

DISASTER MANAGEMENT, STILL A CHALLENGE IN DEVELOPING AND UNDEVELOPED COUNTRIES A REVIEW

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Abstract- Disaster management a new born baby in developing countries and the condition in undeveloped countries are very worst. So the lives in these countries easily come in the jaw of any disaster for instance Cyclone, Hurricanes, landslides, Avalanches, Tsunami, Flood, and Drought etc. But we cannot ignore the importance of the Disaster management to save the lives of the human being from the angry nature. We know the paucity of funds, lack of knowledge and resources are the major factors which are being introduced in the developing and undeveloped countries. Investment in sustainable ecosystem or sound management can also offer cost effective solution to reduce vulnerability of the community from disaster.

Keywords- Disaster, sound ecosystem, natural reasons, paucity of funds.

I. INTRODUCTION

Disasters, that are expected to become more frequent and severe, cause damage to the built and human environment. With loss and damages from disasters increasing globally, reports from international agencies show that developing and the least developed countries are most affected by natural disasters. Disasters are not random and do not occur by accident. Environmental degradation, settlement patterns, livelihood choices and human behavior are all factors contributing to disaster risks, which in turn results in even more harmful effects on human development and environmental assets. They are the convergence of hazards and vulnerable conditions. Disasters not only reveal underlying social, economic, political and environmental problems, but unfortunately contribute to worsening them.

Such events pose serious challenges to development, as they erode hard-earned gains in terms of political, social and educational progress, as well as infrastructure and technological development. Environmental degradation, settlement patterns, livelihood choices and behavior can all contribute to

disaster risk, which in turn adversely affects human development and contributes to further environmental degradation. The poorest are the most vulnerable to disasters because they are often pushed to settle on the most marginal lands and have least access to prevention, preparedness and early warning. Researchers predict a particular strong impact of climate change on the Asian regions which has underlined the value of natural resources and environmental conservation. With climate change it is likely that many new threats and challenges to national security and regional stability will rise. Rural and urban poor are already under stress, and for some groups such as women headed households, adaptation to climate-induced stress, and increased disaster risk will create major challenges. Natural disasters are becoming more frequent in present scenario as climate is changing. Every year, thousands of people are affected by natural events like storms, hurricanes, droughts, earthquakes, floods etc. The impacts of natural disasters on the world populations are dramatic.

The Underdeveloped and developing countries are the most severely affected by natural disasters [1]. For several decades, the governments of developing countries have been confronted with the negative impact of natural disasters on economic development. This is different to most developed countries, where the impact of natural disasters are financed through collaboration with private sector using financial tools such as insurance, micro financial tools and catastrophe bonds.

This paper shows that billions of people in developing and undeveloped countries are periodically and more frequently exposed to at least one event of earthquake, tropical cyclone, flood or drought. As a result of disasters triggered by these natural hazards, more than 184 deaths per day are recorded in different parts of the world [2].

The aim of this entire study is just to analyze all the existing resources and constraints of the

developing and undeveloped countries. For instance human beings are still depending for food, fresh water, wood and fiber, fuel etc. on forest and we have to make and prepared the population for self reliance to promote small and cottage industries (provide adequate employment) for their economic growth and enhanced their standard of living and to identify a theoretical framework and methodological context, based on sociological and anthropological issues related to multicultural phenomena and their approaches.

II. REVIEW OF LITERATURE

Disasters are a result of hazards that impact human and built environments, thus suggesting that nature, people, buildings and infrastructure interact in complicated ways. Disasters are therefore serious problems as they create devastating short-term and long term impacts on a community, nation, or region. These events affect human lives, property, employment, infrastructure, and environment[3]. Several disasters have generated world-wide attention recently. Some become catastrophic, resulting in unimaginable casualties, deaths, and property damage.

The impact of these events expands to a much larger population and geographic area, making the recovery effort very difficult, costly, and time consuming. For instance, the Indian Ocean Tsunami traveled as far as 3,000 miles to Africa, affected more than five nations, and caused about 350,000 deaths making it one of the deadliest disasters in history [4]. The social and emotional impact of the disaster is also heartbreaking. Physiological impacts such as anxiety, fear, feeling of helplessness, and post-traumatic stress disorder may affect victims self confidence and attitude towards life. More than 18% of all natural disasters occur in developing countries; 50% to 60% of this area is extremely vulnerable [5]. Influenced by natural disasters have been 28 developing countries, resulting in over US\$1 billion in direct losses in the last 20 years [6,7]. For small countries, losses much less than US\$1 billion can still have significant long-term consequences [8]. Economic losses from extreme events continue to increase and severely affect disaster-prone areas. Over the past 22 years, developing countries have suffered economic losses of more than US\$122.4 billion from natural disasters; only 3.8 percent were insured

[9]. These increasing economic damages and losses are attributable to an increasing number of great natural disasters, increasing concentration in hazard prone regions, and linkages among social factors such as unemployment, poverty and unequal distributions of income.

The rise in number and intensity of many extreme hydro-meteorological events is increasingly recognized as being the result of global and regional climate change. More broadly and importantly, the underlying risk factors of disasters are increasing: more people are living in vulnerable areas, such as low lying coastal areas, steep hillsides, flood plains, near cliffs, or in forested areas on the outskirts of cities – most often out of necessity, but sometimes out of choice. Environmental degradation is reducing the capacity of ecosystems to meet the needs of people for food and other products, and to protect them from hazards. Healthy ecosystems, such as intact forests, wetlands, mangroves, and coral reefs are beneficial to local populations for the many livelihood benefits [10]. The impacts of disasters, whether natural or man-made, not only have human dimensions, but environmental ones as well. Environmental conditions may exacerbate the impact of a disaster, and vice versa, disasters have an impact on the environment. The high volume of wastes from disasters, from households and debris from forests and rivers, also constitute a major concern for proper disposal [11]. Climate change will have wide-ranging effects on the environment, and on socio-economic and related sectors, including water resources, agriculture and food security, human health, terrestrial ecosystems and biodiversity and coastal zones. Changes in rainfall pattern are likely to lead to severe water shortages and/or flooding. Adaptation is processes through which societies make themselves better able to cope with an uncertain future. Because of the speed at which change is happening due to global temperature rise, it is urgent that the vulnerability of developing countries to climate change is reduced and their capacity to adapt is increased and national adaptation plans are implemented. Future vulnerability depends not only on climate change but also on the type of development path that is pursued.[12]

III. REGIONAL IMPACT ON DEVELOPING COUNTRIES

Impacts and vulnerabilities of natural disaster vary by region to region. There are four regions

that are highly affected by the climate change; Africa, Asia, Latin America and Small Island developing States. Africa is already a continent under pressure from climate stresses and is highly vulnerable to the impacts of climate change. As the climate in

A. Africa is predicted to become more variable, and extreme weather events are expected to be more frequent and severe, with increasing risk to health and life. This includes increasing risk of drought and flooding in new areas [13] and inundation due to sea-level rise in the continent's coastal areas [14].

B. Asia is the largest continent on Earth and spreads over four climatic zones (boreal, arid and semi-arid, tropical and temperate). The region faces formidable environmental and socio-economic challenges in its effort to protect valuable natural resources. There is evidence of prominent increases in the intensity and/or frequency of many extreme weather events such as heat waves, tropical cyclones, prolonged dry spells, intense rainfall, tornadoes, snow avalanches, thunderstorms, and severe dust storms in the region [15]. Impacts of such disasters range from hunger and susceptibility to disease, to loss of income and livelihoods, affecting human survival and well-being.

C. Latin America includes much of the world's biological diversity, as well as a wide variety of ecosystems, climatic regions, topographies and land-use patterns. This region has already been experiencing climate-related changes with the frequency and intensity of extreme natural events. Low-lying coasts in several countries (Argentina, Belize, Colombia, Costa Rica, Ecuador, Guyana, Mexico, Panama, El Salvador, Uruguay, Venezuela) and large cities (Buenos Aires, Rio de Janeiro, Recife, etc.) are among the most vulnerable to extreme weather events such

as rain, windstorms and hurricanes with their associated storm surges and sea level rise.

D. The small island developing States comprise more than 50s States and Territories spread over the Pacific, Indian and Atlantic Oceans and Caribbean Sea, and are highly vulnerable to extreme natural events. Small island developing States are characterised by the concentration of large settlements with associated economic and social activities at or near the coast. Increases in population and the unsustainable use of available natural resources add inundation of land, and coastal and soil erosion with resulting high-cost damages to socio-economic and cultural infrastructure.

IV. EFFECTS OF NATURAL DISASTER ON DEVELOPING COUNTRIES

The economic impact of a disaster usually consists of direct consequences on the local economy and indirect consequences. There are some *Humanitarian* effects include loss of life, affected people and psychological post-disaster effects; *ecological* effects comprise the loss of arable land, forests and damage to ecosystems. *Economic* effects are usually grouped into three categories: direct, indirect, and macroeconomic (also called secondary) effects. The direct losses describe the physical impacts on infrastructure (transport, energy and water), buildings, machinery and agricultural assets whereas indirect losses occur as a consequence of these direct stock losses and include production and economical losses. EM-DAT (worldwide database on disasters) categories disasters into natural and technological, the natural disaster category is divided into 5 sub-groups, which in turn cover 12 disaster types and more than 30 sub-types. Table 1 shows the different types of disasters.

| NATURAL DISASTERS | | | | |
|--|--|---|--|---|
| Biological | Geophysical | Hydrological | Meteorological | Climatological |
| Epidemic o <i>Viral Infectious Disease</i> o <i>Bacterial Infectious Disease</i> o <i>Parasitic Infectious Disease</i> o <i>Fungal Infectious Disease</i> | Earthquake, Volcano, Mass Movement (Dry), o <i>Rockfall</i> o <i>Landslide</i> o <i>Avalanche</i> o <i>Subsidence</i> | Flood o <i>General Flood</i> o <i>Flash Flood</i> o <i>Storm Surge / Coastal Flood</i> Mass Movement (Wet) o <i>Rockfall</i> o <i>Landslide</i> | Storm o <i>Tropical Cyclone</i> o <i>Extra-Tropical Cyclone</i> o <i>Local Storm</i> | Extreme Temperature o <i>Heat Wave</i> o <i>Cold Wave</i> o <i>Extreme Winter Condition</i> Drought, Wildfire o <i>Forest Fire</i> o <i>Land Fire</i> |

Table 1. Natural Disaster Classification

The impacts of natural disasters on society and the environment are substantially greater in less developed countries. The Factors that contribute to an increased vulnerability in developing countries are high poverty and unemployment rates, distributional inequalities, socioeconomic exclusion of the poor from basic services, high population growth, and the lack of strong national and local institutions to respond to natural disasters [16]. For developed countries, no significant macroeconomic impacts are found

and the literature focuses generally on direct and indirect impacts and regional economies. In developing countries, GDP falls in the year of the event or following year, but rebounds in successive years due to increased investment and capital inflows [17]. Table 2 represents the total number of reported disasters, by continent, level of human development and year (2004–2013). This table show only the natural disaster only, and do not include wars, conflict related famines, disease and epidemics.

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | Total |
|------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|
| Africa | 164 | 170 | 202 | 184 | 173 | 156 | 132 | 163 | 123 | 114 | 1581 |
| Americas | 138 | 139 | 105 | 133 | 144 | 115 | 144 | 130 | 115 | 105 | 1,268 |
| Asia | 321 | 360 | 308 | 262 | 240 | 233 | 253 | 235 | 210 | 229 | 2,651 |
| Europe | 98 | 125 | 98 | 104 | 58 | 75 | 99 | 49 | 91 | 69 | 866 |
| Oceania | 23 | 16 | 18 | 11 | 13 | 19 | 18 | 15 | 14 | 12 | 159 |
| Very high human development | 120 | 139 | 119 | 114 | 102 | 95 | 108 | 90 | 112 | 120 | 1,119 |
| High human development | 179 | 157 | 118 | 143 | 113 | 118 | 146 | 102 | 118 | 94 | 1,288 |
| Medium human development | 273 | 284 | 272 | 235 | 244 | 212 | 216 | 217 | 167 | 187 | 2,307 |
| Low human development | 172 | 230 | 222 | 202 | 169 | 173 | 176 | 183 | 156 | 128 | 1,811 |
| Total | 744 | 810 | 731 | 694 | 628 | 598 | 646 | 592 | 553 | 529 | 6,525 |

Table 2. total no. of reported disaster (Source: EM DA, CRED 2014)

Latest data from IDMC estimate that more than 19.3 million people were forced to escape their homes by disasters in 100 countries in 2014 caused by the rapid-onset geophysical and weather-related hazards. In 2014, 17.5 million people, 92% of the total, were displaced by disasters brought on by weather-related hazards mostly floods and storms. The three largest displacement events were caused by typhoons and floods in the Philippines and India. The total number of people displaced varies greatly from year to year, depending on the frequency and size of the largest events. According to an estimate in developing countries population are growing very fast, it has been grown by 96% since 1970 [18]. In Haiti, Niger, Nigeria and South Sudan, the urban population has more than doubled since 2000.

In table 3 region wise displacement show that devastation was more pronounced in small countries. Displacement levels between 2008-2014 have been highest in the middle income countries of East Asia and the Pacific and south Asia. The urban population boom in middle-income countries means that rapidly increasing numbers of people are exposed to hazards, and many of them remain vulnerable. For example, a roughly equal number of people in Japan and the Philippines are exposed to typhoons. However, the Philippines experience much higher levels of displacement because its exposed population is more vulnerable to this hazard.

Lower middle-income countries make up one third of the world's population, but account for approx 61% of displacements in 2014, showing how such countries are disproportionately affected by disaster displacement.

| Countries | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|----------------------------------|------|------|------|------|------|------|------|
| Cuba | 33% | - | - | - | 10% | - | - |
| Myanmar | 16% | - | - | - | - | - | - |
| Philippines | 11% | 14% | - | 14% | 13% | 29% | 20% |
| Sri Lanka | 9.5% | 11% | - | 17 | - | 6.2% | - |
| Benin | 6.2% | - | 5.4% | - | - | - | - |
| Haiti | 5.3% | - | 30% | - | - | - | - |
| China | 5.1% | - | - | - | - | - | - |
| Cayman Islands | 5.0% | - | - | - | - | - | - |
| Marshall Islands | 4.2% | - | - | - | - | - | 8.3% |
| Papua New Guinea, | 4.2% | - | - | - | - | - | - |
| Samoa | - | 17% | - | - | 13% | - | - |
| Namibia | - | 16% | - | 14% | - | - | - |
| Senegal | - | 13% | - | - | - | - | - |
| Fiji | - | 9.5% | 3.9% | - | 10% | - | - |
| Burkina Faso | - | 6.1% | - | - | - | - | - |
| Bangladesh | - | 5.5% | - | - | - | - | - |
| Mongolia | - | 4.9% | - | - | - | - | - |
| Lao People'S Democratic Republic | - | 3.7% | - | 4.1% | - | - | - |
| Chile | - | - | 22% | - | - | - | 20% |
| Colombia | - | - | 12% | 7.8% | - | - | - |
| Pakistan | - | - | 12% | - | - | - | - |
| Cook Islands | - | - | 6.1% | - | - | - | - |
| Thailand | -- | - | 2.8% | 13% | - | - | - |
| Solomon Islands | - | - | 2.8% | - | - | - | 5.6% |
| Gambia | - | - | 2.8% | - | - | - | - |
| Bhutan | - | - | - | 15% | - | - | - |
| Angola | - | - | - | 6.0% | - | - | - |
| El Salvador | - | - | - | 5.1% | - | - | - |
| Japan | - | - | - | 3.7% | - | - | - |
| Chad | - | - | - | - | 13% | 4.9% | - |
| Nigeria | - | - | - | - | 10% | - | - |
| Niger | - | - | - | - | 12% | 4.6% | - |
| South Sudan | - | - | - | - | 10% | 4.2% | 3.9% |
| Comoros | - | - | - | - | 5.0% | - | 5.6% |
| Madagascar | - | - | - | - | 3.9% | - | -- |
| Palau | - | - | - | - | - | 29% | - |
| Saint Vincent and the Grenadines | - | - | - | - | - | 8.6% | - |
| Vietnam | - | - | - | - | - | 4.6% | - |
| Seychelles | - | - | - | - | - | 4.6% | - |
| Cambodia | - | - | - | - | - | 3.9% | - |
| Tonga | - | - | - | - | - | - | 18% |
| Bosnia and Herzegovina | - | - | - | - | - | - | 8.4% |
| Bolivia | - | - | - | - | - | - | 6.2% |
| Paraguay | - | - | - | - | - | - | 4.3% |

Table 3. Countries wise highest displacement

V. CONCLUSION

Disaster and development are correlated to each other. Poor development can intensify vulnerability and cause devastating impact, but at the same time wise development practices may reduce vulnerability. Disasters also hamper the developmental works, but can concurrently provide development opportunities as well. Many risk transfer tools related to disaster, including insurance, can be used and offered by private actors in order to assist government in

developing disaster national programs and frameworks. Integrate measures to prevent and combat the natural hazards as well as to mitigate the effects of climate change through relevant policies and programmes, such as land, water and forest management, agriculture, rural development, early warning systems, environment, energy, natural resources, health and education, and poverty eradication and sustainable development strategies.

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