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Tides of Resilience: Gender and Coping Strategies during Covid Pandemic Across Marine Fisher Households in India

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ABSTRACT

With a renewed focus on gender and households in the post-COVID-19 era, there is a need for community-specific studies to understand the impact of the pandemic on particularly **precarious** communities. This paper addresses this need by focusing on fisher families across nine coastal states in India, attempting to bring to the fore how gender influences their choices of domains and strategies. Examining how women and men—as heads of households—engaged in various capacities (labourer, trader, auction agents), the fisheries sector relied upon different sources to deal with the impact of COVID. Based on an extensive survey covering all nine coastal districts, five major coping domains - consumption, employment, fishing, social support and health- were identified and specific strategies adopted by the households were examined. The paper draws on data from 420 women-headed households and 420 male-headed households and identified the increasing reliance of women on government and community level structures to tide over difficulties contrasting with the reliance male headed households placed on themselves and family. As far as consumption and social coping domains were concerned, increasing reliance by women headed households was on self and community while male headed households relied on family and relatives. There was greater congruence between female- and male-headed households in strategies adopted in the domains of employment and social support, with both opting to engage in part-time fishing and in relief activities respectively. While women preferred to adapt their own tastes to maintain consumption while men relied on using past savings. Finally, as far as health was concerned, women placed greater emphasis on maintaining hygiene while men relied on accessing the vaccine.

INTRODUCTION

The COP 28 noted the need for the world to recognize "the full, meaningful and equal participation and leadership of women" in all aspects of policy making at the international, national and local level. This was based on the need to act on vital and urgent issues such as climate change in order to achieve long term sustainable and equitable solutions. Further, such a need was underscored following the (continuing) impact of COVID-19 on particularly vulnerable communities. The COVID-19 crisis in India underscored a crucial duality that requires policy attention: while gender often defined vulnerability, it also defined leadership. Women were at the forefront of the pandemic response, particularly at the local level, demonstrating leadership in both formal government positions and through vital community mobilization. The role that women play therefore requires more nuanced analyses, with focus on the most basic unit level of analysis-household. Household level studies in India have highlighted the significant role that gender plays in access to and distribution of resources. Thus, from the point of view of equality, the household has been analysed

quite thoroughly. However, for the post-pandemic rebuilding efforts to be effective, they must include a focus on the resilience exhibited at the household level as well. In the wake of the pandemic, it is imperative to foreground the resilience demonstrated at the household level, particularly through a gendered lens. On one hand, numerous studies have shown that the pandemic has intensified pre-existing gender inequalities. Women have borne a disproportionate burden, juggling increased unpaid care responsibilities alongside paid work, all within the constraints of heightened food insecurity, social isolation, and rising instances of domestic violence (Alon et al., 2020; Moshkabadi Mohajer & Moshkabadi Mohajer, 2024; Akalu & Wang, 2023; Erokhin & Gao, 2020). The crisis has underscored the critical role of care work—especially in the context of public health emergencies—and the systemic invisibility of unpaid labour performed by women (Inayatillah & Mellyan, 2022; Hermanto et al., 2021). At the same time, the pandemic has also illuminated new forms of agency that contribute to household resilience.". In many households, women assumed more central, visible, and often formally recognised roles, both within the domestic sphere and in the broader economy. This reflects an emergent and complex form of household-level resilience—one that challenges narrow frameworks of empowerment and sheds light on women's contributions to family welfare and economic adaptation under crisis conditions (Hilmianà & Iskandar, 2024; Lubis et al., 2022; Suharta et al., 2023; Susanti et al., 2022).

While examining the marine fisheries sector in India, compounding the loss of livelihoods, households in the sector – whether male or female headed-have been particularly vulnerable to external shocks and stresses. In understanding that gender plays a role in exposure and sensitivity what one may reasonably assume is that during the pandemic, female and male headed households have reacted through different domains and utilised different strategies to withstand the impacts of COVID-19 pandemic. In identifying the domains, strategies as well as the chief sources – institutions, individuals -that the households have relied upon, the nature of vulnerability can be made more specific thus re-iterating the need for targeted interventions to address the gendered impact of COVID-19 on fisher households in India.

Correll, Benard, and Paik (2007) and McLanahan et al. (2010) show women are socially more vulnerable than men, largely due to higher poverty rates and limited job opportunities. This perception is particularly prevalent regarding female-headed households, as concerns about the transmission of poverty across generations are more pronounced. Connell et al. (2012) notes that especially following the loss of a spouse, female-headed households often face the challenge of balancing multiple, conflicting roles and are frequently compelled to work in marginal, part-time, informal, and low-income jobs due to limited access to well-paying employment opportunities.

Inayatillah and Mellyan (2022) argue that COVID-19 reshaped gender roles, with women taking on greater financial responsibilities through home-based work and small-scale entrepreneurship. Despite their resilience, they faced barriers, highlighting the need for gender-sensitive policies to support long-term shifts in household dynamics. In the context of India, and marine fisheries in particular, Salim et al. (2023) point out that there are gender-based differences on how coping strategies and sources differed among the stakeholders in the coastal states of India during COVID.

Humphries et al. (2022) and Husain et al. (2022) found that the pandemic caused reduction in income and exacerbated the food insecurity of vulnerable women living with HIV in South Africa and the mean dietary score of women worsened significantly after the lockdown started as the diversity of their consumption basket recorded a reduction. Hilmianà and Iskandar (2024) reveals that women played essential roles in enhancing the hygiene and cleanliness of their homes through insisting on sanitization and regular practices such as washing of hands. Further, women assumed leadership of the family following the incapacitation of their spouses by the COVID-19 disease; and took the traditional "breadwinner" role in order to provide for the family's basic needs. This was in addition to the provision of psycho-social support as caregivers to their affected and infected family members (Yoosefi et al., 2020). As far as hygiene is concerned, Malhi et al. (2020) also note that as women have traditionally been responsible for home cleaning and laundry, this has also enabled them to play critical roles in preventing the spread of the COVID-19 disease. While there are contradictory findings on who is more likely to closely adhere to the COVID-19 safety standards and protocols, such as hand-washing, sanitizing, and wearing masks, the pandemic seen women playing a vital role in promoting the efforts to contain the pandemic at the household level by ensuring their children observe hygiene and refrain from activities that would increase their risk of contracting the disease

Thus, while there has been attention paid to the particular vulnerabilities faced by the female headed households during crisis such as COVID-19, there are fewer studies on the female headed households based

in coastal areas. The literature highlighted how these situations demonstrate the innovative coping strategies households adopt. Ideally, this insight can guide policymakers in designing welfare schemes that effectively address the needs of groups facing particular challenges. The paper attempts to find the specificities of female headed coastal households that face the twin challenges of gender and location.

OBJECTIVE

The study explores the role that gender played in deciding coping strategies among the fisher communities in India during the COVID-19 pandemic

RESEARCH QUESTIONS

1. What were the different strategies and sources relied upon by female headed households during the COVID-19 pandemic?

2. How did female-headed households cope during the COVID-19 pandemic? Was it different from how male headed households coped? If yes, what were the reasons for the differences?

DATA AND METHODOLOGY

The data were collected as part of a larger pan-India study using a semi-structured questionnaire across 14 coastal districts in the nine coastal states of India. The study collected data from seven group of stakeholders in the marine fisheries value chain comprising of Labourer, Boat owner, Trader, Marketing Functionaries, Exporter, Consumer and Women. Data was collected during the period August 2022 to January 2023, and following the data collection, qualitative analysis of data was done using Quirkos software. The data were drawn from the national level spanning 3360 households across Indian coastal states and while 30 female headed households were taken from 14 coastal districts each, care was maintained that the household composition remains similar for current analysis. Therefore, equal number of boat owners, traders and marketing functionaries were chosen, however, there were fewer female labourers engaged directly in fishing. However, as has been noted in the literature, there is a greater presence of women in the post harvesting activities especially in the processing sector and therefore women who worked as daily wage labourers in the post-harvest sector were taken for analysis as counter parts to labourers engaged in fishing. A significant difference in the wages earned by men and women must be noted, despite both being employed in the informal part of the marine fisheries sector. For the purpose of this study, a purposive sample of 420 female-headed and 420 male-headed households was drawn from the pan-India dataset. The total 840 sample households were drawn based on the principles of saturation (i.e., when no new information surfaced) as well as keeping in mind the time and resource constraints associated with the study.

Table 1: Demographic details of the sample households

Stakeholder		
(a)	Male headed household	Female headed household
Boat Owners	13(3.10)	13(3.10)
Labourers	196(46.67)	1(0.24)
Marketing Functionaries	21(5)	21(5)
Traders	190(45.24)	190(45.24)
Home based workers	0(0)	195(46.43)
(b) Religion		
Hindu	81.66	81.67
Christian	9.77	13.10
Muslim	8.57	05.24
c) Education		
Illiterate	94(22.29)	112(26.67)
Completed schooling	275(65.55)	300(71.43)
Graduate and above	51(12.14)	8(1.90)
d) Age characteristics		
Less than 35 years	82(19.52)	75(17.86)
Between 35 and 60	228(54.29)	228(54.29)
Above 60 years	110(26.19)	117(27.86)

In the event of the pandemic, it was understood that the impact would be multi-dimensional and in order to arrive at more meaningful conclusions, broad domains needed to be considered. For the purpose of analysis, the impact of the pandemic was divided into five broad areas, namely: (i) Employment, (ii) Social, (iii) Health, (iv) Fishing, and (v) Consumption. Within each of the domains, strategies were identified. These strategies/ categories were derived from the most commonly stated phrases or codes generated from the Focus Group Discussions as well as the Interviews conducted with the Head of the Households. Tables 1(a) and 1(b) show how different codes and categories were analysed from the interviews conducted with female- and male-headed households.(figure 1.)

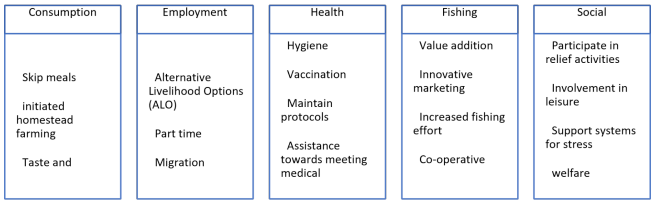


Figure 1: Coping domains and strategies: Conceptual framework

Thematic analysis of data

Thematic analysis, (TA) developed by Braun and Clarke (2022), is an ideal method for analyzing the objectives of this paper due to its flexibility in handling complex data. The study covers diverse topics, including gender roles, household resilience, coping mechanisms, and the effects of COVID-19 on households in India's marine fisheries sector. Thematic analysis offers the adaptability required to explore these multifaceted themes across domains like health, social participation, and consumption habits. Braun and Clarke's approach supports both inductive and deductive methods, enabling the identification of patterns within the data without adhering to a rigid framework.

The paper focuses on identifying coping strategies employed by male- and female-headed households during the pandemic. Thematic analysis is particularly suited for uncovering recurring themes in qualitative data, such as the differing health priorities and support systems for men and women. This method enables a systematic categorization of these patterns, making interpretation more straightforward and facilitating meaningful conclusions. Braun and Clarke's approach also emphasizes the researcher's active role in interpreting the data, a crucial consideration when addressing sensitive topics like gender disparities and household resilience. Reflexivity is encouraged, promoting a thoughtful and context-aware analysis.

TA follows a clear and systematic process, including steps such as data familiarization, generating initial codes, identifying themes, reviewing, defining, and naming themes, and producing the final report. This structured approach ensures transparency and rigor, making it easier for other researchers to assess the methodology and findings.

Conceptual Framework: Gendered Social Vulnerability and Resilience

The study adopts a Gendered Social Vulnerability and Resilience Framework to examine how male- and female-headed households in India's coastal fisheries sector responded to the COVID-19 crisis. Drawing from key contributions in vulnerability and resilience literature (Turner et al., 2003; Adger, 2006; Cutter et al., 2008; Enarson & Chakrabarti, 2009), this framework allows for an intersectional, place-based understanding of how crises impact differently positioned actors and how adaptive strategies emerge from both structural conditions and household-level agency.

At its core, the framework understands vulnerability as a function of exposure, sensitivity, and adaptive capacity. Female-headed households, often occupying more precarious positions within the fisheries value chain (e.g., post-harvest workers, informal labourers), were more sensitive to disruptions in employment and access to markets. Their exposure was also heightened due to gendered caregiving roles and limited mobility. However, the study finds that these households also demonstrated significant adaptive capacity through reliance on collective structures such as Self-Help Groups (SHGs), engagement in home/community gardening, and use of cooperative fishing and digital marketing practices.

The framework also incorporates the role of influencing factors, such as:

- Institutional access (e.g., NREGS, PDS, health infrastructure)
- Social capital (e.g., SHGs, neighbourhood groups, buyer networks)
- Household composition and roles (e.g., caregiving responsibilities, labour availability)
- Livelihood structures (e.g., informal vs. asset-based activities)

These factors influence the coping domains identified in the study: Employment, Consumption, Health, and Social Participation. Additionally, "fishing" has also been incorporated to capture the realities of the marine fisheries sector on which the study is based. Each domain reflects gendered patterns of coping:

E.g.: Women relied more on subsistence-based ALOs (kitchen gardens), hygiene measures, and community relief participation while men often opted for migration, longer work hours, and asset liquidation.

Ultimately, this conceptual framework reiterates that resilience is not gender-neutral. It is shaped by intersecting axes of identity, institutional context, and spatial marginality. Recognizing the gendered nature of vulnerability and adaptation is essential to designing equitable post-crisis interventions, especially in sectors like fisheries that are heavily dependent on informal labour and social networks. This approach aligns with

broader calls in resilience scholarship to move beyond technocratic solutions and centre the lived experiences of those most affected by systemic shocks, particularly women in the Global South.

RESULTS AND DISCUSSION

The socio-demographic details of the 840 households are given in table 1. (table 1.)

PROFILE OF MALE- AND FEMALE-HEADED HOUSEHOLDS

a) Stakeholder Occupation

The distribution of stakeholders shows notable gender-based occupational differences. Boat ownership is equal across male- and female-headed households, each accounting for 3.10%. Labour roles are overwhelmingly male-dominated, with 46.67% of male-headed households engaged in this category, compared to only 0.24% among female-headed households. In contrast, home-based work is exclusively associated with female-headed households, with 46.43% involved, while no male-headed households participate in this category.

Marketing and trading roles display gender parity. Both male- and female-headed households have 5% participation in marketing functions and 45.24% in trading activities.

b) Religion

The religious composition is broadly similar across both groups. Hindus constitute the majority in both male- and female-headed households, at 81.66% and 81.67% respectively. However, there is a slightly higher representation of Christians among female-headed households (13.10%) compared to males (9.77%). Conversely, Muslim representation is higher among male-headed households (8.57%) than among females (5.24%).

c) Educational Attainment

Education levels reveal some important contrasts. Illiteracy is higher among female-headed households (26.67%) compared to male-headed households (22.29%). Nevertheless, a higher percentage of women have completed schooling (71.43%) compared to men (65.55%). However, graduate-level education and above is significantly more common in male-headed households (12.14%) than in female-headed ones (1.90%), indicating a gender gap in access to higher education.

d) Age Distribution

The age profile is fairly balanced across the two household types. The proportion of individuals below 35 years is slightly higher in male-headed households (19.52%) compared to female-headed households (17.86%). The majority in both groups fall in the 35–60 age category, accounting for 54.29% each. A slightly higher proportion of individuals in female-headed households are above 60 years of age (27.86%) compared to males (26.19%).

Theme 1: Maintaining consumption patterns: "We tried our best to maintain normality"

The everyday needs of households were consolidated under the theme of consumption. Among female-headed households, 54 per cent managed the economic burden by adapting to changing tastes and preferences and reducing expenditure wherever possible—often to the extent of skipping meals. Reduction in consumption expenditure emerged as a prominent coping strategy in this group. This aligns with findings by Power et al. (2020), who note that women, especially in female-headed households, disproportionately bore the burden of food insecurity and undertook the emotional and logistical work of rationing and reallocating food within households.

In contrast, male-headed households emphasized the need to maintain a minimum standard of consumption. To do so, they often relied on past savings or the sale of assets. Substitution of consumption needs—where less essential items were replaced or foregone—was also observed among these households. As Alon et al. (2020) argue, gendered roles during crises often shape economic decision-making, with men tending to protect consumption standards linked to social status, while women prioritize family survival and basic needs. (table 2.)

Consumption needs are particularly complex due to what Duesenberry (1949) referred to as the ratchet effect, wherein consumption patterns are more easily adjusted upward than downward. This asymmetry increases the risk of household indebtedness during economic shocks. The pandemic amplified such risks. As Erokhin and Gao (2020) and Swinnen and McDermott (2020) observed, COVID-19 inflicted a disproportionate impact on food security across countries with varying income levels, with lower-income and marginalized households—including female-headed ones—most severely affected.

Moreover, Ribeiro-Silva et al. (2020) highlight that the pandemic exacerbated pre-existing gender inequalities in access to food and nutrition, as women were

Table 2: Theme 1: Maintaining consumption patterns

Theme: Consumption	Categories	Response
Female headed households	Taste and Preferences (54%)	Change self
		"The lockdown hit us hard. We couldn't go out to fish as much, and the markets remained closed. We needed to figure out how to make the most of what we had." "We've always relied on the sea, but now we need to adapt, we started using the smaller catches more wisely. If we can't catch our usual fish, we can make use of the shellfish and seaweed along the shore."
	Skip activities/meal (42.50%)	Cut down on expenses *"And we could reduce our own intake a little. Instead of eating fish every day, we could stretch our meals by including more rice or using preserved fish from our stores. It won't be easy, but if we all do it together, we'll make it through."*
Male headed households	Sale of assets(89%)	

more likely to work in informal sectors with limited social protection, leading to increased vulnerability. In many cases, this meant women absorbed the shock by skipping meals themselves to ensure their children or elderly parents could eat.

Male headed households also relied upon substitution in order to meet consumption needs when it concerned matters of food. For example, fish featured as an essential food item among the surveyed households, therefore consumption was maintained through switching between inland and marine species rather than skipping of fish altogether. In this aspect there were also certain culinary innovations that women headed households undertook such as using of spices / drying of fish to make it last longer. Another difference between male and female headed households was in terms of debt as a source of financing expenditure. Gender characteristics have an impact on household debt willingness, debt level, and channels. Chai and Zhou (2020) point to the fact that male headed household significantly increase the likelihood of household indebtedness, while female headed households were more hesitant to add more to current debt levels. Thus, differences in risk aversion were one factor that led to different coping strategies among male and female headed households.

Almenberg et al. (2021) report that the influence of gender on household debt levels is, to some extent, shaped by differing standards of debt measurement, leading to inconsistent conclusions across studies. However, beyond whether individuals borrow or not, it is the nature and purpose of borrowing that often diverge along gender lines. Women, for instance, were more likely to borrow smaller amounts and for short-term needs—often linked to immediate consumption, caregiving responsibilities, or food purchases—whereas men were more inclined to borrow larger sums, typically for long-term investments or to sustain status-related consumption patterns. These differences are crucial in understanding how households coped with economic shocks during the COVID-19 pandemic. In female-headed households, borrowing behaviour often reflected urgent, survival-driven decisions, such as managing food insecurity or medical needs, which were frequently short-term and recurrent. In contrast, male-headed households, with greater access to formal credit or assets, were more likely to rely on structured loans or asset liquidation to maintain a stable consumption level. Thus, gendered patterns of borrowing are not just financial strategies but are deeply embedded in broader socio-economic roles and responsibilities within households.

Theme 2: Employment: the work on our end couldn't just stop

Our study revealed significant gendered differences in coping strategies adopted during the COVID-19 pandemic, particularly in the realm of employment and adaptation of livelihood options (ALO). Female-headed households displayed a greater degree of livelihood precarity, often characterized by irregular employment, multiple part-time jobs, and a higher engagement in unpaid care work. About 44% of women-headed households and 34.72% of male-headed households took up part-time and multiple jobs to sustain their households through the crisis. This is consistent with existing literature that documents lower female labour force participation in India, especially concentrated in the informal sector (Klasen & Pieters, 2012, 2015; Silberman & Kapsos, 2013; Bhalla & Kaur, 2011; Mazumdar & Neetha, 2011; Hirway, 2012), making women's livelihoods more vulnerable during economic shocks.

However, our findings also point to innovative forms of adaptation adopted by women, particularly through

home and community-based strategies. A remarkable 84% of women reported starting home and community gardens, facilitated through their membership in self-help groups (SHGs). These gardens served dual purposes: ensuring food security and reducing dependence on market-based consumption. This form of community-based adaptation highlights the agency of women in reshaping household survival strategies and underscores their capacity for collective resilience a contrast to the dominant narrative of passivity.

In contrast, male-headed households relied more on migration, even if limited to shorter distances due to mobility restrictions. Migration, however, was not a viable ALO for most women due to mobility constraints, caregiving responsibilities, and safety concerns. In fact, our findings mirror national trends where women migrant workers returned home due to job loss, unable to sustain urban employment (ILO, 2021).

Moreover, state-level differences in adaptive strategies were noticeable. For example, women in Kerala and Tamil Nadu—states with strong SHG networks and robust decentralized governance were more likely to take up community gardening and engage in NREGS work, while those in Odisha and Maharashtra showed greater reliance on petty trade and informal wage labour. These differences point to the role of institutional support and pre-existing community networks in shaping gendered adaptive capacities. The pandemic also led to shifts in domestic roles. About 33% of women-headed households and 28% of male-headed households reported increased male participation in household chores—perceived by some respondents as a temporary yet positive shift. However, whether this shift will translate into long-term gender role reconfigurations remains to be seen.

Previous research by Srivastava and Srivastava (2010) had already noted the stagnation of the rural economy and limited job growth. This concern was reiterated post-COVID by Dreze([1] 19 April 2023), who pointed to declining real rural wages, pushing many into 'subsidiary' employment status. In this context, our study reaffirms that female-headed households often remain on the fringes of economic recovery, relying on a mix of informal income, subsistence strategies, and unpaid labour.

Yet, not all insights are grim. Suharta et al. (2023) point to emergent opportunities, such as women's strategic use of natural resources in beach tourism sectors. Similar patterns of adaptive innovation can be seen in our study, particularly in how women leveraged their SHG affiliations to build micro-enterprises and food gardens. These findings align with current global disaster risk reduction priorities, as outlined in the **Sendai** Framework (2015-2030), which succeeded the Hyogo Framework and strengthened the call for integrating gender into all DRR and climate change strategies.Our study supports this perspective, emphasizing that women are not just victims but agents of change—capable of taking on leadership roles, especially during crises. Adaptation measures during COVID-19 were deeply gendered. Women-headed households adopted diverse livelihood strategies, particularly home-based and collective forms of adaptation, that were significantly influenced by institutional support structures such as SHGs. In contrast, male-headed households relied more heavily on migration and asset-based coping. These differences underline the importance of recognizing gendered capacities and constraints in designing inclusive post-pandemic recovery policies. (table 3.)

Theme 3: Fishing: Fishing is a labour of love and about the feeling a sense of community

The COVID-19 pandemic not only disrupted formal employment but also forced households in coastal communities to reconfigure traditional livelihood practices. As explored earlier under Adaptation of Livelihood Options (ALOs), female-headed households(44.87% opted for ALOs) and showed considerable ingenuity in navigating the crisis—ranging from participation in multiple jobs to establishing home and community gardens. These strategies were often underpinned by institutional linkages, especially through Self-Help Groups (SHGs), which provided a platform for collective action and mutual support.

This adaptive orientation also extended into the fisheries sector. Cooperative fishing practices among female-headed households became a critical form of ALO. By pooling labour and marketing resources, women ensured livelihood continuity despite lockdown-related restrictions. These forms of collective work are consistent with the community-based adaptive strategies seen in kitchen gardens and SHG micro-enterprises discussed earlier. Selling fish together, leveraging long-standing buyer networks, and maintaining quality for trusted customers all reflect the strategic mobilization of bonding social capital, which also enabled successful ALOs like subsistence food production and informal trade.

Moreover, digital innovations in marketing—such as using WhatsApp for fish sales—further align with the broader trend of women adopting flexible, home-based livelihood strategies. These innovations mirror the non-migratory ALOs adopted by women else-

Table 3: Theme 2: Employment

Theme: Employment	Categories	Response
Female headed households	ALO (44.87%)	*"The lockdown was tough on everyone, but it hit us particularly hard. We had so many different kinds of work to do, and it felt like there was never enough time." Well, apart from the usual housework, I had to help out with farm-based labor and animal husbandry. It wasn't easy, especially with the restrictions in place. …there was also the dry fish work and fish sorting. It was crucial to keep that going since it's our main source of income. Even though everything was on lockdown, the work on our end couldn't just stop. "It wasn't easy, but we had no choice. The farm and animals needed attention, and the fish had to be sorted and dried to maintain some level of income. It was a matter of survival, really. Everyone in the household pitched in where they could. It was hard work, but it brought us closer together as a family, too. Everyone understood the importance of each task and did their part"*
		Did farm based labour, animal husbandry (59%)
		Dry fish work and Fish sorting (8.33%)
		Started home/community kitchen gardens/ SHG (84%)
	Part time and multiple jobs (34.72%)	Engaged in fishing for less work due to increase in competition (those who migrated, returned home) (42%)
Male headed households	Migration (37%)	

where in our study, shaped by mobility constraints, care responsibilities, and safety concerns. The use of digital tools and family support—especially through younger members—reinforced the household's economic resilience and echoed similar support systems seen in garden-based and SHG-led adaptations.

In contrast, male-headed households continued to rely more on asset-based and migratory ALOs, often through intensified fishing efforts such as longer hours and exploration of new fishing zones. However, these strategies were not without costs. Overfishing and reduced availability of marine resources emerged as new stressors, indicating that such adaptation may be less sustainable in the long run compared to the collective, community-oriented approaches adopted by many female-headed households.

Ultimately, the integration of fishing into household-level ALOs highlights how gendered constraints and opportunities shape responses to crises. While men pursued resource-intensive strategies rooted in physical mobility and asset deployment, women often turned to community resilience, cooperation, and diversification—underscoring that ALOs are not merely economic responses but deeply social, gendered, and relational in nature. (table 4.)

Table 4. Theme 3 Fishing

Theme 4: Health : " Wash your hands" became a bit of a chant in our house

Health priorities seemed to differ based on the work location and as the spaces inhabited by men and women were varied; with women working on more enclosed structures while men were tasked with activities that involved more movement and mobility. Therefore, FHH seemed to focus on maintaining hygiene (58.61%), while for MHH the focus was on accessing vaccines (65%) as soon as possible as work involved considerable travel and/or movement. The kind of work undertaken by women and men therefore seemed to determine the priorities of health strategies. As women were engaged in home based or working in closer proximity to their homes, women found that maintaining hygiene while following the COVID-19 protocols to the best extent that they could were the most effective coping strategies.(table 5.)

Theme 5: Social aspects of dealing with the pandemic: We are all in it together

For social domain and the associated strategies adopted both men and women seemed to comprehend the 'public' nature of the crisis with households relying on the larger community level structures such as neighbourhood groups, residential associations, and local government to meet the challenges as well as to participate actively in the relief activities. Involving oneself in such activities seemed to further solidify relations and lend a sense of purpose during COVID-19. The women shared moment of camaraderie, knowing that even in the face of adversity, they have each other to lean on (The Scroll, 13 March 2021; ORF, 17 August 2021). [2]

Table 4

Theme : Fishing	Categories	Response
Female headed households	Co-operative fishing	"We decided that it was better to sell together, pooling our resources and efforts." "Yes, together we could reach more buyers, even during the lockdown. It was a good call." "And it wasn't only about the business side of things. Selling together during COVID created a sense of unity among us. This made us all feel good, like we were facing the challenge as one community."
	Social capital	"We had few households to whom we had been selling for years; we focused on getting them the best fish possible."
	Innovative marketing models	"The children helped us with selling online- especially through WhatsApp and other online mediums"
Male headed households	Increase in fishing efforts	"Fewer boats, longer hours, and even the use of advanced technology. But it's also leading to overexploitation in certain areas."

Table 5: Theme 4 Health

Theme: Health	Categories	Response
Female headed households	Hygiene (58.61%)	"What we could do, maintain neatness/cleanliness around us *It became a bit of a chant in our house, but it felt necessary. It was something we could do, even when everything else felt out of control."*
		"Wash hands, keep surfaces clean"
		"Use masks and sanitizers often"
Male headed households	Vaccination (65%)	"*Vaccination was one of the most accessible and promoted solutions, especially in areas where healthcare infrastructure was already strained." "We relied on getting the vaccine as quickly as possible" "As other health services became less accessible, we knew that getting vaccinated was the best possible way, everything else was a temporary relief only.."*

During the COVID-19 pandemic, social coping strategies manifested differently between female- and male-headed households, particularly in their participation in community relief activities. Female-headed households showed a higher rate of involvement (51.11%) compared to male-headed households (31.11%), driven largely by a strong sense of duty, empathy, and community solidarity. Women described their participation as challenging yet deeply rewarding, emphasizing that helping others gave them a sense of purpose and emotional strength. They often referred to neighbours as family, highlighting the importance of mutual aid and collective resilience. In contrast, male-headed households expressed that while the economic impact of the pandemic—such as the loss of income from fishing—was severe, engaging in relief activities provided emotional healing and helped them stay connected and purposeful. Their participation was framed more as a way to cope with personal and communal loss, offering emotional support and a renewed sense of belonging. Overall, while both groups used social engagement as a coping mechanism, female-headed households tended to derive empowerment through caretaking roles, whereas male-headed households found emotional resilience and solidarity through shared community service. (table 6.)

Table 6. Theme 5 Social

As far as sources relied upon by the households were concerned, women depended on the state/government and the larger community level structures (such as neighbourhood groups,) to meet immediate and long-term needs of the households while male headed households seemed to rely on self/ family in order to meet various needs related to the four coping domains. While strategies decided the sources of coping domains, this also points for specific and targeted interventions required in order to meet the requirements of households.

CONCLUSION

The analysis of gender-based policies during the COVID-19 pandemic, particularly within the context of India, underscores the importance of recognizing and enhancing the role of women in household resilience and decision-making. The pandemic has exposed and exacerbated existing gender disparities, yet it has also highlighted the critical leadership and adaptive strategies employed by women, particularly in the household and community spheres. The case of the marine fisheries sector in India further emphasizes the differentiated impacts of the pandemic on male- and female-

Table 6

Theme: Social	Categories	Response
Female headed households	Participation in relief activities (51.11%)	*We were all were part of the food distribution team during the COVID lockdowns. That was tough. it was challenging, but honestly, it was also incredibly rewarding. I was happy—grateful, even—to help others meet their food needs during COVID. So many people were struggling, and just knowing I could make a small difference kept me going. Yeah, it was a difficult time for everyone, but being able to support my community in some way made it all feel worthwhile. We were all in it together.*
		Neighbours are family, helping them when possible
Male headed households	Participation in relief activities (31.11%)	It felt nice to help others, it made us feel like a family. *Even though our boats were tied up and our nets were dry, we found another way to support each other. It gave us a sense of purpose. I saw that even though our incomes were cut, our spirit wasn't. It's true. In a way, participating in those activities was healing. It was more than just helping others—it was helping ourselves to stay strong, to stay connected.*

headed households, revealing distinct strategies and priorities shaped by gender roles.

Methodologies like the "Household Dialogue," piloted by Mercy Corps in Nepal and Niger to shift gender norms at the household level, offer a valuable tool for addressing these disparities by encouraging more inclusive and equitable decision-making. By acknowledging the gendered nature of vulnerability and resilience, policies can be better tailored to support both men and women in coping with and recovering from crises. The differing health strategies, social engagement, and consumption adjustments observed between male- and female-headed households highlight the need for targeted interventions that consider the unique challenges and strengths of each group.

As we move forward in rebuilding after the pandemic, it is crucial to leverage the momentum of women's increased visibility and leadership within households and communities. This involves not only addressing the immediate needs of vulnerable populations but also fostering long-term resilience through gender-sensitive policies that empower women and promote equitable resource distribution. By focusing on the household as a fundamental unit of analysis, we can better understand and support the diverse strategies employed by households to navigate crises, ultimately leading to more sustainable and inclusive development outcomes.

In the context of India's marine fisheries sector, recognizing the gendered dimensions of vulnerability and resilience is key to crafting effective interventions. The varied strategies and sources of support relied upon by male- and female-headed households reflect the broader societal structures and norms that influence decision-making and resource allocation. As such, policymakers must ensure that interventions are not only gender-sensitive but also context-specific, addressing the unique needs of different households and communities. The lessons learned from the COVID-19 pandemic and the responses observed at the household level provide valuable insights for future policy development. By centering gender in our analyses and interventions, we can create more resilient and equitable societies, better equipped to withstand future shocks and stresses. The ongoing work to promote gender equality in policy-making, as emphasized by COP 28, must continue to prioritize the full, meaningful, and equal participation of women at all levels, ensuring that their contributions are recognized and supported in the pursuit of sustainable and just outcomes for all.

[1] Drèze, J. (2023, April 19). *The elephant in the room.* The Indian Express. https://indianexpress.com/article/opinion/columns/jean-dreze-writes-the-elephant-in-the-room-rural-wages-8563219/ Last accessed on 14 July 2025

[2] Soni, Paromita.(13 March 2021) 'One cup of kadak chai': How Mumbai's Koli women survived the coronavirus pandemic The Scroll https://scroll.in/article/989295/one-cup-of-kadak-chai-how-mumbais-koli-women-survived-the-coronavirus-pandemic and Observer Research Foundation. (17 August 2021**).** COVID-19 and the climate impact on the Koli fishing community of Mumbai. https://www.orfonline.org/expert-speak/covid-19-and-the-climate-impact-on-the-koli-fishing-community-of-mumbai Last accessed on 15 Aug. 24

REFERENCES

Achieng, M. S., & Malatji, M. (2022). Digital transformation of small and medium enterprises in sub-Saharan Africa: A scoping review. *Journal for Transdisciplinary Research in Southern Africa, 18*(1), 1–13. http://dx.doi.org/10.4102/td.v18i1.1257

Akalu, L. S., & Wang, H. (2023). Does the female-headed household suffer more than the male-headed from COVID-

19 impact on food security? Evidence from Ethiopia. *Journal of Agriculture and Food Research, 12*, 100563. https://doi.org/10.1016/j.jafr.2023.100563

Almenberg, J., Lusardi, A., Säve-Söderbergh, J., & Vestman, R. (2021). Attitudes towards debt and debt behavior. *The Scandinavian Journal of Economics, 123*(3), 780–809. https://doi.org/10.1111/sjoe.12419

Alon, T., Doepke, M., Olmstead-Rumsey, J., & Tertilt, M. (2020). *The impact of COVID-19 on gender equality* (Working Paper No. w26947). National Bureau of Economic Research. https://doi.org/10.3386/w26947

Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. SAGE.

Chen, M. A., & Raveendran, G. (2012). Urban employment in India: Recent trends and patterns. *Margin: The Journal of Applied Economic Research, 6*(2), 159–179. https://doi.org/10.1177/097380101200600204

Connell, J., Brazier, J., O'Cathain, A., Lloyd-Jones, M., & Paisley, S. (2012). Quality of life of people with mental health problems: A synthesis of qualitative research. *Health and Quality of Life Outcomes, 10*, 1–16. https://doi.org/10.1186/1477-7525-10-138

Correll, S. J., Benard, S., & Paik, I. (2007). Getting a job: Is there a motherhood penalty? *American Journal of Sociology, 112*(5), 1297–1338. https://doi.org/10.1086/511799

Erokhin, V., & Gao, T. (2020). Impacts of COVID-19 on trade and economic aspects of food security: Evidence from 45 developing countries. *International Journal of Environmental Research and Public Health, 17*(16), 5775. https://doi.org/10.3390/ijerph17165775

Hermanto, A., Patrianti, T., Taufan, A., & Marselli, H. (2021, November). The multiple role of fisherman women in the COVID-19 pandemic in Jakarta. In *3rd Jogjakarta Communication Conference (JCC 2021)* (pp. 79–81). Atlantis Press. https://doi.org/10.2991/assehr.k.211121.018

Hilmianà, H., & Iskandar, Y. (2024). The role of women in improving the welfare of their families to improve their conditions during the COVID-19 pandemic in Indonesia. *Cogent Business & Management, 11*(1), 2373465. https://doi.org/10.1080/23311975.2024.2373465

Inayatillah, I., & Mellyan, M. (2022). Gendering COVID-19: The role of women in strengthening the family economy. *Gender Equality: International Journal of Child and Gender Studies, 8*(2), 123–134. https://doi.org/10.22373/equality.v8i2.13054

Jhajharia, G., & Sharma, G. (2021). Impact of COVID-19 pandemic on entrepreneurial actions in India: A thematic analysis. *JIMS8M: The Journal of Indian Management & Strategy, 26*(3), 35–47.

Lubis, R. H., Napitupulu, R. M., & Izzah, N. (2022). The role of women in improving the family economy amid COVID-19 pandemic. *Jurnal Al-Qardh, 7*(1), 16–29. https://doi.org/10.23971/jaq.v7i1.3894

McLanahan, S., & Beck, A. N. (2010). Parental relationships in fragile families. *The Future of Children, 20*(2), 17. https://doi.org/10.1353/foc.2010.0007

Moshkabadi Mohajer, H., & Moshkabadi Mohajer, Z. (2024). Investigating the level of vulnerability of women compared to men in the era of COVID-19. *Woman in Development & Politics, 22*(2), 539–563. https://doi.org/10.22059/jwdp.2023.362047.1008355

Motkuri, V., & Naik, S. V. (2016). Growth and structure of workforce in India: An analysis of census data. *The Indian Economic Journal, 64*(1–4), 57–74. https://doi.org/10.1177/0019466216652753s

Octastefani, T., & Kusuma, B. M. A. (2023). Suddenly home: Returned women migrant workers due to COVID-19 pandemic seeking emergency income and equal gender roles in the household. *Jurnal Ilmu Sosial dan Ilmu Politik, 27*(1), 19–31. https://doi.org/10.22146/jsp.72455

Rachmawati, L., Cahyono, H., Hanifa, N., Vansyah, L. R. R., & Yanuarti, W. A. (2023). Factors affecting Indonesian women's spending during the COVID-19 pandemic. *KnE Social Sciences*, 814–826. https://doi.org/10.18502/kss.v9i4.15123

Rahman, J. H., Mumtaza, F. H., Putra, R. T. N., Kintoro, F. S., Rahayuli, R., Nur'aini, A. O., ... Putri, R. F. (2021). COVID-19 and gender role in unemployment: How women in Special Capital Region of Jakarta are less likely to be unemployed during economic disturbance. In *E3S Web of Conferences* (Vol. 325, p. 06014). EDP Sciences. https://doi.org/10.1051/e3sconf/202132506014

Riyana Miranti, Sulistyaningrum, E., & Mulyaningsih, T. (2022). Women's roles in the Indonesian economy during the COVID-19 pandemic: Understanding the challenges and opportunities. *Bulletin of Indonesian Economic Studies, 58*(2), 109–139. https://doi.org/10.1080/00074918.2022.2105681

Rustagi, P. (2013). Changing patterns of labour force participation and employment of women in India. *Indian Journal of Labour Economics, 56*(2), 215–241.

Salim, S. S., Kumaran, A., Athira, N. R., Anuja, A. R., & Narayanakumar, R. (2023). Factors influencing source of coping strategies in health in marine fishers during COVID-19 pandemic: An exploratory study of Kerala, India. *Indian Research Journal of Extension Education, 23*(4), 52–59.

Sarkar, S., Sahoo, S., & Klasen, S. (2019). Employment transitions of women in India: A panel analysis. *World Development, 115*, 291–309. https://doi.org/10.1016/j.worlddev.2018.12.003

Suharta, R. B., Septiarti, S. W., Kusumawardani, E., Santi, F. U., & Syamsi, I. (2023). Analysis of women traders' approaches to resilience during the outbreaks of COVID-19. *Journal of Nonformal Education, 9*(1), 138–150. https://doi.org/10.15294/jne.v9i1.42494

Swinnen, J., & McDermott, J. (Eds.). (2020). *COVID-19 and global food security*. International Food Policy Research Institute. https://doi.org/10.2499/9780896293878

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