

Relative frequency and effects of disasters environmental sciences essay

[Environment](#), [Natural Disaster](#)



Introduction

Harmonizing to India catastrophe study 2011, 14 States and one Union Territory of India had experienced at least one catastrophe during the twelvemonth 2011. The harm occurred in footings of figure of human lives lost was 1432 and figure of cowss perished was 6266. In entire 6, 84, 901 houses were damaged and 16. 28 lakh hectares of cropped country were affected. 1

Rank

Catastrophe

Year of happening

Entire figure of people affected

1

Drought

1987

300, 000, 000

2

Drought

2002

300, 000, 000

3

Drought

1972

200, 000, 000

4

Flood

1993

128, 000, 000

5

Drought

1965

100, 000, 000

6

Drought

1982

100, 000, 000

7

Drought

2000

50, 000, 000

8

Flood

2002

42, 000, 000

9

Flood

1975

34, 000, 000

10

Flood

1982

33, 500, 000

Source- EM-DAT: The OFDA/CRED International Disaster Database [www. em-dat.net](http://www.em-dat.net) - Universite Catholique de Louvain - Brussels - Belgique

Table1. 2 Top 10 Natural Disasters in India during 1900-2012 in footings of economic harm

Rank

Catastrophe

Year of happening

Damage (000 US \$)

1

Flood

1993

7, 000, 000

2

Flood

2006

3, 390, 000

3

Flood

2005

3, 330, 000

4

Earthquake

2001

2, 623, 000

5

Storm

1999

2, 500, 000

6

Flood

2004

2, 500, 000

7

Flood

2005

2, 300, 000

8

Storm

1990

2, 200, 000

9

Flood

2009

2, 150, 000

10

Flood

2010

1, 680, 000

Source- EM-DAT: The OFDA/CRED International Disaster Database [www. em-dat. net](http://www.em-dat.net) - Universite Catholique de Louvain - Brussels - Belgique

Droughts and inundations were the catastrophes which affected maximal figure of people in India. Table1. 1 shows the top 10 natural catastrophes in India in footings of entire figure of people affected during 1900-2012. In footings of economic harm it was once more the inundations which had caused immense economic losings to India. Table1. 2 shows the top 10 natural catastrophes in India in footings of economic harm during 1900-2012.

1. 2 Catastrophe

So what is a catastrophe? Let 's discuss about it. Disaster is defined as happening of calamity in any country which may be due to natural or manmade causes. It can happen as an accident or due to negligence and may ensue in loss of human life and/or cattle life and/or harm to belongings. It may besides take to debasement of environment. Community of the affected country normally do n't hold the capacity to get by with the state of affairs without external support. 2

Catastrophes can be classified into two wide types: natural catastrophes and manmade catastrophes. The High Power Committee on catastrophe direction in India, constituted in 1999, has identified 31 different catastrophes which can be categorized into five major groups. 3

I. Water and clime related catastrophes

two. Geological catastrophes

three. Chemical, industrial and atomic catastrophes

four. Accident related catastrophes

v. Biological catastrophes

1. 2. 1 Disaster direction

Disaster direction is necessary non merely for prompt response during catastrophe but for bar of it and for decrease of hazard and badness of any catastrophe. It is a uninterrupted and incorporate procedure of planning, organizing, organizing and implementing different activities and steps. It includes readiness, appraisal of magnitude of effects, prompt response such as emptying, deliverance and alleviation. It besides includes rehabilitation andreconstruction. 2 A typical catastrophe direction rhythm has six elements ; the pre-disaster stage comprises of bar, extenuation and readiness while the post-disaster stage comprises of response, rehabilitation, Reconstruction and recovery. 4

Traditionally, direction of any catastrophe worldwide, focussed on immediate deliverance and alleviation operation, so as in India. After the Great Famine of 1876-1878 in India, the Famine Commission was constituted in 1880. The Famine Relief Code was besides adopted. 5 Relief sections were set up under British regulation for exigencies during catastrophes. After independency, catastrophe direction in each province was looked after by Relief Commissioners, under Cardinal Relief Commissioner. Their function were limited to distribution of alleviation stuff in the affected countries. 3

Consequent upon announcement of the decennary 1990-2000 as

International Decade for Natural Disaster Reduction (IDNDR) by the general

assembly of the United Nations 6 and the universe conference on natural catastrophes decrease at Yokohama, Japan in 1994, Government of India constituted a High Powered Committee in August, 1999. 7 The High Power Committee gave its recommendations in October 2001 including a bill of exchange of the catastrophe direction measure and suggested for the constitution of National Disaster Management Authority. 3, 5

After Odisha Super Cyclone (1999) and Gujarat Earthquake (2001) , India changed its catastrophe direction attack from reactive to proactive. 8 After the super cyclone, the Government of Odisha established the Odisha State Disaster Management Authority (OSDMA) . 5

1. 2. 2 Relative frequency and effects of catastrophes

World meteoric organisation statistics shows that harm caused by natural catastrophes during 1963-2002 was worst for inundations (Flood-32 % , Tropical cyclone-30 % , Droughts-22 % , Earthquakes-10 % and other disasters-6 %) . 3 78. 4 % of all catastrophe events worldwide occur due to hydro-meteorological causes and 47. 94 % of all catastrophe deceases worldwide are due to hydro-meteorological catastrophes from 1900 to 2009. 3 Children and adult females are the most vulnerable group as 85 % of the deceases during catastrophes are of adult females and kids. 3

1. 3 Flood

Flood is defined as 'the status that occurs when H₂O overflows the natural or unreal confines of a watercourse, river, or other organic structure of H₂O, or accumulates by drainage over low-lying countries ' . 9 Flood can happen in a

little localised country due to heavy rainfall over a sustained period of clip and the attendant drainage job. Flash implosion therapy occurs when it rains excessively rapidly, by and large for less than six hours. But river inundations are normally of longer continuance as it may last a hebdomad or more and in some instances for months together doing more harm to human lives and farm animal. Coastal inundations are caused by tsunami, heavy costal rainfall and tidal action. 10

River inundations are expected in some geographical countries. Peoples by and large welcome inundations as they provide rich dirt for cultivation and H2O for assorted intents. But flood at an unexpected graduated table and with inordinate frequence causes harm to lives, farm animal and the environment. Matter of concern is that, there is addition in the frequence and strength of inundations in many parts of the universe including India due to current clime change. 11

1. 3. 1 Flood in India

The Indian sub-continent is extremely vulnerable to assorted types of natural catastrophes like drouths, inundations, cyclones, temblors, and landslides etc. India is one of the 10 worst catastrophe prone states of the universe. 3 Among all these natural catastrophes that occur in the state, river inundations are the most frequent and frequently the most annihilating. In India, 40 million hectares of land which is about one-eighth of the entire country of the state is prone to inundations. Flood occurs in 23 out of entire 35 provinces and brotherhood districts in the state. 3 To command

inundation in the state, The National Flood Control Program was launched in India in 1954. 3

1. 3. 2 Flood in Odisha

Odisha province which is situated in the east seashore of India is one of the most vulnerable Indian provinces to climate change. 12 It is located between 17° 48 ' N and 22° 35 ' N latitudes, and 81° 47 ' E and 87° 32 ' E longitudes.

1 The chief rivers of Odisha are Mahanadi, Brahmani, Baitarani, Budhabalanga, Subarnarekha, Rushikulya etc. These rivers are perennial with sulky flow throughout the dry season. With the oncoming of monsoon they swell threateningly and deluge big countries. 1 Odisha experiences terrible inundations in about every two old ages. 13

1. 3. 3 Flood in Kendrapara territory of Odisha

Kendrapara territory is one of the coastal territories of Odisha. After separation from Cuttack territory as a separate territory in 1993, Kendrapara has faced terrible inundations in 1994, 1995, 1997, 1999, 2001, 2003, 2006, 2007, 2008, 2009 13 and late in 2011. 14

Harmonizing to India catastrophe study 2011, Kendrapara territory was severely hit by inundation in 2011. All the nine development blocks in the territory were affected. 473 small towns of 116 Gram Panchayats and two Urban Local Bodies (ULBs) were affected. Entire figure of population affected were 507145 (Third highest after 625897 in Puri territory and 526923 in Cuttack territory) with 13 human casualties (Highest in the

province) . 27000 houses were damaged (Second highest after Puri territory) including kuchha and pucca houses. 1

1. 3. 4 Health effects of inundation

Floods are frequently considered the most frequent and dearly-won of all natural catastrophes in footings of human agony and economic loss.

15Healthimpacts of inundation vary between populations and these depend on the physical exposure of population, single every bit good as community readiness and the type and continuance of flood event.

The immediate wellness effects of inundation can be submerging, hurt, acute asthma, tegument roseolas, stomach flu, and respiratory infections. The mid-term effects of inundation are infected lesions, toxic condition, catching diseases, and famishment. The long-run wellness effects of inundation can be disablement, hapless mental wellness and malnutrition. 16 Approximately two-thirds of the flood deceases can be attributed to submerging. This implies that other one-third human deaths are due to causes other than submerging, such as physical injury, bosom onslaught, fire, C monoxide toxic condition and electrocution. 17

In inundation state of affairss, there are ever increased opportunity of transmittal of diseases like cholera, cryptosporidiosis, infantile paralysis, rotavirus, enteric fever and paratyphoid, particularly in countries if the community does non hold entree to safe imbibing H2O and sanitation. 18

Common mental upsets like anxiousness, depressionand posttraumatic emphasis upset are common after a nerve-racking event of an exceptionally

baleful nature like terrible inundation. 18 These may attest with symptoms like upsetting memories, turning away of fortunes associated with the stressor, sleep perturbations, crossness and deficiency of concentration. 18 Loss of cherished ownerships in inundation can hold much more impact than fiscal losings. 19

One survey found a four times increase in unwellness among people whose places were flooded compared with those whose places were non flooded. 20 Referrals to infirmaries were more than double from the flooded families than not flooded families for the old ages following the inundations in Europe. 21

One community degree survey in rural Odisha, India shows that exposure to inundations is associated with long-run malnutrition. Children who are exposed to inundations during their first twelvemonth of life show higher degrees of chronic malnutrition compared to the kids who are non exposed to deluge during their infancy. 22

1. 4 Public wellness system and inundation

Public wellness system should stay prepared to supply exigency services to the community as the demand may increase all of a sudden when inundation strikes the community. 23 but public wellness systems face tons of jobs in pull offing the inundation state of affairs.

1. 4. 1 Problems

Flood can hold impact on the public wellness attention systems in two ways. The direct impact is due to structural harm to wellness installations and the

secondary impact is through other direction jobs. 24 Scarcity of resources reduces the ability of the wellness system to react efficaciously. 25

Public wellness systems besides face jobs in presenting services due to population supplanting and powerfailure. Population supplanting leads to herding and sanitation job around the impermanent colonies. This may take to outbreak of diseases. 26 Water intervention workss may halt working due to power failure job during inundations. This increases the hazard for waterborne diseases. Power failure job besides affects proper operation of wellness installations such as care of cold concatenation. 26

Disease surveillance in affected countries is of import to understand the impact of inundation on diseases. But acquiring accurate and timely information during inundation is often disputing. 26 Healthcare instantly after inundation is frequently delivered by many bureaus and organisations. Coordination among them at that clip becomes a challenge. 26

1. 4. 2 Readiness

In general inundation readiness steps include building of dikes, land usage planning, watershed direction, inundation prediction and warning system, inundation eventuality planning and readiness of community for self-defense activity and capacity edifice programmes. 11 Public and the public governments ever focus on structural intercessions that modify and control the velocity and the force of flood. 10

Primary wellness Centres under public wellness system are the chief wellness attention establishments in rural countries to cover with wellness

impacts of catastrophes. 27, 28 Poor people are more likely to be affected than the wealthier, when public wellness establishments are affected. 29

To cut down the wellness impacts on a population significantly, wellness system should hold information on impending inundation. 30 Flood readiness planning for public wellness system should be an on-going procedure. It should embrace all stakeholders so that the corporate wisdom can be utilised to cut down the impact of inundation, to take necessary action during the inundation event and to take up proper rehabilitation and recovery activities. 31 but it is a common fact that public wellness planning processes in most of the states including India are based on premises and guesss instead than grounds. 27

1. 4. 3 Community

National Disaster Management Authority (NDMA) has advised the Ministry of Panchayati Raj and Rural Development to turn to the concerns of catastrophe direction in the preparation of representatives of the Panchayati Raj Institutions and local organic structures. Women Self Help Groups (SHGs) , Anganwadi workers and adult females voluntaries are playing a lead function in catastrophe direction readiness. Accredited Social Health Activist (ASHA) workers are besides easing first assistance and hunt and deliverance preparation for big figure of people. 8

So community should be cognizant about their exposure and strength. They are themselves the first respondents to any type of catastrophes.

Educationand preparation of the general community in first assistance and

resuscitation decidedly helps in salvaging many lives before formal medical assistance reaches the catastrophe site. Evaluations of developing plans on first assistance and resuscitation have shown good consequences.

Contingency plans and extenuation programs for inundation become successful merely when the planning procedure involves all the community members and it take into history the bing societal constructions and dynamics. 32

It has been estimated that, 80-90 per centum of wellness attention demands in the first 24 hours after inundation strikes the community can be managed by trained voluntaries from the community itself. This besides reduces the work load on the public wellness system. 33

1. 4. 4 Public wellness workers

Enrolling and retaining human resources in public wellness system is an all clip challenge. There is acute deficit of human resources in rural countries and it is felt clearly during catastrophes like inundation. 34 But Training of available human resource in flood direction can cut down the service spread during inundation well. 35

Training and capacity edifice of wellness forces is one of the most of import elements of catastrophe readiness program of public wellness system.

Trained work force shows assurance in managing exigency state of affairss.

Evaluation of preparation and capacity edifice activities are normally done by comparing pre-tests and post-tests³⁶ but the existent rating of competence and effectivity occurs as the jeopardy strikes the community. Training

besides helps to detect inadequacies in accomplishments, determination pickings pattern and information systems. 37

Training should hold theory Sessionss based on success narratives elsewhere in the universe and mock Sessionss supplying accomplishments to cover with the practical job. The most of import thing is that there should be refresher preparations on a regular basis with regular updating of cognition.

38 There should be more capacity edifice activities for community degree wellness workers as they are the first contact points for the community in exigency state of affairss like inundation. These activities should be based on recognized scientific attacks but adapted to the localculture. 39

1. 5 Public wellness system in Odisha

Commissioner-cum-secretary of section of wellness is the administrative caput of the section and studies to the wellness curate. Nine managers and the drug accountant of Odisha study straight to the commissioner-cum-secretary. These managers are Mission Director, National Rural Health Mission (NRHM) ; Project Director, Odisha State AIDS Control Society (OSACS) ; Director, Medical Education and Training ; Director, Acharya Harihar Regional Cancer Centre (AHRCC) ; Director, FamilyWelfare ; Director, Health Services ; Director, Public Health ; Director, State Institute of Health and Family Welfare (SIHFW) ; Director, Indian System of Medicine (ISM) and Homeopathy. Commissioner-cum-secretary is besides helped by secretaries at assorted degrees such as particular secretary, extra secretary, joint secretary, deputy secretary and under secretary. (Annexure-1)

District wellness disposal is headed by head territory medical officer. Public wellness system below territory degree has been described in the subdivision 3. 1 (Health system in the survey territory) of consequence chapter.

Table1. 3 gives an thought about the figure of public wellness attention establishments in Odisha which provide services to entire population of 41, 947, 358 (Rural 34, 951, 234 and Urban 6, 996, 124) in Odisha. 40

Medical College and Hospitals

3

District Hospitals (30 territories +

Capital Hospital, Bhubaneswar & A ; Rourkela General Hospital)

32

Sub-Divisional Hospitals

26

Community Health Centres

377

Other Hospitals

79

Primary Health Centres

1228

Sub-Centres

6688

Ayurvedic Hospitals

2

Ayurvedic College & A ; Hospitals

3

Ayurvedic Dispensaries

619

Homoeopathic College & A ; Hospitals

4

Homoeopathic Dispensaries

561

Unani Dispensaries

9

Source- Annual Activity Report 2011-12, Health and Family Welfare Department, Government of Odisha.

1. 5. 1 Public wellness system response to inundation in Odisha

Directorate of Public Health in Odisha has been created by a declaration of Department of Health & A ; Family Welfare in 2009. Disaster direction is one of the chief activities of the board of directors. 14 The State unit of Integrated Disease Surveillance Project (IDSP) becomes the province control room during inundation. During 2011 inundation, 135 medical alleviation squads were deployed and 482 Medical Relief Centers were opened in the inundation affected districts. 141, 73, 374 packages of ORS and 52, 74, 613 Halogen tablets were distributed. 1

1. 6 Rationale for the survey

Successful direction of wellness impacts of inundation depends on the coordination of assorted sections and bureaus with the wellness section, cooperation from the community and leading of the wellness section. This can merely be achieved by bettering the apprehension of wellness hazards in local scenes and of the societal and cultural qualifiers of those risks. 17

Research on inundation hazards and response has mostly focused on economic sciences, support and agribusiness. Very few researches have given attending to wellness dimension of inundation. 41

A study of primary wellness centres in Jagatsinghpur territory of Odisha, surrounding territory of Kendrapara was done instantly after 2008

inundation. The aims were to measure the readiness and functional capacity of primary wellness centres in the territory for inundation response.

Pretested questionnaire was used to interview medical officers merely. Health workers and other back uping staffs were non interviewed. 42

No mentions of survey conducted in Kendrapara territory which tries to understand the wellness hazards of community and wellness staffs, inter and intra wellness section work kinetics, outlook and cooperation of community and community based organisations in flood state of affairss were found.

This survey is an effort to understand these local wellness system kinetics which can be utilized to alter the policy for better readiness of wellness system to pull off and extenuate the inauspicious wellness impacts of inundation in Kendrapara territory.

1. 7 Aims of the survey

a^? To analyze the major jobs encountered by public wellness workers in presenting the services after inundation

a^? To analyze the readiness of public wellness workers for pull offing inundation state of affairs

a^? To happen out the capacity spreads of public wellness workers in covering with inundation state of affairs