

**THE NATURAL DISASTER MANAGEMENT & ITS CONTROL -
LANCE FOR A SUSTAINABLE ECO-ENVIRONMENT IN WORLD**

¹ Prof. (Dr.) Ramesh Chandra Rath.

¹ Professor-Cum-Dean(R&D), Einstein Academy of Technology & Management (EATM)
,Recognized by AICTE ,New Delhi , Govt .of India and Affiliated to BPUT, Rourkela
,Odisha.

² Prof. (Dr.) Padma Charan Tripathy

²Professor–Cum-Head of the Department of Civil Engineering, Einstein Academy of
Technology & Management (EATM) ,Recognized by AICTE ,New Delhi ,Govt .of India and
Affiliated to BPUT, Rourkela ,Odisha.

#¹ramesh.ch.rath@gmail.com #²hodcivil.eatm@gmail.com

ABSTRACT

Today, the life of habitants are very difficult to survive in the world because of in balance in regulatory system of the earth .Where many natural disasters appear to be “normal” environmental happenings, through natural environmental conditions that exist in God's creation and sometimes it becomes irrational ,by which the habitants of the world suffer a lot in many ways .Generally, we believe that any natural disaster happens when we go against the “God”, but ‘God’ does not directly cause all natural disasters. Many are simply freak occurrences that strike at random. ‘God’ in general has taken hands off approach, letting mankind go his own way experiencing the fruit of his actions. Wise King Solomon observed, “The race is not to the swift, nor the battle to the strong, nor bread to the wise, nor riches to men of understanding, nor favour to men of skill; but time and chance happen to them all. For man also does not know his time: Like fish taken in a cruel net, like birds caught in a snare, so the sons of men are snared in an evil time, when it falls suddenly upon them” (Ecclesiastes 9:11-12).[1]

History records man's constant struggle with foul environmental conditions to survive. Even today, one seventh of the human race, 840 million people, lives in conditions of chronic and persistent hunger. Every day 24,000 people die from hunger. Three quarters of them are children. Today, most of countries of the world are facing terrible situation for surviving their citizen's life, due to frequently occurrence of earth quake, tsunami, drought, cyclone, feminine, heat wave, heavy snowfalls etc. Hence forth, the researchers

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016

have tried their level best in order to post-mortem the related causes and recommend to the society for people's awareness & precaution regarding the current problem. The invited research article titled "The Natural Disaster Management & its Control-lance for a Sustainable Eco-Environment in World" is structured with number of Section, which develops a conceptual framework for the analysis of natural disaster in localities as well as through out to the globe.

In this invited research article,, the researcher have presented an wide range of scientific debate about the standing problem how to solute permanently for people's well conscientiousness all around the world So that, they have taken number of factors that may be taken into account i.e various technological methodologies to be develop & implement in order to know about the information of natural disaster's occurrence in advance before time .finally ,the researcher have sum up the article with number of recommendation by implementing requisite procedure of research methodology.

Key words: *Natural Disaster (ND), Occurrence –in –Advance, (OIA), Scientific- Debate (SD), Sustainable Environment (SE) People's Conscientiousness (PC).*

1. INTRODUCTION

Now-a-days, natural disasters such as earthquakes, tsunamis, and floods can often come at the least expected time. Others, such as hurricanes and cyclones are increasing in severity and destruction. Typically, the poor are the worst hit for they have the least resources to cope and rebuild. This part of the globalissues.org web site looks at some of these issues.

Natural disasters happen all over the world and they can be utterly devastating for people's lives and the environments in which they live. Although natural disasters are caused by nature and there is nothing that we can do to prevent them happening, there are many different natural causes that lead to natural disasters, and being aware of these causes enables us to be better prepared when such disasters do arrive.

One common natural disaster is flooding, which occurs when a river bursts its banks and the water spills out onto the floodplain. This is far more likely to happen when there is a great deal of heavy rain, so during very wet periods, flood warnings are often put in place. There are other risk factors for flooding too: steep-sided channels cause fast surface run-off, while a lack of vegetation or woodland to both break the flow of water and drink the water means that there is little to slow the floodwater down. Drainage basins of impermeable rock also cause the water to run faster over the surface.

Earthquakes are another common natural disaster that can cause many fatalities. The movements of the plates in the earth's crust cause them. These plates do not always move smoothly and can get stuck, causing a build-up of pressure. It is when this pressure is released

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016

that an earthquake occurs. In turn, an earthquake under the water can also cause a tsunami, as the quake causes great waves by pushing large volumes of water to the surface.

Tsunamis can also be caused by underwater volcanic eruptions. Volcanic eruptions are another natural disaster, and they are caused by magma escaping from inside the earth. An explosion takes place, releasing the magma from a confined space, which is why there are often also huge quantities of gas and dust released during a volcanic eruption. The magma travels up the inside of the volcano, and pours out over the surrounding area as lava.

2. LITERATURE REVIEW

In this section, we the researchers had faced difficulties how to complete this invited article titled "*The Natural Disaster Management & its Control-lance for a Sustainable Eco-Environment in World*", because this research is purely based on both the collection of data on primary and secondary way ,where most of empirical studies .natural disaster is not an accident it is a incident occurred due to number of causes out of which most of un visible .Here , we are just trying to notices to the people & upcoming generation regarding their awareness ,alert and seriously conscious & consider on it how to overcome it Jesus Christ explained this principle of random destruction by giving an example of Pilate killing some Galileans in order to mix their blood with his sacrifices. "Do you suppose that these Galileans were worse sinners than all other Galileans, because they suffered such things? I tell you, no; but unless you *repent* you will all likewise perish" (Luke 13:2-3, emphasis ours throughout). He goes on to give another example of the tower in Siloam falling on and killing people passing by (verses 4-5). Perhaps an earthquake caused its collapse. Regardless, the point Jesus was making is that natural disasters, circumstances or accidents can cut short

Are upset weather conditions, earthquakes and natural disasters on the increase worldwide? Are there spiritual causes behind them or are they just the result of random, environmental happenings? Do disasters have any meaning or message for humankind today?

Some see natural disasters as nature's way of some monumental system of checks and balances, designed to control the world's population. To others it seems like pure happenstance, impure accidents or random violence that proceeds mindlessly out of a universe without a pattern. In this research the researchers were taken two probable hypothesis that independent variable consists Null hypothesis (H_1) Non Controllance of Regulatory system of the earth it leads to more & more natural disasters dependent variable (H_0) refers awareness & consideration of proper utilization of natural resources properly as well as less carbonisation to the earth, more & more plantation may prevent to the terrific natural disasters. However, Jesus mentions that many natural disasters, as we term them today, would be a sad reality of life throughout history and would build in impact as we approach the end of the age. He predicted: "There will be *earthquakes* in various places; there will be *famines* and *calamities*; this is but a beginning of the *intolerable anguish* and

sufferings” (Mark 13:8 Amplified). Various types of earthquakes, plagues and major upsets in the weather, including drought, floods, tidal waves, tornadoes, and hurricanes will continue to wreak havoc on countless thousands around the globe.

3. AIM & OBJECTIVES OF RESEARCH

- To know about the occurrence of natural disaster & inform it to the people in advance
- To know its cause & effect
- To plan & think how to overcome this unbearable tragedy?
- To maintain the regulatory system of environment
- To study & observe such pitfalls made by people
- To Monitor, Control and manage the rescue activities during the disaster.
- To develop & use of modern & advanced technology to know prior about the natural disaster like tsunami ,cyclone, storm, hurricane, flood , drought ,feminine & earth quake till today there is no such technology to know more time before of earth quake

4. WHAT IS THE NATURAL DISASTER OR CALAMITY?

As natural disaster or calamity is/are concerned, these are occurrences due to imbalance in the process of regulatory system of Nature by number of causes out of which number of causes by man make than almighty. in other way, we can admit that it is not an accident but it is incident mostly occurs due to un utilization of natural resources by the human beings such as de-forestation, lack of more plantation, pollute air, by more industrialization , increase of trucks , buses, cars, lorries ,bikes and affects of ultra violet rays of sun etc.

5. BACK GROUND OF NATURAL DISASTER

5.1 Manifestations of Divine Power

Earthquakes and environmental occurrences can also be manifestations of divine power. When God delivered the Ten Commandments from Mount Sinai, it was accompanied by thunder, lighting, thick clouds, smoke, and a great earthquake (Exodus 19:18). Jesus Christ's death was marked by a major earthquake to reinforce God's presence and power (Matthew 27:54; Matthew 28:2).

God, on occasion, will bring earthquakes and natural disasters to strike the rebellious in order to teach lessons or bring His righteous judgments. For example, God used an earthquake to strike down the rebellion of Korah against Moses and the leadership God had chosen. Notice, “and the earth opened its mouth and swallowed them up, with their households and all the men with Korah, with all their goods” (Numbers 16:32).

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016

5.2 Cause and Effect

Since Eve bit the forbidden fruit, natural disasters have plagued mankind. Because Adam also chose to rebel against God, his descendants would have to struggle with the created environment to survive. Adam was told, “*Cursed is the ground for your sake; in toil you shall eat of it all the days of your life. Both thorns and thistles it shall bring forth for you, and you shall eat the herb of the field. In the sweat of your face you shall eat bread, till you return to the ground, for out of it you were taken; for dust you are, and to dust you shall return*” (Genesis 3:17-19).

6. RESEARCH METHODOLOGY

6.1 Problem formulation:

We have studied about 2324 municipalities & 3245 NAC throughout the world through empirical way of data collection, from which several have occurrence of a natural disaster, while others do not. This allows for comparisons between different treatment groups and control groups, assuming that disasters introduce an exogenous shock to social indicators at the local level. Few studies have analyzed the impact at the local level caused by natural disasters, and mostly they focus on villages effects with impact at the household level (see for example Dercon, 2004 and 2005). The idea here in this paper is to separate the effects that a shock introduced by the natural disaster may have on local social indicators such as the Human Development Index, and poverty levels. Taking advantage of the natural disaster as a shock, we will use a Difference in Difference specification, in the following way:

1 For example Charveriat (2000) reports an average of 32.4 disasters per year in Latin America and the Caribbean for the decade of nineties.

$$(1) Y_{jt} = \alpha_0 + \alpha_1 T_i + \alpha_2 D_t + \alpha_3 T_i D_t + \alpha_4 X_{jt} + u_{jt}$$

Where Y denotes the indicator for a social variable (HDI or poverty level) in municipality i at time t. T denotes a dummy for areas considered treatment, i.e. municipalities with an incidence of a natural disaster; it is a dummy variable taking the value of 1 after the natural disaster occurs, X is a set of characteristics of the area. The term α_3 measures the impact of a natural disaster on the outcome variable Y. Treatment (T) can be defined as those areas that will suffer from a natural disaster in the period covered by the data.

However, this specification assumes that municipalities under treatment and control are similar in every way except in that control suffer from a natural disaster. As we are taking the whole municipalities, this assumption may be difficult to hold. To the extent that there is a different trend in time for treatment and control groups, failing for the trend parallel assumption, and thus causing the DiD estimation to be biased. Following Hotz, Imbens and Klerman (2000 and 2006), we use the heterogeneity in the sample, exploiting the

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016

experimental data on the control group, and therefore they show this is a more reliable non-experimental estimator of the differential effects of municipalities with treatment and those who are under control. Adjustment through pre-shock variables allows the data for the control group to empirically adjust for across-shocks differences in population and treatment component assigned mechanisms, helping in this way to isolate a consistent estimate of These authors show that this is a more conservative method for estimating than in other method which derive in similar results such as those non parametric versions of the same equation based on matching methods. The equation then becomes:

$$(2) Y_{jt} = \alpha_0 + \alpha_1 T_i + \alpha_2 D_t + \alpha_3 T_i D_t + \alpha_4 X_{jt} + \alpha_5 T_i X_{jt} + u_{jt}.$$

We will include in X different sets of variables for which municipalities may be more heterogeneous in their response to a shocks from a natural disaster and also for responding to the levels of social indicators of interest, or making the municipality more prone to natural disasters. Thus in the next subsection we present the sets of variables, their sources, and basic statistics.

6.2 Data and Variables

We are using data from different sources. We are interested in dependent variables such as the Human Development Index (HDI), as published by the UNDP at the municipal level for years 2000 and 2005, and also the poverty levels in three definitions (food, capacities, assets) as published by CONEVAL also for 2000 and 2005 at the municipal level. Data for natural disaster are gathered and classified from DESINVENTAR database, which has gathered a number of natural events in municipalities following reports in all media. A description of this database is in the annexes.

A potential drawback is that we have to use all disasters together. Thus, in a first step we will include a dummy variable for disasters in general, where the comparisons are those municipalities without any natural event. In a second stage we divide the events in categories, where the comparisons again are municipalities without disasters. And finally we will restrict the sample to those municipalities with disasters, where the comparison groups are municipalities with other categories of disasters.

The geographical distribution of natural disasters is shown in the Maps in the Annexes. Where we can see that some patterns can be seen but they do not seem to be too strong in some cases. For example, floods events seems to be distributed all around the country, droughts seem to be more concentrated to some extent in the north areas of the country, while frosts also seem to be concentrated in the north, finally rains seem to be concentrated in northern and southern areas mostly in coastal zones.

6.3 Hypothesis:

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016

In this section, with the above said article title *“The Natural Disaster Management & its Control-lance for a Sustainable Eco-Environment in World”*. The researchers were taken two probable hypothesis related two variables such as independent variable & dependent variables where as first one consists Null hypothesis (H_1) i.e Non Controllance of Regulatory system of the earth it leads to more & more natural disasters & the dependent variable (H_0) refers awareness & consideration of proper utilization of natural resources properly as well as less carbonization to the earth, more & more plantation may prevent to the terrific natural disasters in the world in future context

7. MOST WORST DISASTERS IN THE WORLD

Over the course of time that the world has been here, there have been a variety of different natural disasters. Some of them have really made history, because of their devastating, long lasting effects. The problem is that natural disasters are not over. They will continue to occur, and most of them occur with little to no warning. Even if you do get some warning, you don't know the epic proportions that it can reach. Here are a few of the world's worst natural disasters that you may want to be aware of, because if history has proven anything it is that it can repeat itself. Be prepared for disaster, because you never know when it can strike. After all, you are sure to find that most of these disasters were not something that people thought would ever happen to them.

7.1. Haiti Earthquake of 2010

First, we will take a look at the Haiti Earthquake of 2010. This is one of the more recent natural disasters. It had a magnitude of 7.0, which is one of the strongest earthquakes the world has ever seen. It rocked Haiti, and left aftershocks that were felt by many. They had over 200,000 deaths, and millions were left homeless and in need of emergency assistance.

7.2. Hurricane Katrina of 2005

Hurricane Katrina was one of the most deadly earthquakes that hit the gulf coast in years. It was actually the 6th strongest earthquake that has ever hit in the United States. There were a lot of people that lost their lives, and there were also a lot of damages. In fact, there were over \$81 billion in damages that had to be repaired after this hurricane. It left devastating effects.

7.3. Hurricane Andrew of 1993

Hurricane Andrew was another hurricane that hit the United States and really left its mark. It was considered to be the 5th worst hurricane to hit the US, ranking right there above

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016

Hurricane Katrina. It left massive destruction, causes a lot of deaths, and also had billions of dollars in property damages to be considered.

7.4. Tohoku Earthquake and Tsunami

This was an earthquake that hit Japan in 2011, and it had a magnitude of 9.0. That makes it one of the strongest quakes to ever hit the country. In fact, it is the strongest that was ever recorded in their history. This quake left millions dead, injured or missing, and it also destroyed a whole lot of buildings and even caused a disaster that could have lead to nuclear disaster. The tsunami waves as high as 23.6 m (77 ft) were triggered which touched Japan within minutes of the earthquake.

7.5. Tsunami of 2011

A powerful earthquake with magnitude of 9.0 hit coast of Sumatra on Dec. 26, 2004 Sunday at 00:58 UTC triggering tsunamis that swept through the coastal regions of a dozen countries bordering the Indian Ocean. It killed almost 225,000 – 275,000 people in 14 countries, with the hardest hit country being Indonesia, followed by Sri Lanka, India, and Thailand. It made waves as high as 30 meters (100 feet) and is said to be one of the deadliest disasters in recorded history

7.6. Tangshan Earthquake

On July 28, 1976, a powerful earthquake measuring 8.3 on the Richter scale struck an industrial city with approximately one million inhabitants of Tanshan, China. The massive earthquake caused death of thousands of people and caused irreparable damage to property and life. It is estimated that around 255,000 people lost their lives.

7.7. Cyclone Nargis:

Cyclone Nargis hit Myanmar badly on May 2, 2008. The cyclone caused deaths of around 140,000 people and washed up densely populated areas around the Irrawaddy River delta in Myanmar. The damages were estimated to have cost around \$10 billion and the second deadliest in recorded history after Typhoon Nina in 1975.

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016



[Figure: 1 refers about the recent earth quake in Myanmar]

7.8. 2008 China Earthquake

The biggest earthquake struck China's Sichuan province on May 12, 2008. The earthquake was measured at 7.9 on Richter scale and killed about 87,000 people. It left millions of people homeless. Thousands of them were buried under the rubble of crushed communities. Factories, schools, homes were collapsed and it took troops and rescue teams significant amount of effort to reach areas of south western China.

7.9. 2003 Iran Earthquake

A massive earthquake measuring 6.6 on Richter scale according to the United States Geological Survey caused extensive damage in city of Bam and surrounding Kerman province in south-eastern Iran. Approximately, 26000 people lost their lives and 30,000 left injured.

7.10. 2005 Pakistan Earthquake

The Kashmir earthquake that occurred in 2005 had magnitude of 7.6. It is estimated that about 80,000 people were killed in north western Pakistan and Kashmir. The tremors were also felt in the nearby countries of Tajikistan, Afghanistan, western China, and also the Indian-administered Kashmir, where around 1,400 people died.

7.11. Cyclone Phailin

In 10th October 2013, a severe cyclone had hit the sea beach of Gopalpur port of Ganjam District, Odisha with 220 KMPH wind power, but the wise, effective and timely precaution

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016

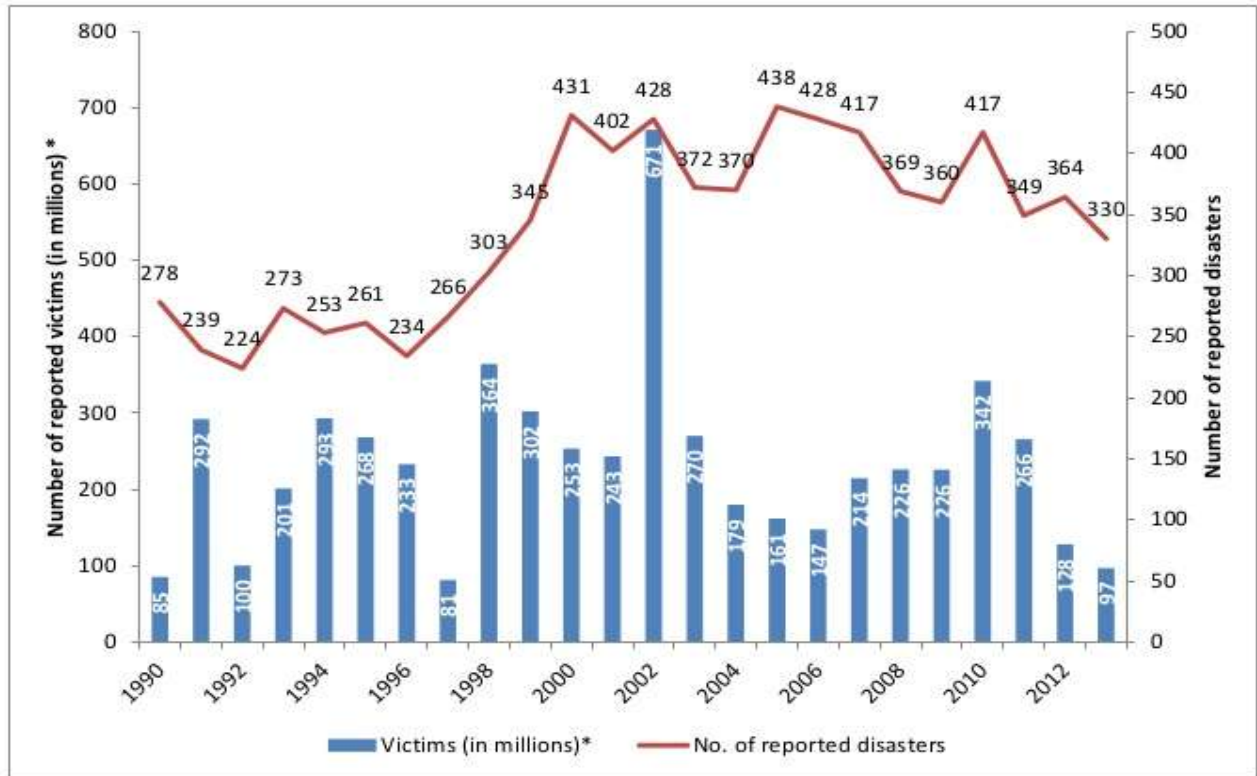
taken by the Govt .of Odisha (Odisha State Disaster Management Authority – OSDMA) (World Bank, 2013). This initiative has led to the construction of 200 new cyclone shelters, operating in places such as schools and community centres to ensure regular maintenance (Singh, 2013). Cyclone shelters have proven to be useful as 75 shelters operated by the Indian Red Cross provided safety to more than 100,000 people during Phailin (Mukherji and Agarwal, 2013) with some shelters holding up to 500 people (Froberg, 2013). Regarding forecasts, the India Meteorological Department (IMD) was able to predict wind velocity more



Figure 2 .NASA MODIS Aqua image of Tropical Cyclone Phailin circling over the Bay of Bengal, moving west towards India, on October 10, 2013. (Credit: NASA MODIS Rapid Response Team in Gutro, 2013; visualisation by UNEP/GRID-Sioux Falls).

As per the reports of the "Annual Disaster Statistical Review 2013" published this month by the Centre for Research on the Epidemiology of Disasters (CRED), 2013 is a year with 330 registered natural disasters. This is less than the average annual disaster frequency observed from 2003 to 2012 which is 388, and represents a decrease in associated human impacts of disasters which were, in 2013, at their lowest level in last 16 years. The death toll of natural disasters still killed a significant number of people totalling to 21 610 but this is largely below the annual average between 2003 - 2012 which is 106 654 and 96.5 million People became victims worldwide, which was also below the 2003 - 2012 annual average of 216 million. On the side of the economy, economic damages from natural disasters shows, in 2013, a decrease to average levels, 2013 US \$ 156.7billion, with estimates placing the costs at US\$ 118.6 billion.

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016



Trends in occurrence and victims (deaths and affected)

For the last decade, China, the United States, Indonesia, the Philippines and India constitute together the top 5 countries that are most frequently hit by natural disasters. In 2013, China experienced its highest number of natural disasters of the last decade. The country was affected by a variety of disaster types, including 17 floods and landslides, 15 storms, 7 earthquakes and one mass movement of geological origin, one drought and one period of extreme temperature. For the top 10 countries in terms of disaster mortality in 2013, five countries are classified as low income or lower-middle income economies. These countries accounted for 88% of global reported disaster mortality in 2013.

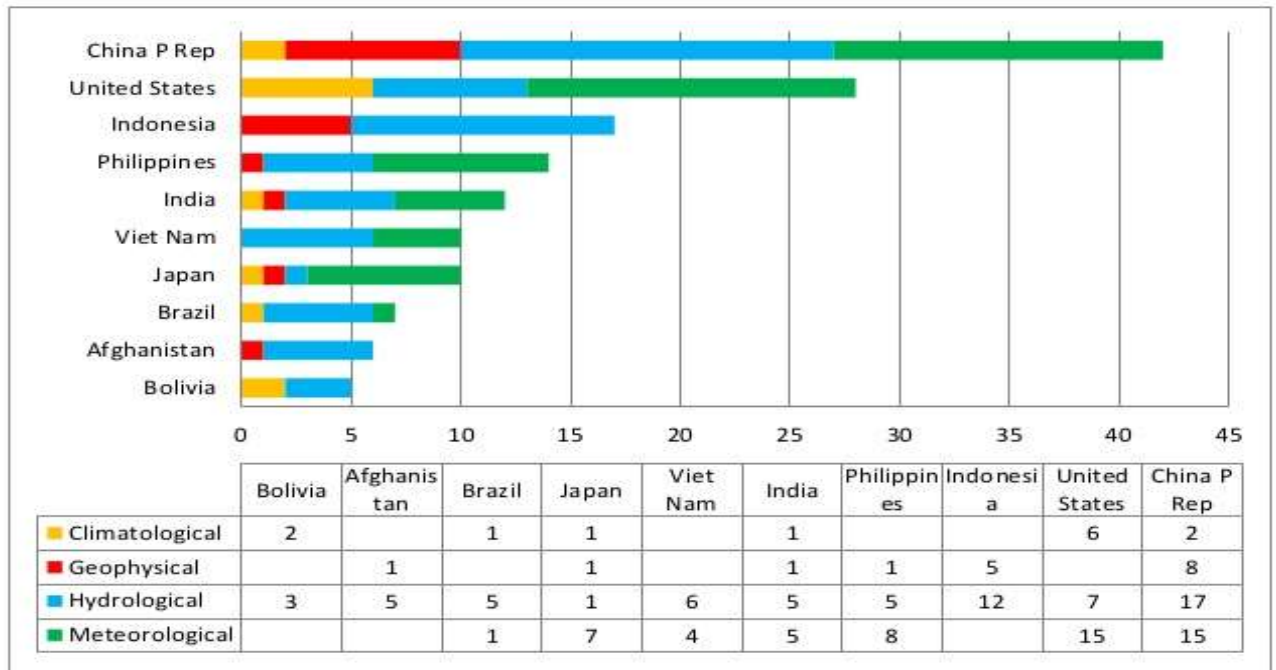
Two disasters killed more than 1 000 people: the cyclone Haiyan the Philippines, in November that resulted to 7 354 deaths and the monsoonal floods in June in India with 6 054 deaths.

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016

Event	Country	No. of deaths
Tropical cyclone (Haiyan), November	Philippines	7354
Flood, June	India	6054
Heat wave, July	United Kingdom	760
Heat wave, April-June	India	557
Earthquake, September	Pakistan	399
Heat wave, May-September	Japan	338
Flood, August	Pakistan	234
Flood, July	China P Rep	233
Earthquake, October	Philippines	230
Flood, September-October	Cambodia	200
Total		16359

Top 10 natural disasters by number of deaths in world

The low number of reported natural disasters in 2013, when compared to the annual average occurrence from 2003 to 2012, was mostly due to a smaller number of hydrological and climatologically disasters, 18% and 45% below their 2003 - 2012 annual average, respectively. There are around 159 Hydrological disasters still had by far the largest share in natural disaster occurrence in 2013 with a percentage of 48.2%, followed by 106 meteorological disasters or 32.1%, 33 climatologically disasters or 10% and 32 geophysical disasters that constitutes 9.7%. & 21 610 people were killed by disasters last year. The said statistic is very far from the 2003 - 2012 annual average of 106 654 deaths. But this is mainly explained by the impact, on the decade's average of three years: 2004, 2008 and 2010, with more than 200 000 people reported killed and two years: 2003 and 2005 with around 100 000 deaths, most of them having been killed by earthquakes.



Top 10 countries by number of reported events in 2013

On a more detailed aspect, it appears that, in 2013, the number of people killed by floods totalled to 9 819 was the highest of the decade and the number of those killed by storms: 8 583 the second highest.

8. DEATH TOLLS BY THE FLOODS

It had observed that the death toll by floods are the largest share of natural disaster fatalities in 2013, representing 45.4% of global disaster mortality, while deaths from storms accounted for 39.7%. Other disasters with severe human impact were reported in China, one drought with 5 million victims, one flood with 3.5 million and one earthquake with 2.2 million, in the Philippines, one earthquake with 3.2 million victims and one flood with 3.1 million, in Thailand, one flood with 3.5 million victims and in Zimbabwe, one drought with 2.2 million victims. When the 2013 data is placed side by side with the figures from the annual average for the decade 2003 to 2012 of 215.5 million indicate that the number of victims of 96.5 million has decreased. This decrease is explained by the lower human impact of climatologically disasters whose number of victims is 8.2 million was 88% below its 2003 - 2012 annual average, and of meteorological disasters with a number of victims of 32.1 million, 70% below the decade's average. Conversely, the number of victims from meteorological disasters of 49.2 million was, in 2013, 60% above its 2003-2012 average.

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016

9. THE PERCENTAGE OF VICTIMS TO DISASTER IN A PIE CHART

There are 51% of victims were from storms, 33% from floods, 8% from droughts and 7% from earthquakes. Only three countries accounted of 72.4 per cent of victims: China with 28.5%, the Philippines with 26.6% and India with 17.3%.

Name of Countries	Types of disaster	Number of Death Toll	%of Victims	Remarks
China	Tsunami/Earth quake	1230	28.50	NB: Data in average
India	Flood/Cyclone	6040	17.30	
Pakistan	Storm/Drought/Earth Quake	2320	51.00	
Philippines	Earth Quake	260	26.6	
Myanmar	Flood/Cyclone	1250	23.00	
USA	Tornado /Typhoon	310	12.30	
Nepal	Earth Quake/Flood	10260	49.20	

[Figure: 5 Refers about the natural disaster & its effect in death toll are average rather than accurate]

9.1Economic impact

The Flooding in the South and East Germany was the most costly natural disaster in 2013 with estimated economic damages of US\$12.9 billion. Costs from cyclone Haiyan in the Philippines were estimated at US\$ 10 billion. An earthquake in the Sichuan province in China, US\$ 6.8 billion, the cyclone Frito, also in China, US\$ 6.7 billion, the Calgary flood in Canada, US\$ 5.7 billion, tornadoes in May in the United States, US\$ 5.5 billion, two floods in China, in Sichuan in July, US\$ 4.6 billion and in the North-East provinces in August-September, US\$ 5 billion and the hurricane Manuel in September in Mexico, US\$ 4.2 billion also added significantly to the total disaster damages of 2013.

The estimated economic losses from natural disasters in 2013, US\$ 118.6 billion was 25% below the annual average damages from 2003 to 2012 US\$ 156.7 billion 2013 value. With the exception of storms, the decreasing rates of climatologically and geophysical disasters is of greater importance. Conversely, damages from floods of US\$ 53.2 billion were, in 2013, 90% above their 2003-2012 annual average and were the second highest of the period. The flood in Germany was the third costliest since the flood in China in May-August 2010, US\$ 19.2 billion 2013 value, and the flood in Thailand in 2011, US\$ 41.4 billion, 2013 value. The damages from meteorological disasters, US\$ 52.4 billion were 21% above their annual 2003-2012 average, US\$ 30.7 billion 2013 value. The cyclone Haiyan, in the Philippines, was the second costliest disaster in 2013, but far behind Hurricane Katrina in 2005 with US\$ 149.1billion 2013 value or Hurricane Sandy in 2012 with US\$ 50.7 billion 2013 value.

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016

The costs from geophysical disasters of US\$ 9.1 billion were 82% below their 2003-2012 annual average US\$ 49.5 billion 2013 value. The earthquake in the Sichuan province in China was the third costliest disaster of 2013. It ranks far from the exceptional costs from the earthquake and tsunami in Japan in 2011 with US\$ 217.5 billion, 2013 value, or damages from the May 2008 earthquake in China US\$ 91.9 billion, 2013 value or from the Honshu-Niigata earthquake in Japan in 2004 ,US\$ 34.5 billion, 2013 value.

The damages from climatologically disasters of US\$ 3.9 billion were 68 % below their decade's average US\$ 12.5 billion, 2013 value.

10. HYPOTHESIS TESTING

After obtained the reliable data from the reliable sources on the above said article title “*The Natural Disaster Management & its Control-lance for a Sustainable Eco-Environment in World*”. The researchers were taken two probable hypothesis were tested with the related two variables such as independent variable & dependent variables where as first one consists Null hypothesis (H_1) i.e Non Controllance of Regulatory system of the earth it leads to more & more natural disasters & the dependent variable (H_0) refers awareness & consideration of proper utilization of natural resources properly as well as less carbonization to the earth, more & more plantation may prevent to the terrific natural disasters in the world in future context. Finally the researcher observed that the null hypothesis has been accepted due to its significant impact on Controllance of natural disaster in world

11. MEASURE DISASTER MANAGEMENT IN WORLD

In a proverb it is justified that “A little prevention& Precaution is better than Cure” and from this statement the Government of Odisha had learnt a Lesson from the Super Cyclone happen in the year of 1999. Hence forth in Phailin, the Govt. of Odisha was taken effective disaster planning, preparation and dissemination of early warning information led to a minimal death toll in the wake of the strongest cyclone to hit India in 14 years. In mid-October, Cyclone Phailin swept over the Bay of Bengal and across the eastern coast of India, causing hundreds of millions of dollars in damage and affecting the livelihoods of 13 million people. The evacuation of more than a million people in the states of Odisha and Andhra Pradesh in response to effective early warnings resulted in a much lower death toll than a catastrophic cyclone of similar strength that struck in 1999, leaving 10,000 people dead. Continued early warning efforts could have similar positive results in the future, and when accompanied by good communication and adequate preparation, impacts of disasters could be mitigated or even prevented. This bulletin will focus on the lessons learned from Cyclone Phailin and how they can be applied to other disasters such as the recent Typhoon Haiyan.

12. FUTURE FORECASTING OF DISASTER MANAGEMENT

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016

For meeting the natural disaster in future consequences, we must have followed the following instructions i.e

- We are well alert before & after the incident happen
- To adopt more & more advanced technology ,Metrological Report of various countries, use sate light phones etc. during the natural calamity
- Built up more & More cyclone sheds , by which we save more life
- Appoint more & more well equipped ,trained personnel who meets the natural disaster



Figure: - 3 Cyclone centres Build by the Govt. of Odisha at Ganjam districts for save of people during cyclone

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016



Figure :4 indicates about the Cyclone phallin strike at the Vishakhapatnam port (AP) in 11th October 2013

SUGGESTION & RECOMMENDATION

- The researchers suggested few of recommendation to the peoples & victims of the concerned countries that not to afraid of natural disaster, it is a natural incident given by almighty, have confidence and face this challenging tragedy.
- Don't neglect your role & responsibilities for make the world in an eco friendly environment, by huge plantation, control of industries construction, control carbon dioxide, and create awareness in the minds of people.
- Don't miss utilize the natural resources, conserve it for use of positive prospective.
- Emphasize on more use of bio-fuel & emphasize on more agriculture & forestation.
- Don't pollute the universe and not to hot the climate by using None CNG energy.etc.

ACKNOWLEDGEMENT

In this section, we thankfully acknowledge to our hearty thanks to our esteemed readers & tender our hearty thanks to the almighty for their invisible blessings to us in order to complete this invited article. Secondly, we rendering our highest gratitude & obligation to our beloved parents for their endless love & affection towards us as well as blessings forever from the inception of our life to till date by which, we stood this position .Finally, we also very much thankful to all well wishers, friends, students, readers etc. for their valuable co-operation towards us with motivating a lot to complete this article in an international standard & repute.

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016

CONCLUSION

In sum, the above summations are summarizing that “The Natural Disaster Management & its Controllance is the first & fore most essential work of everybody, in order to do the environment more sustainable & eco-friendly forever by the following way i.e

- 1) Create more awareness regarding the impact of natural disaster & increase the level of confidence for facing the unexpected tragedy in the future consequences if any.
- 2) Extend the co-operative hands to person to person, group to group, country to country in the moment of tragedy with a humanitarian attitude of help & service to the victims by which the tragedy may be little bit overcome.
- 3) To exchange the advanced information before the incident occurs by which more life & property will save.
- 4) To help each and every country, in their none bearable tragedy by exchanging technological support regarding occurrence of cyclone, tsunami. Earth quake, etc. in advance & help financially to the victims directly.
- 5) The suggestive & preventive measures should be abided and implement as early as possible to make the environment clean & ecological fit for healthy living.

References:

- [1] Alderman, H., Hoddinott, J. and Kinsey, B. H (2006). Long term consequences of early childhood malnutrition. *Oxford Economic Papers*, 58(3), 450-474.
- [2] Alpizar, C. A (2007). Risk coping strategies and rural household production efficiency: quasi-experimental evidence from El Salvador. PhD Thesis, Ohio State University.
- [3] Auffret, P. (2003). High consumption volatility: The impact of natural disasters. World Bank Policy research Working Paper 2962. World Bank, Washington.
- [4] Baez, J. and Santos, I. (2007) Children’s vulnerability to weather shocks: natural disaster as natural experiment. Paper presented at LACEA 2006.
- [5] Benson, C. and Clay, E. (2003). Economic and financial impact of natural disasters: An assessment of their effects and options for mitigation. London, Overseas Development Institute.
- [6] Carter, M. R., Little, P., and Mogue, T. (2007). Poverty traps and natural disasters in Ethiopia and Honduras. *World Development*, 35(5), 835-856.
- [7] CENAPRED. 2008. Database of unpublished data given to the UNDP Office in Mexico. UNDP. Mexico.
- [8] CNA. 2007. Estadísticas del Agua en México. Edición 2007. Comisión Nacional del Agua. Secretaría de medio ambiente y recursos naturales. 2nd edition. Mexico
- [9] CONEVAL. 2008. Poverty maps 2000-2005. Available online [www.coneval.gob.mx]

International Journal Of Core Engineering & Management (IJCEM)

Volume 3, Issue 1, April 2016

Crowards, T. (2000). Comparative vulnerability to natural disasters in the Caribbean. Caribbean Development Bank Research Paper 1/00.

[10] Cutter, S., Boruff, B., and Shirley, W. L. (2003). Social vulnerability to environmental hazards. Social Science Quarterly, 84(2), 242-261.

Author Profile: 01



[Prof. (Dr.) Ramesh Chandra Rath]

He is an Eminent Professor & academician of an international repute in the field of Management Education (Mkt. &HR) since last 22 years. He has obtained his PG in Psychology from Sambalpur University Odisha achieved his MBA Degree from Delhi University in 1996, Concurrred his PhD, Degree from the Department of Management Studies “Birla Institute of Technology (BIT), Meshra , Ranchi Jharkhand (India)” in 2000 on the area of **Green Marketing &Supply Chain Management** (Marketing Management specialization) and Concurrred his Post -Doctorate Degree from Patna University in 2003,on the area of “**Advanced physiology and Criminology** ”He has joined as a HR Manager in Pradhan Steels and Mines, Limited ,Athagarda from January 1998 to July 2001 .He has served as a faculty of NMIT for three years , Associate Professor at ICFAI, Berhumpur Centre, from June 2004 to May 2005, professor in at Centre of Management Studies (OEC)form 2nd June 2005 to 30th June 2007, and he had also served as a professor in Management studies in Ravens haw University form July 2007 to June 2008, Principal of Presidency College, Berhumpur (Odisha) from Sept.2009 to June 2012, Head of the Department of Management Studies (MBA) in Gandhi Engineering College ,Bhubaneswar from the 2nd July 2012 to May 2014. He has presently working as a Professor-Cum-Dean at Research and Development Cell, EATM Bhubaneswar. Dr. Rath has guided four PhD research scholars on the specialization area of Green Marketing & supply Chain Management, Consumer Behaviour, and Organizational Behaviour, Production & Operational Management etc. There are 12 International journals and 16 National Journals & two books of (Management) publication in his credit by reputed publishers.

International Journal Of Core Engineering & Management (IJCEM)
Volume 3, Issue 1, April 2016

Author Profile: 02



Prof. (Dr.) Padma Charan Tripathy

He is a reputed Civil Engineer in the field of Construction Technology, Rural & Development, Road & Construction, and PWD etc. He has served 30 Years of Marathon service in Industry & Academia, with holding Superintendent Engineer & takes retirement from his service as a Chief Engineer in Public Works Department of Govt. of Odisha .During his academic life ,he has acted as Associate Professor, Professor ,Principal in various Colleges,& Universities in the field of Modern Construction & Designing. Presently he is working as the Professor –Cum-Head of the Department of civil Engineering, at Einstein Academy of Technology & Management (EATM), Bhubaneswar, Odisha (India).There are Twenty number “National & International Journal” & four number of Books in his credit .It was published by the reputed publisher of India & abroad.
