Economic Implications of Natural Disasters in Orissa: A Retrospective View

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Over the years, India has witnessed a trend of decline in the incidence of poverty. However, the total number of poor is still high and regional imbalances persist. Years of development have not changed its economic condition uniformly throughout the country. The gap is very wide from one state to another. At the state level, among the major states, Madhya Pradesh, Orissa, Bihar and Sikkim had more than 45 percent of their population below the poverty line in 1983. In respect of the worst affected State of Orissa, 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 etal. (1992) had revealed that around 65 percent of rural population in Orissa were living below the poverty line in between 1961-62 to 1986-87. The figures 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 as 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 under below poverty line during the year was found to be 47.2 percent during 2003-04.

There are many opinions about the deplorable state of economy in the state that have directly or indirectly affected the developmental efforts. Some experts opine that Orissa was not poor in the past; rather its poverty is ascribed to the colonial rule in the state. However, some others explain its poverty in terms of the incidence of sporadic natural disasters like floods, droughts and cyclones (Pradhan, 1976). The availability of data giving cross tabulation of the sequence of events is of critical significance in any attempt at capturing rigorously the broader dimensions of well-being and deprivation of people. A few studies have so far been done in analysing the loss due to natural calamities in the state. In this respect, the present paper is an attempt to analyse on the various occurrences of natural calamities in the state and the loss of related economic values associated with these calamities from 1971 onwards in the state.

Orissa is one of the poorest states in the Indian Union. Like India, it is pre-eminently agricultural. The most important economic unit is the village. Over the years, Orissa has witnessed a trend decline in the incidence of poverty. Years of development have not changed its economic condition satisfactorily. Sahu (1997) estimated the ratio of people living below the poverty line in the state to be more than 60 percent during 1983-84. An earlier study by Mahendra Dev et al. (1952) had revealed that in between
1961-62 to 1986-87, around 65 percent of rural population in Orissa were living below poverty line in the state during 1987-88, instead of the quoted figure of 48.3 as estimated by the Planning Commission during the same year. The official figures of the rate of poverty at present is estimated to be 47.2 percent.

There are many opinions about the deplorable state of economy in the state that have directly or indirectly affected the developmental efforts. Some experts opine that Orissa was not poor in the past; rather its poverty is ascribed to the colonial rule in the state from 1803. Yet, some others explain its poverty in terms of the incidence of sporadic natural disasters like floods, droughts famines and cyclones\(^3\) that have naturally damaged crops and the human habitats and rural settlements situated in the far-flung low lying areas.

**Objective and Methodology**

The climate and the topography of a region have direct bearing on the economic and social life of people in that region. This is true in case of the state of Orissa. Natural calamities, of one description or the other have affected the state from time to time debilitating its economic mettle and thus contributing to its abyssmal backwardness. However, studies based on these factors of economic precipitation are very scanty. Considering the above aspects, this paper attempts to analyse the chronology of notable natural disasters like the floods, droughts, famines that have rocked the state from time to time. An estimation on the loss of related economic values associated with the calamities from 1971 onwards in the State is also made in the second part of the study. The study is based on secondary source of information that have been compiled and collected from Government surveys, reports, doctoral theses, scribes and books relevant to the topic.

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**Section-I**

**Chronology of Natural Disasters**

Climatically, Orissa falls under a tropical climatic zone. The south-west monsoons and the retreating north-east monsoons preponderantly determine the climatic conditions. It may be noted that the monsoon rain in Orissa is much lower than that of West Bengal. Besides, the delayed monsoons, which forecasts consolatory rain to northern Orissa are primarily cyclonic in character. These incidents of flood, drought and famine are pertinent mentioning in this portion of the study.

**Flood**

Before draining into the Bay of Bengal, all the major rivers of Orissa flow long distances; some of them having their sources originating beyond the state of Orissa. The intensity 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 frequency of such floods during the last one and half century (1968-2004) is presented below.

Between 1868-1967, i.e. during a span of hundred years, there were 262 flood inundations in the state, of which 68 were high floods. 77 of them were medium floods and 117 low floods. Among the rivers Mahanadi experienced the highest number of floods i.e 99 times. In other mazor rivers of Orissa, Brahmani experienced such floods 77 times whereas Baitarani caused floods for the 86th time. However, the scale of grimness of the floods of 1881, 1894, 1896, 1907, 1920, 1926, 1927, 1934, 1940, 1941, 1943, 1955, 1960, 1961 surpassed the previous ones. To add to the plight of its people, in between 1967 to 2003, floods of periodic nature occurred...
almost every year in between 1967-1975, 1977, each year between 1980-82, 1985, 1990, 1992, 1994, 1995, 2001 and 2003. The number of such destructive i.e. flood occurs equaled 20 times. Total of all such chronic, periodic and yearly occurrences of floods in Orissa during 1886-2003 i.e. during the last one hundred thirty-six years are as many as 282.

Drought

Like flood, drought is recurrent in Orissa. In most of the years, droughts and floods are experienced simultaneously because of excessive rainfall in some parts of the catchment basins and low rainfall in other regions. Records reveal that there were droughts in 1841-42, 1942-43, 1849-50, 1850-51, 1954-55, 1965, 1966, 1967, 1979, 1984, 2000, 2002 and 2003. In the annals of history, the great devastating Orissa famine, i.e. Na Anka Durbikhya was mainly because of extensive drought in 1865. Just like floods, droughts wreak in a lot of suffering to the Orissa people - the damages being overwhelming by nature. Every alternate year, either a drought or flood has become a recurring phenomenon in the State.

Cyclone

Orissa belongs to a cyclonic zone. 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 north-east coastal belt of the state. Cyclones in Orissa occurred in 1823, 1831, 1932, 1842, 1948, 1874, 1885, 1887, 1890, 1936, 1942, 1967, 1968, 1971 and 1999. Among the others, the severity of the Super Cyclone of 29 October, 1999 is more devastating. It had affected about 97 blocks, 12 districts, the State capital and Cuttack city, 28 NACs, besides affecting around 125.9 lakh people, and causing devastation in about 1200 kms. The super cyclone claimed as much life and property as 1846 Grampanchayats in the state, 14000 villages/wards and 1650086 households were severely affected.

Famine

Orissa is also marred with the worst hit famines in the state's history. Famines are the inevitable consequences of flood, prolonged drought, cyclone and wars. The records evince about the occurrence of many famines in the 14th, the 15th and in the 16th centuries. The famines of 1770, 1774-75, 1780, 1792, 1836-37, 1837-38, 1865-66, 1940-41 and 1942-43 were the major ones. However, the horrors of famines of 1866 cannot be wiped out from the recorded annals of Orissan history. It is believed that nearly one fourth of Orissa's total population were wiped out.

The earlier section, gives an appalling view of the threats looming before the present and future of the State. This was also rightly pointed out that "the State of Orissa is a flood ravaged, drought prone, cyclone hit and famine stricken land."

Section - II

Economies of Natural Calamities

As a matter of fact, the economic history of Orissa is a story of ravages of the recurrent floods and droughts, that have created and still creating havoc in the economic and social life of the people of the State. These natural calamities alongwith cyclones and famines are the crucial factors that have pushed back the progress of the economy. An estimation of the value of properties lost and damaged due to the natural calamities-flood, drought, cyclone, etc. in Orissa in different years between 1971-1999 is depicted in the table below.
The per capita value of property lost and damaged is analysed in the 3rd column of the table. The figures evince that a total amount of Rs.45.1 crore with an average per capita value of Rs.6.66 was lost in the state during 1971-1973, whereas the loss was 51.39 crore with an average per capita loss of Rs.6.81 between 1977-79; the amount was Rs.150.23 crore with per capita loss or Rs.18.82 between 1980-81; and during 1983-85 the loss was as much as Rs.302.76 crore with a per capita average loss of Rs.36.04. During 1989-1991, it was 465.84 crore with per capita loss of Rs.49.59; during 1992-1994 it was Rs.2508.55 crore with an average per capita loss of Rs.258.51 and the loss figured at Rs.478.25 crores with an average per capita value lost of Rs.67.21 during 1998-1999. Thus between these 28 years the total amount lost in the state is estimated to be Rs.4643.97 crore. The table also reveals the fact that, the incidence and intensity of natural calamities have increased from 1989 onwards causing a huge damage of properties in the State.

Preventing natural calamities from their occurrence may be beyond the powers of human beings. But the capacity of combating these disasters is somehow conceivable. There have been many lessons to the people and their governments in the successive years of occurrence of such natural disasters. Except for a gap of two to three years, there have been a series of natural calamities either in form of flood or drought or even as a duo of both the forces. 'Construction of Cyclone Relief Centres', for example, is a lesson from the instance of the Super-Cyclone of the 1999. Other such preventive measures against floods may lie in the working out of an action plan in the direction of effective drainage system in major rivers, effective storage and drainage system in the rivers to meet the requirement of water during shortage and to protect the excess water when in excess and by constructing barrages and bandhas where the locality is situated at a low level to the flow of river. The second section of the study reveals a harassing figure of economic values lost during the last 28 years in the State. This section is taken as a model to prove the effect of the natural calamities on the economy. From this model, it is very clear that the state is losing a huge amount of capital in almost each year due to the natural calamities and thereby causing poverty in the State.

Even though the Government of Orissa have taken a major drastic step by formulating Orissa State Disaster Mitigation Authority (OSDMA) soon after the Super Cyclone, but this concept need more intensive research, skilled and experienced personnel, a deliberate debate and high level discussion to find out an effective solution in order to cater to the ill effects of natural calamities on the economy of the state.

Value of Properties Lost and Damaged due to National Calamities in Orissa since 1971

<table>
<thead>
<tr>
<th>Year</th>
<th>Value of Properties lost and damaged (Rs. in cores)</th>
<th>Average per capita value of properties lost and damaged (in Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971-73</td>
<td>45.11</td>
<td>6.66</td>
</tr>
<tr>
<td>1974-76</td>
<td>34.17</td>
<td>4.81</td>
</tr>
<tr>
<td>1977-79</td>
<td>51.39</td>
<td>6.81</td>
</tr>
<tr>
<td>1980-82</td>
<td>150.23</td>
<td>18.82</td>
</tr>
<tr>
<td>1983-85</td>
<td>302.76</td>
<td>36.04</td>
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<tr>
<td>1986-88</td>
<td>187.28</td>
<td>21.36</td>
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<tr>
<td>1989-91</td>
<td>465.84</td>
<td>49.59</td>
</tr>
<tr>
<td>1992-94</td>
<td>2508.55</td>
<td>258.51</td>
</tr>
<tr>
<td>1995-97</td>
<td>420.39</td>
<td>41.12</td>
</tr>
<tr>
<td>1998-99</td>
<td>478.25</td>
<td>67.21</td>
</tr>
<tr>
<td>Total</td>
<td>4643.97</td>
<td>510.93</td>
</tr>
</tbody>
</table>

Notes:
2. Ibid, pp.2-12, Mark, K,op.cit, Thorner, D., op.cit, Kurien C.T., op.cit.
4. Ibid.

References:
7. Various volumes of Economic Surveys.

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