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I. Preface

In the event of any major disaster, both man-made or of natural causes, the citizens in affected areas suffer manifold losses. These include loss of family and friends, homes, personal effects, shops, etc. Such losses greatly affect the livelihoods and security of the affected persons and cause a traumatic impact on the community.

Whilst the Administration and the Emergency Support Services are engaged in discharging their duties, to identify requirements and to mobilize and deploy necessary resources in the affected areas, there, however, remains the matter of the emotions, behaviour and reactions of the community at large.

Will there be a law and order situation where citizens take advantage of damage to shops and indulge in looting or attack the weak and the vulnerable?

Will the traders create an artificial shortage of grain and foodstuff, medicines and drugs?

Will there be constant wailing and chest beating and a rush to be the first to grab relief supplies?

Keeping these factors in mind, the Municipal Corporation of Greater Mumbai along with all stakeholders working with issues relating to disaster management, came together to participate in a discussion on resiliency capabilities of the citizens of Mumbai. The purpose of this coming together was to deliberate and plan efficiently to address the challenges of preparing, responding and recovering from emergency situations.

Also and with particular emphasis, deliberations were held on gauging the responses and other indicators of the citizens in the face of disasters, so that the Administration and the Emergency Support Functions (ESF) may be the better equipped while responding to reactions of the community.

This subject has not been given wide publicity nor is it widely incorporated in academics, research and policy programmes.

It is therefore felt necessary to conceptualize ways and means by which the levels of Community Resiliency could be assessed, measured and mapped.

An index is often composed of several different indicators combined together using some mathematical formulae to give a single value called the index. There are many methods that can be used to develop an index, and in this document, the working group has chosen to use the ten indicators derived from the behavioural pattern of the Japanese community during the recent disaster in Japan.

Community Resiliency is about communities and individuals harnessing local resources and expertise to help themselves in an emergency, in a way that complements the response of the Emergency Services.

A person, society, eco-system or a city is resilient in the face of shock or stress when it returns to normal (ie. equilibrium) rapidly afterwards or at least does not easily get pushed into a new alternative equilibrium.

Disaster resiliency also refers to the capability to prevent or protect against significant multi-hazard threats and incidents, including terrorist attacks, and to expeditiously recover after a disaster and reconstitute critical services with minimum damage to public safety and health, the economy and national security.

It is heartening that the considerable efforts, put in by the Disaster Management Cell, the Lead Agencies along with the NGO partners, have resulted in a very commendable document, which would serve as a guide for the Administration and Mumbai's Community.

Self assessment and the need to formalize such a document of community resiliency indicators is the need of the hour. Such a document is also an asset to the subject of mitigation of trauma and increased efficiency in many aspects of disaster management.

Municipal Corporation of Greater Mumbai

1st July 2011

II. Introduction

History and Background

It is reported that disasters in the world are occurring with increasing frequency. That may perhaps be so, but the intensity of disasters is surely increasing in recent times. As it is understood, of the two types of disasters - natural and man-made, the former have been occurring over the ages as “acts of God”, and these were considered as such. In recent times however, natural disasters are said to be more catastrophic, particularly in terms of loss of property and life.

Any incident is turned into a disaster depending on the following criteria:

- the intensity of the incident
- area covered by the incident
- number of human lives affected by the incident
- extent of loss of life and property due to the incident
- loss of production etc due to the incident

Hence, when an incident has a major negative influence on society, it is called a “disaster”. There are different categories of disaster and their intensity also varies.

Some of the major disasters in recent times are shared below:

The Great Bombay Dock Explosion

On 14th April 1944, a fire started in the holds of the ship 'Fort Stikine' which was carrying a cargo of cotton bales, gunpowder, timber, ammunition and gold bars from London.

The explosion was so big and loud that it could be felt / heard till Dadar!! A piece of propeller from the ship landed in St. Xavier's High School, Dhobi Talao some three kilometres from the docks!

The docks and the surrounding areas were completely destroyed. Over 120 brave men from the Bombay Fire Brigade and hundreds of dock workers lost their lives. The locals thought that the Japanese had attacked (like Pearl Harbour), which was not true. All the gold bars (which had landed all over the place) were subsequently returned over the next 30 years to the British Government.

Many families lost all of their belongings and were left with just the clothes on their back. The government took full responsibility for the disaster and paid

monetary compensation to citizens who made a claim for loss or damage to property.

It took three days to bring the fire under control, and later 8,000 men toiled for seven months to remove around 500,000 tons of debris and bring the docks back into action. The official death toll was 740, including 476 military personnel, with around 1,800 people injured. Twenty-seven other vessels were sunk or damaged in both Victoria dock and the neighbouring Prince's Dock.

The officers and men did not die in an emotional heat of battle but laid down their lives in the cause of safety, welfare and prosperity of the citizens and the community at large.

In recognition, the citizens of Mumbai erected a Memorial Column at the Fire Brigade Headquarters at Byculla and the Government of India declared 14th April as "Fire Services Day" to be observed nation-wide every year. Thus, the city and the nation took justified pride in the Fire Brigade, which set a memorable example for other Fire Services.

The Koyna Dam and the Koyna Reservoir Earthquake

The Koyna Dam and the Koyna Reservoir formed by it are located about 200 kilometres south of Mumbai. The dam was built in 1962 and in-filled with water in 1963. On December 11, 1967 at 4:21am, an earthquake with an approximate magnitude of 7.0 struck the region in and around the dam. The event caused roughly 200 deaths, 2200 injuries, and destroyed enough homes to render more than 5000 people homeless.

The area was believed to be seismically stable prior to this event, and most experts are convinced that the earthquake was reservoir-induced. The concept of a reservoir-induced (or dam-induced) earthquake is the enormous pressure of the water behind the dam causes shifting in the underlying earth, eventually leading to increased seismicity.

The death toll remained low because the township of Koyna Nagar, which was closest to the epicentre, is fairly rural with low population density. Many neighbouring villages also experienced some human injury and significant building damage, but the one consolation was that the whole region was somewhat loosely populated.

Despite this token of good fortune, any loss of life is still tragic. Some of the deaths and injuries could be solely attributed to the time of the event. At 4:21 am most people were at home and in bed. Later in the day might have found some adults at work in the fields or children in school, but this pre-dawn quake killed men, women and children alike, catching them unawares. To bring the sense of catastrophe home (or perhaps to sell newspapers), print media published a heart-wrenching photo of a young boy who lay dead in his bed ("the fatal bed")

after the collapse of his home. This type of sensationalistic reporting typifies the media focus on human drama and misery.

Approximately 80% of the houses in Koyna Nagar were reduced to rubble. Five neighbouring communities lost *every single* home in the village. Housing damage and destruction were scattered throughout the 50 villages, leaving some 5000 people homeless. For many of these people, their houses and the surrounding land represented their only possessions. For some, the evacuation during the emergency response phase was as devastating psychologically as the actual shaking was physically.

Bridges were destroyed and several sections of road were rendered unusable. Forty culverts were damaged. Amazingly the dam itself held and absorbed the shock, along with the underground installations of the power station it supported. The shock disrupted the power output, causing blackouts throughout the region as far as Mumbai. Many industrial establishments, primarily the textile mills, in Mumbai and Pune lay paralyzed for several days due to the power shortage.

The Latur Earthquake

The earthquake struck at 3.56 am on September 30, 1993 and primarily affected the districts of Latur and Osmanabad. 52 villages were devastated. It was an intraplate earthquake and measured 6.4 on the Richter scale. Approximately, 20,000 people died whilst another 30,000 were injured. The earthquake's focus was around 12 km deep - relatively shallow causing shock waves to cause more damage. Killari, where the epicentre of the quake is believed to be located, has a large crater, which remains in place till date.

Among the first to respond were Amateur Radio operators from Mumbai and Hyderabad, who rushed to Omerga town near Latur from where all quake-hit areas could be accessed by road. The Mumbai-based JNA Wireless Association undertook a special mission. With four-wheel drive vehicles made available for the purpose by Mahindra and Mahindra, a group of eight Mumbai-based radio hams escorted the supplies convoy from Mumbai to Omerga. Later, these ham radio operators split into four groups and visited scores of ravaged villages, relaying vital information such as possible outbreak of disease, food supply situation and devastation of the area. During the 10-day field trip, these radio hams successfully assisted disaster mitigation efforts undertaken by the Indian government and private aid agencies.

It was observed that in both the above cases of natural disasters, since they are “Acts of God”, there were no reports of looting, violence and aggressive behaviour. Perhaps the Indian psyche tends to accept such “Acts of God” as part of their karma.

Terrorist Attacks – 1993 to 2008

On 12th March 1993, at 1:30 pm a powerful car bomb exploded in the basement of the Bombay Stock Exchange building. The 28-storey office building housing the exchange was severely damaged, and many nearby office buildings also suffered some damage. About 50 persons were killed following the explosion. Some 30 minutes later, another car bomb exploded elsewhere in the city and from 1:30 pm to 3:40 pm, there was a series of 13 bomb explosions throughout Mumbai. (The Serial Bombing)

Three hotels, Hotel Sea Rock, Hotel Juhu Centaur, and Hotel Airport Centaur, were targeted by suitcase bombs left in rooms booked by the perpetrators. Banks, the regional passport office, hotels, the Air India building, and a major shopping complex were also hit. Bombs exploded at Zaveri Bazaar, in the area opposite Century Bazaar, Katha Bazaar, Shiv Sena Bhavan, and Plaza Theatre. A jeep-bomb at the Century Bazaar had exploded earlier. Grenades were also thrown at Sahar International Airport and at Fishermen's Colony. A double decker bus was badly damaged in one of the explosions and that single incident accounted for the greatest loss of life – perhaps up to ninety people were killed.

The official death toll was 257 with 1,400 others injured. Several days later, unexploded car bombs were discovered at a railway station.

Ten years later, on 25 August 2003, two large and destructive bombs left in taxis exploded in south Mumbai – the Gateway of India and Zaveri Bazar in the busy Kalbadevi area – killing 52 people, again entirely Hindus and wounding more than a hundred others.

In July 2006, train bombings in Mumbai shook the city once again.

On 26th November 2008, several militants, armed with AK-47 rifles, grenades and low intensity bombs, invaded Mumbai from the sea and carried out coordinated attacks on several key sites within India's financial hub.

Ten simultaneous attacks occurred, targeting the Chhatrapati Shivaji Terminus (CST) railway station, Taj Mahal Hotel, the Oberoi and Trident Hotel, Café Leopold, Nariman House and the Cama Hospital. 174 people were reportedly killed while 294-300 sustained injuries.

There were also reports of firing at the JW Marriot Hotel in Juhu. Successively, two bomb blasts also occurred in the residential area, Vile Parle and in Mazegaon respectively.

Significantly, whilst in the case of the serial bomb blasts (1993) there was an angry and violent community reaction and civil strife, no such behaviour was observed in the case of the train blasts in 2003 and 2006.

There was anger but it was contained and directed towards the inadequate relief related issues.

The 26th November, 2008 attack left Mumbai stunned and overwhelmed. All communities became one in grief, helplessness and anger. However, there were no untoward incidents or any communal backlash. Communities were disciplined in expressing their sorrow and anger without creating law and order problems.

Japan – Earthquake and Tsunami

On 11th March 2011, the world became aware of a massive natural disaster, the fallout of an earthquake and a resultant tsunami. As a consequence of this act of God, the nuclear reactors were damaged and the citizens of Japan had to once again encounter the horrors of a nuclear explosion. Every television channel outdid itself to inform the world of the developing situation and the extent of devastation.

There were sights of collapsed buildings and ships pushed up on the shore. Amongst these pictures there was one very remarkable component that accompanied the television reporting of a disaster – there was no chest beating and uncontrolled wailing or other uncontrolled expressions of grief.

In the midst of widespread human losses and damage to prosperities, several other remarkable facets of the Japanese society stood out.

There was complete calm and order amongst the people, there was no looting or grabbing of the relief materials and people displayed a high sense of dignity, grace, tenderness and sacrifice.

When we compare different people and communities in terms of responding to disasters, we get varied degrees of responses. In 2008, Haiti experienced 7 degree quake with an approximate loss of about 1lakh people. In August of 2005, Hurricane Katrina resulted in heavy property loss in the USA. In both these cases, the community behaviour was characterized by looting, hooliganism, misbehaviour with women, and murder.

The remarkable qualities observed in the case of Japan and the disturbing happenings in cases of Haiti and USA evoked a sense of doubt in our own conduct; can we as different communities behave in the same high order of conduct as observed in the case of Japan, in the face of any calamity?

In Mumbai's own case, there were the floods of 26th July 2005, whereby all means of transport (public and private) came to a halt, communications failed, roads were flooded and people were stranded at various locations.

Yet, in the face of such unprecedented hardships, the community behaved in a responsible manner. There were no cases of mass looting or taking undue advantage of the situation. People were exemplary in extending a helping hand to those in need, and cases of personal sharing and sacrifice were quite common.

All of the above begs the question – if such sharing and caring was accomplished without any prior training guidelines, or laid down procedures, how much better and quicker could the community return to normalcy, had there been in place a guide to behaviour and conduct in an emergency.

Perhaps, we could look to the Kumbharwada potters.

The Kumbharwada Potters' Initiative

Kumbharwada is a Mumbai slum, situated in Dharavi area which is the largest slum in Asia Pacific. This slum is inhabited by Gujarati potters. These artisans have nurtured a sense of social cohesion, rooted in their shared livelihoods, as a way of increasing their resilience to risk.

The success factor behind their resilience is not that they are wealthier than other families. In fact wealthier neighbourhoods are far less proactive in mitigating the risks they face. For Kumbharwada's potters, risk mitigation has become an integral part of their livelihoods, because hazard mitigation measures were identified as the optimal use of resources to protect and enhance their livelihood.

They have in them the community cohesion required to make it happen, based on their shared source of their livelihood.

To protect themselves from financial insecurities, families have set up a community "chit fund" and a "rotating loan", without any external support. These funds support families in times of financial needs.

With such closely knit communities, post disaster resilience factor would be of a very high order, since self-help and mutual caring is the guiding principle of their life.

After considerable introspection and interaction with the community stakeholders comprising of Community Based Organizations (CBOs), Advance Locality Management groups (ALMs), NGOs and various government agencies involved with disaster management, a decision was taken collectively, that it was imperative for us as a community in the city of Mumbai, to assess ourselves in terms of the Community Resiliency factor and understand the Indicators.

Fear Factors

When a major incident takes place; people initially become unnerved and indecisive, followed by fear. This fear reduces the resiliency strength of the community. In order to deal with this 'Fear Factor', an understanding of the different reasons that cause this Fear is necessary.

Social factors

- People who have recently had an operation and are unsure of proper medical support
- People who are without access to transport and unable to reach their destinations
- People who are with limited mobility
- Groups who might find it difficult to understand emergency information
- Transient groups who are holiday makers or travelling communities
- People who are fearful of the safety of their children and their families
- People who are afraid of security of their property and assets

Environmental factors

- How many more areas are likely to be affected
- Will the initial cause of disaster be followed by similar or associated occurrences

Infrastructure factors

- How many other transport hubs are affected
- How long will it take to revert to a semblance of normalcy

Economic & financial factors

- Economic and personal financial loss
- Time required for recovery
- Various costs to be paid for recovery

In every incident, local responders have always to prioritize that the response is primarily to save lives. However after the first response, coming back to normalcy is always a difficult task. People always compare and assume that some miracle will bring the situation to normalcy; they not only pray to 'God' but they wait for the miracle to happen and remain passive and resigned to fate.

This state of mind is to be avoided at all times.

Before we embark upon a gradation system and try to achieve the highest level (details in another chapter), we need to identify "The Resilient Community Assets". This identification will help to improve the community's resiliency factor.

According to Massachusetts Coastal Hazards Commission, September 11, 2006, following are the Resilient Community Assets:

Physical Capital-

- Physical capital comprises adequate shelter, buildings, water and sanitation, tools, transport, energy and communications.
- 'Lifeline' infrastructure in at-risk areas, such as; hospitals, emergency headquarters, schools and shelters, should be resistant to disasters serving both a protective and symbolic function.

Economic Capital-

- Economic capital (savings, income, investments, credit) increase the capacity of individual and communities to absorb disaster impacts and speed recovery.

Human Capital-

- Human capital (knowledge, skills, health, education, physical ability) determines individual resilience more than any other asset

Social Capital-

- Social capital (reciprocity, affiliations, trust) includes networks that provide informal safety nets during difficult times and help people access resources urgently needed after disaster
- The most resilient communities are those which work together towards a common aim
- Creating community consensus is as valuable as building physical infrastructure

Natural Capital -

- Natural capital including water, land, and natural resources are essential for human survival
- Environmental change and degradation can significantly change the potential impact of disasters on all community assets
- Some natural assets are also directly vulnerable to the impacts of hazards, causing cascading system

“Community Resources are the key to Understanding a Community’s Resilience”.

Communities have access to many resources. Resources exist in the natural environment in the people who live in the community, in the organizations in the community, and in the community’s financial and built structures. All are necessary for Resilient Communities.

The key factor is Collective Action. Community Resiliency is developed through collective effort from people throughout the community and people from diverse groups work together towards community goals.

Community resiliency is a relative term and refers to an ideal condition of a community in terms of its capacity to anticipate, prepare for, respond to and recover quickly from the impacts of a disaster.

The disaster-resilient community is a positive community and it is a positive concept. While complete resiliency is not attainable, every community is striving to achieve it.

Vision and Mission

Vision

To build a safe and disaster-resilient community by developing a holistic, proactive, multi-hazard and technology driven strategy through a culture of prevention, mitigation and preparedness to generate a prompt and efficient response of community at the time of disasters. The entire process will centre-stage the community and will be provided momentum and sustenance through the collective efforts of Government agencies and Non-Governmental Organizations (NGOs). *(Reference NDMA Vision)*

Mission

1. To assess vulnerability and ability of community to respond to disasters.
2. To spread awareness, promote education & training at community level, to build capacity and support the ongoing ability of a community, to help each other, to identify strengths and challenges, to mobilize resources, and to work collectively during disasters of any level & nature.
3. To ensure that the community involving all social groups in the process of Disaster Risk Management, maintains resilience before, during and after disasters.
4. To build a proactive and technology driven strategy for effective response to disasters.
5. Raise awareness and understanding of risks and local emergency response capability in order to motivate and sustain self resilience.
6. Support and enable existing community resiliency, expand and grow these successful models of community resiliency in other areas (Kumbharwada Potters' Initiative).

III. Community Resiliency Indicators

What is community resiliency

Resiliency is the capacity of human and natural/physical systems to adapt to and recover from sudden change. It is the capacity of a system, community or society potentially exposed to hazards, to adapt by resisting or changing in order to reach and maintain an acceptable level of functioning and structure.

Communities are provided a broad array of services, from water and waste disposal to civil defence, education, street cleaning, open space, land use planning, and environmental quality. Along the coast, communities may also be provided for flood protection, beach access and near shore water quality. These services are affected during the disaster but resilient people motivate others and assist in the restoration of amenities without causing disturbance and agitation.

Resilient communities are people who enhance the capacities to respond to the impact of crises and step up to restore normalcy. Resiliency is not a single trait, but is rather a combination of traits or characteristics that can reduce community vulnerability. Neither is it a single step, but is rather an on-going effort. With every calamity the community comes across, they reveal the capacities of mental and behavioural agility.

Resiliency includes an awareness of vulnerabilities and planning for ways to protect important services, when protective measures do not work as anticipated. This, however, does not mean that people work in a parallel stream for recovery, but that they will join together with the efforts of the administration.

A major goal of a resilient community is to minimize the occurrence of disaster. Hazardous events will happen and some damage is inevitable from major events; but major events need not result in a disaster. The hazardous events such as storms, earthquake and tsunamis are not avoidable, but the consequences of the events, the loss of human life, property and essential services, can be avoided when a community is resilient. Even impacts of hazardous events with human sources, like massive railway accident, fuel depot fire and terrorist attack can be monitored with proper planning.

Elements for Community Resiliency

Resilient community comprises the following four major components:

- People- their calibre, education, human capital etc.
- Organization- of the people which include value system
- Resources- human as well as material to tackle the situation; and
- Community processes- including economic, social , and spiritual

The need for Community Resiliency

In the Indian context, CR is not a new concept. With every incident, may it be rural like Bhuj, Killari or Uttarkashi quake or coastal tsunami in Tamil Nadu to bomb blasts in metro cities like Mumbai and Delhi, people have reverted to near normalcy on the second or third day of the disaster. This is specifically because of our value system; strong faith in kindness, positive attitude towards rigorous work, cooperating and helping attitude to others. However, mental shocks, bad memories, economic losses have taken a long time for recovery. Human and natural systems undergo constant change, hence, we need to help communities in minimizing risks and losses. This will be critical to the region's long-term viability and success. When a disaster occurs, quick recovery is the only solution.

Time required for recovery depends on a variety of factors, viz:

- Building resiliency in children and families
- Preparedness
- Stress and coping
- Managing a crisis
- Coping with post-traumatic stress disorder (PSD)
- Paediatric bereavement
- Overcoming depression & anxiety
- Anger management
- Behaviour management
- Self-care
- Mental health concerns

Recovery has different dimensions, viz:

- It is time oriented - short, medium and long
- It requires an understanding of the community- the symptoms, the networks and the dependencies
- It occurs when all aspects of community well-being (both mental & physical) are addressed after an emergency
- It needs to be led and coordinated from the time of the disaster
- It needs adaptive leadership and management
- It will take a long time - particularly after a disaster

- It will create new opportunities for the community

Hence, if an Indian community (either rural or urban) requires to be empowered with inner strength to bounce back from a disaster, we need to inculcate:

- Courage to find out their own solutions
- Leadership; individual as well as team leadership
- Realistic awareness about different types of disasters
- Regular practice for preparedness
- Multi-level and structured training
- Sense of pride towards the community
- Feeling optimistic about the future of the community
- Spirit of mutual assistance and cooperation
- Sense of attachment for their community
- Self reliance and search for own resources
- Support for education at all levels
- Organization and development of partnership and cooperative working in the community
- Diversified employment in the community
- Locally owned employment opportunities
- Formation for strategy for increasing independent local ownership
- Openness to alternative ways of earning and economic activity
- Competitive position of community
- Creation and implementation of community vision and goals
- Pursuing trait for achieving goals
- Formation and development of plan which will encompass all segments of the community

Thus can we build a strong and resilient community in Mumbai.

IV. Indicators

‘The Calm’	
Level	Indicator
5	People calm and composed, offering wholehearted help to agency personnel involved in recovery operations
4	People making the effort to remain calm, refraining from complaining or agitating, offering proper help to agency personnel doing recovery work
3	People appear to be disturbed, but moderately responding to orders and cooperating with agency personnel doing recovery work
2	People visibly upset and irritable, creating obstructions in recovery operations by offering inappropriate help
1	People unable to reconcile with the situation, widespread desolation and despair, obstructing recovery work
0	Extreme agitation, widespread scenes of chest beating and exaggerated expressions of sorrow, total lack of effective efforts at recovery

‘The Dignity’	
Level	Indicator
5	Near return to pre-crisis levels in social behaviour, giving respect to others. Unstinted cooperation for recovery processes
4	Comprehensive demonstration of civil behaviour towards others, and purposeful actions towards recovery
3	Presence of quiet and serious atmosphere. People conducting themselves in a restrained manner
2	Grudging accepting discipline and observing some aspects of civil behaviour
1	Signs of some consideration for the injured and weak, but yet self cantered due to high insecurity
0	Complete lack civil behaviour, no respect for the aged and vulnerable, and a pronounced level of insecurity

‘The Ability’	
Level	Indicator
5	Comprehensive laws with compliance mechanism in place, strong political will and community participation in disaster resilient technology for development
4	Greater awareness of the necessity for strong infrastructure and willingness to pursue proper implementation
3	People gaining confidence in the administration and better understanding of the rules and regulations and technology
2	Existing laws are not adhered to, due to lack of awareness and understanding
1	Absence of suitable monitoring standards related to infrastructure and technology, ineffective political and administrative procedure
0	Total lack of proper planning system, implementation of rules and regulation are not comprehensive, lack of technology resulting in weak infrastructure

‘The Grace’	
Level	Indicator
5	People exhibiting consideration for others and displaying kindness, placing common good over and above personal concerns
4	People demonstrating courteous conduct, and displaying genuine concern for others
3	People losing endurance as they are struggling to cope with the situation, perceived signs of insensitivity
2	People are inconsiderate, showing indifference to others
1	Extremely selfish and insensitive attitude of people and unconcern for others
0	Community attitude showing total lack of decency or concern for common good

‘ The Order’	
Level	Indicator
5	Calm and quiet situation prevails, people conducting themselves in an orderly manner
4	Visible signs of a well organized community, there is restraint and people obey directions and organize themselves
3	Community leaders take charge and able to serve the community by getting encouraging response from the people
2	People unorganized but showing signs of individual orderly behaviour but lack of understanding of orders due to language barrier
1	Confusion, authorities finding it difficult to control the people and the situation
0	Situation appearing to be totally out of control with criminal behaviour, chaos everywhere major law and order problem

‘The Sacrifice’	
Level	Indicator
5	Keeping own interest aside and dedicating efforts to the welfare of the community. Administration and Emergency Services working nonstop
4	Concern for others prominently dominating self-interest, leading by example
3	Signs of responsible behaviour apparent when dealing with others
2	Shifting responsibility, egotism takes centre stage
1	Selfishness dominating all actions
0	Sense of excessive selfishness everywhere, aggressive grabbing, missing sense of urgency on behalf of administration

'The Tenderness'	
Level	Indicator
5	Widespread scenes of people demonstrating empathy, sharing and caring
4	People highly considerate of the condition of others and offer small comforts
3	People by and large offering help and displaying acts of kindness
2	Occasional indications of concern and consoling others
1	People displaying outright self-centeredness
0	People exhibiting aggressive, unethical behaviour and indifference towards the injured and weak

'The Training'	
Level	Indicator
5	Community fully trained in disaster preparedness; and everyone is aware of what to do and how to cope and tide over the disaster
4	Community provided with preparedness and basic training, able to cope with the situation, however still requires guidance
3	Basic training visible but there is lack of coordination
2	Community trying to cope, those providing guidance are somewhat able to convey instructions.
1	Community unprepared and incapable of handling emergencies
0	Lack of basic knowledge of how to cope in a disaster, behaviour extremely erratic and confused

'The Media'	
Level	Indicator
5	Responsible and restrained reporting of the situation by media, providing judicious guidance for public safety and advisories for public health, People find the media communications informative and helpful
4	Media demonstrating moral ethics, reporting the factual news and moderating the tone and contents of the reports
3	Over emphasized narration of serious cases, criticizing the authorities, minimal attention on providing guidance to the community
2	Unwarranted competition amongst media to provide gory details, no value addition to the cause
1	Spreading rumours, misinforming the public, people frustrated with the media
0	Media persistently sensationalizing news and capitalizing on the loss and grief of the people thereby creating total insecurity and panic

'The Conscience'	
Level	Indicator
5	No one taking undue advantage of any situation and conducting themselves in an exemplary manner
4	People coming together to form groups and behaving in an honest and conscientious manner
3	People realizing that honesty and ethical behaviour is expected of them and avoid taking advantage of difficult times
2	Frequent scenes of unruly and dishonest behaviour
1	Individuals taking undue advantage of the situation at every stage
0	Immoral condition, fraudulent, criminal and corrupt behaviour rampant

V. Challenges

- The concept of Community Resiliency has rarely been acknowledged
- It is not incorporated in academics, research, and policy programs
- There is a very limited theoretical understanding of the concept of disaster resilience
- It is not clear how this concept should be assessed, measured, and/or mapped
- It seems that making it operational for disaster risk reduction strategies and policies is a critical challenge
- The recent literatures on hazard and disaster seldom refer to resilience concept as a guiding principle behind an effective hazard risk management
- Making it operational for policy decisions poses critical challenges in terms of its assessment
- The main challenge is how to define and develop indicators that can entirely measure this concept or, how this concept should be mapped and what unit of analysis should be used
- It seems that without a guiding framework in which indicators can both be defined and measured, this concept will not be useful for disaster risk reduction strategies
- It is a fact that individuals, groups, and communities may each possess different degrees of resilience which vary significantly over time and with occupation
- Assessing community resilience is a complex process because of the diverse interactions of people, communities, and societies
- Lot of manpower and technical support is required for the process with suitable infrastructure facilities
- The resiliency indicators have to be considered in the context of the behavioural approach of the floating population of Mumbai
- Response of the community in different types of emergencies may be variable
- Political will, cutting across ideologies of parties is crucial
- Honest social commitment required toward the community and country irrespective of caste, creed and region
- Lack of trust from the community towards the government of the day

VI. Implementation Process

Who can use this process

Every individual member of the society shall use this process for self-assessment of resiliency as well as of their neighbourhoods. However, following agencies / organizations shall take the lead in implementing this process, with the view to assess the level of resiliency and enhance the competency while responding to the disasters:

- Disaster Management Unit, MCGM
- Public Health Department, MCGM
- National Disaster Response Force
- Mumbai Police
- Fire Brigade
- Home Guards
- Civil Defence
- NCC, MCC, NSS, Scout & Guide
- All Service Sector Organizations
- All other Government & Semi-Government Organizations
- All Non-Governmental Organizations (working with disaster prone communities for disaster preparedness/ management/ relief/ rehabilitation etc.)
- All charitable organizations
- All Civil Society Organizations
- All Social, Voluntary, Recreational and Sports Clubs
- Lions, Rotary and Giants Organizations
- Community Based Organizations
- Organizations implementing Slum Adoption Scheme
- Citizens' Groups/ Associations/ Forums
- Advance Locality Management Groups (ALMs)
- Corporate houses
- Trade Organizations/ Associations/ Unions
- Chambers of Commerce and Trade
- Financial Institutions

- All Educational Institutes
- Research Organizations/ Agencies
- Individuals Researchers
- All Health Care Institutes
- Industrial/ Commercial Complexes
- Slum Communities
- Residential societies
- Disaster prone communities
- Media Houses
- All political organizations
- All other agencies/ institutions/ organizations

Assumptions

Whilst using the CRI process, one needs to keep in mind the following assumptions:

- This process has 10 indicators i.e. parameters that measure and assess the resiliency level of the community.

The Process design is -

Relevant - for the purpose for which it is being used

Discrete –does not overlap with definitions with other competencies

Simple – it is not ambiguous

Flexible – enough to change if required

Fair – to everyone who will use the assessment process

- Communities shall be assessed during normal time, during disasters and in the aftermath of an attack/ calamity/ disaster.
- The disaster response agencies should make the assessment for the community while conducting awareness programs, while responding to any disasters and also assessing themselves as responders while responding to the disasters.
- It is imperative that, the assessment shall be done for all indicators at every appraisal.
- It has been observed that the resiliency levels vary amongst different sections at different levels of the socio-economic ladders of society. Thus, the

assessor should take sufficient care to ensure that the community should be homogenous, self contained, etc.

- Resiliency level assessments should not be conducted very frequently with a community. Frequent assessments may lead to influenced / unnatural responses from the respondents in the community.
- The assessor organization must read and understand the complete handbook before going for the implementation process with a community.
- This process is intended at facilitating self-evaluation, self-learning and enhancing resiliency of the communities.
- This handbook is meant for voluntary initiatives for assessment of community resiliency. No certification of any sort will be issued - neither to the assessor organization nor to the assessed community/ organization.
- While care has been taken in making these indicators comprehensive and applicable to most communities, yet changes, insertions, deletions or modifications may be necessary to make the process more relevant to the specific context of the target community.
- Specific references should be drawn in the form of examples from the past experiences of disaster situations faced by the community chosen. This is necessary in order to understand each of the indicators in the process and make the implementation process more relevant to the target community. Though, the indicators defined in the CRI process are self-explanatory, yet, they need to be demonstrated and explained by trained individuals.
- If the process is used during normal times (in absence of a disaster situation) the assessor shall draw references from the past disasters faced by the community. If used during normal times i.e. in absence of any disaster, the responses received will be largely hypothetical or based on past experiences.
- Whilst undertaking this process, vulnerability and potential risk factors shall be considered.
- The process once initiated, must be completed in single stretch / sitting.

Process Steps:

Understanding the CRI Assessment Process: Assessment is an occasion where a number of participants take part in a series of exercises and or tests by trained assessors. The participant's performance/reactions are then measured against the levels of the indicators.

The organizations and individuals chosen to be involved in carrying out the Community Resiliency assessment by using this process, shall undergo a preparatory session which could be conducted in the form of brain storming

session, training, self-learning workshop, etc. This session should enable the assessor participants in getting thorough understanding of each of the indicators (refer to the chapter: “Indicators”) and its relevance to the community chosen.

Roles & Responsibilities:

The Roles and Responsibilities are broadly mentioned below, however if the situation requires certain flexibility is permitted.

1. Assessor:

Role: The assessor plays a vital role in the success of the appraisal of the individual / community. The assessor should ideally interact with representatives of the stakeholder groups / agencies in the community at least once during the process of the assessment.

Responsibility: The assessor should act like a human video camera; i.e. they should record words and actions without passing any comments / judgments. They should have good listening and observation skills. They should be able to sustain high level of concentration and should have good interactive skills. The assessor should be objective and be able to focus on real evidence rather than being subjective. The assessor should efficiently classify the behaviour of the assessee as per the indicator level. The assessor should see to it that the assessee is assured of the benefit of being involved in the process, for themselves, their children and the entire community.

On completion of response collection, the assessor should compile all the responses and the findings of the CRI process. The process of compilation should be free from any type of influence of any past knowledge / experiences associated with the community assessed. The assessor should share the final assessment report with the assessee.

A summary sheet of the final assessment and all the documents created during the CRI process should be submitted to the MCGM and EOC for creating a data base and for storing in the archives.

2. Assessee:

Role: Assessee is an individual or a group of individuals or a community who is being surveyed and interacted with. The assessee provides the key information in form of responses in accordance with the resiliency indicators.

Responsibility: The assessee should be open, realistic and co-operative while participating in the assessment process. The responses should be objective in nature and should be drawn either from the past experiences or their normal individual lifestyle.

3. Observer:

Role: They are individuals who are neutral, and who do not have any direct stake with the assessee. However, they should have full understanding of the complete CRI process and of the community being assessed. They will make their own observations, which shall also be helpful for evaluation of the complete CRI process that has been carried out.

Responsibility: The observer is responsible to passively yet thoroughly observe the complete process of CRI from the beginning till the stage of drawing conclusions / results of the assessment process. Their observations are not only of the assessee but also of the assessor and all other stakeholders involved in the CRI process. All of these observations should be documented and presented to the EOC (MCGM).

(Refer: Annexures-I, III, IV & V)

Knowing the community:

Before going into the community to test the Community's Resiliency, it is imperative to collect relevant information about the target community. The information to be collected should include past instances of disasters faced by the community, potential disaster threats to the community, demographical information, socio-economic characteristics of the population etc. The individuals carrying out the assessment must be well acquainted with the community chosen.

Sample selection:

A sample is a finite part of a statistical population whose properties are studied to gain information about the whole (Webster, 1985). When dealing with people, it can be defined as a set of respondents (people) selected from a larger population for the purpose of a survey.

A population is a group of individuals, objects, or items from which samples are taken for measurement.

Sampling is the act, process, or technique of selecting a suitable sample, or a representative part of a population for the purpose of determining parameters or characteristics of the whole population.

For the CRI process, appropriate representation of all key stakeholder groups from the concerned community should be involved in the process. Sizable sample in proportion with the population of the community should be selected. Methods of sample selection used in scientific research may be useful.

The scientific research methods for sample selection include the following;

1. Simple Random Sample:

Here, each subject or unit in the population has an equal chance of being selected. If a subject or unit is drawn from the population and removed from subsequent selections, the procedure is known as random sampling without replacement — the most widely used random sampling method. Random sampling with replacement involves returning the subject or unit into the population so that it has a chance of being chosen another time. Sampling with replacement is often used in more complicated research studies such as nationwide surveys.

(Advantages: Detailed knowledge of the population is not required, external validity may be statistically inferred, a representative group is easily obtainable, and the possibility of classification error is eliminated.

Disadvantages: A list of the population must be compiled, a representative sample may not result in all cases, and the procedure can be more expensive than other methods.)

2. Systematic Sample:

Systematic samples are frequently used in social research. They often save time, resources, and effort when compared to simple random samples. The method is widely used in selecting subjects from lists such as telephone directories, Broadcasting / Cable casting Yearbook, Editor & Publisher.

(Advantages: Selection is easy and the selection can be more accurate than in a simple random sample. This procedure is generally inexpensive.

Disadvantages: A complete list of the population must be obtained and periodicity may bias the process.)

3. Stratified Sample:

A stratified sample is the approach used when adequate representation from a sub sample is desired. The characteristics of the sub sample (strata or segment) may include almost any variable: age, sex, religion, income level, or even individuals who listen to specific radio stations or read certain magazines. The strata may be defined by an almost unlimited number of characteristics. However, each additional variable or characteristic makes the sub sample more difficult to find.

(Advantages: Representativeness of relevant variables is ensured, Comparisons can be made to other populations, Selection is made from a homogeneous group, and sampling error is reduced. **Disadvantages:** Knowledge of the population prior to selection is required, the procedure

can be costly and time- consuming, and it can be difficult to find a sample if incidence is low, Variables that define strata may not be relevant.)

4. Cluster Sample:

The usual sampling procedure is to select one unit or subject at a time. But this requires the researcher to have a complete list of the population. In some cases there is no way to obtain such a list. One way to avoid this problem is to select the sample in groups or categories; this procedure is known as cluster sampling. For example, analyzing magazine readership habits of people in Maharashtra would be time-consuming and complicated if individual subjects were randomly selected. With cluster sampling, one can divide the state into districts, towns or zip code areas and select groups of people from these areas.

(Advantages: Only part of the population need to be enumerated, costs are reduced if clusters are well defined; estimates of cluster parameters are made and compared to the population.

Disadvantages: Sampling errors are likely, clusters may not be representative of the population, each subject or unit must be assigned to a specific cluster.)

Recommended methods for data collection:

Focused group interviews, one to one interviews, observations, and any other suitable method may be used for data collection. One of the suggestions could be -- pictorial presentation of various levels of each of the resiliency indicators should be shown to the respondents collectively. This may help the respondents in relating with the various levels of their resiliency. This will also facilitate in communicating with the respondents in a simple manner about what responses are expected of them during the assessment activity. (Hence, we need to compile a set of pictures representing each of the 6 levels of resiliency under each of the indicators.) This presentation should be made in an objective manner so as to prevent any influence on the mindsets of the respondents. This methodology may work better in case the community chosen hasn't experienced any major disasters in the past.

Compilation of responses:

The responses received from all the respondents should be compiled and presented to key representatives of the community, for group discussions and verifications. This may include leaders / representatives of all the key stakeholder agencies / groups in the community chosen.

Measuring the community resiliency level:

On the basis of responses received and subsequently corroborated by community representatives as mentioned above, average level resiliency of the community can be assessed using the different levels projected under each of the 10 resiliency indicators. The quantifiable criteria to be used while assessing the level of resiliency should be referred to ensure objectivity.

(Refer Annexure- II)

Preparing a Plan of Action for raising the existing level of Community Resiliency:

It is advised that, on completion of the assessment activity, the assessor should work towards developing an appropriate plan of action for raising the resiliency level of the community assessed, in close consultation with the key stakeholder groups / agencies, which were part of the assessment activity.

On the basis of the findings of the CRI process, the assessor will arrive at a hypothetical statement about the overall present state of resiliency of the community assessed as following;

- The community presently blindly faces or responds to disaster situations
OR
- The community presently panics & tries to escape or run away from disaster situations
OR
- The community presently follows scientific approach while responding to disaster situations

While arriving at a plan of action for improvement, the following aspects should be taken into consideration:

- Consider the average responses under each of the ten indicators
- This will further help in setting the milestones / targets for improving the state of community's resiliency in terms of each of the specific indicators of resiliency.
- A graph showing the present level of resiliency and the targeted level of resiliency should be drawn, so as to clearly demarcate the expected areas of improvement, as well as the expected extent of improvement under each area.

- While setting the milestones for achieving progress, concurrence should be taken from the stakeholder groups and their commitment towards the proposed improvements. For this, specific roles need to be identified for each of the stakeholder groups, so as to have clearly laid down roles and responsibilities and specific expectations from each of them.
- Feasible and commonly agreeable actions with timelines to be drawn.

Plan of action should incorporate the following aspects:

Create a roadmap for increasing the resiliency levels under each of the indicators. This should include the following:

- The plan of action should translate into community based & local actions focused at raising the level of resiliency under each of the indicators.
- On the basis of the findings, the assessment areas of concern and scope for improvement to be drawn in definite words.
- Identify actual (on ground & practical) reasons for the certain level of resiliency shown by the community under each of the indicators. This will enable the assessor and stakeholder groups in identifying the true problem areas and root causes of the same.
- Once the assessor and the stakeholder groups are convinced that the targeted improvements have been achieved to a great extent, the assessor should do a re-assessment of the same community so as to validate the successes / achievements claimed.
- Conscious efforts should be made to document and record the complete process followed and the periodical progress attained throughout the processes.
- Set target for achieving a higher level of resiliency (for example; If the average resiliency level of the community under indicator- “The Calm” is at “Level 3”, then the set target could be to raise the level up to “Level 4 or 5”).
 - Mapping of the community for identifying the resources, skills etc.
 - Human (Trained volunteers, youth, etc.)
 - Infrastructure (safe places, temporary shelters)
 - Monetary and other financial resources
- Plans and strategy for linking these resources, skills and expertise for addressing the lacunas identified
- Plans and strategy for raising the awareness level of local community with emphasis on vulnerable sections

- Information and knowledge (such as - emergency information, important contact details, etc.)
- Communication channels for information dissemination
- Mock Drills

The plan of action shall also make provisions for imbining certain features / characteristics in the concerned community and its members for improving the resiliency levels:

- **Sense of solidarity and cooperation:** Not only towards the closed ones or the family members but also towards the community at large.
- **Creativity and adaptability:** The ability to creatively meet changing situations and to discover new / alternative better systems that are less brittle and vulnerable.
- **Pro-activity:** positive action in support of safety and security at individual, family and community level.
- **Carefulness, preparation and planning:** cultivating the virtue of prudence and the habit of 'watching out' in order to avoid trouble or manage it when it is inevitable.
- **Responsibility:** personal and social responsibility for making efforts to ensure that the families and the community at large are prepared for the circumstances.
- **Awareness of environment:** To cope with rapidly changing circumstances, it is imperative to practice our ability to observe, understand and generally be aware of our environment; its opportunities and risks.
- **Holistic methodology:** We can't cope with particular local issues in isolation from the other global issues. Thus, we must bring all that we have and are-values, reasoning ability, knowledge, spirituality, faith, prayers, relationships and cultures on common forum for shared and collective action in order to achieve common good.

Mindset Change Training:

For an effective implementation and to obtain objective analysis from this process, the assessor and the observer shall undergo the acquaintance / training which consists of the following:

- a. Understanding of the community's social characteristics

- b. Understanding the broader political and governance conditions and changes that are occurring, and their impact on the community's ability to manage change
- c. Identification of the different groups within a community, including those who are most
- d. Likely to be affected by a change, and understand the relationships between those groups
- e. Identification of the vulnerabilities within a community which may reduce its resilience to adapt to change
- f. Identification of a community's resources and adaptive capacities which increase its resilience to transformation
- g. Development of scenarios to understand how a change might impact on the community and how that community might utilize its resources and adaptive capacities to respond in an adaptive way
- h. Identification of practical strategies to strengthen the community's resources and capacities
- i. Monitoring and evaluation of changes as they occur to identify expected and unexpected social impacts
- j. Explore a community's set of values, attitudes and beliefs, how these are influenced by the process of change, and how they may influence a community's response
- k. Understanding what impact external (social, political, governance) conditions have on a community's response to change.

Way Forward:

A social resiliency approach generates a richer and more useful social assessment in three ways:

- A resiliency perspective is able to capture and contend with the complexity inherent in human-environment systems and social changes in those systems.
- Instead of attempting to control change, the resiliency perspective recognizes that change and uncertainty are inevitable, and that communities are dynamic.
- The resiliency perspective provides a way of assessing the resources and adaptive capacities of a community rather than just its vulnerabilities. In this way, it provides a core set of capabilities upon which to build adaptation strategies.

Annexure:

Annexure- I: Questionnaire for Data Collection:

Instructions for the Assessor:

This questionnaire is meant for collecting responses from the selected individual members of the concerned community. The assessor organization may mobilize community-based volunteers or engage their own outreach/ field workers for collecting this data.

The questions in the questionnaire are with the purpose of receiving responses and information from the individual assessee so as to assess his/her level of resiliency.

The questions under section- 'Profile of Assessee' pertains to the individual assessee's background and personal information. This information may help the assessor to draw references between the specific level of resiliency of the individual and his /her personal background. In case, the assessee is uncomfortable in answering any of the questions under this section, such questions shall be omitted.

While interviewing the assessee, it is advised, the assessor shall apply suitable communication skills to make the assessee feel comfortable and then ensure the assessee divulges objective responses to all the questions. This could also be done by way of having a casual conversation with the assessee.

Instructions for the Assessee:

It is important for the assessee to read the following instructions before beginning to answer this questionnaire.

- Questions in the section- 'Profile of Assessee' are optional. The assessee may opt to answer all / some / none of these questions.
- Please answer all questions under the 'Indicator' section.
- Chose any one of the levels from 0 to 5 for each of the indicators.
- While choosing the response, please draw references from the past experiences or by assuming yourself in a crisis situation or disaster.
- The purpose of this activity is to help all individuals and communities to understand their present level of resiliency and thus learn about the areas and scope for improvement thereby enabling a process of self-evaluation and self-learning. Hence, individual assessee shall need to be totally objective and truthful in choosing the responses.

Community Resiliency Indicator: An MCGM Initiative

Profile of the Assessee:

Date: _____

- ⇒ Name of the Assessee: _____
- ⇒ Gender: Male ☐ Female ☐
- ⇒ Age: 18 to 25 years ☐ 26 to 35 years ☐ 36 to 50 years ☐ 51 to 65 years ☐
- ⇒ Contact No.: Mobile: _____ Landline: _____
- ⇒ Address: _____

- ⇒ Type of residence: Slum / Chawl / Apartment / Commercial establishment
- ⇒ Municipal ward: _____
- ⇒ Educational Qualification:
Illiterate ☐ Can read & write ☐ Up to HSC ☐ Up to graduation ☐ post- graduation ☐
- ⇒ Occupation: Service ☐ Self Employed ☐ Business ☐ Professional ☐
- ⇒ How long have you been residing in this community:
Less than five years ☐ Five to ten years ☐ More than ten years ☐
- ⇒ Have you ever experienced (directly or indirectly) any type of disaster in your neighbourhood (not beyond city limits) in the past? (If required, the assessor should explain the term disaster and give examples of various types of potential disasters in & around the concerned community.)
- If Yes, please elaborate: _____
 - Type of disaster: Flood ☐ Landslide ☐ House collapse ☐ Fire ☐ Any accidents ☐
Earthquake ☐ Cyclone ☐ Terror Attack ☐ Riots ☐ Epidemic ☐
Any other: ☐ Please specify: _____
- ⇒ Have you yourself/ any of your relatives/ close ones/ friends, suffered any kind of losses during any disaster in the past? YES / NO
- If yes, please elaborate: _____

- ⇒ Have you been personally involved in any developmental/ social work? YES / NO
- If yes, please elaborate: _____

- ⇒ Are you associated with any social organization / group? YES / NO
- ⇒ Name of the Organization and the type/ extent of your association: _____

Response to Indicators by Assesse:

I. 'The Calm':

It is the level of calm condition that is visible in an individual even after facing the destructive impact of disaster. The extent of calm behaviour represents overall shock absorbing capacity i.e. the resiliency of the individual. Calmness is nearly or completely quiet or undisturbed state of mind.

Which of the following type of behaviour / reactions / responses would / did you show while facing the disaster?

- ⇒ Calm and composed, offering wholehearted help to agency personnel involved in recovery operations. ☐
- ⇒ Making the effort to remain calm, refraining from complaining or agitating, offering proper help to agency personnel doing recovery work. ☐
- ⇒ Appear to be disturbed, but moderately responding to orders and cooperating with agency personnel doing recovery work. ☐
- ⇒ Visibly upset and irritable, creating obstructions in recovery operations by offering inappropriate help. ☐
- ⇒ Unable to reconcile with the situation, widespread desolation and despair, obstructing recovery work. ☐
- ⇒ Extreme agitation, widespread scenes of chest beating and exaggerated expressions of sorrow, total lack of effective efforts at recovery. ☐

II. 'The Dignity':

This is the quality or state of being worthy of esteem or respect.

Which of the following type of behaviour / reactions / responses would / did you show while facing the disaster?

- ⇒ Near return to pre-crisis levels in social behaviour, giving respect to others. Unstinted cooperation for recovery processes ☐
- ⇒ Comprehensive demonstration of civil behaviour towards others, and purposeful actions towards recovery ☐
- ⇒ Presence of quiet and serious atmosphere. People conducting themselves in a restrained manner ☐
- ⇒ Grudging accepting discipline and observing some aspects of civil behaviour ☐
- ⇒ Signs of some consideration for the injured and weak, but yet self centred due to high insecurity ☐
- ⇒ Complete lack of civil behaviour, no respect for the aged and vulnerable, and a pronounced level of insecurity ☐

III. 'The Ability':

This indicator defines the overall state of infrastructural redundancy. This not only refers to the role of the state in ensuring quality infrastructure and appropriate policies, but it also refers to individual citizen's role as an alert citizen and a watchdog for ensuring legal compliance.

What according to you is / was the state of resiliency of your community's infrastructural redundancy to disasters?

- ⇒ Comprehensive laws with compliance mechanism in place, strong political will and community participation in disaster resilient technology for development ☐
- ⇒ Greater awareness of the necessity for strong infrastructure and willingness to pursue proper implementation ☐
- ⇒ People gaining confidence in the administration and better understanding of the rules and regulations and technology ☐
- ⇒ Existing laws are not adhered to, due to lack of awareness and understanding ☐
- ⇒ Absence of suitable monitoring standards related to infrastructure and technology, ineffective political will and administrative procedure ☐
- ⇒ Total lack of proper planning system, implementation of rules and regulation are not comprehensive, lack of technology resulting in weak infrastructure ☐

IV. 'The Grace':

Grace can be described as being courteous and with seemingly effortless good-will gestures to others, charming and with a sense of propriety.

Which of the following type of behaviour / reactions / responses would / did you show while facing the disaster?

- ⇒ People exhibiting consideration for others and displaying kindness, placing common good over and above personal concerns ☐
- ⇒ People demonstrating courteous conduct, and displaying genuine concern for others ☐
- ⇒ People losing endurance as they are struggling to cope with the situation, perceived signs of insensitivity ☐
- ⇒ People are inconsiderate, showing indifference to others ☐
- ⇒ Extremely selfish and insensitive attitude of people and unconcern for others ☐
- ⇒ Community attitude showing total lack of decency or concern for common good ☐

V. 'The Order':

This indicator conveys a condition in which every part, unit, etc is in its right place. It is a state of obedience to law and authority. It is also an indicator of an organized social group.

Which of the following type of behaviour / reactions / responses would / did you show while facing the disaster?

- ⇒ Calm and quiet situation prevails, people conducting themselves in an orderly manner ☐
- ⇒ Visible signs of a well organized community, there is restraint and people obey directions and organize themselves ☐
- ⇒ Community leaders take charge and able to serve the community by getting encouraging response from the people ☐
- ⇒ People disorganized but showing signs of individual orderly behaviour but lack of understanding of orders due to language barrier ☐
- ⇒ Confusion, authorities finding it difficult to control the people and the situation ☐
- ⇒ Situation appearing to be totally out of control with criminal behaviour, chaos everywhere major law and order problem ☐

VI. 'The Sacrifice':

Voluntary relinquishing of something valued, it can also be described as offering something highly valued.

Which of the following type of behaviour / reactions / responses would / did you show while facing the disaster?

- ⇒ Keeping own interest aside and dedicating efforts to the welfare of the community. Administration and Emergency Services working nonstop ☐
- ⇒ Concern for others prominently dominating self-interest, leading by example ☐
- ⇒ Responsible behaviour apparent when dealing with others ☐
- ⇒ Shifting responsibility, egotism takes centre stage ☐
- ⇒ Selfishness dominating all actions ☐
- ⇒ Sense of excessive selfishness everywhere, aggressive grabbing, missing sense of urgency on behalf of administration ☐

Community Resiliency Indicator: An MCGM Initiative

VII. 'The Tenderness':

It can be described as an expression of warm and affectionate feelings, gentleness and kindness towards one's friends, neighbours, colleagues, relatives, etc.

Which of the following type of behaviour / reactions / responses would / did you show while facing the disaster?

- ⇒ Widespread scenes of people demonstrating empathy, sharing and caring ☐
- ⇒ People highly considerate of the condition of others and offer small comforts ☐
- ⇒ People by and large offering help and displaying acts of kindness ☐
- ⇒ Occasional indications of concern and consoling others ☐
- ⇒ People displaying outright self-centeredness ☐
- ⇒ Exhibiting aggressive, unethical behaviour and indifference towards the injured and weak ☐

VIII. 'The Training':

It can be described as the knowledge level in terms of preparedness required for self safety and for the purpose of safeguarding the other individuals around.

Which of the following shows your state of training in disaster response and management?

- ⇒ Fully trained in disaster preparedness; and everyone is aware of what to do and how to cope and tide over the disaster ☐
- ⇒ Provided with preparedness and basic training, able to cope with the situation, however still requires guidance ☐
- ⇒ Basic training visible but there is lack of coordination ☐
- ⇒ Community trying to cope, those providing guidance are somewhat able to convey instructions ☐
- ⇒ Community unprepared and incapable of handling emergencies ☐
- ⇒ Lack of basic knowledge of how to cope in a disaster, behaviour extremely erratic and confused ☐

IX. 'The Media':

The sense of responsibility shown by the Media representatives involved in covering the news. Are the media persons found to be sensitive enough to the feelings of the sufferers thereby adhering to the principles of responsible journalism?

Which of the following type of behaviour do you think or / did you observe among the media representatives during the disasters?

- ⇒ Responsible and restrained reporting of the situation by media, providing judicious guidance for public safety and advisories for public health, People find the media communications informative and helpful ☐
- ⇒ Media demonstrating moral ethics, reporting the factual news and moderating the tone and contents of the reports ☐
- ⇒ Over emphasized narration of serious cases, criticizing the authorities, minimal attention on providing guidance to the community ☐
- ⇒ Unwarranted competition amongst media to provide gory details, no value addition to the cause ☐
- ⇒ Spreading rumours, misinforming the public, people frustrated with the media ☐
- ⇒ Media persistently sensationalizing news and capitalizing on the loss and grief of the people thereby creating total insecurity and panic ☐

Community Resiliency Indicator: An MCGM Initiative

X. 'The Conscience':

It is an inner feeling or voice viewed as a guide to the rightness or wrongness of one's behaviour. Conscience is the ability to put oneself in the place of others and to look at yourself through the eyes of others.

Which of the following type of behaviour / reactions/ responses would / did you show while facing the disaster?

- ⇒ No one taking undue advantage of any situation and conducting themselves in an exemplary manner ☐
- ⇒ People coming together to form groups and behaving in an honest and conscientious manner ☐
- ⇒ People realizing that honesty and ethical behaviour is expected of them and avoid taking advantage of difficult times ☐
- ⇒ Frequent scenes of unruly and dishonest behaviour ☐
- ⇒ Individuals taking undue advantage of the situation at every stage ☐
- ⇒ Immoral condition, fraudulent, criminal and corrupt behaviour rampant ☐

Profile of the Assessor:

Name and Signature of the Assessor:

Contact Details:

Mobile No. _____

Email Id: _____

Name of the Assessor Organization:

Annexure- II: Criteria for assessing the level of resiliency: CRI

In order to get the correct outcome from the assessment activity, it is advised that the Assessor Organization use the following criteria and the formats given below. However; the Assessor Organization may also use its own methodology as found suitable for this particular activity.

Comparisons should be avoided between communities and individuals at all costs.

The analytic level of resiliency (between 0 and 5) chosen by more than 80% of the respondents, may be considered as the resiliency level of the concerned community.

It is advised that the assessor organization use the following criteria and the formats given below:

- ☞ Where more than 80% of respondents chose any one level of resiliency from 0 and 5, then that specific level represents the overall level of resiliency of the community they live in.
- ☞ If none of the levels receive equal to or more than 80% responses, then the following relative analysis needs to adapted:
 - Each two consecutive levels (levels that are more or less similar to each other with very minute difference) to be clubbed into one relative level.
 - Whichever combination of levels gets higher responses, the same represents the indicator resiliency level of the community.
 - Relative level identification is very relevant to recognize responses to the overlapping levels (for e.g. there's very thin line / difference between level 5 & 4, level 3 & 2 and level 1 & 0).

Indicators	Level 5	Level 4	Level 3	Level 2	Level 1	Level 0
	Relative Level 3		Relative Level 2		Relative Level 1	

Annexure- III: Questionnaire for the Response Agency

Date: _____

This questionnaire is to be filled in by the authorized representatives of the response agencies in following format. This assessment can be carried out in different circumstances such as;

- Before disaster
- While responding to a disaster
- Post disaster recovery

During the abovementioned circumstances, the response agencies shall carry out the CRI process for assessing the resiliency levels of themselves (i.e. the members of response agencies) and of the concerned community.

The CRI assessment of the response agency members should be filled in by an assessor, who should be a part of the response team but will not be part of the response operation. The assessor shall assess the level of resiliency of the whole response team as a group.

It is advised that, while creating the report of their response to a certain disaster, the response agency should incorporate CRI process report as well, in order to add the humanitarian perspective to their report.

This questionnaire is to be filled in by the authorized representatives of the response agencies in following format

Assessment of the Response Agency:

⇒ Name of the Assessor:

⇒ Gender: Male ☐ Female ☐

⇒ Name of the Agency:

⇒ Designation:

⇒ Number of years of service with the present agency:

Less than five years ☐ Five to ten years ☐ More than ten years ☐

⇒ Age: 18 to 25 years ☐ 26 to 35 years ☐ 36 to 50 years ☐ 51 to 65 years ☐

⇒ Contact No.: Mobile: _____ Landline: _____

⇒ Address: _____

⇒ Any special training attended? _____

⇒ Have you ever been involved in similar response operations in the past?

⇒ If Yes, please elaborate your extent of involvement: _____

⇒ Type of disaster referred to while preparing this CRI process report:

Flood ☐ Landslide ☐ House collapse ☐ Fire ☐ Any accidents ☐

Earthquake ☐ Cyclone ☐ Terror Attack ☐ Riots ☐ Epidemic ☐

Any other ☐ Please specify: _____

Annexure- IV: Assessment of the community affected: Assessment by Response Agency

Brief information about the affected community:

⇒ Name of the community & Address: _____

⇒ Type of community: Slum / Chawl / Apartment / Commercial establishment

⇒ Total Population: _____ Males: _____ Females: _____

⇒ Type of Disaster: Natural _____ Man-Made _____

⇒ Extent of Disaster: Minor ☐ Major ☐ Severe ☐ Extremely Severe ☐

Remarks If Any: ☐ ☐ ☐ ☐

⇒ No. of Days the community has been facing the impact of the disaster: _____

⇒ Population affected by the disaster: _____ Males: _____ Females: _____

⇒ Details of destruction / losses due to impact of the disaster:

- No. of deaths: _____
- No. of Casualties: _____
- Property Losses: Approx. in INR. _____

⇒ Details of history of any disasters occurred in the past 10 years in the community:

○ Type of disaster: _____ Period: _____

○ Type of disaster: _____ Period: _____

○ Type of disaster: _____ Period: _____

○ Type of disaster: _____ Period: _____

○ Type of disaster: _____ Period: _____

⇒ Remarks: _____

Annexure- V: Assessors Report

1. A resiliency based social assessment recognizes the complexity inherent in both communities and in change. This process therefore emphasizes the whole system to which the social assessment is based. The focus of the assessment needs to be carefully defined. The community and government agency should work together to identify:
 - a. Who is included in the 'community'? Is the community geographically based or is the community made up of people with similar characteristics? Has the community come together in response to a particular issue?
 - b. What is the process of change that is likely to take place?
 - c. What will be the issues arising from this change process for the community?
 - d. What values and attitudes does the community have towards this change and the change process?
 - e. What levels of government are important in this context?
2. The internal community structure

In order to understand a community's capacity to respond to change, the community and government together can ask:

 - a. Who are the key social groups who are likely to be impacted by the proposed change?

The format for Assessor's report is as below:

Indicators	Level 5	Level 4	Level 3	Level 2	Level 1	Level 0	No Response
The Calm	%	%	%	%	%	%	%
The Dignity	%	%	%	%	%	%	%
The Ability	%	%	%	%	%	%	%
The Grace	%	%	%	%	%	%	%
The Order	%	%	%	%	%	%	%
The Sacrifice	%	%	%	%	%	%	%
The Tenderness	%	%	%	%	%	%	%
The Media	%	%	%	%	%	%	%
The Conscience	%	%	%	%	%	%	%

Overall Assessment:

Indicators	Overall Level of Resiliency
The Calm	
The Dignity	
The Ability	
The Grace	
The Order	
The Sacrifice	
The Tenderness	
The Training	
The Media	
The Conscience	

DISCLAIMER

This handbook is meant for voluntary initiatives for assessment of community resiliency.

No certification of any sort will be issued, neither to the assessor organization nor to the assessed community / organization.

While care has been taken in making these indicators comprehensive and applicable to most communities, nevertheless, changes, insertions, deletions or modifications may be necessary to make the process more relevant to the specific context of the target community.

The process of assessment will vary, depending on the organization / group using the process.

Assessments conducted during disaster and normal times will also vary.

Whilst undertaking the process of assessment, vulnerability and risk factors may be considered.

Contributors

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**The Calm
The Dignity
The Ability
The Grace
The Order
The Sacrifice
The Tenderness
The Training
The Media
The Conscience**

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