

# Natural Disasters and its Economic Impact : A Case Study

\*Dr. B.P. Sahu

## *Abstract*

*The economists are of the opinion that Odisha has greater prospects of development. It can exploit the valuable natural resources. But the sorry state of affairs is that we have not been able to develop a conducive infrastructure for utilizing our natural resources. Our greatest misfortune is that we have been seriously affected by series of natural disasters in the past. The present and future are also not immune from these. The province of Odisha is a disaster prone area where its economy and society are hard hit by natural agents like flood, famine, drought, and cyclone etc. of the disasters, the flood menace is the most serious problems that the present state has been facing since the British rule. Flood, famine and cyclone visit the littoral districts of Odisha at frequent intervals as if Odisha has become a permanent abode of these natural calamities. It is rightly said that flood, drought and cyclone are as if, eve friends of the people of Odisha which are the obstacles in the way for a sustainable development of this region have been discussed here in this paper.*

**Key word :** *Natural Disasters, sustainable development, Odisha, Flood, drought and cyclone.*

## **Introduction :**

The history of human development is the history of man's encounter with nature. Down the ages man has been struggling with natural forces to go on with progress. Some times, man has been victorious and sometimes nature. Progress is a passion with man. And this progress is social, economic and educational. In the modern times economic development is regarded as the indicator of progress. It is no wonder that nations have been competing with each other to achieve economic progress. Some of the nations are fortunate that their topography does not betray their progress. But some others are on the other side. Nature stares at them with an aggressive posture. One can assess the underdevelopment of Bangladesh because of recurrent natural

---

\* Associate Professor of Adult Continuing Education, NEHU, Shillong.

disasters. Let us come to the state of Odisha. The economists are of the opinion that Odisha has greater prospects of development. It can exploit the valuable natural resources. But the sorry state of affairs is that we have not been able to develop a conducive infrastructure for utilizing our natural resources. Our greatest misfortune is that we have been seriously affected by series of natural disasters in the past. The present and future are also not immune from these. The natural disasters like flood, drought and cyclone have handicapped Odisha's development. In this context, it is reasonable to discuss the impact of natural disasters upon the economy of the state.

The province of Odisha is a disaster prone area where its economy and society are hard hit by natural agents like flood, famine, drought, and cyclone etc. Of the disasters, the flood menace is the most serious problems that the present state has been facing since the British rule. Flood, famine and cyclone visit the littoral districts of Odisha at frequent intervals as if Odisha has become a permanent abode of these natural calamities.

Odisha is considered to be one of the most poor and under developed states in India. The percapita income of the state is comparatively far below than that of both national and other states. All India figures state that around 30% of India's population is below the poverty line where as in Odisha, 44.7% of the people are below the poverty line. According to the Government of India Survey Report, the percapita income of the state was Rs.1231, in 1980-81, Rs.1210 in 1984-85, Rs.1579 in 1989-90 and Rs.1578 in 1993-94. The all India figures for the same were Rs.1630 in 1980-81 and Rs.2255 in 1993-94 (Prusty, 1996) . After a comprehensive analysis it is presumed that , the gaps between national and state were 19% in 1980-81,36% in 1993-94 and in 2001-02 and it has increased and reached at 36% and 43% respectively .The above statistical figures clearly indicate that the economic growth rate of our state is progressing in a tortuous manner.

While one is going to analyse the economic position of a state or country, it is equally important to give emphasis on the total domestic product (TDP) of that state or nation. In this context if the data of the bulletins of the Reserve Bank of India is taken into account , it is ascertained that in 2001-11, the total domestic product was Rs.3779 cores, where as some states like Andhra Pradesh, Tamilnadu, Maharastra, and West Bengal, are much more ahead of it.

Moreover, from the point of view of poverty line, the total demographic figure of Odisha was 36,706,920 (According to 2011,census). Out of that 47.2% has been

registered below the poverty line and it is a record at the national level . Thus a sizable population out of total figure is hanging below the poverty line and inviting constraints like child selling and death out of starvation and malnutrition (The Samaj, 2009).

In respect of the worst affected state of Odisha Sahu (1997) estimated the ratio of people living below the poverty line to be more than 60 percent up to the period 1983-84. An earlier study by Mahendra Dev (1992) had revealed that around 65 percent of the rural population in Odisha was living below the poverty line in between 1961-62 to 1986-87. The figure varied only in a negligible way, Yet another study of the Expert group (1993) reveals the fact that there were 61.5 percent of people living below poverty line in the state during 1987-88, instead of the quoted figure of 48.3 percent estimated by the planning commission during the same year. The figures of 2003-04 have also nothing to add to our jubilation in the fact that proportion of people below poverty line during the year was found to be 47.2 percent during 2003-04 (Sarangi & Panthoi, 2005).

However the present paper emphasizes upon the recurrence of natural calamity in the State and related economic losses thrust upon the State's shoulder from 1971 onwards.

Odisha being labelled as one of the poorest states of Indian Union is predominantly agro-based in nature. The lowest economic unit of the state is the village. Over several decades, Odisha has witnessed a trend of decline in the sphere of poverty. Several Finance Commissions and Developmental Programmes have not changed its economic condition satisfactorily. There are divergent views about the deplorable conditions of economy in the state. Some specialists opine that Odisha was not poor in the past, but its poverty is ascribed to the British rule in the state from 1803. Yet most of the historians along with economists explain its poverty in terms of the occurrence of sporadic natural calamities like droughts, famines, floods and cyclones that have generally created havoc on the crops, human settlements and rural setup, situated in the low lying areas. Natural disasters have affected the state from time to time ruining its economic condition and thus contributing towards its extreme backwardness (Dey, 2009).

All the major rivers of Odisha have their origin from far off spots and snaking through the Zigzag ways finally enter into Bay of Bengal. Some are also originated from outside Odisha. The gravity of floods inundating the rivers depend much on the topography of the state, the drainage system with low channel capacity, low flood

slope, sand banked mouths, high concentration of rainfall in a small number of days in the catchments basin etc. The occurrence of such floods during the last one and half century (1868-2004) is discussed below :

**Flood :**

In between hundred years (1868-1967), there were 262 flood occurrences in the State , out of which 68 were high, 77 medium and 117 low floods. Only the river Mahanadi experienced the highest number of floods i.e. 99 times. Among other main rivers of Orissa, the river Brahmani experienced such floods 77 times where as on the river Baitarani flood comes for 86 times. However, the scale of ghastrliness of the floods of 1881, 1894, 1896, 1907, 1920, 1926, 1927, 1934, 1940, 1941, 1943, 1955, 1960, 1961 surpassed the previous ones. Adding to the plights of the poor Odishan, flood has shaken the economic fate of the state in the year, 1804, 1806, 1807, 1809, 1812, 1817, 1823, 1826, 1831, 1834, 1845, 1846, 1848, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1868, 1872, 1874, 1877, 1879, 1888, 1892, 1894, 1895, 1896, 1900, 1907, 1908, 1911, 1912, 1913, 1917, 1918, 1919, 1920, 1925, 1926, 1927, 1929, 1933, 1934, 1935, 1936, 1937, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1964, 1968, 1969, 1971, 1972, 1973, 1974, 1975, 1977, 1979, 1980, 1981, 1982, 1984, 1994, 1985, 1986, 1991, 1992, 1994, 1995, 1996, 1997, 2001, 2003 & 2004 (Senapati, 2006). From an estimate, it is found that as many as 282 times flood has affected Odisha during 1886-2003.

**Drought :**

Drought is common in Odisha. In most of the years, floods and droughts occurred simultaneously because of excessive rainfall in some parts of the catchment basins or the low rainfall in other regions (Samal, 2006). Archival records reveal that there were occurrences of drought in 1803, 1806, 1808, 1809, 1817, 1828, 1832, 1834, 1841, 1842, 1849, 1850, 1854, 1865, 1866, 1867, 1878, 1879, 1884, 1887, 1888, 1889, 1896, 1897, 1900, 1901, 1902, 1906, 1908, 1911, 1915, 1918, 1919, 1922, 1927, 1934, 1936, 1938, 1940, 1941, 1943, 1945, 1949, 1954, 1955, 1957, 1965, 1966, 1971, 1972, 1974, 1975, 1976, 1978, 1979, 1981, 1982, 1984, 1987, 1988, 1996, 1997, 2000, 2002 & 2003. In the historical records, it was mentioned that the great devastating Odisha famine, i.e. Naanka Durbhikhya was primarily the product of extensive drought in 1866 (Das, 1989). Due to drought, the people of Odisha suffered a lot and the damages were unprecedented in magnitude. The historical records also reveal, that in every alternative year, either a flood or drought has become a general phenomenon in Odisha.

**Famine :**

The state of Odisha also suffered from recurrent famines. Famines are the inevitable results of prolonged drought, flood and cyclone. The previous records also mentioned about the visit of many droughts and famines in the 11<sup>th</sup>, 13<sup>th</sup>, 14<sup>th</sup>, 15<sup>th</sup> and 16<sup>th</sup>, 19<sup>th</sup> and 20<sup>th</sup> centuries (Govt. of Orissa, 2001). The famine of 1770, 1774-75, 1780, 1792, 1836-37, 1837-38, 1842, 1865-66, 1896, 1940-41 and 1942-43 were important ones (Sinha, 1999). Whatever it may be, the horrors of Naanka Durbhikshya of 1866 cannot be ruled out from the Odishan history. It is believed that nearly,  $\frac{1}{3}$  (perhaps about 10 lakhs) of Odisha's exact population were perished.. It would be right to mention that "the state of Odisha is a flood ravaged, drought prone, cyclone hit and famine stricken land.

**Cyclone :**

Odisha is situated on the eastern seaboard of India facing the Bay of Bengal. Its geo-climatic situation is considered as most cyclone prone. As it is adjacent to seashore, the region is more cyclone prone than the inland regions surrounded by hill ranges, which are more prone to earthquake. Thus we can find the cyclonic effects in the coastal belt of Indian states like Andhrapradesh, Odisha, West Bengal, and the effects of earthquake in inland states like Latur, Kutch, and Uttarakasi, Odisha has a vast coast line of 480km. which forces the coastal pockets highly vulnerable to tropical cyclones and tidal surge. If we look into the inscriptions of Hatigumpha, we can find the indication that the cyclone form sea normally comes during April- May and during October, December. The frequency of those cyclones was once in three years in May and October, while once in every five years in October and November.

The State of Odisha belongs to a cyclonic belt. The late monsoon symptoms often cumulate to cyclonic developments in the Bay of Bengal. The wind becomes violent as it moves towards the northwest and lashes the whole of Northeast coastal belt to Odisha (Bhatta, 1997). Cyclones in Odisha occurred in 1823, 1831, 1832, 1833, 1840, 1842, 1948, 1850, 1851, 1864, 1867, 1872, 1874, 1885, 1886, 1887, 1888, 1889, 1890, 1991, 1992, 1993, 1900, 1901, 1907, 1909, 1912, 1913, 1923, 1924, 1925, 1933, 1936, 1938, 1942, 1943, 1947, 1959, 1967, 1971, 1976, 1977, 1979, 1982, 1985, 1986, 1990, 1995, 1996, and 1999 (Super cyclone). But the super cyclone of 29<sup>th</sup> October 1999 is more horrendous than any other cyclone. The killer cyclone had affected 97 blocks & 12 districts. In the State capital and millennium city Cuttack and 28 NACs around 125.9 lakh people were affected and there was a trail of devastation over an area of 1200 km. The super cyclone

killed 30,000 people as per non official report where as, official report estimated a loss of 8,479 people. Out of 13 million affected people, the numbers of children were 3.3 million. 1/3<sup>rd</sup> of this affected children were forced to child labour (IIMC, 2000). It also affected 1846 Grampanchayats in the State, 14000 villages / wards and 1650086 household (Govt. of Orissa, 2001).

### **Economise of Natural Calamities :**

Abundance of natural disaster has pushed Odisha's economy into jeopardy. For this, a number of factors are responsible in destabilizing the economy of the state. Natural disaster is well interlinked with some other factors like political instability, geographical location of the state, religious cult traditional standard of living, illiteracy and callousness of the governmental machinery, all are more or less equally responsible for the decadence of the state economy. It is rightly said that flood, drought and cyclone are as if, eve friends of the people of Odisha. Not only , that, ever the rate of hazard has been increasing at a greater extent, in Odisha.

Ravages by famines and scarcity due to frequent droughts and floods have left their indelible mark in the economic life of the people of the state. As a matter of fact, the economic history of Orissa is a story of ravages of the recurrent floods, cyclones and droughts, that have created havoc in the economic and social life of the people 13. The natural calamities like floods, droughts, famines and cyclones are the important factors that have pushed back the progress of the economy. Total estimation of the value of properties lost and damaged due to the natural calamities in Orissa indifferent years between 1971-99 is depicted in the Table-1.

**Table-1**

Value of properties lost and damages due to Natural disasters in Orissa since 1971.

Year	Value of properties lost and damaged (Rs. in crores)	Average per capitas value of properties lost and damaged ( in Rs.)
1971-73	45.11	6.66
1974-76	34.17	4.81
1977-79	51.39	6.81
1980-82	150.23	18.82
1983-85	302.76	36.04

Year	Value of properties lost and damaged (Rs. in crores)	Average per capita value of properties lost and damaged ( in Rs.)
1986-88	187.28	21.36
1989-91	465.84	49.59
1992-94	2508.55	258.51
1995-97	420.39	41.12
1998-99	478.25	67.21
Total	4643.97	510.93

Source: P. Sarangi and G.C Panthoi, Economic implications of Natural Disasters in Orissa : A Retrospective view, Orissa Review; published by I & PR Department, Govt of Odisha June 2005, P.12.

The per capita value of property damaged and lost is discussed in the column 3 of the table. The figures prove that the total figure of Rs. 45.11 crore with an average per capita value of Rs. 6.66 was lost in the state during 1971-1973, on the other hand the loss was 51.39 crore with an average per capita loss of Rs. 6.81 between 1977-1979. The amount was Rs. 150.23 crore with per capita loss of Rs. 18.82 between 1980-81 and between 1983-85. The loss was as rs. 302.76 crore with a per capita average loss of Rs. 36.04. In 1989-1991 it was 465.84 crore with per capita loss of Rs, 49.59 and during 1992-94 it was Rs. 2508.55 crore with an average per capita loss of Rs. 258.51 and the loss mentioned at Rs. 478.25 crores with an average per capita value lost at Rs. 67.21 during 1998-1999. The total amount of loss in the state is calculated to be Rs. 4643.97 crores in between above mentioned 28 years. The table also highlighted above the occurrence of natural calamities which have increased from the year 1989 onwards doing a huge loss of properties in the poor state.

Preventing natural disaster from their frequent occurrence may be beyond the powers of mankind. But to recede these disasters is somehow possible. The frequent visits of natural calamities to the state have taught public many lessons to the Govt. as well as to the people. On the whole, in the 20th century, except for a gap of 2 to 3 years, there have been a series of natural disasters either in the form of flood or drought or cyclone. Construction of cyclone relief centers, is for example a lesson from

the occurrences of the killer cyclone of 1999. Many preventive measures against floods may base in the working out of a strong and effective action plan in the direction of effective drainage system in the main rivers, good storage system and drainage system in the rivers to supplement the requirement of water problem during shortage time and to protect the excess water when in excess and by constructing strong barrages and bandhas where the villages are situated at a low level to the flow of river. The other section of the study highlights a harassing amount of economic values lost during the last 28 years in the state. From the above analysis it is very crystal clear that the state Govt. is losing a very high amount of capital almost every year due to the natural disasters which create poverty in the state.

The Government of Odisha, though have taken an immediate step by the formation of Odisha State Disaster Mitigation Authority immediately after the killer cyclone, yet this subject needs more intensive historical research by eminent and experienced personnel, a deliberate debate through awareness among the people and high level practical discussion to conceive fruitful and effective solution in order to minimize the ill effects of natural disasters on the state economy.

#### **Conclusion :**

From, the above analysis, it is clear that Odisha has been ravaged by natural hazards simultaneously or alternatively by drought, flood or cyclone every year. These hazards give a striking blow to the economic condition of the state. After every hazard, the Govt. of Odisha takes appropriate steps to alleviate the distress of the people. But the super cyclone of 1999 was so catastrophic in terms of loss of life and property that Odisha had been forced back to 50 years in economic sphere. If a poor State like Odisha falls a prey to the wrath of nature every year, it would be really difficult to stabilize the economy of the State.

Let us be up to the task. It is not time just to ruminate the past, but to be prepared for the future. We have to formulate well thought plans to combat natural calamities. The coastal states like Tamilnadu and Andhrapradesh have set some examples. We have to fall in line with them. Our commitment to the development and will power to rein in the natural forces will pave the way for a sustainable development.



**References :**

- Bhatta, B. (1997): Natural Calamities in Orissa During the British Rule. *Economic History of Orissa*. Indus publishing company, New Delhi, 356-365.
- Das P. C. (1989): *The Economic History of Orissa in the 19th Century*. New Delhi, 78-81 consulted with the write up of H.K. Mahatb, History of Orissa, Cuttack, 1960, Vol. II, P. 446, RM Senapati. Op.cit, p. 171, Two Bachelors of Arts, "The Oriya Movement being a demand for a united Odisha", published by H.H. Panda, Secretary, Oriya Samaj, Gamjam, Aska, 1919, PP 242-243.
- Dey, B.K. (2009): Orissare Prakrutika Biparjaya O Ehara Arthanitika Prabhab. *The Samaj(O)*, Dt. 4.10.2009.
- Govt. of Orissa ( 2001): *Drought in Orissa during 1954 and 1955*, Govt. of Orissa, Revenue Department & H.V. Baikundi, 1998, Famines and Droughts in India, Down to Earth.
- IIMC (2000) : *National Seminar on Disaster Management and Media*. Indian Institute of Mass Communication, Dhenkanal in Collaberation with FES, India, New Delhi.
- Prusty, S. (1996): Poverty in Orissa. A critical survey. *Kurushera*, XLV, 3, 57.
- Samal K.C. ( 2006): *State NGOs and Disaster Management*. New Delhi. White paper on Natural Calamities, 1976-1977, Revenue Department, Govt. of Odisha, Files of Special Relief Commissioner, Revenue Department, Govt. of Odisha, Bhubaneswar 2002, Annual Report on Natural Calamities, 1998-2006, Special Relief, Revenue Department, Govt of Odisha.
- Sarangi, P. and Panthoi, G.C. (2005): Economic Implications of Natural Disasters in Orissa : A Retrospective view. *Orissa Review*, published by I & PR Dept. Govt. of Orissa. 12.
- Senapati, R.M. (2006): *Planning and Economic Development in Odisha*. Report on the administration of Bengal, Bihar and Odisha, seasons and crops report, L.S.S.O' Malley, Bengal District Gazetteers, Cuttack, 1915, Report on the Administration of Bihar and Odisha, Bihar and Odisha Documents ( 1929), 170-171.
- Sinha, B.N. (1999): *Geography of Orissa*, N.B.T, New Delhi, 52-55.
- *The Samaj*, 14.11.2009.

