सत्यमेव जयते

TRAINING MANUAL

HOW TO CONDUCT EMERGENCY MANAGEMENT EXERCISE (EMEx)

September 2015

NATIONAL DISASTER MANAGEMENT AUTHORITY
GOVERNMENT OF INDIA

Training Manual

How to Conduct Emergency Management Exercise (EMEx)

Training Manual—How to Conduct Emergency Management Exercise (EMEx)

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Member Secretary
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FOREWORD

Today the world is witnessing exponential urban growth, especially in the developing countries. It is projected that by 2030 another 1.8 billion people would be added to the cities mostly propelled by migration of poor people from the rural areas to large urban centers in the developing countries in search of employment and livelihood. India would be one of the main theatres of urban explosion in the coming years. It is estimated that by 2021, India would have 550 million people living in its cities. The unplanned expansion of the cities to accommodate rapid population growth, combined with inappropriate land use planning and the partial implementation/non - compliance of safety norms/ building standards have further increased vulnerability of the urban population to various disasters. Disaster risks from extreme natural hazards are compounded by these everyday risks, resulting in a process of "risk accumulation" specific to urban areas, where risk is amplified by human activities.

This exponential growth of population has pushed an increasing number of people into the bracket of vulnerability by compelling them to move to unsafe settlements with inadequate basic infrastructural services. Furthermore, the unplanned rise of tier two and tier three cities as major centres of economic and social activity have further exacerbated and escalated the risk profile of urban India. Therefore it is necessary to retrofit all new development activities for reducing the threats of impending disasters. Additional costs involved shall always be far less than the benefits accruing from such investments. The road ahead lies in investing in disaster risk reduction, which is in turn, cost effective and adopting smarter and more inclusive development strategies.

Considering the need to strengthen the capacities and capabilities of Indian urban population in disaster preparedness and response, the model/tool of Emergency Management Exercises (EMExes) has been facilitated and organized by NDMA in various Indian cities, in collaboration with concerned states which is aimed at improving the emergency response capacities of urban stakeholders.

As coordination is the key in effectively managing urban emergencies, these EMExes are aimed at improving coordination among the functional departments of the urban bodies in a city/district set up. They also help in testing, examining and assessing the emergency response capacities of a city/district and highlight all the areas of improvement. Overall, these EMExes help to strengthen inter-departmental emergency communication, coordination and chain of command during exigent times.

The manual on "How to Conduct an EMEx" has been prepared to provide a hands-on approach to the planning and implementation of an EMEx by concerned stakeholders in their respective jurisdiction/district/city. I take this opportunity to express my deep sense of appreciation for all the stakeholders who have rendered support towards formulation of this document.

New Delhi
September, 2015

R. K Jain (IAS)
Member Secretary, NDMA

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Joint Secretary
National Disaster Management Authority
Government of India

ACKNOWLEDGEMENT

We live in an era of unprecedented urbanization and many of our cities are vulnerable to disasters due to their location in high-risk zones. Their disaster vulnerability has also increased considerably over the years due to extreme weather conditions being influenced by climate change. The emergency response machinery is not adequately equipped to handle unpredictable instances of natural and man-made disasters which are extremely complex in nature.

The Emergency Management Exercise (EMEx) aims to give concerned stakeholders a holistic operational training in complex emergency management situations. As disaster response is a multi-sectoral / multiagency coordination driven function, the main focus of EMEx is to ensure the effectiveness of requisite emergency/ disaster management strategies. In this backdrop, there is a need for City Disaster Management Plan with Standard Operating Procedures (SOPs) for Emergency Support Functionaries (ESFs) / teams and Government authorities along with the sector specific disaster plans and strategies.

In view of the need for necessary coordination and synergy among all agencies and stakeholders, NDMA started implementing the Model of Emergency Management Exercises to focus on building necessary capacity and skills of concerned stakeholders / emergency responders involved in emergency / disaster response with special focus on mass casualty management and preparedness.

We hope that this Manual will serve to create a locally driven, multi-disciplinary, sustainable commitment to emergency management activities and will, over time, become a validated model which can be easily replicated in other cities. The model adopted for implementing EMEx rests on creation of a resource pool of trainers at the state and city level who in turn can disseminate the training further at the local level. Based on the experience gained during the conduct of EMExs across different locations in India, this Manual will also act as a ready reckoner in conducting similar exercises to all the emergency responders and stakeholders.

I wish to mention sincere appreciation on behalf of NDMA to the Head of Disaster Risk Reduction Section of the UNICEF, India for rendering necessary technical support and contribution of former Joint Secretary Smt. Neelkamal Darbari in preparation of this Manual. I wish to acknowledge the support rendered by the Senior Consultant (CBDM) NDMA in preparation of this Training Manual in particular and the support rendered by officers of Capacity Building & Administration, Policy & Plan and other Divisions of NDMA in general.

22/9/15

New Delhi
September, 2015

B. Pradhan (IAS)
Joint Secretary, NDMA

Executive Summary

About Emergency Management Exercises

Emergency Management Exercises (EMEx) are large-scale learning exercises designed to explore and strengthen the emergency response systems in disaster-prone cities/districts. They bring together a variety of actors in disaster management – regional emergency responders, educational institutions, hospitals, health professionals, humanitarian agencies, state agencies, community members, non-government organisations, civil society organisations, and professionals working in disaster management (or related fields) to assess the cities' disaster preparedness and resilience, develop new skills for emergency management and mass casualty events, and to work cohesively to develop a multi-disciplinary approach, for coordinating response to a local disaster/emergency. Multiple training courses, referred to as tracks are delivered simultaneously to different stakeholder groups during an EMEx. After successful delivery of the tracks, participants get an opportunity to work together and apply the theoretical concepts to practical scenarios through a table top simulation followed by a city wide drill.

"An EMEx is a standard, extended learning exercise for various systems and sub-systems of Urban Emergency Management Services (U-EMS)".

The objective of an EMEx is to improve emergency preparedness by building technical capacity of emergency support functions (ESFs) to launch a coordinated, timely and adequate response to known and unforeseen disasters.

Following its successful implementation in some of India's most hazard prone cities i.e. Mumbai, Chennai, Delhi, Guwahati, and Jorhat, EMExes have been practiced by the National Disaster Management Authority (NDMA) as a systematic way of building capacity in urban areas, strengthening emergency preparedness, and conducting periodic tests of their response capabilities.

The manual has been prepared to guide and inform the process of conducting EMExes. Another purpose that this manual will serve to provide a set of guidance notes for conducting EMExes in a scientific and result –oriented manner. The manual has the following sections:

- The History of Emergency Management Exercises in India
- Challenges Faced by Urban India: The Need for Emergency Management Exercises in India
- The Significance of Emergency Management Exercise in Disaster Management

- The Process Overview of an Emergency Management Exercise
    - Planning an Emergency Management Exercise
    - Conducting an Emergency Management Exercise
- Learning Lessons: Evaluating Emergency Management Exercise
- Follow-up actions after an Emergency Management Exercise

1 History of Emergency Management Exercises in India

Emergency Management Exercises (EMExes) have been implemented in a localized manner since 2003. However, between 2003 and 2008 the EMEx initiative in India was led by various Civil Society Organizations (CSOs) supported by international academic institutions. This was followed by part institutionalization of the process pertaining to EMEx in Mumbai with the leadership provided by the Municipal Corporation of Mumbai in 2008 which witnessed ownership by a Government Entity for the first time for conducting EMEx. It was in 2011 with the Chennai Emergency Management Exercise (CEMEx) that the National Disaster Management Authority (NDMA) played a facilitative role. Ever since then, EMExes have been adopted and regularly organised under the aegis of the NDMA and various State Disaster Management Authorities (SDMAs). The following is a list of EMExes that have been held with the direct support of the NDMA:

- Chennai Emergency Management Exercise (CEMEx)- 2011
- Guwahati Emergency Management Exercise (GEMEx)- 2012
- Delhi Emergency Management Exercise (DEMEx)- 2012
- Jorhat Emergency Management Exercise (JEMEx)- 2013
- Silchar Emergency Management Exercise (SEMEx)- 2013
- Dibrugarh Emergency Management Exercise (DiEMEx)- 2014
- Nagaon Emergency Management Exercise (NEMEx)- 2014

All the EMExes were implemented with large levels of stakeholder participation during preparedness phase and the weeklong exercise. Some of the significant outputs and outcomes were:

- Attendance by a large number of participants (e.g. Guwahati) from a wide range of sectors who were actively interested in acquiring new emergency response skills and knowledge.
- Key stakeholders were brought onto a common platform to share information and collaboratively develop a disaster response strategy.
- Opportunity to assess preparedness before the exercise. While the actual exercise happened in the end within 5 odd days, the preparedness phase saw concerted activities over three to six months prior the EMEx week.
- Disaster awareness generated among various levels of government, community

and emergency management sectors

- Teachers and school students were made aware of school safety issues.
- Dynamic relationships between local and international disaster management specialists were fostered.
- Emergency responders identified information and coordination needs and gaps.
- Effectiveness of disaster management strategies were evaluated
- High quality training was delivered and simulations helped participants and various systems practice their existing skills and new learning
- Resources in the public and private sectors were effectively mapped and mobilized.

Overall, the EMExes showed that they were a good way to encourage disaster preparedness in cities/districts where they were conducted and contributed towards creation of a locally-driven, multi-disciplinary sustainable commitment to emergency management. It was demonstrated that, in time, EMEx could become a validated model to test the readiness of various roles and functions of emergency management in cities and countries.

2 Challenges Faced by Urban India & The Need for Emergency Management Exercises

"A city is not an accident but the result of coherent visions and aims."

– Leon Krier, *The Architecture of Community*

We live in an era of unprecedented urbanization. Since 2008, it has been ascertained that at the global level, more people live in cities and towns as compared to the countryside. Moreover, the number of city and town dwellers is expected to swell up to 5 billion by 2030[1]. This colossal figure will have great ramifications on the evolution of modern cities in the developing world. It is well known that half of the world's urban population lives in Asia. India too is fuelled by a rising economy and a phase of social transition with the challenge of growing urbanisation. According to McKinsey, the country's cities are expected to grow from 340 million people in 2008 to 590 million in 2030, with 68 cities having a population of more than 1 million[2].

Many of India's cities are vulnerable to disasters due to their location in high-risk zones, poor drainage and waste disposal systems, overcrowding, the proliferation of informal settlements, the lack of essential services and infrastructure, unplanned urbanisation, inadequacy in terms of implementation of construction and environmental controls, and high levels of urban poverty. Their disaster vulnerability has also been considerably increased because of climate change and accelerated population growth. A study conducted by Geo-Hazards International found that Delhi and Mumbai were the third and twelfth most earthquake-prone cities in the world.[3]

The exponential growth of Indian cities will pose a big challenge to emergency risk management in Indian cities in the coming years. Emergency management exercises (EMExes) will need to take note of the challenges that tier 2 and tier 3 cities in India will face in order to evolve suitable and sustainable emergency risk management

[1] *LINKING POPULATION, POVERTY AND DEVELOPMENT, Urbanization: A Majority in Cities https://www.unfpa.org/ pds/ urbanization.htm*

[2] *India's urban awakening: Building inclusive cities, sustaining economic growth http://www.mckinsey.com/ insights/ urbanization/urban_awakening_in_india*

[3] *Forbes India, 'The 20 Most Earthquake Vulnerable Cities' Available at: http://www.forbes.com/2007/12/04/ earthquakes-india-japan-biz-cx_db_1203earthquakes_slide_21.html accessed on 13 September 2013*

strategies. The following indicators capture the challenges faced by Urban India that can make it more vulnerable to the risks posed by disasters:

- **Rapid Unplanned Urbanization and Population Growth**

  Rapid unplanned urbanization is the greatest challenge facing Indian cities. An exponential rise in urban population would be one of the foremost challenges to Indian cities in preparing for emergencies. It will be extremely difficult to address coordination in mega cities during such times. Massive population implies massive planning on the part of the governance systems to ensure coordination and communication during times of emergency. Thus, the challenge of rapid unplanned urbanization manifested through exponential population growth in Indian cities needs to be factored in emergency risk management in India. The following table-1 gives an estimate of population growth in major Indian cities:

- **The Unplanned Growth of Cities**

  One of the greatest challenges to India's rise as an economic superpower is that of unplanned growth of its cities. A burgeoning population in cities demands growth in cities' infrastructure that is economically

Thirteen cities will have a population of more than 4 million

	Population in 2030 Million	GDP, 2030[1] $ billion	Per capita GDP, 2030[1] $ thousand
Mumbai (MMR)	33.0	265	8.0
Delhi (NCT)[2]	25.9	296	11.4
Kolkata	22.9	169	7.4
Chennai	11.0	73	6.6
Bangalore	10.1	127	12.6
Pune	10.0	76	7.6
Hyderabad	9.8	67	6.8
Ahmedabad	8.4	68	8.1
Surat	7.4	53	7.2
Jaipur	5.4	24	4.5
Nagpur	5.2	37	7.1
Kanpur	4.2	15	3.6
Vadodara	4.2	35	8.5

1 2008 prices.
2 National Capital Territory; excludes Noida, Gurgaon, Greater Noida, Faridabad, and Ghaziabad.
SOURCE: India Urbanization Econometric Model; McKinsey Global Institute analysis

Table–1: Estimate of Population Growth in Major Indian Cities

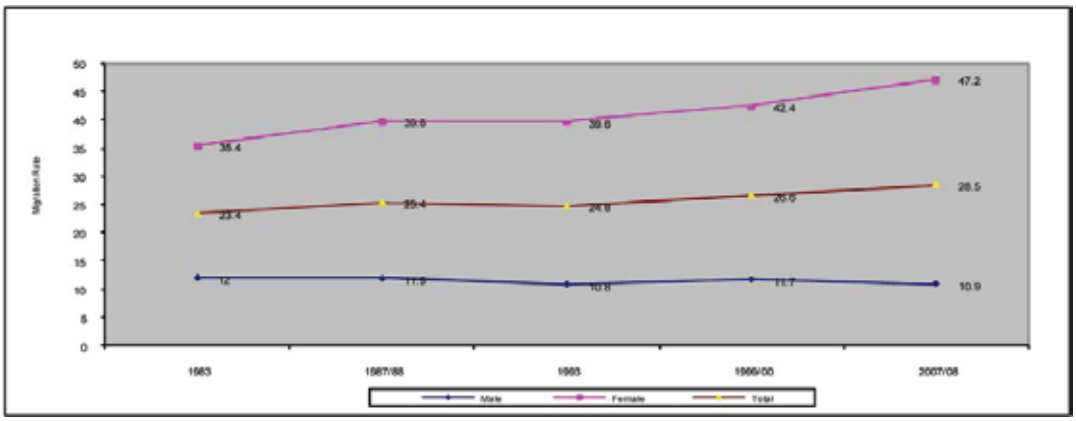
feasible and ecologically sustainable. However, ill designed urban sprawl has been one of the most distinguishing characteristics in the growth of Indian cities. Unplanned growth can push habitations in those areas that have traditionally been deemed vulnerable to the risks of natural hazards. In addition to this, unplanned growth also poses a great challenge of addressing coordination between distant and cut off areas during exigent times. Thus, unplanned growth has severely enhanced the vulnerability of people in urban centres by limiting their access to clean water, good sanitation, affordable conveyance and healthcare.

- **The Challenge of Migration**

Inadequacy of higher education and employment opportunities in rural India are pushing people to migrate to the cities. This is also true of people living in Tier 2 cities migrating to metros and mega cities in search of better education and job prospects. However, internal migration places a great challenge to both these migrants and to the cities where they are migrating. For, accommodating migrant groups puts pressure on the city's basic infrastructure such as housing, transport, sanitation, water, education and healthcare.

All these factors enhance the vulnerability of these migrants and in the city to a variety of risks. Invariably the migrants often find themselves relegated to a lower socio-economic status in the cities they have migrated to, often living in remote and vulnerable corners of a city. The figures also corroborate an increase in internal migration which stood at 24.8 percent in 1993 to 28.5 percent in 2007/08.[4]

The graph–1 captures the growth of migration in India[5].



Graph–1: Migration Rate by Sex (NSS, 1983–2008)

[5] *The Changing Pattern of Internal Migration in India Issues and Challenges, Sandhya Rani Mahapatro http://epc2012.princeton.edu/papers/121017*

- **Inadequate Land Use Planning**

  Land use planning refers to planning out the use of land in an administrative unit (city, district) etc. in an efficient way to achieve economic goals and development outcomes. Needless to say land use planning is of great significance to Indian cities. However, Indian cities have been marked by inadequate land use planning which has added to existing vulnerability of such cities.

  Rapid urbanization in India has led to the incorporation of haphazardly constructed areas into the ambit of a city leading to ineffective land use. An imbalance in land use planning is a direct outcome of unplanned urbanization which increases the vulnerability of cities to various risks. For instance, in the case of the Indian city of Pune, the radial growing pattern of land use of the city and the supporting transport systems raises the problem of the "Ineffective Land Use Pattern" for the sustainable development of the city; it also results in the loss of green land section of the city[6].

- **Transportation Stress**

  One of the greatest challenges faced by Indian cities is transportation stress. As the population in Indian cities grows, the number of people commuting to and fro for work and leisure has also increased. This has increased the number of vehicles in Indian cities. However, the capacity of roads to accommodate these vehicles has not increased commensurately. This results in an increase in the number of accidents taking place in a city. This also has severe implications for air quality as air pollution increases exponentially due to large number of vehicles.

  WHO estimates that currently India has 120 million vehicles, a number that is steadily growing. Nearly, almost 135 million people die every year in traffic accidents on Indian roads while air pollution contributes to more than 620,000 premature deaths in 2010[7].

- **Urban Flooding**

  Urban flooding has become a recurrent phenomenon. This is indeed ironical as during summers there is always a shortage of water. The rapid urbanization underway in India also contributes towards this problem. As the drainage systems in the Indian cities have become old or clogged due to the presence of untreated waste such as plastic bags, the rainwater that should drain gets clogged in these drains and results in flooding.

  The 2005 floods in Mumbai where almost 5000 people lost their lives serves as a grim reminder of the quantum of the risks to which Indian cities are exposed on account of flooding.

[6] *Mrs. Rupali P Zope, THE PLANNING STRATEGIES FOR URBAN LAND USE PATTERN: A CASE STUDY OF PUNE CITY, INDIA http://www.ijirset.com/upload/july/13_%20THE%20PLANNING.pdf*

[7] *World Resources Institute, http://webcache.googleusercontent.com/search?q=cache:http://www.wri.org/blog/ connecting-sustainable-transport-urban-development-india*

The problem of urban flooding is further compounded by the problem of storm water drainage. According to the report of Sub-Committee for Development of National Sustainable Habitat on Storm-water Management, *"Many cities in India ranging from large metropolitan to small transitional cities lack effective storm drainage systems and face problems due to illegal, unplanned development and encroachment often on natural areas and drainage systems/ways. As the cities develop and grow, benefits from important environmental functions (natural water ways/areas) are often ignored and overlooked as a result of which natural areas are degraded and damaged. This along with increase in built up area results in increase in incidences of flooding and accompanied ill effects".*

- **The Need for Proper Urban Planning**

  Proper urban planning is required to make Indian cities safe from the ill-effects of indiscriminate expansion and unplanned urbanization. All this adds to the spatial, economic and social problems of cities leading to an increase in their vulnerability.

  Proper urban planning can lead to solutions on spatial, economic and social problems faced by Indian cities. One of the greatest challenges for urban planners in India will be to change the current prevalent problems of low rise buildings, high density population in central areas and non-existence of rapid public transport systems in Indian cities. Another problem that needs to be tackled by urban planners is to ensure that building bye laws are adhered to. Violations of building bye-laws drastically increase the vulnerability of urban buildings to all kinds of risks.

- **Potentiality of Terror Strikes**

  A great threat to Indian cities arises from the possibility of a terror strike. Various examples ranging from 1993 Mumbai Blasts to the 2011 Delhi Bombing and from the notorious 2008 Mumbai attacks in to most recent 2014 Chennai train bombing highlight terrorism as one of the important threats and challenges to Indian cities. During an emergency like a terror strike a city's response capacity becomes critical in saving lives.

- **The Problem of Slums**

  Slums are an inconvenient truth of an Indian city. These slums are home to people, who for the lack of better economic means are forced to live in an environment which is not conducive to basic human requirements. These slums mostly suffer from a lack of all basic amenities such as clean water, sanitation, access to electricity, education and healthcare. Needless to say, the lack of all these amenities greatly increases the vulnerability of these populations and in turn the cities where they emerge. Presently, there are a staggering 65 million slum dwellers in India[8].

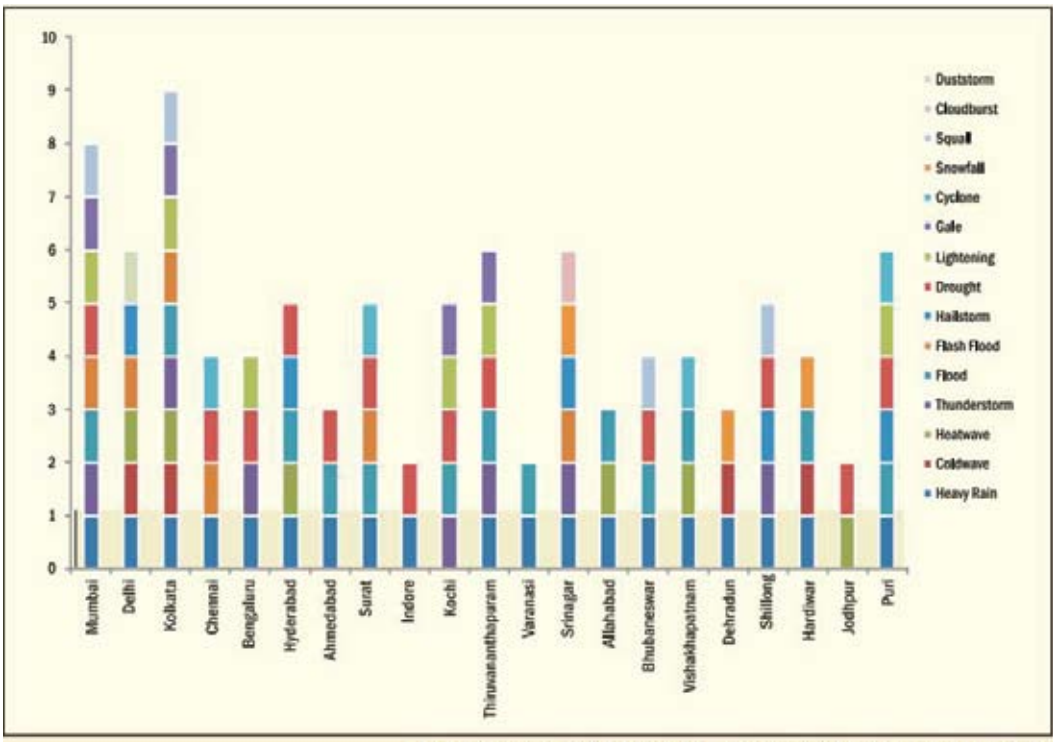
[8] *The Hindu, http://www.thehindu.com/todays-paper/tp-national/tp-newdelhi/65-million-people-live-in-slums-in-india-says-census-data/article5188234.ece*

- **The Challenge of Environmental Sustainability and Climate Change**

  As urbanization puts pressure on already distended urban centres due to large numbers of people from the countryside and rural areas migrating to such urban centres, cities are faced with a unique challenge. Bundelkhand in India serves as a veritable example, which reeling under the pressure of perpetual droughts now witnesses deserted villages, where people have migrated to urban centres in search of a better life.

  This is the challenge of sustainable development. To accommodate this burgeoning population, developing cities in India often pursue an agenda of indiscriminate infrastructural development. This only adds to the vulnerability of the city to various risks. This vulnerability is further compounded by the adverse impacts of climate change. To strive for sustainability, cities should necessarily pursue the imperative of climate compatible development. One of the greatest manifestations of climate change has been heat waves in summers and cold waves in winters, which have become quite characteristic in Indian cities during recent times.

  A climate compatible development approach minimizes the harm caused by climate impacts, while maximizing the many human development opportunities presented by low emissions for a more resilient future. Thus, such an approach



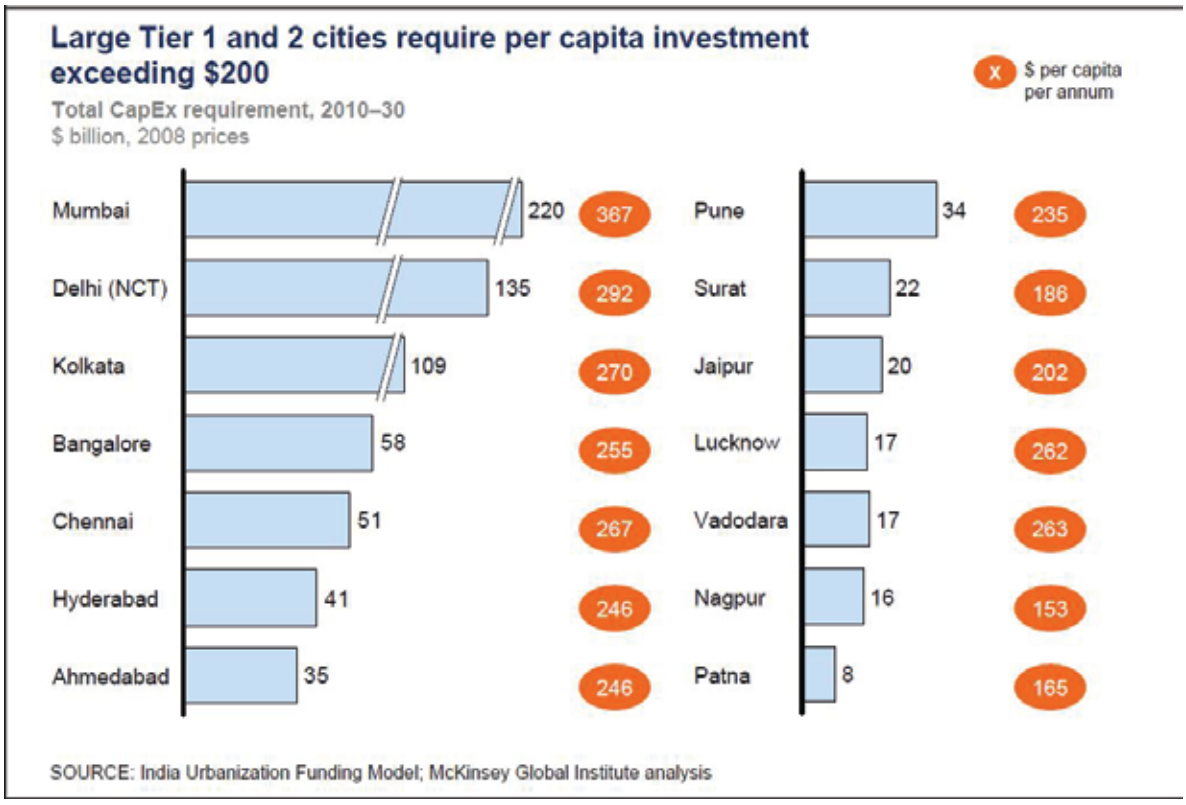
Data: Source: BMPTC 2001, Kapur 2009, Census 2001-2011

Graph–2: The vulnerability profile of 21 Indian cities

is indispensable for building an effective emergency risk management apparatus in India. The graph–2 shows the vulnerability profile of 21 Indian cities[9].

- **The Huge Demand for Investment to Develop Infrastructure**

  One of the most characteristic features of Tier 1 and Tier 2 Indian cities is the crippling infrastructure of these cities. Civic amenities in most of these cities need urgent maintenance and attention. Under such conditions it becomes extremely difficult to navigate the complex urban administrative system to effect coordination during times of emergency. It has been estimated that in the coming 20 years meeting the demands from these growing urban cities would require $ 1.1 trillion[10]. Thus, any concerted strategy to reduce the vulnerability of Indian cities to various disasters such as Emergency Management Exercises (EMExes) necessarily need to factor in these infrastructural shortcomings. The table–2 lists the Tier 1 and Tier 2 Indian cities in need of infrastructural per capita investment exceeding $200[11].



Table–2

[9] *Climate Resilient Urban Development: Vulnerability Profile of 20 Indian Cities http://irade.org/ Executive%20Summary_RF.pdf*

[10] *http://www.wri.org/blog/3-challenges-facing-india%E2%80%99s-growing-cities*

[11] *India's urban awakening: Building inclusive cities, sustaining economic growth http://www.mckinsey.com/ insights/urbanization/ urban_awakening_in_india*

- **Ecological Imbalance brought about by Geographical Expansion**

  The burgeoning of the Indian cities would also disturb the already fragile ecological balance of the Indian urban space. This could expose Indian cities to newer risks and vulnerabilities. For instance, Delhi's urban area has almost doubled in the last 20 years. Sprawling cities and reliance on automobiles have contributed to traffic congestion, air pollution, rising greenhouse gas emissions, and poor public health. Similarly, by 2030, 2.5 billion square metres of roads need to be paved and 7400 kms. of metro and subways need to be constructed for growing Indian cities, 20 times the capacity of the past decade[12].

  The emergency risk management exercises need to be well aware that such exponential geographical expansion may possibly cause disruption to the fragile ecological balance and should formulate corrective strategies that help in building safe cities.

EMExes should thus be held as they examine, test, evaluate, and assess a city's emergency response capabilities, identify its strengths and areas which require improvement, ascertain where and how resources should be directed, and help with determining stakeholders' awareness of disasters and their skills requirements. Such information can then be fed into disaster planning processes and used to improve emergency response strategies so that they are even more effective in protecting vulnerable communities such as children, pregnant women, lactating mothers, slum dwellers, the disabled and the elderly.

Mock drill during Silchar EMEx, November 2013.

[12] *http://www.wri.org/blog/3-challenges-facing-india%E2%80%99s-growing-cities*

3 The Significance of Emergency Management Exercise in Disaster Management

3.1 EMEx as a tool to strengthen emergency communication, coordination and chain of command

Effective governance is at the heart of effective response in emergency management. Therefore, an EMEx serves as a catalysing tool which strengthens emergency communication, coordination and chain of command during exigent situations. For the sake of administrative convenience, a city is governed by innumerable urban bodies. These urban bodies need to coordinate with each other to ensure the smooth functioning of the entire civic administrative apparatus. However, during an emergency, ensuring coordination to maintain communication for carrying out commands becomes extremely difficult.

An Emergency Management Exercise (EMEx) helps in strengthening the capabilities and capacities of Emergency support functionaries who in turn would ensure that coordination, communication and the chain of command are not broken during emergencies. By making all the civic departments under its ambit practice and assess their responses to a simulated emergency, an EMEx helps in strengthening the effective governance during emergencies to save lives. It is well-known that the components of urban resilience consist of social resilience, economic resilience, infrastructural resilience and institutional resilience[13]. Since effective governance is the foundation of building institutional resilience, therefore an Emergency Management Exercise (EMEx) is meant to strengthen the process of intra and inter agency communication, command and coordination between various institutions in an urban centre.

Furthermore, risks in urban settings play out differently as compared to rural settings. A variety of factors contribute to this difference such as rapid urbanisation, accelerated population growth (largely due to rural-urban migration), etc. Overcrowding has also increased the vulnerability of India's cities to disasters, as extreme population concentration tends to further distend the already swollen civic infrastructure of the city. This leaves the city extremely vulnerable to the adverse impacts of disasters. Other factors that

[13] *http://www.gfdrr.org/sites/gfdrr.org/files/publication/EAP_handbook_principles_tools_practice_web.pdf*

contribute to this enhanced vulnerability of cities are overcrowding in informal settlements or slums, the poor provision of basic services and infrastructure to protect individuals against disasters, unplanned urbanisation, inadequate implementation of construction and environmental controls, and high levels of urban poverty. This vulnerability is further compounded by the risk of extreme weather events brought about by climate change.

In this enhanced vulnerability scenario, EMExes provide an opportunity to gauge at a city's emergency response capacities and then bridge the identified gaps successfully. The following points help to capture the essences of EMExes as potent instruments of strengthening intra and inter agency emergency communication, coordination and chain of command:

- Simulating emergency scenarios helps in assessing the response of crucial civic departments by highlighting intra-department unity of command, clarity of communications and overall coordination.
- Coordination of a complex system is contingent upon the synchronization of its component parts. Similarly, a city (complex system) will have better coordination if its component parts (various civic agencies/ departments) have an effective intra and inter departmental coordination. An EMEx helps in achieving this coordination at the micro, meso and macro levels.
- EMExes can be used to test city and sector-specific disaster management plans for e.g. hospitals and transport systems. The identified gaps in coordination and communication can then be bridged through counteractive measures.
- EMExes can highlight logistical problems in city and state disaster management systems which may hinder effective coordination and communication. Finding solutions to these problems is the key to effective coordination and communication.
- EMExes provide a rare opportunity for stakeholders to come together on a common platform , network and work together. They allow stakeholders to gain a more comprehensive overview of the city's disaster management frameworks, their role in emergency response, and how their role fits with others.
- EMExes unite the city's residents, business, industries, government authorities, emergency responders, and stakeholders across all sectors under the common purpose of protecting homes, families, businesses, essential infrastructure and essential services from disasters. This common pursuit of safety binds citizens into an implicit bond that can be leveraged to ensure unity of command and timely implementation during an emergency.
- EMExes generate mass public awareness about disasters and emergency response, a prerequisite to effective coordination and communication.
- EMExes build the capacity of stakeholders in cities e.g. communities, regional

emergency responders, education institutions, hospitals, health professionals, humanitarian agencies, state agencies, NGOs, community-based organisations, civil society organisations and professionals, to deal with emergency situations.

- EMExes strengthen inter-agency coordination and allow appropriate coordination and communication mechanisms to be developed.
- EMExes provide opportunities for Emergency Support Function (ESF) teams, as well as other stakeholders in the community, to practice applying their skills in simulated emergency situations

3.2 EMEx in Urban Contingency and District Disaster Management Planning

Pursuant to the National Disaster Management Act 2005, all states and districts are mandated to formulate disaster management plans. These plans are meant to identify the areas in the district/state which are vulnerable to different forms of disasters, the measures to be undertaken by government and local authorities for disaster prevention, mitigation, capacity-building, preparedness, and response, the division of responsibilities between government departments and local authorities, the procurement of essential resources, the establishment of communication links, and the dissemination of information to the public.[14]

However, the Disaster Management Act placed an inordinate amount of importance on district and state level plans. This in turn meant that it did not lay enough stress on the formation of City Disaster Management Plans (CDMPs). To bridge this gap, Emergency Management Exercises (EMExes) have been taken up by the NDMA. Implementation of Simulation Exercises like EMExs-form an important part of NDMA's commitment to safeguarding Indian cities by building up their response capacity.

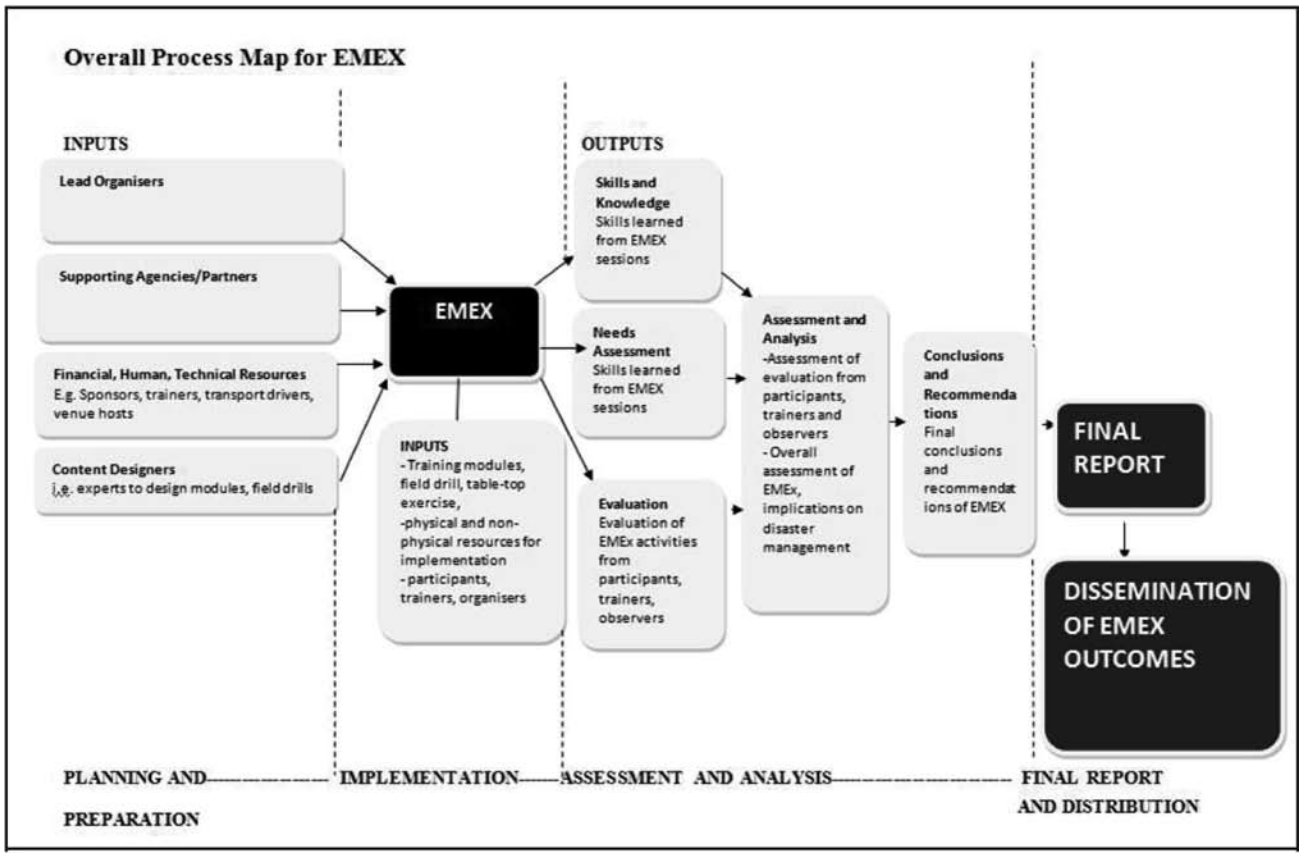
As pointed out by the National Disaster Management Authority's Guidelines w.r.t State Disaster Management Plans, these plans should be formulated after vulnerability, capacity and risk assessments of the district/state have been conducted.[15] EMExes can be useful in this regard as they assess the city's disaster response capabilities, which goes towards establishing the city's vulnerabilities and risk to disasters.

This Manual also describes the operational and administrative aspects of the plans as summarized below:

- Description of the Emergency Operations Centre's role
- Incorporate medical preparedness and mass casualty management by: (a) listing all hospitals and primary health centres including private nursing homes and their capacities (b) emergency casualty management plans at local, district and state levels (c) building nearby medical facilities in cities (d) plans for enhancing the availability of mobile hospitals.

[14] *National Disaster Management Act 2005 ss 23(4), 31(3)*

[15] *National Disaster Management Guidelines: Preparation of State Disaster Management Plans p. 3*



- Describe the mechanism of convergence of existing national, state, district and local resources.
- Outline various life-line structures/ infrastructures and highlight the arrangements for maintaining and managing these structures during disasters.
- Address logistical issues in preparedness, response, rehabilitation and recovery-related matters.
- Lay due emphasis on the conduct of mock exercises and drills for different disasters.
- Clearly identify and spell out the systems and institutions for implementing the plans, explicitly taking note of the NDRF, Civil Defence, Home Guards, youth and student organisations, the National Cadet Corps, the National Service Scheme and Nehru Yuva Kendra.
- Factor public-private partnerships into the disaster management approach.[16]

As EMExes bring together stakeholders across the entire emergency response sector to work together, this provides an ideal opportunity to see how they converge so that an appropriate convergence mechanism can be developed for the disaster management plans. This also assists in identifying the systems and institutions for implementing the disaster management plans. The involvement of public and private hospitals, and other emergency medical services, facilitates the development of medical preparedness and

[16] *National Disaster Management Guidelines: Preparation of State Disaster Management Plans*

mass casualty management strategies. Through simulated exercises the EMExes show the logistical problems in the city's and state's emergency response system. The drills used in the EMEx set examples for the simulation exercises and drills to be included in the disaster management plans. Finally, the success of the public-private partnerships in enabling the EMExes to occur, shows that they can indeed, be used as a tool for effective disaster management.

Thus EMExes are not just exercises in emergency response. They are a vital assessment, evaluation and testing tool for designing disaster management plans, and they are also part of the disaster management plan process.

4 Overview of Emergency Management Exercises

4.1 What does an Emergency Management Exercise look like?

4.1.1 Emergency Management Exercises are designed to be comprehensive and progressive. That is, they aim to give stakeholders/participants a holistic, practical and theoretical training in key urban disaster/emergency management issues. They also consist of progressively complex exercises, each of which builds upon the skills learned in previous exercises. By doing so, this maintains the confidence of stakeholders, enhance their skills, and the satisfaction from successfully completing each of the smaller exercises keeps them motivated and eager to participate in the next exercise.

4.1.2 The main elements of the EMEx are:

EMEx Component	Description
Parallel Training Courses (called tracks) Including prep-workshops	Theoretical and hands-on training in hospital and pre-hospital emergency management, including mass-casualty pre-hospital and hospital triage, medical stabilisation and resuscitation, monitoring, and evaluation. Domains such as school emergency preparedness, emergency needs assessment, community-based disaster risk reduction, interagency coordination humanitarian response, earthquake vulnerability reduction and industrial safety are also covered. The range of training courses offered depends on the learning needs of the ESFs. All tracks are delivered in a 'Train the Trainer' mode so that a pool of resource trainers can be created to disseminate and replicate the training at local levels.

Table-top Simulation	Held after the training tracks and brings together all the participants to work together on a coordinated response to a city disaster. The typical format involves the facilitator giving participants hypothetical emergency situations, which they are then to discuss and develop solutions to. Table-top exercises are often used as a prelude to larger, more complex exercises. They have the following advantages:	
	•	Participants can test and rehearse inter-agency communication and coordination.
	•	Information management methods, and the flow of information, can be analysed
	•	ESFs can plan how resources should be mobilised.
	•	Participants can practice their problem-solving skills and discuss in a low-stress environment, coordination and disaster/emergency management strategies.
	•	Participants can practice their problem-solving skills.
	•	Key agencies and stakeholders can become acquainted with one another, their inter-related roles, and their respective responsibilities.
Field Drill	City-wide, real-time simulation of a mass casualty event e.g. bomb blast involving multi-agency coordination and response. Key emergency responders like the police, fire services, ESF teams and hospitals practice carrying out their response plans and strategies.	
Debriefing	Post-drill hot-wash which engages participants, resource persons, and other stakeholders to identify the strengths and weaknesses in current emergency management plans. They can also be used to identify gaps in capacity-building and training needs.	
Evaluation	Domestic and international experts in disaster management are invited to observe and evaluate the entire EMEx and make recommendations for further improvement.	

4.1.3. A 7-day programme could be devised as follows:[17]

<table>
<tr><th>Day 1</th><th>Day 2</th><th>Day 3</th><th>Day 4</th><th>Day 5</th><th>Day 6</th><th>Day 7</th></tr>
<tr><td>Opening Ceremony</td><td colspan="2"></td><td colspan="2">Introduction to Earthquake/ Flood/Cyclone Safety of Buildings</td><td rowspan="11"></td><td rowspan="11"></td></tr>
<tr><td colspan="4">Minimum Initial Services Package in Reproductive Health</td><td rowspan="10">Table-Top Exercise</td></tr>
<tr><td colspan="4">Emergency Medical Services</td></tr>
<tr><td colspan="4">Emergency Hospital Management</td></tr>
<tr><td colspan="4">Community-based Relief and Response</td></tr>
<tr><td colspan="3">Emergency Nursing Care</td><td></td></tr>
<tr><td colspan="3">Public Health in Emergencies</td><td></td></tr>
<tr><td colspan="3">Basic and Advanced Life Support</td><td></td></tr>
<tr><td rowspan="3">Coordination of Response for Senior Government Officials</td><td colspan="3">Multi-Sectoral Needs Assessment for Emergencies</td></tr>
<tr><td colspan="3">Chemical and Industrial Disaster Preparedness</td></tr>
<tr><td colspan="3">Search and Rescue</td></tr>
<tr><td colspan="2">School Preparedness</td><td colspan="2">Incident Response System</td><td rowspan="2">Hot Wash</td></tr>
<tr><td colspan="2" rowspan="2"></td><td colspan="2">Higher Education Preparedness</td></tr>
<tr><td colspan="2">Sensitization/Preparedness for CBRN Emergencies</td></tr>
</table>

4.2 Objectives of Emergency Management Exercises

4.2.1 The objectives of EMExes may differ according to the needs of the city and the specific focus of the exercise – one EMEx could, for instance, be designed more to test the emergency response capabilities of the health and transport sectors, while another EMEx could

[17] *Programme is based on the 2012 Guwahati Emergency Management Exercise*

be directed at testing the entire city's/district's emergency response system. Nonetheless, the overall objective of EMExes should be to improve the urban disaster/ emergency management strengths and capabilities of the city's emergency responders, education institutions, hospitals, humanitarian agencies and other actors working in disaster-related fields.

4.2.2 The EMEx Manual addreses the following:

- To provide an opportunity for the state governments and cities administration to enhance their capacity to respond in emergencies in a coordinated way.
- To improve the capacity of various Emergency Support Functions (ESFs)
- To build a pool of Resource Persons, who will carry forward the concept of emergency preparedness

4.2.3 Further objectives could be:

- Create a locally-driven, multi-disciplinary, sustainable commitment to devising emergency management activities.
- Test, improve, and build the disaster/ emergency management capacities of various sectors and stakeholders in the city, including emergency responders, education institutions, hospitals, humanitarian agencies, and other professionals and personnel working in related fields.
- Test and enhance inter-agency communication to mitigate disaster risks and to ensure that the most effective disaster response possible is delivered.
- Identify gaps in capacity and capabilities.
- Train and refine the skills of ESF teams and other stakeholders at the district, sub-division and circle levels.
- Use the lessons learned and methodologies from the EMEx to develop regular capacity-building programmes for ESFs in the state at different levels, such that they are empowered to strengthen their response capabilities and are able to create a pool of potential trainers. The ESFs should be able to undertake regular simulation exercises to test and rehearse SOPs on inter-agency command, control, communication, coordination, and response.
- Use the EMEx methodology and curriculums to strengthen regional disaster management centres in states.
- Develop participants' awareness and skills in critical disaster management issues, such as school safety, emergency medical aid, industrial safety, chemical accidents, and urban disaster risk reduction techniques.
- Create massive awareness among people as a system.

4.3 Who Participates in Emergency Management Exercises?

4.3.1. Participants come mainly from the government, medical/health, education, emergency services, civil defence, industrial, disaster management and community sectors. They are usually teachers, government officers, school administrators, emergency physicians,

casualty medical officers, doctors, paramedics, emergency response personnel, hospital administrators, microbiologists, safety and quality control personnel, ambulance drivers, pilots, police/security personnel, fire service personnel, civil defence, industrial administrators, and NGO staff. School students and members of the community also take part in the EMExes. About 800-1000 persons take part in EMEx in one location/city /urban area.

4.3.2. Emergency Support Functionaries (ESFs)

Disaster response is a multi-sectoral/multi-agency and coordination driven function. ESFs' form integral part of the Emergency Operation Centres.

Extension teams and designated team members of each ESF will be required to coordinate the response procedures at the affected site. Each identified ESFs' should have a plan for mobilization, management and monitoring of their designated activities.

List of Emergency Support Functionaries

List of select ESFs' are indicated below:

ESF No. 1. Communication

ESF No. 2. Search and Rescue

ESF No. 3. Relief Coordination (Shelter, Water & Food)

ESF No. 4. Engineering Services & Public Works

ESF No. 5. Public Health & Medical Response

ESF No. 6. Water & Sanitation

ESF No. 7. Damage Assessment

ESF No. 8. Law & Order

ESF No. 9. Social Welfare

ESF No. 10. Transport

ESF No. 11. Volunteer Management

ESF No. 12. Power

ESF No. 13. Livestock Management

The following state department can be considered as the primary agencies for each ESF:

ESF	Primary Agency
ESF No. 1 – Communications	Information Technology Department (ITD)
ESF No. 2 – Search and Rescue	Home Department (HD)
ESF No. 3 – Relief Coordination (Shelter, Water & Food)	Food & Civil Supplies Department (FSD)
ESF No. 4 – Engineering Services & Public Works	Public Works Department (PWD)

ESF No. 5 – Public Health & Medical Response	Health and Family Welfare Department (HFWD)
ESF No. 6 – Water & Sanitation	Public Health Engineering Department (PHED)
ESF No. 7 – Damage Assessment	Revenue & Disaster Management Department (RDMD)
ESF No. 8 – Law & Order	Home Department (HD)
ESF No. 9 – Social Welfare	Social Welfare Department (SWD)
ESF No. 10 – Transport	Transport Department (TD)
ESF No. 11 – Volunteer Management	Revenue & Disaster Management Department (RDMD)
ESF No. 12 – Power	Electricity Department (PD)
ESF No. 13 – Livestock Management	Animal Husbandry & Veterinary Department (AHVD)

4.4 Organizers of Emergency Management Exercises

4.4.1 The organisers of EMExes are the State Government/State Disaster Management Authorities (SDMAs), District Disaster Management Authorities, and other ESFs. The organisers can get technical support from specialized/technical institutions available in the country or outside country and can take help of technical experts available in the country or outside the country.

4.4.2. They may also engage national/ international public and private institutions as co-organizers and partners.

5 Planning Emergency Management Exercises

5.1 Prerequisites for Holding Emergency Management Exercises

5.1.1 To hold an EMEx, there must first be the commitment from policy-makers, government authorities, and ESF teams to mitigate urban disaster risk and test their emergency and disaster management capabilities. Cities also need to have:

a) *Multi-hazard risk assessment and development profile of the city:* This should document the city's recent disaster and emergency history as well as the seasonality of hazards. The profile should also contain information on the city's current social and economic position and the development challenges it faces.

b) *Organisational, institutional, administrative, and technical structures, processes and systems for disaster management:* The city should already have some sort of disaster management framework in place and should have identified the organizations and agencies responsible for disaster management and emergency response.

c) *Disaster Management Plan:* As the primary purpose of an EMEx is to ascertain the effectiveness of disaster management strategies, there should already be a city disaster management plan with Standard Operating Procedures for ESF teams and government authorities along-with sector-specific disaster strategies.

Silchar EMEx, November 2013. Photo .

d) *Emergency Operations Centre:* There should be an operational Emergency Operations Centre and functional inter-agency communication and coordination systems in the city.

5.2 Key Stages in EMEx Planning and Implementation

5.2.1. There are 8 stages in planning and implementing an EMEx. Overall, especially for cities which are holding EMExes for the first time, a minimum of 6 months is required. In the case of Guwahati's EMEx, the entire planning process took more than twelve months and that was the key to its good conduct and comprehensiveness. This also accounted for the EMEx's ability to cover over 840 participants. As a general principle, it is recommended that planning timetables be strictly adhered to so that the best possible EMEx can be delivered.

5.2.2. The table below gives an overview of what the key EMEx planning and implementation stages are, the approximate amount of time required, the key activities involved, and the outputs expected.

S.No.	Phases	Timeline	Critical inputs and action	Outputs/Outcomes
1	State Government Approval: This phase is concerned with commitment of the state government to hold the Emergency Management Exercise (EMEx). The important policy level decision of the state/city approving the organization of the EMEx shall be taken in this phase.	Any time before the Scope & Identification of Tracks (minimum 1-2 months)	Approving the EMEx methodology, Conceptualizing the organization of an EMEx, Experience sharing on past EMExes, review of existing documentation on EMExes/Mock ex; opinion mobilisation with city/ state administration; mobilisation of national/ state-level support group of experienced Individuals /agencies	High-level commitment, pledge and commitment from the state/city
2.	Scope and Identification of Tracks: This phase is associated	One month with at least two	Sensitization workshops with ESFs and other stakeholders;	• Identification of the types of training tracks to

S.No.	Phases	Timeline	Critical inputs and action	Outputs/Outcomes
	with the details of the training tracks to be held. Important decisions such as the type of training tracks and their number shall be finalized in this Phase.	coordination Meetings	announcement of decision to hold EMEx to ESFs, SDMAs, DDMAs and other government authorities; review of AARs of other EMExes/Mock ex; Strategic discussion with ESFs; discussions on capacity assessment and scoping exercises; programme monitoring and coordination	be held in the EMEx. • Finalizing the number of training Tracks for the EMEx. • Shared understanding of what an EMEx is • Formation of small core groups to scope EMEx • Revitalisation of EOC functions
3	State Commitment for Financial Contribution: This phase is associated with the state's Commitment of financial resources towards organizing the EMEx. Important decisions such as finalization of a tentative budget for the EMEx shall be taken in this phase.	One month	High level meetings with concerned financial bodies of the state to chalk the modalities of financial resources needed to conduct the EMEx. Programme monitoring and coordination	Financial plan, policy and budget of the EMEx are finalized.

S.No.	Phases	Timeline	Critical inputs and action	Outputs/Outcomes
4	Venue and Selection of City: This phase is associated With the selection of a possible city for holding the EMEx. After the selection of the city, the venue for holding the EMEx shall be finalized as well.	One month	High level meetings for deciding the city and the venue of the EMEx.	The city and the venue of the EMEx are finalized.
5	Stakeholders for Engagement: This phase is associated with the identification and selection of key stakeholders that will be required for conducting the EMEx.	One to one and a half months	Work planning for • Selection of participants and venues • Faculty engagement • Technical preparation of tracks • Media and Communications strategy • Drill and table-top exercise • Logistics/operations • Monitoring arrangements	Clarity on : • Availability of funds and other resources • EMEx activities • National and international faculty • Partnerships Approval of plans, budget expenditure, and allocation of roles and responsibilities
6	Formation of State Level Committee: This phase is associated	Approximately One Month	This committee will be convened under the chairmanship of the	The establishment of a state level committee to look

S.No.	Phases	Timeline	Critical inputs and action	Outputs/Outcomes
	with the formation of a State level committee that will look after the important decisions of EMEx.		Principal Secretary of Revenue and Disaster Management and will include the Joint Secretaries of all the ESFs.	after the conduction of the EMEx.
7	Identification of Participants: This phase is associated with the identification of the participants that will attend the EMEx.	One week	The state level committee will convene to decide the nature and number of the participants that will be part of the EMEx. These participants will then be invited by the state level committee to be part of the EMEx.	A final list of participants that will be attending the EMEx.
8	Follow-up phase: Link to improvement of urban systems, particularly planning, identifying EMEx follow-up actions for each stakeholder	6 months+	Documentation e.g. after action report, evaluation report	Learning and action continuum is established Transformative agenda: Achieve outcome focus in all activities.

The Organizing Committee of the EMEx must constitute the following members from the state administration:

An organizing committee is the body of members from the state administration that take important decisions regarding the scheduling and organization of the Emergency Management Exercise (EMEx). An indicative overview of the organizing committee for conducting EMEx is given below:

Sl. No.	Designation	Role in the Organizing Committee
1.	Chief Secretary, State Government	Chairperson
2.	Principal Secretary, Revenue and Disaster Management	Coordinator/Nodal Officer
3.	Commissioner and Principal Secretary, Health and Family Welfare Department	Member
4.	Principal Secretary, Education (Higher) Department	Member
5.	Principal Secretary, Education (Elementary) Department	Member
6	Principal Secretary, Home Department	Member
7	Director, Chemical Safety	Member
8	Principal/Dean, Medical College	Member
9	Director, Health and Medical Department	Member
10.	DGP and Director, Fire Services	Member
11.	Commissioner and Chairperson, DDMA (District where EMEx is organized)	Vice-Chairman
12.	Commissioner of Municipal Corporation	Member
13.	ADC and CEO of DDMA (District where EMEx is organized)	Member
14.	Senior Superintendent of Police (Law and Order)	Member
15.	Inspector General of Police (Traffic)/Commissioner of Police	Member
16.	Superintendent of Police (Communications)	Member

17.	Director School Education	Member
18.	Secretary General of Red Cross	Member
19.	Chief Engineer, PWD (Buildings)	Member
20.	Chief Engineer (Public Health Engineering Department)	Member
21.	Director, Public Relation and Information	Member
22.	Director, Doordarshan	Member

What should a Core Committee look like?

The function of an EMEx core committee is to provide leadership and to plan, strategies, develop, and implement the EMEx's activities. The committee members should consist of officials from appropriate government line departments, disaster management authorities (state, district and national), and technical agencies. For an EMEx to be successful, the committee must have a clear strategy with targets and objectives to be achieved, adhere to planning deadlines, conduct regular progress reviews, and have good coordination and communication mechanisms.

The table below shows the specific roles and responsibilities core committee members could undertake:

Project Roles	Personnel	Main Responsibilities	Major Deliverables
Portfolio/ Programme Management	Principal Secretary, Disaster Management , reporting to Chief Secretary	• Control and command through review and feedback on plans. • Enabling various decisions through approvals. • Promoting a clear strategy.	• Formal authority, commitment and leadership so that the SDMA and DDMA can mobilize resources and Implement the EMEx • Managing organising committee • Relationship management with National (NDMA) and internal agencies to bring technical capacity And capability to the EMEx

Project Roles	Personnel	Main Responsibilities	Major Deliverables
Sr. Project Management	District Commissioner/ Magistrate (with support from officers And experienced EMEx coordinators)	• Manage resources, operations plans, resource mobilisation	• Clear operations plans presented to the Portfolio/programme Manager • Inspection and preparation of all the venues. • Mobilisation of participants for all the tracks. • Mobilise sponsorships
Project Management	Senior SDMA official (with support from officers, Experienced EMEx Coordinators, and technical Specialist)	• Manage resources, planning process, coordination and communications	• Present all the details (budget heads, logo, media campaign, publicity, Press release) to the portfolio manager for approval. • Coordination, progress review and feedback to the operations team. • Vendor selection • Provide status reports from time to time. • Visibility and EMEx promotion through various media and communication channels. • Stationery and training material.
EMEx Coordination	DDMA and SDMA officials	• Coordinated resources • Information management to	• EMEx schedule and programme • Progress reports • Planning assistance to operations teams for the SDMA and DDMA.

Project Roles	Personnel	Main Responsibilities	Major Deliverables
		Support monitoring and evaluation	
Technical Support-Planning	SDMA/Technical Institutions/ technical experts	• Provide guidance, advice, and training in EMEx development • Mobilization of technical resources	• Technical preparation of all the tracks • Communication with resource agencies • Design inputs for table top exercise and mock drill • Finalization of national faculty.
Strategic Advice	Technical Specialists	• Inputs for scoping, planning and resource mobilisation • Coordination with technical resource agencies • Advise on EMEx scoping, planning and resource Mobilisation • Coordination with international technical resource Agencies.	• Policy guidance and advise to the state government • Finalise EMEx scope, calendar of activities, and training faculty • Provide high-level coordination • All- round programme guidance and advice • Finalise EMEx, calendar of activities and detailed activity planning. • Provide access to national and international faculty and experienced coordinators • Provide high-level coordination.

Project Roles	Personnel	Main Responsibilities	Major Deliverables
		• Additional support on coordination, Local logistics, and media communication	• Provide access to programme and operations capacity-building • Provide high-level representation.

5.2.3. Particular care must be taken during the assessment phase as it is here where the problem statement is defined, the city's capacities to carry out EMExes are identified, and the current status and needs of its emergency response systems are ascertained. Care must also be taken with the scoping exercise as conducting it properly will ensure efficient operations planning, resource mobilization, and provide time for finding alternatives if there lies a need to do so. Together with the assessment phase, the scope, depth and terms of reference of the EMEx can then be established. Some guiding principles for conducting the scoping exercise are:

- There must be a clear and sustained commitment from state and city authorities to support the scoping exercise and throughout the entire process of designing and implementing the EMEx.
- In order to have appropriate numbers and types of participants to attend the training tracks, there needs to be an accurate estimation of capacity-building needs and a balanced focus given to the various sectors/ ESFs.
- Efforts should be made to address the learning needs of ESFs and keep the number of tracks manageable. The EMEx activities planned should meet the overall needs for impact, efficiency and cost effectiveness.
- All interested stakeholders e.g. disaster management departments, SDMAs, city-level ESFs, city authorities, NGOs should be involved in the scoping exercise.
- Resource needs must be analysed in a comprehensive manner. Some questions to consider are: What are the resources required? Where can they be obtained?

It may be that in the scoping discussions various stakeholders will try and influence it according to their respective needs and perceptions

- A small group can be constituted by the state government and given the mandate to carry out the scoping exercise, with the intention of planning a feasible and doable EMEx. Members of the group should have experience in conducting simulation exercises.
- It must be remembered that despite the advantages of the 'Train the Trainer' model, it may not work for those participants who are attending the training courses for the first time.

5.3 Action Planning–Designing the Emergency Management Exercise Activities

5.3.1. The following general principles should be adhered to when designing the EMEx:

1. Keep it Functional, Simple, and Continuous

The scale and complexity of the EMEx must reflect the current capacity of ESFs and the city's/town's emergency management capabilities. It should be tailored towards participants' learning needs and include a series of follow-up activities (such as refresher training) to establish a continuum of actions for continuous improvement.

2. Be Innovative and Resourceful

Challenges in finding resources, developing suitable EMEx activities, and building capacity are bound to occur in any EMEx Prep. The key for overcoming these challenges is to be creative, open to innovation, develop networks with diverse range of actors, and remain results-oriented.

3. Visual and Emotional Appeal

Steps taken to make the EMEx visually appealing, such as having banners, coloured T-shirts and logos, other publicity material, can evoke an instant response even in those who are not participating in the exercise. They can also indirectly create awareness about disaster risk reduction and emergency management amongst the general public.

4. Use the Media and Technology for Promotion, Awareness Generation, Information Sharing, and Event Coordination

The ability of the media to generate mass public awareness should never be under-estimated. Especially in the case of social media like Facebook and Twitter, they can be particularly effective in reaching out to youth, young adults, and children. Some media promotion methods are: EMEx website (with a dedicated domain name so that it is easy for the public to remember), TV and radio shows, road shows, street plays in dense traffic areas, leaflet distribution, on the ground promotion, newspaper advertisements, etc.

In the age of technology, many devices and systems have been developed which enable faster, more efficient, and more effective communication, information gathering, and information flows. These should be organized to aid decision-making, coordinating and engaging with the different stakeholders, planning the exercise, and managing time management.

5.3.2. To catalyse the EMEx development process and ensure that it progresses as smoothly as possible, it is highly recommended that persons with experience in organizing EMExes, such as NDMA office bearers, be enlisted to assist in the process. Ideally these persons should be placed in the state and district disaster management authorities as they are the apex bodies for disaster management in cities and are the primary coordinators of EMExes. An **organising committee** should also be formed to develop a broad implementation plan, that is, a plan that sketches out the main activities which should be undertaken in the lead-up and during the EMEx.

5.3.3. Once the overall scope of the EMEx and its activities have been decided upon, a **core committee** consisting of officials from appropriate government line departments and technical agencies should be formed to carry out the tasks necessary for implementing the EMEx activities. A government order instituted by the Chief Secretary or the relevant state minister for disaster management constituting the core group would aid greatly in expediting planning, implementation, and coordination processes.[18] While the tasks will differ according to the scope of the EMEx and the city's training needs, as a guide the main activities to be undertaken, along with their challenges, have been set out in the table below. **Annexure 1** provides a sample checklist of EMEx preparation tasks.

S. No.	Particulars of Tasks	Key Organisers
1	**Training Track Selection:** Identification and selection of training tracks that need to be a part of the EMEx. This scoping of training tracks needs to be need based. *Challenge:* This scoping of training tracks can throw open lots of possibilities for training tracks. This makes it difficult to assess which training tracks to include in the EMEx.	SDMA, DDMA

[18] *Would like example of the government order from GEMEx*

S. No.	Particulars of Tasks	Key Organisers
2	**Participant Selection:** Finalization of participant list based on the requirements/ specifications as sent by track leads/ trainers, and after assessing the city's ESFs' SOPs and related documentation. *Challenge:* Regular communication with ESFs to nominate appropriate participants for the training tracks	SDMA, DDMA
3	**Finalization of Budget:** After the selection of the training tracks and the identification of the venues, the budget needs to be finalized.	SDMA, DDMA
4	**Venue Selection:** Site selection to accommodate all the participants and track-wise round table setup. Development of exercise problems. *Challenge:* Finding large enough venue to accommodate all the participants and make arrangements for them to sit in groups for the table-top. Developing suitable communication systems and hypothetical exercises that would involve all the ESFs.	SDMA, DDMA
5	**Field Drill:** Site selection, logistical planning, model set arrangements and support artistes to act as mock victims for the field drill. Development of scenario, selection and sensitization of hospitals, ambulances and engagement with other ESFs. Includes finer details like printing tags for victims, transportation and site logistics	SDMA, DDMA, District Magistrate

S. No.	Particulars of Tasks	Key Organisers
6	**Closing Ceremony and Hot Wash:** Venue selection, state government invites officers to discuss future plans following the EMEx	SDMA/DDMA
7	**Communication and Media Plan:** Develop a comprehensive and integrated communication plan with the following components: • Radio Jingles • TV Advertisements • Road Shows • Street Plays • Website design, development & maintenance • Social Media (Facebook, Twitter) • Posters, banners and public hoardings • Standee • Press release Design, review, and finalization of EMEx logo, translation of materials into local languages. Vendor selection to distribute visibility materials e.g. brochures, posters, stands, banners, participant kits, stationery and training materials, manage event photography, filming, and audio-visual requirements for all training courses.	SDMA, media and web designers
8	**Technical Planning of Tracks:** Identification of lead technical organizations (regional and national),	SDMA, DDMA

S. No.	Particulars of Tasks	Key Organisers
	engagement with technical institutions, framing of content, use of frameworks, faculty identification. Assignment of track coordinators	
9	**Organise Administrative Support:** Organise administrative support at venues in terms of training materials, folders, hand-outs, schedules, programmes, stationery, equipment, flip charts, attendance sheets, evaluation sheets and certificates	SDMA, DDMA
10	**Logistics:** Organise accommodation and transport for participants and trainers, refreshments at venues, field drill	SDMA, DDMA
11	**Planning for Engagement of National Faculty**	SDMA
12	**Resource Mobilisation** Mobilize for in-kind support from sponsors, partnership-building	SDMA, DDMA
13	**Planning for Engagement of National Faculty**	SDMA

5.4 Operationalizing Roles and Responsibilities of Key Organisers

The overall planning, execution and management of EMExes should be carried out by the SDMA with the immediate support of the DDMA. The NDMA and other agencies/institutions may also provide technical support. Additional roles and responsibilities which the SDMAs and DDMAs may want to undertake are:

Have	District Disaster Management Authority
Multi-level coordination: SDMA coordinates with all the state and district heads, technical agencies Institutions and their consultants.	Participant recruitment Visit institutions, government departments, schools, NGOs, hospitals, CBOs and Communities to encourage participation in the EMEx.
Web presence: Design EMEx website with all required information and publicity through social media channels	Venue selection and finalisation Select and finalise venues for the inauguration ceremony, preparatory workshops, training courses, table-top exercise, field drill, hot-wash, and valedictory ceremony.
Media and communication: SDMA handles all media communication	Local-level coordination Coordinate with communities, local authorities, ESFs, venues, and participating institutions to carry out the EMEx activities.
Coordination and Progress review SDMA conducts daily progress reviews of the EMEx and helps with coordinating activities between all the EMEx organisers	Provision of local-level information As the DDMA is the apex body for disaster management in the district, they are in an ideal position to furnish state, national and international organisers with information on matters such as the city's emergency response systems, disaster hazards, and key personnel who should be involved in the exercise.

5.5 Relationship Management

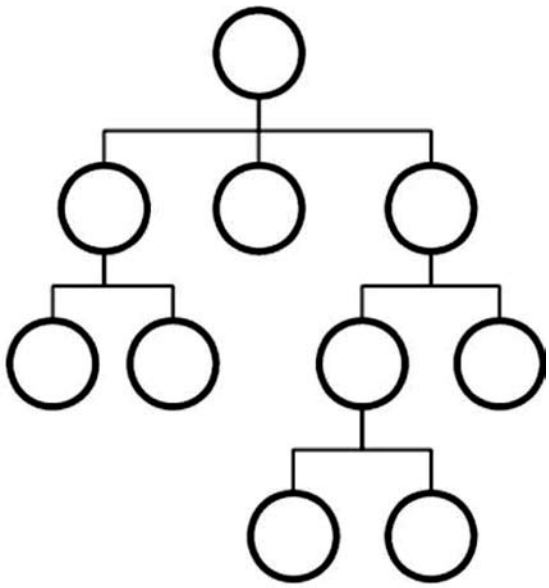
5.5.1. With so many local, state, national and international actors involved in organising the EMEx, the greatest challenges are reaching a consensus on the EMEx's activities, scope, and terms of reference, and developing shared understandings and expectations of the exercise. Well-structured communication, accountability, and command structures, regular engagement with all organisers, as well as constant exchanges of up-to-date and accurate information, are the keys to overcoming these difficulties.

5.5.2. Command structures could be hierarchical – this would be consistent with the way government and disaster management systems are organized in India and would provide a clear indication of the chain of authority in the EMEx. The top-most level, that is where the strategic planning occurs, could be the EMEx core committee, the NDMA, and other agencies providing technical support and overall guidance to the EMEx's development. They in turn, will have local-level organizers e.g. individual track organisers, venue hosts, media managers, ESF heads, reporting to them. For the structure to function effectively each level of command has to show strong leadership and decision-making abilities.

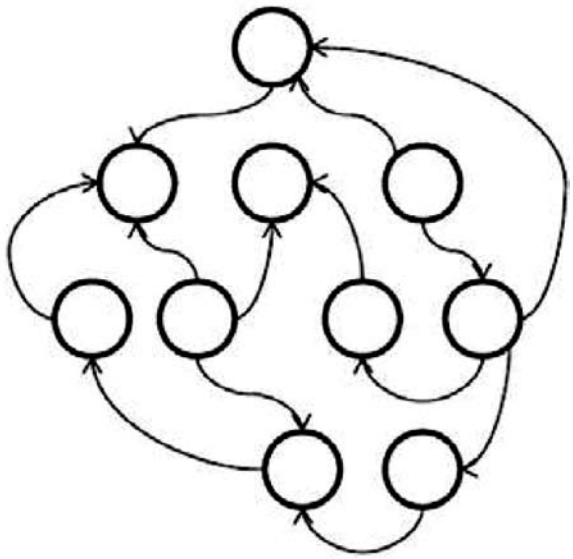
Executive Level: EMEx core committee, technical support agencies, SDMA

Mid-Executive Level: DDMA

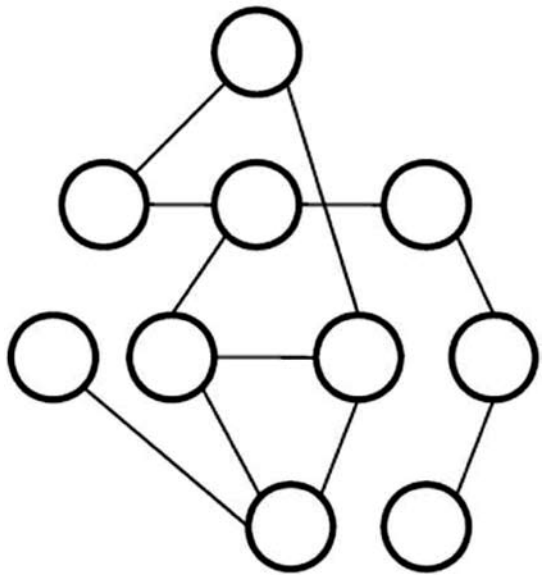
Local Organisers Level: Individual track organizers, venue hosts, ESF team heads



5.5.3. Efficient communication and information flows need to be maintained amongst all parties in the command structure. Efforts also have to be taken to ensure that there is complete transparency in information management, and that bottle necks in communication are minimized. Information should be openly shared between all command tiers. A diagrammatic depiction of information and communication flows is shown below.



5.5.4. When organising an EMEx, rather than adopt a 'command and control' method, the ideal approach should be **cooperative, collaborative,** and **engaging all stakeholders**. Stakeholders' roles and responsibilities must be defined and senior managers have to take the lead in actively promoting collaborative approaches. The diagram on the right side shows what a cooperative structure will look like:



Tips for Planning EMExes

- Allow for as much planning and preparation time as possible, factoring in generous time allowances for negotiating with stakeholders. This will enable a mix of implementation strategies to be devised, programme activities to be properly planned, leave room for any unexpected situations, and adequate and appropriate resources to be mobilized.
- Robust and regular monitoring of EMEx planning milestones can help ensure that the EMEx's development is kept on track. (A monitoring sheet can be referred).
- Ensure that stakeholders are aware that the EMEx is an exercise, not an event, and that they are clear on its objectives.
- Choose venues which are close to the DDMA office and are located near one another. This will make it easier for participants and trainers to move from venue to venue, and will also allow the DDMA to act as the EMEx command centre. Seating arrangements should be flexible and mobile so that it is easier for participants to engage in group work and cross-learning. They should also be tailored to the requirements of the training tracks.
- In-kind support from sources such as government organizations, colleges, and schools can be a useful and important way of mobilizing resources.

- Set the dates of the EMEx at least 6 months in advance and notify all relevant persons accordingly. It should be noted that certain stakeholders like national and international faculty need to have the dates and terms of engagement confirmed a minimum of 6 months before the EMEx.

- Strategic leadership and support from EMEx core committees, policy-makers and government authorities is essential to maintaining organisers' energies and confidence in developing the EMEx. It can be quite a long-drawn, tiring process which demands a lot of resources and time.

- National and local faculty should be brought together at least a month before the actual EMEx to work on the technical planning of the training tracks, table-top exercise, and mock drill. Teams should meet at least 2 days before the delivery of the training track.

- Efforts to engage non-traditional actors i.e. the commercial sector should be made as they are also affected by disasters and have expertise, skills, knowledge and resources which can be mobilized in emergency situations.

- National and international faculty to be engaged for the EMEx need to be selected more than one month before the exercise.

6 Resource Management for the EMEx

6.1 Managing Human Resources for EMEx

Overview of Key Personnel

6.1.1 EMExes typically involve staff from SDMAs and DDMAs (mainly District Project Officers(DPO). Additional human resource support may be sought by seconding officers from other DDMAs. In the case of the GEMEx, the ASDMA and DDMA mobilized their DPOs a month before the start of the exercise and they were assigned specific tasks like coordinating the training courses. Junior officers were appointed to assist them and two coordinators with EMEx organising experience were recruited by UNICEF and seconded to the ASDMA and DDMA under the supervision and technical guidance of Senior Consultant, CBDM, NDMA, who was coordinating and rendering technical oversight and guidance from NDMA to the state for conduction of EMEx. All liaised with the DDMA on planning and executing the GEMEx.

6.1.2 Depending on the size of the city, the scale of the EMEx, and resource availability, it is advisable to divide the city into sections and assign DPOs to each section to oversee the implementation of the EMEx and recruit participants. They can also ensure that all necessary preparations, such as providing training materials and setting up audio-visual equipment, have been made at the venue. The lead EMEx organizers should also personally visit the venues for all EMEx activities (including the inauguration and closing ceremony) to ensure that they are suitable for the exercises.

6.1.3 Local officials from municipal corporations and line departments, staff from EMEx venues, members of the community, personnel from supporting institutions, media channels, and private companies may also be involved in organising the EMEx.

Training Faculty

6.1.4. Technical faculties will be enlisted to deliver the training courses and design the table-top exercise and field drill. They are usually sourced from leading institutions such as:

Expert Observers

6.1.5 Evaluating and monitoring the EMEx activities is the most important part of the EMEx as it ascertains their effectiveness, areas for improvement, and the follow-up actions that should be undertaken. Accordingly specialists in emergency/disaster management and in the issues covered by the EMEx (such as emergency logistics, hospital management and emergency medical care), should be enlisted to observe and evaluate the training courses, field drill, and table-top exercise.

6.2 Financial Resources

6.2.1. Preparation of the EMEx budget should be done following discussions between stakeholders and after the EMEx programme has been decided. This should be undertaken by the relevant State Disaster Management Authority and submitted to the state government's Principal and Chief Secretaries for Disaster Management. The key components the budget should cover are:

- Participation of trained volunteers
- Printing (banners, posters, stands, brochures, ID cards)
- Media campaign (radio, road shows, website creation (if not already created))
- Logistics support for conducting training (laptop, LCD, sound systems, venue rental)
- Documentation
- Transportation, refreshments, and accommodation
- Ground preparation for field drill
- Scoping exercise
- Discovery, assessment, EMEx design, preparedness action phase
- Travel, boarding and lodging of national and international faculty

6.2.2. State governments are the primary financers of EMExes. However, additional resource support could be sought from partners, stakeholders, and other supporters in both the public and private sectors. The table below sets out an approximate budget and staff requirements: (based upon the GEMEx)

Approximate Estimate of Budget:

Below template shows how to estimate budget for EMEx.

Sr No	EMEx Phase	Unit	Costs (Rs)	Remarks
1	Policy Discussions to Plan EMEx	3 Meetings		
2	Need Assessment for Capacity Building through Prep Workshops	3 Prep Workshops		

Sr No	EMEx Phase	Unit	Costs (Rs)	Remarks
4	Designing EMEx (Planning and Designing Meetings)	4 Internal Meetings		
5	Track wise Planning (Per track no. of participants, kit for the participant, food including tea-coffee, venue, audio-visuals)	17 Tracks		
6	Resource Persons to be invited (Local as well as outsiders)- Cost of accommodation of resource persons, food, Long distance travel, local travel, kit for the resource persons)	15		
7	Table Top Exercise (Venue, Food, Audio-Visuals, seating arrangements)	1000 people		
8	Field Drill (Cost of designing stages, artists, audio visuals, seating arrangements, tea-coffee, Lunch etc.)	800-1000 people		
9	Hot Wash (Cost of venue, audio visuals, tea-coffee, food)	800-1000 people		

Sr No	EMEx Phase	Unit	Costs (Rs)	Remarks
10	Other Costs			
10.1	Vehicles (Innova/Bolero cars)	25 Nos.		• For Resource Persons
10.2	Big Buses	2 Nos.		• For Participants on Day 1
10.3	Photography and Video Documentation			• For Event records
10.4	Media Coordination	All Media (Digital and Print Media)		• For Advertisement and Awareness
10.5	Brochures, Banners and Standees	As decided		• For advertisement throughout the city • Banners and standees at track venues • Brochures in English and in local Language

Sr No	EMEx Phase	Unit	Costs (Rs)	Remarks
10.6	Certificates for track-wise participants and Resource Persons	As per actual		
10.7	Momentos to Dignitaries	As per actual 3 members		
10.8	Event Coordinators	for 3 months		
10.9	No. of Staff	As decided		
10.10	Communication cost			
10.11	Process Documentation			
10.12	After Action Report			
10.13	Contingency			
10.14	Overheads Total Budget			

Additional EMEx Resource Management Tips	
•	Including experienced EMEx coordinators in the EMEx core committee can significantly expedite and enhance the planning process. They should be identified and deployed at least 3 months before the EMEx is to be carried out.
•	Seconding staff from other DDMAs and institutions can be a good way of addressing short-term capacity needs and obtaining the necessary expertise.
•	An orientation session should be held for expert observers at least a day before the EMEx so that they can familiarize themselves with the evaluation tools and the required tasks.
•	Ample time needs to be given to developing and revising budgets
•	All pledges of contribution from stakeholders should be backed by Memorandums of Understandings (MOUs) or letter of commitments so that EMEx organizers can be certain about what resources they can expect to receive for the exercise. The MOUs or letter of commitment should also clarify the stakeholders' expectations from making their contributions.
•	Steps should be taken to encourage all EMEx organisers and stakeholders to work in an integrated manner and meet project implementation targets on time. This is because all of the EMEx activities and planning processes are interlinked with one another.

Silchar EMEx, November 2013. Photo

7 Designing the EMEx Activity Programme

7.1 General Principles

7.1.1 EMEx activities should be designed so that they are multi-disciplinary, practical, collaborative, interactive, realistic, easily replicable, and enable new skills to be developed. They should show what the initial considerations in emergency responses should be, which areas and communities should be targeted, how data should be collected and presented, and draw out the strengths and weaknesses in the city's emergency/disaster management systems and plans. Additional principles which should be followed when designing EMEx activities are:

- Ensure that the training content is tailored to the participants' learning needs and language requirements. A competency-based approach should be used to set the EMEx's content.
- Include participants from different sections of the community.
- Clearly state the objectives of the training activities and ensure that participants are clear about their roles and expectations. This could be achieved by providing prior information about the nature of the training exercises and how it will be conducted to the participants.
- Design mechanisms to select appropriate participants for EMEx activities. Efforts should be made to ensure that a wide range of participants, especially NGOs, CBOs, CSOs, and members of the community, are engaged in the exercises including ESFs.
- To promote continued learning and maximise the utility of the EMEx trainings, pre-and post-EMEx activities should be devised. For example, monthly EOC-level regular meetings incorporating the participation of all ESFs could be held and there could also be preparatory school safety training workshops.
- The training content should include practical components.
- Organisational and system-level learning should be emphasized in the tracks and workshops.
- Adequate advance notice should be given to trainers so that they can prepare their courses properly.
- Especially for those exercises which have

large participant numbers, there need to be mechanisms for controlling discussions and managing them.

- Venues will have seating arrangements that facilitate discussions, group work, and practical exercises should be used. To this end organisers may need to work with trainers to ensure that suitable sites are chosen.
- All training exercises should have follow-up activities and refresher sessions. Trained participants should be integrated into emergency response systems so that their skills can immediately be utlized to improve disaster management systems.
- Presenters should ensure that they are clear and engaging in their presentation delivery.
- The number of participants in each training track is 30-40 maximum.

7.2 Designing Training Courses (Tracks)

7.2.1. The range of training courses offered at the EMEx would depend on the risk profile of the city/district, the needs of the participants and the capacity-building requirements of the city's emergency response system. Generally though in the past, EMExes have focused on emergency hospital management and medical skills, school and higher education safety, industrial and chemical disaster preparedness, emergency response coordination, emergency needs assessment, and incident response systems. The following table lists the courses which have been run in previous EMExes, explains their content, and identifies the target participants.

Identification of Emergency Support Functions (ESFs) and Participants

An important part of designing the EMEx activity is the identification of the relevant functions and the concerned agencies that need to be associated with this massive exercise. Such functions are known as 'Emergency Support Functions' or ESFs. Each ESF has certain participants within its ambit, the totality of which constitutes the participant profile of the entire EMEx. The following table provides the details of the ESFs along with the respective participant profile:

Emergency Support Function (ESF)	Primary Agency	Members of the State Administration
ESF No. 1 - Communications	Information Technology Department (ITD)	Senior Superintendent Of Police, Additional Deputy Comm. (Relief, Law & Order, City Municipal Corporation, Senior Station Officer, (Fire), Joint Director, Health Services, Transport, PWD.

Emergency Support Function (ESF)	Primary Agency	Members of the State Administration
ESF No. 2 – Search and Rescue (Evacuation)	Home Department (HD)	Civil Defence, PWD, City Municipal Corporation, Police, Dept of Health, NDRF, NCC, NSS, Nearest Army Cantt.
ESF No. 3 – Relief Coordination (Shelter, Water & Food)	Food & Civil Supplies Department (FSD)	Food Corporation of India, Railways, Cooperative societies.
ESF No. 4 – Engineering Services & Public Works	Public Works Department (PWD)	PWD – Roads, Police, City Municipal Corporation, PHE, Water resources, transport.
ESF No. 5 – Public Health & Medical Response	Health and Family Welfare Department (HFWD)	City Municipal Corporation, zones, Major Public Hospitals, Private Nursing homes, Army Hospital, blood bank, ambulances.
ESF No. 6 – Water & Sanitation	Public Health Engineering Department (PHED)	Director/CEO of PHED, PWD, Water Resource Department
ESF No. 7 – Damage Assessment	Revenue & Disaster Management Department (RDMD)	Circle officers, BDO, Municipal Corporation, Agriculture Dept, PWD, PHE, Water resource Department, Animal Husbandry and Veterinary Department
ESF No. 8 – Law & Order	Home Department (HD)	Home Guards, Civil Defence, Assistant Public Relation Officer, National Disaster Response Force, District Information & Public Relation Office, Fire.
ESF No. 9 – Social Welfare	Social Welfare Department (SWD)	Chairman of Social Welfare Department

Emergency Support Function (ESF)	Primary Agency	Members of the State Administration
ESF No. 10 – Transport	Transport Department (TD)	Superintendent of Police (Traffic, Railway, Airport authority), State Transport Corporation, Local Transport Unions, Truck Association, Ambulance operators, Water Tanker Association.
ESF No. 11 – Volunteer Management	Revenue & Disaster Management Department (RDMD)	Home Guards
ESF No. 12 – Power	Electricity Department (PD)	Chairman of the State Power Corporation
ESF No. 13 – Livestock Management	Animal Husbandry & Veterinary Department (AHVD)	CEO, DDMA, Municipal Corporation, Food &Civil Supplies, Circle Officials, Revenue Circle, Fodder Development Officer, Medical Stocks, PWD, PHE

Training Courses and Participant Profile

The following table provides an indicative list of the training courses and their respective target participants:

Training Course	No. of Days	Description	Target Participants
Emergency Medical Services	4	Gives first responders the confidence and skills That they need to provide the highest level of immediate pre-hospital health care in a disaster setting. Teaches basic critical skills like CPR, log-rolling and extrication, early trauma management, triage, and assessment and response skills for medical disasters.	Paramedics, nurses from Government, NGOs, Red Cross
Hospital Disaster Management	4	Improves the ability of hospital management to organise intra-hospital care during mass	Hospital administrators, medical

Training Course	No. of Days	Description	Target Participants
Plan and Mass Casualty Management		casualty events. Trainers work with participants to develop unique plans to coordinate the delivery of care at all levels and effectively assess and mobilise hospital resources. Participants are provided the opportunity to develop emergency management plans for the hospitals involved in the EMEx.	superintendents, chief medical officers, medical directors, nursing superintendents, senior matrons, heads of emergency casualty Departments, ICU staff
Disaster Response- The Humanitarian Perspective	3	Looks at the humanitarian issues involved in disaster management. It involves sub-tracks on interagency coordination, standard operating procedures for disaster response, and application of minimum standards	Disaster management officials from disaster management authorities, NGO/humanitarian agency professionals, emergency responders, academics/education professionals
Emergency Nursing Care	3	Designed to give nursing staff working in the emergency department the confidence, skills and knowledge they need to provide the highest level of immediate nursing care in a disaster setting.	Staff nurses in emergency departments, nursing tutors from nursing colleges and Schools, nursing supervisors e.g. deputy matron, senior staff nurses
Comprehensive	3 to 4	Teaches participating doctors how to assess,	General Surgeon,

Training Course	No. of Days	Description	Target Participants
Trauma Life Support		resuscitate and deliver initial care in a systematic algorithmic manner to patients with major trauma. Course includes airway securing techniques.	Orthopaedicians, Neurosurgeons, Anaesthetists, Emergency Medical Officer, Critical Care/ Casualty Medical Officer
Advanced Disaster Life Support	3	Give advanced training to those individuals who have already received training in basic trauma life support. Trains participants in mass casualty decontamination, use of personal protective equipment, essential skills and mass casualty incident information systems and technology applications. Uses simulated all-hazards scenarios, interactive sessions and drills with high-fidelity mannequins and volunteer participants to create a realistic and practical experience. A pre and post-test will be conducted.	As above
Community-based Disaster Management and Public Health Emergencies	4	Trains senior-level public health practitioners, community medicine PG's and disaster management personnel in the skills needed to evaluate disaster response systems. An overview of various components of disaster response, and practical tools to evaluate these components will be included. Participants will also be trained in the public	Senior Medical Officers from Municipal Corporation/ Cantonment/Hospital / Epidemiologist, Program Directors of Disease Control Programme of health/MCD/NCDC/

Training Course	No. of Days	Description	Target Participants
		health issues and tools which can be used to address them. Alternatively, this course can be segregated into two courses	Medical officers Public health Engineers, Sanitation Engineers, NGOs working in the domain of Public Health, Post Graduates from Dept. of Community Medicine of Medical Colleges/railways/ESI/ For CBDRR: Senior officers from Dept. of Relief , Revenue, health, Social welfare, Food and Supplies, PHE, Sanitation, Red Cross, NGOs, RWAs, civil society
Inter-Agency Communication and Coordination	1	Focuses on inter-agency communication/ protocol coordination within agencies and communication with the media during disasters.	Senior Representatives of all ESFs, nodal officers from related Government departments
Multi-sectoral needs assessment in emergencies	2	Provides the necessary skill set to involved government and humanitarian agencies to build the capacity of affected areas across all Sectors on assessment parameters	Nodal officers from government departments (in charge of needs assessment, relief, response), disease surveillance officers, NGOs, Public Health Officials

Training Course	No. of Days	Description	Target Participants
Search and Rescue	3	Provides emergency response personnel with the skill set they need to successfully complete search and rescue missions	Trainers from police departments, municipal corporations, City Development Authority, Army, Railway, Home Guards, security
Incident Response Systems	2	Trains emergency response personnel in the basic principles of Incident Response Systems, including: • Interaction of hazards and vulnerability (material, organizational, attitudinal) • SOPs for Disaster Response • Application of standards in humanitarian response e.g. Sphere Humanitarian Charter and Minimum Standards in Humanitarian Response, International Network for Education in Emergencies Minimum Standards	Senior representatives of all ESFs
School Disaster Preparedness	2	Provides training in school safety issues, disaster preparedness, evacuation, and risk management strategies	Trainers from education and teachers' institutes, senior teachers, NGOs working in the domain of school safety headmasters, representatives from DIET and education directorate, principals

Training Course	No. of Days	Description	Target Participants
Chemical and Industrial Disaster Preparedness	2 to 3	Provides training in disaster preparedness and preparedness audits for industries/ service providers	Safety officers, factory inspectors, safety officers from oil companies, MAH units, fertilizers, pharmaceuticals, transport, etc.
Minimum Initial Services Package in Reproductive Health	4	Trains health and disaster management officials on the essentials of reproductive healthcare in emergency situations	Trainers of health and family welfare training institutes CDPOs of ICDS, senior officers of social welfare, Senior Medical Officers of Health, NGOs dealing in reproductive health issues, senior officers from the State Society for HIV/AIDS Control Programme, Nurses and health workers
Higher Education Preparedness	2	Provides training in safety issues, disaster preparedness, and risk management strategies for higher education	College administrators, NSS supervisors, Senior Educators
Training for Engineers on Earthquake Safety-other hazards as well	2	Develops local engineers' skills and knowledge in making buildings resistant to earthquakes.	Junior Civil Engineers (PWD), Municipal Corporation, City Development Authority

Training Course	No. of Days	Description	Target Participants
Community-based Disaster Risk Reduction	2	Trains disaster managers from the government and non-government sectors on participatory approaches in disaster management	Disaster managers from government and non-government sectors
Communication Workshop	1	Workshop which focuses on: a. Inter-agency communication – what information each agency would like from the other during disasters b. Communicating effectively with the media c. Advances in communication technology globally	Agency heads (police, fire, emergency management services, hospitals, disaster management authorities), public relations officers, media leaders, technical experts
Sensitization/Response Preparedness for CBRN Emergencies	2-3	With a focus on : Fair understanding on the various elements & phases of disaster response operations in the wake of CBRN emergencies Inter agency coordination and role of different stakeholders during CBRN emergencies Awareness at the community level	Frontline response and security agencies - Armed Forces Personnel, NDRF, SDRF, Police, Fire Services, medical personnel esp. from Govt. set ups; information and broadcasting personnel; civil administration

7.2.2. Training courses should be run using a combination of lectures, presentations, plenary discussions, group work, practical demonstrations, practical exercises, and videos to engage the participants' interest. Case studies featuring local examples should also be used to enhance the trainings' relevance to the participants' work. A balance between theory and practice needs to be achieved. Finally, care should be taken to minimise the use of technical terms and to ensure that the training course is delivered at a comfortable pace. It is recommended that

for **maximum learning outcomes to be achieved**, training courses should be structured in this manner:

- *Knowledge delivery:* 15%-20% of the training time is spent on delivering knowledge through interactive presentations or similar methodologies.
- *Comprehension-building:* 50%-60% of the training time is used to build comprehension of frameworks, principles, and systems through practical activities like case studies, group work, table-top exercises and class-room based simulations
- *Reinforcement and feedback:* 10%-20% of the training time should be spent on reinforcing application-level learning through feedback sessions.

Guwahati EMEx, November 2012.

Tips for Developing Training Courses

To ensure that the training courses are functional, practical, and suitable to the participants' needs, the following steps can also be undertaken:

1 **Needs assessment:** The needs assessment should identify the participants' training requirements e.g. information gaps, uncertainties in emergency management procedures, lack of particular types of skills, weak emergency response systems, and the need for clarifying roles and responsibilities. Regard must also be given to the situations that participants typically face.

2 **Scope definition:** Scoping involves identifying the terms of reference for framing the training course. It involves prioritizing learning needs, identifying the availability of resources and personnel, deciding upon a suitable location for running the training course, identifying the target participants, and the learning outcomes that they are to achieve.

3 **Develop statement of purpose:** A statement of purpose is a broad statement of the exercise goal and brings focus to the entire exercise. It controls the selection of the objectives and provides clarification to all organizers and stakeholders. It could be as follows for eg:

- The purpose of the school safety training track is to train participants in school safety issues and in basic disaster risk reduction.

It could also include the details of the key organizers, the duration of the training course, and its location.

4 **Define objectives of the training course:** Objectives describe the outcomes, performance, and achievements that are expected from participants. They are more specific than the statement of purpose and can also be thought of as general statements of expected actions. Objectives are also critical for evaluating the success and value of the training course. Objectives are developed based upon the needs assessment and statement of purpose. They should be clear, concise, performance-oriented, realistic, simple, measurable.

5 **Develop key training components and list expected actions:** This involves developing the structure of the training course such that it is consistent with the objectives, statement of purpose and needs assessment. Care should be taken to ensure that the content flows logically and is both practical and theoretical. Expected actions – the actions or decisions which participants should carry out to show competence – should be listed. By doing so this will help with establishing whether the terms of the training course have been satisfied.

6 **Prepare 'take home' messages for participants:** Preparing 'take home' messages, that is short simple statements of the key principles from the training course, are a good way of concluding training courses as they reinforce the key learning points from the sessions.

7 **Preparation of teaching and learning material:** Preparation of teaching material and learning material based on the exigencies of each track along with the requirements and the level of understanding of the participants.

8 **Track wise evaluation:** There will be evaluations at the end of each track. The participants will be asked to evaluate the training track and then the feedback will form the basis of further improvement for the improvement for upcoming EMExes.

7.3 Designing the Table-Top Exercise

A table-top exercise is essentially a group discussion where participants, guided by facilitators, come together to solve a hypothetical emergency/disaster situation. They have the advantages of enabling participants to, in a low-stress environment, rehearse their emergency response strategies, get acquainted with one another, and develop problem-solving skills, review plans, procedures and policies. It usually consists of the following steps:

7.3.1

Step	Description
Background information	Provision of detailed background information about the table-top exercise to participants. This should include the objectives and statements on the roles they are expected to perform in the exercise
Group formation	Participants are placed into groups. A variety of skills, knowledge, and backgrounds should be maintained in the groups.
Presentation of the problem	The facilitator gives participants a hypothetical problem which closely approximates actual emergency situations encountered in the city. It can be delivered using numerous formats e.g. whole-group presentation, oral narration, and written statements, scenario and sub-scenarios
Facilitate the exercise	The facilitator guides the groups through solving the problem, for example by breaking it down into smaller problems and providing leading questions. The facilitator also controls the pace of the exercise and stimulates discussions.
In-depth problem-solving Group presentation Conclusion	Participants begin developing solutions to the hypothetical problem Individual groups present their solutions to all the participants present Facilitator summarizes the key outcomes from the exercise, challenges, and learning points.

7.3.2 During previous EMExes, table-top exercises were found to be a useful way of enabling participants to reinforce what they had learned and apply their skills. The exercises also illustrated to participants the range of immediate concerns beyond their own functional foci that a disastrous event presents and raised issues which went beyond the topics covered at the EMExes. The exercises elicited considerable attention, interest and enthusiasm from them.

7.3.3 Like the training courses, the hypothetical problem should be developed based upon the participants' training needs and the city's emergency response system. They should also be consistent with the objectives of the EMEx e.g. identify bottlenecks in emergency communication, discrepancies and overlaps in response planning, and gaps in inter-agency coordination and communication. The problem also needs to have a clear set of training objectives

and be developed such that it remains relevant to and engages all participants.

This can be especially challenging when there are a large number of ESFs and participants in the table-top exercise.

An example format of the hypothetical problem is shown as follows:

Title: Table-Top Exercise [Name of Scenario]
Objectives:
At the end of the table-top exercise participants will demonstrate the ability to:

- Develop an understanding of their roles and responsibilities in emergency situations
- Identify communication gaps

Participants involved: [List of participants

e.g. hospitals, line government departments]

Facilitators: List of facilitators who will be leading the discussions

Narrative: Description of the problem. This should be as realistic as possible and engage all the ESFs. It should also be based upon existing challenges faced in the city's emergency response system.

7.3.4. Effectively engaging participants is the greatest challenge in the table-top exercise, particularly when large participant groups are involved. They have to be managed such that they remain interested and motivated throughout the entire exercise, are prepared to exercise the role they would usually play in an emergency situation, and are willing to actively participate in the discussion so that they are dynamic, have a variety of viewpoints, and offer creative solutions to the problem at hand. **Choosing the right facilitators/moderators is essential to meeting this challenge**.

What sort of facilitator/moderator should I look for?

The importance of facilitators in table-top exercises cannot be overstated. Aside from presenting the hypothetical problem and guiding the discussions, the way they open, 'set the scene', and run the table-top exercise can be the key determinant in whether participants have a positive learning experience. Accordingly, facilitators with good communication skills and experience in leading discussions should be used. They should be highly experienced with dealing with people from different backgrounds and have a deep knowledge about emergency/disaster management. They should be familiar with the city where the EMEx is being held and the challenges it faces in its emergency response systems. An understanding of the roles and responsibilities of different stakeholders and ESFs in the city's emergency response system would also help them in engaging with the participants.

An EMEx could have a lead facilitator and assign additional facilitators to each of the discussion groups. Facilitators should be guided by the following principles when conducting the table-top exercise:

Opening the table-top exercise: The facilitator's opening remarks can influence the participants' entire experience of the EMEx. The lead facilitator should launch the proceedings by:

(a) Welcoming the participants

(b) Briefing the participants on what will happen during the exercise, also explaining its purposes and objectives, the ground rules, and administrative procedures

(c) Introduction of the hypothetical problem

(d) Ice-breakers

Facilitate the discussions: Facilitators should ensure that the table-top exercise is fully participatory and involves all participants. This can be achieved by encouraging those who may be hesitant to offer their inputs, maintaining eye contact with participants, acknowledging comments in a positive manner, and posing questions to stimulate discussions.

Control the discussion: Facilitators need to be able to control the discussions so that participants' interests and involvement are maintained in the exercise. Some strategies for doing so are varying the pace of the exercise, approaching the problem in stages, and monitoring participants for signs of frustration or conflict.

Tips for Running Table-Top Exercises

- Press attention can help with generating participants' interest in the table-top exercise, raising the community's awareness on disaster management issues, and directing government attention to improving emergency response systems.
- Ensure that participants are well-informed about the objectives and nature of the table-top exercise. They should also have a clear understanding of the roles that they are to perform.
- To help participants engage with one another, ice-breaker activities should be held before introducing the problem to them.
- Facilitators should be encouraged not to rush through the problem. The emphasis should be on having a deep analysis of the hypothetical problem and not developing superficial solutions.
- An appropriate venue with proper acoustics and audio-visual configurations should be selected for the table-top exercise. Seating arrangements should be conducive for group discussions.
- Ensure that senior disaster managers and government officials i.e. those with key decision-making powers for emergency response are included amongst the participants.

7.4 Designing the Simulation or Mock Drill

7.4.1 The purpose of a city-wide mock drill is to test the ESFs' abilities in mobilising their resources and emergency management plans to deliver a coordinated and effective response to a disaster/emergency. It is also an opportunity for participants to practice the skills they have learned from the EMEx. Mock drills are designed to challenge the entire emergency management system in a highly realistic and stressful environment. They are the highlight of

the EMEx and are, for the participants, the most interesting and useful feature in the exercise.

7.4.2 Usually, a mock disaster/emergency situation is created at a designated location in the city hosting the EMEx. At the 2011 CEMEx, a wall collapse during a football match leading to a stampede was simulated at the Chennai city corporation grounds, following which participants had to practice setting up emergency triage sites, running casualty wards, securing the site, and transporting the mock victims to hospitals. At the 2012 GEMEx, an earthquake and terrorist attack affecting 200 mock victims (including child casualties) was simulated at the Assam Engineering Institute. They are then followed by a 'hot wash' session to identify the successes, shortcomings, and strategies for improving the participants' emergency response.

7.4.3. The Need for Mock / Field Drills:

- To Inculcate a 'Culture of Preparedness'.
- To Examine the Plans and SOPs of Identified Stakeholders.
- To Evaluate the Resource Status of various Departments.
- To Coordinate the Activities of Various Agencies for their optimum utilization.
- To use the Feed back to identify the gaps and improve the Resource Capabilities to Face Actual Disasters.

7.4.4. Mock/field drills should be designed with the following principles in mind:

- The drill must be interactive and test the entire emergency management system in a highly realistic and stressful environment. It should involve all ESFs and require them to apply their emergency management/ response skills.
- An EOC as well as other sites which are likely to be involved in disaster/emergency situations should be used for the field drill.
- Simulated victims can help achieve an additional level of realism
- Personnel who are experienced in running field drills should be used to carry out the exercise.
- Substantial time should be given to planning the field drills.
- The field drill should require ESFs and participating stakeholders to exercise the roles and responsibilities which they will usually carry out in emergency/disaster situations.
- The objectives of the field drill should be clearly stated.
- All activities in the field drill must be timed.

7.4.5. Objectives of the mock drill:

A field/mock drill seeks to accomplish the following objectives:

- To review Disaster Management Plan of the State.
- To evaluate the Emergency Response Plan and Standard Operating Procedures of the Urban area/District/selected for Mock Exercise.

- To highlight the Roles and Responsibilities of various Stakeholders.
- Enhance Coordination among Emergency Support Functions of various stakeholders at District level.
- To generate Public Awareness by involvement of Local Government, NGOs and Public.
- Identify the gaps in Resources, Manpower, Communications and in any other field.

7.4.6. How to Conduct a Mock/Field Drill:

A mock/field drill should have a minimum of 150 participants. The following steps are involved in conducting a mock/field drill:

Step 1

- Delineating objectives of Mock Exercise.
- Scope of Exercise.
- Selection of the District/industry for Mock Exercise.
- Date and Venue for Table Top and Mock Exercise.
- Participants
- Media Coverage.

Step 2

- Precursor to Mock Exercise.
- Scenarios are initially painted at Local Area level and spill over as "off site" emergency where district administration comes to aid; sometimes help from State/ neighbouring district/s may be sought. Principal Secy. DM, Collector/DC and Stakeholders at State and District levels like Director Industry, SSP, District Health Officer, Fire Officer, Public Services heads, NDRF Team Leader, Communication, Civil Defence, Home Guard, Red Cross, RTO, NGOs, Public Relations etc respond. Subsequent situations are simulated as realistically as possible.
- Details of Coordination and Safety are discussed.
- The Gaps are identified and Remedial Measures taken.

Step 3

The Mock Exercise

- Observers are detailed, briefed and format for assessment issued.
- Self Assessment Formats are given to all stake holders.
- Scenarios are formulated after due deliberations and the Mock Exercise is conducted by simulating scenarios in a sequential manner.
- Sequence of events and Administrative Arrangements are finalized with States & District Authorities beforehand.
- Actions are taken on ground by concerned stake holders on orders of their own departments.
- Incident Command Post is established at district level for command and control. The State may also operationalize EOC.
- Relief Camps are established for evacuees.
- Hospitals are earmarked for evacuation of casualties and Medical Aid Posts are established at critical areas.

Step 4

Submission of the Final Report

- Reports are sent by all Stake Holders and Observers.
- A Final Report is made at State Disaster Management Authority
- Lessons Learnt are circulated to all concerned.

7.4.7. Following the field drill, a 'hot-wash' session should be run to evaluate the participants' performance in the mock drill. The hot wash should be run in the following manner:

(a) Begin with a summary description of the event so that all participants obtain an overview of what happened during the simulation. This description could include information on the emergency incident, its immediate impacts, the response, the problems encountered and reported, and other subsequent activities.

Guwahati EMEx, November 2012. Photo

(b) Discuss what worked/what did not, what went well/what did not during the field drill. This is the key to making problem-solving the targeted outcome of next steps and subsequent follow-up activities. Specific focus should be on identifying:

- Gaps in emergency response protocols and procedures
- Procedures that did not work
- Procedures that were not carried out
- Assets and resources that might be underused, and capabilities that may not have been recognised or widely known before the exercise.
- The response from the ESFs, in particular hospitals
- Discussion of an action plan with the participants for a better response in a potential future emergency In the hot-wash, discussions should be oriented around ESFs and their emergency response SOPs.

The Hot wash exercise should culminate after the distribution of certificates to all the participants of EMEx.

Additional Tips for Running Field Drills

- To make the drill even more realistic and closer to actual disaster situations, an element of surprise should be included.
- Overlaps between emergency responders' actions should be documented so that these can subsequently be addressed in their emergency/disaster management strategies and plans.
- The mock drill should cover all the ESFs in the city.
- The safety of participants, especially children, must be provided for in the mock drill.
- When planning the field drill, consideration must be given to whether it would compromise the actual response capabilities of stakeholders involved.

8 Evaluating the Emergency Management Exercise

8.1 The Importance of Evaluation

8.1.1 Evaluating EMEx activities involves critically assessing how they were carried out, the outcomes achieved, the extent to which they met participants', EMEx organisers', and trainers' expectations and learning objectives, how valuable they were to helping stakeholders improve their disaster/emergency management skills and knowledge, and their overall usefulness in helping the city improve its emergency response capabilities. Evaluation is as important as the EMEx activities as it shows the impacts and successes achieved, as well as ways for further improving their effectiveness. Evaluations may even show that certain EMEx activities are completely out of alignment with participants' training needs and should be omitted. The key to effective evaluation is to ensure that there is plenty of preparation time and that the evaluation tools and methods are developed in close consultations between the EMEx organisers, the EMEx core committee, and the training faculty.

8.2 Evaluating the Training Courses

8.2.1 Evaluations by both participants and trainers should be carried out at the end of each training course. This can be conducted using forms with a mixture of quantitative and qualitative questions designed to ascertain the following:

- Key discussion points and issues raised by participants in the training course.
- Key outcomes from the training course.
- Key learning points for participants.
- Challenges encountered in the training course.
- Participants' and trainers' views on the strengths and weaknesses of the training course.
- Participants' degree of enjoyment, engagement, interest, and overall satisfaction with the training course.
- The suitability of the training course to participants' needs and the suitability of the skills and knowledge taught to their work and organisation.
- Whether the participants responded positively and carried out the practical exercises effectively.

- Participants' views on the training course's overall subject balance.
- Mode of delivering the training course – whether trainers were clear in their communication, explained the content well, and covered the course content at a suitable pace.
- Participants' and trainers' assessment on the overall success of the training course.
- Participants' and trainers' suggestions for improvement and follow-up actions.
- Whether the training course was well-coordinated, planned and executed.

Sample evaluation forms for participants and trainers have been included as **Annexure 2** of this manual.

8.3 Evaluating the Table-Top Exercise

8.3.1 As with the training courses, the evaluation of the table-top exercise should be carried out by the facilitators and the participants. The objectives of the evaluation should be to identify:

- Key discussion points and issues raised by participants.
- Challenges encountered in the table-top exercise.
- Key outcomes and learning points from the table-top exercise.
- Participants' and facilitators' views on the strengths and weaknesses of the training exercise.
- Participants' degree of enjoyment, engagement, interest, and overall satisfaction with the table-top exercise.
- Whether the objectives and purpose of the table-top exercise were met.
- Whether the table-top exercise was well-coordinated, planned, and executed.
- Participants' views on the facilitators' effectiveness and mode of conducting the exercise.
- Whether the table-top exercise was useful to the participants and enhanced their learning experience.

8.3.2 Expert observers with experience in table-top exercises, evaluation methods, and emergency/disaster management training should also be engaged to observe the table-top exercise. They should focus on the following aspects:

- Participant management e.g. were the participants divided effectively in groups, was there enough participant diversity, were discussions managed such that a variety of viewpoints could be drawn out, and were the participants effectively engaged in the exercise?
- Group dynamics i.e. how did the participants interact with each-other, were there any conflicts between the participants and how were these resolved?
- Whether the table-top exercise was suitably designed for the EMEx and met the participants' learning needs?
- The effectiveness of the facilitators e.g. how did they open the exercise and introduce the problem to the participants, did they set down the ground rules properly, and how well did they communicate with participants.

- Whether the EMEx satisfied its stated objectives?
- Challenges in running the table-top exercise.

8.3.3 If the table-top exercise has less than 100 participants, individual participant evaluations can still be carried out. However if participant numbers are greater than this, especially given resource constraints and the challenges involved with processing and analyzing hundreds of responses accurately, alternative methods will need to be adopted. Some suggested methods are:

- **Individual Group Evaluations:** At the conclusion of the table-top exercise, Group facilitators lead the participants of the individual group through answering the evaluation questions and record their responses.
- **Focus/Sample Group Evaluation:** A manageable number of participants should be chosen to form a sample survey group and evaluate the table-top exercise. The participants should come from a variety of backgrounds and be broadly representative of the different groups formed during the table-top exercise.
- **Discussion Forum:** At the end of the table-top exercise, participants are brought together in a large group. The lead facilitator uses a 'question and answer' lecture approach and directs the evaluation questions to them at large.

Sample participant and expert observer evaluation forms have been included as **Annexure 3** of this manual.

8.4 Evaluating the Field Drill

8.4.1 The evaluation of the field drill is the most critical component of the EMEx as it is on the basis of this that stakeholders will proceed to revise their emergency management strategies. This could extend from the policy to operational level and could involve significant changes in personnel, resource management, operating procedures, and organisational strategy. It is recommended that in addition to the overall field drill evaluation, participating field sites and emergency responders e.g. fire departments should also conduct their own internal performance evaluations.

8.4.2 For the overall evaluation of the field drill, a team of expert observers with in-depth knowledge and skills on disaster/emergency management drills and the key competencies that are being tested in the field drill should be appointed. They should also come from a variety of professional backgrounds and sectors. A day or at least a certain amount of hours should be spent on familiarising the expert observers with the evaluation tool before deploying them to the field drill site.

8.4.3 Each expert observer should be assigned to the key field drill sites and directed to do the following:

- The overall utility of the field drill to emergency responders' training needs and EMEx objectives.
- Construct an event log, detailing each of the key response actions taken, by whom, and when they were undertaken.

- Analyse the effectiveness of the stakeholders' emergency response actions.
- Coordination and communication mechanisms between the stakeholders.
- Effectiveness of Incident Response Systems.
- Whether the objectives of holding the field drill were met and whether they satisfied the EMEx objectives.
- Identify bottlenecks and other challenges encountered during the emergency response.
- Observe the logistics during the field drill.
- Observe the dynamics between the participants and the degree of their engagement in the field drill.

8.4.4 Holding a 'hot wash' session following the EMEx would also enable participants to reflect upon the strengths and weaknesses of their response actions during the drill and identify areas for improvement. How this should be carried out has already been discussed in Chapter 5.

Sample field station observation logs and participant/emergency responder evaluation forms have been included as **Annexure 4** of this manual

9 What Happens After the Emergency Management Exercise?

9.1 What are the benefits/outcomes of an EMEx?

9.1.1 The overall outcomes expected from the EMEx can be divided into four domains, as summarized below:

Benefit /Outcome Domain	Description
Awareness-building	Multi-level stakeholder awareness on the city's emergency/disaster response systems and disaster risks is generated. In particular, knowledge levels in the community are enhanced.
Participation	Stakeholders from different sectors and levels are brought together on a common platform and actively engage in the EMEx activities, especially the mock drill.
Learning opportunity	The training tracks impart disaster/emergency skills and knowledge to participants. Learning is fostered at the individual, system, and sub-system level. Stakeholders drive learning agendas in each training track.
Performance improvement	Emergency responders improve their emergency response strategies and operations. For those cities holding EMExes and mock city-wide drills for the first time, more regular exercises will help them to achieve the same.
Coordination and organisation	Emergency responders improve their internal coordination and organising mechanisms. Better inter-agency coordination and communication structures are created by the emergency responders. They may also develop resource management and sharing strategies.

Benefit /Outcome Domain	Description
Continuous learning	All participants are motivated to practice and incorporate the skills and knowledge they have learned from the EMEx into their work and daily activities. Trained EMEx personnel are absorbed into existing emergency response systems so that they can begin initiating improvements and provide training to their colleagues.

9.1.2. There are additional short, medium, and long-term outcomes which can be achieved from holding the EMEx. These are discussed as follows:

- **Short-term outcomes: Organisations, especially government departments and authorities, develop an organisational-level strategy to improve emergency management**

  Organisations develop a strategy which focuses, prioritizes, aligns, and orients organisational actions towards improving its emergency management practices. This may also require developing a resource management strategy. *A set of strategic objectives are developed and validated, core principles to be identified are upheld, and a set of targeted initiatives and overall roadmap for implementing these objectives are formulated*

  Other short-term steps to improve emergency response are investing in the hierarchy of Emergency Operations Centres, and engaging ESFs in regularly practicing their functions and coordinating with one another. This should be led by senior well-trained officials. Over time, this will foster good relationships and communication between the ESFs, such that they will adopt a more cooperative and collaborative approach towards addressing the challenges of disaster/ emergency management.

- **Medium-term outcomes: Performance approximation exercises for all ESFs are conducted**

  A performance approximation exercise involves assessing the ESF's organisation, processes, and concerned personnel against three performance dimensions i.e. goals, design and management to identify the areas which require improvement. An assessment grid following the one shown below can be used to carry out the exercise:

Levels	Goals	Design	Management
Organisation	**Strategy, operating plans, and metrics:** *The most important box as everything flows from strategy.* • Does the ESF have a strategy to deliver on its emergency responsibility? • Are the ESF's roles and responsibilities clarified in the contingency plan? • What is the ESF's vision to acquire the capabilities needed to respond to the current hazard profile of the city? • Is there adequate support from higher levels for the ESF to acquire new capabilities? • Are there any plans to link with the citizens' capacities?	**Organization structure and overall business model:** • How does the organization's change during emergencies? • Isthe organisation's structure clarified in the operations plans or SOPs? • Is there need for some improvement/ change in the structure to deliver on newer capabilities? List any specific programmes to harness citizens' participation to improve effectiveness of emergency service delivery.	**Performance review and feedback practices and management culture:** • What are the enablers in the system which helps the performer to work on disaster preparedness and response? • Are there special powers or inputs (e.g. financial, organise surge capacity, procurement of supplies) approved for emergency response? If yes, at what level? • List any special recognition or rewards institutionalised to complement efficient and adequate performance by ESF during emergencies • Does the ESF as an organisation have a space to get evaluated and seek feedback from higher levels or other ESFs? • What are the small improvements that will create enabling work culture for emergency preparedness and response? • Do ESFs have space to voice their need for prevention, mitigation and acquire new capabilities?

Levels	Goals	Design	Management
Process	**Professional requirements both internal and external:** • Does the ESF participate regularly in post disaster needs assessment? If yes, how does that happen? • Who makes the plan for assessment? Do they have to get an order or they can initiate assessment on their own? What happens to the assessment report? • Are there emergency contingency plans in place for the ESF? If yes, please include a sample. • Is mutual aid agreement with other ESFs part of the contingency plan? • Is pre-stocking of emergency supplies part of the contingency plan? • Is capacity building plan part of the emergency contingency plan? • How does the ESF-Citizen interface for DRR work?	**Process design, systems design, and workspace design:** • Does the response plan get prepared at the ESF level? • Do long term recovery plans get prepared in the ESF? If yes, please give samples. • Are there SOPs for the ESF? If yes, please include the sample?	**Process ownership, process management, and continuous improvement:** • Who monitors the implementation of the plans? • What is the reporting mechanism? Who reports to whom for implementation of the response plan? • What is the experience of ESFs participating in the EOC- level coordination meetings? • What are the bottlenecks in emergency communication? How can emergency communication be improved?

What Happens After the Emergency Management Exercise?

Levels	Goals	Design	Management
Performer/ People level	**Job specifications, performance metrics, and individual development plans:** • Do the regular development ToRs include emergency responsibility? • What can be improved to enable knowledge development, skill improvement and attitude to do proactive emergency work or use new capabilities?	**Job roles and responsibilities, skill requirements, procedures, tools, and training:** • Disaster preparedness and disaster risk reduction, response are the responsibilities of which level? • What tools, equipment etc. are required to carry out their emergency roles and responsibilities? Do they have them? If yes, do they know how to utilise them? • What training do they have on a regular basis? What training do they still need?	**Performance feedback, consequences, coaching, and support:** • Does the emergency work done by concerned personnel attract review and feedback within the ESF and from other levels of administration/ government? If yes, when and how? • What can be improved? • What kind of support is required and from which level during emergencies?

- **Long-term outcomes: A Continuum of learning, planning, and action-planning for ESFs is established**

  Following the performance approximation exercise, each ESF draws up a strategy and plan for enhancing its capabilities. Performance benchmarks are set by the state and district disaster management authorities. Some points for consideration are:

  - ESF learning needs and developing an appropriate learning strategy for various levels.
  - ESF staffing needs
  - Equipment and physical infrastructure needs for each of the ESFs.

Outcomes of the EMEx:

- Preparation and activation of hospital contingency plans in the City (coming under the jurisdiction of City Municipal Corporation)
- Preparation and activation of contingency plans of all related health and medical infrastructure zone/ward wise.
- Review of the existing emergency response plans(SOPs) of all the 14 ESFs
- Preparation and activation of the school and college(higher education) disaster preparedness and response plans zone/ ward wise
- Review of current contingency plans of Major Accident Hazard Units(MAH) coming under City Municipal Corporation
- Designation of the disaster lanes within City Municipal Corporation
- Capacity enhancement of different stakeholders involved in emergency management and response
- Mass sensitization and public awareness on Urban Emergency Management Services (U-EMS)
- Testing and rehearsing procedures on interagency communication, coordination and interoperability with respect to emergency/disaster response
- Conduction of Mega Mock Drill
- Perspective plan for strengthening Urban Emergency Management Services in the city

10 Learning Lessons for Anticipated Challenges

Lessons that may be learnt:

As with any multi-stakeholder project, an EMEx will also have certain constraints so analysing them may open up some lessons to be learned for future exercises:

- The expertise available in terms of national faculty for various reasons should get formalized. Proper care should be given to the fact that finding experts for technical assistance should not take long.
- The selection of participants can easily be one of the greatest challenges in the process of organizing an EMEx.
- The budgeting may be a tricky proposition. Proper care should be taken to ensure that budget allotted is neither inflated nor under resourced. Both the scenarios can be potentially damaging to the exercise.

Stakeholder Management:

Possible challenges that should be anticipated regarding stakeholder management

- Early on in the phase one, a participatory exercise to evolve stakeholder management strategy between State and city authorities will support efficient relationship management. Further develop a corresponding communications strategy that will aid management of the relationships where stakeholder hierarchy is involved.
- Provide adequate space and time for stakeholder relationship building. During the preparatory phase, plan and implement small priorities to build momentum and confidence to pull off the big exercise. For first timers to EMEx this helps build more positive interest in the project and avoid fluctuation in perceptions.
- Clear and manageable plan with preparedness and follow-up actions help stakeholders identify their roles and responsibilities. Requisite detailing of plan with respect to dates, resource needs etc. further

assists stakeholders to quantify and pledge their commitments.

- Regular coordination meetings in the city where EMEx is planned help much more than ones planned elsewhere.
- Apart from the stakeholders with mandate to work on disaster preparedness various other actors have interest to come along and invest in common good through an exercise that as well has high visibility quotient.
- Certain stakeholders like national and international faculty need information in terms of exact dates, and other terms of engagement at least 6 months in advance.
- Certain stakeholders need occasional monitoring to maintain the level of engagement on the project. Plan certain milestones for their participation and engagement.

Annexures

Annexure 1

EMEx PREPARATION CHECKLIST

Sr No.	Activity	Responsible Department / Agency /Persons	Completed (Y/N)	Remarks
1	**Confirmation of venues** for training courses, table-top exercise, and mock drill	State Government/ SDMA/ DDMA		
2	**Notification letters on the EMEx** sent to heads of participating institutions e.g. hospitals, colleges, universities, schools, industries, service sector, concerned government departments, and the NDRF	DDMA		
3	**Identification of trained volunteers** (from civil defence, Red Cross, NYK, NCC, NSS, NGOs, scouts and guides) for the mock drill.	DDMA		
4	**Organisation of stationery and visibility** material e.g. banners, posters, stands, brochures, ID cards, certificates, training kits, writing pads and pens	SDMA		
5	**Organisation of colour-coded shirts and tags for mock drill**	SDMA		
6	**Launch of media campaign** e.g. road shows, street plays, radio programmes, press releases	Assigned SDMA agencies, DDMA		

Sr No.	Activity	Responsible Department / Agency /Persons	Completed (Y/N)	Remarks
7	Web-site creation, including training course material, schedules, EMEx details and background	State Government/ SDMA/DDMA/ specialist organisation		
8	Logistic support in venues for training courses e.g. laptops, projection screens, sound system, sitting arrangements, training kits, registration	DDMA, SDMA		
9	Documentation–process documentation for day-to-day activities and overall documentation e.g. photography and video	SDMA, DDMA		
10	Evaluation – EMEx activity evaluation forms prepared for trainers, participants, and expert observers	SDMA, DDMA		
11	Invitation of delegates and media for different events	SDMA, DDMA		
12	Transportation and accommodation for national and International delegates	State Govt/SDMA		

Annexure 2

TRAINING COURSE EVALUATION FORMS FOR TRAINERS AND PARTICIPANTS

TRAINER'S SESSION EVALUATION REPORT

Date	**Name of Session** **Name of Trainer**
Part I: Please rate the following, with 1 indicating extremely poor and 5 indicating excellent. Additional comments may also be made.	
Participants enjoyed the session and were actively engaged in the discussions and course content	
Training module content was well suited to the participants' needs	
The practical exercises were carried out effectively	
Participants showed a high interest in the practical exercises and responded well to them	
Overall the training module was a success	
Part II: Please provide comments on the following questions	
Session Description *Briefly describe what occurred in the session. What were some of the key discussion points and issues raised?*	
Strengths and Weaknesses *Comment on what you think were the successes of the session. What were the weaknesses?*	
Key Outcomes *Describe the key outcomes from the session*	

Suggestions for Improvement and Follow-Up Actions *What steps should be taken to improve the session? Identify the follow-up actions which are to be undertaken by participants and facilitators*
Additional Documentation *Attach copies of your presentation and any materials which were used or distributed to participants*

Annexures

PARTICIPANT'S TRAINING COURSE EVALUATION FORM

Date	**Name of Training Course**
Part I: Please rate the following, with 1 indicating extremely poor and 5 indicating excellent. Additional comments may also be made.	
Overall subject balance	
Skills taught met my needs	
Skills from the session were useful to my work and my organisation	
Session was well-coordinated, planned, and executed. Practical exercises were well-designed and effective.	
Trainers were clear in their communication and explained the content well.	
Overall satisfaction	
Part II: Please provide comments on the following questions	
Key Lessons, Skills and Messages Learned *Describe the key lessons, skills and messages which you learned from the session. What were the most useful points from the session? Did the session enhance your understanding of your role in disaster management and emergency response?*	
Strengths and Weaknesses *Comment on what you think were the successes of the session. What were the weaknesses?*	
Suggestions for Improvement and Follow-Up Actions *What steps should be taken to improve the session? Identify the follow-up actions which are to be undertaken by participants and facilitators*	

TABLE-TOP EXERCISE EVALUATION FORMS FOR PARTICIPANTS AND EXPERT OBSERVERS

PARTICIPANT'S EVALUATION/FEEDBACK - TABLE-TOP EXERCISE

Date	
Part I: Please rate the following, with 1 indicating extremely poor and 5 indicating excellent	
The exercise was well organized and structured	
The exercise scenario was realistic	
Facilitators effectively led the exercise and managed the discussions.	
The exercise was well-suited to my role and relevant to my work.	
The exercise enhanced my problem-solving abilities.	
The exercise gave me a better understanding of my roles and responsibilities in disaster / emergency response.	
The exercise enabled me to engage with other stakeholders in emergency response and improved my ability to work with them.	
Part II: Please provide comments on the following questions	
What were the successes and failures of the exercise?	

How should the table-top exercise be improved?	
What were the key lessons learned?	
What actions do you and/or your organisation need to take in your area of responsibility?	

EXPERT OBSERVER'S REPORT – TABLE-TOP EXERCISE

Date	**Name of Expert Observer**
Part I: Please rate the following, with 1 indicating extremely poor and 5 indicating excellent	
The exercise was well-organized, structured, and properly managed	
The exercise scenario was realistic and well-designed	
Facilitators effectively led the exercise and discussions Facilitators showed good participant management and communication skills.	
The exercise was well-suited to participants learning needs and their work requirements	
Part II: Please provide comments on the following questions	
Was the hypothetical problem suitable for the participants and the EMEx?	
Please comment on the group dynamics and quality of the discussions	
What were some of the successes and failures of the table-top exercise? What were the issues raised?	
What areas and steps should be taken to improve the table-top exercise? What follow-up actions are needed?	
What were the key lessons and outcomes of the session?	
How did the participants respond to the table-top exercise?	

Annexure 4

FIELD DRILL OBSERVATION LOG AND EMERGENCY RESPONDER EVALUATION FORM

FIELD DRILL ACTIVITY OBSERVATION LOG

Date:	**Location of Drill:**	
Name:	**Observation Station/:** **Aspects to Observe** *E.g. V.S. Hospital, hospital command system*	
Part 1: Please list all the events and activities which you observed at the drill		
Time	**Activity Description/Assessment**	**Problems Encountered**
E.g. 8.00am	*Hospital Head received phone call advising of mass casualties*	*Describe the problems encountered when executing the emergency response actions*
Part II: Please provide additional comments, identifying what were some of the problems and successes faced during the drill		

FIELD DRILL ROLE EVALUATION LOG – HOSPITALS

FIELD DRILL ROLE EVALUATION LOG – HOSPITALS

Date:	**Location of Drill:**			
Name: **Time (Start/End):**	**Name of Hospital Observed:** **Observation Location Details:**			
Part I: For each criterion, check the appropriate column and add comments as appropriate				
Criteria	**Yes**	**No**	**N/A**	**Comments/ Recommendations**
Implementation of Hospital Emergency Management Plan				
Emergency alert/disaster warning system effectively				
Hospital personnel were ready and prepared to respond to casualties				
Registration systems were in place and casualty arrivals were properly recorded				
Traige/Emergency Department procedures were effective – casualties were properly prioritized and sent to the relevant departments				
Emergency/Disaster Command Centre operated well				
Command structures within the hospital were effective				
There was clear and constant communication within the hospital – effective communication procedures in place				
Good communication was maintained with external emergency management parties e.g. ambulance services, police, local government authorities,				

Victims were attended to promptly and the appropriate medical treatment was provided				
Public/media information and communication procedures operated well.				
Hospital was secure; crowd/public control procedures were effective				
Traffic management procedures, both within and outside the hospital, were effective. The hospital was readily accessible to emergency vehicles				

Criteria	Yes	No	N/A	Comments/Recommendations
Implementation of Hospital Emergency Management Plan				
Overall Assessment				
Hospital had good documentation of victims (e.g. victim logs), medical procedures administered, and general hospital administration				
Hospital had the proper resources and the capacity for response actions.				
Hospital had proper disaster termination procedures in place				
Overall the hospital's disaster management plan was well-implemented				
All personnel understood their roles and carried them out well				
Hospital personnel participants utilised their GEMEx training effectively				
Part II: Please provide additional comments, identifying what were some of the problems and successes faced during the drill				

12 WEEK BUILD UP AND PREPARATORY PHASE FOR EACH EMEx

Week 1	Week 2	Week 3	Week 4
1) Policy meetings and formation of committees at state level to undertake EMEx	1) Pre-EMEx mobilization ◆ Govt. Order constituting EMEx Committee at the State level 2) Select stakeholders (institutions) who will participate in the tracks 3) Prepare and distribute community survey to measure current level of preparedness 4) Preparation of Calendar of activities for roll out of EMEx		1) Review of existing contingency plans (critical infrastructure) 2) Identify relevant participants from all stakeholders 3) Preparation of Hospital, School, ESF, vital facility plans
Week 5	**Week 6**	**Week 7**	**Week 8**
1) Review of existing contingency plans (critical infrastructure) 2) Preparation of Hospital, School, ESF, vital facility plans	1) Community and public awareness campaign	1) Community and public awareness campaign 2) Prep workshops on school safety and interagency communication and co ordination 3) Technical Module adaptation and preparation	1) Community and public awareness campaign 2) Prep workshop on hospital DM Planning 3) Media Workshop 4) Prep Workshop on Chemical Industrial Disaster preparedness 5) Technical Module adaptation and Preparation

Week 9	Week 10	Week 11	Week 12
1) Community and public awareness campaign 2) Pre EMEx administrative, logistic and operational planning 3) Technical Module adaptation and Preparation	1) Co ordination meetings, participant confirmation, venue selection, logistical planning 2) Technical module preparation	1) Confirmed list of experts, resource persons and trainers 2) Modules prepared 3) Preparation for simulation 4) Create scenario, identify location of simulation, identify local resources to create scenario (old vehicles, explosive/ fire devices, etc	**ROLL OUT OF EMEx** 1) TOT trainings 2) Tabletop 3) Simulation exercise 4) Hot-wash 5) Needs assessment workshop -identification of gaps, preparation of long and short term capacity building planning

Contact Us

For further information on *Training Manual*—How to Conduct Emergency Management Exercise (EMEx)

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