

**MANAGEMENT OF MAN-MADE DISASTERS IN SECONDARY  
SCHOOLS IN RANCHI DISTRICT, WITH SPECIAL REFERENCE TO  
PREVENTION AND PREPAREDNESS**

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## Table of Contents

<b>Sl. No.</b>	<b>Section</b>	<b>Page No.</b>
1	Introduction	3
2	Relevance of the Topic	4
3	Objectives, scope, limitations and historical data	5-6
4	Concepts/Theories/Philosophies	7-10
5	Research work that was done on the topic, so far	11
6	Problem Statement	11
7	Methodology Proposed	12-13
8	Data proposed to be collected and Statistical Techniques Projected:	14
9	Relevance of Projected Findings	14
10	Challenges / difficulties anticipated taking up the study and how do you propose to address them?	15
11	Proposed time frames for completion of the major mile stones	15
12	Help required ,if any, from the University	15
13	Acknowledgements	16
14	Bibliography	17-19

## **1. Introduction**

The Disaster Management Act, 2005 defines disaster as “a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or manmade 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”.

Man-made Disasters also termed as human-induced disasters or of anthropogenic origin are man-made events, of sudden or progressive nature, which impact the affected community adversely. Children are the most vulnerable group in any type of disasters, whether naturally occurring or man-made, which result in injuries, deaths, disruption of normal lives, trauma, stress and adversely affect their overall development. They are future generation citizens of the society.

School Safety is very essential, as school is the center of major academic and community activities and a culture of disaster prevention and mitigation can be created in case of natural as well as man-made disasters. A disaster resilient society can be created by educating children in schools on different types of disasters and their prevention.

Both Government and Private secondary schools of Ranchi district face major disaster threats due to manmade causes. Moreover, some additional factors like the Naxalite attacks, quality related issues in mid-day meals, safety issues in schools etc. increase the risk many fold. The present study focuses on the man-made disasters that affect secondary Government and Private schools and their stakeholders such as students, teachers, non-teaching staff, parents and overall society. The different types of man-made disasters affecting schools include building fire, road accidents, transport safety, midday meal disasters, theft, Naxalite attacks, building collapse, electrical short circuits etc.

The research has been motivated by losses due to man-made disasters in schools. Children are the major sufferer of the various events of man-made disasters in terms of their lives and health. There has not been much research in the field of man-made disasters especially in Ranchi district of Jharkhand. If the students can be made aware of the preventive measures, then they will be better prepared for the coming threats and respond to them effectively, thus saving their lives as well as save the lives of fellow students and other staff.

## **2. Relevance of the Topic**

Existing school safety plans need a major up gradation in strategies in the form of effective preventive measures and from conventional to the modern approach. This can be done by identifying the gaps in the existing disaster management policies and replacing it by modern approaches in disaster management. The conventional system was based on post-disaster management, rehabilitation, and relief, but the modern strategy is focused on prevention and preparedness about the incoming disaster.

This is done by early warning system, response and human resource management, the formation of a school disaster management committee and task action force with clear roles and responsibilities and monitoring of alerts given by government sites and experts would form the basis for modern strategies.

Formation of a school disaster management committee and task action force with clear roles and responsibilities, development of alert mechanism before disasters and continuous monitoring of alerts given by government sites and experts would form basis for modern strategies.

The school management would make calendar of preparedness activities for disaster management, detailed version of school maps, evacuation plans and mock drills with the involvement of parents and government officials to be conducted in the school. The task of the school management to prepare a disaster management plan taking into consideration the disability and gender based needs of the community. The periodical review of the disaster management plan and risk audit by the school management and assured by the government officials can largely contribute in upgrading strategy towards the modern approach.

The present study focuses on the man-made disasters that affect secondary Government and Private schools and their stakeholders such as students, teachers, non-teaching staff, parents and overall society. The different types of man-made disasters affecting schools include building fire, road accidents, transport safety, midday meal disasters, theft, Naxalite attacks, building collapse, electrical short circuits etc.

The research compares the scenario of pre-disaster preparedness and prevention as well as the response to the disasters and post-disaster activities in Government and Private schools.

### **3. Objectives, Scopes, Limitations and Historical data**

The objectives of this research topic are as follows:

- a) To identify the types of man-made disasters in Government and Private Secondary Schools in Ranchi.
- b) To identify the sources and causes of man-made disasters in Government and Private Secondary Schools in Ranchi district.
- c) To analyze different approaches for Prevention and Preparedness for identified man-made disasters in Secondary Schools.
- d) To analyze the Perceptions of the school head, students, and teachers with regard to management of man-made disasters.
- e) To analyze the Psychological behavior of School students with regard to management of man-made disasters.
- f) To analyze disaster preparedness planning for man-made disasters by parents, experts, staffs, and school management.

The scopes of this research topic are as follows:

- a) Various types of manmade disasters in Ranchi district which affect the stakeholders of Government and Private secondary Schools such as students, teachers and staffs, parents, disaster management experts etc.
- b) Sources and causes of manmade disasters in Government and Private Schools of Ranchi district of Jharkhand.
- c) Analysis of different approaches for Prevention and Preparedness for qualified manmade disasters in Government and Private Schools.
- d) Analysis of the perceptions of school head, students, teachers, disaster management experts etc.
- e) Analysis of psychological responses, stress management responses, panic management responses, disaster preparedness measures, disaster preparedness planning etc. of the stakeholders of Government and Private secondary Schools.

The limitations of this research topic are as follows:

- ❖ The research covers only Man-made disasters confined to Government and Private Schools while there are many Man-made disasters which are not applicable for schools.
- ❖ The research does not take into account the Natural disasters which are more destructive in comparison to Man-made disasters.
- ❖ The research is restricted to Ranchi district only having a small sample space of 373 respondents while the research could be performed in larger geographical area having more respondents so that more quantitative data could be gathered.
- ❖ There are many types of schools like kindergarten, primary, secondary and senior secondary, while the present research is limited to secondary schools and other types of schools are not covered.
- ❖ The research is qualitative perception analysis and psychological behavior of different respondents and can be quantified with different statistical tools in the form of quantitative study.

Some historical data related to school disasters happened in past:

- ❖ In August 2018, 8 staff members of Sapphire International School including Principal, Vice Principal, wardens and two guards were accused by the court for killing of student.
- ❖ In April 2015, a 9 year old girl in St. Thomas school Ranchi died in the school campus as the school management was unaware of the diseased condition of the girl.
- ❖ In January 2015, a 12 year boy of class VI of Rise academy Ranchi was killed by a running bus.
- ❖ In July 2013, 40 students of Gurukul school in Ranchi were admitted in hospital after a lizard was found in the mid day meal.
- ❖ In Feb 2012, a school bus was met with accident in Ranchi in which three were injured.
- ❖ In May 2006, a student of class XII of DAV public school, Ranchi was crushed by school bus.
- ❖ In 2004, Kumbakonam fire accident in Tamil Nadu, 93 children lost their lives in Sri Krishna middle school.
- ❖ In 1995, Dabwali in Haryana, 425 lost their lives due to flames in a prize ceremony.

#### 4. Concepts/Theories/Philosophies

Sl. No	Title	Type of literature	Author	Website reference	Publishing year	Gist of the article	Linkage to own research	Remarks
1	Jharkhand-National Disaster Risk Reduction Portal	Book	National Institute of Disaster Management (NIDM)		2014	State vulnerability to disasters, institutional setup and initiatives	Need for the disaster management in Jharkhand	
2	Disaster management In India	Book	Ministry of home affairs		2011	Disasters in India, institution frame work, policies and guidelines, capacity developments	Overview of the different types of disasters in India and Govt policies to face them.	
3	School Safety version 1.0	Book	Prof A S Arya, G Padmanabhan and Anup Karanth		2009	School safety programme, primary strategies and management structures	Application of disaster management in schools, its necessity and role.	
4	Indicators of Disaster risk and risk management	Book	Omar D. Cardona		2005	Various indexes related to disaster, risk management, prevalent vulnerability.	Indicators for disaster risk management and measure of various indexes.	
5	Disaster management in India -a status report	Book	Ministry of home affairs		2004	Disaster prevention, mitigation and preparedness	Current status of Govt. plans in managing disasters	
6	Extreme Weather Events in India- A Preliminary Analysis of Impacts	Research paper	Ajay Singh, Anand Patwardha, Abhijat Abhyankar, Nandlal L.Sarda		2012	Climate change and disasters in India, Addressing changes and adaptations	Strategy improvement for different types of disasters and methods.	

7	Disaster Management in Hospitals: Shifting Strategy Towards Systems Approach	Research paper	Muzaffar Ahmad, J.S. Murli		2012	System approach to address gaps in disaster management	Strategy upgradation from the conventional to modern approach in various schools.	
8	Children and Disaster Risk Reduction: Taking stock and moving forward	Research paper	Emma Back, Catherine Cameron and Thomas Tanner		2009	child-led disaster risk reduction approaches and techniques	Maintaining education during disasters and risk reduction	
9	Earthquake disaster risk management planning in schools	Research paper	Mahmood Hosseini, Yasamin O. Izadkhah		2006	Development of earthquake disaster management system for the schools.	Basis for the emergency management system for the schools.	
10	Disaster planning and management	Research paper	Holmes E. Miller, Kurt J. Engemann, Ronald R. Yager		2006	Phases of disaster management. Recovery plans.	Planning of disaster management. Emergency response at the time of disaster.	
11	Disaster Management In India	Research paper	Daya Kaul, Md. Ayaz , Lohitkumar S N		2005	Mitigation and prevention of various natural disasters in india	Approaches to tackle various disasters and development of models.	
12	Applying Management Science to Emergency Response Systems: Lessons from the Past	Research paper	Green, LV. and PJ Kolesar.		2004	Interdisciplinary approach involving management and disaster science.	Integration of management and disaster management system.	



13	Towards total disaster risk management approach	Research paper	De Guzman, E. M., & Unit		2003	Different aspects of disaster management approach	Risk management aspect of the disaster management	
14	DMD, 2011. A draft on Jharkhand State disaster Management Plan 2011.	Internet		<a href="http://www.jharkhandonline.gov.in/">http://www.jharkhandonline.gov.in/</a>		Disaster risk profile of jharkhand and institutional set up.	Details about vulnerability of jharkhand to disasters and need for the plan.	
15	Disaster management department, Govt. of jharkhand	Internet		<a href="http://www.jsdmd.in/">http://www.jsdmd.in/</a>		State disaster management plan, IEC materials etc.	Need for the development of disaster management system.	
16	National institute of disaster management (NIDM)	Internet		<a href="http://nidm.gov.in/">http://nidm.gov.in/</a>		Disaster management at national level, disaster updates etc.	NIDM periodicals gave the base for the research.	
17	National disaster management authority (NDMA)	Internet		<a href="http://www.ndma.gov.in/en/">http://www.ndma.gov.in/en/</a>		National policy, plans, capacity building etc.	Literature source, DM organisations for the basis of research.	
18	National disaster response force (NDRF)	Internet		<a href="http://ndrfandcd.gov.in/">http://ndrfandcd.gov.in/</a>		Concept of civil defense , home guards and fire cell in disaster management	Role during disasters and strategy development.	
19	National disaster management division (NDM)	Internet		<a href="http://www.ndmindia.nic.in/">http://www.ndmindia.nic.in/</a>		Plans, norms, reports about disaster management, implementation.	Basis for upgradation of traditional strategy for school safety	
20	Indian meteorological dept (IMD)	Internet		<a href="http://www.imd.gov.in/">http://www.imd.gov.in/</a>		Weather forecasting, press release and alerts.	Aid to the disaster management system	
21	The New York Times	Internet	Gardiner Harris		2015	School disaster due to earthquake.	Impact of earthquake on schools.	

22	The Telegraph	Newspaper	Correspondent		2015	Student's death due to lack of information by school management on diseased conditions.	School database for diseased children and special care to be taken.	
23	The Telegraph	Newspaper	Correspondent		2015	Road accidents kill many students.	Road safety features should be included.	
24	The Hindu	Newspaper	Correspondent		2013	Quality issues in mid day meals.	Safety issues in mid day meals.	
25	The Telegraph	Newspaper	Correspondent		2012	Safety issues in school bus.	Effective strategies for school bus safety.	
26	The Telegraph	Newspaper	Correspondent		2006	Road safety measures were not taken.	Safety strategies to be developed.	
27	The Hindustan	Newspaper	Correspondent		2004	School fire accident was met.	School fire plan should be developed	
28	The Hindu	Newspaper	Correspondent		2001	School safety in natural disaster like earthquake.	Infrastructure should be developed for future disasters.	
29	The Times of India	Newspaper	Correspondent		1995	School fire disaster.	Fire evacuation plan and strategies to be developed	

## **5. Research work that was done on the topic, so far**

Under Disaster management Act 2005, various plans and organizations have been developed by the Govt. of India to combat the various types of disasters. At the national level as well as state level we have different types of organizations like National disaster management authority (NDMA), National institute of disaster management (NIDM), national disaster management division (NDM), National disaster response force (NDRF), Indian Meteorological department (IMD), Disaster management department, Govt. of Jharkhand etc which on coordination and integration with each other are generating positive responses in managing disasters.

Disaster management is a continuous process and its application is diverse in different fields like natural disasters, manmade disasters and pandemics. Various researches have been done by Government agencies and officials in order to constitute various programs and plans. External researchers have done many works on integration of various plans for disaster management.

The table presented under the heading concepts/theories/philosophies gives a detailed description of the research work done on the topic so far.

## **6. Problem Statement**

On the basis of literature review, research gap is figured out in the research topic which is described in following points:

- A lot of studies have been conducted in similar line of research. However, there is lack of empirical and field based research on Man-made disasters in schools.
- Research gap regarding formulation and planning of disaster management Strategies and its implementation in secondary schools.
- Research gap regarding comparison of Prevention and Preparedness activities in Government and Private schools in Ranchi district, with special reference to Man-made disasters.
- Research gap in perception analysis of school heads, teaching staffs, nonteaching staff and students.
- Research gap in behavior analysis of students, teachers, non-teaching staffs, parents, disaster management experts etc.

## **7. Methodology Proposed**

The present research is qualitative study which deals with immeasurable aspects of prevention and preparedness in case of man-made disasters in government and private schools in Ranchi district of Jharkhand. The qualitative aspect of present study follows concept of deduction which implies process of reasoning in which conclusion is drawn from the stated objectives with the help of evidences as provided by the respondents and the case studies in the related events.

Other aspect of present study follows inductive approach of qualitative study which involves drawing conclusions about all members of community such as school management, school staffs, students etc by examining a few members of the community (a small sample) by means of conducting personal interviews with the respondents, asking open ended questions, focused group discussion etc.

The subsequent steps for the research design include asking questions to the respondents about the management of man-made disasters, collecting data from the respondents by means of questionnaire, open ended questions, case studies which were done by personal interview, recording and processing information which was done through bar diagrams for different types of man-made disasters, analyzing the information which was done through fish bone analysis for the root and cause analysis of man-made disasters, giving report or recommendations which were done by drawing conclusions from the data analysis, giving intellectual contributions from the research study about management of man-made disasters in secondary schools and highlighting limitations about the study.

In order to achieve research objectives, primary data was collected using structured questionnaires. The respondents included school management head, teachers, non-teaching staff, students, parents, disaster management experts etc.

The methodology will consist of following steps:

### **❖ Pilot study**

A pilot study in the line of the subject would be conducted for testing the research design as well as the feasibility of application of data collection techniques of a small sample say 2 Government schools and 2 Public Schools in Ranchi area of Jharkhand.

### ❖ **Research design**

The research would be a qualitative research or which would require extensive survey of the 5 Government schools and 5 Private secondary Schools of Ranchi district of Jharkhand. The research would be a diagnostic evaluation of government plans and policies regarding disaster management and current preventive strategies for manmade disasters.

### ❖ **Research Techniques**

The primary sources of data includes primary stakeholders of schools such as school management, Principal, teachers, non teaching staffs, supporting staffs, students etc.

The secondary sources of data includes research papers, Government reports related to disasters, Thesis related to disasters, newspapers citations, books, online information related to various disasters.

The following research techniques would be used in course of research study:

- a) **Rapport establishment:** It is the process of creating the feeling of trust and confidence among the respondents during the initial visits in the field work.
- b) **Observation:** It is the process of scientific and systemic recording of details during the field visit which were observed through naked eyes.
- c) **In-depth interview:** It is a process of less structured, long term discussion with the respondents with the investigator.
- d) **Case studies:** To provide in-depth and comprehensive insights about the experiences of the respondents about those cases within the framework of sample universe.
- e) **Focused Group Discussion:** This method is used to collect information such as perceptions of various stakeholders of schools, psychological behaviors of students, stress management, panic management etc.

For effective and flawless data collection, survey method would be used. The questionnaire would be prepared for the effective data collection and will be based on survey method.

## 8. Data proposed to be collected and Analysis Techniques to be used

The study aims at obtaining critical information about disaster management in Government schools and Private schools in Ranchi district of Jharkhand. The data collected would be primary data and will be collected by conducting personal interview with help of structured questionnaire, focused group discussion and case studies.

Following approaches would be used for the data analysis:

- a. **Familiarization:** The collected data, observations, case studies were studied in order to get key points, so that concept can be figured out and later relationships could be developed.
- b. **Identifying Thematic Framework:** Key issues were identified and concepts were developed out of the collected data by which data can be examined and referenced.
- c. **Indexing:** In this phase, all data were condensed to get some numerical values out of the texts obtained at the time of in-depth interviews, case studies and focused group discussion.
- d. **Charting:** The indexed data were rearranged according to various thematic frameworks to which they relate and charts, fish bone diagrams etc.
- e. **Mapping and interpretation:** In this phase, different charts were used to define the concepts; mapping was done to draw some insightful conclusions and recommendations.

## 9. Relevance of Projected Findings

The research findings would serve value addition to the society in terms of current assessment for the management of disaster in schools. Based on research findings, Government and private secondary schools could adopt the disaster management plan for effective risk analysis, disaster prevention and preparedness. The research findings would present comparative disaster management strategies of Government and Private secondary schools, perception analysis of respondents, behavior analysis of respondents, findings from focused group discussion and root cause analysis by means of case studies.

## 10.Challenges / difficulties anticipated taking up the study and how to address them

Challenges that might come up during the research survey are given as:

- ❖ Getting permission from the Government and Private school authorities to conduct survey in their schools. This can be addressed by getting one permission letter from the competent authority.
- ❖ Survey in around 10 schools to complete the research and this can be addressed by classifying the schools in different strata and then start survey from one end to the other.
- ❖ Interviewing of all the stakeholders related with disaster management- including the school heads, teachers, non-teaching staffs, students, disaster management experts, parents etc.

## 11.Proposed time frames for completion of the major mile stone

SL.NO.	Topic to be covered	Time duration
1	Proposal of Research topic	Nov 2014
2	Literature survey	Dec 2014 – Mar 2015
3	Presentation of synopsis	Apr 2015
4	Registration of the topic for PhD thesis	May 2015
5	Questionnaire and Pilot Study	Jun 2015- Nov 2015
6	Presentation of Research Progress	Dec 2015
7	Extensive data survey	Jan 2015- Nov 2016
8	Presentation of Data Surveyed	Dec 2016
9	Data compilation and analysis	Jan 2017- Nov 2017
10	Overall Presentation	Jan 2018
11	Pre-submission	July 2018
12	Thesis Submission	Aug 2018

## 12. Help required from the University

Help in the form of analysis of surveyed data and continuous guidance from research supervisor as well as research guide in the process of research.

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