation with the TAC	The NIDM; UGC; PrasarBharati; private broadcasters; IITs, universities, and other academic institutions The MHRD; IITs, universities, and other academic institutions The MHRD; MoH&FW; MCI The IITs, universities and other academic institutions; the CoA The IITs, universities, and other academic institutions; the MoM-GSI; MHRD; AICTE; CoA	

32	Community Education	8.2.2	The SDMAs	The DDMAs; NGOs
33	Training (i-iii)	8.3	The MoM/GSI in consultation with the TAC The SDMAs State governments	The MoMGSI; NIDM; IITs, universities, and other academic institutions The state DGMs The SDMAs
34	Training of Professionals	8.3.1	The MoM/GSI in consultation with the TAC The MoM-GSI State governments	The NIDM; MoMGSI; IITs, universities, and other academic institutions The NIDM; IITs, universities, and other academic institutions; SDMAs; AICTE; CoA] The SDMAs; DDMAs; state DGMs
35	Capacity Upgradation	8.4	The TAC	The MoM-GSI
36	Documentation (i-iv)	8.5	The MoM/GSI in consultation with the TAC The SDMAs	The MoM-GSI; NIDM; SDMAs; DAVP; NGOs; IITs, universities, and other academic Institutions The CoA; IITs, universities, and other academic institutions The NIDM; CBRI; CRRI; IITs, universities, and other academic institutions

			The MoM-GSI The MoM-GSI	The NIDM; CBRI; CRRI; DST; BRO; IITs, universities, and other academic institutions	
37	Introduction (i-iii)	9.1	Central ministries The IMD State governments	The state governments/SDMAs; DDMAs; ULBs, PRIs] The SDMAs; MoM-GSI; NRSC The state DGMs; BRO; MoEF; DoS-NRSC; DDMAs; State Resource Centres; NDRF; MoM-GSI; MHA; PRIs	
38	Emergency Search and Rescue (i-iii)	9.2	DDMAs SDMAs SDMAs	The PRIs The NDRF; PRIs; district administrations The NCC; NSS; NYKS	
39	Emergency Relief	9.3	SDMAs/ DDMAs; district administrations		
40	Incident Command System	9.4	State governments/SDMAs; State governments/SDMAs	district administrations; PRIs	
41	Community Based Disaster Response	9.5	DDMAs	The home guards; NGOs; NYKS	

42	Role of Private and Corporate Sector	9.6	SDMAs		
43	Specialised Teams for Response (i-iii)	9.7 9.7.1	The NDRF State governments/SDMAs State governments/SDMAs; DDMAs		
44	Emergency Logistics	9.8	State governments/ SDMAs SDMAs	The DDMAs	
45	Emergency Medical Response	9.8.1	SDMAs	The state medical and health departments and private hospitals	
46	Introduction (i-ii)	10.1	SDMAs The MoM-GSI	The MoES; MoM-GSI; DST; DoS-NRSC; central ministries; state Governments The SDMAs; state governments; DST; CBRI; CRRI; IITs, universities, and other academic institutions	

47	Standardisation (i-ii)	10.2.1	The MoM/GSI in consultation with the TAC The MoM/GSI in consultation with the TAC	The BIS; IITs, universities, and other academic Institutions The DST; IITs, universities, and other academic institutions
48	Earthquake-Induced Landslides	10.2.2	The MoM/GSI in consultation with the TAC	The DST; IITs, universities, and other academic institutions
49	Design of Surface and Sub-Surface Drainage Systems	10.2.3	The MoM/GSI in consultation with the TAC	The DST; IITs, universities, and other academic institutions
50	Development of Early Warning Systems	10.2.5	The MoM/GSI in consultation with the TAC	The DST; state governments/SDMAs; district administrations; IITs, universities, and other academic institutions
51	Landslide Dams	10.2.6	The NRSC	
52	Run-out and Return Period Modelling of Landslides	10.2.7	The MoM/GSI in consultation with the TAC	The IITs, universities, and other academic institutions

53	Snow Avalanches	10.2.8	The MoM/GSI in consultation with the TAC	The SASE; IMD; DST; IITs, universities, and other academic institutions	
54	Emerging Concerns	10.2.9	The MoM/GSI in consultation with the TAC	The DST; IMD; IITs, universities, and other academic institutions	
55	Important Research and Development Activities (i-ii)	10.3	The MoM/GSI in consultation with the TAC The MoM/GSI in consultation with the TAC	The MoM-GSI; DST; CBRI, CRRI, CDMM; BRO; NRSC; IMD; CWC; state governments; IITs, universities, and other academic institutions The MoM-GSI; DST; NIDM; BIS; IITs, universities, and other academic institutions	
56	Areas Requiring Special Attention	10.4	The MoM/GSI in consultation with the TAC	The SDMAs; MoMGSI; IMD; DST; NIDM; BRO; NRSC; CWC; IITs, universities, and other academic institutions	
57	Plans	11.1	Central ministries	The NEC; state governments	
58	Plans of Central Ministries and Departments	11.2	MHA	The central ministries; the MoM-GSI	
59	Plans of State Governments (i-ii)	11.3	State governments/SDMAs State governments/SDMAs		

60	Disaster Management Plans of the Nodal Agency (i-iii)	11.4	The MoM-GSI		
61	Institutional Mechanisms (i-ix)	11.5.1	<p>The MoM-GSI</p> <p>NDRF</p> <p>NDRF</p> <p>The NEC</p> <p>The BRO</p> <p>State governments</p> <p>State governments/SDMAs</p> <p>The DDMAs</p> <p>State governments</p>	<p>The SDMAs; DDMA; district administrations; local administration</p> <p>The GSI; BRO</p> <p>The NDRF</p> <p>DTRL; MoM-GSI; SASE; CBRI; CRRI; CDMM; NRSC; ISRO; Department of Information Technology</p> <p>The district administrations</p> <p>The district administrations; local bodies</p>	

62	Centre for Landslide Research, Studies and Management (i-iv)	11.5.2	The MoM The MoM The MoM	The MoES The MoES; GSI; DST; NIDM	
63	Implementation and Monitoring	11.5.3	Central ministries	The state governments; district administrations; PRIs; ULBs	
64	Mainstreaming of Disaster Management in Developmental Plans (i-v)	11.6.1 11.6.2 11.6.3 11.6.4	Central ministries Plans of Central Ministries/Departments SDMAs State Plans State governments Centrally Sponsored/Central Sector Schemes	The state governments; NDMA The central Ministries	

		11.6.5	The MoM-GSI District Planning and Development Council Funds SDMAs		
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PSYCHO-SOCIAL AND MENTAL HEALTH CARE

As per National Disaster Management Guidelines for the management of Psychosocial Support and Mental Health Services in the states, the State ministry of Health and Family Welfare as the Nodal Ministry in close cooperation with Ministry of other concerned agencies will prepare a detailed Action Plan in accordance with these Guidelines with specific tasks, activity targets and time frames as a Psychosocial support management plan.

Role of Nodal Ministry

Sno	Broad Areas	Details of Action Point	Reference Section & Page no	Other Participating agencies	Timeline as per Guidelines
1	Regulatory Frame Work	Enactment/amendment of any act, rule and regulation, if necessary, for better implementation of PSSMHS	Sec 4.1, Para i , Page 24	SDMA & DDMA	0-3 Years
2		Ensuring implementation of PSSMHS in NMHP and DMHP.	Sec 4.1.1, Point iii, Page 24 Para	SDMA & DDMA	0-3 Years
3		Integration of the PSSMHS in Disaster Mental Health programmes and General Hospital Programmes as part of hospital and district health plan	Sec 4.1.1, Point ii, Page 25, Sec 4.4.8.2, Point iv, Page 38	District Health Department	0-3 Years

4	Mitigation	The State Health Department shall coordinate with other line ministries and departments who have similar roles in PSSMHS so that the programmes are implemented uniformly.	Sec 4.2.2, Point iv, Page 27	Ministries of Labour, Women and Child Welfare, Human Resource Development and Social Welfare	0-3 Years
5		Structured and standardized capacity building programme for different training modules of PSSMHS shall be developed.	Sec 4.2.2, Point viii, Page 27	State Nodal Centre in consultation with Centre of excellence & Regional Nodal centers	0-3 Years
6		To ensure quality of service in the area of PSSMHS, an accreditation system for agencies working in this field shall be developed.	Sec 4.2.2, Point ix, Page 27	State Nodal ministry will identify	0-5 Years
7		Integrating with DM mental health plans and Health/Hospital DM Plans	Sec 4.4.8.1, Point i, Page 37,	State Nodal Ministry,	0-3 Years

8		Inclusion of PSSMHS in the minimum standard of medical care in disasters.	Sec 4.2, Para i, Page 26	Line ministries, SDMA & DDMA	0-3 Years
9		All the stakeholders involved in the PSSMHS will require adequate trained personnel for proper implementation of the programme. The inventory of such persons shall be maintained by MoH&FW at centre, state and district level	Sec 4.2.3, Para 1, Page 27	District Health Department	0-3 years
10		preparedness activities for PSSMHS can be formally linked with various health programmes (like NMHP/DMHP, NRHM) as well as non-health development programmes like Rural Employees Scheme, Community Development Programme, NSS/NYK programmes	Sec 4.2.4, Para 3, Page 28	ESI, NSS, NYK in consultation with the State Nodal ministry	0-3 Year
11		Sensitizing and training (basic and advanced) on PSSMHS across identified departments, sectors and levels.	Sec 4.4.3, Para i, Page 32	District Health Department	0-3 Years
12		The institutional framework for PSSMHS will be part of the overall health intervention in disaster preparedness.	Sec 4.3.1, Para 1, Page 28	District health department	0-3 Years
13		Strengthening nodal institutions/ hospitals.	4.4.8, Para 1,	District health department	0-5 Years

14		Establishing a National Accreditation System for quality assurance.	4.2.2, Point ix	Nodal ministry will identify	0-5 Years
15		Strengthening public-private partnership in research and development	4.4.8.3, Point 1-6, Page	Nodal ministry in consultation with ICMR, WHO, UN, INGO	0-5 Years
16		Incorporation of PSSMHS in DMHP, district health and hospital plans.	Sec 4.1.2, Point iii, Page 25	District Health Department	0-3 Years
17		Evolving a mechanism to include disaster-induced psychiatric disorders/ physical disability in the disaster insurance and medical/health insurance	Sec 5.3., Para 2, Page 47	Appropriate agencies will be identified	0-3 Years

Role of regulatory bodies

Sno	Broad areas	Details of Action Point	Reference Section & Page	Other Participating agencies	Timeline as per Guidelines
1	Education & Training	Inclusion on Disaster PSSMHS in Post-graduate Curriculum of Psychiatry, Psychology, Social Work, Disaster Management, Emergency Medicine and Health Education.	Sec 4.4.2, point iv , Page 31	Department of Education, State universities, school boards NCERT, UGC, AICTE,MCI In consultation with the State nodal ministry	0-3 years
2		Inclusion of PSSMHS in Medical under graduate studies.	Sec 4.4.2, 31	MCI, In consultation with the State nodal ministry	0-3 years
3		Integrating with all training programmes in the area of Psychology, Social Work, Mental Health, Emergency Medical Response, Hospital Administration, Nursing and Paramedis.	4.4.2, 31	Department of Education, State universities, school boards UGC and MCI, In consultation with the State nodal	0-3 years

				ministry	
4		Initiation of distance learning courses for sensitisation across different categories of disaster management stakeholders	4.4.2, Point c, Page 32	Department of Education, State universities, school boards UGC, IGNOU, In consultation with the State nodal ministry	0-5 years
5		Intensive PG Diploma/PG courses in PSSMHS.	4.4.2, Point iii & b, Page 31	Department of Education, State universities, UGC, MCI, In consultation with the State nodal ministry	0-8 Years

Role of NodalCentres

Sno	Broad Areas	Details of Action Point	Reference Section & Page no	Other Participating agencies	Timeline as per Guidelines
1	Mitigation, Capacity building and Preparedness	Developing/strengthening a mechanism for quick and effective referral system	Sec 4.6.2, page 43, Sec 5.5, 49	State Nodal Centre in consultation with the State Nodal Ministry	0-3 years
2		Sensitizing and training (basic and advanced) on PSSMHS across identified departments, sectors and levels.	Sec 4.4.3, Para 1, Page 32	State Nodal Centre in consultation with the State Nodal Ministry	0-5 years
3		Standardized training will be imparted to the mental health professionals like psychiatrists, psychologists, psychiatric social workers. Training will also be given to paramedics, community level workers and NGOs on PSSMHS from time to time.	Sec 4.4.3, Point 1, Page	State Nodal Centre in consultation with the State Nodal Ministry	0-3 years
4		Creation of a core group of master trainers at district level.	Sec 4.4.3, Point iii,	State Nodal Centre in	0-3 Years

			Page, 32	consultation with the State Nodal Ministry	
5		Training of NDRF/QRTs/DMTs with all basic psycho-social support skills	Sec 4.4.3 Point xiii, xiv, Page 33	State Nodal Centre in consultation with State the Nodal Ministry	0-3 Years
6		Developing PSSMHS need assessment indicators and templates.	4.4.8.4, Point i, Page 39	State Nodal Centre in consultation with State Nodal Ministry	0-3 Years
7		Strengthening the resources base and data management/ documentation in PSSMHS.	4.2.3 all points, Page 27 – 28, 4.4.5, i Page 35	State Nodal Centre in consultation with the State Nodal Ministry	0-5 years
8		Inclusion in the CBDM Plan and training of PRI team members.	4.4.8.2 Point viii, Page 38	Ministry of Panchayati Raj through NIRD in	0-5 Years

				consultation with the State Nodal Ministry	
9		Evolve a mechanism for community outreach education programmes on PSSMHS.	Sec 4.4.6, Point i – v, Page 35-36	State Nodal Centre in consultation with the State Nodal Ministry	0-5 Years

Role of State Disaster Management Authority (SDMA)

Sno	Broad Areas	Details of Action Point	Reference Section & Page no	Other Participating agencies	Timeline as per Guidelines
1		All the states will develop their own plans and guidelines for managing PSSMHS in disasters, in accordance with the national guidelines	Sec 4.1.1, Point i , Page 24	State Nodal ministry	0-3 Years
2		PSSMHS shall be integral part of State and District Disaster Management Plan	Sec 4.3.1, Point ii, Page 29	DDMA	0-3 Years
3		State authorities shall ensure inclusion of PSSMHS as an integral part of disaster planning for preparedness and response, relief and rehabilitation.	Sec 4.3.2 Para 1, Page 30	State Health Department, DDMA	0-3 Year
4		SDMA shall coordinate and ensure the participation of the department of Social Welfare, along with the departments of social work in the state universities and other state level NGOs for PSSMHS	Sec 4.3.2, Point iii, Page 30	Health, Social welfare, Education department,	0-3 Years
5		SDMAs may take the help from nodal institutions to make the standardized protocol for documentation.	Sec 4.4.5 Point i Page 35	Centre of excellence & nodal centres	0-3 years
6		SDMA will coordinate with State Mental Health Authorities and District Mental Health Programme authorities to provide training	Sec 4.6. 1, Point v, Page 43	State Mental Health Authority and	0-3 Years

				District Mental Health Programme	
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Role of District Disaster Management Authority (DDMA)

Sno	Broad Areas	Details of Action Point	Reference Section & Page no	Other Participating agencies	Timeline as per Guidelines
1		The district Disaster Management plan shall include PSSMHS as part of general health care and relief work in disaster	Sec 4.2.2, Point v, Page 27	State Health Department	0-3 Years
2		A nodal officer will be appointed to coordinate various departments and NGOs	Sec 6.2.3, Para 2, Page 59	State Health Department	0-3 years
3		District level, requisite PSSMHS management structure will be integrated into medical preparedness as part of district health plan.	Sec 4.1.2, Point iii, Page 25	State Health Department	0-3 years
4		A nodal officer from DMHP will be appointed He/She shall work closely with the Chief Medical Officer as well as to co-ordinate and monitor PSSMHS.	Sec 4.2.2, Point iv, Page 27	Health and other line	0-3 Years

				departme nts	
5		A resource list PSSMHS trained man power will be prepared at the district level	Sec 4.4.3, Point vii , Page 33	Health Departme nt, DDMA	0-5 years
6		DDMAs may take the help from nodal institutions to make the standardized protocol for documentation.	Sec 4.4.5, Point i , Page 35	SDMA, state nodal centre, Centre of excellenc e & nodal centres	0-3 Years
7		The integration of PSSMHS shall start at the primary health care level centre's at block and the specialised services at district level.	Sec 5.4, Point i , Page 48	State Health Departme nt	0-3 Years
8		The trained PHC team, health teams, community level workers for identification and referral	Sec 5.5, Point i , Page 49	DDMA, Health and line departme nts	0- 5 years

INCIDENT RESPONSE SYSTEM

Name of the Agency: Ministry of Home Affairs				
S.No.	Details of Action Points	Reference section / Chapter and page No,	Other participating agencies	Timeline as per guidelines
	Designation of Nodal Officer for Air Support Action taken By: MHA	Chapter 3 (3.2 – Para 2) Page No. 24		06 months to 02 years of the release of guidelines (released on July, 2010)
	Declaration of lead agency Action taken By: MHA	Chapter 3 (3.3 – Para 2) Page No. 25		06 months to 02 years of the release of guidelines (released on July, 2010)

Name of the Agency: State Government				
S.No.	Details of Action Points	Reference section / Chapter and page No,	Other participating agencies	Timeline as per guidelines
	Designation of Nodal Officer for Air Support Action taken By: State Government	Chapter 3 (3.2 – Para 2) Page No. 24		06 months to 02 years of the release of guidelines (released on July, 2010)
	Ensure that IRTs at State, District, Sub-Division, Tehsil/Block are formed and IRS is integrated in the State and District DM Plan. This may be achieved by issuing a Standing Order to all District Magistrates/DCs, line departments to identify suitable officers for different positions in the IRTs as given in Annexure – XI. Action taken By: State Government	Chapter 3 (3.4.1 – iii) Page No. 26	District Administration	06 months to 02 years of the release of guidelines (released on July, 2010)
	Issue a Standing Order in advance to different departments and agencies, so that in any emergency, mobilisation of both equipment and personnel happens smoothly. Action taken By: State Government	Chapter 3 (3.4.1 – iv) Page No. 27	District Administration	06 months to 02 years of the release of guidelines (released on July,

				2010)
	Ensure that a reasonable amount of imprest fund is sanctioned clearly delineating the procedure for emergency procurement. Action taken By: State Government	Chapter 3 (3.4.1 – v) Page No. 27	District Administration	
	Involve community based organizations for disaster response Action taken By: State Government	Chapter 3 (3.12) Page No. 33	District Administration	
Name of the Agency: State Government				
S.No.	Details of Action Points	Reference section / Chapter and page No,	Other participating agencies	Timeline as per guidelines
	Ensure effective communication and Web based / online Decision Support System (DSS) is in place in the EOC and connected with District, Sub-Division, Tehsil/Block level IRTs for support. Action taken By: State Government	Chapter 3 (3.4.1 – viii) Page No. 27	District Administration	
	The Chief Secretary and district magistrate of Hill states should design their Incident Response Teams (IRTs) as per their suitability	Chapter 3 (3.10) Page No. 33	District Administration	

	Action taken By: State Government			
	Preparation of Response Plan incorporating the IRS. NDMA Guidelines on the preparation of State DM Plan will be referred for such purpose. Action taken By: State Government	Chapter – 9 Page no, 87	SDMA / SECs / / District Administrations	06 months to 02 years of the release of guidelines (released on July, 2010)
	Identification of suitable officers at different levels for the various positions in the IRS organisational structure and formation of IRTs at the State, District, Sub-Division and Tehsil / Block levels through issuing Standing Orders at respective levels. Action taken By: State Government	Chapter – 9 Page no, 87	SDMAs / SECs / / District Administrations	06 months to 02 years of the release of guidelines (released on July, 2010)
	Identify at least four Key Resource Persons in each District for getting them trained, who in turn will impart training on IRS in the concerned Districts itself. Action taken By: State Government	Chapter – 9 Page no, 87	SDMAs /SECs / / District Administrations	06 months to 02 years of the release of guidelines (released on July, 2010)
Name of the Agency: State Government				
S.No.	Details of Action Points	Reference section / Chapter and page No,	Other participating agencies	Timeline as per guidelines
	Training of officers from different States on ICS (now adapted and called IRS) has been going on in India since 2003. A list of all such trained officers should be prepared in each State with their present locations of posting. The list should be accessed easily by all concerned. These officers can	Chapter – 9 Page no, 88	SDMAs / SECs / District Administrations	06 months to 02 years of the release of guidelines (released on July, 2010)

	<p>preferably be selected as Master Trainers and Key Resource Persons of the concerned State itself.</p> <p>NDMA has already collated a list of such trained officers and posted it on the NDMA website (www.ndma.gov.in). It may be referred to and updated by the State and District administration.</p> <p style="text-align: center;">Action taken By: State Government</p>			
	<p>Develop training faculty and master trainers in each State for capacity building of Key Resource Persons in each District. For this purpose six willing and suitable officers of different services will be identified and selected who would be trained by NIDM as Master Trainers for the State. The State Government will ensure that appropriate officers are selected and trained.</p> <p style="text-align: center;">Action taken By: State Government</p>	Chapter – 9 Page no, 88	SDMAs / SEC / District Administration	06 months to 02 years of the release of guidelines (released on July, 2010)
Name of the Agency: State Government				
S.No.	Details of Action Points	Reference section / Chapter and page No,	Other participating agencies	Timeline as per guidelines

	<p>Strengthening of EOC in each State and District as per norms laid down in the Guidelines and ensure establishments of IT Solutions for:</p> <ul style="list-style-type: none"> (i) standardisation of command structure; (ii) proactive planning facilities; (iii) strategic and tactical response; (iv) comprehensive resource management; (v) GIS, situational awareness and decision support; (vi) enhancing modeling capability for predicting casualties and mobilisation of resources for large scale incidents including CBRN emergencies. <p style="text-align: center;">Action taken By: State Government</p>	<p>Chapter – 9 Page no, 88</p>	<p>SDMAs / SECs / /District Administrations</p>	<p style="text-align: center;">06 months to 02 years of the release of guidelines (released on July, 2010)</p>
	<p>Organising the existing communications network so as to meet the requirements of any emergency in the State. This should include plan for quick and easy linking of existing independent networks of all the different line departments of the State Governments. The communications plan should also include alternative communication facilities like HAM radio, wireless, satellite phone, Skype etc.</p> <p style="text-align: center;">Action taken By: State Government</p>	<p>Chapter – 9 Page no, 89</p>	<p>SDMAs / SECs / / District Administrations /</p>	<p style="text-align: center;">06 months to 02 years of the release of guidelines (released on July, 2010)</p>

MANAGEMENT OF TSUNAMI

S.No.	Details of Action Point	Reference Section & page no.	Other Participating Departments/ Agencies	Timeline as per Guidelines
1.	Tsunami Alert, Watch and Advisory Bulletins received at the NEOC, SEOCs and DEOCs will be disseminated through the fastest means to the people in the coastal areas likely to be affected. With receipt of information, respective SDMAs and DDMAAs will act as per the stipulations laid out at section 3.4.4. in the Guidelines for Management of Tsunamis issued by NDMA.	Section 3.4.4, Pg. 26	Departments of Disaster Management, Revenue, Public Relation, DDMAAs, Home (Police network)	
2.	SDMAAs will prepare information material on coastal hazards at State level drawing on the expertise of the academia and various State Departments including Health, Police, Fire and Rescue Department, Revenue administration, Fisheries, Geology and Mining.	Section 3.10, Pg. 32	Departments of Health, Police, Fire & Emergency Service, Revenue, Fisheries and Geology & mining	
3.	SDMAAs/DDMAAs will conduct regular public awareness campaigns for the tsunami early warning mechanisms though workshops, drills and exercises, video films, distribution of ICTs, and publicity material, posters etc.	Section 3.10, Pg.32	Department of Public Relation	

4.	State Governments and SDMAs in collaboration with their State Earthquake Management Committees (SEMC), Hazard Safety Cells and non-governmental organisations (NGOs) will organise awareness programmes for specific target groups of stakeholders on various aspects of tsunami management.	Section 3.11, Pg.34	SEMC, HSC, Departments of PWD, Public Relations	
5.	Corporate sectors operating in coastal areas will be encouraged to support public awareness campaigns on tsunami risk and preparedness among vulnerable coastal communities near their locations	Section 3.11, Pg. 34	Department of Industrial Promotion, DDMA's	
6.	Proper awareness on the intricacies of EWS has to be created through public awareness campaigns and the general public should not panic when an alert is issued. This will enable INCOIS to issue warnings even if there is a remote possibility of a tsunami so that the coastal communities can review their preparedness levels.	Section 3.11, Pg. 34	Department of Public Relation and DDMA's	
7.	Tsunami warning drills have to be periodically conducted and school children in the coastal areas right from elementary school level need to be made aware of safe evacuation procedures.	Section 3.11, Pg. 34	Department of Elementary and Secondary Education, SDMA's, Fire & Emergency Services	

8.	Governments and SDMA's will, in collaboration with their boards of intermediate education, ensure that the subject of disaster safety and disaster preparedness (including tsunami) is introduced at the intermediate education level (Class XI and XII or, their equivalents), as well as at the degree level in the non-technical disciplines. Universities and autonomous institutes will introduce DM (which will include tsunami management) in various educational programmes.	Section 3.12, Pg.37	Departments of Elementary, Secondary & Higher Education, Directorate of Technical Education	
9.	State Governments will introduce a five year quality improvement programme for teachers and professionals engaged in teaching the subjects related to tsunami (namely earth science, architecture, ocean engineering and earthquake engineering).	Section 3.12.4, Pg. 37	Directorate of Technical Education	
10.	The Island States must set up the State Disaster Response Force (SDRF) from their existing police force and train these SDRF personnel with the help of master trainers from NDRF. The medical facilities in the island territories will also be adequately strengthened and the possibilities of deploying medical ships or medical boats to remote islands will be explored by the health administration.	Section 3.14, Pg. 41	Departments of Home and Disaster Management	
11.	The DM plans prepared at the state and district levels will have sections incorporating all-hazards medical management to improve emergency medical preparedness and emergency medical response. Medical preparedness from tsunami risk will focus on likely injuries, outbreak of diseases and other post tsunami public health problems including psycho-social trauma.	Section 3.15, Pg.43	Department of Health & Family Welfare	

12.	Trained Medical First Responders (MFRs) will be identified in advance to be deployed for administering first-aid and resuscitation measures, at the incident site and during transportation of casualties. DM plans at all levels will identify medical and paramedical staff to supplement manpower resources at district and state levels.	Section 3.15, Pg.43	Department of Health & Family Welfare, Civil Defence, NYKS, NSS, NCC, Indian Red Cross Society	
13.	A uniform casualty profile of tsunami injuries will be created and a system of triage to classify casualties will be institutionalised so that the treatment can effectively be facilitated by the medical authorities concerned. This plan will include inventory hospitals and their telephone numbers, availability of ambulances, doctors, anaesthetists, specialists, paramedical staff, sources of public and private sector medical resources, and commonly needed medical supplies and medical stores, blood banks, heli-ambulances and floating hospitals, etc., for easy accessibility.	Section 3.15, Pg.43	Department of Health and SDMA	
14.	The medical preparedness plans will include the identification of trained trauma and psycho-social care teams including nursing and paramedical staff. In the coastal areas vulnerable to tsunami, mobile hospitals and Quick Reaction Medical Teams (QRMTs) will be developed as a part of the health-care delivery system of the states to manage patients with minor injuries at the incident site.	Section 3.15, Pg.43	Department of Health, SDMA & DDMA	

15.	In the design of public infrastructure like roads, schools, hospitals, multi-purpose shelters etc., prevailing risk and vulnerability has to be kept in mind. In tsunami-prone areas, the DDMA's will ensure that a bank of designs of temporary shelters, intermediate shelters and disaster-resilient houses shall be prepared, with the flexibility to use traditional and local knowledge, coping capacities and locally available shelter materials.	Section 4.4.1, Pg.46	State PWDs, SDMA's and other concern agencies of State Govts/UT Administrations	
16.	Cyclone-cum-tsunami shelters should be designed in such a way that they address multi-purpose uses. Such multi-purpose uses will ensure that such structures do not fall into disuse when there is no threat of cyclones or tsunamis. This would ensure their proper maintenance by the community itself. Cyclone-cum-tsunami shelters should be so designed so as to take care of the livestock of the communities, wherever possible, while protecting the local people.	Section 4.3.2, Pg.46	Department of Panchayati Raj and PWD	
17.	Coastal villages can be safeguarded from the impact of tsunami by adopting soft solutions and by educating the villagers to follow simple precautionary measures as illustrated at section 4.5.1 of NDMA Guidelines on management of tsunamis	Section 4.5.1, Pg.46	Departments of Rural Development, Panchayati Raj	
18.	The recommended design solutions and specifications against various observed tsunami effects, as given in the tables under section 4.5.2 and 4.6 of NDMA Guidelines on management of tsunamis should be taken into consideration in new design and construction port and harbour structures.	Sections 4.5.2 to 4.5.6, Pg.48	Department of Public Works, Industrial Promotion	

19.	While NDMA Guidelines on management of tsunamis indicate an illustrative list of critical lifeline buildings and structures at table 4.7, the State Governments/SDMAs will, in consultation with knowledge institutions such as IITs and NITs and Hazard Safety Cells (HSCs), review their existing built environment, and prepare such lists.	Section 4.7.3, Pg.53	Public Works Department	
20.	DDMAs will explore the inclusion of coastal protection measures to be eligible for schemes like National Rural Employment Guarantee Scheme, as they will meet the employment generation objective and provide the much needed protection to the fragile coastal areas.	Section 4.7.7, Pg.55	Departments of Panchayati Raj and Rural Development	
21.	The necessary capacity for carrying out similar structural safety audit and strengthening for private buildings will also be developed through suitable capacity development efforts among the professionals in the private sector. The nodal agencies will make available the details of technical guidance for carrying out structural safety audit of lifeline structures and their strengthening in public domain for the use of the general public and professionals in the private sector.	Section 4.8, Pg. 55	SDMA, DDMAs, Local Authorities	
22.	The vulnerability assessment of the seafront and coastal natural resources can be carried out only on the basis of reliable large-scale maps. Assessment techniques may be used to determine the vulnerability of structures of seafront in the order of priority decided by the State Governments/SDMAs, in consultation with their SEMCs and HSCs.	Section 4.10, Pg. 57	State Remote Sensing Centres	

23.	State Governments/SDMAs will initiate efforts to compile GIS databases and develop a GIS data bank consisting of GIS maps for all urban areas, indicating vulnerable seafront and natural resources, all critical structures and infrastructures.	Section 4.10, Pg.57	State Remote Sensing Centres, Department of Urban Development, Public Works	
24.	As far as possible, local authorities will discourage the construction of structures in areas vulnerable to high tsunami risk. In case of construction of structures in areas prone to sea erosion and high risk of tsunami, the professionals involved in the design and construction of such structures will be made aware of the tsunami risk and vulnerability in such areas.	Section 4.10, Pg. 57	Local Authorities	
25.	Effective implementation of building bye-laws is to be ensured by the State Governments and ULBs in construction of buildings and local infrastructure should be strengthened to make them resistant from tsunami and cyclonic sea surge.	Section 5.3.1, Pg.61	Department of Urban Development/Municipal Administrations	

26.	Based on CRZ and best land use practices, it is necessary to plan for conservation and restoration of mangroves and raising tree shelterbelts extensively in all potential coastal zones. Based on information received from the states, groups of experts from Ministry of Environment & Forest, Botanical Survey of India, Zoological Survey of India, State Governments and some experts from Universities and research organisations, would visit the sites to assess the suitability and feasibility of the proposed areas of inclusion under the National Mangrove Conservation Programme. Plantations are to be closely monitored so as to ensure their survival and growth involving state-of-the-art remote sensing technologies.	Section 5.3.1, Pg. 61	Department of Environment and Forest	
27.	DDMAs will make special efforts to ensure that employment generation schemes like MGNREGA will be specially made applicable in tsunami-prone areas for establishing shelter belt plantations and mangrove plantations.	Section 5.6, Pg. 64	DDMAs, Department of Rural Development	
28.	State Governments/SDMAs will, in consultation with their SEMCs and HSCs, establish the necessary techno-legal and techno-financial mechanisms. This is to ensure that all stakeholders like planners, builders, architects, engineers and government departments, responsible for regulation and enforcement adopt tsunami-safe zoning, planning and construction practices and provide for safety in all design and construction activities in such a way that acceptable safety benchmarks against tsunami are satisfied.	Section 5.7, Pg. 64	Department of Environment and Forest, Urban Development, Finance, Disaster Management	

<p>29.</p>	<p>All State Governments/SDMAs in tsunami-risk regions will adopt the model techno-legal framework for ensuring compliance of tsunami-safe zoning, planning, design and construction practices in all new constructions. State Governments will update the urban regulations by amending them to incorporate multi-hazard safety requirements. State Governments will review, revise and update the town and country planning Acts, land use and zoning regulations, building bye-laws and DCRs, and this process will be repeated at least once every five years.</p>	<p>Section 5.7, Pg. 64</p>	<p>Public Works Department, Departments of Urban Development, Finance, Disaster Management</p>	
<p>30.</p>	<p>The designs of some structures in tsunami-prone regions, randomly selected by the ULBs, will be subjected to detailed technical audit for reviewing the entire design process and detailed design calculations. A procedure will be developed by each State Government/SDMA for undertaking this third party audit or external compliance review by accredited agencies for ensuring the review of a structural safety audit. In particular, the external compliance review of seafront structures, lifeline buildings and infrastructure in tsunami-prone areas will be undertaken as per the recommendations of the expert group set up by the MHA, GoI.</p>	<p>Section 5.7, Pg.64</p>	<p>Departments of Urban Development</p>	
<p>31.</p>	<p>Specific illustrative guidelines will be issued by State Governments for each non-engineered construction type in tsunami-prone areas and demonstrated through the construction of new public buildings in villages</p>	<p>Section 5.7, Pg.64</p>	<p>Departments of Urban Development and PWD</p>	

32.	State Governments will develop suitable bye-laws for rural areas where most buildings are non-engineered, keeping in mind the local conditions, and extend them to the rural areas, especially on priority in high-risk areas. State Governments/ SDMAs, in consultation with SEMCs, HSCs and Panchayat Raj Institutions will regulate all future constructions at coast lines to provide safety against tsunami.	Section 5.7, Pg. 64	Department of Panchayati Raj	
33.	As soon as the warning is issued, the Tsunami Response Plan will be activated in the concerned areas. Response to early warning would involve safe evacuation of community population with minimal loss to property (living and non-living assets). Depending on the scale of Tsunami, the run-up height and level of storm surge, the scale of response will be mobilised at community, district, state and national level.	Section 6.1, Pg.67	Department of Disaster Management and DDMA's	
34.	Systems will be institutionalised by the Disaster Management Authorities at various levels for coordination among various agencies like Central Government Ministries, Departments, State Governments, district authorities, ULB's, PRI's and other stakeholders for effective tsunami response.	Section 6.1, Pg. 67	Department of Disaster Management, SDMA's and DDMA's	

35.	Standard Operating Procedures (SOPs) for the Emergency Operation Centres (EOCs) will be developed by State Governments and integrated within the framework of the NDMA Guidelines on IRS, which will take advantage of modern technologies and tools, such as GIS maps, scenarios and simulation models for effectively responding to disasters. GIS maps available from other sources such as the city planning departments, state space application centres and other such sources, will be compiled considering their potential application after a disaster. State Governments/SDMAs will undertake training of personnel involved in IRS.	Section 6.4, Pg. 68	SDMAs, Departments of Disaster Management and Home	
36.	A number of community based organizations normally volunteer their services in the aftermath of any disaster. State Government/SDMAs and DDMAAs will coordinate the allocation of these human resources for performing various response activities. State Governments will work with these agencies to understand and plan their roles in the command chain of the IRS, and incorporate them in the DM Plans.	Section 6.5, Pg. 68	Department of Rural Development, Panchayati Raj	
37.	The relief and response activities carried out by various stakeholders will comply with the norms prescribed by the appropriate authorities.	Section 6.5, Pg.68	Department of Disaster Management	
38.	After a Tsunami, accurate information will be provided on the extent of the damage and the details of the response activities through electronic and print media.	Section 6.5, Pg. 68	Department of Disaster Management and Revenue	

39.	Special efforts will be made by the DDMAAs to enlist the support of NGOs and humanitarian agencies to ensure that in the event of a sudden occurrence of a tsunami, adequate emphasis will be placed on restoration of livelihoods of the tsunami affected people disrupted by the tsunami.	Section 6.5, Pg. 68	SDMAAs, DDMAAs	
40.	The needs of psycho-social support and trauma care of the tsunami affected people will also be met through special efforts by trained social workers and clinical psychologists.	Section 6.5, Pg. 68	SDMAAs, DDMAAs and Department of Health and Family Welfare	
41.	State Governments will facilitate the involvement of the corporate sector in making available their services and resources to the Government during the immediate aftermath of Tsunami.	Section 6.6, Pg. 69	Department of Industrial Promotion	
42.	Inflatable motorised boats, helicopters and search & rescue equipments are required immediately after a tsunami to carry out search and rescue of people trapped in inundated areas, on tree tops and hanging on to structures. State Governments will compile a list of such equipment and identify suppliers of such specialised equipments and enter into Long Term Agreements for their mobilisation and deployment in the event of tsunami.	Section 6.9, Pg. 70	Department of Disaster Management	
43.	India Disaster Resource Network (IDRN), which is a web-based resource inventory of information on emergency equipment and response personnel available at every district, will be revised and updated frequently.	Section 6.9, Pg. 70	SDMAAs, DDMAAs, State and District NICs and District Administrations	

44.	The setting up of relief camps for the people whose houses have been damaged by tsunami or flooded by the storm surge and the provision of basic amenities in such camps involves complex logistics of mobilising relief supplies, tents, water supply and sanitation systems, transport and communication systems, and medical supplies. Immediate restoration of power supply would be essential to carry out relief operations. The DM Plans at the State and District levels will address this issue in detail. An information booth for victims would be established by the district authorities.	Section 6.9, Pg. 70	SDMAs, DDMAAs and Department of Disaster Management	
45.	In the event of mass casualties, States/UTs will develop systems for proper identification of dead bodies, recording the details of victims, and their DNA fingerprinting.	Section 6.9, Pg.70	Department of Health and Family Welfare	
46.	Prompt and efficient emergency medical response will be provided by Quick Reaction Medical Teams (QRMTs), Mobile Field Hospitals, Accident Relief Medical Vans (ARMVs) and Heli-ambulances. They will be activated to reach the tsunami-affected areas immediately, along with dressing material, splints, portable X-ray machines, mobile operation theatres, pulse oximeters, resuscitation equipment and life-saving drugs, etc.	Section 6.10, Pg. 71	Departments of Health and Family Welfare, Disaster Management	
47.	Resuscitation, triage and medical evacuation of victims who require hospitalization will be done in accordance with SOPs. A large number of victims may suffer from psycho-social trauma, for which appropriate counseling will be provided.	Section 6.10, Pg.71	Departments of Health and Family Welfare, Disaster Management	

48.	The emergency medical plan will be operationalised immediately on receiving information from the tsunami-affected areas. Hospitals in the affected areas will create a surge capacity for the required number of beds by discharging non-critical patients and mobilise doctors and support staff, additional orthopaedic equipment and supplies at short notice from non-coastal areas.	Section 6.10, Pg. 71	Departments of Health and Family Welfare, Disaster Management	
49.	The emergency medical plan will identify the requirement of enhanced manpower, medical stores and the requirement of blood and its components.	Section 6.10, Pg. 71	Departments of Health and Family Welfare, Disaster Management	
50.	After a tsunami, information centres will be set up to provide medical response information to the public, relatives of victims and media.	Section 6.10, Pg. 71	Departments of Health and Family Welfare, Disaster Management	
51.	The designated hospitals will also identify the surgical teams that can be deployed in the field at short notice and arrange for their transport, medical equipment and supplies. State Governments will coordinate with both government and private hospitals in order to facilitate effective and adequate hospital response after tsunami.	Section 6.10, Pg. 71	Departments of Health and Family Welfare, Disaster Management	
52.	Documentation of medical response provided after a tsunami will be done by a medical administrator. This documentation will be used as feedback for future improvement of the response strategies.	Section 6.10, Pg. 71	Departments of Health and Family Welfare, Disaster Management	

53.	In accordance with Section 7.3.1 of National Disaster Management Guidelines for Management of Tsunamis, all the Coastal States and UTs, while preparing State DM Plan, shall include the vulnerability of different parts of their states/UTs to tsunami and measures to be adopted for prevention, mitigation, capacity building and preparedness to tsunami disaster.	Section 7.3, Pg. 75	SDMA, DDMA, Department of Disaster Management	
54.	Authorities in charge of education institutions falling in tsunami risk zones will prepare tsunami preparedness plans and conduct mock exercises and drills. Using school buildings as temporary relief camps during disasters disrupts the education of children for long periods.	Section 7.3, Pg. 75	DDMA	
55.	Alternative arrangements for accommodating relief camps will be put in place through various mitigation projects to gradually reduce the dependence on the buildings of educational institutions.	Section 7.3, Pg. 75	SDMA, Department of Disaster Management	
56.	All hospitals of coastal areas will develop their emergency plans, conduct mock exercises and drills and update themselves from time to time with relevant information on tsunami disaster management and preparedness. State Governments/SDMA will monitor the preparation and testing of these plans. State Governments will ensure that all government offices are able to withstand tsunami, and are fully prepared with DM plans.	Section 7.3, Pg. 75	Departments of Health and Family Welfare, Disaster Management	
57.	The DM plans will incorporate all the features of the EOCs including their establishment and operations.	Section 7.3, Pg. 75	SDMA, DDMA	

<p>58.</p>	<p>As defined at Section 7.4 of National Disaster Management Guidelines for Management of Tsunamis, all the Departments of Coastal State Governments and UT Administrations, concerned to tsunami in any way, will identify the measures for prevention and mitigation of tsunami in their DM Plans in accordance with the National and State DM Plans and national and state level DM Guidelines.</p>	<p>Section 7.4, Pg. 76</p>	<p>SDMA and DDMAAs</p>	
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MANAGEMENT OF DROUGHT

SL. No.	Action Point	Section of the guidelines	Main Agency	Collaborating agencies	Action taken till March 31, 2011
1	<p>Separate Drought Monitoring Cells (DMCs) will be created at the state level with adequate staff under the control of State Disaster Management Authorities (SDMA's). State level monitoring cells will have requisite Administrative, Technical and data maintenance staff.</p>	1.4	State government/SDMA	State Executive Committee (SEC)	
2	State DMCs will undertake on a priority basis, the preparation of vulnerability maps for their respective States.	1.5	State DMCs	NRSC; NATMO, IMD, SAUs and ICAR	
3	To establish a Control Room for drought management and strengthen the Drought Monitoring Cell in the DAC, GoI, with all required technical facilities and personnel so as to have the capability of analysing and examining the reference and research	1.8	DAC, MoA		

	applications will corroborate on a weekly basis their findings on the crop health. IMD will have a dedicated webpage on drought monitoring and forecast in its web portal which will be coordinated by DRU, Pune				
7	Assessment of damage expected will include agricultural production, depletion of water resources, livestock population, land degradation and deforestation as well as human health.	3.4	State DMC	State Depts. of Agriculture, Animal Husbandry and Water Resources; National Crop Forecasting Centre (NCFC)]	
8	Unit of deceleration of drought should be standardised and alternative methods of quicker assessment of crop yield need to be evolved so as to mitigate the impact of drought in time.	3.5	DAC	State DMCs and NCFC	
9	The Drought Management Information System of DAC will be revamped, institutionalized and made operational with the support of State DMCs.	3.7	State DMCs	DAC	

MANAGEMENT OF URBAN FLOODING

S No.	Details of Action Points	Reference Section and Page No.	Other Participating Agencies	Timeline as per Guidelines
1.	<p>Establishing Technical Umbrella for Urban Flood Forecasting and Warning (At the State Level)</p> <p>State Nodal Departments will establish a State Level Guidance, Monitoring and Approval Mechanism for UFDM for building Effective Capacity Development/ Manpower Training/ Observational Network Design and Operational support. The ULB Scale Customization / Operation/ Upgrade and Update activities of UFDM will be shouldered by a Consortium of Local Level Technical Institutions (NITs, Engineering Colleges, etc.) for establishing GSM/WAN telemetry based ARG/AWS network; customization/testing/operation of urban flood EWS; customization of all necessary spatial and non-spatial data for building DSS for UFDM. ULBs will extend all necessary administrative/financial/logistical support for the designated consortium of local level technical institutions to commission and operate the UFDM systems with due technical support/ manpower development teams on sustainable basis. ULBs need to organize an institutional back up, through developing appropriate MoUs with those technical institutions identified for this task.</p>	3.18, 38	MoUD, SRSACs and ULBs	

2.	<p>State Urban Flood Disaster Management Information System</p> <p>The Technical Umbrella at the state level will ensure the establishment of a comprehensive UFDNIS.</p>	5.12, 66		
3.	<p>Urban Flooding Cells (States/UTs)</p> <p>The Department of Municipal Administration/ Urban Development in the State/UT will be the nodal department for the management of urban flooding.</p> <ul style="list-style-type: none"> i) A separate Urban Flooding Cell will be constituted within nodal department, ii) A Joint Secretary cadre officer will be designated as the Nodal Officer in charge, iii) It will take the lead to establish a state level monitoring and approval mechanism for UFDNIS particularly as a part of the Technical Umbrella, and iv) It will guide all the ULBs in all aspects of UFDNIS. UFC shall be formed with members from Irrigation Department, State Remote Sensing agency, Disaster Management Department, etc. to guide the ULBs, for both prior to the events as well as during the event. 	5.17, 70	MoUD	
4.	<p>Adverse Impact of Urban Flooding</p> <p>Steps will be taken for business continuity plan by local Federations of Commerce and organisations like CII, FICCI, ASSOCHAM and NASSCOM. State governments will coordinate these efforts.</p>	7.1.1, 86		

5.	<p>NDRF and SDRF</p> <p>Periodic simulation exercises and mock drills will be organised and made mandatory on the lines of pilot initiatives of NDMA for ensuring effective, functional emergency response, along with the inventory of community resources and assets.</p>	7.5.1, 91	States/UTs	
6.	<p>Fire Brigade</p> <p>i) Since Fire is a municipal subject, a uniform policy is required which will be applicable in all States. Steps will be taken by all the states/UTs to have the fire services under the Municipal Corporation/ Municipality, for at least the larger cities/ towns,</p> <p>ii) States/ UTs will take necessary steps to systematically strengthen fire services by making provisions in their annual plans, and</p> <p>iii) The 13th Finance Commission recommended that a portion of the grants provided to the (ULBs) be spent on revamping of the fire services within their respective jurisdictions. These bodies could provide financial support to the State Fire Services Department towards this objective. In this process, ULBs could draw upon the expertise of state agencies and the National Disaster Management Authority, as required.</p>	7.5.3, 92	MoUD and ULBs	
7.	<p>Preparedness</p> <p>Local scale emergency medical response systems will be established to deal with medical preparedness, emergency treatment, mortuary facilities and disposal of bodies and carcasses, public health issues including trauma and control of epidemics.</p>	7.6.1, 93	ULBs	

8.	<p>Emergency Medical Response</p> <p>i) Risk knowledge will be linked with local scale response plans by organising necessary support systems from national agencies, in accordance with needs of the local authorities and community stakeholder groups, and</p> <p>ii) Institutionalised multi-agency collaboration will be developed with clarity of roles and responsibilities from city to ward levels and periodic updating of SOPs at different levels based on experience gained.</p>	7.6.2, 93		
9.	<p>Urban Flood Education</p> <p>i) Disaster-related curricula have already been introduced by the Central Board of Secondary Education (CBSE) for classes VIII, IX and X. It has to be clearly brought out that Urban Flooding is different from riverine flood which largely affects rural areas. The MoUD, in consultation with the MHRD, will encourage the CBSE to introduce modules of UFDM in classes XI and XII as well. MoUD will consultation with MHRD and the state governments will promote the efforts the development of high-quality education materials, textbooks and field training. The state governments/ SDMAs will encourage their school boards to develop similar content in their school curriculum,</p> <p>ii) Such efforts will address all aspects of UFDM in order to inculcate a culture of prevention, mitigation and preparedness as well as effective and prompt response, relief, rehabilitation and recovery. Case histories of major flood events will be used as valuable inputs in the process,</p> <p>iii) MoUD will lead efforts to involve All India Council of</p>	8.2, 98	MoUD, MHRD and MoHFW	

	<p>Technical Education (AICTE), University Grants Commission (UGC), Council of Architecture (COA), Institution of Engineers (IE) and the state governments to develop suitable modules for inclusion in the curricula of architecture and engineering courses in the Indian Institutes of Technology (IITs), National Institutes of Technology (NITs) and other universities, colleges and polytechnics of engineering and architecture to equip the students with the requisite knowledge of flood-proof design and construction techniques,</p> <p>iv) DM related aspects of medical education will receive detailed attention at different levels, so that graduating doctors, paramedics and emergency medical technicians are able to handle emergencies with a better understanding of the issues involved. One of the major public health concerns in management of urban flooding is the possibility of breakout of epidemics after a severe flooding event. Besides this, trauma care and emergency medical care are also very relevant,</p> <p>v) The state governments will follow up these efforts with regular in-service refresher programmes at appropriate levels for upgradation of knowledge and skills, and</p> <p>vi) There are some important human factors which contribute to urban flooding, namely, improper disposal of domestic, commercial and industrial solid waste and construction debris. These issues will be highlighted in curriculum developed by the states for schools. Implications of non-compliance of the techno legal regime will also be included. Such efforts will go a long way in generating awareness from a young age and contribute to bringing a change.</p>			
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10.	<p>Institutional Capacity Development (Raising the Level of ATIs)</p> <p>i) Efforts should be made to raise the level of ATIs. The faculty should become the nodal point of capacity enhancement in the state, be able to design and supervise the technical capacity programme initiatives of line departments. They should evolve suitable training modules by taking specific needs of the line departments in consultation with knowledge institutes, undertake research studies, and mock drills to improve preparedness and response capacities, design and development of databases, etc. to meet the emerging needs of the ULBs,</p> <p>ii) The State/UT governments should designate a nodal officer in the department of MA&UD to work in close coordination with the DM cells of ATIs on one side and the commissioners of ULB on other side, and</p> <p>iii) DM Cells of ATIs are to work in close coordination with state departments of MA&UD and Commissioners of ULBs to ensure capacity development programmes.</p>	8.4, 100	MoUD, NIDM and ATIs	
11.	<p>Role of Civil Society</p> <p>Civil Society needs to consider the enhancement of the socio-economic conditions of the poor, alleviate poverty and improvement of livelihood of these vulnerable groups.</p>	8.7,101	ULBs	
12.	<p>Suggestions for Establishing Effective Community Level First Responder Support</p> <p>i) Encourage local residents to constitute consisting of ex-servicemen, retired police personnel, paramilitary forces and RWAs,</p> <p>ii) The owners/ those connected with management of</p>	8.7.2, 102	ULBs	

	<p>organisation which generates bulk solid waste in commercial areas running of hospitals, hostels, community halls, hotels and restaurants,</p> <p>iii) These people should be encouraged to be part of the TF/VG,</p> <p>iv) The VG can be trained by the teams of Civil Defence, SDRF, NDRF, etc.,</p> <p>v) Involve various youth organisations, namely (i) NCC, (ii) NSS, and NYKS to have the inherent advantage of outreach at the grass-root level and also have the advantage of ready availability for immediate assistance at the ground level in the event of any disaster, and</p> <p>vi) Develop emergency response plans for hospitals and government offices.</p>			
13.	<p>Role of Public Representatives</p> <p>Public representatives including Municipal Ward Members, MLAs and MPs are regularly elected by the people, directly or indirectly. They have a very close contact with the people at the grass-root level and their cooperation should be enlisted for various awareness generation programmes on a regular basis.</p>	8.14, 108	ULBs	
14.	<p>Role of Media</p> <p>i) Steps will be taken to evolve appropriate media campaign covering radio, visual and print media besides the production of printed materials like brochures, pamphlets, posters, etc., and</p> <p>ii) Media companies will also be motivated to launch/expand awareness generation programmes as a part of their CSR.</p>	8.15, 108	ULBs	

15.	<p>Awareness on Insurance</p> <p>Awareness generation campaigns should be initiated by states/UTs, ULBs and other stakeholders. State governments, local authorities and other stakeholders are to communicate the benefits of insurance. This should be done with active cooperation from the insurance companies. MoUD should coordinate efforts for this.</p>	8.17, 109	ULBs	
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