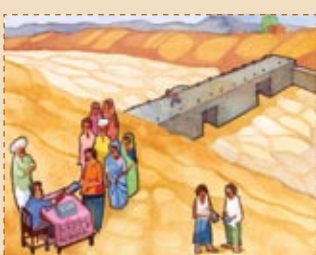
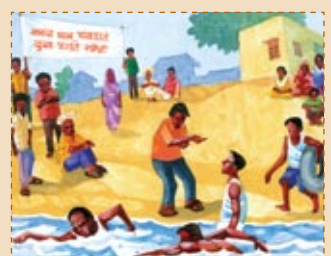
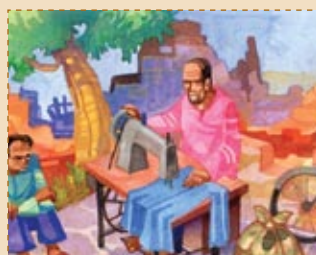


UNDERSTANDING VULNERABILITY for Disaster Risk Reduction



**A SET OF
VISUAL AIDS**

© Unnati 2008

FIRST EDITION. 500 copies

Please feel free to use this compilation for wider educational purpose with due acknowledgements and inform us of the same.

PUBLISHER:

UNNATI - Organisation for Development Education

G 1/200, Azad Society, Ahmedabad 380 015. Gujarat.

Phones: 079 - 2674 6145, 2673 3296. Fax: +91-79-2674 3572

Email: psu_unnati@unnati.org Web url: www.unnati.org

DISPLAY PANELS:

Design & Art direction: Tarun Deep Girdher

Illustrations: Ranjit Balmuchu | Scanning: Bharat D Suthar

BOOKLET:

Design: Solution One Designworks, Ahmedabad

cover, layout & production: Tarun Deep Girdher

PRINTED AT: Print Vision Pvt. Ltd., Ahmedabad. 079 - 2640 5200

Illustrations copyright © Ranjit Balmuchu & Tarun Deep Girdher 2008

DISCLAIMER: The panels and this booklet is primarily designed to facilitate community understanding on vulnerability for disaster risk reduction.

Due care has been taken to simplify the technical aspects and concepts.

Hence the users are encouraged to use this material as an aid to supplement their existing knowledge on the subject during their interactions with the community. This compilation shall not be used for any commercial purpose.

PREFACE

THE AFFECTS OF HAZARDS are mainly endured by vulnerable groups, as they are unable to cope with its impact, owing to paucity of alternate resources to replenish the damage caused due to loss of life and assets. Understanding the concept of vulnerability, identifying the vulnerable, attending to their needs, rights, entitlements, endowments and building community resilience to reduce vulnerability, are vital to reducing the risk of hazards and from annihilating the situation.

In recent years, there has been a paradigm shift in the articulation of disaster related conceptual frameworks and practices. Disaster Risk Reduction (DRR) has evolved as an integrated approach to disaster response and mitigation. The current global and national policy environment places greater emphasis on building community resilience to reduce vulnerability. However, various studies and evaluations indicate, that there are huge gaps between the conceptual base and practice at the ground level.

THIS SET OF VISUAL AIDS have been developed with the aim of providing a preliminary understanding about these evolving concepts, related to disaster risk reduction; based on the understanding that without practice at the community level, frameworks and concepts will remain amorphous. The visual aids will not only familiarise the practitioners with the concepts, but will also enable in generating discussions at the community level and integrate them in their efforts for building support systems for disaster mitigation.

The users of these visual aids are encouraged to share their experiences for collectively contributing toward building a body of knowledge on this evolving concept of disaster risk reduction.

Binoy Acharya
UNNATI . March 2008

INTRODUCTION

DISASTERS HAVE BECOME a frequent phenomenon in India. During the past ten years, we have witnessed high profile disasters like the Orissa super cyclone, Gujarat earthquake, Indian Ocean Tsunami, Kashmir earthquake, Mumbai floods and the recent Bihar floods. These disasters have taken a huge toll of life and property. All these catastrophes effect the society and economy significantly and has become a cause of great concern for the people as well as the government.

OVER THE YEARS, a paradigm shift has occurred in the theory and practice of disaster management. Earlier, disasters were treated as a one time event with a focus on geophysical and engineering knowledge without considering the social and developmental aspects. Gradually, the attitude shifted towards preparedness with an emphasis on 'contingency planning' and relief supplies. However, as disaster losses continued to increase, there is a shift from response approach to a more proactive attitude. It is now being understood that disasters are related to vulnerability of the people, which in turn is dependent on the development patterns of the region.

With the experiences and new learnings in the field of disasters, there is need to focus on vulnerability reduction. It is therefore extremely important that we follow the approach of 'Disaster Risk Reduction', which means we plan, and act in a manner to reduce vulnerability and works towards preventing hazards from taking the shape of a disaster. Though we have moved ahead in theoretical construct, there is still a long way to go before substantial achievement is made in building resilient communities and a safe living environment.

IN ORDER TO BUILD resilient communities, which are better prepared to prevent the hazards from taking shape of a disaster, we need to create awareness at the grass roots level, about the fundamental concepts of vulnerability, capacity to cope, hazards, disasters and their inter-relationships. This booklet is a compilation of 17 such display panels, divided into three sets:

- A. Understanding Hazards and Disasters
- B. Vulnerability and Disaster Risk Reduction
- C. Building Resilience for Disaster Mitigation.

Each set has five to six illustrations which will together help in understanding the conceptual framework. The attempt is to visualise and illustrate these concepts in an easy to understand simple language. The panels are planned in a manner that they can be used together or even as three individual sets – either in a training situation or for wider dissemination as permanent display. Each section has an introduction articulating the basic focus of the topics covered in that particular set of panels.

DIGITAL FILES OF the same panels have been provided in the accompanying DVD. There are two folders in the DVD. One has ready-to-print high resolution files in pdf format. The files are in size 12” x 18”, which can be scaled up to take prints of 24” x 36” size for the purpose of display. One can also use the same print ready pdf files to take prints on smaller size (A3 or A4) to be used for smaller meetings.

The second folder has only the images, used in the panel, in an easy to use format for power point presentations, during training programmes or meetings. This has screen resolution files without the text, in jpeg format.

Please feel free to use the material provided in this booklet and the DVD for wider dissemination and creating awareness on this issue. The users of this compilation are requested to share their practices, so that we collectively build a body of knowledge on vulnerability and disaster risk reduction.

A

Understanding
Hazards
and Disasters

There are six panels in the first set of visual aids which give an overview of *the different kinds of hazards*. These panels focus on developing an understanding on the following:

- the basic concept of hazards;
- different kinds of hazards; and
- hazards can occur anytime and effect any of us.

The first panel, reconstructs the effect of a coastal tide or a tsunami. The second panel, portrays the occurrence of an earthquake and its impact in an urban location. The third panel, represents an industrial hazard, depicting the Bhopal gas tragedy of 1984. The fourth panel, emphasizes the fact that hazards are potential risks which can occur anytime, often, without warning and effect any of us.

The fifth and the sixth panels categorically recap the two broad categories of hazards – natural hazards (such as floods, tsunami, tidal waves, earthquake and cyclones) and man-made hazards (such as accidents in factories, fires, road accidents, stampedes and even riots).

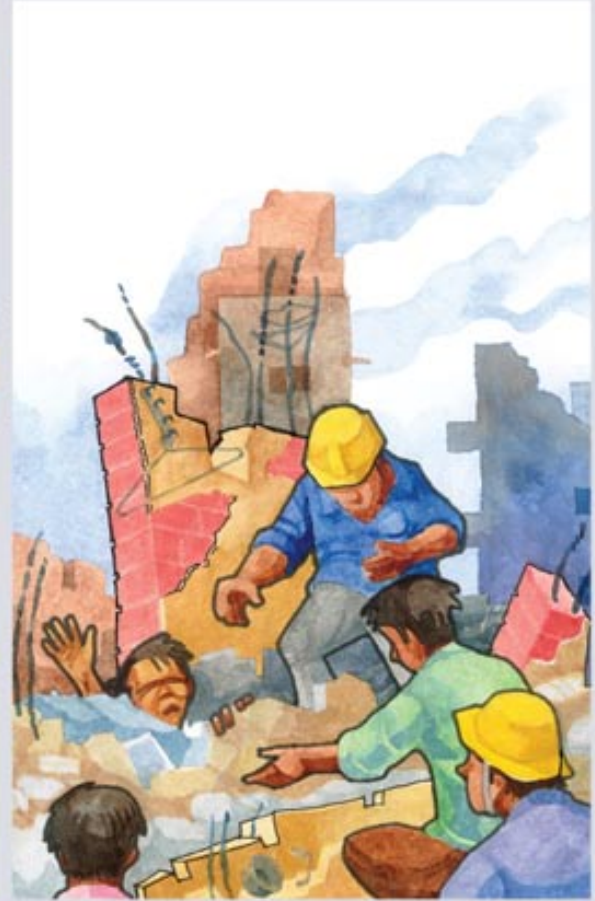
Irrespective of the kind of hazards, they are dangerous events or conditions that threaten or have potential for causing loss of life, or damage to property or the environment.





समुद्र के किनारे बसे गांव के मछुवारे समुदाय का जीवन रोजमर्रा की तरह ही बीत रहा है। अचानक समुद्र की लहरें उठीं और किनारे बसे हुए समुदाय का जीवन उथल-पुथल हो गया। इससे न केवल जान-माल वरन व्यवसाय और मकान भी क्षतिग्रस्त हुए।

In a village by the sea, life is going on as usual for the fishing community. Then a tidal wave hits the coast and everything changes. There is loss of life, livelihood and damage to the dwellings.



मकर संक्रान्ति के दौरान सभी पतंग उड़ाने में मशगूल थे, कि अचानक धरती में कंपन हुआ। इस भूकंप से मकान क्षतिग्रस्त हुए, साथ ही कई लोगों की जाने भी गई।

During the festival of kite flying, everybody was enjoying and the earth rumbled. An earthquake left behind a trail of damaged buildings, loss of shelter and even life.



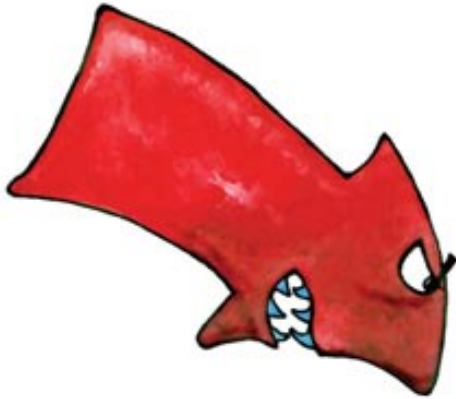
भोपाल में दिसम्बर ३, १९८४ की रात लोग गहरी नींद में थे, तभी अचानक नजदीकी कारखाने में जहरीली गैस का रिसाव हुआ। इस रिसाव से काफी संख्या में लोगों की मृत्यु हुई और स्वास्थ्य पर भी विपरीत असर पड़ा।

In Bhopal, on 3rd December 1984, people were sleeping at night. Due to an accident in the nearby factory, harmful gas leaked from the storage tank and spread. A large number of people died and many suffered from health problems



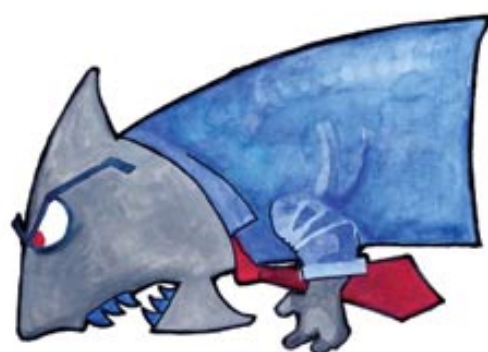
संकट की स्थिति किसी भी समय आ सकती है और हममें से किसी को भी प्रभावित कर सकती है। उदाहरण के लिए घरों में, स्कूलों में और सार्वजनिक भवनों में लगी छोटी सी आगजनी की घटना, एक खतरनाक स्थिति बन सकती है जान-माल को नुकसान हो सकता है।

**A hazard can occur anytime and strike any one of us.
Even a small fire at home, school or in a public building
may lead to a dangerous situation, damaging
property and loss of life.**



कुदरती संकट विभिन्न तरह के हो सकते हैं जैसे कि बाढ़,
सुनामी, समुद्र में लहरें उठना, भूकंप और चक्रवात।
ऐसे संकटों के होने एवं उनकी तीव्रता पर हमारा काबू नहीं होता है।

Natural hazards can be of various types - floods,
tsunami, tidal waves, earthquake and cyclones.
We have little control on their occurrence and intensity.



कुछ संकट मानव-सृजित हैं। इस तरह के संकट ज्यादातर हमारी लापरवाही की वजह से होते हैं, जैसे कि कारखानों में अकस्मात गैस-रिसाव और आग का लगना, सड़क दुर्घटना, भगदड़ और दंगा होना।

Some hazards are man-made, mostly, occurring due to negligence like accidents in factories – gas leakage and fire, road accidents, stampedes and riots.

B

Vulnerability
and Disaster
Risk Reduction

The second set of six panels establish the *relationship between disasters, vulnerability and the capacity to cope with a hazard*.

These panels focus on understanding:

- when the impact of hazards can lead to disasters; and
- relationship between vulnerability and capacity to cope with a hazard.

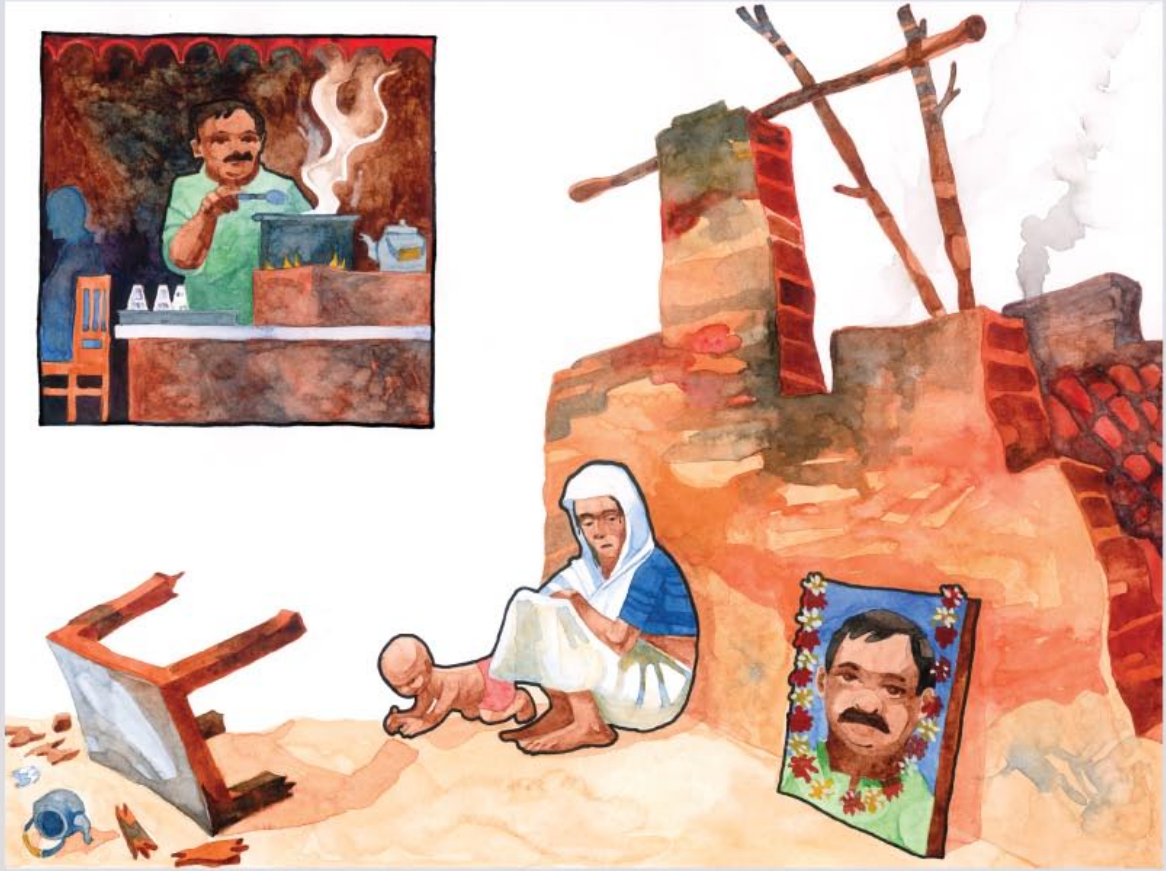
The first panel, represents the potential effect of hazards. The second panel, compares the capacity of different communities to cope with the same hazard - the vulnerable groups which lack resources are affected more by the same hazard. The third panel, clarifies the concept of vulnerability based on geographical location and the importance of appropriately built structures to enhance physical capacity.

The fourth and fifth panels, depict the concept of capacity and vulnerability to different hazards over a period of time, through a case study.

The sixth panel, reemphasizes the fact that the same hazard can effect the vulnerable groups more than others, becoming a disaster for them.

Vulnerability is the degree to which an area, people, built structures or property is exposed to loss, injury or damage caused by the impact of a hazard.





संकट हमें चौतरफा असर करता है।
सिर्फ सम्पत्ति और भवनों की ही क्षति नहीं होती
बल्कि इससे आजीविका के स्रोत भी नष्ट होते हैं,
कभी-कभी जान की हानी भी होती है।

**A hazard can affect us in several ways!
It leads to loss of property or damage to shelter.
It can also cause loss of income and source
of livelihood, sometimes even loss of life.**



संकट से कौन ज्यादा प्रभावित होता है?
असहाय वर्ग इससे सबसे ज्यादा प्रभावित होते हैं क्योंकि
इनके पास संकट से जूझने की क्षमता नहीं होती है। साथ ही जो लोग
असुरक्षित मकानों में रहते हैं वे ज्यादा प्रभावित होते हैं।

Who does the hazard affect most?
It affects the vulnerable groups most, who cannot cope
with its impact. People living in unsafe buildings can
also be affected by the hazards.



भौगोलिक बसावट भी असहाय स्थिति में ला सकती है जैसे -
निचले हिस्सों पर बसे लोगों की बाढ़ग्रस्त होने की संभावना ज्यादा
होती है। उपयुक्त एवं समुचित तकनीकी रूप से निर्मित भवन
इस तरह के संकटों का सामना कर सकते हैं।

**Vulnerability is also due to geographical location;
low lying areas are more prone to hazards such as flooding.
However, if built structures are appropriately constructed,
they can withstand the effect of hazards.**



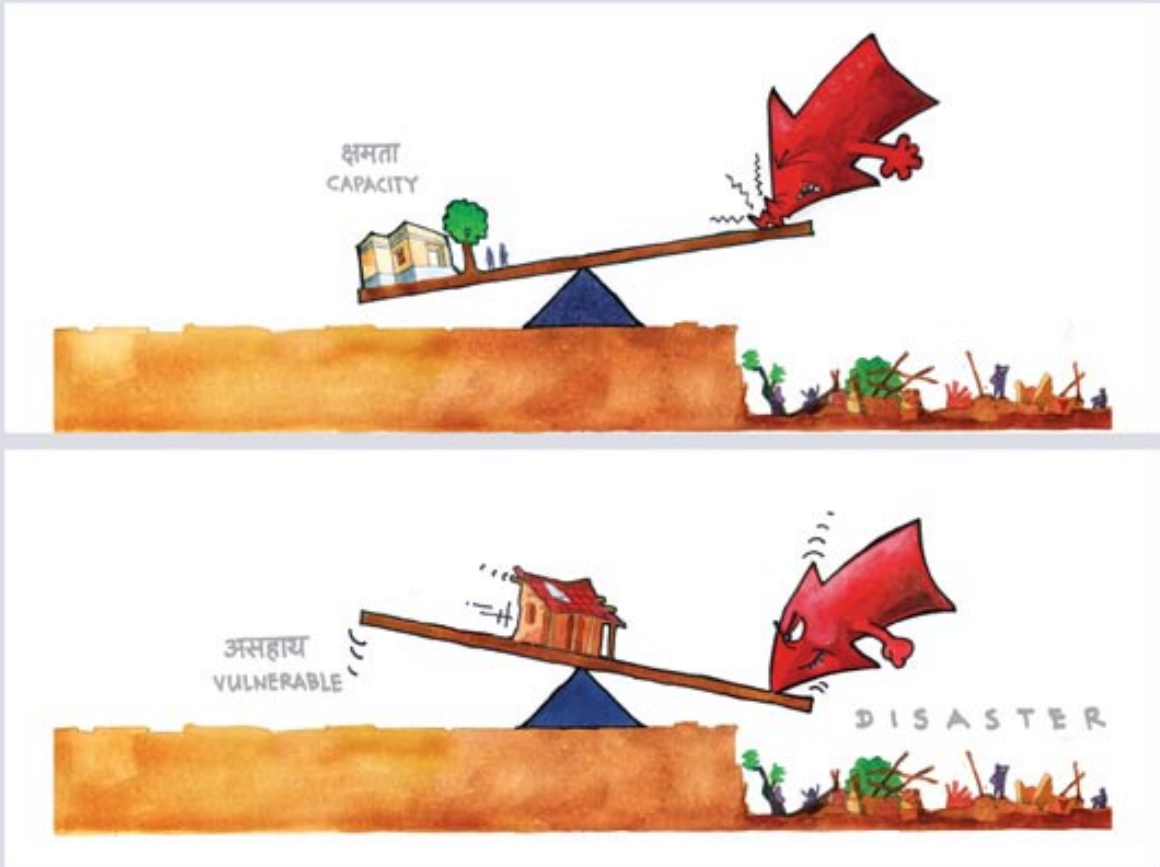
कुछेक कारीगरों के सहयोग से रामभाई अपनी दर्जी की दुकान अच्छे-खासे मुनाफे में चला रहे थे। बाढ़ के दौरान उन्हें नुकसान तो उठाना पड़ा पर अपने साधन उन्होंने बचा लिये। बैंक में जमा बचत की मदद से रामभाई दुकान फिर से शुरू कर पाये।

Rambhai had a flourishing business of tailoring with a few employees. During the flood, he suffered losses but could manage to save his equipments. With the help of his savings in the bank, he was able to start his tailoring shop again.



कुछ समय बाद, भूकंप के दौरान दुकान ढह जाने से रामभाई को काफी नुकसान हुआ। इस बार के संकट से वे उबर नहीं पाये। आज रामभाई सिलाई मशीन के साथ फूटपाथ पर बैठे अकेले काम कर रहे हैं।

After some time, during the earthquake, Rambhai suffered major losses as the building collapsed. This time he could not cope with the impact of the hazard. Now he works alone with a sewing machine on the roadside.



विभिन्न प्रकार के संकट होते हैं और इन संकटों को हमेशा रोका नहीं जा सकता। यदि हमारे पास इन संकटों का सामना करने की क्षमता है तो हम उसे आपदा बनने से रोक सकते हैं। परन्तु असहाय वर्ग जो कि जोखिम में ही जिन्दगी बीताते हैं, उनके लिए यही संकट आपदा में बदल सकता है।

There are several types of hazards and they cannot always be prevented. If we have the capacity to cope with the hazards, it does not become a disaster. But for vulnerable groups, which are at a greater risk, the same hazard can turn into a disaster.



Building
Resilience for
Disaster
Mitigation

The third set of five panels attempt to create an understanding for *improving capacity to cope with hazards and building resilience of the communities for disaster mitigation*. These focus on building resilience through:

- safer built structures - both personal dwellings as well as public buildings;
- active participation of the community in being prepared to combat hazards or emergency;
- building financial capacity with regular savings; and
- treating disaster mitigation as a development issue and not as a reaction to the event.

The first panel, stresses on the need for buildings to be built safely and repaired as per the bye-laws and standards. The second panel, emphasises the need of public buildings also to be safe. The third panel, demonstrates the importance of micro finance and regular savings as a tool for disaster preparedness in the time of need. The fourth panel, portrays the importance of community participation in volunteering, forming task groups and training for disaster preparedness.

The fifth panel, looks at the context of using the various development schemes of the government as a means of improving financial capacity (livelihood) and at the same time improving the physical environment to cope with impending hazards.





मकान व भवन सुरक्षित मापदण्डों एवं नियमों के अनुसार निर्मित व मरम्मत होने चाहिए। यह कुदरती संकट के समय क्षति व नुकसान कम करने में सहायक होती है।

Houses and buildings should be constructed or repaired as stated in the safety norms and bye-laws. This will help reduce the damage or loss during natural calamities.



सिर्फ हमारे घरों का नहीं बल्कि स्कूल, पंचायत भवन, धर्मशाला, अस्पताल और सामुदायिक भवन जैसे सार्वजनिक भवनों को भी सुरक्षा मापदंड के अनुसार बनाना व मरम्मत करना चाहिए। हमें विभिन्न आपदाओं के लिए तैयार रहना चाहिए।

Not only our personal dwellings, but public spaces such as schools, *panchayat ghar*, *dharmshalas*, medical centres and community hall need to be constructed and repaired following the safety standards. We should prepare ourselves for various disasters.



भौतिक क्षमता बढ़ाने के साथ-साथ वित्तीय सुरक्षा को भी मजबूत करना जरूरी है। नियमित बचत एवं बीमा जरूरत के समय मददगार साबित होते हैं।

Along with building the physical capacity, in the event of any disaster, the financial security also needs to be strengthened. Regular savings and investments in insurance can provide us support at the time of need.



समुदाय में से विभिन्न कार्यों के लिए स्वयंसेवकों का चयन कर,
उनकी टीम बनानी चाहिए। इन टीमों को प्रशिक्षण देकर,
आपदा के दौरान सेवा हेतु तैयार करना चाहिए। समुदाय की तैयारी
के लिए नियमित रूप से मॉकड्रिल करना चाहिए।

Different volunteer groups from within the community should be formed for different tasks. These groups should be trained and be ready when the services are required during a disaster. Mock drills should be conducted to increase community preparedness.



राष्ट्रीय ग्रामीण रोजगार गारंटी योजना जैसे विभिन्न सरकारी विकासलक्षी कार्यक्रमों के तहत हमारे आसपास के कुदरती संसाधन एवं पर्यावरण को सुधारना जरूरी है। भूमि व जल संरक्षण, वृक्षारोपण और चारागाह विकास कार्य से समुदाय पर संकट का असर कम कर सकते हैं।
इससे आपदा के प्रभाव को कम किया जा सकता है।

Through different development programmes of the government, like National Rural Employment Guarantee Scheme (NREGS), we can also improve our immediate environment through soil and water conservation, plantation and development of pasture (*gauchar*) land in such a way so that the hazard has less effect on the community and facilitates the process of disaster mitigation.

The accompanying DVD contains two folders: one for taking prints of the panels and the second one for using the images in power point presentations. The details of the folders and the files are given below.

**DRR visual aids panels
_Printing**

Each folder contains the high resolution pdf file of the relevant panels as shown in this booklet. As per the requirement and space, you can take prints of A3 size or as large as upto a size of 24" x 36".

set A_hazards_print

A1_tsunami_print.pdf
A2_earthquake_print.pdf
A3_bhopal_print.pdf
A4_fire_print.pdf
A5_natural hazards_print.pdf
A6_manmade hazards_print.pdf

set B_vulnerability_print

B1_disaster_print.pdf
B2_vulnerability_print.pdf
B3_location vuln_print.pdf
B4_rambhai 1_print.pdf
B5_rambhai 2_print.pdf
B6_vuln-capacity_print.pdf

set C_resilience_print

C1_building_print.pdf
C2_school_print.pdf
C3_savings_print.pdf
C4_community_print.pdf
C5_NREGS_print.pdf

**DRR visual aids slides_
Presentations**

Each folder contains the low resolution images (jpegs files) of the relevant visuals, without the text as shown in this booklet. You can use them for various presentations or lectures etc.

set A_hazards_slides

A1_tsunami_ppts.jpeg
A2_earthquake_ppts.jpeg
A3_bhopal_ppts.jpeg
A4_fire_ppts.jpeg
A5_natural hazards_ppts.jpeg
A6_manmade hazards_ppts.jpeg

set B_vulnerability_slides

B1_disaster_ppts.jpeg
B2_vulnerability_ppts.jpeg
B3_location vuln_ppts.jpeg
B4_rambhai 1_ppts.jpeg
B5_rambhai 2_ppts.jpeg
B6_vuln-capacity_ppts.jpeg

set C_resilience_slides

C1_building_ppts.jpeg
C2_school_ppts.jpeg
C3_savings_ppts.jpeg
C4_community_ppts.jpeg
C5_NREGS_ppts.jpeg

UNNATI - Organisation for Development Education is a voluntary non-profit organization registered under the Societies Registration Act (1860) in 1990. We work to promote social inclusion and democratic governance so that the vulnerable sections of our society are empowered to effectively and decisively participate in mainstream development and decision making processes.

We provide issue based, strategic educational support to development initiatives in Gujarat and Rajasthan. We undertake collaborative research, public education, advocacy, direct field level mobilisation and implementation with multiple stakeholders. We work from the grassroot level to policy level environment for ensuring basic rights of citizens. In this, we draw inspiration from the struggles of the vulnerable and strength from our partners. Presently, all the activities are organised around the following programmes:

SOCIAL INCLUSION AND EMPOWERMENT

The initiatives include:

Dalit mobilisation and organising in Western Rajasthan in collaboration with local NGOs and people's organisations to fight discrimination.

Educational support for mainstreaming gender at all levels—internally and for our partners.

Promoting civic response in mainstreaming disability through educational support to agencies working with persons with disabilities and other civil society organisations.

Facilitating formation of craft based producers' group of women affected by the Gujarat earthquake for livelihood promotion.

CIVIC LEADERSHIP AND GOVERNANCE

We work in the rural and urban areas.

The activities include:

Community mobilisation for participation in decision making forums and monitoring of basic services to ensure social justice.

Support elected representatives especially women and dalits to promote accountability through reform in local governance institutions. The support includes capacity building for equitable implementation of development programmes, participatory planning and facilitating social audits.

Promotion and strengthening of forums like association of women elected representatives, Social Justice Committees and Village Development Committees for facilitating collaborative action.

SOCIAL DETERMINANTS OF DISASTER RISK REDUCTION

We facilitate adoption of sustainable and affordable innovations in the field and research to promote community-based practices for disaster risk reduction. The activities include action research on current community practices, documentation of best practices and research and advocacy on disaster response policies and packages.

Through the Knowledge Resource Centre, the learning derived from our field experiences are consolidated and disseminated for wider sharing. It is our endeavour to build training academies at Jodhpur, Rajasthan and Bhachau, Gujarat for practitioners, citizen leaders and development workers on disaster risk reduction, social inclusion and democratic governance.



UNNATI

Organisation for Development Education

web url: www.unnati.org

COORDINATING OFFICE

G 1/200, Azad Society, Ahmedabad 380 015. Gujarat.

Phone: 079 - 2674 6145, 2673 3296. Fax: +91-79-2674 3572

Email: psu_unnati@unnati.org

RAJASTHAN PROGRAMME OFFICE

650, Radhakrishnapuram, Nr. Leharia Resort,

Pal-Copasni bypass Link Road, Jodhpur. Rajasthan.

Phone: 0291 - 3204 618

Email: unnati@datainfosys.net