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A Study on Recent Natural Calamities and Its Fender-Bender on Agricultural Development in India

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Abstract

India has a unique geo-climatic condition which makes it as vulnerable for various types of natural disasters like earthquakes, droughts, cyclones, floods, and landslides etc., There is no country which is saved from disaster of any kind and there is no such immune system was developed to save from natural calamities which have been a frequent incident of all nations and the number of occurrences and its nature might be of different at different places. There are different types of disasters based on its sources. The first one is natural calamities; it is a major one which includes hurricanes, floods, earthquakes, outbreaks of volcano, landslides, fires, tsunamis. Second type is environmental emergencies including industrial accidents, technological accidents, connecting with productions, usage and transportation of hazardous materials and forest fire caused by humanoid actions. Third most important type is Complex emergencies including authority break-down, prowling, external and internal attacks, conflict situations and war. The fourth type of emergencies are Epidemic in nature including unexpected start of transmissible disease affecting health, interrupts of services and businesses, and wide variations in economic and social expenses. The present paper focuses on Natural calamities and its impact on agricultural development. All types of Disasters are having its impact in all fields. Agricultural development has been very much affected by all kinds of disasters particularly through Natural calamities. The major responsibility of the Government is to ensure the Sustainable Livelihood for its people. In fact, sustainability of livelihoods is mostly disturbed by Natural Calamities. This paper highlights the impact of recent Natural Calamities on Agricultural Development. The existing facts and figures were critically analyzed for arriving valid conclusion.

Key words: *Natural Calamities, Earthquakes, Droughts, Cyclones, Floods, and Landslides.*

Introduction: Natural hazard is a danger of an unexpected occurring event having harmful effect on human and their belongings. These harmful negative effects are natural disasters. It is the result of naturally occurring processes that has the history throughout the existence of earth. It is the result of geographical and geological processes. Natural calamities are

playing major role in social, economic, cultural and other fields of development like agricultural, industrial, technological and service related fields. Worldwide reports show that the natural disasters are in rising trend from 1950 onwards. Major impact has been noticed in agriculture, rangeland, and forestry fields. Environmental deprivation is the most importance factor for agricultural vulnerability. Because it directly linked with natural disaster, our traditional development was focused on balancing both agricultural and environmental developments. Now the modern technological world is not at all giving importance for environment, the only focus for the modern development is to progress and not focuses on qualitative life. Life style changes may also leads to changes in living condition. In past children used to play with natural things like coconut shells, stones, mud, water, wood, coir, plants and the like. But now children do not know all these natural residuals and its delights. They were all engaged with mechanical, electrical and electronic gadgets. Uninterruptedly their mind is working with these gadgets, but their body is not physically moving. It's a major cause for all kinds of health related problem. It creates again a sequential problem in livelihood and even maintaining relationship. In those days festivals and ceremonies were celebrated with their kith and kin. Even for marriage and the family related functions people invite all their relatives before a week and collectively they were all work together happily for all kinds of works. And now it was not to that level, functions are also restricted to one day half day events. People find difficulty to work for others, simply for cooking also. It's all from the real cause of modernization and lack of physical works. This is one kind of societal impact; it has its serious impact on the society.

Reviews on Natural Calamities: Natural disaster is described by Anderson, (1990), as it is a temporary event generated by natural perils that devastate the local capacity to respond and disturbs extremely the social and economic progress of that particular region and its related regions. The International Federation of Red Cross and Red Crescent Societies, (2003), explains the natural disasters as it includes both hydro-meteorological and geo-physical disasters. The hydro-meteorological disasters include landslides/avalanches; droughts/famines; dangerous temperatures, heat waves, hurricanes and, floods, forest/scrub fires; windstorms; and others forms of insect plague and waves) and the geo-physical disasters include earthquakes and volcanic eruptions. According to a study by the United Nations' Food and Agriculture Organization (FAO) analysis between 2003 and 2013 nearly 78 natural disasters spread across 48 developing countries, shows globally the agriculture sector in developing countries suffered nearly a quarter of the damages from natural disasters, and also found that 22% of all damage by natural hazards such as drought, floods, storms or tsunamis take place in the agriculture sector. The study also insists that, the fatalities are frequently experienced by deprived rural and semi-rural societies lacking insurance and financial resources needed to regain their lost livelihoods. It observed and added that, only 4.5% of post-disaster compassionate assistance was targeted agriculture from 2003 to till date. According to the FAO study, 2015, worldwide 2.5 billion people depend on agriculture. Herders, small-scale farmers, forest-dependent and fishers communities generate more than half of global agricultural production and are mainly at risk from calamities that destroy or damage harvests, equipment, supplies, livestock, seeds,

crops and stored food. Jose Graziano da Silva, director general of the FAO, (2015) said that “Agriculture and all that it includes is not only perilous for our food supply, it remains a main source of livings across the sphere. Although it is a sector at hazard, agriculture too can be the foundation upon which we build societies that are stronger and better fortified to deal with catastrophes.

Natural Calamities in India: There are number of natural disasters occurred in India. The top ten most worst natural disasters which have taken massive toll of life and wealth of India. They were 1. Bengal Famine (1770), the huge food crisis which hit the pre-independence state of Bengal between 1769 and 1773 was the greatest natural disasters in India for ever. More than 1 crore people died due to hunger, thirst and disease in this massive disaster. Odisha Cyclone (1999), Bengal Famine (1943) Mumbai Floods (2005), Bihar Floods (2007) are the other most important natural disasters which have affected India very worst. 2. Indian- ocean tsunami (2004), is the next worst natural disaster in India which rose in the Indian Ocean following a main shaking which had its epicenter in the marine bed. It occurred on 24th December, 2004 when people were partying Christmas on the seashores of South India. The tsunami caused immense loss of life and property in India, Sri Lanka, Andaman Nicobar and Indonesia. 3. The Great Famine of 1876-1878, which was affected southern and south west parts of the country and it took away nearly 3 crore people, and more than millions were affected and is considered as one of the most worst natural disasters in India. 4. Gujarat Earthquake, (2001), a very big earthquake in Gujarat stunned on the critical morning when the whole country was celebrating Republic Day on 26th January, 2001, with the intensity 7.9 on Richter scale and 20, 000 and more people mislaid their lives, and thousands and thousands of people were injured, missed and homeless in this great natural calamity. 5. The Third Plague Pandemic, which surfaced during the beginning of late 19th century in China. The Third Plague Pandemic was started, later it spread to other neighboring countries. In India it reached through the Bombay and Kolkata ports, Crores of people were killed in this massive disaster. 6. Coringa Cyclone (1839), which overtake the Coringa a harbor city in Andhra Pradesh, Nearly 25,000 boats were destroyed by the massive cyclone and 3.2 lakh people were killed. 7. Latur Earthquake (1993), is the one more devastating natural disaster in India on September 30, 1993, was hit Latur in Maharashtra, which killed nearly 20,000 and injured 30,000 people, measured 6.4 on the Richter scale. It also created enormous damage to assets, reduced thousands of constructions to debris. 8. Uttarakhand Flash Flood (2013), was another natural disastrous hit of the country in River Ganga in 2013, which took toll of thousands of lives, most of them were pilgrims of Badrinath and Kedarnath. The serious and sudden rains in the region caused vicious landslides in Uttrakhan, and reported thousands of them were missing. 9. Calcutta Cyclone, (1737), the disaster which killed thousands of people and shattered a large number of ship crafts docked on the harbor. 10. Kashmir Floods, (2014), a recent natural disaster which affected Jammu & Kashmir in September, 2014. The dense and constant rains smashed the city of Srinagar and caused terrible floods, which took over thousands of life and had people trapped in their homes for days, without food and water. 11. Chennai Flood, 2015 between November and December, the rain fall surpasses the usual

more than 60%, it is the most recent flood in Tamil Nadu have lost more than 300 lives and devastated more than 20,034 crores of losses on all of the parts of Tamil Nadu.

Recent Catastrophes: Last ten years India faced more than five major disasters. Gujarat Earthquake (2001) was happened on 26th January, 2001 was measured 7.7 Richter scale and hits more than 20,000 people lasting for about 42 seconds, it caused severe damage to more than 4,00,000 houses and injured 1,67,000 people. Indian Heat Waves (2002), causes extreme heat waves in southern parts of India. Andhra Pradesh was the most horrible hit area, almost all water bodies drying up quickly, and numerous creatures and birdies dying of thirst due to this heat wave. The Indian Ocean Tsunami (2004), happened on December 26, 2004 around Sumatra, it was an earthquake measured a colossal 9.0 on the Richter scale in Indonesia. It was turned in to tsunami in the Indian Ocean and was affected more number of livings. Almost 10, 136 inhabitants lost. Andaman and Nicobar Islands and Tamil Nadu were heavily affected. Uttarakhand Flash Floods (2013), a huge flood destroyed Delhi, Himachal Pradesh, Uttar Pradesh and Haryana, and also certain areas of Tibet and Nepal, apart from Uttarakhand region. Kashmir Flood, (2014), in September, (2014), the Jammu and Kashmir faced serious flood as the torrential rain dealt its gust, causing overflow in the Chenab and the Jhelum rivers. It disconnects all lines of communication, and bankrupt more than 2600 villages in the area and caused the almost 200 deaths. Chennai Flood (2015), was also caused more than 300 deaths and created a loss approximately for about 20,034crores.

Impact on Agricultural Development and Livelihood of rural poor: The major consequences of disasters on the agricultural sectors are direct physical damage, losses across the food value chain, losses to manufacturing of agricultural based industries, subsequent macro-economic impact, impact on livelihoods, food security and nutrition and Effect on sustainable development are the major consequences Agriculture sector tolerates almost all the major impact of natural disaster. According to UN World Conference for Disaster Risk Reduction in Sendai, Japan (2015), the initial results from a new Food and Agricultural Organization's (FAO) study in developing countries nearly a quarter of injures created by natural disasters are tolerated by agricultural sector. Within agriculture sector 22% percent of all damages imposed by natural dangers such as drought, floods storms or tsunamis were registered. As per international reports 2.5 billion people depend on agriculture for their livelihoods. These farming communities generate more than half of global agricultural production. Approximately all the processes in productions of agricultural products like are crop, tools, materials, cattle, seeds, pouring, ploughing, harvesting food storage, transportation, marketing and processing etc., were the various phases in which it has to face the natural interruptions. Apart from that, all the nation's major problems are food security, economic development, and gross national product are very much affected by this agricultural sector. Agriculture soaks up upto 84% of all financial impacts of droughts, 82% of the agricultural losses are through flood and storms. The second most pretentious subsector after crops is livestock which accounting for 36 percent of all losses in agriculture. The forestry sector incurred 2.4 percent of the losses in the total of agricultural sector.

Analysis of Evidences: Common impacts of natural actions and adversities in agricultural sector are water bodies' contamination, loss in harvest and livestock, increased weakness to disease in crops, demolition of agricultural infrastructure and other irrigation systems. On the whole in India 68 percent of the total spread area is susceptible to episodic droughts. In arid and semi-arid zones almost once in every 8-9 years severe and rare droughts occur. It is also noted that in certain states of India drought happens regularly and 16% of area in India is drought prone and roughly every year 50 million people are affected by droughts. In fact, obstinate drought with less than average rainfall over an extended period of time leads to serious ecological glitches. India's coastline of approximately 8,000 km, with two distinct cyclone terms i.e. pre-monsoon period from May to June and post-monsoon period from October to November and most casualties are caused due to seaside flood by tidal waves, hurricane flows and torrential rains. Out of six cyclones-prone regions in the world our ocean is one. For about 80 % of total cyclones affects eastern coast, approximately every year two to three severe cyclones are formed in our country. In the higher elevation parts of Himalayas, avalanches constitute a main hazard, it receive snowfall round the year, severe snow falls occur in states like Jammu & Kashmir, Himachal Pradesh and Uttrakhand. It was reported every year that extra fatalities of life and assets.

According to the Food and Agricultural Organizations report on the Influence of Natural Hazards, Disasters on Agriculture, Food Security and Nutrition, 2015 through 78 post-disaster needs assessments undertaken in 48 developing countries in Asia, Africa and Latin America over the past decade (2003–2013) found that, the 78 disasters caused a total of 140 billion USD of damage and losses on all sectors, of which 30 billion USD was scheduled in agriculture sector and subsectors. On an average, agriculture engrosses 22 % of the total economic impact caused by natural hazards. It shows that 29.4 % loss alone in agriculture, 14.1% destruction along in agriculture, 21.8 % damage and loss in agriculture sector was recorded. 42 percent of all damage and losses in agriculture is on the crops subsector, followed by 36 percent in livestock, 5.5% in fisheries, 2.4 in forestry, 3.5 in irrigation and 10.3 in other sectors of agriculture. In crop sector total damage and losses amount to about 13 billion USD were created by floods, 23% caused by storms, 15% drought, 1.7% Tsunami, 0.7% earthquake. 11 billion USD, or 36 percent of all damage and fatalities described in the post-disaster needs assessments are on livestock and seriously affected by drought for about 85.5%, 8.4% by floods, 3.2% storms and the remaining alike.

Crop area affected through Natural disasters in India (in Lakh hectors)

Year	crop area affected In lakh hectares
2001-02	18.72
2002-03	21
2003-04	31.98
2004-05	32.53

2005-06	35.52
2006-07	70.87
2007-08	85.13
2008-09	35.56
2009-10	47.13
2010-11	46.25

Agriculture and its allied sectors provides livelihood to largest part of the people in India and also more in rural areas also contributes Gross Domestic Product (GDP). Sustainable agriculture, means food security, rural employment, and ecologically supportable technologies such as soil preservation, supportable natural resource management and biodiversity security, are essential for integrated rural development. As far as India is concerned 27 states and Union territories are disaster prone. Of which 58.6 per cent of the land is disposed to earthquakes, over 40 million hectares are affected by erosion and (Source: Ministry of Home Affairs (MHA), India) floods. Out of 7,516 km of Indian coastal line 5,700 km is prone to cyclones and tsunamis and nearly 68 % of the cultivable area is susceptible to drought, landslides and avalanches. As per the FAO report the serious impacts of natural disasters between 2003 and 2013 all over the world recorded in its report are the total damage of \$1.535 trillion, the total people affected were 2.023 billion and the total people killed were 1,159,925. As a mankind they could not break all these kinds of calamities and its impact with their scientific inventions. Thus, coping up strategies are very much needed of this hours. Government must ensure the crop insurance for all the agricultural lands and also distribute the money immediately after the disaster takes place. In any way government must ensure the compensation to the agricultural field.

Catastrophes do not disturb all persons and areas in the same way, or to the same extent, and these alterations have significant policy suggestions. For example, as this study Exemplifies, specific types of perils cause extra agricultural losses than others, the agriculture subsectors are exaggerated differently by calamities, and the nature of disaster impact on the sector varies by area and nation. It is therefore necessary to realize the extensiveness and opportunity of disaster impact on agriculture and livelihoods that is the degree to which calamities increase the level of food insecurity or stop economic growth.

Conclusion: The evidence from the past records shows that, there was a series of natural disasters around the world and in India. Natural disasters will always create more destruction than it was expected and there is no full control over natural calamities by human beings and their technological developments. Apart from all it could not be stopped or eliminated from our routine events. So the science and technology should change its perspective from prediction to protection. Agriculture is the foundation for livelihood not only for this sectorial people, but for the entire livelihood it is most essential, it produces food for living. Without this sector there is no life in this world. So the people in all the fields must realize the importance of agriculture and they must try to encourage and help this sector to improve. Government and the entire private organizations must come forward

to help this sector more. Because when the agriculture sector is compared to other sectors, is more prone to natural adversities. People in this field face unforeseen events, and there is no sustainability for their livelihood. It should be cared properly by our government at various levels. There is a growing danger of marketing agricultural lands to real estate owners for selling it for non-agricultural purposes. If this trend continues, slowly there will be a poor production in agricultural field. It again leads to scarcity for food products and affects all economic and health aspects of the country. So, the serious attention must be taken at all levels to develop and encourage this valuable unreserved field.

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