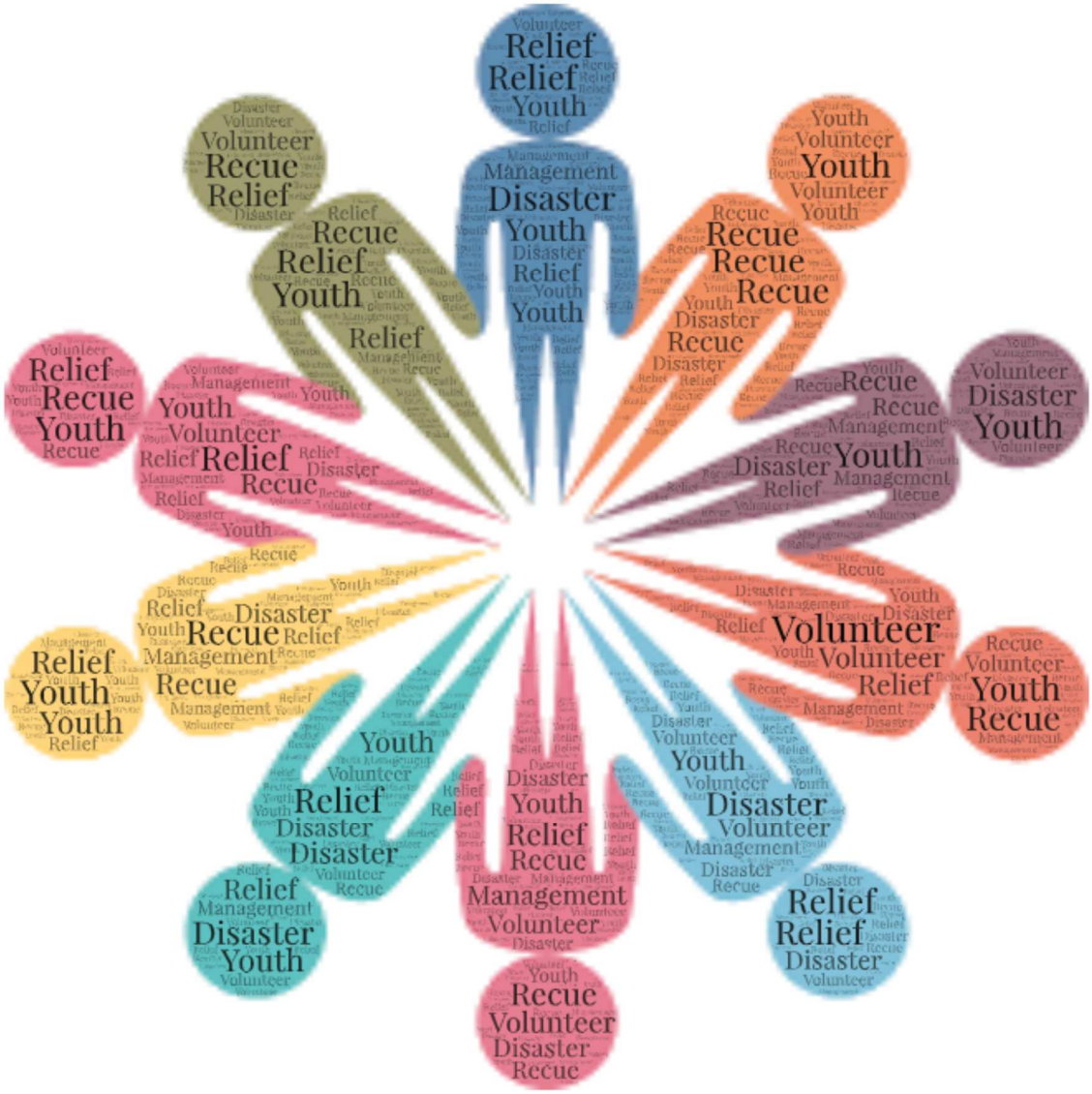
Training Module

ROLE OF YOUTH AND VOLUNTEERS FOR DISASTER RISK MANAGEMENT



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BUILDING RESILIENCE

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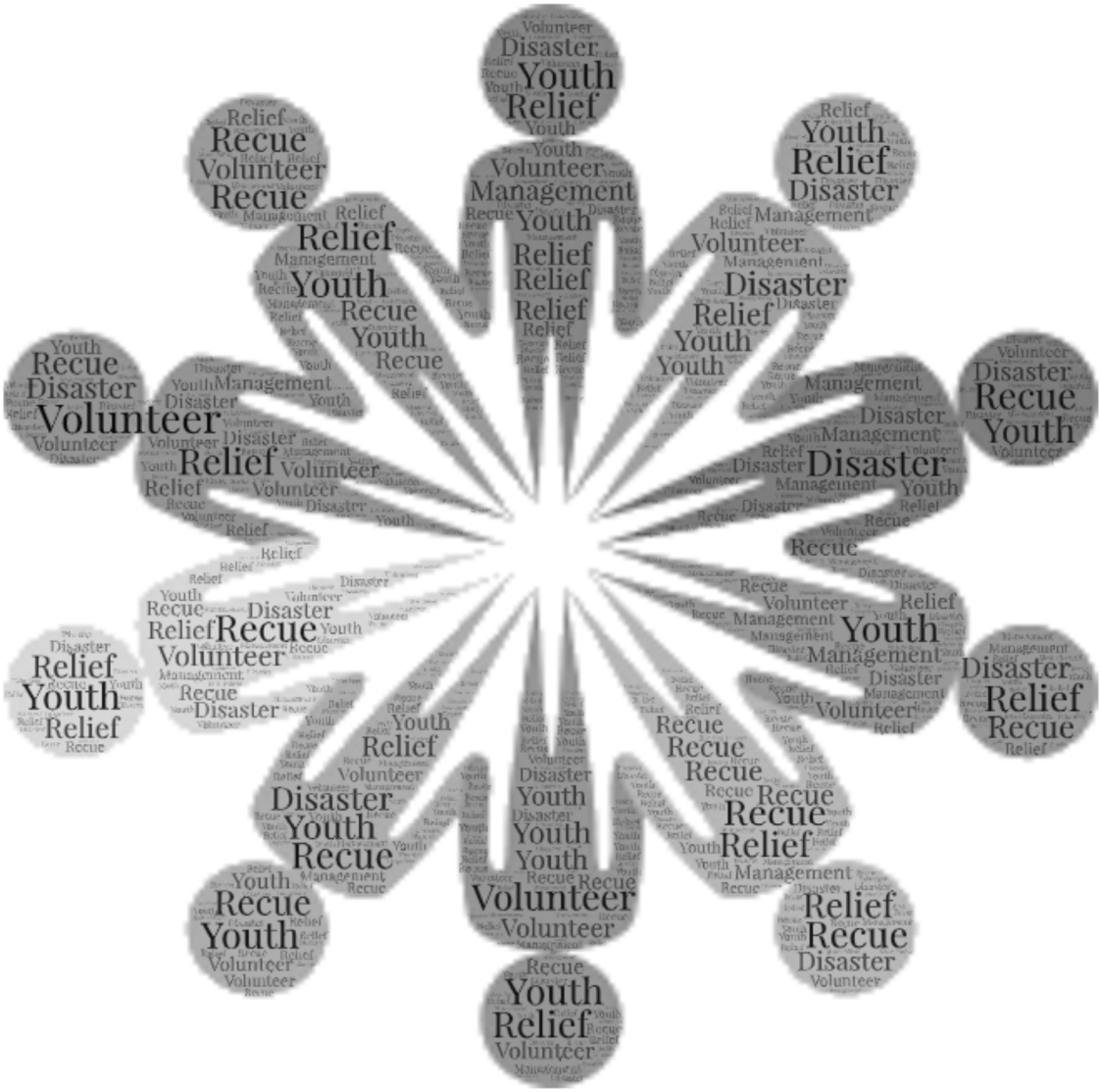

GUJARAT INSTITUTE OF DISASTER MANAGEMENT

BUILDING RESILIENCE

Training Module on Role of Youth and Volunteers for Disaster Risk Management

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Message

Extreme events, around the world, are on a rise. There is no denying the fact that in the years to come, with the ever-increasing exposure due to our rapid growth, losses, in all its dimensions, would increase. Come to think of it, the effects and impacts of such extreme events would befall leaders and citizens of tomorrow's world; children, youth and young professionals of today. This particular demographic section, under the age of 30, currently make up more than half the world's population. Thus, it makes perfect sense to orient the leaders of tomorrow towards managing their disaster risks, so that, together, we can save our way towards a sustainable and disaster resilient future. While the Sendai Framework for Disaster Risk Reduction (SFDRR) emphasises upon all of the society approach towards disaster risk reduction, the Sustainable Development Goals, on the other hand, fosters the ideology of leaving no one behind. In this light, there is an immediate need to stop considering children and youth as victims of disasters, and start recognising their contributions towards making a difference for more inclusive disaster risk reduction and resilience-building policies, more prepared households and safer communities. However more can, and must, be done to support and engagement children and youth around the world in disaster risk reduction activities to fully implement the Sendai Framework for Disaster Risk Reduction within the stipulated timelines.

This training module has been prepared to inspire the youth, young professionals and volunteers to look beyond their monotonous scope and bring forth disruptions and innovations in the field of disaster risk reduction and risk management. We do not require solutions which are expensive, but we require solutions which are lean, agile and cost-effective. Given the tremendous potential of the youth, young professionals, this module intends to motivate them to work towards resilience in their own unique way. Apart from having the conventional sections of training, this module derives heavily from global experiences, documented in Words in Action.

I am pleased to present this training module Titled "Role of Youth & Volunteers in Disaster Risk Management" developed by GIDM. I hope this training module will be of immense help to the youth, young professionals, volunteers, representatives and stakeholders from volunteer agencies engaged directly or indirectly in this field of Disaster Risk Management and will enable us to achieve the targets of Sendai Framework.

(P. K. Taneja)
Director General

November, 2019
Gandhinagar

Abbreviations

AIR	All India Radio
CWC	Central Water Commission
CBDRM	Community Based Disaster Risk Management
CBEWS	Community Based Early Warning Systems
CBO	Community Based Organizations
CWDS	Cyclone Warning Dissemination System
DM	Disaster Management
DMC	Disaster Management Committee
DMT	Disaster Management Teams
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EW	Early Warning
EWS	Early Warning System
GSI	Geological Survey of India
HRVC	Hazard Risk Vulnerability Capacity
HFL	Highest Flood Level
IMD	Indian Meteorological Department
INCOIS	Indian National Centre for Ocean Information Services
IOC	Indian Oil Corporation
ICT	Information and communication technology
IVRS	Interactive Voice Recording System
IDNDR	International Decade for Natural Disaster Reduction
INSARAG	International Search and Rescue Advisory Group
MAH	Major Accident Hazard
MFR	Medical First Responder
MoD	Ministry of Defence
MHA	Ministry of Home Affairs
MoYAS	Ministry of Youth Affairs and Sports
NCC	National Cadet Corps

NEOC	National Emergency Operation Center
NSS	National Service Scheme
NYKS	Nehru Yuva Kendra Sangthan
NGO	Non-Governmental Organization
SAR	Search and Rescue
SASE	Snow and Avalanche Study Establishment
SDM A	State Disaster Management Authority
SFDRR	Sendai Framework for Disaster Risk Reduction
SMS	Short Message Service
SOP	Standard O00perating Procedures
TV	Television
UNO	United Nations Organization
UNDRO	United Nations Disaster Relief Office
UNGA	United Nations General Assembly
VIP	Very Important Person

Content

Introduction to the module

About the module

"*The power of youth is the common wealth for the entire world. The faces of young people are the faces of our past, our present and our future. No segment in the society can match with the power, idealism, enthusiasm and courage of the young people*"

These words by Nobel laureate Kailash Satyarthi makes perfect sense in disaster risk management. It does not take rocket science to figure out that we have been developing and progressing in a very unsustainable manner. Hydro-meteorological extreme events have become more frequent and there are several reasons to conclude that such recurrent occurrences are the consequence of climate change, which, in turn is the sour fruit of conventional, unscientific and irrational development strategies that have been adopted by us down the ages, since the era of industrial revolution. It goes without saying that the need of the hour is disruption; "disrupt the conventional and traditional ways to establish trends and practices that are out-of-the-box and yet the most effective solutions to the most imminent problems". The power to bring about this disruption lies with the youth, the young professionals and those who abide by the true sense of volunteerism.

In addition to this, for long the youth have been looked down upon as the casualties of extreme events; a weak link requiring support, but, gone are those days. Over the years, youth & volunteers have shown the world extraordinary examples of their courage, indomitable spirit in times of disasters and crisis and it is high time that this zeal be fueled. In fact, the millennials, along with the diverse aged volunteers, are in need of a subtle spark just to ignite them and the rest, will be history.

The story that follows aptly highlights everything that this module is going to talk about.

Indri, a 25 year old girl from Indonesia, has always been passionate about HIV and AIDS. In a country where children do not openly speak about sexual and reproductive healthcare with their parents, Indri was fortunate to be raised in a more open family. This helped to grow her interest in advocating for sexual and reproductive rights, and gave her the courage needed to speak out.

On 28 September, 2018, Indri was at a roadside café with friends in her seaside hometown of Palu, on the island of Sulawesi when at around 7:30pm, a very large earthquake struck the island. Motorbike riders immediately fell to the road, and chaos ensued. Indri panicked for her father, who lived only metres from the ocean – in Indonesia, people know that if there is an earthquake, a tsunami will likely follow.

As everyone raced towards higher ground, Indri instead went looking for her father. After some time and without finding him, she had no choice but to retreat to higher ground and safety for the night. Four more earthquakes occurred throughout that evening. She waited until 5am, then immediately rushed to look for her dad, and amid tears of relief, found him safe and well. But many people were not so fortunate. The official death toll from the disasters (the 7.5-magnitude earthquake that triggered a tsunami) surpassed 2,000 people. However, with the added blow of liquefaction, the actual death toll is believed to have been over 3,000.

Indri felt a huge sense of gratitude that she was safe, and the desire to give back. She told herself, "I'm still able to undergo activities, still have my arms and legs, so why don't I use it to help people in need? Who else will help them if there are not people who care about the lives of friends affected by this disaster?" It was during this time that the Indonesian Planned Parenthood Association, put the call out for youth volunteers needed to provide counselling on reproductive health as well as HIV and AIDS as part of our humanitarian response. When Indri received the call she thought, "this activity is noble; I can help others this way. I already have knowledge about HIV and AIDS from my campus organisation at university. So now, I can share this knowledge that I have with peers around my age so that they can protect themselves for the sake of their future."

Limited access to accurate information and opportunities makes young people vulnerable to poor sexual and reproductive health. Unforeseen conditions inside displacement camps – can worsen these risks.

Indri started traveling from camp to camp educating young people on HIV and AIDS. In her own time, she even creates posters to make the sessions more interesting and interactive. In the aftermath of emergencies such as this triple disaster in Indonesia this type of care is not only a right, it is essential.
(Source: https://www.ippf.org/blogs/youth-volunteer-indri-indonesia)

This training module would talk about understanding disaster risks and would try to inculcate a culture of resilience in the youth and the volunteers. This understanding will circumscribe the different phases of the conventional Disaster Management (DM) Cycle. For example, being prepared enough to make a preemptive response makes sense in case of an ensuing cyclone or flood or maybe even Tsunami, if the early warning system of the state is functional, but, in case of events like earthquake, it is utmost necessary that the risks be understood and the impacts be mitigated, if an earthquake is to strike. It goes without saying that such steps are more often placed with the government of the day, but, it is upto the youth to understand the risks, the science behind such risks and put forth a voice of concern at different levels, starting from the level of an individual, family, right upto the state and national government. Thus, the primary motto of this module would be to stimulate the youth and young professionals to contribute to disaster risk reduction & management using their skills and potential in their own domain of expertise. In addition to this, the module would focus on elaborating the concept of risks. Risks are no longer to be understood and assessed singularly; risks have become systemic. For example, in the stpry of Indri, being aware of the risks of a Tsunami would not be enough to ensure effective risk management, understanding the consequential or cascading risks like the risks to health (sanitation and hygiene) post an extreme event, needs due consideration even in the preparedness phase. Thus, the scope of understanding risks needs to be enlarged and that is possible only when the youth and young professionals, who, in fact in a way would run the systems in the future, are made aware of it. Keeping all these dimensions in mind, the module has been designed in an interesting way to avoid the use of technical terminologies and DRR jargons, which usually becomes confusing to a commoner (someone who is not used to the jargons of DRM or is just a beginner in this subject) after a point.

The ultimate objective of the module is to kindle the spirit of voluntary contribution in youth, in all the dimensions of disaster risk management. This contribution may come in the form of facilitating effective disaster response, or, may even go beyond the accepted paradigm like development of agile and lean mechanisms for disaster risk management. In a way, the focus would be more on stimulating the youth and young professionals to contribute meaningfully in disaster risk reduction and not merely in disaster response.

The module has been developed by the Gujarat Institute of Disaster Management (GIDM) with inputs from professionals working in this sector and by referring to several research articles. GIDM is a premier institute entrusted with the responsibility of human resource development, capacity building, training, research and documentation in the field of disaster risk management.

Who shall use the Training Module?

It can be used by trainers who intend to train the youth and volunteers in disaster risk management, including representatives of volunteer organisations. The module can also be used for self-study by anyone who has interest in this field and intends to learn more about it.

How to use the Training Module?

The module has been designed rationally ensuring a rational flow. A brief introduction to the different elements of the module are as follows.

UNIT - 1 (U1)	Introduction, Overview & Understanding DRM
U1:L1	**Demystifying Disasters**
	Often disasters are misinterpreted, used interchangeably with other words which has, in different ways, corroded the true sense of the term. Thus, this section would talk about what disasters actually are its connotations.
U1:L2	**Managing Disasters: Evolution from DM to DRM**
	Managing disasters, or mere disaster management has been a way of dealing with disaster for long, so this needs to be understood, in light of the evolution of this field.
U1:L3	**Understanding Disaster Risks**
	Understanding disasters are not enough in today's world of rapid growth and progress; what we need is to understand that the embedded risks in our development plans, strategies etc. In fact, keeping pace with the Sendai Framework for Disaster Risk Reduction (SFDRR), it is more important to understand the risks to be able to develop in a sustainable and resilient manner.
U1:L4	**Understanding Disaster Risks in Gujarat**
	After having understood, broadly, what risks are, it is important to understand the risks in Gujarat.
U1:L5	**Context setting of engaging Youth and Volunteers**
	It is imperative that a context is set for the youth, young professionals and volunteers for this training, motivating them and inspiring them to think about their roles in disaster risk management and how they can contribute in disaster risk reduction. The best way to do so is to learn from what is happening around the world, what is being done by youth and volunteers in different parts of the world.

UNIT - 2 (U2)	Involvement of Youth and Volunteers in DRM
U2:L1	**Role of Youth and Volunteers in Understanding Disaster Risk**
	This section discusses the role of youth, young professionals and volunteers in understanding disaster risk, cutting across the boundaries of disciplines.
U2:L2	**Youth, Young Professionals and Volunteers in Disaster Risk Governance**
	Can the youth and volunteers, or, children for that matter, influence disaster risk governance? This section documents cases from around the world to encourage participants to actively take part in DRR activities.

U2:L3	**Investment for Resilience through the Lens of Youth and Volunteers**
	Investment in disaster resilience means investment towards resilience of children & youth too. Investments is not merely financial, it goes beyond this narrow scope of understanding. This section elaborates on these points.
U2:L4	**Youth and Volunteers for Effective Response and Build Back Better**
	The role of youth, young professionals and volunteers have been exemplary in disaster response, recovery and rehabilitation. This section reiterates on the same points through relevant examples.

UNIT - 3 (U3)	**Building a Culture of Disaster Resilience**
U3:L1	**Learning Disaster Resilience from the World**
	India as a nation has a lot of potential and most of its potential rests with the youth. Thus, it makes perfect sense to tell the youth about the culture of disaster resilience found in different parts of the world.
U3:L2	**Making the Environment of Youth Safer and Resilient**
	Taking a small step, sometimes, is a big leap and the small step in this regard is making the immediate environment of a youth, young professional safe and disaster resilient. But how to do it? This section talks about it.
U3:L3	**Words in Action: Helping Youth and Volunteers to Strategise**
	The last section of the module talks about how youth, in fact, whosoever is interested, can build a culture of resilience and sustainable development.

Each session has been explained in detail, along with the session plan, content to be covered, methodology to be followed and a trainers' note. The content of the module is expected to be inherently dynamic as the field of disaster risk management is witnessing substantial change every other day and the onus is on the trainer or the learner to look up the newest development. The module also retains a degree of flexibility in the sense that the trainer can innovate on the methodology or activities according to the profile and need of participants.

Trainers' Guide

Disaster risk management, disaster risk reduction is inherently participatory in nature and that is why the training module has been designed keeping a participatory framework in mind. DRR is one of those fields where even the trainer can learn from the participants and go on to include his learnings in future lessons. The trainer should consider the following guidelines:

- Registration of the participants should be electronic and must be made open on the eve of the program. This will help the trainer to understand the type of participants and he / she may consider making few last minute changes in the style of delivery.

- The program must start with public dissemination of risk information of the venue which should be audio-visual (preferably) and the participants must be made aware of the evacuation routes, assembly points etc.
- A pre-test should be conducted by the trainer to gauge the knowledge of the participants before the beginning of the program. After the completion of the program, a post-test should be scheduled. The questions should be objective type and must be repeated in pre and post-test. An analysis of the pre and post scores would be an effective way of understanding the effectiveness of the course as well as the trainers ability to impart training.
- Instead of abiding by the traditional practice of trainer-participant introduction, the participants should be introduced to each-other and the trainer should come up with interesting ways to do so.
- Each lecture session should end in a discussion. This will not only help the participants to learn more from each-other but also the trainer to understand whether he has been capable enough to get his ideas across to the participants or not.
- If possible, a qualitative assessment of the trainer should be conducted at the end of every lecture session. The questions should focus only on qualitative aspects of the lesson and the trainer. Such an assessment would be an effective tool to measure the performance of the trainer.
- If the same trainer is taking more than one session, then, the test would be able to let the trainer know which sessions were good, which were average and which needs to be improved.
- If the same session has been taken by different trainers over a period of time, such a test would be an effective way of knowing which trainer is better in imparting training in that particular topic / subject.
- In group activities and simulation exercises, care should be taken to ensure that the grouping is logical or rational in some way; hazard-wise, state-wise, district-wise etc.

Target Group

The training is targeted towards the youth, i.e., for participants ranging from 15 to 29 years of age. However, volunteers, often, go beyond the strict demarcation of these age groups. Thus, it would be safer to say that this module would be appropriate for participants between the age group of 15 to 40 years.

It would not be out of place to suggest that the generic understanding of disaster risk management is either flawed or incomplete or reactive. These are major impediments to fostering a culture of disaster resilience and it is exactly these impediments that the module intends to address. Thus, anyone, within the specified age group, who is keen on learning about the basics of disaster risk management can be the target group. The style of delivery, however, may differ depending upon the target group.

A group size of 25 - 30 people would be ideal.

Entry Behaviour

Level of participants: Youth, Young Professionals, Volunteers, including representative of volunteer organisations.

Age Group: 15 to 40 years

Educational Qualification: Anyone who has a preliminary understanding of subjects like geography, science, social science etc.

Disaster Experience: Not at all mandatory

Objective of the programme

The overall objective of the programme is to impart adequate knowledge and skill to the trainees to deal with risks in their respective spheres of life and empower them to formulate strategies/ action plan suitable to prevent risks and build resilience.

Methodology

The training will be conducted in an interactive mode with a judicious mixture of lectures, discussions, demonstrations, experience sharing, group work and case study analysess.

Teaching Aids

Training will have to be conducted with the help of the following:

Background reading materials / reference materials

Electronic handouts of presentations or additional material

Simulation exercise

A group is to be created on a social media to ensure that the participants are in touch and are actively sharing knowledge amongst each other. Such groups can also function as crowd based sources of data.

Training Materials and Equipment Required

The training will essentially be classroom based and for simulation exercises, the venue institute should be used. The training materials for classroom teaching like Computers, LCD projectors, flip charts, markers etc. would be required.

Seating Arrangements

The seating arrangements should preferably be four or five circular tables to facilitate group work and allow the trainer to move around the class for interaction.

Language of Instruction

The medium of instruction will be English, Hindi and Gujarati

Trainers/ Facilitators/ Resource Persons Required

Disaster risk management or disaster risk reduction is, no doubt, an inter-disciplinary field and therefore the proper delivery of this module demands experts from various sectors. However, this module primarily focusses on the basics and fundamentals of disaster risk management only.

For self-learners, this module will serve as a guiding light; the reference materials suggested by this module would be enough to form a basic idea of resilience. However, adjacent and supplement materials gathered from reliable and trusted sources would also be helpful.

Expected Outcome

After going through the training program modelled in accordance to this training module, a participant will have a better understanding of:

1. Terminologies / jargons of Disaster Risk Management.
2. Understand the role of youth, young professionals and volunteers in Disaster Risk Reduction & Management.
3. Understand the role of youth, young professionals & volunteers in the entire cycle of Disaster Management / Disaster Risk Management.
4. Be motivated to take actions towards disaster risk reduction.

Evaluation & Validation

The process of evaluation adopted in this training module serves two purpose; first, through the pre-test and the post-test sequence, the effectiveness of the training is gauged. The questions in the pre-test and the post-test should be same but the order should be different. In fact, the trainer may include some additional questions in the post-test too. The change in the average score of the pre-test and the post-test will show the effectiveness of the training and the change in the individual scores will reflect the degree to which a participant has grasped the subject. If there has been no substantial change in the pre and post-test score of an individual participant and both the scores were low to average (upto 50% of the total score), it would mean that the course has been ineffective for the participant. If the pre and the post-test score of a participant is on the higher side, it would mean that the participant is ready for the next level of training and if this be the case of the entire group of participants, it would mean that the entire group can be branded as Master Trainers of Understanding Disaster Risk. This pool can then go on to train other groups of people and they themselves should be taken to the next level of training.

The process of evaluation doesn't end here; after each lecture session the participants would be asked to rate the trainer on the following parameters:

A. Planning and preparation

1. How much was the content relevant to the overall program or the objectives of the particular session?
2. How much knowledge the trainer had of the content? Was he able to clarify your doubts? Do you think he is the right person to deal with this section of the lecture / topic?
3. What the flow of instruction coherent? To what extent were you able to achieve the objectives set out at the beginning of the lesson?

B. Classroom environment

1. How much did the trainer encourage participation in the form of debates and discussions?
2. Were the discussions, moderated by the trainer, constructive in nature? (1 - Not at all constructive to 5 - Constructive and conclusive)

C. Instruction

1. Was the style of the lecture appropriate for the topic / session? (This is to understand the dynamics of delivery)
2. Was the speed of the lecture adequate to understand the concepts of the topic?
3. Was the choice of language appropriate for you?

These answers would be collected on a Likert scale and evaluated.

According to the pre-test and post-test results, future programs are to be designed and conducted.

Public Dissemination of Risk Information of the Venue (PDRIV)

In case the training is being conducted at GIDM or at any other physical venue, it is mandatory that an audio-visual clip be shown about the venue that informs the audience / participants about the hazards the venue or the surrounding is prone to, the risks, the escape routes or evacuation plan and emergency assembly points. The audio-visual clip to be shown must not contain mere presentations or verbal directions. It should be a visual document of the actual evacuation route from common points like corridors or lounges to the assembly points, which may or may not be within the same establishment.

Primarily, a venue may be exposed to various different types of hazards and for an event of a day or two, hazards like flood or drought may be irrelevant and in such cases more immediate hazards like fire or earthquake should be dealt with. The focus should be on preparing the audience for evacuation if such a need arises during the program. The clip may be allowed to run repetitively while the initial arrangements are being made on the day of inauguration or when the participants start coming in and settling down for the first session of the training program.

In addition to the audio-visual clip, along with the registration kit, a single-page document should be handed over to the participants with the evacuation routes marked and assembly points mentioned. Emergency contact numbers may also be provided if the participants come from other parts of the world.

Proper preparation in this regard on behalf of the organisers is also necessary. The venue selected for the training course must have a minimum standard of disaster preparedness measures. First of all, the venue must have a disaster management plan and an emergency evacuation strategy within it. For the evacuation strategy to be effective, proper signage should be placed on and around the campus premises. The evacuation strategy should have been a tested through mock-drills a couple of times keeping in mind the different groups and types of participants that might join the training program like differently-abled individuals or senior old-age personnel and for a mock-drill to be executed, the establishment must have a disaster management plan. Thus, everything is dependent on the other with the disaster risk management plan serving as the key document.

Inauguration and Pre-Training Assessment

Need of the session

Participants of this course are expected to come from different walks of life, different disciplines with different levels of understanding of the subject. Thus, it is utmost necessary to understand and assess their knowledge before starting the program.

It is not at all a great idea to start a one day or two-day long program with a test and therefore even before the test, the trainer will have the responsibility to informally introduce himself and facilitate the participants to introduce themselves. The trainer may indulge in innovative ways to do so; the more interesting he makes it, better participation he can expect throughout the course. The trainer or the course coordinator may also include asking the participants about their expectations from the course.

After the introduction is done away with, the participants are provided with a question paper comprising of a maximum of 25 - 30 questions which needs to completed within 30 minutes.

With a five-minute break immediately after the test, the formal inauguration should start which should be chaired by the head of the institute and other dignitaries.

The course-coordinator may utilise this opportunity to inform the participants about:

- Session timings, i.e., the final schedule
- Lunch & Tea Breaks
- Formation of teams or groups for exercises and simulations
- Norms for interactions and discussions during sessions
- Mobile phone etiquettes
- Availability of facilities (telephone, internet etc)
- Smoking rules / bans etc.
- Evening engagements (if any)

Objective of the session

This simple but elaborate session of around 90 minutes is expected to bring out:

1. The prior knowledge and understanding of the participants
2. To build a rapport between the participants and the trainer or the course-coordinator and also among the participants
3. Changes of content or delivery style that might be required on part of the trainer to meet the level of participants or their expectations from the course

Training aids

PDRI clip, question paper, flip-charts, markers etc.

UNIT 1: Introduction, Overview & Understanding Disaster Risk Management

Need of the session

The term 'Disaster', itself, demands thorough understanding to avoid its misinterpretation and misuse. This section introduces the participants to the word disaster, its connotations and the true sense of it. It orients the participants to the ongoing evolution of understanding; from 'managing disasters' to disaster risk management and eventually steps on to aspect of understanding disaster risks which has become the primary focus. The concept of risk is explained, taking into consideration the hazards predominant in Gujarat. And finally, the participants are given a context of how they fit in to the whole cycle of disaster risk management.

Units of the session

Unit 1 Lesson 1: Demystifying Disasters

Unit 1 Lesson 2: Managing Disasters: Evolution from DM to DRM

Unit 1 Lesson 3: Understanding Disaster Risks

Unit 1 Lesson 4: Understanding Disaster Risks in Gujarat

Unit 1 Lesson 5: Context Setting of Engaging Youth and Volunteers

Objectives of the session

The primary objectives of this unit would be to:

- Understand the entry behaviour of the participants since this unit is the first session of the training program
- Explain to the participants what about disasters, disaster management cycle and its evolution.
- Set the context for the involvement of youth, young professionals and volunteers in DRM

Duration

300 minutes. (45 + 45 + 45 + 45 + 45) minutes for the sessions and 15 minutes spillover time from each session.

Methodology

The methodology of this session is no different from the overall methodology of the training program. Every lesson or every unit must start with a question to intrigue the participants and foster discussion. Building up on such discussions, the trainer must start his presentation or lecture.

Training aids

Power-point presentation, flip-charts, markers etc.

Unit 1 Lesson 1: : Demystifying Disasters?

Flow of the session

Note for the trainer

The term 'Disaster' is to be elaborated upon in this session. The trainer should focus on using lucid and easy to understand language for this purpose. The primary goal of this lesson would be to emphasise on two facts:

1. Hazards are not disasters

2. The term disaster is consequential in nature and in most of the cases, disasters are anthropogenic and not natural.

The trainer may begin by asking a simple question of how disasters are different from hazards. The trainer may go onto poke the participants with relevant and interesting questions like, if there is an earthquake in a location which has no inhabitants whatsoever and if there is an earthquake in a populated city, which one of these events would be a disaster? The trainer may also cite examples of recent events like that of cyclone Vayu (2019) in Gujarat and cyclone Fani (2019) in Odisha and fire a discussion of how disasters are different from hazards.

The term 'disaster', in fact, has a consequential connotation which is expressed through its legal definitions. At this point of time, the trainer should introduce the participants to the definitions of Hazard and Disaster. In this context, the trainer may also deliberate more on the classification of hazards, and to ensure that the context of India is maintained, the following classification of the High Powered Committee may be illustrated:

Table 1: Classification as per the High Powered Committee of India

Biologically related	Geologically related	Chemical, industrial and nuclear related	Accident related	Biologically related
Floods and drainage management	Landslides and mudflows	Chemical and industrial disasters	Forest fires	Biological disasters and epidemics
Cyclones	Earthquakes	Nuclear disasters	Urban fires	Pest attacks
Tornadoes and hurricanes	Dam failures / dam bursts		Mine flooding	Cattle epidemics
Hailstorm	Mine fires		Oil spill	Food poisoning
Cloud burst			Major building collapse	

Snow avalanches			Serial bomb blasts	
Droughts			Festival relates	
Sea erosion			Electrical disasters and fires	
Thunder and lightning			Air, road and rail accidents	
			Boat capsizing	
			Village fire	

The trainer, depending on the interest of the participants may go on to introduce other classifications like that of the Classification of Perils by IRDR, or, the classification as per the National Disaster Management Plan of India (2016).

After having an elaborate discussion on hazards, the trainer should move on to the definition of disaster as per the National Disaster Management Act (2005) and also the Gujarat State Disaster Management Act (2003).

As per the Gujarat State Disaster Management Act, disaster is,

"An actual or imminent event, whether natural or otherwise occurring in any part of the State which causes, or threatens to cause all or any of the following:

1. Widespread loss or damage to property, both immovable and movable; or
2. Widespread loss of human life or injury or illness to human beings; or
3. Damage or degradation of environment

And any of the effects specified in sub-clauses (1) to (3) is such as to be **beyond the capacity of the affected community to cope up** with using its own resources and which disrupts the normal functioning of the community."

As per the National Disaster Management Act, disaster, "means a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man-made causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area."

The trainer should try to establish the similarities between the two definitions.

If time permits, the trainer, depending on the background of the participants, may ask the participants to represent the definition of 'Disaster' in terms of a Boolean expression with the use of OR and AND operators.

Moving on, the trainer must then start explaining how uncontrolled growth, unplanned development, has caused more and more disasters over the years. To illustrate the fact, the trainer may give simple examples like that of a coastal city.

Almost a decade ago, coastal cities were not so crowded and populated as they are now and hence if there is a cyclonic storm or a Tsunami, the extent of damage would be much, much larger as it would have been ten years ago.

The trainer must then probe the participants to debate on the above statement. The Super Cyclone of 1999 in Odisha claimed tens of thousands of casualties but, Fani, on the other hand registered very few deaths. So how is the above statement correct? The trainer must explain that it was owing to the tremendous advancement of science and technology that cyclones are now predictable and are monitored whenever they form over the sea. But would it be the same if the hazards was to be an earthquake? Earthquakes, till now, are not predictable. If there is an earthquake now in a particular area, which is densely populated and overtly developed, would the devastation be the same if the earthquake had struct two decades ago?

The trainer must allow the participants to ponder about this and finally conclude that, there are higher chances that the devastation and destruction would be higher in the present condition. To elaborate the point, the trainer must subtly emphasise on the fact that the number of buildings, the type of its construction and many other such factors, in this era, makes the area under consideration more vulnerable than it was few decades back. In a particular seismic zone, if an earthquake has to happen with a particular magnitude / intensity, it will happen and it is upon us, the civil society and the government, to understand the possibility / probability of it and undertake development / constructions accordingly. But are we doing it? Perhaps, no! The residents, in general, are unaware of the hazards they are prone to, and neither they have the capacity to cope with such sudden shocks and consequentially, a mere hazard becomes a tragic disaster. In such a scenario, who is to blame and is it wise enough to classify disasters as natural or man-made, when we clearly understand that we have been doing much lesser than is expected of us to build our coping capacities to be resilient to disasters.

The trainer may chose not to use the term ‘resilient’ or ‘resilience’, since, resilience is a holistic concept which needs detailed deliberations. However, the trainer, may briefly touch upon the concept of resilience, if time permits and the participants maintain their interests.

Objectives of the lesson

- The primary objectives of this lesson would be to:
- Explain what disaster is
- Explain how disasters are different from hazards
- Understand the legal connotation of disasters
- Discuss the anthropogenic causation of disasters

Duration

45 minutes depending upon the potential of the trainer to fan discussion and debate.

Methodology

This session should be more discussion based rather than merely an information delivering one. The session should open with a question to the participants to stimulate their thoughts and should also end with a question, so that the participants go into the next session on the evolution of DM into DRM with an appropriate string of thoughts.

Resource materials

HPC Report (2001-2002), IRDR Peril Classification and Hazard Glossary, National Disaster Management Plan (2016), GIDM's training module on Understanding Disaster Risk Management.

Training aids

Power-point presentation, flip-charts, A4s, markers, pens etc.

Unit 1 Lesson 2: Managing Disasters: Evolution from DM to DRM

Flow of the session

Note for the trainer

Disasters are being managed since times immemorial; thus, this session would focus on the aspect of how disasters have been managed and how there has been a shift in the paradigm.

The trainer may begin this session by introducing the participants to the disaster management cycle.
One may find different versions of the disaster management cycle from different sources, but it is the responsibility of the trainer to explain to the participants that the core rationale behind all such version is the same and is very rational for one to follow.

Figure 1: Disaster Management Cycle

Even before moving into the details of the Disaster Management Cycle, the trainer must draw the attention of the participants to the fact that, managing disasters, primarily have been responsive in nature. The disaster management cycle talks about prevention and mitigation, but the question remains, prevent and mitigate what? Prevent disasters? Mitigate the impact of disasters? But how do you prevent a disaster or mitigate the impact of a disaster, if you are not aware of the 'points of failure'? For example, we cannot prevent an earthquake from happening, but we can off course, mitigate the impacts and effects of it. But how do we do it? For us to mitigate the impacts of an earthquake, we would need to understand what would lead to the devastations post an earthquake. The likely answer is the failure of integrity of a building; the building collapses and the people inside it are either injured and in the worst case, loose their life. Thus, in an earthquake, the problem is of buildings / infrastructure which defines the extent of impact. To prevent such destruction, we need to understand the 'Risk' posed by such an event like earthquake. The trainer should probe the participants at this point to ensure that they understand why it is important to understand the risks due to an event. At this point, the trainer should elaborate on the idea of disaster risk as a function of four elements; hazard, exposure, vulnerability and coping capacity. The trainer should explain the evolution of the concept of risk, as follows:

Disaster Risk ∝ (Hazard) X (Vulnerability)

Disaster Risk ∝ (Hazard) X (Vulnerability) X (Exposure)

Disaster Risk ∝ ((Hazard) X (Vulnerability) X (Exposure)) / (Coping Capacity)

The first equation talks only about the 'impact' of a hazard based on the probability of occurrence and the degree to which the hazard can cause damage.

The second equation helps in assigning an unit to disaster risk; if 'this' be the probability of occurrence and 'this' be the degree of damage it can cause and 'that' be the amount of assets costing 'this much', then the product of all these would give an idea of what damage and loss would be incurred by the hazard.

If time permits, the trainer can explain that these equations have evolved under the requirement of how risks are to be understood and assessed; the first equation is the most basic and preliminary form, while the last one is for a detailed assessment & understanding of risks. The details of how to use this, would be dealt in the later chapters.

Once the trainer has successfully oriented the participants of the importance of understanding risks, he should swiftly move on to the fact that the same concept has been underlined and emphasised upon by the Sendai Framework for Disaster Risk Reduction (SFDRR 2015 – 2030).

The trainer should then subtly move on to explain the evolution of disaster management frameworks, promising to come back to the topic of Disaster Management Cycle, after having emphasised upon the need of understanding risks, which has been realised, internationally, down the years.

In 1987, "The General Assembly recognise(d) the importance of reducing the impact of natural disasters for all people, and in particular for developing countries; It decides to designate the 1990s as a decade in which the international community, under the auspices of the United Nations, will pay special attention to fostering international co-operation in the field of natural disaster reduction, …" In 1989, The General Assembly ... "proclaim(ed) the International Decade for Natural Disaster Reduction, beginning on 1 January 1990; decided to designate the second Wednesday of October International Day for Natural Disaster Reduction, to be observed annually during the Decade by the international community; adopts the International Framework of Action for the International Decade for Natural Disaster Reduction;" In 1991, The GA endorse(d) the New York declaration and the recommendations contained in the first annual report of the Scientific and Technical Committee (STC) on the Decade as well as the proposal of the STC to convene in 1994 a world conference of representatives of national committees for the Decade.

Figure 2: Yokohama Strategy and Plan of Action for a Safer World

Yokohama Principles

1. Risk assessment is a required step
2. Disaster prevention and preparedness reduce the need for disaster relief.
3. Disaster prevention and preparedness are integral aspects of development policy and planning
4. Development and strengthening of capacities to prevent, reduce and mitigate disasters is a top priority
5. Early warnings of impending disasters and their effective dissemination
6. Participation at all levels in prevention
7. Vulnerability reduction through proper design and patterns of development
8. Technology and information sharing
9. Environmental protection
10. Each country bears the primary responsibility for protecting its people, infrastructure, and other national assets from the impact of natural disasters

In 2003, The GA decides to convene a World Conference on Disaster Reduction in 2005, to conclude the review of the Yokohama Strategy and its Plan of Action; to identify specific activities aimed at ensuring the implementation of relevant provisions of the Plan of Implementation of the World Summit on sustainable development on vulnerability, risk assessment and disaster management; to share best practices and lessons learned to further disaster reduction within the context of attaining sustainable development and identify gaps and challenges; to increase awareness of the importance of disaster reduction policies; and to increase the reliability and availability of appropriate disaster-related information to the public and disaster management agencies in all regions, as set out in the relevant provisions of the Johannesburg Plan of Implementation; . The ten-year review takes into account several relevant processes, such as the Johannesburg Plan of Implementation of the World Summit on Sustainable Development.

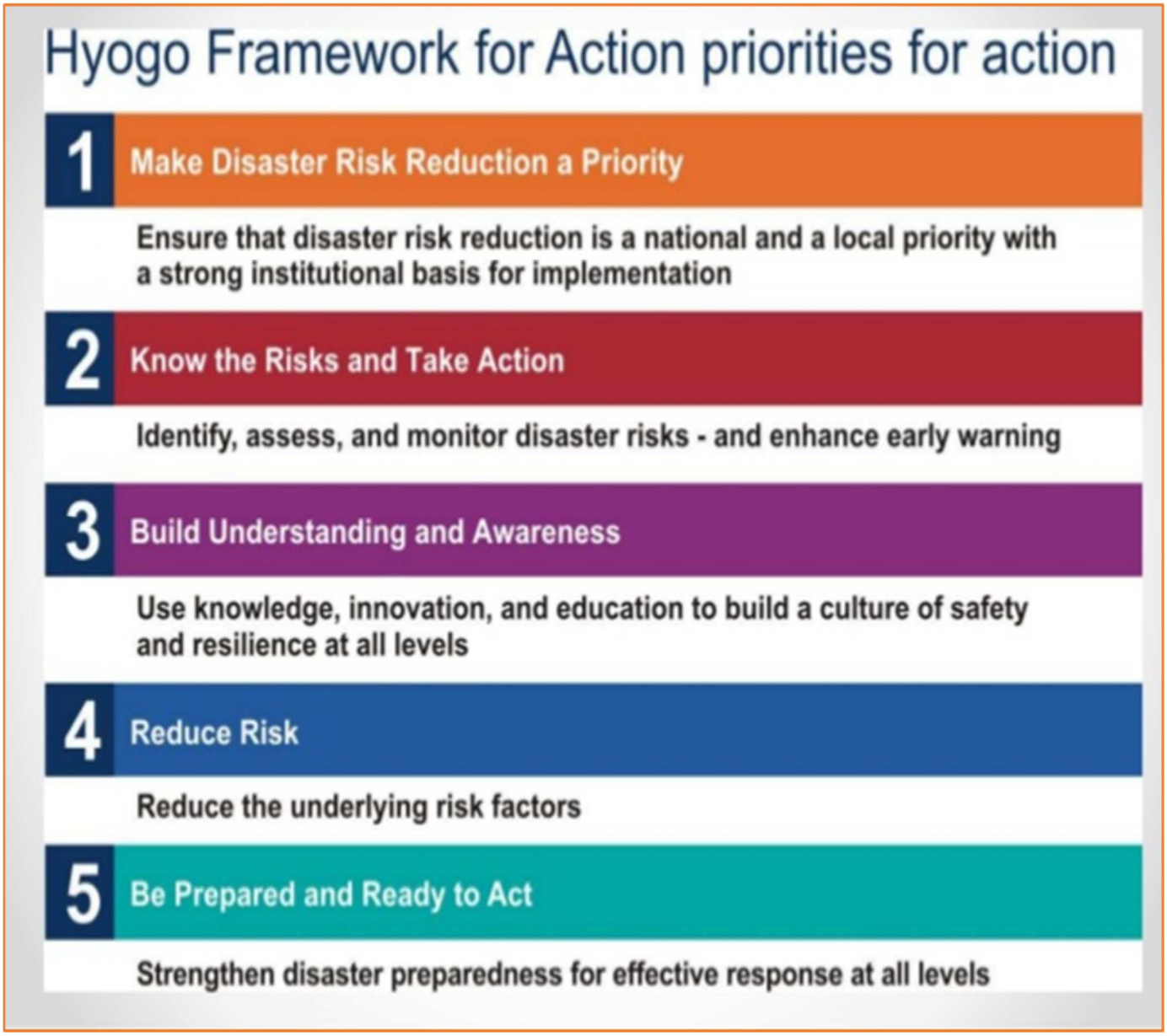

Figure 2: Hyogo Framework for Action

Third World Conference on Disaster Risk Reduction, Sendai, Japan, 2015

The HFA was a 10-year action plan, effective from 2005 to 2015. During this decade, disasters around the world continued to produce human, economic, infrastructure, and ecological losses, especially in the most vulnerable and poorest nations. SFDRR has 7 targets and 4 priorities for action.
Understanding risk; risk governance; investment in risk reduction & building back better.

The Sendai Framework is the successor instrument to the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters.

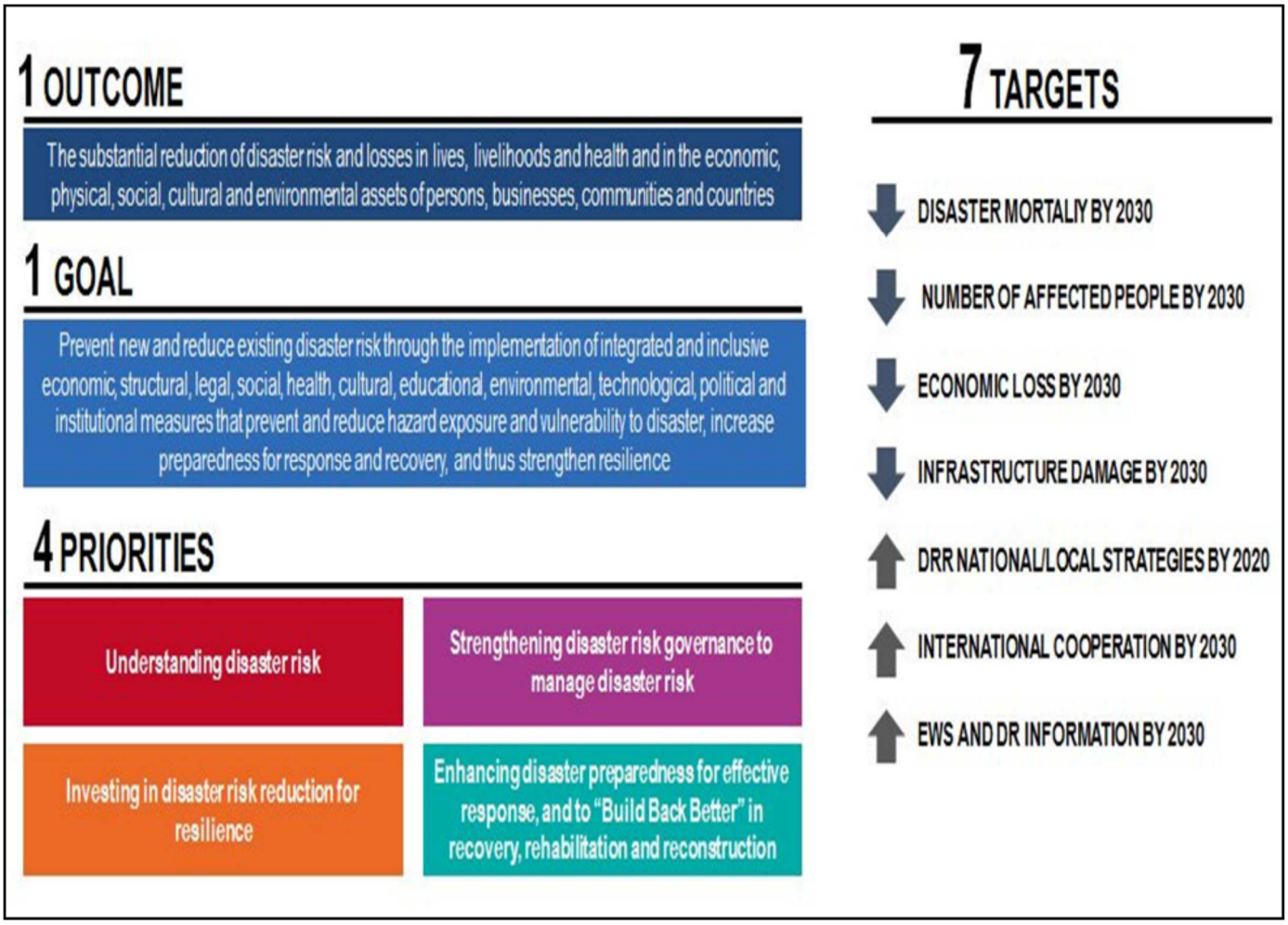

Figure 3: Sendai Framework for Disaster Risk Reduction (SFDRR)

As per the SFDRR, the trainer must emphasise upon two critical elements:

1. Understanding disaster risk takes precedence over every other activity. The objective is no more managing disasters, but reducing disaster risks and managing disaster risks; efforts should be oriented in a direction such that disaster risks, owing to hazards, do not escalate into disasters.
2. The responsibility of disaster risk reduction is upon all of the society and since most of the Indian society is the youth, young professionals or, largely the society banks upon the youth and young professionals, the responsibility and duty of disaster risk reduction is majorly on the youth.

Having said that, the trainer must then move on to explain the disaster management cycle, in light of disaster risks and not disasters itself.

Phase I: Prevention and mitigation

If it is known that a system (community, area, village etc.) is prone to or likely to be affected by a hazard or if it is established that there exists a risk, the first and the foremost logical thing to do would be to prevent the hazard, if possible, or to mitigate the likely effects and impacts of the hazard. This is what constitutes the first phase. Risks of hazards like earthquake cannot be prevented but they can be mitigated by ensuring physical (structural and non-structural), social and institutional vulnerabilities are addressed and the system is endowed with adequate capacity to deal with the risk.

Fire risks can generally be prevented by taking care of points of failures (vulnerabilities); for example, in an organisation with a risk of fire hazard, fire alarms are to be installed, fire extinguishers are to be placed at regular intervals, staffs are to be trained on how to use extinguishers and what to do in case the alarm rings etc. If a fire occurs, due to any random reason, even with such steps of prevention, the magnitude of loss will be reduced many folds. Thus, the idea here is to ensure prevention or mitigation of the impact of loss in any terms.

The trainer can then go about giving examples of what steps are generally taken in this phase. Care is to be taken that such examples are primarily from Gujarat so that the participants can easily relate to. Examples can be cited of the Heat-wave Action Plan prepared by the Ahmedabad Municipal Corporation every year. The National Cyclone Risk Mitigation Project can also be explained by the trainer in this regard. In fact, the prevention and mitigation part of all the state and national level plans can serve as a good resource material for this phase as well this entire section.

Phase II: Preparedness

Once all steps have been taken to prevent or mitigate the impact of losses, the second phase is all about readiness; to put it in terms of management and administration, this phase is about the preparedness of the system such that its leanness and agility is not compromised during the event.

The trainer can then go about giving examples of what steps are generally taken in this phase. Care is to be taken that such examples are primarily from Gujarat so that the participants can easily relate to. For example, the Gujarat School Safety Week Initiative is one of the most well known exercises carried out in this regard. Preparation of school disaster management plans, carrying out mock-drills based on that etc. are various steps that are taken to prepare the school community to respond to any unforeseen event. Similarly, training programs that are conducted by state and national institutes to build the capacity of different stakeholders is a crucial aspect of preparedness.

The trainer can use this opportunity to emphasise the role of Gujarat Institute of Disaster Management in preparedness through capacity development initiatives.

Phase III: Response

After the first two phases, it is expected that the community or the system (speaking, generally), is ready to respond to any event. Off course, no one can predict the exact unfolding of events but then the first two phases of the cycle is all about preparing the system to respond to an event with the capacity to adjust to anything that exceeds the preparation.

Everything that the system has been trained for is put to use in this phase and the failure to do so will actually make the effort put in the previous phases futile.

The trainer can give examples of prepared responses and un-prepared responses as seen in Gujarat over the years. For example, the response in the 2001 earthquake can be compared to the response of any subsequent quakes or any other extreme event for that matter. Response to floods as seen in Sabarkantha can also be exemplified here. The preemptive response in case of cyclone Vayu should be discussed. The trainer must also emphasise on the fact that this phase constitutes of three prime activities; search, rescue and relief. Even these sub-phases are intuitive in their discourse; one must search for a victim and then rescue him and finally, transfer him to a safe haven / shelter / relief camp, where he will be treated.

Phase IV: Recovery

After the immediate response to the event, what primarily becomes the objective of all and every operation is to reinstate normalcy. To put it in terms of management and administration again, the aim is to ensure business process continuity; the business here may refer to the day-to-day working of a community (district / state) and even the day-to-day life of an individual or a family. The core idea is however not just reinstating normalcy; it is more than that; the idea is to build back from the ruins to a system which would have the capacity to deal in a better way.

Examples can be cited from the recovery projects undertaken after the Bhuj Earthquake of 2001.

Build Back Better

The trainer must lay emphasis on the fact that restoring normalcy, i.e., recovery is not the end. In fact, it is just the beginning of a new cycle. In the recovery phase, it is essential to find out the causalities of the disaster, the points of failure or simply put, the vulnerabilities and ensure that while recovering or 'building back', efforts are put to 'build back better'. The basis of this lies in the fact that if normalcy is restored or the system is recovered to the state it was before the disaster hit, the vulnerabilities will also be a part of it and that may result in similar consequences.

Just to close the session on a lighter note, the trainer may probe the participants on sharing their thoughts on how do they think they will be able to contribute in disaster risk reduction and not merely in managing disasters?

Objectives of the lesson

- The primary objectives of this lesson would be to:
- Explain the importance of understanding disaster risks.
- Explain the evolution of disaster management into disaster risk management
- Introduction to Yokohama strategies, Hyogo Framework for Action and SFDRR
- Explain the disaster management cycle in light of SFDRR, stressing on the element of risk.

Duration

45 minutes

Methodology

Discussion would be the primary mode of delivery except those parts where the participants are required to be informed about new concepts like the equation of risk, the international frameworks etc.

Training aids

Power-point presentation, flip-charts, A4s, markers, pens etc.

Resource Material

Yokohama Strategy, Hyogo Framework for Action, Sendai Frame work for Disaster Risk Reduction, Documents on School Safety Program, Heat Wave Action Plans etc.

Additional Information

The trainer may enlighten the participants about the 2019 Global Platform on Disaster Risk Reduction, where the youth shared their key strategies with the Special Representative of the UN Secretary-General for Disaster Risk Reduction on how to implement the Sendai Framework together. Their ideas build on their experiences, and the priorities defined at the UN World Conference on DRR in 2015. The youth asked to:

1. Include children and youth as equal and diverse stakeholders in local, national and international policy and planning processes through legally-mandated and well-resourced spaces, including in intergovernmental proceedings;
2. Invest in building and strengthening the capacities of children and youth on DRR so they can become peer educators for disaster risk and climate change awareness and education, and influence friends and families to reduce disasters risks at home and in school. Recognize their role and contributions to substantive thematic issues beyond factors specific to their demographic;
3. Establish a mechanism to allocate more resources to child- and youth-led DRR projects. This includes providing children and youth with dedicated avenues and capacities to contribute to the national strategy design and review process set forth in the Sendai Framework;
4. Provide age-appropriate data and tools for children and youth to monitor and provide feedback on DRR activities;
5. . Understand child and youth diversity by disaggregating DRR data according to age, gender and level of vulnerability to properly address diverse and unique needs; and
6. 6. Recognise expertise across various thematic areas, such as the leading role young scientists can play in research on DRR.

Understanding the coherence amongst international agendas and frameworks through the lens of a youth

The Sendai Framework, Paris Agreement and 2030 Agenda on Sustainable Development all share a similar intent: reduce vulnerability; enhance resilience.33 This includes targets and actions to:

1. Eradicate poverty and economic loss from disasters.
2. Reduce the loss of lives from hazardous events.
3. Strengthen resilience in key sectors from education to infrastructure.
4. Increase risk-informed adaptation and resilience planning.
5. Ensure support to those living in the most vulnerable and marginalised situations.
6. Leave no one behind.

Unit 1 Lesson 3: Understanding Disaster Risks

Flow of the session

Note for the trainer

In this world of rapid growth & development, the focus should be more on understanding disaster risks and trying to reduce them and ensuring that in the process of development no new risks are created.

As exemplified and touched upon in the previous session, this session would delve deeper into the concept of disaster risks.

Identifying, assessing and understanding disaster risk is critical to reducing it. And in addition to that, communicating the risk in an easy perceptible manner is equally important. Thus, assessment of risk should be inclusive and participatory in nature and if not that, at least the communication of risk should be as vernacular as possible.

Risk has been calculated in many different ways. However, the trainer must not indulge in the higher forms of calculation since this entire module is about introducing the participants to the basics of risk reduction & management.

The trainer may take this opportunity to quiz the participants on what is disaster risk reduction and disaster risk management?

The final notion to be put across is the fact that disaster risk management circumscribes the disaster risk reduction of 'acceptable' risks and management of 'residual' risks, in a way.

To start with, risk is to be illustrated as the combination of hazard and vulnerability only, i.e., the first formula.

Disaster Risk ∝ (Hazard) X (Vulnerability)

Disaster Risk ∝ (Hazard) X (Vulnerability) X (Exposure)

Disaster Risk ∝ ((Hazard) X (Vulnerability) X (Exposure)) / (Coping Capacity)

The first equation talks only about the 'impact' of a hazard based on the probability of occurrence and the degree to which the hazard can cause damage.

The second equation helps in assigning an unit to disaster risk; if 'this' be the probability of occurrence and 'this' be the degree of damage it can cause and 'that' be the amount of assets costing 'this much', then the product of all these would give an idea of what damage and loss would be incurred by the hazard.

The trainer must explain to the participants that this approach is to be used when risk is not to be assigned any unit, i.e., risk is not be expressed in terms of money or lives lost. This expression is just about understanding risk and prioritizing risks.

In this case, hazard can take a value from 5 to 1 depending on the probability (likelihood) of occurrence or frequency of occurrence. 5 is to be assigned to hazards which occur very frequently and 1 to hazards which are very rare. On the other hand, vulnerability would be the intensity of damage that particular hazard can cause with 5 being the highest and 1 being the lowest. Thus, for a hazard which is very frequent in occurrence and has the potential to cause a huge damage the risk would be 25 and the minimum value risk can have in this sort of an interpretation is 1. If three categories are defined from 25 to 15, 15 to 5 and then 5 to 1, these categories can be said to be severe, moderate and mild risks. The trainer must re-iterate that this categorisations are not strict and it is just the perception of the individual or the group doing this for their building, community etc. This particular categorisation has been done keeping Gujarat in mind; an earthquake of a very high magnitude is a rare occurrence, i.e., the hazard would be rated as 1 or 2, but the damage it can cause would be a havoc and has to be rated as 5. Thus, the risk in that case amounts to either 5 or 10 and falls in the category of mild risk.

The idea behind this is that this exercise needs to be done for every hazard the system is prone to. Once the risk for that particular hazard is computed, steps need to be taken to minimise the value over a period of time, i.e., steps have to be taken so that the vulnerability goes down from say, 5, to say, 2. If that is not the case, then the level of preparedness is not at all adequate and appropriate. Once the risk has been evaluated and categorised, it can be easily communicated to all other people in form of lucid representations like red for severe risk, orange for moderate risk and yellow for mild risk.

Another way of interpreting risk would be to incorporate the idea of perception of risk.

Disaster Risk = (Hazard) X ((Vulnerability)^(Perception))

In this case, risk would be hazard multiplied by vulnerability which is raised to the power of perception. Perception may take values from 3 to 1, where, 3 represents perception of higher damage and 1 represents perception of lower or no damage. Similarly, categorisations can be done taking the minimum and maximum value of risks into account. Case in point would be an earthquake of very high magnitude; in this case the hazard would be 1 or 2, vulnerability would be 5 and perception of damage would be high, i.e., 3. So, the risk in this case amounts to 250 or 125 depending upon the hazard rating. And, contrary to this will be tremors which have frequent occurrences, so 5 in hazard, vulnerability can also be rated as 5 but the perception of damage would be low as people are more used to it. Thus, the risk would be around 25. *This turns out to be more accurate representation of risk as scientifically speaking, an earthquake with regular recurrence will not have the potential to wreak much havoc and interestingly, people would have a better preparedness to deal with such shocks. Japan would be a very fine example in this case.*

The trainer can then subtly touch upon the point that if risk is to expressed in terms of monetary value,

then probability of occurrence, i.e., hazard, needs to be evaluated along with exposure. However, the process involves higher forms of calculation and need not be discussed in the basic level.

Disaster Risk = (Hazard) X (Vulnerability) X (Exposure)

Exposure in this case would be exposure of lives and infrastructure to the hazard under consideration. Let's say that the chances of a building being hit by an earthquake of intensity IX is 40% and if it is hit, there would be around 80% damage (Damage grades according to building types depending on the intensity of the earthquake has already been worked out by the National Institute of Disaster Management, India(RCC / Masonry)). The overall asset value of the building can be summed up to say 400,000 INR. Therefore, the disaster risk can be communicated in the following way (0.4 X 0.8 X 400000);

"If an earthquake of intensity IX hits our building, we can expect a minimum loss of 1,28,000 INR."

This is a simple enough message to put in perspective the grave consequences of an earthquake. Such calculations can be done for other hazards too. For example, the chances of having a Malaria or Dengue prone environment, post the annual monsoon, is 90% and every year almost 80% of the children get affected by such a disease, post monsoon. On an average, the cost of treatment is around 5,000 INR and the loss of education or other such activities goes beyond the scope of valuation. Therefore, the risk of post-monsoon disease is 3,600 INR per household having a child. Now, once this information is made lucidly available, people would prefer to invest 1000 INR in prevention, mitigation and preparedness activities rather than spend 3,600 INR and suffer for more than a month.

Once again, the trainer must convey to the participants that this is a very crude way of assessing, expressing and prioritizing risks. At higher levels, specialized scientific and statistical tools are used to compute risk, but the fundamental idea remains the same.

The trainer may also introduce the concept of coping capacity as a denominator, if time permits, but a simple exercise can easily be conducted.

The trainer should start the exercise by grouping the participants into hazards, if that has not yet been done. In context of Gujarat, groups can be made depending on the areas they come from; for example, people coming from districts prone to earthquake can be made to sit together while people coming from areas frequented by floods can be grouped together. Each group will then be asked to do the following.

1. Depending upon its return period, grade the hazard assigned to it from 1 to 5, 5 being very frequent to 1 being rare occurrences.
2. The participants will then be asked to list out all the issues which led to losses due that particular hazard in previous years. The reasons can be as minute as not knowing what to do when the hazard strikes.

3. Once such a list has been prepared, every member would be required to rate a particular issue in terms of how much damage it can cause. For example, in an earthquake prone area, ill construction might be an issue that has been identified. Similarly, many other issues would also have been identified. The issue of ill construction would be rated by the group members in terms of how much vulnerability it contributes. some will answer 5 and some 4. After everyone has rated, an average for this issue is to be calculated.
4. After an average for every issue is calculated, the average rating of all the issues needs to be summed and then averaged. This final averaged value is the vulnerability to be used in the risk equation.
5. The last step would be putting the values and calculating risk. Higher the value, more risk the community is in.

If such an exercise is repeated at the community level, the list of vulnerabilities (issues) produced by the community will then become a guiding document; issues which have higher rating needs to be taken care of either by the community by themselves or by approaching the government. And, on recurrence of this exercise the sum total vulnerability must go down or at least attempts should be made to decrease the vulnerabilities.

This exercise itself would give them a very realistic idea of risk assessment.

Objectives of the lesson

The primary objectives of this lesson would be to:

Understand what disaster risk is and its components are.

Understand the basic fundamentals behind risk calculation and expression.

Explain how the calculated risk can be communicated in a lucid manner through colours or even represented in monetary terms..

Duration

45 minutes.

Methodology

This session is an informative session and should be followed by a simple example.

Training aids

Power-point presentation.

Unit 1 Lesson 4: Understanding Disaster Risks in Gujarat

Flow of the session

Note for the trainer

After having understood what disaster risk is, this session would focus on provoking the participants to talk about risks, based on the hazards in Gujarat.

This session is primarily to stimulate the youth, young professionals and volunteers to understand disaster risks and motivate them to come up with ways of risk assessment which is inherently disruptive in nature.

This session should begin with introducing the participants to the different hazard maps of Gujarat found in the hazard, vulnerability risk assessment atlases available at the state and national level. The usage of the maps can also be seen in the state and national level disaster management plans.

Earthquake: As per Indian Seismic Zone Map, Gujarat region lies in three zones- Zone III, IV and V. Kachchh region (about 300km x 300km) lies in zone V where earthquakes of magnitude 8 can be expected. A belt of about 60-70km width around this zone covering areas of North Saurashtra and areas bordering Eastern part of Kachchh lie in zone IV where intensity VIII can be expected mainly due to earthquakes in Kachchh and some local earthquakes along North Kathiawar Fault in Northern Saurashtra. The rest of Gujarat lies in zone III where intensity VII earthquakes can be expected due to moderate local earthquakes or strong Kachchh earthquakes.

Drought: Gujarat is one the chronic drought prone state of India, with an average annual rainfall of about 800 mm with more than half of the Talukas of Gujarat receiving rainfall within the range of 200-400 mm. However, with every passing year and with the profound impact of climate change, the statistics are changing every year. Substantial portions of the State are arid to semiarid. With large parts of North Gujarat and Saurashtra having no source of alternate irrigation, groundwater exploitation is leading increased threats of droughts. Falling water tables have added stress on crops and water supplies.

Cyclone: Gujarat falls in the region of tropical cyclone. With the longest coast line of 1600 km in the country, it is highly vulnerable to cyclone and its associated hazards such as floods, storm surges, etc. Two cyclonic storm seasons are experienced in Gujarat: May to June (advancing southwest monsoon) and September to November (retreating monsoon).

Flood: Majority of the area of Gujarat is flood prone, irrespective of the size of the catchment. The flood risk in Saurashtra is lower than that of the South Gujarat plains. The relatively flat plains in the lower basic areas with hilly catchments in upper parts of South Gujarat accentuate flood risks. Few villages in the North Gujarat are flood prone too.

Tsunami: Gujarat is prone to tsunami risk due to its long coastline and probability of occurrence of near and offshore submarine earthquakes in the Arabian Sea. Makran Subduction Zone (MSZ) -South West of Karachi is an active fault area which may cause a high magnitude earthquake under the sea leading to a tsunami.

Fire, Industrial & Chemical, Accidents, Heatwave, Epidemic, Stampede, etc. are also frequent in Gujarat.

In addition to this, the trainer must also explain the anthropogenic causalities of hazard; that is how anthropogenic activities is accentuating hazards; some of which were not even thought of few decades ago.

The trainer can begin this lesson by explaining the importance of greenhouse gases, specially of carbon dioxide, the absence of which would have resulted in a pretty cold earth, ice age. However, with the increased concentration of carbon dioxide and other green-house gases, the reflected infrared radiations bouncing back from the surface of the earth, are trapped and it gradually leads to an overall warming of the earth. This overall warming causes the polar ice sheets to melt which, in turn, leads to the rise of sea level and becomes a pertinent hazard to island countries like Tuvalu. The abnormal warming up of the sea-surface temperature, especially near the inter-tropical convergence zone, leads to increased frequency of cyclones and why the coast of Gujarat is susceptible to cyclones.

The abnormality in sea temperature affects the cycle of ocean currents and this in turn affects phenomenon like El Nino or La Nina. A little interesting depiction El Nino Southern Oscillation (ENSO) may put across the fact that such phenomenon are utterly catastrophic and it affects not only a single nation or region but vast areas of the world; El Nino is responsible for thunderstorms on the eastern Pacific while it causes drought in the western Pacific regions, even affecting India. The trainer may go on to discuss how these affects the economy of different communities and even nations at large.

"The most prominent droughts in India, six of them, since 1871 have been El Nino triggered droughts, including the recent ones that occurred in 2002 and 2009. Nevertheless, it is important to note that all El Nino years do not lead to drought in India. The year 1997-98 is a stark reminder as it was a strong El Nino year but that did not cause drought in India, in fact, rainfall was in excess. On the other hand, a moderate El Nino in 2002 resulted in one of the worst droughts.

Going by historical data of 135 years from 1880 to 2014, about 90% of all evolving El Nino years have led to below normal rainfall and 65% of evolving El Nino years have brought droughts. From this fact, one thing is clear that El Nino years adversely affect the weather in India in terms of Monsoon rain, with very few exceptions. During an El Nino year, the rainfall is generally below the normal average, which has its negative bearing on crop production."

The trainer should focus on giving the participants a very detailed idea of how global warming is contributing towards exaggeration of hydro-meteorological hazards, primarily their frequency and intensity. It will also make them understand that these hazards are natural phenomenon and very little can be done to contain them and so preparedness, mitigation to some extent and preemptive disaster response, aided by science and technology, is the only way forward.

After having explained the possible hazards, the trainer should probe the participants to explain how they understand risk, when the above mentioned information of hazard is provided to them.

The trainer should steer the discussion along the lines that now when the hazards are known, we must go ahead and figure out the exposure of elements to these hazards. For example, in case of cyclones, what kind of information do we have about the hazard? Do we have the wind speeds at a particular village? If yes, do we have the demographic data of the village? Can the demographic data be disaggregated to women, children, old aged people? Do we have information about the types of houses at that village? After having developed a clear idea of the assets / elements exposed, the trainer should guide the participants to think about the vulnerability of the exposed assets / elements. Are the buildings / houses strong enough to withstand a wind of the said speed? If no, it becomes inherently obvious that the risk of collapsing of such buildings are high, so, there is a need to retrofit the structure, if the probability of occurrence of the cyclone is high! Does the village have a storm shelter? If the probability of occurrence is high but storm shelters are not available and the village has a considerable population of women, children and old aged people, it is again obvious that these lives are at stake.

The trainer may go on to ask the participants to do the same sequence of inquisitions for different hazards, only after they are provided with sufficient information in form of hazard maps.

This session is primarily for the participants to understand risks on their own taking cue from the previous session in terms of hazard, exposure & vulnerability. The trainer should also take this opportunity to explain how different disciplines contribute in understanding disaster risks. For someone with a science background, the trainer should ask the participants on how they can use their background to understand and assess risk? The trainer can definitely talk about different tools like GIS, HEC-RAS, MIKE etc. The trainer can also pitch interesting ideas like using crowd-sourced data and OpenSreetMap to do the same.

For someone with a social sciences background, the trainer should orient the participants about the use of Participatory Rural Appraisal tools.

The trainer may cite example of BIPAD (http://www.bipad.gov.np/); a data visualisation platform created by youth and young professionals with the Government of Nepal. `

Objectives of the lesson

The primary objectives of this lesson would be to:

Stimulate the participants to understand the disaster risks of Gujarat in accordance to the parameters like hazard, exposure and vulnerability

Introduce the different ways risk is understood and communicated in different parts of the world. The example of Nepal is just one and it is upto the trainer to include more such examples.

Orient the participants to understand that understanding risk is not limited to the intelligentsia of the society and it is not limited to any particular discipline.

Duration

45 minutes.

Methodology

This session should be more discussion printed with a few pictures of different hazard maps which are available.

Training aids

Power-point presentation, flip-charts, A4s, markers, pens etc.

Resource Material

Hazard, Vulnerability Maps of Gujarat which is detailed upto the village level or taluka level.

Unit 1 Lesson 5: Context Setting of Engaging Youth and Volunteers

Flow of the session

Note for the trainer

After having elaborate discussion on disaster, disaster risk, evolution to disaster risk management, this session would focus on why youth, young professionals and volunteers are important in disaster risk management and how they can contribute.

The threat of disasters and the impacts of a changing climate is very real to children and youth as they are aware that the consequences will significantly affect the rest of their lives. Seeing and treating them as passive victims or as a homogenous group misses the vast potential of their unique and collective capacities to drive solutions. Around the world—and often alongside supportive adults—girls, boys and non-binary children and youth are already taking actions to reduce disaster risks at school, home and in their communities, some of such examples are quoted below..

They are advocating for sustainable and resilient societies for all, where they are involved in decision-making as active citizens. They are standing up for their fundamental rights for protection, safety, survival, education and participation. Across many countries, millions are increasingly protesting and demanding climate justice from their governments. Standing still is not an option.

- Awareness-raising, behavior change and advocacy initiatives involving and led by youth and volunteers can result in greater outcomes than information-sharing alone, including on household and community risk preparedness, better hygiene practices, alternative livelihood strategies and greener lifestyle choices.
- DRR innovations led by youth & young professionals often prioritise inclusivity with crowd-sourced data gathering in person and online, as well as risk-taking, creative ways to use new technologies and outside-the-box thinking.
- Communication and social media and educational campaigns designed and run by youth and volunteers can mobilise local to global actions in language and processes that engage, inspire and motivate.
- Peer-to-peer support recovery programmes by prepared and trained youth and volunteers are often effective in helping reduce post-traumatic stress disorder, anxiety, depression and alcohol or drug addiction exacerbated by a disaster event.

The trainer should take this opportunity to reiterate the point to the participants, especially those officers who come from youth and volunteer organisations, that **supporting children and youth in actions that**

advance the Sendai Framework for DRR should not be a checkbox activity. Their participation is a valued proposition as it brings real and necessary benefit to DRR and resilience-building policies, programs and strategies. Engaging children and youth also upholds their legal rights as outlined in the Convention on the Rights of the Child, which has been ratified by 196 countries.

The trainer may then go on to cite examples of individualism, volunteerism that glorifies the role of youth and volunteers in different phases of disaster risk management.

Just from the other side of the San Juanico bridge in Leyte (The Philippines), lives a man named Oscar, a local resident of Samar, the first island to be struck by typhoon Haiyan in November 2013. Despite the aftermath conditions and turmoil that surrounded him, Oscar remained optimistic and decided he would find a way to serve his community.

After working with the NGO All Hands Volunteers on several projects, he joined the Streetlight Programme as a carpenter in Hernani, a city on the South-East coast of Samar Island. Launched in partnership with the Norwegian NGO Streetlight, this Disaster Risk Reduction Programme assisted vulnerable people in relocating to safer areas. As a carpenter, Oscar assisted in the construction of a local clinic, dormitory, office and study center.

Oscar's son, Gerald, also decided to follow in his father's footsteps. After graduating from a culinary school, he joined All Hands Volunteers, but this time, in Nepal, where much help is still needed.

Oscar says, "This is the life I have always dreamed of for my son." (Source: UNV)

Volunteerism is a fundamental source of community strength and resilience that exists in all societies throughout the world. The role of volunteerism, in general, and mobilizing and managing volunteers, in particular, are important components of any disaster risk management strategy that aims at fostering community recovery, strength and resilience in vulnerable areas. In the last decade, almost one million people have been killed by disasters, many of them volunteers who were at the forefront of responding to emergencies, and more than one trillion dollars have been lost. Even though every dollar invested in disaster preparedness saves seven dollars in disaster aftermath, and thousands of lives, only 1% of international aid is spent on minimizing the impact of disasters.

"My name is Francesca Pinna, I am a United Nations Volunteer in the United Nations Development Programme (UNDP) Country Office in Haiti. I never thought that I would get engaged in the field of Disaster Risk Reduction (DRR). It happened by chance after the earthquake that hit the Italian city of Aquila in 2009. I understood what an unexpected natural disaster could really provoke and how much destruction could have been avoided through an adequate knowledge of disaster risks and appropriate preparedness. **That occasion was also the first time that I saw the importance and the power of volunteers. People came to help the people that had been affected by the earthquake. The volunteers were the biggest machine that acted immediately and that cared for the neediest.** I loved the energy and wanted to be a part of it.

I actively participated in the organization of several events, in particular the activities of **"observation urbaine" - in which children are accompanied by volunteers to identify disaster risks in their cities and suggest solutions - and the "vendredis de la protection civile" – through which volunteers go to selected schools and teach the best practices to put in place before, during and after a disaster.** (Source: UNV)

450 DRR Youth Volunteers in Myanmar, trained by UNDP & UNICEF, engaged with community members, to assess disaster risks, and identified fire, flood and cyclone as the main hazards to which their communities are vulnerable. They have become agents of change in their own families and communities. They apply and share their Disaster Risk Reduction knowledge to help everyone but especially those who need it the most – women, children, the elderly, people with disabilities and people living with illness. (Source: UNV)

"I have some good news and some bad news regarding the climate emergency. I will start with the good news. The world, as a small number of people have been saying lately, will not end in 11 years. The bad news however is that around the year 2030, if we continue with business as usual, we will likely be in a position where we may pass a number of tipping points. And then we might no longer be able to undo the irreversible climate breakdown.

A lot of people, a lot of politicians, business leaders, journalists say they don't agree with what we are saying. They say we children are exaggerating, that we are alarmists. And not once, not one single time have I heard any politician, journalists or business leader even mention these numbers. It is almost like you don't even know they exist, as if you haven't even read the latest IPCC reports on which the future of our civilization is depending.

Or maybe you are simply not mature enough to tell it like it is. Because even that burden you leave to us children. We become the bad guys who have to tell people these uncomfortable things, because no one else wants to or dares to. And just for quoting and acting on these numbers, these scientific facts, we receive unimaginable amounts of hate and threats. We are being mocked and lied about by elected officials, members of Parliament's, business leaders, journalists. What I really would like to ask all of those who question our so-called "opinions" or think that we are extreme: - Do you have a different budget for at least a reasonable chance of staying below the 1.5 degrees of warming limit? Is there another intergovernmental panel on climate change? Is there a secret Paris agreement that we don't know about? One that not declude the aspect of equity? Because these are the numbers that counts, this is the current best available science. You can't simply make up your own facts just because you don't like what you hear. And because you have ignored these facts, because you and pretty much all of the media to this very minute, keep ignoring them, people do not know what is going on. This is what it's all about, this is all that we are saying. But I will also tell you this: -You cannot solve the crisis without treating it as a crisis, without seeing the full picture. You cannot leave the responsibility to individuals, politicians, the market or other parts of the world to take. **This has to include everything and everyone." – Greta Thunberg**

The motto of this session is to orient the participants of the virtue of volunteerism and even individualism. The participation of youth goes much more beyond the comprehended dimensions of relief, rescue, recovery and rehabilitation. It is also about opening a dialogue of activism; a dialogue to inspire and motivate the masses to act upon things which are probably small, but would have tremendous consequences in the long run.

Historically, in the context of disasters, young people (children and youth) have more often been framed one-dimensionally as a population at high risk of experiencing negative impacts during disasters, and, therefore, a population in need of protection. However, youth have more recently been recognized as having potential as change agents in their communities and stakeholders in the development and implementation of DRR policies and practices. As the first digitally native generation, youth today are equipped with unprecedented technological savvy, an entrepreneurial orientation, and confidence in their ability to change the world.

In this era of individual development, youth are often found in school, colleges and work places, when an extreme event takes place, but it is interesting to note that, in disaster planning, there is often an assumption that someone will protect them, be it their parents or some government organisation or agency. Case in point is the Surat fire incident of 2019. The tragedy claimed a lot of lives and perhaps this could all have been averted, had the victims, mostly young people, had known the basic skills required to survive through a smoke, or in fact, raised their voices way before, had anyone of them noticed that certain fire compliances are not in place in the building, and, knowing this would have required an inherent culture of resilience, which is exactly what the trainer should be doing in this session.

The trainer should take this opportunity to discuss the institutional setup for youth and volunteers in India.

Ministry of Youth Affairs and Sports is the nodal agency for implementation of National Youth Policy and promoting volunteerism. The National Youth Policy formulated in 2014 identifies 11 priority areas for youth development in India. **The Policy addresses that youth engagement in disaster response should be institutionalized by taking account of their enthusiasm and proximity with first responders, as part of future imperatives in promoting and leveraging existing community development organizations.** The trainer should doubly emphasise that post-SFDRR, the responsibility of disaster risk reduction rests on all of the society and hence, the youth, volunteers and young professionals should not limit themselves to mere disaster response. The capacity, potential and skills of this particular section forms the demographic dividend that demands to be leveraged for a disaster resilient, sustainable development.

Just to give a brief idea to the participants, the trainer may go on to introduce the various organisations mandated for the involvement of youth and promoting volunteerism in social welfare.

National Cadet Corps (NCC) is the Indian military cadet corps with its Headquarters at New Delhi. It is open to school and college students on voluntary basis. The cadets serve in air, naval and army wings

around the country managed by 633 district offices that are monitored and supported by 17 state directorates with headquarters in Delhi.

National Service Scheme (NSS), under the Ministry of Youth Affairs and Sports (MoYaS), Govt. of India, has more than 3.2 million student volunteers on its roll. The thrust areas in which NSS volunteers are engaged are health, literacy, HIV-AIDS, environment, disaster management etc.

Nehru Yuva Kendra Sangathan (NYKS), established in the year 1972, has an objective of providing rural youth avenues to take part in the process of nation building as well providing opportunities for the development of their personality and skills. In the year 1987-88, NYKS was set up as an autonomous organization under the Government of India, MoYAS, to oversee working of these Kendras. The basic objective for creation of such youth clubs is to provide community support through developmental initiatives involving activities with particular focus on youth empowerment.

Civil Defense comprises of community volunteers except for small number of government officers. To be qualified as a Civil Defense member, one has to be at least 18 years old. As per 2013 data there are 425,000 Civil Defense volunteers in the nation. The trainer may also elaborate on the Gram Rakshak Dal and Sagar Rakshak Dal , which consists of more than 40,000 youth in both the forces.

The role of **Home Guards** is to serve as an auxiliary to the police in maintenance of internal security, help the community in any kind of emergency such as an air-raid, fire, cyclone, earthquake, epidemic etc., help in maintenance of essential services, promote communal harmony and assist the administration in protecting weaker sections, participate in socioeconomic and welfare activities and perform Civil Defense duties.

The trainer may also elaborate upon **UNV** and encourage youth to be a part of such volunteer based organisations, if they are already not a member.

The trainer should close the session with an open question, “How many times would we require to suffer and burn, before we learn that prevention is better than cure, that is efforts in prevention, mitigation and preparedness, is way better than response?”

Duration

45 minutes.

Methodology

This session should be more of an inspirational talk to motivate and emphasise upon the participants that youth, young professionals and volunteers, indeed, have a huge role to play in disaster risk management. The concluding part may be a little informative, just to make sure that the fire that have been built up within the participants do not die off.

Training aids

Power-point presentation, audio-visual clips.

Resource Material

This is a very dynamic section which would require the trainer to present latest stories and developments of the role of youth, young professionals and volunteers in disaster risk management, from around the world.

Unit 2: Involvement of Youth and Volunteers in DRM

Need of the session

Youth are unmatched by any other demographic group in their ability to usher in meaningful change in society if empowered young people can become independent and responsible citizens, take up leadership roles and contribute significantly in bringing positive societal changes. "In many corners of the world both developed and developing, young people are a force for change, asserting themselves as agents with powerful voice on public scene" (UNDP Youth Strategy, 2014–17). At present, in India, youth (in the age group of 15–29 years) comprise 27.5% of the population and contribute 34% of India's Gross National Income. Local youth have often been found responding to disasters by rescuing people and distributing relief. **But the role of youth, young professionals and volunteers is not limited to disaster response; it goes above and beyond the phase of response.**

Aapda Mitra

The National Disaster Management Authority of India (NDMA), started a scheme to train community volunteers in disaster response in selected flood prone districts of India.

When a disaster happens, volunteers from the affected community are normally the first to act. The impact of volunteers in disaster response can be tremendous, as the extent of damage – in terms of economic and human loss – is greatly influenced by the initial response to a disaster. Therefore, there lies a critical need to train these volunteers in certain basic skills in disaster management so that they are able to respond in an informed and prompt manner as well as assist the concerned agencies in rescue and relief operations. The scheme envisioned 200 trained community volunteers in each of the selected most vulnerable flood prone districts in the then 25 States of India, i.e., a total of 6000 trained volunteers in 30 most vulnerable flood prone districts of India.

The state of Gujarat has done exceptionally well in creating a strong network of Aapda Mitra (friend in time of a disaster) throughout the state.

There are innumerable such examples available from across the world which demonstrate how actively youth can participate in various disaster management activities (preparedness, response, mitigation and recovery) and help communities to become more resilient.

Today's youth also has a unique stake in mitigating the impact of climate change. To take up this monumental challenge the creative enthusiasm of young minds needs to be channelised into concrete actions. Young people have important environmental concerns and responsibilities too. They are already exposed to a number of environmental hazards like poor water and air quality, high level of atmospheric pollution, noise pollution, increasing heat and cold waves, poor soil quality, deforestation, etc. Hence, they are already accountable to take actions to protect themselves and their surroundings from negative environmental impacts. The participation of youth in overall disaster resilient sustainable development can be sought at different levels ranging from grassroots activism, community conservation projects, and climate change adaptation projects to influence policy decisions and establish environment networks.

This unit would address the above mentioned dimensions; the aspect of involving youth, young professionals and volunteers in various aspects of disaster risk management, risk reduction, climate change adaptation / mitigation would be thoroughly discussed. Since the involvement of youth, young professionals and volunteers is a dynamic topic, the trainer must keep in mind to include instances of inspiration and motivation from around the world as well from the state

Overall, the unit has been modelled into the following sessions, keeping in line with the role of youth and volunteers in the different priorities of the SFDRR.

Priority 1	Priority 2	Priority 3	Priority 4
Understand disaster risk	*Strengthen disaster risk governance to manage disaster risk*	*Invest in DRR for resilience*	*Enhance disaster preparedness for effective response and build back better*
With knowledge and support, youth and volunteers are active participants in assessing disaster risk in creative and collaborative ways. They are also involved in data collection and analysis focusing on their demographics	Through empowering programmes that strengthen voice and agency, youth at different ages are informing strategies through children's parliaments, advisory groups, student councils and youth-led networks	With knowledge and age-appropriate resources, youth are participating in DRR at schools, home, at work and in their communities in ways that build their resilience	With capacity-building and understanding safe practice as determined by their age and ability, youth are actively preparing to safely respond to and recover from a hazardous event

Units of the session

Unit 2 Lesson 1: Role of Youth and Volunteers in Understanding Disaster Risk

Unit 2 Lesson 2: Youth, Young Professionals and Volunteers in Disaster Risk Governance

Unit 2 Lesson 3: Exploring the Role of Youth and Volunteers in Investment for Resilience

Unit 2 Lesson 4: Youth and Volunteers for Effective Response and Build Back Better

Objectives of the session

The primary objectives of this unit would be to:

Explain the participants their role in each of the priorities of SFDRR

Empower them to manage disaster risks at individual as well as higher levels

Motivate and inspire the participants to think of their roles beyond the perceived boundaries of disaster response

Duration

270 minutes. (45 + 45 + 45 + 3*45) minutes for the sessions and 15 minutes spillover time from each session.

Methodology

This unit would primarily be informative, but should be dove tailed with equal amounts of examples and case-studies from around the world. A small exercise can also be undertaken in the very first lesson of the unit. However, it is upon the trainer to decide how he / she intends to conduct the sessions.

Training aids

Power-point presentation, chart papers etc.

Unit 2 Lesson 1: Role of Youth and Volunteers in Understanding Disaster Risk

Flow of the session

Note for the trainer

This session is supposed to train the participants about understanding disaster risk in details. The idea behind this session is to exemplify that understanding and assessment of risk requires trans-disciplinary approaches.

The trainer should bear in mind that this session would be dealing with understanding of disaster risks and by the end of this session the participants should be empowered enough to do, at least in a very crude form, risk assessments. In addition to this, since the participants may come from different backgrounds, the trainer must enable all participants to conduct assessments in ways they understand and are capable of. Moreover, it would not only be the youth and volunteers attending the training, there may be supervising and coordinating officials from different organisations too, thus, the trainer must be able to cater to the inquisitions of such participants too.

Disaster risk management needs to be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment

Youth and local volunteers have a heightened sense of their environments through a strong attachment to place. This allows them to provide detailed information about the hazards within different contexts, as well as offer ideas for lowering the risk to potential disasters. For instance, adolescent girls can offer insight and ideas on specific risks to their safety during and after hazardous events and their unique needs, thus, during devising strategies or planning phase, it is essential that their opinions be taken into consideration.

To achieve Priority 1, authorities, practitioners and youth actors can ensure children and youth of all ages, genders, abilities and cultures:

1. Gain knowledge about localised natural and human-made hazards through knowledge and curricula that is sensitive to age, gender, culture and disability.
2. Can join or lead localised, inclusive and age-appropriate mapping exercises that prioritise and act on child and youth views for risk-informed programming.
3. Are supported for their innovations in understanding disaster risk in their community and nationally through opportunities, mentoring, partnerships and investment (i.e., online crowdsourced mapping, youth-led social media campaigns, educational comics, etc.), with specific attention paid to ensuring the equitable participation of girls.

4. Have the capacities and resources to share and train others at school, home and in their communities in understanding disaster risk.

The trainer should then probe the participants; how, using the formula or without using it, they can understand their risks? The trainer should briefly exemplify that understanding and assessing risk are completely different things; understanding requires the use of basic knowledge, some local information and maybe a bit of science, but assessing would require a little more than that. Thus, the first step towards any of this would be to understand the disaster risks. Assessment enables quantification and prioritisation of risk. This means that after doing an assessment you get to know which hazards pose more risk and requires immediate attention and which hazards can be dealt with later. Over the years, the reiteration of the process should lead to lower values of risk signifying that the vulnerabilities are going down and this is assuming that exposure to hazards would probably not decrease owing to the tremendous want to development.

The trainer should divide the participants into two groups; one having participants with science background (Group A) and the other having participants with social science background or primarily having a non-science background (Group B). The idea behind this is to establish the fact that disaster risk reduction is essentially a cross-disciplinary subject.

For group A, the trainer should start by letting the participants identify the probable hazards of the area they think they want to work on. It is to be noted that the concept of macro-scale risk assessment should not be promoted, i.e., the participants should be asked to select an area which maybe their community or village or town or district. Once that has been done, the participants should be asked to understand the science behind the hazards they think that might affect them. For example, if it is earthquake, they think, then why is it so? Did the area experience past earthquakes? Is it on a fault line? Is it near plate boundaries? This will require the participants to look for physical maps depicting such features. Eventually, the trainer must direct them towards using hazard maps like earthquake hazard maps or seismic zonation maps, cyclone hazard maps etc. From these maps, the participants would be able to understand what kind of wind speed they can expect and what kind of intensity of a quake they can expect? These maps are generally associated with a return period also, i.e., an earthquake with a return period of say 100 years will have more intensity than a quake with 50 years return period. The same goes for other hazards too.

After having done this, the participants will have a very clear understanding of the hazards and the intensity of it too. The next step would be to understand how much of an area will the hazard affect. If we consider the barren lands of Kutch, nothing is exposed, thus, there is no issues of life loss or property loss / damage in that case. But in case of a town, there are good chances that losses will take place. The next step is to understand whether the assets which are exposed in this area are strong enough to deal with the hazards. This would require a little bit of scientific intervention. To understand risks of an earthquake,

buildings can be classified into different groups according to their construction type and every construction type has a probable grade of damage due to a particular intensity of an earthquake. The trainer should ask the participants if they can find such a document which helps them to do so. (Hint: National Institute of Disaster Management of India has such a published document). Theoretically, the participants now have an understanding of the hazard, the exposure to the hazard and the vulnerabilities of the exposed asset to the hazard. The trainer should urge the participants to interpret all these information. The best way to do so would be a map; such a map would depict that if an earthquake of a particular intensity hits the area that they have selected then particular percentage of houses, depending on their type of construction, would suffer a particular grade of damage. If the population demographics is available, then the result would be more meticulous. Buildings with the highest grade of damage would also have life losses. Children, old aged people residing in, say, the top three grades of damage would suffer life loss and injury. Thus, in a way, the trainer should emphasise on the fact that basic information combined with disaggregated data of demographics may be useful in risk assessment. The trainer should then steer the discussion on to software like Geographical Information System (ArcGIS, QGIS) saying that these software can be used for the representation and manifestation of the risks due to a particular hazard, expressed in terms of damage, life loss etc.

The trainer must then raise the question to group A that beyond these well-known hazards, there are many problems and issues at the village or town level which is known only to the locals. Moreover, as a consequence of the last exercise, being from science background, people may come up with solutions of mitigation like retrofitting of buildings and many a times, such solutions are expensive and when a scientist goes about suggesting such solutions they are not well accepted. What to do in such a case? There are also examples when the locals have their own way of mitigation strategies which are perhaps not known to the scientists who are making hazard, vulnerability and risk maps in the comfort of his laboratory. What then? A solution to such a problem may be acceptable in some cases but the community in question may have some other issues which requires immediate attention. What then? These questions would lead the trainer to Group B.

The trainer should now apprise both the groups of methodologies of hazard and risk understanding through well-established techniques of Participatory Rural Appraisal (PRA). Techniques like hazard map, dream map etc. brings out the issues of the community or the area in question in a language which the residents understand. They focus on immediate issues which might have been missed by Group A and often times, due to their more immediate concerns, they fail to understand the bigger issues like that of an earthquake because in the last 30-40 years no one has experienced it and probably are under the impression that they won't be affected by an earthquake ever or any time soon, and, thus, there is no point on investing in an earthquake resilient construction. The point that the trainer should try to establish is that even though participants may come from different backgrounds, disaster risk reduction and management is truly a trans-disciplinary issue and requires all hands on deck.

Moving ahead, the trainer should then merge both the groups and conduct a small exercise of PRA, the result of which may be a hazard map imposed on a dream map, to illustrate the fact that disasters may pull down the pace of development and development may also lead to unforeseen disasters.

Figure 4: Application of PRA Tools

Objectives of the lesson

The primary objectives of this lesson would be to:

Empower participants to understand and assess disaster risks.

Enable the participants to understand that disaster risk management is a trans-disciplinary subject

Duration

45 minutes.

Methodology

Power-point presentation for the information to be delivered to the participants and the rest would be an exercise.

Training aids

Power-point presentation, chart papers etc.

Unit 2 Lesson 2: Youth, Young Professionals and Volunteers in Disaster Risk Governance

Flow of the session

Note for the trainer

This session would primarily talk about promoting the involvement of youth, young professionals and volunteers in disaster risk governance through being a part of the greater decision making process, drawing inspiration from cases around the world.

Disaster risk governance at the national, regional and global levels is vital to the management of disaster risk reduction in all sectors and ensuring the coherence of national and local (state) frameworks of laws, regulations and public policies that, by defining roles and responsibilities, guide, encourage and incentivise the public and private sectors to take action and address disaster risk

With knowledge and capacities, children and youth can contribute to disaster risk governance at various levels. This includes contributing to village DRR plans and providing perspectives on how to better and meaningfully engage children and youth in the formal implementation, follow up and review of the Sendai Framework. Involving children early in governance not only teaches them the foundations of civic engagement, but can build the confidence, capacities and critical thinking skills valuable for resilience.

To achieve Priority 2, authorities, practitioners and youth actors can ensure children and youth of all genders, ages, abilities and cultures:

1. Have the knowledge, capacities and support to meaningfully participate in national and local DRR strategy planning as well as implementation, follow up and review.
2. Can join formal and informal local child- and youth-centric governance bodies to gain skills and have influence (i.e., children's parliaments, student councils, child and youth advisories, youth networks, etc.), with specific attention paid to ensuring equitable access to participation and leadership opportunities in these networks for girls and young women.
3. Are supported to research issues of concern to policymakers through qualitative and quantitative approaches, and have their findings valued and used in developing DRR strategies.
4. Can take part in formal and informal processes that hold the governments and non-state actors, including the private sector, to account in implementing the targets and priorities of the Sendai Framework and the Paris Agreement. This includes in monitoring and evaluation activities.

Adolescents advise local government on hazard mitigation and actionable risk solutions in Indonesia

In Kupang, Indonesia, adolescents are taking a changemaker role in local DRR governance by identifying key hazards and risks in their communities and offering solutions. Through discussion, peer interviews and hazard and capacity mapping, an adolescent group determined that the lack of water access in their village, exacerbated by drought-inducing conditions, negatively affected their school attendance. This affected girls the most in the village as they were often tasked with gathering water from long distances from home. As a solution, the adolescents developed prototype ideas for installing drilled wells with a motor pumps, and worked with their parents to advocate for the idea to the village council. This led to five installed wells in the village. It also transformed attitudes about gender roles and adolescent participation. Village leaders saw the value of how engaging adolescents could strengthen their DRR strategies, plans and budgeting and invited them to join village planning and monitoring processes. Additionally, the adolescents involved said they gained confidence through the experience as they felt empowered to raise their voices on the issues affecting their lives.

- Case study: https://unicefindonesia.blogspot.com/2017/06/adolescents-take-action-adults-listen.html
- Video: https://youtu.be/KlqfKEd5-3Y

Consultations with children and youth are valuable for developing local, regional and national DRR strategies—especially for sufficiently understanding and addressing their needs and advancing their rights as active citizens and key stakeholders. When undertaking consultations with youth, it is critical that their concerns will be seriously considered in decision-making; and that the consultative process includes age-appropriate reporting and feedback loops so they know how their views affected change. Consultations can be used to spark peer-to-peer and youth-adult dialogues, create action plans and policies and provide baseline data for monitoring Sendai Framework implementation. They can be a first step action that accompanies and leads to meaningful child and youth engagement in DRR efforts. For inclusive DRR, meaningful engagement is critical to strengthen the agency of youth as they develop so they can make the right, informed and safe decisions for themselves, their community and the wider society. This includes being able to do so while representing a cohort where individuals possess varied personal and decision-making capacities. Children, adolescents and young adults represent a heterogeneous cohort and the ingroup diversity must guide all engagement pathways. Meaningful engagement does not only benefit youth (i.e., youth for youth activities) but considers children, adolescents and young adults as drivers of transformation for the wider community. Such a process can be said to be meaningful only when,

1. Youth themselves identify issues of concern to address.
2. Youth control the process and the outcomes.
3. Adults are supporters when needed, rather than leaders.
4. Peer approaches and accompaniment are key here.

Cultures of Disaster Resilience among Children and Young People (CUIDAR) is a European-wide consortium funded by the European Union Horizon 2020 programme that aims to enhance the resilience of children, young people and urban societies to disasters. Working with children and young people, the project developed a framework for authorities and practitioners to use in ensuring child and youth concerns and ideas are meaningfully heard and incorporated into the emergency planning processes from preparedness to recovery and rebuilding. The steps presented in the framework below are valuable for ensuring inclusive and culturally sensitive strategies are relevant to and for children and youth before, during and after hazardous events. The framework can be directly applied to National DRR Strategy planning as part of the Sendai Framework Priority 2 plan of action.

- Report: www.lancaster.ac.uk/cuidar/wp-content/uploads/2018/05/Report-A-child-centred-disaster-management-framework-for-Europe.pdf
- Film: www.lancaster.ac.uk/cuidar/en/film

Participatory approach promotes safe shelter and settlements awareness (PASSA and PASSA Youth)

When children and youth are meaningfully engaged, DRR activities not only develop a culture of safety but they can build child and youth self-esteem, strengths, resourcefulness, action-planning and responsibility capacities. Facilitated by volunteers, the Participatory Approach for Safe Shelter and Settlements Awareness (PASSA Youth) supports adolescents in identifying hazards, understanding risks, lowering vulnerabilities and addressing safety issues in their neighbourhoods. Through participatory processes, digital technologies and social media, youth and volunteers learn about and engage in actions that increase social inclusion and physically improve housing and community infrastructure.

- PASSA Youth Video: www.youtube.com/watch?v=rUXSu1DKHLs

Young scientists around the world inform, influence and accelerate Sendai Framework implementation

The Young Scientists Platform on DRR was created in 2016 during the UNDRR Science and Technology (S&T) Conference to gather young scientists and supportive organisations around the world. The platform provides a space for young practitioners from different scientific fields (including engineering) and regions to connect with their colleagues, widen their knowledge and share their expertise. The platform aims to promote capacity building through workshops (both online and offline), as well as provide opportunities for young practitioners to showcase their research and valuable contributions to reducing risk through the Young Scientist Roadmap on DRR, in support of the UNDRR S&T Roadmap for the implementation of the Sendai Framework. The young scientists take part in meaningful intergenerational engagement through participation in various platforms (e.g., UNDRR Science and Technology Advisory Group80 at the global and regional levels, Global Assessment Reports,81 Global Risk Assessment Framework, UN Technology Facilitation Mechanism, Commission on S&T for Development, UN Global Platforms on DRR, etc.), knowledge generation through youth-led, peer reviewed publications on DRR and collaboration with other stakeholders across the S&T community.

Objectives of the lesson

The primary objectives of this lesson would be to:

Explain through examples from around the world about risk governance through meaningful engagement.

Explain that risk governance goes beyond being a part of the governance system; for youth and volunteers it is primarily extending assistance towards taking risk informed decisions

Duration

45 minutes.

Methodology

This session is an informative session.

Training aids

Power-point presentation.

Unit 2 Lesson 3: Exploring the Role of Youth and Volunteers in Investment for Resilience

Flow of the session

Note for the trainer

This session would focus on investment in resilience. The trainer must ensure that the participants understand that investment, first of all, goes beyond financial implications and investment in this regard should ensure resilience of youth.

The trainer should elaborate the concept of 'investment in resilience' as per the Sendai Framework and initiate a discussion with the participants.The trainer must elaborate the point that investment is not merely financial investments, it is investment in any form. Agreed that youth and young professionals may not be in a position to invest but they can, through their expertise, create financial setup to direct funds towards resilience. The trainer can exemplify crowd-sourced funding to fund an initiative of DRR in a community, or, investment of youth and volunteers to ensure resilience of a community post-disaster. Come to think of it, providing a platform to ensure financial security of a community by youth and volunteers is also an effective way of ensuring resilience. From the SFDRR:

"enhancing relevant mechanisms and initiatives for disaster risk transparency, which may include financial incentives, public awareness-raising and training initiatives, reporting requirements and legal and administrative measures;"

"To encourage the establishment of necessary mechanisms and incentives to ensure high levels of compliance with the existing safety-enhancing provisions of sectoral laws and regulations, including those addressing land use and urban planning, building codes, environmental and resource management and health and safety standards, and update them, where needed, to ensure an adequate focus on disaster risk management;"

"To develop and strengthen, as appropriate, mechanisms to follow up, periodically assess and publicly report on progress on national and local plans; and promote public scrutiny and encourage institutional debates, including by parliamentarians and other relevant officials, on progress reports of local and national plans for disaster risk reduction;"

Apart from specific discussions, the trainer can adopt a general approach too.

Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment. These can be drivers of innovation, growth and job creation, without creating new risks. Such measures are cost effective and instrumental to save lives, prevent and reduce losses and ensure effective recovery and rehabilitation.

The trainer may emphasise on the fact that social entrepreneurships in DRR and DRM can also turn out to be an investment in disaster resilience.

For the older (other) participants, the trainer would want to discuss along higher lines.
Long-term investments in DRR not only uphold children and youth's access and rights to safe and resilient social services, but also contribute to reaching and transforming marginalising circumstances of children and youth living in vulnerable situations. For instance, children are highly affected by disruptions to their education and healthcare, including devastating effects on their full earning potential for children and youth who drop out of school and colleges. Girls and young women, in particular, are often the most affected by violence and economic hardship after a hazardous event. Investing early in infrastructure, policies and strategies that reduce child and youth vulnerabilities can pay greater dividends over time as they are more able to make positive economic, social and political contributions to society. Investing in children and youth also helps to ensure long-term planning not only meets their current needs and those of future generations, but makes long-term economic sense.

To achieve Priority 3, authorities, practitioners and youth actors can ensure children and youth of all ages, genders, abilities and cultures:

1. Are prioritised hazard-proof infrastructure investments—including the development and subsequent regulation of building codes and standards related to health; water, sanitation and hygiene (WASH) systems; educational facilities; shelter and human settlements; and child and youth-care centres.
2. Benefit from built or designated non-school structures as evacuation sites. This ensures continuous education for children and youth and addresses child protection concerns related to violence, abuse and trafficking.
3. Are receiving inclusive education and skills-building opportunities that account for local and regional hazards and climate impact—in a way that supports sustainable, long-term employment for all citizens.
4. Can gain DRR and climate change knowledge in mainstreamed formal and informal educational curricula in age-appropriate and gender- and culturally-responsive formats. The curricula is designed to maximise learning and recognise and support the effectiveness of peer-to-peer and experiential learning.
5. Are participating in and benefiting from livelihood development and adaptation that is resilient to current and future disaster risk, including risk linked to climate change—especially for older adolescent girls and young women living in vulnerable situations.

Investing in Comprehensive School Safety improves structures and services that build life-long resilience in communities

Throughout the world, countries have been developing and implementing Comprehensive School Safety (CSS) policies that address safer learning facilities, school disaster management and risk reduction and resilience education. The government in Uttar Pradesh, India, was an early pioneer in safer school construction, at scale, ensuring that every new school would be a safe school. With a high earthquake risk, vulnerable school buildings and a lack of knowledge about earthquake-resistant construction methods among the local mason population, the government developed and incorporated earthquake-resistant school designs into construction plans and invested in training local masons and engineers to reduce the risk of earthquake-related deaths and injuries in schools.

- CSS India case study: www.preventionweb.net/publications/view/61556
- CSS overview: www.preventionweb.net/publications/view/51335
- ASEAN CSS mapping case study: https://media.ifrc.org/ifrc/wp-content/uploads/sites/5/2018/06/CaseStudy12_Youth-Final.pdf
- CSS case studies: www.preventionweb.net/publications/view/61498
- CSS Asia-Pacific trends: https://www.preventionweb.net/publications/view/61412

The trainer should take this opportunity to talk about the School Safety Initiative in Gujarat and the various other related activities.

Objectives of the lesson

The primary objectives of this lesson would be to:

Explain that investing in resilience is not limited to financial investment

Explain that investment in resilience encompasses the idea of resilience for children & youth.

Duration

45 minutes.

Methodology

This session should primarily be an informative session.

Training aids

Power-point presentation.

Unit 2 Lesson 4: Youth and Volunteers for Effective Response and Build Back Better

Flow of the session

Note for the trainer

Continuing the flow of the previous sessions, the trainer must put forth examples of how youth have, over the years, played an incredible role in building back better and not to ignore the fact, that, youth, volunteers, young professionals and even children can play effective role in disaster response.

Experience indicates that disaster preparedness needs to be strengthened for more effective response and ensure capacities are in place for effective recovery. The trainer must spend a good amount of time of this session to discuss on the very basic necessities like:

a. Fire safety
b. First aid
c. Search and Rescue
. The trainer may touch upon concepts like Golden Hour, Golden Day, Triage and INSAARG
d. Minimum standards of relief and the basic principles of distribution

Awareness about the basic techniques would lead to enhanced preparedness required for effective response. **External agencies like Indian Red Cross or NDRF may be invited to take up this session, theoretically, as well as with practical demonstrations.**

For theory purposes, the trainer may refer to the Training Module for Master Trainers on School Safety (NSSP) by NIDM for references.

Apart from the practical session, the trainer may also shed light on overall involvement of youth in this priority of SFDRR.

Disasters have also demonstrated that the recovery, rehabilitation and reconstruction phase, which needs to be prepared ahead of the disaster, is an opportunity to "Build Back Better" through integrating disaster risk reduction measures.

Evidence shows that when the wider community engage in DRR planning, preparation and response in partnership with governments, rates of mortality, morbidity and other negative impacts decrease after hazardous events. Including children and youth at different stages of preparedness reduces risk as it increases their own capacities and resilience in the short and long-term.

To achieve Priority 4, authorities, practitioners and youth actors can ensure children and youth of all ages, genders, abilities and cultures:

1. Are provided opportunities to both co-design community and school preparedness plans and to be actively engaged in post disaster needs assessment and recovery planning.
2. Have the knowledge and spaces to teach others about disaster risk and preparedness, especially through peer-to-peer trainings that are or can be adapted to be child- and youth-friendly, as well as gender and culturally-responsive.
3. Know how to stay safe during a hazardous event or an evacuation, no matter where and who they are, including knowledge on where to go if they are separated from people they know. This includes ensuring that all children are able to participate and lead in early warning readiness and safety drills.
4. Have the skills to help themselves and friends cope with short- and long-term trauma, or know where to access culturally-sensitive and age-appropriate wellness support.

Youth-led social enterprise in Nepal using post-earthquake crowdsourced data to support government information sharing on hazards across the country

After the 2015 Gorkha Earthquake in Nepal, nearly 9,000 people contributed information to map critical infrastructures on an open data platform to support humanitarian responders in post-disaster recovery and rebuilding efforts in affected areas. The initial data was used by humanitarian agencies to navigate and plan and in the distribution of relief materials, as well as to mobilise youth volunteers. Youth Innovation Lab, a youth-led civic technology social enterprise is working with the Government of Nepal to develop an integrated Disaster Information Management System (DIMS) that includes the open source data collected by digital volunteers during the 2015 earthquake. The aim of the platform is to provide geospatial data critical to implement Sendai Framework policymaking at local to national levels, as collected by youth volunteers across the country. The crowdsourcing initiative uses mapathons, virtual internships and workshops to build data mapping literacy among youth. They are then able to work together with authorities to increase post-disaster investment efficiency through data-driven disaster governance and resilience building.

- Youth Innovation Lab/Manuals: www.youthinnovationlab.org/reportsandpublications
- Government platform: http://bipad.gov.np/incidents

In Cuba, environmental education and disaster prevention are directly related. From preschool through secondary school, the national curriculum addresses environmental protection. Classes focus on ecological problems, natural hazard risks, and disaster mitigation and prevention. However, officials within the Ministry of Education (MINED) consider formal school-based disaster risk reduction (DRR) and environmental education insufficient, because it excludes adults and cannot be rapidly updated with new knowledge. In response, the MINED-developed informal DRR education programs that include the whole community. The project, Education, Leadership, and Gender for the Strengthening of Resilience in Children and Adolescents against Risk, Danger, and Vulnerability in Cuba (the Education, Leadership, and Gender project), aims to strengthen the resilience and response capacity of children and communities against natural hazards. Despite frequent hurricanes and flooding in Cuba, the number of related fatalities is minimal, largely due to the political will of preserving lives through formal and informal hazard education.

Resource:https://www.preventionweb.net/files/61511_csspolicycasestudycubastudentsleadi.pdf

Objectives of the lesson

The primary objectives of this lesson would be to:

Illustrate how it is important to be prepared to ensure effective response

Illustrate how the potential of youth and volunteers has been / could be used for resilient recovery

Duration

45 + 45 + 45 minutes. (Each time slot for fire safety, basic first-aid and search & rescue)

Methodology

This session should primarily be a hands-on session on safety, first-aid, search and rescue. For theory purposes, Training Module for Master Trainers on School Safety (NSSP) may be used.

Training aids

Power-point presentation. to illustrate the formula and chart-papers for the groups

Unit 3: Building a Culture of Disaster Resilience

Need of the session

Understanding of risks, preventing risks of hazard becoming a disaster or mitigating the impacts of a hazard forms the core of disaster management cycle, but, with the world rapidly progressing in every dimension, limiting ourselves to the cycle would probably be of no help. For example, preparing a disaster management plan or a risk reduction strategy at the local (state) level will not suffice, if it is an one-off intervention. What makes sense, with issues like climate change looming large at the horizon, is that we make disaster management cycle an integral part of our daily business, i.e., what is referred to as mainstreaming disaster risk reduction principles in all sorts of planning. This is only possible when people, especially the youth, inculcate a culture of disaster resilience. Resilience has different definitions, given at different times by different academicians, practitioners, organisations and agencies and what it means is that every individual or community should have the capacity to anticipate a shock, try to absorb it initially, adapt to it if it is beyond the immediate coping capacity but bounce back with full might once the shock is removed. This will only happen if a culture is brewed or else, it will always be 'managing disasters'. Interestingly, such kind of resilient cultures are seen in communities or nations which are more prone to hazards of different sorts and thus, it makes perfect sense to learn from them. This section would comprise of three lessons; the first one would be on learning from the world, the second one on how the youth and volunteers in India can make their immediate environment safe and resilient and the third lesson would be on empowering them to design DRR strategies.

Units of the session

Unit 3 Lesson 1: Learning Disaster Resilience from the World

Unit 3 Lesson 2: Making the Environment of Youth Safer and Resilient: Empowering the Youth

Unit 3 Lesson 3: Words into Action

Objectives of the session

The primary objectives of this unit would be to:

Inspire participants to learn about resilience from the rest of the world

Empower youth and volunteers to make their environment safer and resilient

Provide tools to design strategies of DRR fostering resilience

Duration

180 minutes. (45 + 45 + 45) minutes for the sessions and 15 minutes spillover time from each session.

Methodology

This unit would primarily be informative with relevant discussions. There a single exercise in the last learning session.

Training aids

Power-point presentation.

Unit 3 Lesson 1: Learning Disaster Resilience from the World

Flow of the session

Note for the trainer

The trainer should focus on citing examples of how youth and volunteers have played a critical role in fostering disaster resilience.

The trainer should begin this session by explaining what resilience is. The trainer may use standard definitions but he / she must ensure that he gets across the fact that resilience is not something someone achieves in day; it is a culture, a habit. A culture of being able to anticipate shocks, preparing for it, being able to absorb it and then adapt to it and still being able to bounce back to normalcy once the shock is removed from the context. This means if a cyclone causes people to lose their livelihood and it takes months to recover from that, the community is not resilient. Thus, to inculcate the culture of disaster resilience, youth and volunteers should be able to,

- anticipate risks = understand disaster risks
- prepare for the risks = ability to absorb the shock through implementation of prevention and mitigative measures
- adapt to the shock = ability to cope with the effects and impacts, ensuring the magnum is not beyond the overall coping capacity
- bounce back = ability to restore normalcy, realizing what went wrong and learning from it.
- ensure that the same shock do not cause the same magnitude of effect and impact next time

Mainstreaming child- and adolescent-led school watching teams across the education sector improves safety in Philippines

Students in public elementary and secondary schools across the Philippines are participating in government-promoted, annual school watching programmes to keep them safe before and after emergencies and hazardous events. The Ministry of Education initiated protocols to highlight and address hazards, risks and vulnerabilities in schools across the country. Students gather information about hazards that can be addressed by school authorities. The students also create hazard maps that can be shared with other students alongside other safety information (such as earthquake or fire drill protocols). The programme includes a school watching app (SWApp) that helps to automate data gathering. Researching risk and holding authorities to account helps to build students' confidence, capacities and DRR awareness at school and home.

SWApp in action video: https://youtu.be/ovr0W1Evwo0

Video : www.youtube.com/channel/UCzgtsUZj6M1JczTfyOi09pw

School watching team story - Lizette: https://youtu.be/-jgzB-uwzYo

Youth build coastal resilience through Green Clubs in Vietnam

In Da Loc, Vietnam, young people in Green Clubs led disaster risk reduction, climate change adaptation and ecosystem management activities in cyclone-affected villages facing poverty and land saltwater intrusion threats to agriculture. This included helping to plant and manage mangrove forests to reduce cyclone impact. The youth also developed awareness-raising and behavior change campaigns using theatre, film, poetry and art. During the Building Coastal Resilience in Vietnam project, the Green Club members reached more than 10,000 community members through their activities.

- Report:https://careclimatechange.org/wp-content/uploads/2016/02/Building-Coastal-Resilience-in-Vietnam.pdf
- Youth as Green Messengers: www.care.org.vn/we-are-green-messengers

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Children learn how to reduce risk together

Meet Iggy, a Fijian Iguana, and his friends who are representing the Fiji National Disaster Management Office. They are featured in films and books that teach children about emergency and safety procedures for school and home, as well as about climate mitigation and health safety. Iggy and his friends help children learn and want to share key messages about DRR with their peers, friends and family, including how to make a family emergency plan. Iggy, his friends and Fijian children are featured in a child-friendly risk reduction and safety film that delivers evidence-based, consensus-based and action-oriented messaging in a way that is warm, familiar, light, friendly and caring. Each of its 7 sections explain to children how to prepare for and how to safe during a specific incident, and includes children using songs to learn and share information.

- http://healthsongs.org/disaster-risk-reduction
- https://resourcecentre.savethechildren.net/library/iggyvola-reducing-risks-together

Indigenous children and youth become emergency preparedness leaders in Canada

Indigenous communities in Canada are disproportionately affected by multiple hazards from floods to wildfires to climate change impacts that threaten hunting and fishing livelihoods. Involving youth as active participants and leaders in preparedness supports building capacities and self-determination. It can also ensure household, school and DRR plans reflect their concerns as the next generation connected to land, culture and community. In the Preparing Our Home programme, youth—alongside Elders and adults—participate in and lead risk assessment and emergency preparedness activities that combine Traditional Knowledge, Indigenous Science, Western Science and creative research methods.

The programme provides planning tools for participatory hazard and risk identification, social vulnerability mapping, asset and critical infrastructure mapping, fire safety and youth career development in emergency management. For instance, youth in one community used photography to map assets and explore how different hazards might impact food security, pet safety and housing. Cultural craft is a major comment of the programme since culture is a lifeline that keeps communities together and is central to community resilience. In addition to the community-led work, a national youth leadership gathering brings together youth and Elders from across Canada to learn from each other and to develop solutions for community resilience.

- Project: http://preparingourhome.ca/about-us
- Sample community toolkit: http://preparingourhome.ca/lessons-from-the-xetolacw-community-school
- Preparing our Home and the Sendai Framework: http://preparingourhome.ca/global-context

Applying an integrated neighbourhood approach to disaster recovery and reconstruction in Haiti enhances youth resilience

Enhancing long-term resilience for youth after a catastrophic disaster requires a holistic approach to recovery. Taking this view, the American Red Cross worked across multiple sectors after the 2010 Haiti earthquake to enhance community and household resilience and provide healthy and secure living spaces that support youth safety in affected communities. In addition to interventions in housing, neighborhood infrastructure and livelihoods, cross-cutting themes—including youth engagement, women's empowerment, disaster risk reduction and environmental preservation—were incorporated into activities to encourage community participation and achieve long-term sustainability. Efforts aimed to expand knowledge, strengthen local economies and improve physical living spaces. To increase disaster preparedness of youth and engage them in community and household readiness, more than 5,000 students in 17 schools were trained on disaster risk reduction and preparedness. The American Red Cross funded the rehabilitation of schools to increase the safety of youth and to serve as community evacuation shelters during emergencies. To improve long-term resilience, more than 200 youth received vocational training and internship opportunities in fields with high probability of employment, helping them relevant skills to find stable livelihoods and start businesses.

- LAMIKA (page 75 in the publication): www.preventionweb.net/publications/view/65555

Through the examples, the trainer must ensure that participants understand how resilience is perceived by different communities and what activities are being done around the world. The idea is to inspire participants to come up with their own designs, solutions etc.
Can a participant design a tool to help villagers prepare hazard maps easily? Can a participant design an interactive game for school children or college going youth trying to address a pertinent issue? Can strategic games or multi-player games be designed to enhance coordination of the youth in disaster response?

These are the types of question that should be ignited in the minds of the participant at the end of the session.

Objectives of the lesson

The primary objectives of this lesson would be to:
Explain what resilience is
Explain how resilience is perceived and inspire participants to think of ways to brew a culture of disaster resilience

Duration

45 minutes.

Methodology

This session is an motivational session based primarily on presentations.

Training aids

Power-point presentation.

Unit 3 Lesson 2: Making the Environment of Youth Safer and Resilient

Flow of the session

Note for the trainer

The trainer should focus on citing examples of how youth and volunteers have played a critical role in fostering disaster resilience.

The trainer, in this session, should focus on orienting the participants on how to make their immediate environment, school or work place, safer. The trainer may also go beyond this stages and talk about the basics of disaster response.

1. The trainer should talk about structural and non-structural safety of the immediate environment; school, college, work-place and home. Be it anywhere, the basic ideology of structural and non-structural safety remains the same. The trainer may elaborate on the basics of what structural and non-structural safety means.
2. The next thing to talk about would be to have a disaster risk management plan; which would encompass everything from understanding and assessing of risks, undertaking preventive and mitigative measures, capacity building initiatives for enhancing preparedness and also an emergency response plan. The plan may be of a school, college, university, office, community etc.
    - The trainer should talk about having a disaster supply kit at different levels; school, college, family etc. The trainer may derive notes from the standards set by the authorities at the national and state level.
3. The trainer should then familiarize the participants of the different ways in which they can be watchful. In India, the primary concerns are of heavy rain, cyclone etc. India Meteorological Department (IMD) issues bulletins and also updates weather forecasts, regularly, on its Facebook page and other social media handles. The idea is to ensure that the participants are aware of such resourceful sites. The trainer can also talk about other resources like windy, NDEM etc. In this regard, the trainer can also talk about INCOIS, ISR, CWC and interesting projects like that Earthquake Early Warning System (EEWS) that has been taken up by the government.
4. The trainer may also orient the participants about how early warning is disseminated and how emergency communications are carried out. The trainer may also talk about setting up of community based early warning systems through some innovative approaches, spearheaded by the youth and volunteers.

The trainer may site the example of community based flood early warning systems in Singora and Jiadhal rivers in India, which can be found at the UNFCCC website just to drive the point home that youth, young professionals and volunteers can take up such small projects at their own community too. Source: https://unfccc.int/climate-action/momentum-for-change/activity-database/community-based-flood-early-warning-system-india

This way, the trainer would be able to give a holistic idea of disaster management cycle, in practical terms to the participants.

Objectives of the lesson

The primary objectives of this lesson would be to:

Empower the participants to create a safer environment

Empower participants, through sharing of information, on how to develop a habit which would eventually lead to resilience.

Empower the participants to have basic idea of what to do before an extreme event and during an extreme event in terms of disaster response.

Duration

45 minutes.

Methodology

This session is primarily informative and the trainer may use the Master Trainer's Module on School Safety by NIDM for reference.

Training aids

Power-point presentation & practical demonstrations

Unit 3 Lesson 3: Words in Action: Helping Youth and Volunteers to Strategise

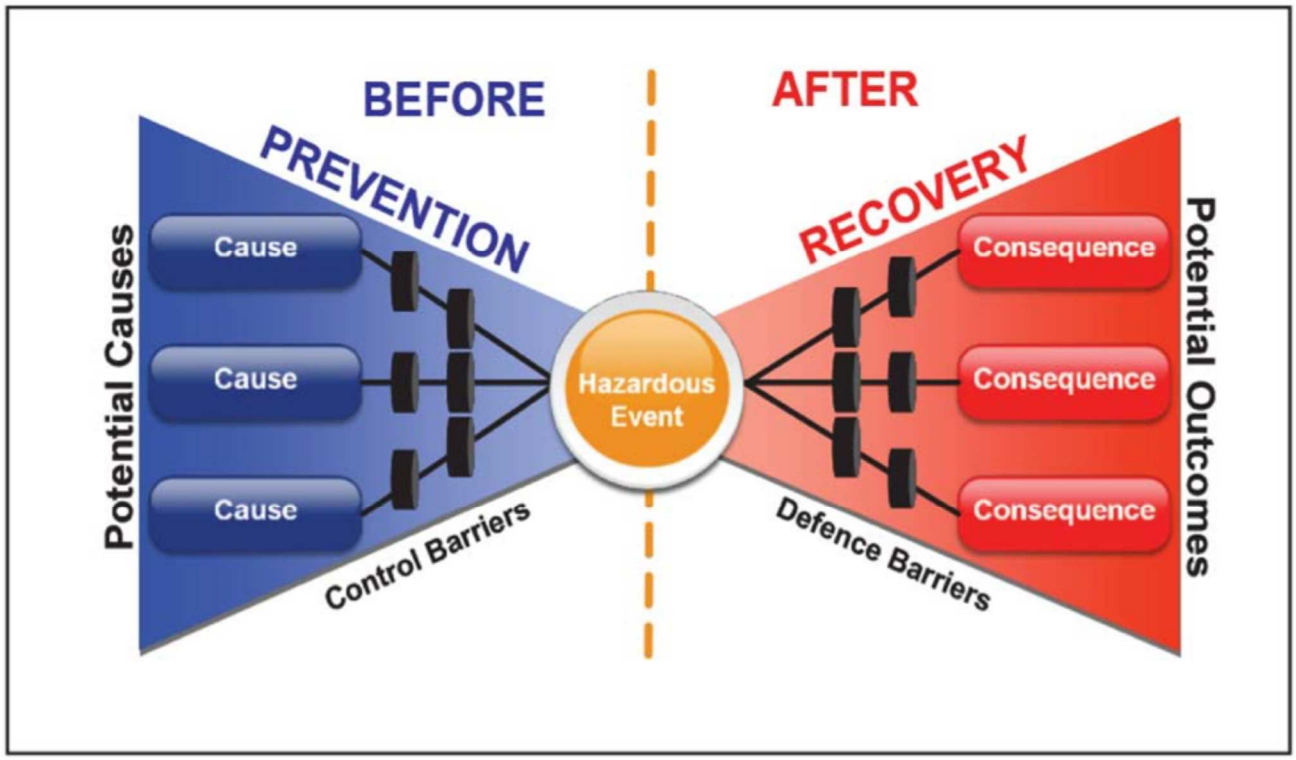
Flow of the session

Note for the trainer

The trainer should illustrate the participants about ways of making their immediate environment safer and disaster resilient.

In this final session, the objective of the trainer should be to enable the youth, volunteers and other participants to design strategies of disaster risk reduction and management and by virtue of the previous sessions, expect that these strategies are not merely one-off interventions and somehow become a part of the system so that in the long run, it becomes a culture fostering disaster resilience.

The trainer, in this lesson, will enlighten the participants about how to manage their risks through a very simplified approach.



Step 1	The trainer should divide the participants into groups based on some similarity; coming from school, community, district etc. This group should then take up one hazard at a time. The trainer may remind the participants that in the initial sessions, using the formula, they have already prioritised risks of different hazards. The hazard constitutes the central circle in the above bow-tie. This is the first step.

Step 2	For each hazard identified, the possible consequences are to be listed. So, from the circle, the trainer directly moves the participants' attention to the extreme right side. In case of earthquake, the consequences can be loss of life and loss of property, majorly. These are the risks associated with the hazard. Similarly, the hazard can be malaria or dengue and its effects and impacts can be degradation of health, loss of school / college days etc.
Step 3	The trainer then moves to the extreme left of the bow-tie. The potential causes of the listed consequences (risks) are then mapped. In case of earthquake, what are the possible reasons of loss of life and property? Given that earthquake is a phenomenon which can neither be controlled, nor can it be predicted, what possible reasons can trigger the losses? 1. Structural reasons 2. Non-structural reasons In case of structural reasons, further deliberations would reveal that causes can be: 1. Zone-insensitive construction (What seismic zone are you in ? Does your building construction type suited to that particular zone ?) 2. Poor construction (Building code insensitive construction or improper construction) 3. Old construction And in case of non-structural reasons, the causes can be broken down to as detailed as: 4. Physical non-structural 1) Glass facades 2) Furnitures / Objects 3) Chemicals 5. Non-physical non-structural 6. Ignorance about the dos and the don'ts 7. Ignorance / non-existential evacuation routes Non existential risk management plan
Step 4	With step 3, the outline of the bow tie is drawn. The trainer must then shift the attention of the participants to the prevention / mitigation phase. The cause phase (step 3) determines the prevention / mitigation phase. What needs to be done to address the causes identified in Step 3? 1. To prevent structural systems from failing, steps should be taken. Help of engineers may be sought to do safety checks. If there are issues with the structure, proper steps for retro-fitting should also be taken. 2. If the construction is itself zone-insensitive, engineers must be consulted to understand what steps are to be taken. 3. To ensure non-structural systems does not fail, the group must ensure that physical and non-physical issues are addressed. These steps are to be taken and it is here that it needs to be decided that each of these step would take how much time, i.e., a timeline is to be provided for each of the actions and if possible, a budgetary provision should also be made.

	These details constitute a strategy of disaster risk reduction, when all such steps pertaining to all the hazards have been put down and the timelines and the budgets of the same has been agreed upon by every stakeholder.
Step 5	The last step is the response and recovery; what to do if the magnitude of the event surpasses the coping capacity? The group is expected to come up with processes that might be needed during the event; How to evacuate? How to assemble? Who should be responsible for what? Whom to call and their phone numbers?

The trainer, at the very end of the lesson, must help the participants to correlate that the procedural approach of risk management using the bow-tie analysis is just an algorithmic form of the disaster management cycle and all the points put together, except the ones in Step 5, constitute a disaster risk reduction strategy.

Objectives of the lesson

The primary objectives of this lesson would be to:

Empower the participants to design disaster risk reduction strategies at their level

Stimulate the participants to go back and initiate such processes in their school / college or work-place, such that, in the long run this becomes a part of the system.

Duration

45 minutes.

Methodology

This session is primarily informative and should conclude with an exercise on the bow-tie analysis.

Training aids

Power-point presentation, flip charts, markers etc.

Post Training Assessment and Valedictory

Need of the session

At the end of the training, evaluation of the knowledge, skill and attitude of the participants would determine their exit behaviour. The level of increase of knowledge and skill from the inputs given through the training has to be evaluated. Feedback from trainees regarding the training and related facilities would help in modifying future modules to make it more effective.

Objectives

- Discuss a framework for improvement of the present module
- Evaluate the quality of training imparted through the program
- To assess the exit behavior of the participants at the end of the course.
- To evaluate the knowledge and skills gained during the course.
- To carry out formal internal evaluation

Duration

45 minutes.

Methodology

Any one of the following methods can be followed, according to the trainers' discretion:

1. Formal structured questionnaire – Each trainee is asked to fill up a structured questionnaire that evaluates their knowledge gained through the course.
2. Quiz on the course – Divide into groups and give points for correct answers. The group that wins gets a small prize.
3. Informal discussion– The trainees divide into groups and identify the key learning points of the training and write them on a flip chart. After they finish, they move on to the next flip-chart and add or comment on the points raised by other groups. At the end of the exercise, all the points are collated by the trainer and discussed.

Training/ Performance Aids

Depending on the methodology chosen:

- Copies of pre-decided questionnaires or
- Flip charts, Markers, Tag-boards to pin the hand-outs

This successfully concludes “Understanding Disaster Risk Management”

GUJARAT INSTITUTE OF DISASTER MANAGEMENT

BUILDING RESILIENCE

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