

Natural Disasters: The Economic and Social Impact, and Overview of Responsiveness of Countries Based on Development

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Abstract: No region or country is immune to Natural Disasters. But the differentiating factor lies in a country's response and ability to rise up from the effects of unexpected external causes.

This paper wishes to address and shed light on two aspects: the effects of natural disaster on a country's: economy and society, and also the response of respective Governments/ international institutions to the disaster by highlighting the level of effectiveness. This will be done, by comparing the major effects (economic and social) of disaster on a developed and an under-developed nation's society and economy, the nation's responsiveness in terms of aid and disaster management, and finally, critically analyzing this responsiveness between the two. It will also explore reasons why under- developed nations tend to suffer more as compared to wealthier nations, and the difference in cost shouldered by nations of varying development. The two nation's that will be analyzed along with the respective disaster are: Developed- United States of America; 2005 hurricane Katrina, and Underdeveloped- Haiti; 2010 Haiti Earthquake. This paper will not focus on the concept of development, so will not explore, but rather view it as the progress and advancement- socially and economically (as comparative degree of progress between U.S and Haiti). But more crucially to this paper, will understand how differently endowed countries tend to react appropriately.

Beyond data and facts, unfortunately, there is not adequate literature and material that discuss a country's 'responsiveness'. To elaborate- because of differences in factors such as: political, social, economical, legal, cultural, demographic, technological advancements (for e.g. in forecasting disasters) etc., the scope in comprehending how nations are affected by disasters and deal with them is huge, - especially considering the fact that nations are likely to respond differently based on the differences in the above mentioned factors. There are inherent factors that already affect how a nation may withstand/respond to the economic and social effects, which are inevitably based on its economic might and social resource. It is through these themes, this topic is relatively unexplored. There is a need to understand that the development of a nation, and its own factors can play a differentiating role in: saving lives, minimizing cost, provide more aid, planning, providing manpower, keeping the economy afloat, etc.; and how the disaster is viewed and approached with response.

Apart from loss in lives and property, themes such as- losses, unemployment, loss in production, increased borrowing, aid, inflation, derailment of trade, etc., are common to disasters. Because of unexpectedness, they can affect the economy to destructive lengths- to even cause recessions in some cases, which is why there is a need to understand how fast a nation, can bounce back to normalcy. With such predilection, there comes a need to study this. The impact of this research will be that it will expand the scope of research, and also provide for the development of present/future disaster management programs by highlighting underlying reasons and factors that affect a nation, so that more effective disaster management programs/methods can be implemented to be able to efficiently deal with disasters, -by neutralizing the 'development' factor.

This paper will bring out certain conclusions; that developed nations tend to suffer greater capital/ monetary loss because of high level of capital invested (across all sectors), where as under-developed nations tend to suffer greater loss of lives as compared to economic/monetary loss. Again within the developed nation (US), the Black

population suffered more in terms of greater number of lives lost than the white population because of lack of options, which confined them immobile and more susceptible to threat as they did not have the resources to either take shelter nor travel away from the disaster point. US worked independently (all Federal agencies towards a common yet combined goal) and recovered (economic, infrastructure and social) within six months, unlike Haiti who relied completely on international help (different agencies/nations worked independent of each other resulting in chaos and lack of concrete recovery), and is recovering from the effects of earthquake even today (both economically and socially).

The paper will base its data and literature on secondary data, derived from congressional reports, humanitarian works, aid agencies, NGO's etc. Existing reports and papers will provide data; the main analysis of 'developed' and 'under developed' nations will be developed from secondary data. The analysis and inferences will be made using existing data- by understanding trends, patterns in economy and society, and combining them with existing theories and anecdotes by experts in the field.

Keywords: Natural Disasters, Development, Developed, Underdeveloped, Earthquake, Hurricane, USA, Haiti, Economy, Hurricane Katrina, Haiti Earthquake, International Economics.

1. USA, HURRICANE KATRINA, AUGUST 29TH 2005

Hurricane Katrina hit the gulf of U.S (Louisiana, Mississippi, Alabama) killing 2000 people, 1.5 Million were directly affected, 800000 people had their houses rendered uninhabitable, and 90000 square miles of land was destroyed. Expenses associated with the damage to Hurricane Katrina's was estimated between \$96-\$125 billion, and additionally around \$40-\$66 billion in insured losses. \$250 Billion dollars is said to be the total cost- including interruption in production. It is said to be one of the most expensive disasters to hit the U.S. Looking at it from a broader perspective, the fraction of the country that was affected, accounted for only a small portion of the total U.S. economic output. According to the Congressional Research Service Report for Congress by Cashell and Labonte, in 2005, Louisiana and Mississippi were recorded to have accounted just a mere 2% of the national gross domestic product (GDP). Furthermore, in 2003, the New Orleans- affected area saw an impact of a minute percentage of 0.4% of the total national individual income. It is important to note that the sheer geographic and economic size of the U.S, helped offset the direct economic consequence of Katrina.

I would like to summarize the economic and social impacts of the Storm on the region, nation.

A. *ECONOMIC IMPACT:*

Even if the entire output contributed by Louisiana and Mississippi was lost due to the hurricane, the national GDP was said to only drop a mere 2% in comparison. The economic activity continued in both these states, and the economic loss was actually less than earlier estimated. The CRS report provided data conferring that, preceding to the disaster, the economy grew beyond excess of 2%. The yearly rate of growth in GDP was 4.2% the previous year. The growth rates were recorded as 3.8% and 3.3% respectively, in the initial quarters of 2006. Therefore the resultant lost output due to the storm, was not damaging enough to cause a recession, or allow downward economic growth. The Congressional Budget Office approximates that the decline in growth because of the storm, was hovering about one-half and one percentage point, and was lesser when considered on a yearly basis (Cashell & Labonte, 2005).

Although Katrina caused the economic growth to decline somewhat in the latter part of the year, financial activity across the region resumed till the following year. Financial activity, and spending in relation to construction, allowed for economic development in the beginning of the following year. For Katrina to affect with deleterious consequences, it would have had to have an impact on the overall economy of the U.S (Cashell & Labonte, 2005).

Labor, Unemployment: The labor force actually decreased (from June to July 2006) so as to reduce the unemployment rates even below the rates before Katrina. In Louisiana, unemployment reduced from 6.2% to 3.5%, which was likely because of relocation of many people, and because of this drop, many others were able to find jobs. Many people relocated out of state and several others even left the labor force allowing this. The demand for construction and health workers grew immediately and drastically, so as to provide for the losses in the system. 1.2 million people moved because

of the impact, and 63% of these people held jobs, while some returned- a staggering 22% did not return-leaving void in the labor work force to be filled (ESA, 2006).

Industry: The two main industries affected:

Energy: The gulf region sits at a strategic point that allows extraction and production of oil and natural gas for the entire country. It is said to generate 6.5% of the total domestic crude oil consumption and furthermore generate 16% of the total natural gas produced. Katrina caused the oil refineries in the gulf area to shut down, which is said to have resulted in loss for refining of approximately 2 million barrels each day.

Energy stock and consequentially, price, is significant to the overall national economy because energy is a major component in trading activities, transportation, production, and businesses as it can distort the market supply and demand. It is often said that oil shockwaves can cause increased inflation, a reduction in output, and in the broader scheme of things, higher unemployment in the little amounts of time (Cashell & Labonte, 2005). It is because of quick reconstruction, and alignment of the economy that the country was able to bounce back the next quarter without much loss, which could have had a long lasting impact. Katrina is said to have disrupted 19% of the nations oil manufacturing output; destroyed some 113 manufacturing platforms, and further destroyed 457 pipelines distributing oil and gas (Cashell & Labonte, 2005). These obstacles and destructions caused the then oil prices to inflate by \$3 per barrel, and also triggered gas to inflate to nearly \$5 per gallon. Therefore to avoid sudden inflation and escalation in gas prices, the government unconstrained oil resources from its stockpile reserves to increase supply and bring down prices.

Trade: Trade is an important factor that could have affected the economy. The Gulf ports and adjacent areas have been major points for trading in the past. In 2003, the goods that entered the affected areas reached \$100 billion, which is about one sixth of all U.S imports passing through ports. The affected ports in Louisiana included five of the twelve largest U.S. ports including- 1st- South Louisiana, and New Orleans that was the largest port. Disruptions to trade were mostly short-lived as most of the ports in neighboring areas such as Baton Rouge and Mobile resumed operations immediately after the impact (Cashell & Labonte, 2005). Most of the import vessels could be easily diverted to other ports. Trade has the ability to impact GDP through net exports. So for example, if both exports and imports fell in equal proportion, the GDP would not change. But if the net exports fell, then surely GDP would fall because of greater imports (Cashell & Labonte, 2005).

B. SOCIAL IMPACT:

Displacement: Hurricane Katrina relocated more than a million people around the Gulf Coast region. More than 600,000 homes were also destroyed. At its peak, hurricane evacuee shelters housed beyond 273,000 people and, later, FEMA trailers sheltered a minimum of 114,000 households.

In Louisiana alone, the population fell by nearly 380,000, Mississippi's populations declined by 72,000 people. Many of these people moved inward where the disaster had minimal impact. Majority of these people constituted the white population. The New Orleans population saw a decline from 484,674 people before Katrina to an estimated 230,172 after Katrina in July 2006 — a reduction in more than 50% of the city's population. Having said that the encouraging fact was that by July of 2014, the population had increased back up to 384,320 (ESA, 2006).

Change in class/ migration: According to the Economics and Statistics Administration (ESA), U.S Department of commerce, 2006, The population of New Orleans fell — a decline in 254,502 people. The white population fell drastically, and the black population stayed unchanged or rather increased as the general trend. In Mississippi, the white population declined from 63% to 60%, and the black population increased from 34% to 36%. Alabama saw similar trend of decrease in white population and increase in black populations: 2% and 1% respectively (ESA, 2006). The number of people that migrated was huge, and saw particular trends within society, which were general patterns observable across cities.

Social, income housing: Families below the poverty line remained largely unchanged, which signified that they did not move; understandable because they could not afford to bear transportation/shifting cost. In Mississippi and Alabama, the per capita income saw a decline of 5% and 4 % respectively from before the hurricane. Personal income (all income received by an individual) fell to half, from 125 to 65 Billion dollars. Households receiving public assistance and food stamps increased significantly by 19 and 14% respectively, after the hurricane. This importantly signified that great number of people could not sustain through their own personal means and needed assistance of the state (it also shows that those just border lining poverty were also pushed into dependence). The total number of housing units decreased by

145000, 32000, and 4500 in Louisiana, Mississippi and Alabama respectively. The vacancy rate also increased giving to the increased migration and movement of people (ESA, 2006)

C. GOVERNMENT AID, RESPONSE:

The United States was able to answer and provide help much better because of economic and technological might. It so happened that even before the actual hurricane, through technology and research, the state governments understood that they could experience a disaster, and so commissioned programs for a whole year to deal with evacuation and disaster management. Having said that, the failure of the state governments lies in the fact that they did not consider extensive destructive damage, threat and volatility as actually experienced when the disaster hit. FEMA and disaster management teams acted swiftly within 24 hours, as these states asked for federal help, as this was burden too large for them. FEMA and the US army were the first to be on ground zero to work on saving lives of those injured and rescuing others to safety. According to government-released papers in response to the disaster; 110.6 Billion dollars was given towards relief, recovery and rebuilding efforts as Federal Aid. The United States has many institutionalized agencies and organs within the government to deal with aid and disaster managements. There is Federal emergency management agency (FEMA), USAID, US departments of: state, agriculture, treasury, labor, interiors, homeland security, defense, oceanic and atmospheric administration, justice, NASA, health and human services, education, housing and urban development, health, peace corps, coast guard, military. All these agencies work on behalf of the federal government to provide help, aid and rebuilding of their concerned sectors, work. So the US department of agriculture will work towards the growth of farmers, aid to farmers, losses for crops etc., and transportation spent 2 Billion dollars towards the building of roads, bridges and train tracks; in this case within Louisiana, Mississippi, Alabama, New Orleans. It is because of this individual yet collective workforce that these agencies were able to act fast and provide immediate results; and it could be felt, as they were catering to every sector and aspect of development within the society, state. What we see is a clear communication line and understanding of roles between the different governmental agencies and the federal itself.

At the President's request, Congress was asked to provide a sum of \$16.7 billion from the 'U.S. Department of Housing and Urban Development's Community Development Block Grants program', to help the process and aid the reconstruction of damaged infrastructure of the region. This disaster resulted in the largest housing related recovery program in U.S. history. Every party played their part: right from the US army pumping 250 Billion gallons of water out, to medical teams deployed by FEMA-which eventually saved 6600 lives, every disaster relief team acted towards the immediate relief, rebuilding and creating a support system

2. HAITI, HAITI EARTHQUAKE, JANUARY 12TH 2010

The Haiti earthquake on January 12 2010 caused devastation worth magnitude of 7.3 on the Richter scale. Over 230,000 people and 300,000 were killed and injured respectively because of this disaster. Further 600,000 people living in the city deserted to stay with families living away from the disaster hit areas. The earthquake relocated nearly 1.5 million people (which constitutes 20% of national population). The earthquake caused damage and loss of between \$7.8 billion to \$8.5 billion. Taking account of the costs and difficulty of recuperating from this earthquake, it is normal to think that a disadvantaged country such as Haiti would still feel the effects and post disaster consequences of the impact half a decade later. Certainly, the story would have been far worse for Haiti had it not received the unprecedented human capital and monetary aid it did.

The challenges put forth for recovery were innumerable, and was made further challenging because of the inherent vulnerabilities that existed in Haiti. These vulnerabilities expand to include poverty, weak government, national insecurity and a continual susceptibility to natural disasters. It was and is said to be the poorest country in the Caribbean by far, where each person survives on USD \$1.25 a day. Infant mortality rates were recorded as twice the regions average, and approximately one in three persons suffer from food inadequacy (Patrick, 2011). This in effect was worsened by the uncontrolled urbanization, which took place over some decades. This was revealing through the nations weak urban planning and poor quality of infrastructure. Even though it is and has been highly susceptible to natural disasters like Japan, Haiti's claim has been worse, as it has suffered nine severe disasters over the span of 2 decades, which has is said to have affected over 3.5 million people. The disaster caused the destruction of several national government buildings, and death of many bureaucrats and civil servants. The 'National Disaster Risk Management System', the 'Emergency Operations Centre' and 'Port au Prince's' primary station, along with several government vehicles were rendered damaged or destroyed- driving the already devastating situation into lingering paralysis (Patrick, 2011).

I would like to summarize the economic and social impacts of the earthquake on the nation.

A. ECONOMIC IMPACT:

Haiti's GDP in 2009 stood at a developing \$11.9 billion in comparison to \$11.6 billion the previous year, representing growth in the positive direction. The quake unfortunately affected the GDP by shrinking it to a mere 5.1% in comparison (Patrick, 2011). The main airport, nearly all ports, and nearly all roads were destroyed along with 294,383 houses. The economists estimated the damage caused by the quake on the economic sector, which included infrastructure, building, and roads, which in totality summed up to somewhere between \$7.2 billion and \$13.9 billion (Patrick, 2011). The high-end (product) market, which was nearly \$14 billion in good and services, was also devastatingly affected because loss in trade and production.

Labor: Prior to the earthquake, 43% of the workforce in Haiti was self-employed. While the country was in financial ruins, it did hurt that the government was unable to support self-sustaining businesses, which were dependent on people spending in a volatile environment. While low wages were contributing to this, the fact that the spending environment was so volatile, mixed with starvation/poverty, it did not make it any easier for the economy to sustain. Also taking account of 200000-300000 people who were killed, the impact on employment was devastatingly huge leaving many vacancies in employment. Having said that, this did not necessarily deteriorate or add any extra value to the economy as majority of the unemployed labor force (was unskilled).

Trade: Haiti's economy was on the path towards growth and development, but was abruptly halted and derailed. Only some year earlier, the United States Congress approved an agreement for trade between the two countries through the "The Haitian Hemispheric Opportunity Through Partnership Encouragement" (HOPE)- Act, signed in 2006. This trade bolstered Haiti's economy through exports of products from the apparel industry, which were exported duty-free to the United States. By 2009, largely because of this partnership, Haiti had become the 17th-largest supplier of apparels to the U.S, apparel soon constituted over 90% of the total Haitian exported goods to the U.S. Products worth \$424 million were exported according to the American Apparel and Footwear Association. For an economy so heavily dependent on trade and vital partnerships such as this, the earthquake impacted this trade heavily because of lost time and money (for production and export). The earthquake also saw effects being felt in that more and more people (outside Haiti) became less likely and willing to invest in the country because of its vulnerability and slow growth and development-as experienced in previous disasters that hit Haiti. Not only did the earthquake slow down investments into Haiti, it also made investors more weary for the future because of such predispositions. It is important to note that majority of the revenue earnings for Haiti, was gained through trade.

Agriculture: In the past, Haiti has suffered extremely high unemployment rates, and the quake certainly did not bring any kind of stability, but actually furthered the unemployment rate. As an impoverished nation, nearly all of Haiti's employment and economy was catered by the agricultural sector, and through commodities such as sugar and textiles. To exemplify this, it can be understood that the agricultural sector alone employed approximately two thirds of the entire labor population. Seeing to its importance, unfortunately nearly all of Haiti's agricultural industries and sector were devastated, naturally causing surging unemployment rates, and consequent prices to surge further because of loss in production and supply. Furthermore, other important Haitian based export goods such as mangoes and coffee (mostly to the western world) were hit because of losses and devastating impact on soil, therefore production was derailed.

B. SOCIAL IMPACT:

Haiti was and is one of the most impoverished nations in the western hemisphere. Greater than eighty percent of the total population lived in abject poverty, reaching the poverty line, and within that, a massive 54% of the population lived in absolute poverty, and adding to this, two-fifths of all Haitians were farmers, which meant that their dependence on the derailed agriculture sector was going to cause more people to succumb to poverty. Before the earthquake, Haiti had 380000 orphans, but post- disaster it is said to have reached nearly 1 million (Patrick, 2011)

Displacement:

Those who were forced out of their homes because of the quake, many relocated in small clusters closer to their extended family members. Others chose to move to displacement camps, which created social dislocation as they were placed away from residential areas. This directly affected the psychological recovery process and basic coping strategies of those people living in these camps. A lot of negativity surrounding the response grew amidst the Haitians as they struggled between the reliance on the humanitarian aid and the will to protect their livelihood. The magnitude of people that were

moved outside of their homes was significant, considering pretty much all of Haiti had been at least temporarily displaced. Food, water, and housing were most affected; people had to rely on aid and assistance from the government, international community (Patrick, 2011).

C. GOVERNMENT RESPONSE, INTERNATIONAL AID:

Haiti received \$9 Billion in all; all of it accounted from international organization and countries, where as US proved to be the single largest contributor to the aid. Within hours of being hit, the president of Haiti immediately called on US to help and provide assistance. Haiti's cause saw participation from all across the globe, from various actors, parties, and agencies from diversified backgrounds. These included UN agencies, Red Cross, international organizations, corporates, civil society, the US, various militaries with the help of the local government (Patrick, 2011). The consequence of the earthquake made it especially difficult for parties to deliver to their full potential. Despite that, integration of policies and actors was desired to promote coherence among all parties. The Haitian government tried to ease the situation by allowing availability of fuel, restoring damaged electric plants, and keeping financial markets alive by reopening banks and paying public workers. Geographic and linguistic barriers did not inhibit or constrain access to those affected. Their success story included reaching all 1.2 million earthquake-affected (Patrick, 2011). Through aid and commitment, four million people received food; 1.2 million were restored to safe water daily; 1.5 million people received materials that provided shelter; 2.1 million household kits were distributed; 90% of relocated people had access to health care; one million people were provided cash for their jobs; 142,000 people received agricultural help concerning planting; and 2,047 of those separated children received psychosocial support, (Patrick, 2011). While this was largely possible because of the huge fund raising and contributions appropriated towards the relief work, the help stopped at providing temporary camps and food. There were many agencies running simultaneous projects that differed in objective and reach of the afflicted.

While the short-term success stories were clear, unfortunately, it was quickly apparent that there was a void in cooperation and communication between the international community, the Haitian government and the civil society. Programs were poorly managed, integrated and implemented, with no real betterment apart from siphoning aid and resources in an uncoordinated manner. The international community and government lacked communication, and were evident as lower leveled tiers of Haitians, and the government itself was largely excluded from assessment, design, planning and implementation of programs, which could have seen better collaboration between stakeholders towards recovery. The hopeful intentioned service from the humanitarian community lacked utmost positivity and impact. Haitian government was overlooked for consultation of their own people, which affected the responses and coping strategies for large number of people. (Patrick, 2011).

Basic data needed for planning and monitoring of a large-scale humanitarian response of this scale was absent. To add to this conundrum, the Census data itself was destroyed or rendered inaccessible (Patrick, 2011). The Needs Assessment assumed was possible to implement, however this was pointless as they were slow to publish. It is because of this that the basic data needed for planning and implementation was outdated or obsolete. Also significantly exemplifying the lack of coordination, most agencies conducted their own individual needs assessments, following different standards, methodologies and focus. This limited the effectiveness and usefulness of the assessments carried out, as they could not implement a coalition strategic plan. This collective effort and impact was lost because of this chaos in communication and planning.

3. COMPARISON AND ANALYSIS

U.S and Haiti; (Developed and Under-developed):

Haiti's programs and weak collaboration derailed the path of recovery. It was immediately evident that the international community, Haitian government and civil society lacked coordinated and integration amongst each other. The US military received great consensus and acceptance from several international agencies. It helped establish protocols and allowed for swift engagement for other parties to work with the military resources. Haiti had to immediately rely on the backs of the international community because of its weak economy, and sub par technology and disaster management programs. In the case of Katrina, the United States did not receive aid from external parties, as it was able to cater to the needs of its people.

The director of the National Hurricane Center (U.S) had warned the mayor of New Orleans as well as then President-George. W. Bush, on the 27th, nearly two full days before the disaster. The United states through technology were able to warn at the precise moment in order to start evacuation of people- which resulted in a lot fewer people dying. The Eastern part of the U.S had planned for this event for nearly a year, by running disaster management programs and evacuations drills. Haiti did not least expect the earthquake to ravage through. The earthquake was immediate and sudden, as the government did not provide any previous warnings through any use of technology (such as seismography). This is also one of the reasons why so many more lives were compromised. Having said that, even if there were warnings of the earthquake, Haiti would not have been able to implement a successful disaster management and evacuation program, as they simply did not have the resources to do so. Certainly it would have saved more lives than it did, but it ultimately brings in the question of Haiti's capabilities in order to do so; they were just too handicapped, vulnerable and weak for the disaster.

US, as a developed nation, was far more able to cope with Katrina and its effects whether on the economy or on the territory front of matters. Having said that, the black population was seen to have suffered displacement and impoverishment more in comparison to the white population. This can be linked to the fact that majority of those who died and lived under the poverty line were blacks and did not have alternatives like the Whites, to migrate out- state until the disaster had subsided.

United states saw a collective effort and impact displayed by its federal agencies in aiding consequences of Katrina, which was possible because of a cohesive force built and enabled by the FEMA. They were given instructions, and each worked towards a different, yet a common goal. Haiti had many agencies come to its rescue, but saw utter confusion, as effort was lost in the sub par understanding of the situation, lack of collaboration, and out dated data. In the end, every agency in the Haiti worked on its own two feet instead of collaborating with the rest of the agencies, which they should have done. Ultimately the US Army had to take the charge and control the entire work force and collaboration as to see smooth transition of the work; Haiti's government took time to administer and collaborate the workforce, which shows how badly the disaster had impacted the country, not only economically but also in terms of government paralysis.

Haiti was not able to stand on its feet even for a week, as they immediately requested help from the US- a developed nation, and the international community. Taking from this and many other disasters suffered by under developed nations, we can see that there the reliance for aid and help has largely bared on the developed nations; whether the 2004 Indian ocean tsunami, or the 1975 Bangladesh cyclone (Kenny, 2014). When Japan suffered its streak of natural calamities, it was able to support itself because of its extremely strong economy and trade. The common link that we are seeing is that, under developed nations are not only less likely to deal with catastrophes by itself, but also that, usually its dependence lies on larger nations with stronger economy to provide aid and response. The effect of Katrina on US as a whole was miniscule, as the affected states constitute to only 2% of its GDP (primarily trade only), whether as in the case of Haiti, virtually everything was destroyed right from its trade (which is its main source of revenue and GDP) to its airport, buildings, crops and evidently employment. Also, far fewer people were killed in the case of U.S, which means the labor force was protected, and did not instill problems for the economy as in case of Haiti- where more than quarter of the population was wiped out. This affected businesses, agriculture, production, and importantly trade and export, which as stated was the main sources of revenue.

More often than not, it is observed that the economic costs associated because of the ill effects of disasters are seen to be higher and more demanding in the developed world. This can be inferred, as, wealthy countries allow greater exposure for destruction of property and assets, and are more likely to have systems, and constructions that are far better and more capital intensive—(made to meet safety regulations), as compared to under developed nations. Where as in under developed nations, we observe that a greater proportion of the existing population is exposed to danger because of lack of safety measures, and a rising population who tend to succumb to infrastructure collapses. Studies have shown that merely in terms of loss as a percentage of the GDP, the vast number of the top thirty odd earthquakes in the recent past have been in developing counties as opposed to developed. Research has also expanded to shows that the ten deadliest earthquakes in the past century have resulted in deaths somewhere around 52,000 and 283,000 each, which have evidently occurred developing countries (Kenny, 2014). As recorded, four of the ten ensued recently: the Indian Ocean tsunami, earthquake in Haiti, Sichuan, China and Kashmir (Kenny, 2014). It has been observed and calculated that the median number of deaths per earthquake occurring in developed countries has resulted in death of 50, as compared to 450 in other countries who have the lowest income, literacy, and life expectancy in comparison.

Kobe in Japan, caused mutilation worth about 2.3 percent of Japan's GDP (capital stock-\$114 Billion) (Kenny, 2014). The 2010 Haiti earthquake, in comparison, caused devastation worth more than its entire annual output. Taking this into consideration it is almost impossible for Haiti to withstand the consequences and rise up to provide positive results, whereas it would be easier and possible for Japan to bounce back with a lesser digress in growth. The effects of disaster related-infrastructure -collapse, has seen to disproportionately impact the poor. Fatalities from Haiti earthquake were seen to be 100 times than that of Katrina, this brings the two extremes effects into light: exposure of catastrophe on infrastructure versus exposing catastrophe on human lives.

There are not only demographic aspects, but also geographical, technological and importantly economical aspects as to how countries can cope with natural disasters. As seen in the Katrina case, Blacks were part of the neglected demography, but U.S as a whole-saw far less number of deaths (in total), while the losses in damage were far greater. Whereas in Haiti, - the number of people killed was far greater, and the losses incurred (in terms of damage/capital) was far less compared to that of US. This is because U.S is a larger nation with greater potential for damage and destruction, and also because capital spent on buildings, roads and in businesses (which happened to be destroyed) are far more intensive and expensive. The blacks in US (who are largely vulnerable) may have suffered the most direct consequences through death-because of poverty, but at least their death tolls (2000 people) did not equal that of Haiti's (230,000 people).

The United States had over \$110 Billion dollars to act on response and disaster management. Haiti saw the death toll almost 100 times greater than Katrina but received only \$9 Billion dollars (which is one of the largest aid received in history). So this understanding of per capita- aid does bring things into better light of comparisons which brings in the aspect of aid management and level of poverty and development. The US saw total losses to approximately \$96-\$125 Billion, out of which \$110 Billion was provided by the federal government as aid; therefore other agencies, humanitarian organizations businesses etc. would have provided for the remainder of the losses. These other institutions were as developed and financially healthy in order to support the deficit, and this trend of a healthy private sector and businesses and NGO's does depend on the health and development of the country. Haiti on the other hand experienced a total damage of \$7.8- \$8.5 Billion, and received nearly \$9 Billion in aid from several different nations, agencies and organizations. This means that, Haiti actually received surplus capital in order to recover and replace damages; and looking at conditions today and how long it took Haiti to progress towards some development, -it is apparent that this money was not used appropriately and efficiently. There was virtually no contribution from the private sector who in turn relied heavily on the government and other public institutions for recovery. Viewing this, it can be said that the US private sector single handedly had the potential to offset the losses and provide recovery for Haiti if needed, because of its strong roots steeped in development and financial might. This aspect not only brings in the comparison of how developed nations are able to provide aid and offset damages, in the case of the deficit – by Business individual etc. who were able to provide capital, but also sheds light into aid management of nations (again based on development). Haiti certainly did not use its surplus aid to the fullest potential, which should have ideally resumed operations to its normalcy, where as the U.S faced no problem in resuming to normalcy. Six months after Katrina had hit the US, the region was salvaged and appropriate aid has been distributed for nearly all aspects of life, and also saw that its economy was slowly back to previous rates and was once again growing (with an initially dip and then increase). Haiti on the other hand was still providing aid, running camps, providing food, shelter etc. even after six months; and even today, there are people who still live in tents in the capital. This shows the stark differences in capacities and disaster management between the two nations based on development.

4. CONCLUSION

Development is an important factor that enables and is enabled by structured systems, updated data systems, strong disaster management programs, robust economy and high human development index. US had various governmental agencies each working towards a separate but common goal, clear understanding of roles and responsibilities, have one of the largest economies in the world(very high GDP- \$16.7 trillion), and rank in the "very high HDI" with composite value of 0.995 GDI according to the UNDP. Haiti showed dismal communication, high reliance for aid and management on other countries, one of the lowest GDP of \$8.7 Billion, HDI value of 0.4(non existent GDI because lack of data). The stark differences in size, control and influence also do play an important role aside from economic and social factors, in in-turn influencing them. Ultimately the level of development is one of the most important factors that helps us in understanding a country's responsiveness to a natural disaster. Some of the several important highlights understood in this

paper are based on differences in development: that development can affect a nation's ability to withstand and recover from disasters, reliance for aid and degree of support needed differs, the importance of mitigating and using resources (technology, aid and international parties) needs to be appropriated towards a unified goal, providing a framework for overall development of economy (not just trade) and growth of the private sector, there exist inherent differences in loss of capital versus lives in developed and under developed countries, and of course that even in the most developed nation, the most vulnerable communities in terms of financial health, social seclusion and least in poverty alleviation will suffer the greatest brunt of damage and are not guaranteed security. This helps us understand that even within a developed nation, those who are still bordering poverty rates and seclusion will suffer the same fate as those actually living in under developed nations. This helps bring an important point that social and economic equity must ascend across the globe and across all communities, because in reality natural disasters are not limited to territorial space. Although these very same issues addressed and brought out in this paper may not be observed across all cases of disasters between a developed and under developed nation, the link between development and resurgence/recovery/management is strong and can be observed across because of the interdependence of factors, and causal-effect mechanism (social and economic) which are inter-related. Several social and economic constructs work together to affect a nation's level of development, and affect how a nation may recover because of these very constructs. A professor of economics at the Michigan State University, Mark Skidmore, who has been studying the economics of natural disasters, rightly said about Haiti, that "if the same earthquake had taken place in Japan or California there would have been a loss of a few hundred lives. It wouldn't have been similar to the devastation in Haiti" (Newshour). He reiterated this link to level of development by saying that it is "highly dependent on the level of development". And as explored through the paper, the damage, effect and response from natural disasters (whether on economy or life) is indeed highly dependent on the level of development'.

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