

**From Livelihood to Loss: Climate Change and Socioeconomic Vulnerability among
Communities of Manchar Lake, Sindh**

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ABSTRACT

This study has investigated the effects of climate change and environmental degradation on the lives and daily experiences of communities living around the Manchar Lake, Sindh. The research story assumed a qualitative research design, investigating how alterations in the environment redefined socioeconomic vulnerability and influenced the survival strategy of the local people. The information was gathered by conducting in-depth interviews and focus group discussions with the residents, fishermen, and household members who wholly rely on the lake as a source of their livelihoods, as well as key informants of local institutions and local organizations. The results showed that the environmental alterations due to climate, such as water contamination, depleting fish populations, and the growing rate of extreme weather, had seriously affected traditional livelihoods. The respondents noted a great loss of income, compelled work changes, and displacement in their original settlements in isolated instances. These alterations not only destabilized economically, but also helped to marginalize social groups, erode culture, and increase the level of insecurity in already vulnerable communities. Community vulnerability was further enhanced by the lack of effective institutional support and policy-responsive initiatives. The research found that climate change had turned Manchar Lake into a place of livelihood into a place of socioeconomic hardship, with the strong need to bring together community-based and climate-resilient development options to assist the affected population.

Keywords: climate change, environmental degradation, Manchar Lake, water pollution, declining fish stocks, climate-resilient.

INTRODUCTION

The issue of climate change has been drawing more and more attention as one of the most severe issues of the twenty-first century, which has extensive environmental, economic, and social implications. Although its effects are on a global scale, they are not uniform since they have a disproportionate effect on communities living in the developing nations that rely on natural resources as their livelihoods (Intergovernmental Panel on Climate Change, 2022). Climate change in these contexts is not just an environmental phenomenon but a very social process that alters the vulnerability, inequality, and survival patterns. When environmental degradation is added to the structural inequalities that exist, it increases exposure of the disadvantaged communities to risks, which increases socioeconomic vulnerability (Adger, 2006).

It is not a secret that Pakistan is one of the most climate-prone nations worldwide, with growing heat, unpredictable precipitation, extended droughts, and an ever-increasing number of extreme weather events like floods (Global Climate Risk Index, 2021). Climate change has had far-reaching consequences on the water resources, agriculture, and rural livelihoods, especially in arid and semi-arid areas. Both climatic and anthropogenic factors have led to changes in the ecology of the water bodies in the country, such as rivers, lakes, and wetlands. The changes have interfered with the traditional

livelihood systems and helped to increase socioeconomic instability among populations that depend on these ecosystems to survive (Zubair & Zhang, 2025).

Manchar Lake, in Sindh province, is among the worst-hit ecological areas. Previously considered to be the largest freshwater lake in Pakistan, Manchar Lake has been a crucial ecological and economic asset that sustained thousands of lives, especially the local fishing villages called Mohana. These communities have relied on the lake to fish and conduct transportation and cultural activities over generations to create a distinctive socio-ecological system that is deeply connected to the health and productivity of the lake (Azeem, Memon, & Mari, 2021). Nonetheless, in recent decades, the Manchar Lake has undergone drastic deterioration of the environment and has become a very contaminated and ecologically strained water source.

Climate change and man-made factors can be seen as the cause of the degradation of Manchar Lake. The decrease in freshwater inflows as a result of upstream water diversion, together with the increase in temperatures and precipitation changes, has dramatically changed the hydrology of the lake. Concurrently, the release of the untreated industrial effluents and agricultural run-offs into the lake has contributed to a rise in salinity and contamination, making the water inappropriate both to human and aquatic life (Soomro et al., 2018). This has led to a depletion of fish stocks and a great loss of biodiversity. Through such ecological alterations, the livelihood of the local communities has been directly weakened, especially the fishing communities.

Sociologically, the effects of environmental degradation are far-reaching than ecological destruction, but they include significant alterations in social structures, relations, and identities. Loss of livelihood is not just an economic phenomenon but a social process which impact on migration patterns, social exclusion, and marginalization. In the case of communities surrounding Manchar Lake, the decrease in fish stocks and water quality has compelled many households to leave traditional jobs and find alternative ways of making a living, which, in most instances, are precarious and informal (Ilahi, I. N., 2023). Such a shift has created a loss of culture and a feeling of displacement in the populations that have been affected, as it has broken their social networks of cultural practices.

These dynamics can be explained in terms of the notion of socioeconomic vulnerability. Exposure to environmental risks, sensitivity to environmental risks, and ability to adapt or cope with the changing conditions combine to create vulnerability (Adger, 2006). The communities in the Manchar Lake scenario are extremely vulnerable to environmental degradation, are highly sensitive since they rely on the lake as their source of livelihood, and in most cases, they lack the resources and institutions to effectively cope with the changes. All these factors put them in a state of increased vulnerability, when any slight environmental change may lead to serious social and economic effects.

Furthermore, climate change and environmental degradation are more likely to increase the existing social inequalities, especially based on class, gender, and occupation. In fishing societies, women in particular tend to be disproportionately victims of environmental stress because they have to take care of the household, water harvesting, and provide income-generating activities. With the scarcity of resources, their workload grows, and they end up having fewer opportunities (United Nations development Program, 2020). Equally, the less privileged populations who have less access to education, healthcare, and access to financial matters are less able to endure environmental jolts, perpetuating poverty and marginalization cycles.

The other environmentally important aspect of change is the influence of the environmental change on culture-identity and social cohesion in Manchar Lake. The Mohana community (also known as the boat people) has a unique cultural identity in close relation to the lake and its ecosystem. Environmental degradation has been threatening to destroy their traditional way of life, such as the use of houseboats as the main mode of livelihood, and fishing as a major occupation. With livelihoods becoming unsustainable, numerous families have to migrate or switch to other jobs, which results in loss of cultural practices and community ties (Azeem, Memon, & Mari, 2021). This loss of culture is a hidden

face of climate change, and it is important to have a more comprehensive perception of the effects of the issue.

Although these challenges are very harsh, the experiences of any community surrounding Manchar Lake have not been adequately studied. A large part of the literature on climate change in Pakistan is macro-level analysis or technical literature (e.g., hydrology and environmental management). Although these studies are relevant, they do not usually take into consideration the lived experiences of individuals and communities that are directly impacted by environmental change. Qualitative research is required to hear the voices, perceptions, and daily lives of these communities, which will give a better understanding of how climate change is felt on the ground.

In this research, the gap to be filled is the case of taking a qualitative approach to research the lived experiences of the communities that live around Manchar Lake. The study will elicit the social aspects of climate change, which can be unseen in quantitative studies, by examining how people are cognizing and reacting to the environmental changes. It discusses the impact of environmental degradation on livelihoods, social relationships, and cultural identities, and how they culminate in socioeconomic vulnerability.

Moreover, the research will be relevant to the larger discussions in environmental sociology and development studies since it brings out the interrelatedness of ecological and social systems. It highlights that climate change needs to be dealt with by not only technical means but also policies that are socially inclusive and consider the needs and views of the vulnerable groups. With Manchar Lake, this implies coming up with interventions that can support sustainable livelihoods, amplify adaptive capacity, and advocate for social equity.

To sum it up, climate change and environmental degradation have turned Manchar Lake into a food source into a location of socioeconomic woe. The effects of these changes have a profound social dimension on the local communities, as they can not only influence the economic well-being of the local community but also the cultural identity of the local community and its social cohesion. Through the lived experiences of these communities, the present study is helpful in giving an insight into the intricate relationship between environmental change and social vulnerability. It highlights the necessity of integrated and community-based interventions on climate adaptation and development, especially where the livelihoods of the people are strongly linked with the vulnerable ecosystems.

Problem Statement

Climate change and environmental degradation have steadily taken their toll on the vulnerable ecological areas, especially in developing countries, where communities are directly reliant on the availability of natural resources to survive. Manchar Lake, one of the most affected areas, has been a source of ecological degradation in Pakistan, where the livelihoods of traditional fishers have been greatly affected. The lake has, over the years, evolved into an environmentally challenged area due to low freshwater inflows, pollution, and climatic changes. Such transformations have resulted in a reduction of fish resources, income, and growing food insecurity among the locals. Consequently, most households have been compelled to change occupations or migrate, resulting in increasing socioeconomic vulnerability, social dislocation, and community weakening.

Research Gap

In Pakistan, the available literature on climate change has been much more concerned with environmental and hydrological aspects, and little has been done on the social impacts of climate change. In Manchar Lake, the majority of research focuses on ecological degradation and water quality challenges, but does not capture the lived experiences of people who are affected. A deficiency of qualitative sociological research that examines the way in which environmental change transforms livelihoods, social relations, and vulnerability on the community level is evident. In addition, the impact

of climate-induced changes on the experiences and responses of various social groups, especially marginalized fishing groups, has received inadequate attention. This research fills this gap by considering the lived experiences of the local populations and how they have coped with environmental stress.

Research Objectives

To examine the impact of climate change and environmental degradation on livelihoods and socioeconomic vulnerability among communities around Manchar Lake.

To explore the lived experiences of community members regarding livelihood loss, survival strategies, and coping mechanisms in response to environmental stress.

To assess the role of social and institutional support systems in shaping community resilience and adaptation to climate-induced challenges.

Research Questions

How have climate change and environmental degradation affected livelihoods and increased socioeconomic vulnerability among communities around Manchar Lake?

How do community members describe their lived experiences of livelihood loss, and what coping strategies do they adopt?

What role do social networks and institutional support systems play in community resilience and adaptation to environmental challenges?

Significance of the Study

The relationship between livelihood change, social vulnerability, and climate change has a contribution to the field of environmental sociology in this paper. It provides the effects of environmental degradation empirically on daily living, particularly in the communities that rely on the resources. The policy implications of the findings include priorities of community-based and socially inclusive policies of climate adaptation that do not only aim at technical solutions. The study also attracts development practitioners and policymakers who may want to work with rural Sindh since the findings can be utilized to formulate targeted interventions that can improve livelihoods, reduce vulnerability, and increase resilience. Lastly, the study also offers the voices of the oppressed communities of Manchar Lake as well as the importance of taking the social dimension into account when responding to climate change.

LITERATURE REVIEW

Climate change has been a characteristic global issue in the twenty-first century, having a broad impact on ecology, economies, and societies. According to the Intergovernmental Panel on Climate Change (2022), the increase in temperatures, changes in the distribution of precipitation, and the rise in the number of severe weather events are creating an increasing threat to the population at risk. In particular, the low-income and resource-dependent areas are at risk. Sociologically, climate change is not merely a phenomenon in the environment; it is also a source of social inequality since the effects are not uniformly spread among the various groups in society (Adger, 2006).

In some arguments, scholars have suggested that three factors, which are interrelated, contribute to vulnerability to climate change, namely exposure to environmental hazards, sensitivity to environmental hazards, and adaptive capacity (Wisner et al., 2004). Low-income communities, where institutions do not support them, and rely heavily on natural resources, have a higher risk of being

severely affected in their livelihood. Environmental degradation is directly proportional to socioeconomic instability in such situations, which reaffirms the poverty/marginalization cycles.

Livelihoods of developing countries are usually highly interconnected with natural ecosystems i.e., rivers, lakes, forests, and agricultural lands. These systems are disrupted by environmental degradation, resulting in livelihood insecurity and forced adaptation strategies. The United Nations Development Program (2020) argues that fishing and agriculture are climate-sensitive livelihoods, which are some of the most impacted sectors of the world.

Research has found that environmental stress factors like water contamination, soil erosion, and low resource supply are major income earners cutters and heighten the reliance on the informal and precarious labor markets (Ellis, 2000). Such disturbances in rural settings are also factors leading to rural-urban migration, social disintegration, and erosion of traditional community structures. These changes illustrate how closely intertwined the social systems and the environmental change are.

Pakistan is well known as a nation that is highly susceptible to climate change in the world. According to the Global Climate Risk Index (2021), Pakistan has been determined as one of the most impacted countries because of the frequent floods, droughts, and heatwaves. The variations in climate have had disastrous effects on agriculture, water supply, and the lives of rural people, especially in Sindh and Balochistan provinces.

Studies have shown that the scarcity of freshwater, melting of glaciers, and irregular monsoon patterns have caused water stress in the nation (Zubair & Zhang, 2025). The occurrence of floods like those in 2010 and 2022 only reinforces the susceptibility of ecological systems and infrastructure in Pakistan. The rural communities are highly vulnerable to livelihood shocks due to the disproportional impact of these environmental changes on them, as they rely on the natural water bodies to survive.

Manchar Lake is one of the largest freshwater lakes in Pakistan, and one of the most important ecological zones in Sindh. Thousands of households, especially fishing communities called the Mohana, have long been dependent on the lake, and their livelihoods are ingrained in the ecosystem of the lake.

Nevertheless, various studies indicate that in the last few decades, Manchar Lake has experienced extreme environmental degradation. The ecological balance of the lake has been changed dramatically due to factors like less freshwater inflow into the lake (associated with the Indus River), water diversion through irrigation schemes, and discharges of industrial and agricultural effluents (Mahessar et al., 2019; Soomro et al., 2014). Studies have established that the quality of water has declined to unsafe standards, and water has become saltier and more contaminated, as well as lost aquatic biodiversity (Jahangir et al., 2015).

These environmental alterations have turned the Manchar Lake into a highly stressed and polluted water body, which has a serious impact on its ability to support the traditional livelihoods.

Much of the literature has underscored that environmental degradation in Manchar Lake has contributed to a high disruption of the livelihoods of fishing communities. Research indicates that dwindling fish stocks and worsening water quality have lowered the incomes of households and raised economic insecurity (Kazi et al., 2008). Having relied on the lake as a source of their livelihood, fishermen are now left to pursue other ways of livelihood, like wage labor, migration, or informal economic practices.

These are not only economic but also social changes. Loss of livelihood usually leads to the disintegration of the traditional jobs and community setup. With changes in the households whereby fishing ceases, there is a loss of cultural continuity and social cohesion. This is in line with general sociological arguments that environmental stress on livelihood results in structural transformation of the rural societies (Ellis, 2000).

Social vulnerability is the key concept to consider the effects of climate change on Manchar Lake communities. Environmental exposure is not the only determinant of vulnerability; access to resources, institutional support, and social networks are also determinants of vulnerability. The studies have indicated that the marginalized groups in the fishing communities are more vulnerable as they lack access to alternative livelihoods, as well as poor adaptive capacity (Adger, 2006).

Vulnerability is also enhanced by gender aspects. Women living in the affected families tend to have more domestic responsibilities, which include the duty to collect water, manage the household, and supplement income. Meanwhile, they are not able to gain access to formal employment and decision-making processes. This consolidates the already existing gender inequalities and puts them at more risk due to climate change (UNDP, 2020).

Institutional responses are still poor in Manchar Lake, even though it has been extensively published on environmental degradation. Research emphasizes the ineffectiveness in enforcing environmental laws, inadequate wastewater treatment, and unintegrated plans to address climate change (Soomro et al., 2018). There are no proper rehabilitation and livelihood support programs, which also contribute to the vulnerability of the community.

In addition, the interventions of the policy are more inclined towards technical solutions (e.g., water diversion or drainage management) and leave out the social aspects of climate change. This is an indication of a wider disconnect between environmental governance and social realities on the ground. This usually leaves the concerned communities out of the decision-making process and development planning.

The recent ethnographic research is based on the necessity to learn about the lived experiences of environmental change. The studies of Manchar Lake indicate that communities do not assume climate change as an abstract process but as a lived experience that is filled with uncertainty, loss, and problems of adaptation (Kumar, 2025).

Stories of local people emphasize the human and cultural aspects of environmental destruction, such as a sense of place, the loss of identity, and fear of cultural extinction. The Mohana community is a special socio-ecological group with a particular identity, which is closely connected with the lake. With the worsening of the environmental condition, plenty of houses end up uprooted, not only that, but also the erosion of a culture (News reports, 2025).

Although the literature on climate change in Pakistan is developing, there is a considerable gap in qualitative sociological studies, which dwells upon the lived experience and social vulnerability in Manchar Lake. Current research is mainly focused on ecological and hydrological processes with little concern for how environmental change redefines the social relations, identities, and coping mechanisms.

The research fills this gap by taking a qualitative approach to understand the experience and reaction of communities to environmental degradation. The emphasis on lived experiences adds to a better comprehension of the mechanisms of climate change as a social process that alters livelihoods, strengthens disparity, and changes community structures.

All in all, the literature exhibits that the socioeconomic and cultural impact of climate change and environmental degradation in Manchar Lake has far-reaching implications. As ecological research points to the seriousness of environmental degradation, sociological approaches bring out more profound aspects of vulnerability, changes in livelihoods, and social dislocation. But the lived experiences of affected communities have yet to be discussed, especially via qualitative methods. This research aims to close this gap by offering a comprehensive sociological explanation of the experiences of environmental change, its interpretation, and management on the community level.

METHODOLOGY

In this study, a qualitative case study design was used to examine the effects of climate change and environmental degradation on the communities in Manchar Lake. A qualitative approach was chosen to have a deep insight into the lived experiences of livelihood loss and social vulnerability.

In-depth interviews (IDIs) were used to gather primary data using a semi-structured interview guide. The research used a purposive sampling method to sample 20-25 respondents who were directly impacted by the changes in the environment, such as fishermen and the household members who relied on the livelihoods of the lakes. The data were collected until there was saturation. Thematic analysis was employed in the analysis of the data. Transcription of interviews, coding, and organization of the data as key themes, including livelihood disruption, coping strategies, and socioeconomic vulnerability, were carried out. Strict ethical considerations were undertaken, such as informed consent, confidentiality, and the freedom to withdraw at any time.

RESULTS AND DISCUSSION

In this section, the findings of the study are provided in the form of in-depth interviews with communities living around Manchar Lake. Thematic analysis was used to identify significant trends in the lived life experiences of participants in terms of climate change, environmental degradation, and socioeconomic vulnerability. These findings are clustered into generic themes that reveal that the environment has inverted livelihoods, social relations, and coping strategies. The stories of the participants support all of the themes discussed and relate to the existing literature to obtain a deeper sociological explanation of the phenomenon.

Theme 1: Livelihood Disruption and Economic Insecurity

The former is the initial theme that shows harsh livelihood disturbance among the fishing families in Manchar Lake. The respondents indicated that the deterioration of the environment, dwindling fish populations, and water pollution had severely impacted their revenues, and many families were now forced to turn to unpredictable and informal work. Once the main part of the local economy, traditional fishing was termed as becoming more and more untrustworthy and unable to sustain the households.

One participant explained:

“Fishing to keep the entire family, and now we are out there all day long in the lake and get practically nothing.”

Another respondent added:

“We are not fishermen as we used to be anymore; we are merely day-by-day breadwinners with no regular income.”

Such results are in line with the arguments of Ellis (2000) that environmental stress has dire effects on the livelihood systems of rural populations that are reliant on natural resources. On the same note, Adger (2006) adds that environmental changes that relate to climate lead to higher insecurity of income and lower adaptive capacity of the vulnerable population Zubair & Zhang, (2025) also point out that water scarcity and ecological degradation have also contributed to the instability of rural livelihoods, especially in Sindh, in the Pakistani context.

Therefore, the results indicate that environmental degradation in Manchar Lake has shifted livelihoods to be less stable, resource-based systems to highly insecure and uncertain survival mechanisms, further contributing to the socioeconomic vulnerability of communities affected.

Theme 2: Social Vulnerability and Marginalization

The second significant theme that stands out in the data is the growing social vulnerability and marginalization of the communities that live around the Manchar Lake. In addition to the economic misery, the respondents pointed out that environmental degradation has added to their social marginalization, diminished their access to support systems, and undermined their status in the general society. Loss of income is not the only consequence of loss of livelihoods that has transformed social identity, dignity, and status within the community.

Several respondents indicated that the degradation of livelihoods that relied on fishing had caused a loss of respect and recognition in society. One participant described it as follows:

“We are no longer respected as before. When they find out that we are the lake people, they believe that we are poor and helpless.”

Another respondent shared:

“We are excluded everywhere. even in the local towns we are not treated like part of them.”

These stories are part of a larger social marginalization process in which environmental degradation becomes an expression of poor social position and marginalization in mainstream opportunities. These results are in line with the idea of social vulnerability, which highlights that vulnerability is more than an economic phenomenon, but a social and relational one (Adger, 2006). The less powerful communities, those with a weak institutional support and deteriorating livelihoods, are at a higher risk of exclusion and diminished access to resources.

On the same note, Wisner et al. (2004) note that vulnerability is constructed by social structures and inequalities, which define the way communities are affected and react to environmental risks. With respect to the fishing communities, the degradation of the environment has strengthened the already existing hierarchies, pushing already marginalized groups further into both social and economic insecurity.

Studies have revealed that the rural population in Pakistan is likely to experience a decrease in social mobility and more dependence because of the decline in livelihood systems due to climate (Zubair & Zhang, 2025). This argument is supported by the findings of this study, which show that the change in the environment in Manchar Lake has not only affected the livelihood of the people there but has also caused more social marginalization and stigma to the affected populations.

On the whole, this theme shows that climate change is more of a social rather than an environmental process, which creates inequalities that cannot only be measured by loss of income but also in dignity, identity, and social belonging.

Theme 3: Gendered Impacts and Household Burden of Climate Change

The third theme brings out the gender aspect of the effects of climate change, especially how women and other members of the household are overburdened in the communities surrounding Manchar Lake. The results show that environmental degradation and loss of livelihoods do not impact all people in society equally. Women, rather, are more subject to social and economic pressure because they have to have dual roles in the management of the household and support of informal income.

The participants described how the females had to go on with household tasks in increasingly challenging circumstances as male members of the family faltered due to dwindling fishing earnings or had to seek jobs elsewhere. One respondent stated:

“Women are left with very few resources when men go to work and come back empty-handed, and all the work is on them: food, children, and survival of the household.”

Another participant added:

“Women are the victims of water and food scarcity, and we just silently bear the burden.”

These narratives show that climate change exacerbates the gender inequalities that already exist by raising the amount of unpaid care work and lowering access to resources and decision-making authority. Women have to pay for the depressed household incomes by engaging in informal labor, and at the same time, perform their household duties.

The results align with those of UNDP (2020), which states that climate change has a greater impact on women in resource-dependent communities because of unequal distribution of resources and immobility, as well as the lack of involvement in decision-making. In the same vein, Adger (2006) claims that intersecting inequalities, such as gender, influence social vulnerability in terms of the capacity of individuals and households to react to environmental stress.

Research has also indicated that in rural South Asian settings, environmental stress leads to a greater workload of women, especially in terms of water collection, household food security, and caregiving (Zubair & Zhang, 2025). The example of Manchar Lake echoes these more general trends, showing how livelihood insecurity as a result of climate exacerbates gender inequalities in already disadvantaged groups.

On the whole, this theme emphasizes the fact that climate change is not gender-neutral. Rather, it contributes to the perpetuation of existing inequalities, where women are burdened more and have fewer opportunities to be economically and socially empowered in an environmentally deteriorating situation.

Theme 4: Institutional Neglect and Lack of Support Systems

The fourth theme is the inadequate institutional response and low support systems that the communities facing the environmental degradation at Manchar Lake have. The respondents repeatedly indicated that the government failed to intervene effectively, provide sufficient rehabilitation assistance, and develop proper climate adaptation planning. This institutional failure has amplified the underlying vulnerabilities and exposed communities to a lot of reliance on their own meager resources to absorb environmental and economic shocks.

The lack of structured assistance was disliked by the respondents. One participant stated:

“The government does not send anyone to assist us; we are left alone to take care of everything on our own.”

Another respondent added:

“They are aware of our troubles, yet nothing is being done. We are still grappling with no good support or planning.”

These stories suggest that, as serious as environmental degradation is, the lack of institutional support systems further exacerbates the situation. Communities have no option but to use informal coping mechanisms that, in most cases, are inadequate in dealing with livelihood insecurity in the long run.

This result correlates with that of Adger (2006), who states that the institutional capacity and governance structures greatly influence vulnerability. Communities with weak or unresponsive institutions are faced with more challenges in adapting to change in the environment. On the same note,

Wisner et al. (2004) focus on the fact that it is not just exposure to hazards that predisposes people to disasters and climate but also failure of access to institutional support and resources.

Research in the Pakistani context has indicated that the adaptation policies are normally centered on technical aspects and do not consider the social protection measures at the community level (Zubair & Zhang, 2025). Such a disconnect between policy formulation and local realities has been witnessed in Manchar Lake, where the environmental degradation is ongoing with little government intervention.

On the whole, this theme shows that institutional neglect is a crucial factor that increases the effects of climate change. Devoid of efficient governance, social protection, and specific support programs, the vulnerable communities will continue to live in poverty, insecurity, and environmental hazard cycles.

Theme 5: Coping Strategies and Adaptive Responses

The last theme is the coping mechanisms and adaptive behaviors that communities have embraced to climate change occurring around Manchar Lake. Although there was a high degree of livelihood disruption and vulnerability, the participants were able to exhibit a range of short and long-term responses to deal with the economic stress and environmental unpredictability. These were the seasonal migration, diversification of the sources of income, dependence on informal labor, as well as on social networks to survive.

Migration was one of the main survival tactics, as indicated by many respondents. One participant stated:

“In seasons when the fishing is poor, we go to neighboring cities to do day wage work, we cannot live.”

Another respondent explained:

“They rely on relatives and friends in times of need, but without them, it is very hard to survive.”

These accounts emphasize that such coping mechanisms are more informal, reactive, and survival-based than institutionalized and institutionally based. Although the strategies are a relief in the short run, they may not guarantee long-term sustainability and stability in livelihood.

The data are consistent with Ellis (2000), who believes that rural households in the developing setting tend to use livelihood diversification and migration as their coping strategies to address environmental shocks. On the same note, Adger (2006) stresses the importance of social capital and networks in promoting adaptive capacity, especially within vulnerable communities having minimal institutional support. Nevertheless, these coping mechanisms in most cases are limited by structural disparities and a lack of targeting the underlying factors of vulnerability.

With reference to Pakistan, as reported by Zubair & Zhang, (2025), communities that are vulnerable to climate often resort to informal and temporary coping strategies because of poor policy support and the absence of institutional safety nets. This trend can be seen in the case of Manchar Lake, where adaptation is mostly self-organized and relies on social relations, rather than on formal support.

On the whole, this theme shows that, although communities are resilient in terms of adaptive strategies, their coping mechanisms are narrow in terms of both scope and sustainability. Lack of institutional support in the form of structured institutional support also inhibits their capacity to move out of short-term survival and into long-term resilience.

DISCUSSION

The findings of this study suggest that climate change and environmental degradation have had extensive socioeconomic and social impacts on the communities surrounding the Manchar Lake. All these issues are evident in the themes, and the transformation in the environment has not only disrupted livelihoods but also social relations, vulnerability, and reduced institutional trust. The change in the constant livelihoods that relied on fishing practice to uncertain and informal livelihood practices is an element of a wider livelihood transformation process in the presence of ecological stress, and it is consistent with Ellis (2000), who emphasizes that ecological shocks are the central factors in transforming rural livelihood systems.

The other problem that is cited in the study is that vulnerability in Manchar Lake is multidimensional i.e., it is an economic, social, gender, and institutional neglect. According to Adger (2006), vulnerability is not only determined by exposure to environmental hazards, as it depends on social structures, availability of resources, and institutional capacity. The findings suggest that marginalized fishing communities have increased vulnerability due to low adaptive capacity and a lack of state assistance.

Moreover, the research results show that migration, informal employment, and utilization of social networks are part of the coping mechanisms that can only provide short-term survival solutions rather than long-term solutions. Though these measures are community resilience, they fail to generate sufficient measures against the long-term structural vulnerabilities. The gendered effects add to such problems, making women particularly susceptible to environmental stress because of higher exposure to unpaid labor and domestic load, which increases the outcomes of UNDP (2020).

The institutional neglect proves to be a significant factor that intensifies the crisis. The lack of proper governance, rehabilitation programs, and policies of climate adaptation has left communities largely unattended. This policy-practice disjuncture highlights a gap in governance regarding dealing with climate vulnerability in Pakistan.

CONCLUSION

The paper concludes that climate change in the Manchar Lake case is not merely an environmental issue but a very social process that not only changes the livelihoods, but also exposes them to greater vulnerability and even modifies the community fabric. Environmental degradation has contributed to the loss of livelihood as communities have had to develop unstable coping mechanisms and informal survival mechanisms.

The findings also imply that the vulnerability is multidimensional and is not just prevalent in the economic conditions, but also in the social identity, gender relations, and institutional trust. There have not been proper policy interventions and support mechanisms to assist in curbing these issues, and the victims have been left in a cycle of insecurity. Overall, the analysis identifies the fact that the change in the environment should be viewed within the scope of the broader social and institutional change.

RECOMMENDATIONS

Recommendations are suggested based on the findings:

Community-Based Adaptation Programs:

Participatory and community-based climate adaptation strategies should be developed to include the local stakeholders in decision-making processes.

Livelihood Diversification Support:

Skill development and alternative livelihood programs are supposed to be initiated by the government and development agencies to minimize reliance on the resources of the lake.

Environmental Restoration Measures:

The situation with the ecological state of Manchar Lake needs to be corrected by taking immediate steps to enhance the quality of water and implement the ecological balance through pollution control and sustainable water management.

Social Protection and Welfare Systems:

Specific support programs need to be implemented in vulnerable households, especially those households that rely on fishing livelihoods.

Gender-Sensitive Interventions:

The needs of women should be given special attention by making them part of the livelihood programs and decision-making.

Strengthening Institutional Capacity:

There should be enhanced alignment of environmental, social welfare, and disaster management institutions to guarantee effective climate response strategies.

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