Climatic Vulnerability & its impact on the Villagers Living in the Coastal Regions of Ganjam District of Odisha

Mrs.ManjuPrava Das

Principal
P.G. Department of Rural Management
S.M.I.T., Ankushpur, (Berhampur)
Odisha, India
E-mail:manjupravadas@gmail.com
Cell: 91-9437653865

ABSTRACT

India has a coastline of about 7,516 km of which 5, 400 km is along the main land. Thirteen coastal states and Union Territories (UTs) in the country are being affected by climatic vulnerability. Four states (Tamil Nadu, Andhra Pradesh, ***Odisha*** *and West Bengal) are rather highly vulnerable to cyclone hazards. The Bay of Bengal is world's most cyclone prone region. Odisha is one of the most vulnerable states of India towards climate change. Natural calamities from time- to- time seriously affect livelihoods in this state and the income level of people. Poor societies have low adaptive capacities to withstand these adverse impacts of climate change, due to the high dependence of a majority of the population on climate-sensitive sectors like agriculture, forestry and fishery. The direct impacts of adverse climate cause loss of life, livelihood, assets, infrastructure etc. The present paper is an attempt to know the real sufferings of the villagers living in the coastal regions of the Ganjam District of Odisha who are frequently being affected by the rudeness of climatic vulnerability. They regularly loss a lot in their general livelihood, starting from extreme scarcity of food, drinking water and fuel to the extreme effect on health, education and infrastructure. The traditional marine fishermen living in the coastal regions of Ganjam district are the worst sufferers.*

Key Words: Climate, vulnerability, coastal region, cyclone, livelihood

1. Introduction

The Bay-of-Bengal has 480 km long sensitive coast line, which is a periodic recipient of climate risks such as cyclones and coastal erosion. Nearly one third of the cyclones of the east coast of India visit the coast of the state of Odisha. So, even a slight change in the sea's behaviour can have an immediate impact on the coast. Global climate change and the threat of accelerated sea-level rise exacerbate the already existing high risks of storm surges, severe waves and tsunamis. Over the last few years, global sea level rose by 1.0-2.5 mm/year. Weather conditions are often brutal in the Bay of Bengal as the area is ravished by heavy monsoon rains, both summer and winter. Destructive cyclones are common in the spring and fall months, bringing intense winds and severe flood. In the past two decades, Odisha has been teetering from one extreme weather condition to another: from heat-wave to cyclone, from drought to flood. With the current trend of the climatic variability accompanied with global warming and increased green house effects, the coastal areas of Odisha are likely to be affected by many more extreme cyclonic disturbances and low pressure systems of greater magnitude.

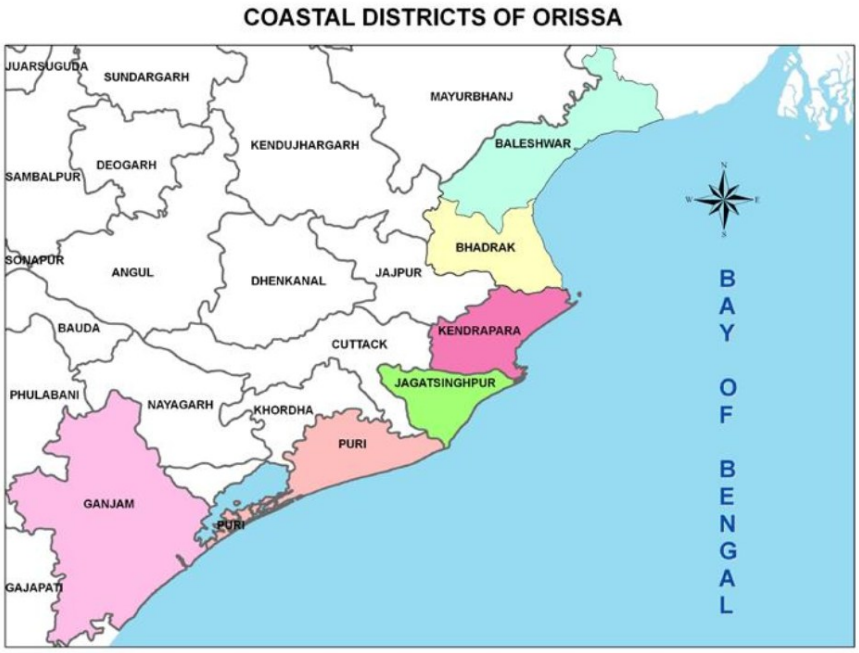
1.1: State of Odisha: At a Glance

Odisha is one of the 29 states of India, located in the eastern coast. It is surrounded by the states of West Bengal to the north-east, Jharkhand to the north, Chhattisgarh to the west and north-west, and Andhra Pradesh to the south and south-west. Odisha has 480 kilometres (301 mi) of coastline along the Bay of Bengal on its east, from Balasore to Malkangiri. Odisha lies between the latitudes 17.780N and 22.730N, and between longitudes 81.37E and 87.53E. The state has an area of 155,707 km^2, which is 4.87% of total area of India, and a

coastline of 480 km. In the eastern part of the state lies the coastal plain. It is the 9th largest state by area, and the 11th largest by population. According to the 2011 census of India, the total population of Odisha is 41,947,358.

General Information on Odisha Coast:

- 480 Km Coastline.
- Six major estuaries.
- Coastal Districts: Six
- Coastal Population: 36% of Total Population and 43% of Urban Population
- Fisherman Population (coastal): 1,73,197
- Fishing Potential: 2, 08, 000 Tonnes
- Climate: Moist sub-humid or Dry sub-humid type
- Rainfall: 1100 to 1500 mm
- Port: Major (1), Minor (1)
- Fishing Harbor: Major (1), Minor (3)
- Tidal Regime: Micro-meso Tida



1.2: Climatic Vulnerability and Odisha

Vulnerability may be defined as an internal risk factor of the subject or system that is exposed to a hazard and corresponds to its intrinsic predisposition to be affected, or to be susceptible to damage. The state of Odisha can be considered highly vulnerable to climate variability and change due to the combination of poverty and a high frequency of cyclones and floods. Nearly one third of the cyclones of the east coast of India visit Odisha coast. Odisha is geographically situated on the eastern coast of India at the head of the Bay of Bengal, highly prone to violent tropical cyclones, with a coastal stretch of around 480 km. This stretch covers six coastal districts, namely Balasore, Bhadrak, Kendrapada, Jagatsinghpur, Puri and Ganjam. Odisha's coastline is highly prone to cyclonic events. So, even a slight change in the sea's behaviour can have an immediate impact on the coast. In the past two decade, Odisha has been teetering from one extreme weather condition to another: from heat-wave to cyclone, from drought to flood. Sea-level rise is also an important

consequence of climate change, both for societies and for the environment. These natural calamities have seriously affected livelihoods in the state and the income level of people.

From among the above said six coastal districts, Ganjam District is regularly affected by various natural calamities like Drought, Flood & Super cyclone etc. The unprecedented flood of the 1990, Super cyclone of 1999, the Phailin of 2013 affected the economic backbone of the district continuously. In particular, the cyclonic events have generated lots of direct impacts that affect livelihood, e.g. high tide, flood, intrusion of salt water, water logging etc. After the Super Cyclone of 1999, the state government has taken measures like installation of modern communication systems, construction of cyclone shelters and other improved infrastructure including pucca houses for the poor in the cyclone prone areas to reduce the physical vulnerability of the coastal districts to cyclonic winds and tidal surges. However, poor socio economic conditions, weak housing, large settlements (including densely populated islands near the sea coast) in areas extremely prone to tidal surges, depletion of mangroves and tree shelterbelts, location of highly hazardous industries in cyclone prone areas, poor road communication to many villages near the coast make the state vulnerable to cyclones.

2. Study Area and Methods

The present paper is an attempt to know the real sufferings of the villagers living in the coastal regions of the Ganjam District of Odisha who are frequently being affected by the rudeness of climatic vulnerability. They regularly loss a lot in their general livelihood, starting from extreme scarcity of food, drinking water and fuel to the extreme effect on

health, education and infrastructure. The traditional marine fishermen living on Ganjam district coast especially those of Gopalpur area are the worst affected. This study analyzes household survey and Focussed Group Discussions (FGDs). Data were collected from two villages namely Podampeta and Karapalli situated in the belt of the Gopalpur-on-sea. The local (*Odia*) language was used to conduct FGDs, and discussion was held focusing on the effect of climate change on their livelihoods. Since most of the people were belong to both agriculture and fishing occupation, in both the villages, this study purposively selected those households who are depending on both activities to maintain their livelihood. In the context of household sampling, 50 households (i.e. 25 households from Podampeta village, and 25 households from Karapalli village) were interviewed.

3. Findings:

After discussing with the villagers, the various responses regarding the effect of climatic vulnerability on their livelihood, the findings are:

3.1 Effects of Regular Climatic Change:

a) Effect on Occupation:

Fishing in cyclonic weather is obviously much more dangerous. Climate change causing depression or cyclone not only reduces fishing activities but it also hampers the drying of fish. During heavy rains even the fish do not come to the surface and tend to remain in deeper waters and it becomes difficult to make a good catch during heavy rains or cyclones even when they risk going fishing during this time. High force winds make boats to capsize and the fishermen have to swim across the sea, which they described as a difficult task. The sea currents are far too strong for anyone to swim long distances to reach the shore.

At times, they also are injured by when the boat capsizes or they get tangled with propellers. Some deaths have occurred due to drowning or through injuries from the propellers on the motor boats.

b) Effect on Agriculture:

Agriculture in these two villages is vulnerable to more than one type of hazard—cyclones, water surges and droughts. There is generally no immediate threat to the lives of the farmers. The risks affect the economic situation at the individual level rather than collectively. They spend considerable amounts of money on cultivation every season with the hope of a good yield despite the fact that a single cyclone or flood is enough to destroy their efforts and incur losses on the money spent.

c) Effect on House:

An important asset that they have is their houses. Most of the residents in both the villages have their own houses. However, not all in the fishing village have pucca houses (brick and cement houses with concrete roofs). The flood and cyclone affect their houses adversely and it happens with them regularly.

3.2: Effects of Phaillin- 2013 on the villagers

- Very old and big trees and the trees which were providing livelihood support to thousands of people in the coastal areas were uprooted.
- Thatched houses in these villages were being badly damaged. In some asbestos houses, the roofs were damaged.
- Children were the worst sufferers in this disaster and their clothes and study materials had been badly destroyed.
- Continuous rain had made the situation worse.

- The belongings of the people like cooking materials, sleeping materials, clothes, etc were lost in the cyclone.
- Electricity was out of order and people were in dark as kerosene or candle were not available in the village.
- Safe drinking water was not available in the villages.
- 12 houses have been submerged in the sea in Podampeta village and 140 fisher folk were affected. 150 nets were lost and 50 boats have been damaged
- Agriculture was also affected in these villages.
- Most of the boats were broke down and all the nets were damaged.
- The livestock in the village were also affected adversely.

Conclusion

Recurring climate change causing floods and cyclones in the studied areas have made the rural population extremely vulnerable. Poor societies have low adaptive capacities to withstand the adverse impacts of climate change, due to the high dependence of a majority of the population on climate-sensitive sectors like agriculture and fishing. With access to poor infrastructure facilities, weak institutional mechanisms and lack of financial resources, it becomes more difficult for them. The direct impacts of climatic vulnerability are loss of life, livelihoods, assets, infrastructure etc. To minimize the losses in such exigencies, it is necessary that a system be created for increasing preparedness at all levels i.e. government, civil society and community.

References:

Chandra Sekhar Bahinipati and Nirmal Chandra Sahu, (2012) *Mangrove Conservation as Sustainable Adaptation, Asian Journal of Environment and Disaster Management,* Vol. 4, No. 2 ,183–202

Chittibabu, P., Dube, S. K., Macnabb, J. B. and Sinha, P. C. ,(2004). Mitigation of Flooding and Cyclone Hazard in Odisha, India, *Natural Hazards*, 55–85

Kumar, K. S. K. and Tholkappian, S.,(2006).Relative vulnerability of Indian coastal districts to sea-level rise and climate extremes, *International Review for Environmental Strategies*, 6(1), 3–22.

GoO, (2009), *Annual Reports on Natural Calamities, different years (2001-09),* Published by Special Relief Commissioner, Revenue and Disaster Management Department, Govt. of Odisha, Bhubaneswar

Wisner, B (2006). Risk Reduction Indicators: Social Vulnerability.

Electronic sites:

URL:http://www.proventionconsortium.org/themes/default/pdf/TRIAMS_social_vulnerability.pdf

www.infochangeindia.org

WWW.timesofindia.com

www.thehindu.in