1- FINDINGS

The team conducted interviews maintaining strict confidentiality, after getting consent (written or oral) from the respondents. Those not interested in interviewing were left out. A structured questionnaire was used mainly to collect the necessary information. Data was collected, compiled and analyzed. The team conducted extensive interviews, interactions and focused group discussions with respondents. Special care was taken to cover the elderly, weaker sections and other vulnerable groups.

1. Understanding of Disaster:

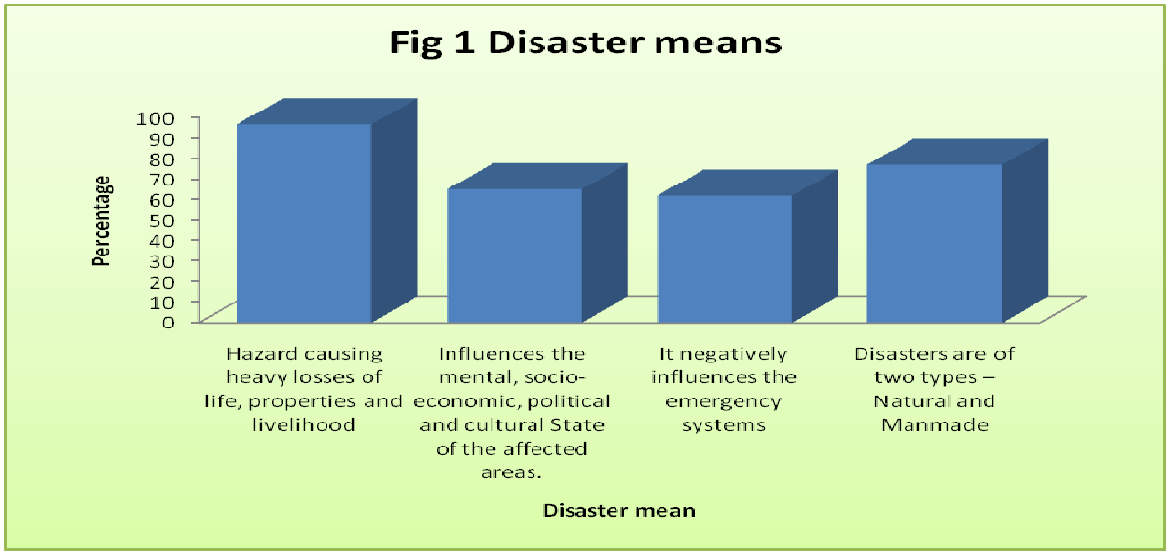
Respondents were asked to describe their understanding of "Disaster". It was necessary to see if it was comprehended in its entirety and in its different manifestation. Only thereafter, can any realistic expectations be entertained regarding DRR.

Section 2 (d) of the DM Act, 2005 defines 'Disaster' as a catastrophe, mishap, calamity or grave occurrence in any area, arising from either natural or man made causes, or by accident or negligence which results in substantial loss of life or human suffering, or damage to and destruction of property 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.

According to the ISDR definition, disaster is a serious disruption of a community or a society functioning, causing widespread human, material, economic and/or environmental losses which exceed the ability of the affected community or society to cope using its own resources.

In their responses, 97% chose a definition of that disaster meant "Hazard causing heavy losses of life, properties and livelihood'', whereas 65% of them also said disaster "Influences the mental, socio-economic, political and cultural State of the affected areas". Disaster was additionally described as that which "negatively influences the emergency systems" for 62% of the respondents. Two types of disasters –Natural and Manmade, were recognized by 77% of respondents. **See Table 1.**

Table 1: Disaster means	**Number**	**%**
Hazard causing heavy losses of life, properties and livelihood	64	97.0
Influences the mental, socio-economic, political and cultural State of the affected areas.	43	65.2
It negatively influences the emergency systems	41	62.1
Disasters are of two types – Natural and Manmade	51	77.3



The responses reveal an incomplete understanding of the Disaster paradigm. A realization of the local role and use of local resources as being central to any endeavor to address risks of hazards is missing. Consequently, it raises critical questions about comprehension and their role in DRR.

2. Ranking of Most Familiar Disasters:

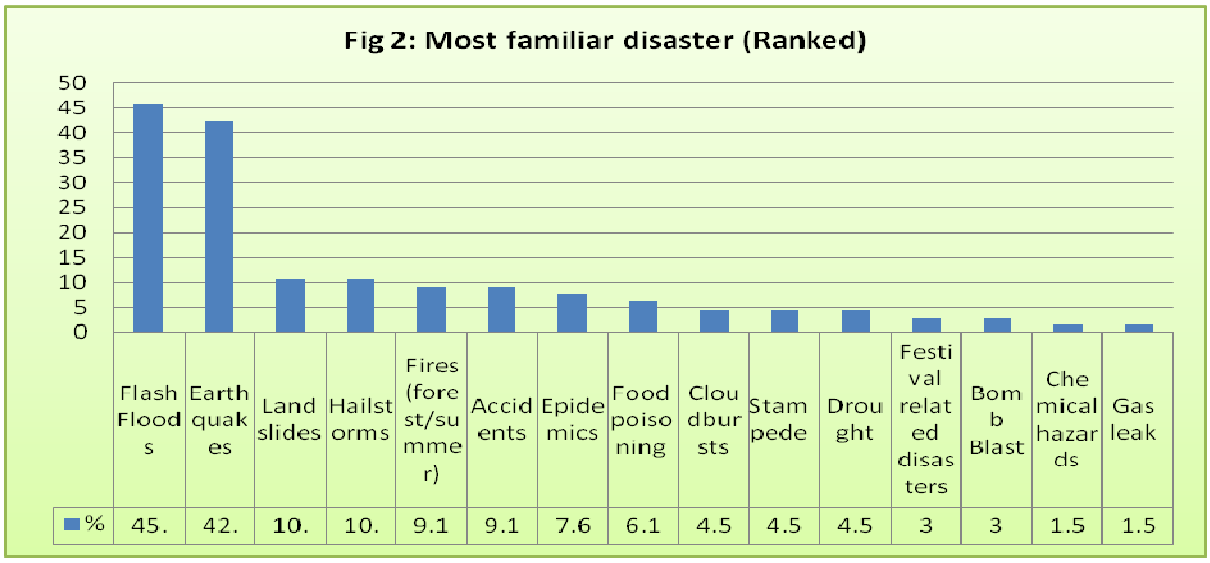
Realizing that there are varying levels of development, education and literacy, another fundamental question was about disaster types. It is quite likely that the various stakeholders may recognize a disaster, based on experience, knowledge and informations. Theoretically it is possible that they may be intuitively clued into Disaster Management and Disaster Risk Reduction, without being able to articulate it. Hence, they were asked to name the most common disasters.

According to BSDMA (Bihar State Disaster Management Authority) the most common disasters in Bihar are Floods, Droughts, Earthquakes, Fire, Cyclones (toofan), Loo, Warm Air Currents and Landslides, in that order.

45.5% of respondents recognized floods as the most common disaster, followed by 42.4% noting earthquakes.

The most common disasters as ranked by the respondents were- Floods, Earthquake, Landslide, Hailstorm, Fire, Accident, Epidemics, Food poisoning, Cloudbursts, Stampede, Drought, Festival related disasters, Bomb Blasts, Chemical hazards and Gas leaks. **See Table 2.**

Table 2: Which of the following disasters are you most familiar with	N0.	%
Floods	30	45.5
Earthquakes	28	42.4
Landslides	7	10.6
Hailstorms	7	10.6
Fires (forest/summer)	6	9.1
Accidents	6	9.1
Epidemics	5	7.6
Food poisoning	4	6.1
Cloudbursts	3	4.5
Stampede	3	4.5
Drought	3	4.5
Festival related disasters	2	3.0
Bomb Blast	2	3.0
Chemical hazards	1	1.5
Gas leak	1	1.5



It was evident that many respondents were unaware of local conditions since landslides are not a common hazard type in Bihar. Explanations can be put forth but it will not take away from the fact that a large numbers of stakeholders were not relating the question to their experience. A misplaced recognition of disaster types does not bode well for their participation in Disaster Management. It points to a huge gap in public perceptions.

3. Disaster Management:

The next question pertained to their understanding of Disaster Management. How disasters to be addressed are is an important factor. Only then can there be an assessment about the perception of Disaster Risk Reduction.

Section 2 (e) of the Disaster Management Act, 2005 defines 'Disaster Management' as a continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary or expedient to prevent danger or threat of any disaster, mitigation or reduce the risk or severity or consequences of any disaster, capacity-building and preparedness to deal with any disaster, prompt response to any threatening disaster situation or disaster, assessing the severity or magnitude of effects of any disaster, evacuation, rescue and relief, rehabilitation and reconstruction.

For 21% of the respondents, management of resources to tackle natural disasters was seen as Management of a Disaster, followed by 17% who answered that it was integration of an action plan with development policies. According to 15% respondents, mitigation of damage is disaster management, whereas 13.6% said it was management of official machinery to tackle natural disasters and provision for training/capacity building. About 87% of them said that all these constituted Disaster Management, **See Table 3.**

87% of them said that Disaster Management includes management of resources, official machinery, training/capacity building, mitigation and development policies.

Table 3: According to you Disaster Management is -	**N0.**	**%**
Management of resource to tackle natural disasters	14	21.2
Management of official machinery to tackle natural disasters	9	13.6
Provision for training/capacity building	9	13.6
Mitigation of damage	10	15.2
Integration of action plan with development policies.	11	16.7
All the above	57	86.4

The feedback seems to suggest that respondents were being either too general or too specific in their understanding. The replies to the next question shed light in greater detail.

4. Disaster Management includes-

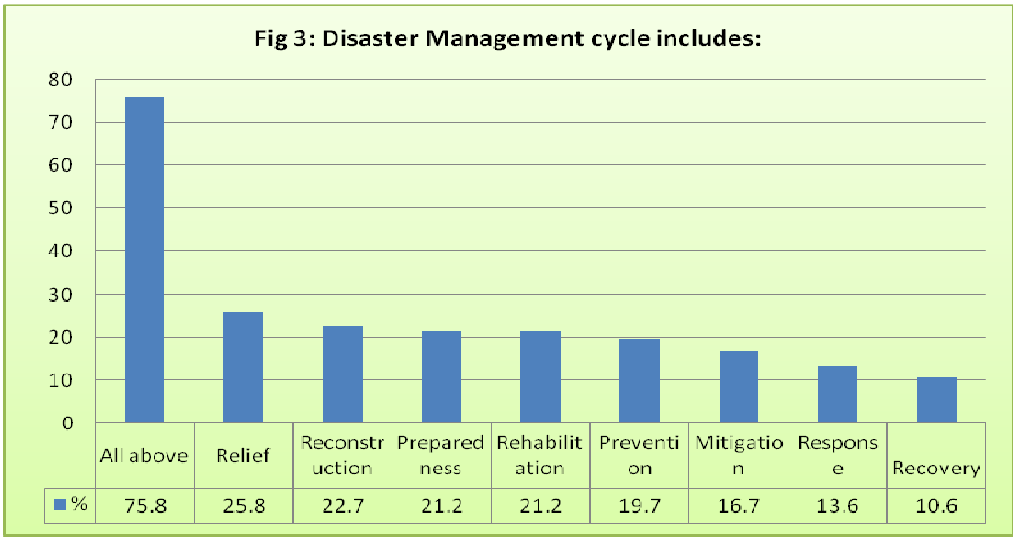
Whether stakeholders were aware of the entire gamut of Disaster Management was pertinent. A limited view bodes ill for energetic participation and active planning for Disaster Risk Reduction.

Disaster management is a continuous process; the end of one phase is the beginning of another, although one phase does not necessarily have to be completed in order for the next to take place. Often several phase-wise activities take place concurrently. Each of the phases is important in terms of greater preparedness, better warnings, reduced vulnerability, appropriate response and/or the prevention of future disasters, during recovery.

The complete disaster management cycle includes formulating public policies and plans that either address the causes of disasters or mitigate their effects on people, property, and infrastructure. Mitigation and preparedness phases precede the occurrence of a disaster. By embracing development, a community's ability to mitigate against and prepare for a disaster is improved. As events unfold, disaster managers become involved in the immediate response and long-term recovery phases.

Responses regarding Disaster Management Cycle were as follows- Relief (26%), Reconstruction (23%), Rehabilitation (21%), Preparedness (21%), Prevention (20%), Mitigation (17%), Response (14%) and Recovery (11%). **See Table 4.**

Table 4: Disaster Management cycle includes: (please tick)	**N0.**	**%**
Preparedness	14	21.2
Prevention	13	19.7
Mitigation	11	16.7
Response	9	13.6
Relief	17	25.8
Reconstruction	15	22.7
Rehabilitation	14	21.2
Recovery	7	10.6
All the above	50	75.8



Most officials said that Disaster Management cycle includes Preparedness, Prevention, Mitigation, Response, Relief, Reconstruction, Rehabilitation and Recovery. But they were not aware of shaping of public policies and plans that either address the causes of disasters or mitigate their effects on people, property, and infrastructure. While a large number of them covered all phases, simultaneously they also chose individual phases. It seemed to indicate their focus on one particular activity.

5. Awareness of Disaster Management Act – 2005

The respondents were next queried on the Disaster Management Act, 2005 and the level at which Disaster Management planning is undertaken. Responses would indicate knowledge of instituitions in Disaster Management & Disaster Risk Reduction. There is a possibility however that respondent may be geared up for playing a role in DRR, without hearing about the Act. Such danger can not be discounted. However, it was felt worthwhile to check their awareness of the DM Act, since it signals a tectonic shift in India's Disaster Management from a reactive, relief-centred approach to a more holistic perspective. The larger vision includes prevention, preparedness, response, rehabilitation and reconstruction. The results were in line with the other responses.

Only 24% were aware of Disaster Management Act - 2005. Further, a few of them believed that Management Plan is needed at State level only (4.5%). About 10.6% respondents reported that it is the District. Then there were those who identified Block level (7.6), Village level (9.1%). Interestingly 10.6% of them said it was needed for state and Districts only. However, 53% said it was needed for all.

About 45.5% knew of the National Disaster Management Authority (NDMA), 51.5% of the State Disaster Management Authority. Roughly half the respondents were aware of National Institute of Disaster Management and only 33% were aware of IDRN (India Disaster Resource Network). **See Table 5.**

Table 5: Are you aware of Disaster Management Act - 2005	**N0.**	**%**
Yes	16	24.2
No	50	75.8
(a) As per Disaster Management Act 2005 Disaster Management Plan is needed for		
a. State only	3	4.5
b. District Only	7	10.6
c. At Block level	5	7.6
d. At Village level	6	9.1
e. All of the above	35	53.0
f. a) and b) only	7	10.6
(b) Are you aware of National Disaster Management Authority NDMA		
Yes	30	45.5
No	36	54.5
(c) Are you aware of State Disaster Management Authority SDMA		
Yes	34	51.5
No	32	48.5
(d) Are you aware of National Institute of Disaster Management NIDM		
Yes	33	50.0
No	33	50.0

(e) Are you aware of the term IDRN (India Disaster Resource Network)?		
Yes	22	33.3
No	44	66.7
(f) Are you aware of NDRF (National Disaster Response Force)?		
Yes	37	56.1
No	29	43.9
(g) Are you aware of District Disaster Management Authority responsible for disaster management in your district		
Yes	50	75.8
No	16	24.2

It was indeed surprising to note that a large number knew about the NIDM, while being unaware of the critical IDRN. Large- scale capacity building efforts of NIDM may be a reason for their familiarity. Similarly with the experience of Kosi floods being fresh in their memory, there is greater name recognition of NDRF and DDMAs.

6. Is it Relevant for All Line Departments to Prepare Disaster Management Plans?

In the earlier days before the paradigm shift in Disaster Management, it was common to consider Disaster Management to be the responsibility of the Relief Department in the State HQs and in Districts. However, with the more comprehensive understanding after the perspective shift, the concept of mainstreaming became significant. This necessitated all or most line departments to factor Disaster Management in their policies and programmes. DRR, for its part, entails a more comprehensive role of all the line departments, in addition to non-governmental players and the community.

Hence, to begin with, it was necessary to assess whether official stakeholders were aware of the role of line departments. They were asked if it was necessary for them to prepare plans.

Table 6: Is it relevant to prepare D.M. Plan of all concerned line departments?	**N0.**	**%**
Yes	54	81.8
No	12	18.2

In the **Table 6** about 82% said that preparation of D.M. Plan of concerned line departments is relevant. Responses revealed a satisfying level of realization of the role of every official stakeholder in Disaster Management.

7. Disaster Risk Reduction Plan:

The concept of DRR is broader than the canvas of Disaster Management, as envisaged in the Act of 2005. It clearly postulates the role of society, in addition to the government's intervention in the various phases of DRR.

According to UNISDR, "Disaster Risk Reduction (DRR) aims to reduce the damage caused by natural hazards like earthquakes, floods, droughts and cyclones, through an ethic of prevention".

The respondents were questioned about their comprehension of DRR. They were asked specifically, if they had a DRR Plan. Although, they were also asked to name the different participants in such plan and activity.

Table 7: Disaster Risk Reduction Plan	**N0.**	**%**
(a) Do you have Disaster Risk Reduction Plan		
Yes	33	50.0
No	33	50.0
(b) If Q.no. 4 (a) Yes then list the content of DRR Plan		
(c) Do you have any resource list /Resource map ready?		
Yes	22	33.3
No	34	66.7
(d) Whether periodic mock drill is undertaken in your district/block?		
Yes	34	51.5
No	32	48.5
(e) Tick all those who should participate in district/block level disaster mock drill?		
District/Block Administration only	54	81.8
Local NGOs	54	81.8
Local Community	51	77.3
Local Police	51	77.3
Fire Services	47	71.2
Army from the local cantonment when available	43	65.2
(f) Should PRIs/ULBs be given role in Disaster Management		
Yes	61	92.4
No	5	7.6
(g) In your view which of the following disaster management related exercise should be handled by Panchayats?		
Relief Camp management	18	27.3
Damage Assessment	14	21.2
Identification of beneficiaries.	21	31.8
All of the above	50	75.8
None of the above	1	1.5

Surprisingly, where 50% of respondents responded that they have a Disaster Risk Reduction Plan. About 33% replied that Resource list/Resource maps were ready, whereas 52% identified it as periodic mock drill undertaken in their district/block. They were further queried about mock drills, who should take part in them, in addition to a role for PRIs in Disaster Management. Around 81% said that District/Block Administration should participate in district/block level disaster mock drill. Similar to this only 81% said Local NGOs should also participate in disaster mock drill. About 77% of them thought the local community as well as local Police should participate in district level disaster mock drill. About 92% respondents wanted a role for PRIs in Disaster Management. Specific aspects of disaster management viz., relief camp management, damage assessment and identification of beneficiaries.

It was also important to check whether the realization was limited to recognition of roles, without a deeper understanding of its contents. Questions on contents were posed to the officials to gauge their understanding of a subject, about which they may not have been formally appraised.

Half the Officials claimed to have Disaster Risk Reduction Plan. They opined that:

- For Flood affected areas the entire disaster management program run by Government, NGOs and CBOs was not sufficient to reduce risk. They have suggested construction of Dams in Nepal to reduce the risk of Disaster.
- For Fire hazards, they said that the activities of Government were response-centric, and that there was no risk reduction. They suggested that houses made by *pual* (paddy straw) ought to be covered by a layer of soil, to reduce the risk of fire. They also suggested that one bowl of sand be kept in houses.
- For Drought, they suggested that Government needs to train them about crops that they can give yields with reduced irrigation.
- For Earthquake, they suggested that earthquake resistant structures.
- For Epidemics, they recommended vaccination.
- Some Government officials suggested coping mechanisms to reduce the risk of post-disaster-such as an *Aapda Kosh,* where interested persons can contribute every month to a fund that can be utilized at the time of disasters.
- Some Government officials also suggested that every village have a volunteer force of 15 persons who should be trained in disaster response
- They also suggested a village action plan with do's and don'ts.

Responses on availability of a DRR plan revealed their erroneous understanding. However, suggestions to reduce risk of disaster suggested an intuitive grasp, which can be relied upon.

8. Scope for Integration of Disaster Risk Reduction into Development:

The respondents, as a follow up, were queried about the scope for integrating DRR into various development policies. The purpose was to seek a categorical answer as well as to explain the different ways in which it can be achieved.

According to UNISDR, "disasters hold back development and progress towards achieving the Millennium Development Goals (MDGs) because disasters are rooted in development failures. This is the core rationale for integrating disaster risk reduction into development."

As per UNISDR, "Disaster risk reduction includes disciplines like disaster management, disaster mitigation and disaster preparedness, but DRR is also part of sustainable development. In order for development activities to be sustainable they must also reduce disaster risk. On the other hand, unsound development policies will increase disaster risk - and disaster losses. Thus, DRR involves every part of society, every part of government, and every part of the professional and private sector including panchayats."

The response was a heartening 82%, where respondents clearly recognized scope for integration.

Table 8: Is there any scope for integration of Disaster Risk Reduction into Development	**N0.**	**%**
Is there any scope for integration of Disaster Risk Reduction into Development (If Yes then suggest)		
Yes	54	81.8
No	12	18.2

There suggestions revealed a good grasp of DRR, although the earlier responses showed distinct unfamiliarity with formal concepts and institutions. Suggestions of some of the official respondents were:

- Constructions should be disaster proof
- Development schemes should be formulated taking into consideration geographical and natural conditions and risks of schemes /project. Only those new technologies should be adopted which are easily accessible
- Disasters provide opportunity to create and enrich the development process and reduce risk of future disaster
- Promote Earthquake resistant buildings
- Procure fire fighting equipment
- Hospital buildings to be earthquake resistant and fire proof
- In flood affected areas, plinth of houses should be higher
- Construction of river embankments in flood affected areas
- Retrofitting of existing buildings

9. Integrated DRR Concerns in Panchayat Development Plans:

After 73rd amendment powers have been devolved to PRIs at local level for different functions of development. It follows that members of the PRIs be adequately sensitized, trained and oriented for better understanding of disasters. These will include building a basic database for each village. Mobilization of adequate funds and development planning to incorporate disaster mitigation components, in-built in every or most development projects, like Indira Awas Yojana and others in the context of DRR

Table 9 depicts about 'Integrated Disaster Risk Reduction Concerns in Panchayat Development Plans'. And found 54.5% of the surveyed respondents knew about the need to integrate DRR concerns in Panchayat Development Plans.

Table 9: Do you know how to integrate DRR Concerns in Panchayat Development Plans	**N0.**	**%**
Know integrate DRR Concerns in Panchayat Development Plans		
Yes	36	54.5
No	30	45.5

It was encouraging to see a positive response of the majority. However, the negative response of about 45% of official respondents underscored the need to enhance awareness.

10. DRR to Address Concerns of the Response Phase:

While the objective of DRR is to reduce the damage potential of hazards, the stress seemingly is more on long-term policy reforms and lifestyle changes. However it does not preclude measures that reduce loss of life or reduce post-event damage. Respondents were enquired to list out if any measures were taken up in this regard. A sample list of interventions was put forward.

Table 10: Has any high raise platform / community centre / temporary shelter / high raise toilet/high rise hand pump etc. been constructed or installed under development schemes ?	**N0.**	**%**
Yes	44	66.7
No	22	33.3

Long experience in dealing with and living through hazard events seemed to explain their high level of sensitivity in this regard. With 66 % respondents answering in the positive, there was a clear indication of a population significantly aware of the risks. At the same time, 33% of officials reporting no contribution, is a serious cause for concern. If anything it underscores the need for greater and systematic awareness-building and development of suitable plans.

Respondents were assessed about the role of community in facing disasters. They were also asked to explain about the different ways in which it can be strengthened. Expectedly, more than 76% of official respondents indicated their sensitization about community role.

Through a positive response was received from a large number, a fourth of them had no realization about the critical role of community.

11. Role of Community in Disaster Management:

Community is the first responder at the time of any disaster. By better lifestyle management and coping mechanisms it can reduce the impact of disaster.

Many of the respondents elaborated with suggestions and opinions:

- Community plays a vital role in minimizing loss of lives
- Awareness and preparedness is required, especially at Panchayat/Village level
- Basic function of community is providing relief
- Boatmen are important as they help in evacuation
- Community is capable of convincing the affected persons
- Community can play a role in a warning/alerting system
- There is greater exchanges of ideas
- Community is the immediate helpline in case of huge damage
- Community facilitates relief measures taken by government
- Different sets of volunteers are available at community level
- They play a role in relief camps and damage assessment
- They rescue people
- Without community involvement disaster can't be managed by government machinery

Table 11: Do you know about role of community in disaster management? (If Yes then explain)	**N0.**	**%**
Yes	50	75.8
No	16	24.2

12. Familiarity with Standards in Relief Operations and Coordination with NGOs:

The Response phase of Disaster Management begins with the onset of the disaster. The risk has not been reduced, leading to the event. However, even in this phase, interventions according to accepted benchmarks mitigate losses and save lives. A knowledge of these standards enables SOPs, and relief measures that prevent escalation and greater loss. Sphere Standards are internationally acknowledged in humanitarian response relating to water supply & sanitation, nutrition, food and shelter & site planning and health.

Similarly, NGOs and CBOs play a crucial role during this phase, augmenting government and community efforts.

Only 33% were familiar with humanitarian logistics, aware of the minimum standards of response and coordination with NGOs. Respondents were asked about both. **See Table 12**.

Table 12: Do you have familiarity with humanitarian logistics, awareness of the minimum standards of response such as sphere standards and the coordination with NGO	**N0.**	**%**
Yes	22	33.3
No	44	66.7

Data clearly showed a huge gap on both counts with only a third of the official respondents answering positively. Some of these recognized the important role that NGOs can play.

Some government officials who were aware of humanitarian logistics, aware of the minimum standards of response and coordination with NGOs have suggested that:

- NGO can play an important role due to their local knowledge.
- Help should be taken from NGOs
- There should be disaster management coordination meetings with NGOs during this phase

13. Information Communication Technology in Disaster Management:

In an era when communication technology has leapfrogged, it is pertinent to see if the stakeholders have a proper appreciation of this change. The role of Information Communication Technology in Disaster Management is an important parameter to judge the respondents amenability. They, were, thus, asked if Information Communication Technology can be effectively used in Disaster Management.

Table 13: Are you aware of use of Information and Communication Technology in disaster management,	**N0.**	**%**
Yes	41	62.1
No	25	37.9

About two-thirds were aware of use of information and Communication Technology in Disaster Management. They know that information about flood and storm can be got through Television, Radio, and Newspapers.

Some of them suggested ICT usage for:

- Use in Early warning system for floods in co-ordination with Government line departments
- Database of mobile numbers of all concerned in a communication plan
- Preparation of IEC materials/ Pamphlets regarding Disaster management

- Wireless system for preparedness and early warning
- Creating awareness the community for DRR
- Use to predict about earthquake & weather pattern
- Preparing communication plan, including phone and mobile numbers
- Providing citizens, keywords for separate relief requirements. Citizens can contact separate nodal agencies for diverse requirements such as calling for ambulance to shift injured or acquiring information in advance about availability of hospital beds before rushing the patient to a hospital etc. This will ease pressure on the centralized relief agency
- Language used in disseminate information is important. Alert messages in local language have larger impact, reaching out to maximum people.

14. Awareness of Technology in Disaster Response, Preparedness and Mitigation:

The potential of advanced technologies is required to be harnessed in early warning, preparedness and response systems along with adequate emphasis on building human capacities to use these tools and technologies.

New developments in technology like the Internet, Geographical Iinformation System, Early Warning System, Remote Sensing can be gainfully used to mitigate risk of disasters. Hence respondents were asked about it and also to spell it out.

The results were abysmal. Only about a third of the official respondents claimed any knowledge.

Table 14: Are you aware of the knowledge of basic technology in disaster response, preparedness and mitigation such as incident reporting system, early warning system, internet, GIS/ Remote sensing and other communication technology in disaster management	**N0.**	**%**
Yes	26	39.4
No	40	60.6

It revealed a shocking lack of appreciation of how technology advances can be fruitfully used in Disaster Management

Suggestions of the knowledgeable one-third concerned:

- Use of telephonic messages, mobile & internet
- Incident reporting system, early warning system.
- Preparedness, reporting system, early warning system, remote sensing & other communication

15. Experience of Documentation & Knowledge Management Practices for DRR:

Documentation of experience creates institutional memory that proves invaluable in future disasters. While this is not a prevalent practice in Disaster Management, it, nevertheless, is important. It was significant to note that 30% of official respondents realized its importance. Many of them had taken part in such efforts.

Table 15: Have you ever done documentation or case studies or knowledge management practices for disaster risk reduction	**N0.**	**%**
Yes	20	30.3
No	46	69.7

Their responses talked about:

- Documentation, case studies and knowledge management practices are available.
- Flood related documentation
- List of high platforms in flood prone areas and communication plan with mobile numbers

16. Need to Train Line Department Officials in Disaster Risk Reduction:

Line department respondents were asked to indicate if they felt the need for training in DRR. An overwhelming 88% of them emphatically underscored the need.

Table 16: Is it necessary to train line department officials in disaster risk reduction?	**N0.**	**%**
Yes	58	87.9
No	8	12.1

Theirsuggestions were directed towards:

- Mock drill, 2. Reaction Time Management, 3. Relief Distribution & Documentation, 4. Boat Driving & Swimming, 5. Fire Fighting 6. Evacuation strategy of community 6.Earthquake resistant construction techniques, 7. Retrofitting
- Before disaster all animals should be vaccinated. Deworming be done before disasters, and animals to be kept on high ground under a roof
- Fodder to be stored. Other practices in animal husbandry
- Disaster plan & training of personnel in emergency medicine and mock drills at hospitals
- Disaster Preparedness, relief & rescue work, mass level awareness and training
- Preparing DRR Plan
- Co-ordination with other departments