



Infrastructure Building and Post-Cyclone Management in Odisha: A Study of People's Perception in one Select Village in Nilagiri Block

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Odisha – a state in eastern India is known for, among other things, the way it has handled the natural disasters especially severe cyclones after its debacle in 1999. This coastal state is often regarded as a magnet for such type of natural disasters. It is because of its geo-climatic location adjacent to the Bay of Bengal for 300 miles, it has to bear the brunt of different weather events within a span of 130 years from 1891. Odisha being vulnerable to different kinds of natural disaster such as tsunami, lightning, sun- stroke, floods, cyclonic storms and droughts etc. The 1999 super cyclone of Odisha remains printed in our mind as an apocalyptic failure of the administration machinery of Odisha government. It resulted in the death of thousands of people besides causing devastation in many dimensions. The 1999 super cyclone exposed the weakness in state's preparedness to face the natural disaster. It also forced both the central and provincial government to revise their respective disaster management policy and strategies. It was a lesson for the state and its administration. Since then Odisha started working determinedly to upgrade its disaster response system. The measures taken were such that the victim state has been regarded as a model for disaster management. It is rightly said that Odisha province tops in disaster risk index and best in disaster management. Following the super cyclone of 1999, Odisha witnessed six dangerous cyclones from 2011 to 2023, namely Phailin (2013), Hudhud (2014), Titli (2018), Fani (2019), Amphan (2020) and Yaas (2021). The blunders made by Odisha government in 1999 were not repeated in the following cyclonic events. The impactful disaster management strategies adopted by Odisha post 2000 has made it possible to bring down the death tolls to a great extent.

Odisha's success story in effective disaster management has come as a surprise for many. Odisha's turnaround in disaster management has lessons for the rest of the world. Presently, Odisha has improved its flexibility and reduced the disastrous effects of different tropical cyclones. The successful disaster management policy of Odisha is considered as a backbone that every other states of India as well as other states of the world must follow. The 'adaptive governance' (Walch, 2018) strategy adopted by Odisha government proved to be impactful which is reflected in Odisha being recognized as a disaster reduction model for all other states of India. Under the leadership of chief minister of Odisha Mr. Naveen Patnaik, the disaster risk reduction strategies adopted by state, named as 'Odisha model' have been acknowledged in all over the world even the western capitalist state and united nations are recognizing the 'Odisha model'. Presently, Odisha is far more resilient than it used to be before 2000. In 2023 Odisha was awarded with "Subash Chandra Bose Aapada Prabandhan Puraskar" for exemplary work in disaster management. Since 2013, Odisha government has adopted a high degree of preparedness and effectively evacuated millions of people during disaster which led to the safeguarding of immeasurable life and property. It must be mentioned that Odisha's years of planning and preparedness has been impactful in meeting challenges poses by different kind of natural disaster.

After the dreadful experience of 'super cyclone', Odisha was the first state to establish a disaster management authority which is also referred as OSDMA (Odisha state disaster management authority) even before the establishment of NDMA (national disaster management authority) in 2005. Odisha is the only Indian state with a state disaster rapid action force i.e. ODRAF (Odisha disaster rapid action force). Odisha along with few other states has a disaster loss database and reports damage incurred, regularly in accordance with SFDRR (Sendai framework for disaster risk reduction) targets (Roy and Chaterjee, 2019). Since 2010, Odisha is continuously experiencing different type of natural disaster every year and sometimes two natural disaster in a single year. So, the preparedness of Odisha state government is becoming more futuristic along with it the DRR (disaster risk reduction) strategy of Odisha is also evolving to face multifaceted challenges of both natural and man-made disaster. Even the state government has given stress on disaster awareness through introducing courses on 'disaster and pandemic management' in educational curriculum of students from standard 4th to graduation levels. Thus, the state government of Odisha has left no stone unturned to make Odisha a safer place during natural calamities.

Accordingly, Odisha's disaster management has witnessed paradigm shift from an activity-based reactive approach to a proactive Institutionalized structure; from a single faceted domain to a multi-stakeholder setup; and from a Relief-based approach to a 'multi-dimensional pro-active comprehensive approach for reducing the risk of life, property and ecology. Therefore, Disaster management holds an important status in Odisha's policy framework as it is the marginalized and the under-privileged people who are worst affected because of different natural calamities and natural disasters. Currently, Odisha government has developed the most robust infrastructure for effective disaster management.

In the Post-1999 super cyclone, the primary goal of Odisha Government during natural disasters has been "zero causality". Be it Covid-19 emergency, tropical cyclones, Bahanga train accident and many more, the disaster management team of Odisha has worked effectively and efficiently. This has earned

global applause. By learning from the past experiences of natural and man-made disasters, Odisha has come a long way in managing the disasters efficiently.

Review of Literature:

The success stories of Odisha in disaster management caught the attention of scholars in various disciplines in India and beyond. Let's discuss here in this section a few of these to understand the various dimensions of disaster management in the state.

Colin Walch (Walch, 2018) in his article "adaptive governance in the developing world: disaster risk reduction in the state of Odisha, India" explores the success story of Odisha in disaster risk reduction (DRR) and provide a ground evidence of emerging significance of adaptive governance to mitigate and manage the risk of disaster efficiently. The study identifies two key factors contributing to the adoption of adaptive governance: traumatic shock and committed political leadership. The traumatic shock refers to the 1999 cyclone that led to reforms and the establishment of new institutions following a significant loss of life and infrastructure damage. The committed political leadership led by Chief Minister Naveen Patnaik, was dedicated to socio-economic development and resilience building. The study reveals that the government's response to the 1999 cyclone created a momentum for reform, resulting in the establishment of the Odisha State Disaster Management Authority (OSDMA) and improved coordination between government agencies, NGOs, and international organizations. The study emphasizes how the 2013 Cyclone Phailin served as a test of the adaptive governance system and demonstrated its effectiveness in reducing disaster impact. The success in disaster risk reduction has been attributed to the collaborative efforts between the government, local communities, and various organizations. The case of Odisha serves as rare example of adaptive governance in a developing country, demonstrating the importance of context-specific approaches to resilience building and disaster risk reduction.

The article entitled "Assessment of vulnerability to cyclones and floods in Odisha, India: a district-level analysis" provides a comprehensive assessment of the vulnerability of Odisha's districts to cyclones and floods. Authored by Chandra Sekhar Bahinipati (Bahinipati, 2014) and published in *Current Science*, the study analyses the determinants of vulnerability, such as sensitivity and adaptive capacity, and identifies districts with higher vulnerability scores. The findings have significant policy implications for prioritizing resources in disaster risk management programs at both state and district levels. The study's integrated approach combines socio-economic and biophysical vulnerability, offering a holistic understanding of vulnerability. Overall, the document presents valuable insights into the vulnerability of Odisha's districts to cyclones and floods, making it a crucial resource for policymakers, researchers, and disaster management professionals.

S. K. Samantray (Samantray, 2014) in his article "Disaster Management – An Overview of People's Perception" presents findings from a study conducted in the eastern part of Odisha on people's perception of disaster management, focusing on floods and cyclones. The article provides valuable insights into the perceptions and needs of disaster-affected communities, offering important considerations for disaster management strategies. The study emphasizes the importance of informing people well in advance of impending disasters to enable them to take necessary precautions. The article also underscores the essential precautionary measures for disaster mitigation, including safe storage of food grain, preservation of safe drinking water, and stocking essential medicines. It recommends that the government strengthen measures for immediate restoration of transport and communication systems, as well as hygienic and sanitation measures post-disaster. Additionally, the study identifies socio-economic variables that influence respondents' capabilities in disaster management.

The article named "Rapid eco-physical impact assessment of tropical cyclones using geospatial technology: a case from severe cyclonic storms Amphan" discusses the ecological impact of Super Cyclone Amphan on the coastal areas of India and Bangladesh. The study, conducted by Manoranjan Mishra, Dipika Karl, Manasi Debnath, Netrananda Sahu, Shreerup Goswami (Mishra, et al, 2021) which emphasizes the importance of rapid eco-physical impact assessment of severe cyclonic storms for future sustainable development in vulnerable regions. It aims to provide valuable insights for coastal managers and policymakers to formulate action plans for coastal management and sustainable development. They utilize geospatial technology and satellite imagery to analyse the impact on shoreline change and mangrove vegetative canopy greenness. The findings reveal significant damage to the shoreline of West Bengal and landward movement in Bangladesh due to the cyclone. The study's focus on the impact of natural disasters on coastal regions and the use of advanced technology for analysis makes it a relevant and informative resource for researchers, policymakers, and environmentalists.

The articles reviewed above hint at one gap in the literature regarding studying the people's perceptions about the way the disasters are managed by the state. The media and the claims of the government only highlight the success stories. Whether there is something which is not true became thus a point of curiosity. Hence, this piece of research has been undertaken which is explorative.

Methodology:

The study is based on an empirical study in a village Karanjia in the Nilagiri block in Balasore district of the state which is semi coastal. The study follows random sampling method. It has interviewed 30 respondents who are the villagers and one of them was a people's representative. It has followed schedule method where open ended questions were used.

Infrastructure Building and People's Perception about the disaster management process:

Karanjia is a revenue village adjacent to the Sone (Soona) river in other words it is situated in the bank of the river. It's a kind of Iceland surrounded almost all the sides by the river. Only a year ago a bridge on the river connects it to the main road. It has 141 electors as per the updated voter list of 2024. There are more than 40 households out of which there are 6 pakka houses and the rest are thatched houses. The economic background of the people is

purely agrarian and they mostly they rear animals like goat, cattle, and poultry. Education level is very low. The sex ratio is 77 (male): 63 (female). The respondents said that there was no road connecting all households in the village. Only in the month of January 2024 a 200 metre concrete road has been constructed. The random sampling was made by choosing the respondents keeping a gap of 6 as the total respondents were to be 25.

The respondents reply was horrific. People started gathering at the place of interview. What they said are listed below:

- (i) When the cyclone hits Balasore cost it usually rains for five to six days with strong wind. The rain in the upper region brings more water to the Soona River and flood comes. This is a common experience for them in all the severe and less severe cyclones. The force of the water flow is such that it demolishes the earthen river bank and the water flows through the village towards the bridge. Since most of the houses are thatched (kacha), these either are destroyed or its walls fall down. As a result their cattle and poultry flow away by the flood water.
- (ii) When asked whether they were ever evacuated to a safer place, four of them replied that they were having the experience of staying at Kathapal School. They told that the people, who were given shelter there, objected their coming to their place as they belonged to Kaansa Village. However they requested them that the cyclone shelter facility (Kaansa High School) was 1.5 kilometers away and everywhere there was flood water. Hence they were give shelter there. However, they said no body was providing them cooked food. They were given some rice and daal and were asked to cook their food by themselves. Therefore there was much inconvenience caused to them. The other residents of the village did not go to the place of shelter as they are attached to their cattle and poultry.
- (iii) After the cyclone comes to an end the R.I (Revenue Inspector) visits the village and notes down the losses incurred by the individual households. However the government doesn't give them anything. Only five respondents answered that they were only given fifteen hundred each time. Even no polythene was given to them.
- (iv) The respondents replied that during the time of flood on very few occasions motor driven boats having the capacity of ten peoples were supplied. According to them it was so risky to move to other places in that. Therefore they prefer not to go.
- (v) The respondents said no medicine, no food are supplied to them either before or after such calamities.
- (vi) The respondents also shared their difficulties to evacuate the pregnant women as bridge is very sloppy and at an inconvenient height.
- (vii) All the respondents said whenever they have met the block officials, the letter have humiliated by saying that your village was not shown on internet.
- (viii) The respondents proposed that there must be a place of shelter within there village at a grater height so that they can easily move to their place when the situation would so warrant. They also volunteered to provide land for that purpose. They also proposed for the construction of a place of shelter for their cattle and poultry. Their main demand has been to get an all-weather road touching all households. Since the respondents depend upon agriculture some of them also expect some land which is won by the government. Among other things they also demanded for construction of a stone-embankment covering the village.

The above narratives hint at the people's perception about the way the disasters are managed by the administration. This is a new revelation. This is a gray area in the success story.

Conclusion: A Way Forward

When we look back, it is found that Odisha has come a long way in the last 24 years. Presently, Odisha is able to protect its people which is the most fruitful result of its "adaptive governance" strategy. Since 1891 to 2023 around 100 tropical cyclones has created a mess in Odisha in comparison to other states of India but the expertise and resilience Odisha shown in dealing such emergency situation is praise worthy. In the contemporary times, The Odisha model of disaster management is globally recognized due to its success ratio. In terms of reducing the number of death and eliminating the risk of property destruction Odisha has also done a commendable work. However, the story does not end there. The administration has to take people with it as many feel deprived as the study reveals. This aspect of governance is required to add substance to the story of success claimed by the government of Odisha.

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