

COLLABORATE
INNOVATE
GROW

INSIGHTS ON CHALLENGES IN MANAGEMENT OF DISASTER.



OUTLINE

1. Education On Disasters
2. Public Awareness
3. PUBLIC HEALTH SYSTEM : Its role in Disaster Management Prevention.
4. Addressing Challenges Through Triage Process.
5. Charting a Hazard Map
6. Effect of Culture and Disaster Management
7. Environmental Degradation and Disasters: Addressing Challenges.
8. Summary
9. Closing case
10. Review Questions

**WE LIVE IN THE MIDST OF ALARMS :
ANXIETY BECLOUDS THE FUTURE;
WE EXPECT SOME NEW DISASTER WITH
EACH NEWSPAPER WE READ.**

-ABRAHAM LINCOLN

OPENING CASE STUDY

- MUMBAI-DEHRADUN EXPRESS :
- AMARAVATI EXPRESS
- Q. IMPROTANT LESSONS LEARNT FROM THE ACCIDENT ?
- Q. MOST DISASTERS GIVE Fore warning and with alertness they can be averted . Agree/Disagree?



THIS WILL NOT HAPPEN TO ME!!! SYNDROME..



For [risk – reduction activity](#) to be successful access to prior information and knowledge is critical . Ensuring accessibility of information i.e. to educate people is also required in order to mitigate disaster.

8.1 EDUCATION ON DISASTER

The Three Aspect That Are Critical To Reduction Of Losses From Disasters Are :

EDUCATION

EDUCATION IS FORMAL
INFORMAL DIFFUSION
OF KNOWLEDGE

Data-(raw-facts)
Are Arranged Into
Meaningful Forms :
Becomes **Information**

KNOWLEDGE

Information Is Put Into Milieu
That Gives It Meaning And
Relevance To Action Or
Inaction : It Becomes
KNOWLEDGE

AWARENESS

Organized Knowledge Which
Is gained Through Years Of
Experience Is Called Wisdom.
Which Is A Source Of
AWARENESS.

Impact of EDUCATION

- IN the context of a disaster knowledge education and awareness are of great importance as all the facets of disaster i.e prevention, preparedness- response-recovery get sustenance from them..
- The ill effects of disasters include physical damage , human suffering and death, loss of livelihood, and psychological trauma.
- The government alone cannot stop the disasters. The community as a whole and individuals have an equally significant role to play.
- Disaster education can be effective in risk reduction only if it concentrates on the social intricacies and disparities that constitute the disaster management profiles of societies.
- The role of government is to communicate the disaster information to all the stakeholders and educate them for early warning , evacuation planning and post – disaster relief operation.

Worth of Education`

Education is also important because **preparation through education is less costly than learning through tragedy.**

It is extensively accepted that an educated community is better able to prepare for and respond to, disasters , and that education for disaster reduction is intricate and difficult yet essential to any suitably executed, centrally managed disaster strategy.

Disaster education is recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as an essential element in sustainable development since it hastens the progress of societies towards disaster resilience.

People can be educated about disasters through diverse means which include formal education systems, vocational and professional training courses, community-based self assessment exercise and public discussions involving media , awareness campaigns and special events.

Implementation of Education

In the 90's Government put educating and training the citizens to increase the awareness was greatly emphasised . The 1990's was celebrated as the "Decade for Natural Disaster Reduction"

The inclusion of disaster education in syllabi across schools and universities is being advertised as an important constituent of long term disaster risk reduction strategy.

The disaster education interventions at the primary level help children become aware and responsible adults.

In fact education for disaster reduction can be directly linked with sustainable development as education, knowledge and awareness are vital to building the capability for hazard loss reduction. Children can serve as catalysts for the reduction of disasters.

Students from primary schools to post-graduate level can enthusiastically study the safety status of their own schools and colleges and work with the teachers and community members to find ways to protect themselves and their communities.

Implementation of Education

Apart from pedagogy and curriculum development, there must be ways to gauge the level of awareness of the children. The mode of teaching should take into account the practical implementation apart from purely academic orientation.

To have a multiplier effect on the wider society in terms of increased levels of awareness, it should be ensured that trained teachers are available.

to make the best use of the wealth of collective information, it should be warranted that disaster information dissemination to children must take into account issues such as age, level of literacy, language and dialects and other important cultural factors.

An evaluation of existing knowledge is also necessary. The evaluation technique should be in consonance with the age, level of literacy and mental capacity of children.

It can also help gauge the levels of disaster awareness among children. Other interactive and visual techniques such as hands-on and experiential learning methods can be used for educating children.

Few Examples Adopted Worldwide

Experimental learning is an immersive participant focused active approach to learning that involves experiential Education involves learner of all age.

In Caribbean :

One such technique is Disaster Awareness Game (DAG). DAG was designed to fill gaps in the competence of disaster managers to communicate disaster risk in a susceptible environment. This technique is used for measuring levels of hazard and disaster awareness, educate children as well as adults about hazards and disasters that are relevant to their environment, encourage constructive conduct at all stages of the disaster management cycle and clear myths about disasters.

These tools include lectures and presentations on local hazards and the pertinent disaster management context.

It uses a board game with related question cards and a score sheet to evaluate the levels of awareness prior to and after exposure to the game.

The board game also helps to update the players about the cost of poor conduct in hazardous situations.

Few Examples Adopted Worldwide

Name of Game	Game's Characteristic	Target Group	Type of hazard	Stage of DMR cycle
Decisions for the Decade. for the Red Cross Red Crescent Climate Centre	Face-to-face multiplayer game with direct interaction	Government officials at local to national level and a wide range of stakeholders affected by long-term climate risks	Floods and droughts	Prevention/Mitigation, Preparedness and Response
Beat the Quake by SCEC Southern California Earthquake Centre at USC	Online/ computer single-player game	Communities exposed to earthquakes	Earthquake	Preparedness
Build a Kit Department of Homeland Security	Online/ computer single-player game	Kids and their parents	All types of natural hazards	Preparedness
Disaster Master by FEMA /ready.gov / the Department of Homeland Security	Online/ computer single-player game	Kids and their parents	Wildfire, tornado, hurricane, storm, earthquake, tsunami, of weave extreme cold	Preparedness and Response

Few Examples Adopted Worldwide

- ❑ In [South Africa](#), various individual states are pursuing relevant educational initiatives. These curricula deal with life and safety education, and violence prevention. Songs younger children in South Africa. are used to teach the basics of safety.
- ❑ In [Japan](#), disaster education is a community priority. Children grow up seeing adults practicing civil responsibility in a myriad ways. In residential areas and urban homes, small red buckets of water are kept outside the front door as a remnant of traditional community fire brigades, which have existed in many cities since the 1700s. Disaster preparedness and mitigation are taught in Japanese schools by way of lectures.
- ❑ In [Germany](#), there are 16 different curricular arrangements that entrust the responsibility for education to sub-national states. The textbooks focus on regions of the world at risk, the natural reasons of risk, and the impact of hazards on surroundings. The teachers attempt to sensitise students to the difference between a natural event and a disaster, and show the requirement of early warning systems in disaster management. The schools carry out voluntary workshops called *arbeitsgemeinschaft* in afternoons, a group of students indulge in research work relating to earthquakes and floods in their own region

Few Examples Adopted Worldwide

- ❑ In [Jamaica](#), an annual hazard awareness month is celebrated in June every year. On this Day, schools are encouraged to make their students more aware of the types of hazards that affect Jamaica and also to involve them in hazard awareness activities such as creating original items in dance, drama, song and poetry to express themselves about their vulnerabilities to all types of disasters.
- ❑ In [Algeria](#), the mode of education about natural disasters is through stories at the rate of one lesson per year. In the pre-university years, the teaching gets more systematic and students are taught geology, plate tectonics and, again, earthquakes.
- ❑ In [China](#), there is a prescribed textbook for senior middle schools on natural hazards and their mitigation,

PUBLIC AWARENESS

Public awareness is a primary component of disaster risk reduction. Therefore, attention must be given to improve education, training and awareness in all communities. The more the awareness in public about disasters, the less is the loss from disasters.

One of the most effective mechanisms for a country to prepare for a disaster is by conducting educational and public awareness programmes at the local community level.

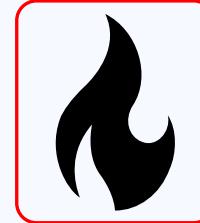
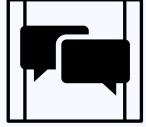
Public awareness is the process of transmitting information to the general population to increase their levels of consciousness about disaster risks so they can prepare appropriately to cope with a disaster

Public awareness is an integral part of disaster education. The target audiences for both public aware-ness and education extend like waves in a pool.

Public education and awareness efforts need to recognise these layers and draw their inhabitants towards the centre.

For generating awareness, categorisation of people on the basis of their level of knowledge is required and accordingly the awareness mechanism can be customised to meet their information needs.

PUBLIC AWARENESS



People who are already acting constantly to make themselves and those around them safe

The people who are interested in disaster management and are willing to act. They are motivated to act but do not know how. These people need support and confidence.

Group of persons who have heard about the disaster management efforts and have started to think and talk about the issue.

Follows a larger group that seems **resistant to act**. People falling in this category are fatalists and are vaguely aware of the issues but have no intention to act yet.

An example will further make the reason for the customisation of information clear. According to survey results provided by the Washington Post of a survey titled: '[Survey of Hurricane Katrina Evacuees](#)', 680 individuals who had been evacuated from the Gulf Coast to shelters in Houston, Texas, were surveyed and it was found that 73% of respondents were aware of the fact that an evacuation order had been issued before Katrina hit.

Sixty-six percent of those who heard an evacuation order confirmed that it gave clear information about how to evacuate; however they did not evacuate before the storm hit. About 64% of those who did not leave never imagined that this kind of situation would arise. Forty-two percent of those stated that they waited too long. Fifty-five percent stated that their reason for staying back was lack of conveyance. Twenty-two percent of those who stayed back before the storm stated that they were physically unable to leave; approximately, the same number stated they had to care for someone who was physically unable to evacuate and 37% of those who did not vacate stated they just simply did not want to leave. (Bentley, 2006). [

This survey indicates two important points: **FIRST IS**
there is a uniform dissemination of information, uniform reception cannot be guaranteed;

The **second** is people have to be made aware about the aftermath of disasters.
Efforts should be directed towards getting individuals to think about a disaster ahead of time and
to prepare themselves for impending disasters.

PUBLIC AWARENESS

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The more the awareness in public about disasters, the less is the loss from disasters.

The responsibility for generating awareness lies with governments. It is a continuous process and to create a culture of prevention, there needs to be a great degree of public participation and popular understanding of disasters and their ill-effects.

Public awareness on disaster management entails Do's and Don'ts in disastrous situations.

The messages that are spread for generating awareness should be reliable, clear, precise and specific. The awareness campaigns should be conducted at regular intervals so that the information is kept alive in the community.

It should be ensured that the disaster risk reduction becomes a central part of the culture and everyday life of the community, and the information is passed on from generation to generation.

Activities Undertaken By Communities And Agencies

1. Celebration of Disaster Safety Day: A day in the calendar year should be dedicated to disaster

2nd Wednesday of October is observed as the United Nations Day for Natural Disaster Reduction and ASEAN Day for Disaster Reduction. marked by celebrations , Drills across the country. Individuals and communities who follow best risk-reduction practices must be awarded.

2. National Public Awareness Program: This program should be organised at local, regional and

National Awareness Program should include awareness generation through distribution of posters, videos and leaflets on natural and man-made disasters.community notice boards. community theatre and dramas These groups can dramatize and showcase events pertinent to the kind of disaster the community is prone to

3. Inclusion of disaster management as a subject in school and college curriculum:

This can help generate awareness in students about management of disaster. Moreover, disaster management is an upcoming field and requires research and development in its various areas.

4. Disaster management Training:

The informal training can be imparted outside the formal learning or training institution to community leaders and should cover important information for the people residing in disaster-prone regions.
The awareness training programme should be evaluated at regular intervals.

Public Health System: Its Role in Disaster Management Prevention

The main aim of any public health system is to ensure creating an environment in which people can be healthy, both mentally and physically.

After a disaster, there is a fear of spreading of communicable diseases and the government with public health agencies should take pre-emptive steps to control the menace arising out of the outbreak of diseases.

Public health agencies have a vital role to play during and after disasters as they have to work towards prevention and transmission of communicable diseases because if uncontrolled, these diseases may lead to greater disasters.

Public Health System: Its Role in Disaster Management Prevention

The main communicable diseases that occur after disasters can be classified into the following categories:

- 1. Diseases transmitted by contact:** These diseases spread through personal contact or being around the people who are already infected. These diseases include common cold, influenza, bronchitis, diphtheria and pneumonia. Diseases such as Acute Respiratory Infections (ARI) also spread and affect the common people, especially the children, after a disaster.
- 2. Diseases transmitted by agencies:** These diseases spread through agents such as mosquitoes and include malaria, yellow fever, dengue, leptospirosis and chikungunya. These infections generally occur when there is a natural imbalance in the environment such as in the case of disasters. There are other pathogenic agents such as bacteria, parasites, fungi which cause diseases. The pathogenic agents are omnipresent and generally human bodies and the environment learn to balance these, but under disastrous situations, communities migrate to new places. When this migration happens, pathogenic agents also find themselves in new environments. This may lead to health disasters and primary victims of such incidents are the displaced communities given that they have no immunity to new pathogenic agents they confront. The local community may also be adversely affected given that their vulnerability could be higher to new pathogenic agents.
- 3. Disease transmitted through poor personal hygiene or from contaminated environment:** These diseases include food poisoning, cholera, typhoid fever and diarrhoea diseases. Further diseases can be transmitted through faecal matter consumed orally such as drinking contaminated water or eating sordid food and fruits.
- 4. Diseases transmitted through air:** Breathing contaminated air can spread air-borne diseases such as tuberculosis, measles, meningococcal meningitis and whooping cough.

Public Health System: Its Role in Disaster Management Prevention

The risks concerned with communicable diseases and the imminent need to control them must be well understood by the affected community. An understanding of these risk factors is essential for public health system workers. It can help in predicting and preparing to prevent and combat communicable disease outbreaks during and after disasters. The prevention mechanism that should be triggered at various levels during times of emergency is as follows:

1. **Primary prevention:** It is defined as the biological and clinical demonstration of an infection. The intervention includes immunisation of communities and awareness generation through education on basic hygiene and sanitation methods.
2. **Secondary prevention:** It includes thwarting an embryonic form of a disease before it develops into a serious form that is prone to cause death or complications. The initial diarrhoeal attack can take serious form if left unchecked. The use of oral rehydration salts (ORS) at the onset can prevent the disease from developing further. The availability of indigenous medicines to the infected people to treat these conditions can help in the absence of pharmaceutical provisions.
3. **Tertiary prevention:** It covers rehabilitation following the illness such as nutritional rehabilitation after measles, tuberculosis, etc.

Vaccination drive , Health education programmes ,identification of health problems of community and study the behaviours adopted by its members to cope with these problem are to be followed up .

Public Health System: Its Role in Disaster Management Prevention

It is evidenced from the history that bad housing, improper water supplies, insufficient drainage and consumption of infected food cause many diseases and deaths. Thus, the public health system should recognise the challenges and address the main constraints of environmental health. This entails the following:

1. Recognizing and responding to uncertainties from disasters and prioritising treatment of different conditions.
2. Clarifying roles and tasks of various personnel involved in providing public health both before and after the disaster.
3. Ensuring co-ordination between various agencies working for public health.
4. Ensuring early detection of diseases and efficient transportation and communication systems of infected population.
5. Understanding that different communities respond in unexpected ways to medical emergencies in times of disasters, members of health system should be trained and authorised to handle these different situations.

The public health system is an integral part of disaster management agency. It facilitates proper response to disasters by use of available resources in a way so as to contain the losses from disasters and its aftermath.

ADDRESSING CHALLENGES THROUGH TRIAGE PROCESS

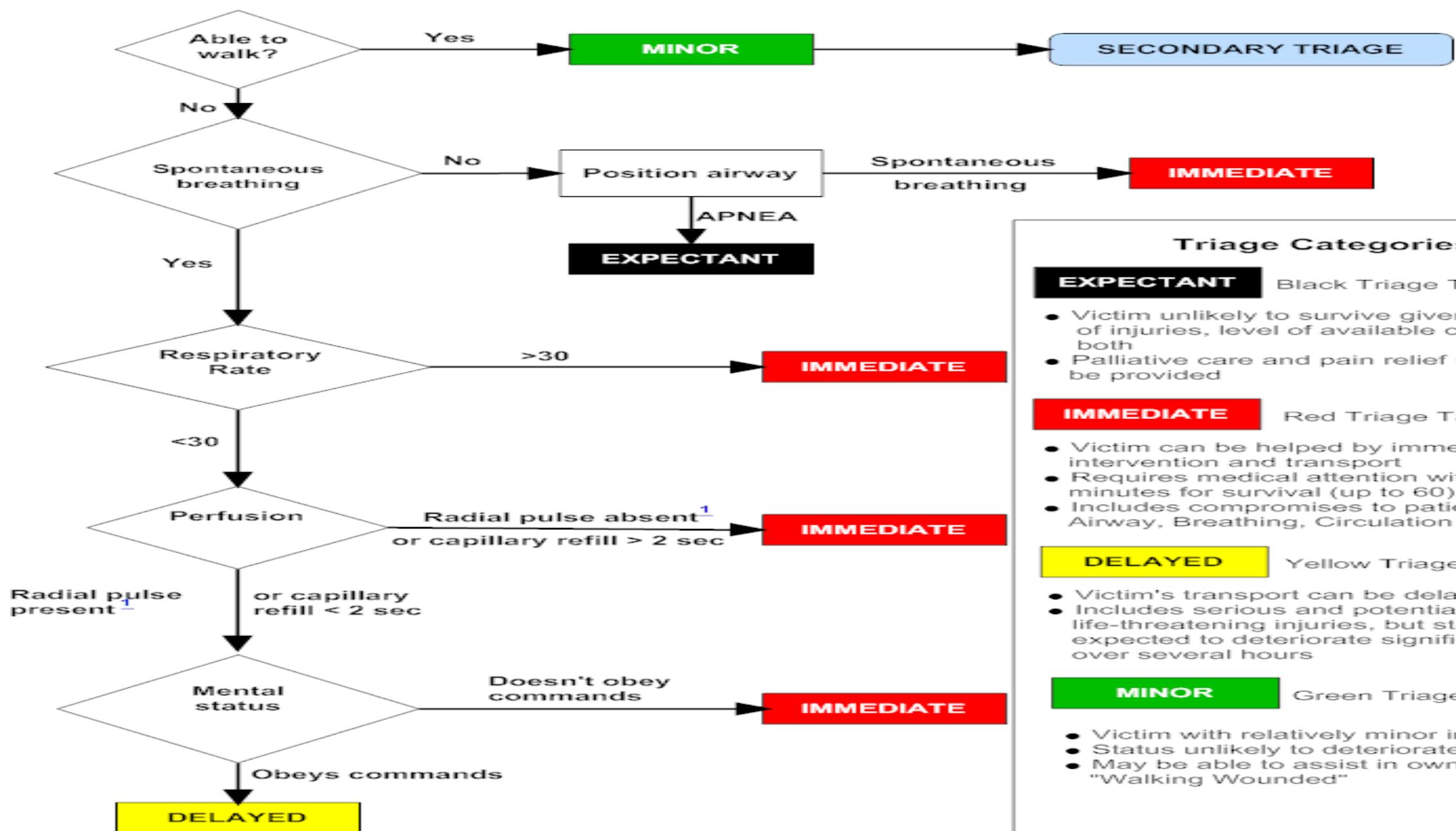
- ❖ `Triage` is a term whose origin can be traced to the French verb “treir” which means to separate. It was first used in Napoleonic Wars and finds a mention in the Work of Dominique Jean Larrey.
- ❖ During world war 1 , French doctors used this term while treating the wounded soldiers.
- Triage is commonly referred today as the process of deciding the priority of patients treatment on the basis of severity of their condition. It deals with sorting and prioritising patients for medical attention according to degree of injury or illness and expectation for survival.
- Simple Triage is usually used in a scene of an accident or a ‘ mass – casualty incident’

Priority 1

Priority 2

Priority 3

START Adult Triage



Triage Categories

EXPECTANT

Black Triage Tag Color

- Victim unlikely to survive given severity of injuries, level of available care, or both
- Palliative care and pain relief should be provided

IMMEDIATE

Red Triage Tag Color

- Victim can be helped by immediate intervention and transport
- Requires medical attention within minutes for survival (up to 60)
- Includes compromises to patient's Airway, Breathing, Circulation

DELAYED

Yellow Triage Tag Color

- Victim's transport can be delayed
- Includes serious and potentially life-threatening injuries, but status not expected to deteriorate significantly over several hours

MINOR

Green Triage Tag Color

- Victim with relatively minor injuries
- Status unlikely to deteriorate over days
- May be able to assist in own care: "Walking Wounded"

CHARTING A HAZARD MAP



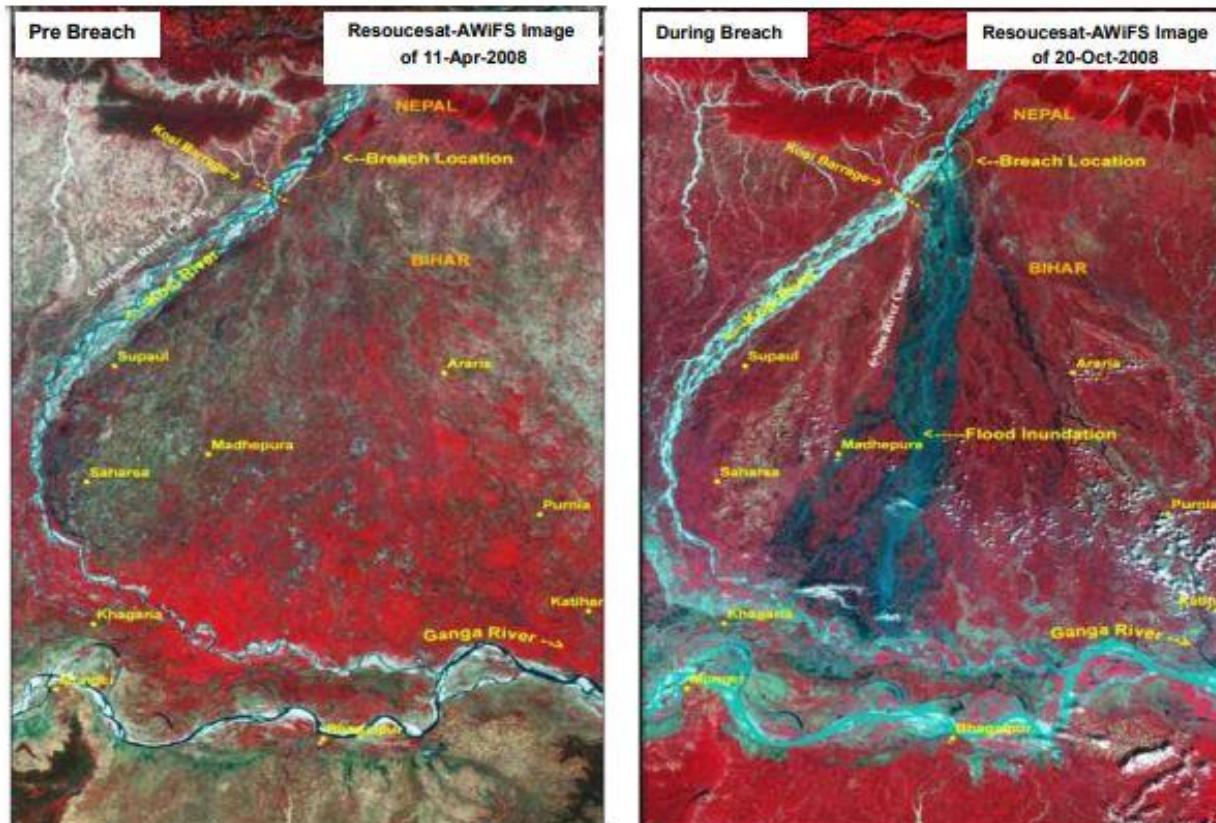
IRS-P6 AWIFS



RISAT-image of 13-Oct-2013 (06:00 hours IST)

- A hazard map is a common visual aid used to point out safe escape routes and safe harbours in disastrous situations.
- They act as guide for people and help them save their lives in disastrous situation.
- It is a community based approach used to map the risk prone and safe zones.
- Risk area can be mapped using these simple hazard maps and risk reduction activities can be carried out in those areas.
- The hazard map helps people to know the correct escape routes and take refuge at safe places when disaster strikes.

CHARTING A HAZARD MAP



Flooding Around Assembly Area, Srinagar, J&K

25-May-2014



10-Sep-2014



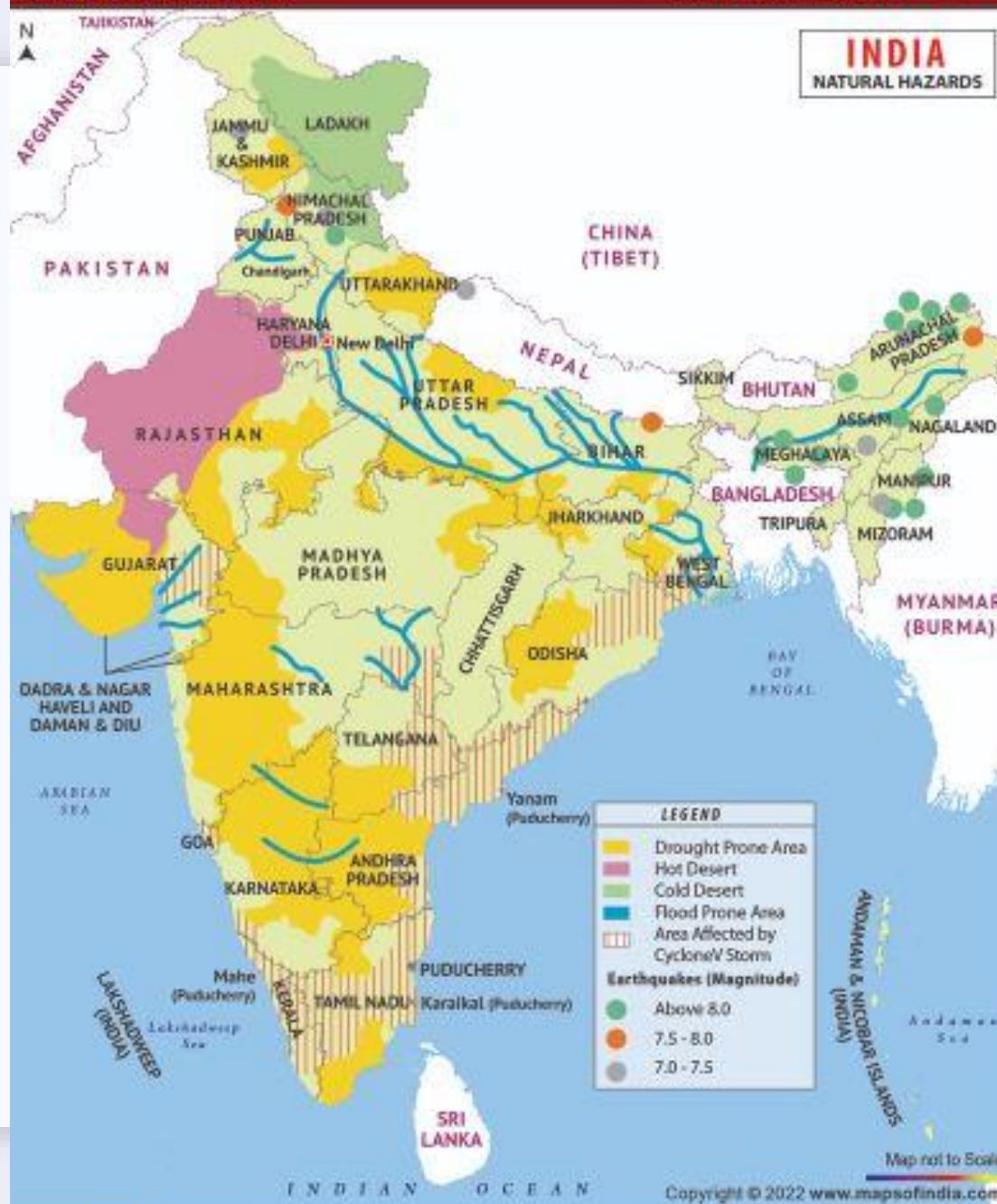
Flood Inundation

Scale
0 100 m

Natural Hazard Map of India

[Click here for Customized Maps](#)

INDIA NATURAL HAZARDS



Simple Hazard Map

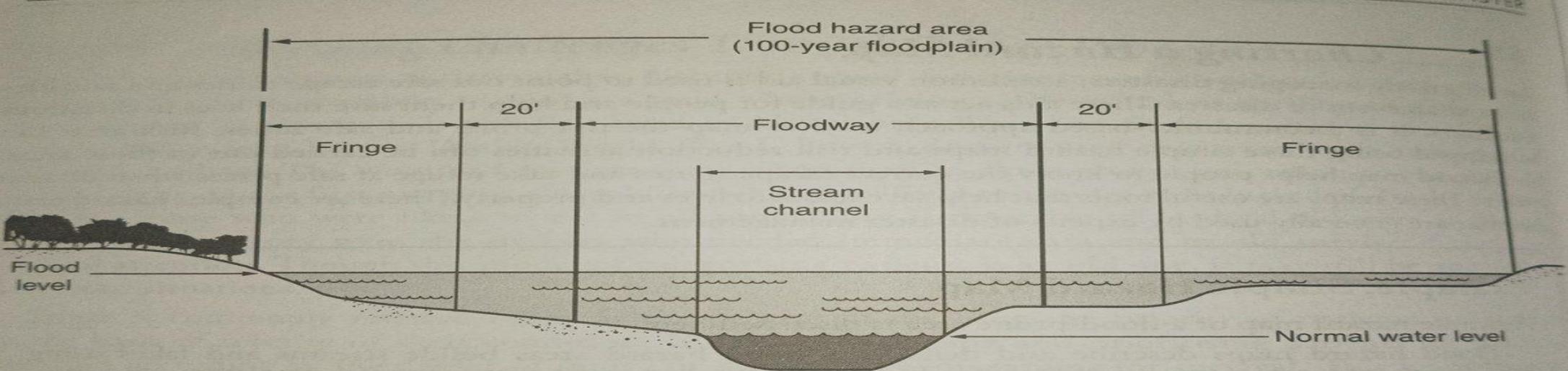


Figure 8.1 Flood hazard map of Dublin. (Retrieved from <http://dublinohiousa.gov/engineering-floodplain-management-in-dublin/> on 31.05.2014.)

- Flood hazard maps describe and demarcate the flood hazard areas beside streams.
- The rivers hydrology and topology is assessed and modelled with known river data.
- Flooding areas are classified as floodway zones and flood fringe zones.
- The hazard maps are to be updated according to the change in the hydraulic system and flood fringes.

Effect of Culture and Disaster Management

An understanding of cultural characteristics can strengthen, empower and enrich management effectiveness and success.

- The word 'culture' comes from the Latin word '**cultura**' which is related to cult. In its broadest sense, the term refers to the result of human interaction. It can be defined as acquired knowledge that people use to interpret experience and generate social behaviour.
- This knowledge gained through experience forms values, creates attitudes, and influences behaviour.
- ❑ Certain characteristics of culture as follows:

1. **Culture is learned:** Culture is not inherited or biologically based; it is attained by learning and experience.
2. **Culture is shared:** People as members of a group, organisation or society share culture. It is not limited to a single individual.
3. **Culture is trans-generational:** We say so in the sense that it is cumulative knowledge arising out of experience that is passed down from one generation to the next.

4. **Culture is symbolic:** It uses the human capacity to symbolise or use one thing to represent another.
5. **Culture is patterned:** It follows a structure and is integrated. A change in one part will bring changes in another.
6. **Culture is adaptive:** It is based on the human capacity to change or adapt to its surroundings

Effect of Culture and Disaster Management

Culture becomes a barrier when training and awareness programmes are insensitive to cultural norms and values of a given community. Different aspects pertaining to culture which is vital for disaster management are as follows:

- 1. Roles and responsibilities of persons in community:** Certain members of a community command a respectable position and hence whatever they say is followed by the entire group. They must be imparted awareness training so that they can disseminate information to the community. Indigenous community leaders such as mayors, gram pradhans, mukhiyas, religious leaders and teachers in local schools are members who play an important role in the community and have a say in community affairs.
- 2. Language:** The local residents are more receptive if training is conducted in their native language because it is easily understandable and they feel interested. Caution should be exercised in the usage of words, terms or expressions. Use of taboo words or expressions should be avoided as they will do more harm than good.
- 3. Correct translations:** It is essential that translation of messages from one LANGUAGE TO OTHER IS PRICISE ANS NESSAGE ISBEING EXACTLY RELAYED TO THE PEOPLE OF COMMUNITY. BMEANING OF THE MESSAGE become distorted or not received by the target audience if the translation is improper. Intonation and is being exactly relayed to the voice modulation should be taken into consideration while communication.
- 4. Medium of transmission:** Medium chosen for education and public awareness should use and take into account the modes which are accessible to the members of the community. Indigenous knowledge may also be included into public awareness programmes.
- 5. Traditional healing methods:** These methods, which use herbal medicines, are century-old mechanisms followed by communities. Instead of just discarding them in favour of modern medicines, their efficacy should be established. If in an agreement with modern medical systems, these medicines can well be used when disaster strikes and outside help gets delayed. Their use can help save lives in emergencies.

Exposure to disasters have made communities develop traditional strategies or preventive measures to prepare and deal with disasters. These are culture-specific and should be given weightage.

Environmental Degradation and Disasters: Addressing Challenges

Degradation of the environment has opened a Pandora's Box of cataclysm across the planet. We all are witnesses to the horrors of drought and extreme weather conditions that assault one or the other part of the world each day.

The growing number of devastating hurricanes, typhoons, droughts and floods across the globe is a result of climate change. The important aspect is that most of these natural disasters are **triggered by human action**. If an individual exhibits controlled and regulated behaviour in a responsible manner towards the environment, these disasters may well be prevented to a great extent.

Extremities of weather conditions can be attributed to global warming, the root of which is human actions. Also, the selection of building sites and materials significantly affect a community's vulnerability to environmental disasters.

Improper handling of solid wastes causes build-up of explosive gases which endangers the physical environment. Pollution of water bodies by discharging of waste in rivers and lakes makes water undrinkable and affects flora and fauna of the region

Environmental degradation affects humans as well plants and animals and also water and air quality adversely.

The challenges of environmental degradation can be addressed by undertaking activities for pollution prevention. Environmental management professionals can make considerable contributions during the disaster management phases by identifying possible improvements.

Identification of environmental regulatory requirements and funding programmes to support environmental mitigation actions is a challenge. At preparedness phase, this can be addressed by assessing environmental vulnerabilities and providing assistance in developing response procedures to ensure that environmental hazards are addressed.

The central goal of any disaster management activity should be to reinforce the need to address environmental concerns because it can serve as a tool to prevent disasters and lessen their impact on people, their homes and livelihoods.

CLOSING CASE STUDY:

CASE PROBLEM: THE GEOGRAPHY LESSON

The term tsunami comes from the Japanese words 'tsu' meaning 'harbour' and 'nami' meaning 'wave'. As evident, Tsunamis generally consist of a series of waves which span from minutes to hours, arriving in a series resembling a 'wave train'. The waves of tsunami ranges to tens of metres in heights and their destructive power can be enormous. They have the capacity to affect entire ocean basins. The 2004 tsunami of Indian Ocean was amongst the deadliest natural disasters in human history. Around 290,000 people were killed or went missing from over 14 countries bordering the Indian Ocean. But many lives were also saved.

It was 26 December 2004, Tilly Smith, an 11-year-old British schoolgirl, was on a holiday in Thailand with her family. The Smiths, from southeast England, were celebrating Christmas at Maikhao Beach in Phuket, southern Thailand. Triggered by a massive earthquake off northern Sumatra, deadly tsunami waves were already on their way. Tilly saw the water was swelling and kept coming in and there was froth on it. She sensed something wrong. Her mind kept going back to the geography lesson Mr. Kearney gave just two weeks before she flew out to a Thai resort with her family. She acknowledged the signs of the receding sea as a sign of an imminent disaster. The beach was getting smaller and smaller. Tilly remembered what she had studied about tsunamis in school. The slow rising of the sea and formation of froth and whirlpools before the big waves came, was similar to what she had seen in a video of a tsunami that hit the Hawaiian Islands in 1946. Tilly knew that the consequences of not acting when something strange happened would be grave. She got more and more frantic and started screaming to get off the beach. She warned her parents of the impending disaster and as a consequence all the hotel guests were rapidly moved from the beach.

The family took refuge on the third floor of the hotel where they stayed. Set well back from the shore, it withstood the surge of three tsunami waves. When tsunami struck everything including beds, palm trees were displaced due to storm. If they had stayed on the beach they would not have survived. In the disaster's aftermath, the Smiths met people from nearby resorts who had lost whole families.

A simple geography lesson saved lives. Tilly's geography teacher, who has taught the course for at least 11 years, uses audio-visual teaching aids such as interactive white boards to harness geographic information online. Tilly's class had looked up U.S. websites about tsunami early-warning systems. Children were also given practical tasks such as building earthquake-proof houses out of balsa wood. Students do not learn much from books and any subject can be dull if it is taught that way. To get children involved and interested, practical lessons are a must.

The International Strategy for Disaster Risk Reduction aims to inform and mobilize Governments, communities and individuals to ensure that disaster risk reduction is fully integrated into school curricula in high-risk countries and that school buildings are built or retrofitted to withstand natural hazards. Sensitising the next generation about living with hazards can help make our societies better able to cope with disasters. On the first anniversary of the Official Tsunami Commemorations at Khao Lak, Thailand on 26 December 2005, Tilly was named 'Child of the Year' by the French magazine *Mon Quotidien*. On the first anniversary of the Official Tsunami Commemorations at Khao Lak, Thailand on 26 December 2005, she was given the honour of closing the ceremony with a speech to thousands of spectators.

A simple geography lesson to a school girl can save thousands of lives.

CLOSING CASE STUDY:

Critical Thinking Question

1. Do you think children can play an important role in disaster management? Give reasons for your answer.

CLOSING CASE STUDY:

Questions for Review

1. Is education on disasters important? If yes, why?
2. Through public awareness, disaster can be prevented effectively?
Agree/Disagree giving suitable reasons for your answer.
3. What is Triage? How can it help in classifying injuries? 4. Explain the role of public health system in disaster management.
5. Explain the importance and role of culture in disaster management.
6. What is a hazard map? Explain with an example.
7. Explain the relationship between environmental degradation and disaster.

“That which does not kill us makes us stronger.”

— Friedrich Nietzsche, German philosopher, poet and scholar.

THANK YOU ...