

Challenges and Coping Strategies of Women Pre, During and Post Disasters: A Study on Jagatsinghpur District, Odisha.

Sthitapragyan Panigrahi¹, Kabir Mohan Sethy²

¹Research scholar, Post-graduate Department of Geography, Utkal University, Vanivihar, Bhubaneswar, Odisha-751004,

²Professor, Department of Geography, Utkal University, Odisha

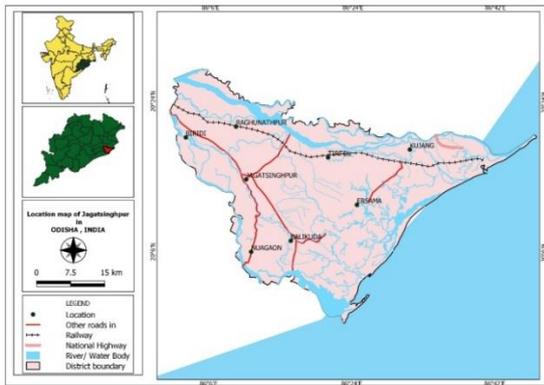
Abstract— The study is an attempt to evaluate and examine the challenges and coping strategies faced by women in pre during and post disasters. India's east coast is one of the six most cyclone prone areas in the world, although the coastline of Odisha is only about 17% of the Indian coast, it has been affected by nearly 55% of all cyclonic storms that have crossed the east coast and associated storm surges that have often inundated large tracts of coastal districts due to its geographical location and bring huge damage to coastal settlements. The damages had great impact on women the underlying socio-cultural and economic patterns increases their specific vulnerability to disasters. Traditional expectations and home-based responsibilities limit women's mobility in terms of access to information, decision making and education. Male dominance and demographic trends put women increasingly at risk. The participation of women in capacity building community level planning, implementing and rehabilitation is still on a low-key profile. Utilizing a mixed-methods approach with surveys, interviews, and focus group discussions, this study collects both qualitative and quantitative data on women's lived experiences. Results indicate that pre-disaster challenges frequently include a lack of preparedness information and economic dependency. During disasters, women often confront crowded shelter conditions, limited privacy, health and sanitation issues, and elevated risks of harassment. In the aftermath, they face considerable hurdles in economic recovery, mental well-being, and social reintegration. To manage these difficulties, women rely on self-help groups (SHGs), community networks, and resource-sharing to build resilience, though significant gaps in support systems persist. The study concludes with recommendations for targeted interventions, such as gender-sensitive disaster policies, community-based support frameworks, and economic recovery initiatives tailored to women's needs. These findings highlight the critical role of gender-specific approaches in disaster management to strengthen resilience and recovery for women in disaster-affected regions like Jagatsinghpur.

Keywords: Climate Change, Coping Strategies, Natural Disasters, Vulnerability

I. INTRODUCTION

Natural disasters have far-reaching effects, often affecting women disproportionately due to social, economic, and cultural factors that make them more vulnerable before, during, and after the disasters. Across the phases of a disaster, women face specific challenges related to limited access to resources, exclusion from decision-making processes, and heightened health and safety risks. These gender-based vulnerabilities are often intensified in rural and disaster-prone regions, where resources and support structures may already be limited. Jagatsinghpur is one of the coastal district of Odisha Jagatsinghpur district lies between East longitudes $86^{\circ} 03'$ and $86^{\circ} 45'$ and North latitudes $19^{\circ} 58'$ and $20^{\circ} 23'$ provides a critical case study of the unique and complex struggles women face throughout disaster cycles. As a region frequently struck by cyclones, floods, and other environmental crises, women in Jagatsinghpur often confront severe obstacles to their safety, health, economic stability, and social well-being. For instance, pre-disaster, they may lack access to vital information, disaster preparedness resources, and economic support systems that are essential for resilience. During a disaster, women are often responsible for family care in shelter situations, which can expose them to physical and psychological risks, while post-disaster challenges include rebuilding livelihoods and coping with trauma and loss. This study explores the distinct challenges faced by women in Jagatsinghpur across all disaster phases and examines the coping strategies they develop in response. By analyzing both the obstacles and adaptive mechanisms, this research aims to highlight the importance of gender-sensitive disaster management approaches, which can strengthen resilience and provide meaningful support to women in disaster-prone regions.

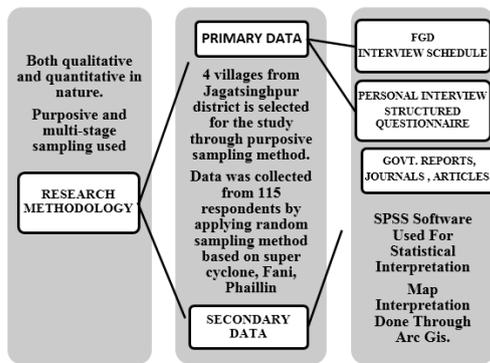
II. STUDY AREA: LOCATION MAP



II. OBJECTIVE OF THE STUDY

- To explore women’s vulnerability during disasters in Jagatsinghpur district.
- To access different coping strategies of women in the time and after disasters.

III. METHODOLOGY



IV. ANALYSIS AND INTERPRETATION:

Demographic features of the vulnerable women in the study area:

1. Caste Composition

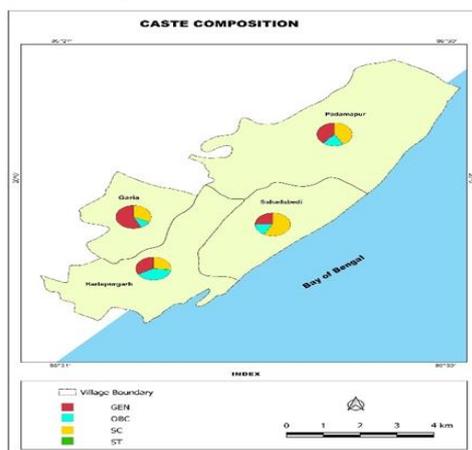
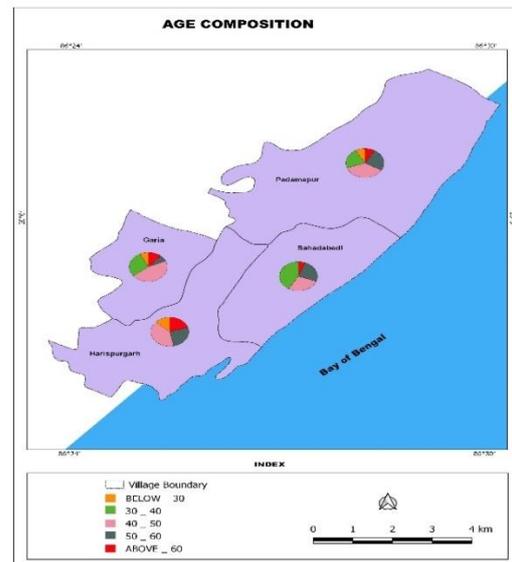


Figure 1: Caste composition of the women respondents.

In Harishpurgarh village 33.33% of women respondent comprises general caste, 40.01% comprises OBC population ,26.66% of women respondent comprises SC population. In Padmapur village 38.88% of women respondents comprises general population,19.44 comprises OBC population and 41.66% comprises SC population. In Sahadabedi population, 16.66% comprises OBC population, and 58.33% comprises SC population. In Garia village 57.14% comprises general population, 10.71 comprises OBC population, and 32.14% comprises SC population.

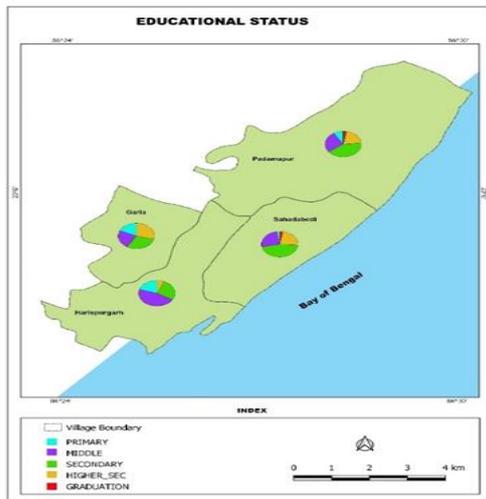
2. Age composition:

In Harishpurgarh village women respondents comprises the age group below30 is 13.33%. 40.01% come under age group 40-50, 26.66% come under the age group between 50-60 and 20% comprises above 60. In Padmapur village women respondents comprises the age group below 30 is 8.33%, 22.22% comprises 30-40, 36.11% comprises 40-50, 25% come under the age group between 50-60 and the 8.33 comprises the population above60.



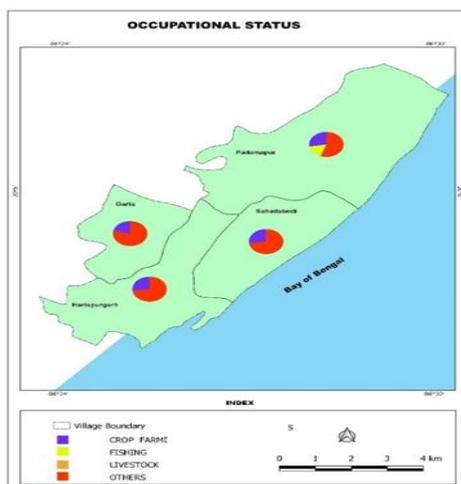
In Sahadabedi village women respondents comprises the age group between 30-40 is 41.2%, 27.7% comprises the age group between 40-50, 25% comprises the age group between 50-60 and 5.5% comprises the age above 60. In Garia village women respondents comprises the age group below 30 is 7.14%,28.5% comprises the age group between 30-40, 46.4% comprises the age group 40-50, 7.14% comprises the age group between 50-60, and 11.2% comprises the age group above 60.

3. Educational qualification:



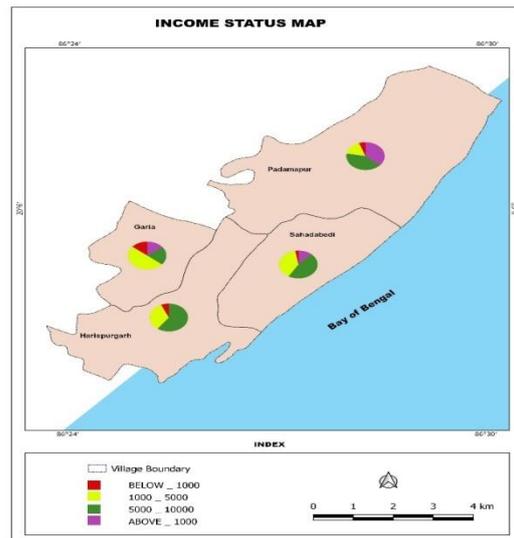
In Harishpurgarh village 20% of women respondents completed primary education, 46.66% women respondents completed middle education, 26.66% completed secondary education, and 6.66% completed higher education. In Padampur village 5.55% women respondents are illiterate, 8.33% completed primary education, 25% completed middle education, 38.88% completed secondary education and 19.44% completed higher education. In Sahadabedi village 2.7% women respondents are illiterate, 2.7% have completed primary education, 25% completed middle education, 44.44% completed secondary education, 22.46% completed higher education and 2.77% completed Graduation. In Garia village 14% women respondents are illiterate, 15.7% completed primary education, 20.2% completed middle education, 25.8% completed secondary education and 25.2% completed Graduation.

4. Occupational status:



In Harishpurgarh village 26.66% of women respondents are engaged in crop farming activities and 73.33% engaged in other activities. In Padampur village 27.77% women respondents are engaged in crop farming activities and 16.66% engaged in fish farming activities and 55.55% are engaged in others activities. In Sahadabedi village 27.00% women respondents are engaged in crop farming activities and 73% engaged in others activities. In Garia village 21.4% women respondents engaged in crop farming activities and 78.5% engaged in others activities.

5. Income status:

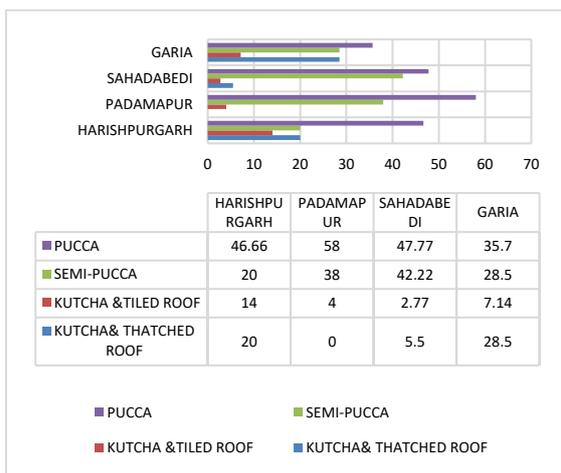


In Harishpurgarh village 6.66% of women respondent's income is below 1000, 33.33% income is between 1000-5000, 60% women respondents' income is between 5000-10000. In Padampur village 5.55% women respondents' income is below 1000, 16.66% income is between 1000-5000, 41.66% income is between 5000-10000, and 36.88% respondent income is above 10000. In Sahadabedi village 2.7% women respondents' income is below 1000, 38.8% respondent income is between 1000-5000, 47.2% respondent income is between 5000-10000 and 11.6% respondents' income is above 10000. In Garia village 14.2% women respondents' income is below 1000, 50% respondents' income is between 1000-5000, 21.4% women respondents' income is between 5000-10000 and 14.8% income is above 10000.

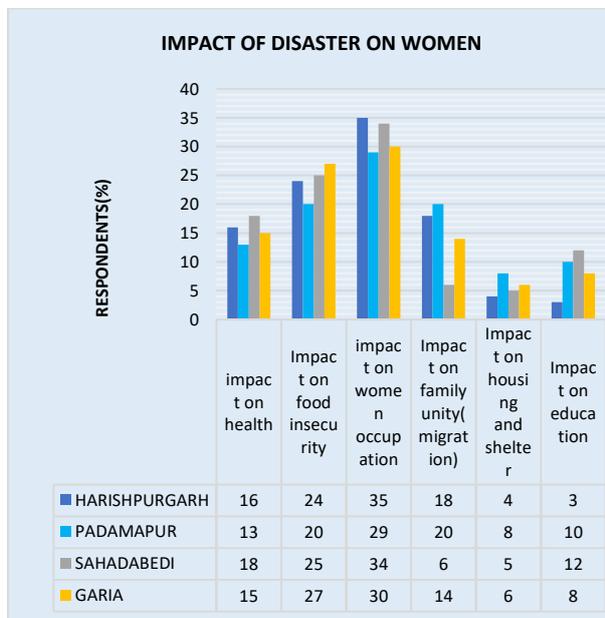
6. Type of house:

In Harishpurgarh village 20% women respondent are residing under kachha and thatched roof, 14% residing under kachha and tiles roof, 20% residing under semi-

puccha house and 46% women respondents residing under Pucca. In Padampur village 4% women respondent are residing under kachha and tiled roof , 38% residing under Semi-puccha house and 58% women respondent residing under Puccha house. In Sahadabedi village 5.5% women respondent residing under kachha& thatched roof, 3.77% residing under kachha and tiled roof , 42.22% women respondent residing under semi puccha house ,and 47.77% residing in Puccha house. In Garia village 28.5% women respondent are residing uinkachha and thatched house house ,7.14% women respondent residing under kachha and tiled roof , 28.5% women respondent residing under Semipuchha house and 35.7% residing under puccha house.



V. IMPACTS OF DIASATER ON WOMEN



In the present study table 2 shows the differential impacts of disaster on women which makes them more vulnerable . The highest percentage of women

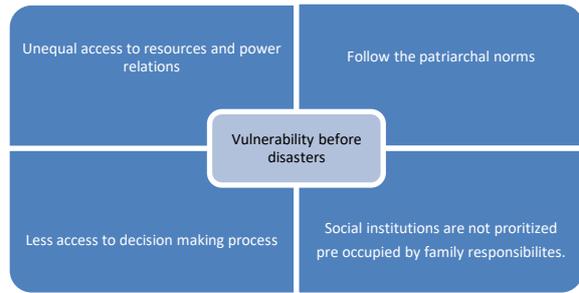
respondent said that the impact on occupation is more follwed by 35% in Harishpurgarh Village , 29% in padampur, 34% in Sahadabedi and 30% in Garia village.The second highest percentage of women respondent said that impact on food insecurity is 24% in Harishpurgarh village, 20% in Padampur village, 25% in Sahadabedi and 27% in Garia village. The third highest percentage of women respondent said that the impact on family due to out migration of male members is in Harishpurgarh village that is 18%, 20% in Padampur, 6% in Sahadabedi and 14% in Garia. On the other hand Women respondent said that the impact on health in Harishpurgarh village is 16%, 13% in Padampur ,18% in Sahadabedi and 15% in Garia village. They also mentioned that the impact on education of girls and children is neglected during and after disasters many of them they leave colleges due to family and home displacement , some migrate to other cities to run and support their families and drop out rates of primary children also increases, in Harishpurgarh 3% , 10% in Padampur, 12% in Sahadabedi and 8% in Garia the education was impacted. The women respondent said that the impact on housing and shelter in Harishpurgarh village is 4% ,8% in Padampur,5% in Sahadabedi and 6% in Garia was affected.

VI. RESPONDENTS RESPONSES REGARDING WOMEN VULNERABILITY

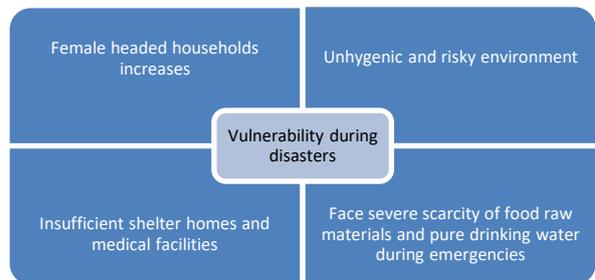
TYPES OF VULNERABILITY	RESPONDENTS %
Social vulnerabilty	TOTAL
Lack of social security	77.5
Patriartical structure	77.5
Disintegration of social patterns	21.75
Weak family / kinship structure	30.25
Injustice practices	75.75
Physical vulnerability	
Weak structure of houses	89.25
Poor road network disrupt emergency response , recovery	82.66
Frequent embankment breaching	81.75
Settlement growth scattered throught areas highly exposed to storm surge	87.25
Psychological vulnerability	
Change to network family support	66.25
Change in self perception	54.75
Negative beliefs/ideologies	61.25
Negative attitude towards change	72.5

Lack of self confidence and increase dependancy	77
Economic vulnerability	
Loss in productivity	88.25
Limited access to market	81.75
Loss of income, savings	85.5
Loss of employment	88.5
Increase in debt and loan	84
Economic insecurity	87
Malnutrition	85
Political vulnerability	
ineffective decision making process	82
Less access to participate in community gatherings	75.25
Limited access to political power and representation	92.25

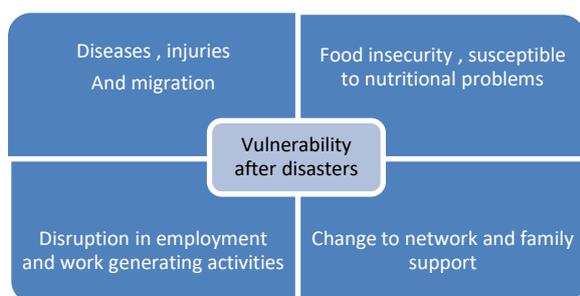
In the above table respondents' responses regarding physical vulnerability are as follows: weak structure of houses (89.25%), poor road network disrupts (82.66%), frequent embankments breaching (81.75%) and settlement growth scattered throughout areas highly exposed to storm surge (87.25%). Respondent responses regarding psychological vulnerability are as follows: Change to network family support (66.25%), change in self-perception (54.75%), negative belief and ideologies (61.25%), negative attitude towards change (72.5%), and lack of self-confidence and increase dependancy is (77%). Respondent responses regarding economic vulnerability are as follows loss in productivity (88.25%), limited access to market (81.75%), loss of income and savings (85.5%), loss of employment (88.5), increase in debt and dependancy on money lenders is (84%), economic insecurities (87%) and malnutrition (85%). Respondent responses regarding social vulnerability are as follows: lack of social security (77.5%), weak family and kinship structure (30.25%), patriarchal structure (77.5%), injustice practices (75.75%) and disintegration of social patterns (21.75%). Respondent responses regarding political vulnerability are as follows: ineffective decision-making process (82%), less access to participate in community gatherings (75.25%), and limited access to political power and representation (92.25%).



From the survey it is found that, experience of vulnerabilities to disasters differs from women to men a large proportion of the respondents said that before disasters they hardly take decision due to possessing limited property, social institutions and family budget are not prioritized in the family. These social norms hinder and increase their vulnerability in disaster preparedness and keep them away from taking preparation for any upcoming disaster. Most of the respondent shares those traditional expectations and home-based responsibilities (to take care of the family members, age old population, and children, arrange and collect food items) are their priorities besides any circumstances.



From the survey it is found that women drudgery and workload increase dramatically which make them more vulnerable in terms of their health condition. Despite poor health condition they must travel long distances for hospital facilities to look after their family. Respondent said that they usually live in dilemma that whether they live in their houses or prefer shelter homes because women are responsible for taking care of family members and resources, they are sometimes the last number of the family to leave the house to seek distant shelters even after getting warnings long before and due to lack of appropriate facilities in the shelter homes, these significant challenges and thoughts push most of the respondents in vulnerable situations during disasters.



From the survey it is found that women who are engaged in primary and secondary activities face economic challenges in terms of loss of production, loss of livestock, deterioration of housing condition, limited access to resources and due to lack of work opportunities either they migrate or change their occupation for a better living, when the male migrate to other places women become the bread earners of their family. Low income, and low paid jobs leads to reduce their food consumption which deteriorates their health condition and increases food insecurities. Sometimes they participate themselves in rehabilitation works through their indigenous skills and techniques.

VII. COPING STRATEGIES OF WOMEN PRE, DURING AND POST DISASTERS

PRE-DISASTER	DURING DISASTER	POST DISASTER
<ul style="list-style-type: none"> Women often use traditional knowledge and local warning indicators from birds' animals and other natural phenomena for preparedness 	<ul style="list-style-type: none"> They seek temporary shelter and safeguard their assets. 	<ul style="list-style-type: none"> Women sell the stored items like badi, papad, dry fish and poultry to generate income
<ul style="list-style-type: none"> Through their indigenous techniques they arrange rope, saree, bamboo sticks, jute bags, and garia to save themselves and others. 	<ul style="list-style-type: none"> Women face acute personal discomfort at shelter homes due to the unavailability of local hygienic resources. 	<ul style="list-style-type: none"> Assistance of local social network and groups of relatives for those who are in disadvantaged positions.
<ul style="list-style-type: none"> They store firewood(jala) and cowdung cakes(g hasi) for future use. they prepare mud stoves for future use. 	<ul style="list-style-type: none"> Women adopted their coping strategy of reducing the food they eat to serve the family members and avoid embarrassment. 	<ul style="list-style-type: none"> They sell seasonal vegetables in local markets, which are grown in their backyards (kitchen garden)
<ul style="list-style-type: none"> With available of local resource, they built resilient house structure to keep livestock, fodder, and paddy safe 	<ul style="list-style-type: none"> During the time of relief distribution, lactating women, age old women seen to 	<ul style="list-style-type: none"> Females mostly engage themselves in daily wage activities. Most of the female engaged in

during flood and heavy rainfall. They store dry fish, puffed rice, jaggery (gud) to be used immediately after disaster.	standing in queue in flood affected areas.	agriculture activities in others field for sustenance.
<ul style="list-style-type: none"> Women collect all their important belongings (papers and documents) and other valuables. 	<ul style="list-style-type: none"> Depressions, anxiety, emotional traumas were on the rise with loss of property, belongings, and food security in disaster situation. 	<ul style="list-style-type: none"> Women participate in organisational work to protect others and themselves whether they are at home in the rice fields or at work.

VIII. RESULTS AND DISCUSSION:

Women are the worst victims during disasters stereotypes of roles prohibit their foray into public domain. Women experience greater impacts and higher vulnerability than men. Low socio-economic condition, social relief, and lack of decision making and participate in prevention and preparedness programmes increases their vulnerability. Despite numerous challenges and constraints women play an important role in managing their household responsibilities, ensuring food security, and diversifying livelihood activities to mitigate disasters. Women are regarded as custodians, carriers of traditional knowledge and their active participation enhances the effectiveness before, during and after disasters making them good manager of climate change, hence they should be involved in participatory capacities and training programmes to regulate the climate change responses at local/community level. There is an urgent need to identify obstacles to women's participation in decision making starting from grass root level which includes raising awareness, building confidence, and leading training programmes which is a great step towards reducing the impact of vulnerability and strengthening of coping strategies.

IX. CONCLUSION

This study on Jagatsinghpur district, Odisha, reveals that women, as one of the most vulnerable demographics, bear unique challenges during natural disasters. From limited resources pre-disaster to the heightened risks of harassment, health concerns, and family obligations during sheltering, women encounter considerable barriers to safety and resilience. Post-disaster, these women face a steep path to recovery, with disrupted livelihoods, increased

mental health strains, and significant obstacles to social and economic reintegration. Their vulnerability is exacerbated by the region's social and economic constraints, as well as the entrenched gender norms that often exclude women from decision-making roles and prioritize their family care duties over personal welfare.

Nevertheless, women in Jagatsinghpur demonstrate a remarkable capacity for resilience and adaptation, utilizing both traditional knowledge and modern coping mechanisms to navigate each phase of disaster impact. They prepare by storing essential items, organizing community support networks, and even relying on natural indicators as early warning systems. During and after disasters, women employ a range of strategies—from using community resources and selling home-grown produce to engaging in relief efforts—to ensure their families' survival and eventual recovery. Additionally, their participation in self-help groups and reliance on local social networks illustrate how they build community resilience despite limited external support.

The findings underscore an urgent need for gender-sensitive approaches to disaster management. To enhance the resilience of women in disaster-prone regions like Jagatsinghpur, targeted interventions must address gaps in disaster preparedness, shelter facilities, health services, and economic recovery programs. Community-based initiatives that incorporate women's voices into planning and execution can bridge critical support gaps, while income-generating opportunities and flexible financial support systems can empower women economically. Gender-inclusive policies that promote equitable participation and recognize women's unique challenges in disaster contexts are essential to strengthening the overall resilience of communities in Odisha and other disaster-prone areas.

In conclusion, this study calls for a paradigm shift in disaster management approaches, urging a focus on the specific needs and strengths of women. With the right support and resources, women in Jagatsinghpur can not only survive but lead the way in building resilient, sustainable communities prepared to face future disasters.

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