

CLIMATE JUSTICE FOR PASTORALISTS

*The Gujjar Community of
Himachal Pradesh Speaks Out*



actionaid
ActionAid Association (India)

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FOREWORD

Nomadic pastoralism is where livestock are herded to seek new grazing lands and pastures. Among one of the oldest occupations, nomadic pastoralism continues to be a way of life and livelihood for millions worldwide and in India. And the challenges pastoralist communities face continue to increase. As a result, there is a real danger that this century may see the demise of the pastoral way of life and nomadic pastoralism. That is not a desired future.

Pastoralism is a healthy, viable system. It is essential for sustaining millions of our people who are otherwise likely to join a large pool of precarious wage labour, given the employment situation worldwide. Nomadic pastoralism offers a way of life dignified for its followers and sustaining for our planet. Some studies estimate that the livestock sector comprises 4.5% of India's GDP, with about two-thirds deriving from pastoral production.

Pastoral people are ecological defenders, conserving our bio-diversities. Their cattle convert native vegetation directly into food without the intermediate stage of cultivation. They help in cross-pollination and farming practices in a symbiotic relationship. Their regular migration ensures the dynamic use of resources, selection of breeds and symbiotic linkages with farmers.

Over the decades, there has been a significant loss and degradation of grasslands and range lands. For instance, data presented by the Government of India at the United Nations Convention to Combat Climate Change (UNCCD) at the Conference of Parties (COP 14) reported that India had lost 31% of grassland in a decade between 2002-2015 and about 19% of common lands during the same period.

Furthermore, climate change and extreme weather events have meant disturbances in ecosystems, adversely impacting the livelihood of pastoralists. For example, the 2019 drought in Maharashtra led to a significant decline in fodder production, affecting the availability of feed for cattle.

Pastoralists face multiple precarities overlaid on the destruction of commons and non-recognition of rights to pasture land and movement. British colonial rule laid the basis of the stigma they face by notifying most nomadic tribes as "criminal". Though

1956 saw the repeal of the Criminal Tribes Act and the denotification of erstwhile “Criminal Tribes”, – the bias, prejudice and oppression continue. Furthermore, the nomadic and semi-nomadic way of life makes securing identification papers essential to access welfare schemes and policies challenging.

This study is the product of action research to investigate the effects of extreme weather events on the Gujjar community’s livelihoods and their capacity to adapt to climate change in Himachal Pradesh, India. A perception-based study, its purpose isn’t to add to an ever-growing body of data on climate change but to inform the agenda and action for climate justice at various levels through the lived experience of the pastoralist Gujjar Community. The action research sought to gather insight into how the community understands climate change and what they have experienced of its impact.

The report is part of our efforts in ActionAid Association to draw communities who are least responsible for climate change and bearing the brunt of its impact into the movements for climate justice. There is a need to recognise that pastoralism is a healthy, viable system essential for sustaining millions of our people who otherwise, given the situation of employment worldwide, are likely to join a large pool of precarious wage labour. Nomadic pastoralism offers a way of life dignified for its followers and sustaining for our planet.

We would like to show how pastoral people and many other communities dependent on natural resources are ecological defenders, conserving our bio-diversities. Therefore, we need to celebrate, enable and pay for their service as custodians of environmental resources.

We look forward to all comments and suggestions from readers.

In solidarity,

Sandeep Chachra

Executive Director

ActionAid Association

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Tanveer Kazi

Principal Researcher of the Study
& Associate Director,
ActionAid Association

INTRODUCTION

In recent years, there has been a significant increase in scientific research on the impact of climate change on nomadic pastoralism. However, few studies have focused pastoralists' experience of climate change, their methods of adapting to climate change and how traditional knowledge within pastoralist communities is being used or underused in such adaptation. Such insights should form the cornerstone of any climate justice framework that impacts pastoralists.

This interim report is the product of an action research aimed to investigate the effects of extreme weather events on the Gujjar community's livelihoods and their capacity to adapt to climate change in Himachal Pradesh, India. Its purpose, being a perception-based study, isn't to add to an ever-growing body of data on climate change but to inform the agenda and action for climate justice at various levels through the lived experience of the pastoralist Gujjar Community. The purpose of the research was to provide insight on how the community perceives climate change and their experiences with related circumstances. The objective of the research was to gain a comprehensive understanding of the community's vulnerability to the effects of climate change and its abilities to adapt.

The research sought to identify the specific losses and damage incurred by the community because of climate change and to analyze the strategies that they have adopted to manage these changes. The research aimed to understand both economic and non-economic losses and damages experienced by the community due to the effects of climate change on their lives. This was done through a mixed methods design including a structured survey, focus group discussions (FDGs) and participant and non-participant observation among other methods. Several aspects of the community's life as a whole including the effects of extreme weather

events, water accessibility, natural resources, migratory patterns, health, food resources, and climate change-related concerns were explored in the research.

The purpose of this interim report is to provide a broad outline of some of the key findings of this study. For instance, it was found that changes in precipitation including reductions in total amounts and shifts in timing and increases in the frequency and intensity of extreme events, are having the greatest influence on herding livelihoods. This is significant as many pastoralists worldwide face common adaptation challenges such as declining quality and access to traditional water sources and pasture degradation. These climate pressures are co-occurring with other shifts such as increasing mining and settled agriculture, reducing the land available for nomadic livelihoods and a lack of policy support for nomadic herding. The integrated effects of these changes are leading, in many cases, to the abandonment of herding livelihoods, creating significant losses for these communities. There is growing concern about the loss of traditional knowledge and ways of life that underpins nomadic herding, especially women's knowledge. This loss cannot be seen without a serious climate justice perspective and this research strives to foreground this perspective in addressing the needs of the community and informs an inclusive climate justice agenda.

The research findings can guide policymakers and practitioners in developing suitable interventions to advance climate justice and support the livelihood of the Gujjar community. The research provides crucial insights into the specific challenges faced by the community and the measures adopted to mitigate the effects of climate change. By addressing the identified issues, policymakers and practitioners can enable the Gujjar community to adapt to the consequences of climate change and safeguard their traditional practices. This can ensure the community's resilience in the face of climate change while preserving their way of life. This interim report also offers crucial recommendations to various stakeholders to act on the issues emphasized by the findings.

What is Climate Justice and Why is it Important for Pastoral Communities?

Climate justice principle aims to ensure that the impacts of climate change and the measures taken to address it are fairly distributed with a focus on marginalized communities that historically bear the least responsibility for causing the issue. When assessing climate justice in relation to pastoral communities, it must be taken into account that pastoralists are important stakeholders as climate change has a severe impact on the lives and livelihoods of pastoralists who are highly vulnerable to its effects because of their dependence on natural resources. Pastoral communities face severe vulnerability to climate change impacts such as droughts, floods and extreme weather events which make them prone to significant losses and damage towards their livelihoods. These communities rely on natural resources for their survival. Any depletion of these resources can directly result in poverty, displacement and food insecurity for them.

Achieving climate justice requires consideration of the historical responsibility of peoples especially concerning pastoral communities who face a disproportionate impact from climate change despite contributing minimally to greenhouse gas emissions that have resulted in climate change. Equitable distribution of climate change benefits and burdens across communities is also critical particularly in addressing the unique challenges faced by pastoral communities due to climate change. These communities are vulnerable to the effects of climate change including droughts and desertification which threaten their cultural practices and livelihoods. Hence, a just response to climate change must recognize and support the specific needs of these communities ensuring a fair distribution of benefits and burdens and preventing pastoral communities' disproportionate exposure to the adverse consequences of climate change.

Assessing the impact of climate change on pastoral communities is further complicated by the historical forces of caste, untouchability, social discrimination, and exclusion they face in daily life. These communities

are often at the bottom of the Caste social order with limited access to resources and opportunities. These communities are frequently marginalized and deprived of essential services like healthcare, education, and access to clean water. It is crucial to recognize the historic and systemic oppression these communities face and ensure that climate justice efforts prioritize social justice for ensuring their needs and rights. Striving towards a more equitable and just future for all. It is important to enable these communities to participate in decision-making processes and equip them with the necessary resources and support.

It is important to ensure climate justice to address the impacts of climate change and provide relief for pastoral communities experiencing loss. It is important to acknowledge historical responsibility, ensure fair distribution of benefits and burdens, address the loss and damage experienced by marginalized pastoral communities and guarantee social justice. It is important to recognize that those who contribute the least to climate change are often the most affected by its adverse effects. Therefore, the achievement of climate justice is necessary to ensure that vulnerable pastoral communities are not left behind in the transition to a more sustainable future. A collective effort is needed to work towards a future that is equitable, just and sustainable for all. Embracing the principles of climate justice is vital in securing a better future for both present and future generations and the planet.

Context

Impact of Climate Change in Himachal Pradesh

Himachal Pradesh, situated in northern India, is a mountainous state that is currently undergoing adverse effects of climate change which are significantly affecting both its environment and economy. The state's hilly topography, delicate ecosystems and dependence on natural resources make it particularly vulnerable to these changes. The surge in temperature, extreme weather events and alterations in precipitation patterns are already

causing substantial damage to the state's infrastructure and agriculture. This situation is projected to deteriorate in the future, posing significant threats to the state's development trajectory. As we explore the impacts of climate change in Himachal Pradesh, we will focus on the following factors: temperature increase, glacier thinning, extreme weather events, agriculture, water scarcity and biodiversity.

The present situation of climate change has become a stark reality, as the warnings of its dire consequences have been manifested through various indicators. An unrelenting heatwave, the occurrence of 2,760 forest fires the highest ever recorded in Himachal Pradesh, a prolonged dry spell and a rainfall shortage of 92.4% are some of the key indicators that illustrate how rapidly and alarmingly climate change is developing. The intensity of the weather alterations in Himachal's mountainous regions is demonstrated by the historic 21 consecutive days of a severe heatwave while Rajasthan and Madhya Pradesh lead with 25 days and Himachal ranks third with the same duration. It is a matter of grave concern that socio-economic conditions of communities in these regions that are already lagging, will be further hampered by the fallout of the changing climate, warranting urgent and concerted action¹.

According to The Himachal Pradesh State Disaster Management Plan the average mean surface temperature of Himachal Pradesh has increased by 1.6 degrees Celsius in the last one century. This increase has led to changes in rainfall and temperature patterns in the state which in turn caused a rise in the frequency and intensity of extreme weather conditions. Extreme weather conditions like cloudbursts, flash floods, landslides and hailstorms have become regular in the state. These all changes have been severely impacting infrastructure and agriculture. Given the state's mountainous terrain and location in a seismically active zone, landslides

1. How Himachal Is Paying The Price For Ignoring Climate Change Warnings <https://www.outlookindia.com/national/climate-crisis-warnings-are-a-thing-of-past-it-is-now-hitting-himachal-pradesh-with-brute-force-news-208477>.

and flash floods pose a significant risk to the state. The effect of extreme weather is anticipated to get harsher in the future due to climate change².

The state of Himachal Pradesh is facing a grave threat as many of its glaciers are melting rapidly due to global warming. The reduction in snow cover in the state has been significant, dropping from 23,542 sq km in 2019-20 to 19,183 sq km in 2020-21. Of particular concern are the Chenab and Baspa glaciers in Kinnaur which have retreated by about 20% in the past few decades. This phenomenon has led to changes in river flows, water availability and biodiversity in the region. Given that major rivers such as the Beas, Chenab and Sutlej have their source in the state. The impact of melting glaciers is particularly significant, as they provide water for irrigation, hydropower and domestic use. The Sutlej River basin glaciers are melting rapidly and may shrink significantly by as soon as 2050. According to a study, 33% of glaciers are predicted to disappear by 2050 and 81% by the end of the century. The urgency of addressing the socio-economic backwardness of the communities in the focus areas cannot be overstated given the severity of the situation³.

Himachal Pradesh, a state in India, is currently facing a serious and concerning issue of water scarcity particularly in its lower regions. Unfortunately, this situation is expected to worsen due to the effects of climate change. The changing patterns of rainfall and melting glaciers could further exacerbate the problem, negatively impacting the availability of water for agricultural, hydropower and domestic use. The recent winter season in Himachal Pradesh witnessed a significant decrease in rainfall and snow which has caused harm to underground water and downhill water sources including springs, wells, bawries, lakes, rivulets, streams and rivers, resulting in substantial crop losses such as wheat and barley. The

2. <https://scroll.in/article/1004622/in-himachal-pradesh-climate-change-and-unplanned-development-are-causing-disasters>

3. 'Large Losses in Glacier Area and Water Availability by the End of Twenty-First Century under High Emission Scenario, Satluj Basin, Himalaya' DOI:10.18520/cs/v11i6/i10/1721-1730.

consequences of water scarcity extend beyond crop losses to include health issues such as dehydration, infections and malnutrition. Moreover, water scarcity may lead to conflicts over water resources among different groups, making this a complex issue that requires urgent attention^{4, 5}.

Himachal Pradesh is a treasure trove of natural wonders. Its abundance of biodiversity and unique ecosystems which create a home for a vast array of plant and animal life. This includes many species that are found only in this region and making it a truly special and remarkable place. However, climate change poses significant threats to the state's biodiversity including changes in species distribution, phenology and abundance. An escalation in temperatures and alterations in precipitation patterns elevate the vulnerability to forest fires and infestations, whereas the liquefaction of glaciers and alterations in river courses could have an impact on aquatic ecosystems and the flora and fauna that rely on them. The region is prone to abnormal floods, prolonged droughts, dangerous landslides, the depletion of biodiversity and risk of food insecurity. Himachal Pradesh has more than 95 endemic species of plants and animals such as the pink rhododendron, Himalayan yew, western tragopan, musk deer and snow leopard^{6, 7, 8}.

The impacts of climate change in Himachal Pradesh have emerged as a critical issue of concern for the state's sustainable development and

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4. 'Winter drought in Himachal impacts agriculture and drinking water supply' <https://india.mongabay.com/2021/04/winter-drought-in-himachal-impacts-agriculture-and-drinking-water-supply/>
 5. Explained: Home to perennial sources, why Himachal Pradesh is staring at a water crisis- <https://indianexpress.com/article/explained/himachal-pradesh-water-shortage-crisis-explained-7237900/>
 6. Climate change effects in the Western Himalayan ecosystems of India: evidence and strategies- <https://forestecosyst.springeropen.com/articles/10.1186/s40663-017-0100-4>
 7. <https://fsi.nic.in/isfr19/vol2/isfr-2019-vol-ii-himachal-pradesh.pdf>
 8. <https://www.greathimalayannationalpark.org/>

the well-being of its people. The severe and far-reaching impacts of climate change such as rapid glacier retreat, extreme weather events and biodiversity loss, have threatened the state's natural resources and its economy particularly agriculture and pastoral communities. It is essential to develop effective strategies for mitigating the impacts of climate change, promoting sustainable development and ensuring the well-being of the state's people. The subsequent chapters will delve into the details of the causes, impacts and potential solutions to address the issue of climate change in Himachal Pradesh with a particular focus on identifying opportunities for sustainable development and the protection of the state's natural resources.

Impact of Climate Change on Pastoralists in Himachal Pradesh

Pastoralism, a traditional way of life for numerous inhabitants of Himachal Pradesh, India, has been sustained across generations. The 20th Livestock Census administered by the Indian government in 2019 revealed that over 154,000 households rely on livestock rearing in Himachal Pradesh as their primary source of income⁹. The contribution of pastoral communities to the state's economy and cultural identity has been significant. Nevertheless, climate change poses a significant challenge to the sustainability of this way of life and jeopardizes the livelihoods of these communities. This threat is compounded by the fact that many of these communities inhabit socio-economically disadvantaged areas, rendering them particularly vulnerable to environmental shocks. In light of these concerns, there is an urgent need to take decisive action to address the socio-economic backwardness of these communities and ensure the sustainability of pastoralism in the region.

The socio-economic backwardness of pastoral communities has become a critical concern in the face of changing climatic conditions. The availability

9. 20th Livestock Census-2019: All India Report. <https://ruralindiaonline.org/en/library/resource/20th-livestock-census-2019-all-india-report/>

of water and forage for livestock is being affected by the changing climate which has led to a decrease in livestock productivity, lower incomes and increased migration from pastoral areas. The frequency and severity of extreme weather events including floods, landslides and droughts, are having a detrimental impact on the health and productivity of livestock and the livelihoods of pastoral communities. The situation is particularly concerning in parts of Himachal Pradesh where glacier retreat has resulted in reduced water availability during the dry season, thereby exacerbating the impacts of climate change on pastoral communities. It is imperative that urgent action be taken to address this situation and provide necessary support to these communities¹⁰.

The pastoral communities residing in the state of Himachal Pradesh are presently grappling with a challenging situation due to the negative effects of climate change. These communities are predominantly reliant on natural resources and have limited access to alternative livelihoods, healthcare and education, thereby rendering them more vulnerable. The average temperature in Himachal Pradesh has already risen by 0.5°C over the past few decades and scientific projections suggest that it could escalate by 1.5-2.5°C by the end of this century. With the shift in precipitation patterns, there has been a considerable impact on the timing and duration of the growing season leading to a reduction in forage availability for livestock. These changes are imposing an enormous amount of pressure on pastoral communities and their survival which in turn could potentially damage the economic and cultural fabric of the region. Therefore, it is of utmost importance to prioritize and address the socio-economic backwardness of these communities, through the implementation of effective and sustainable policies, in order to ensure their well-being and safeguard their livelihoods for future generations¹¹.

10. Puhals: Outlining the Dynamics of Labour and Hired Herding among the Gaddi Pastoralists of India -<https://pastoralismjournal.springeropen.com/articles/10.1186/s13570-022-00237-5>

11. Climate change effects in the Western Himalayan ecosystems of India: evidence and strategies- <https://forestecosyst.springeropen.com/articles/10.1186/s40663-017-0100-4>

The pastoral communities in Himachal Pradesh are facing an imminent threat to their livelihoods due to the adverse effects of climate change, despite not being responsible for the greenhouse gas emissions that cause it. These communities are among the most vulnerable and require immediate attention to tackle the challenges they face. The rise in temperatures has led to the drying up of their pastures, thereby reducing the availability of grazing land for their livestock which poses a serious threat to their way of life. As livestock is a crucial source of income and food for these communities, it is imperative to address the key challenges they face to ensure their sustainable development and meet their specific needs. It is vital to include these communities in the fight against climate change and to create effective and sustainable policies that prioritize their socio-economic well-being. The urgency of this issue cannot be overstated and immediate action is required to safeguard the future of these communities and the region as a whole.

Gujjar Pastoralists

The Gujjar community is one of the Scheduled Tribes in Himachal Pradesh, a state with a population of 68.56 lakh (Census, 2011). The Gujjars number 92,547 and make up 23.6% of the total Scheduled Tribes population of 3.92 lakh in the state. Most of the Gujjars (97.5%) live in rural or tribal areas of Himachal Pradesh. They are one of the many nomadic and transhumant groups that inhabit the Indian Himalayas. Gujjar population is primarily concentrated in Chamba, Sirmour, Solan, Kangra, Mandi and Bilaspur districts of the State¹².

The Gujjars practice seasonal migration between the high-altitude pastures and the lowland forests where they graze their buffaloes, sheep and goats. They live in temporary huts made of bamboo and grass and carry their belongings on pack animals. They migrate with their livestock between summer and winter pastures. They usually move to higher altitudes in

12. Census of India. (2011). Population Enumeration Data (Final Population). Retrieved from <https://censusindia.gov.in/census.website/data/population-finder>

summer (April to October) and lower altitudes in winter (November to March). The summer pastures are located in the alpine meadows or Bugyals of the Himalayan ranges, where the Gujjars graze their cattle on the lush green grass and herbs. The alpine meadows or Bugyals in the Himalayan ranges are vast, high-altitude grasslands that provide ideal grazing grounds for the livestock of the Gujjar pastoral community during the summer season. These meadows are characterized by a unique landscape that is rich in biodiversity and ecological resources. They are found at elevations ranging from 2,500 meters to 4,000 meters above sea level and are usually located at the foothills of the snow-capped peaks of the Himalayas¹³.

The Bugyals are home to a diverse range of plant species including medicinal herbs and shrubs which are important for the traditional healing practices of the Gujjars. During the summer months, the Gujjars migrate with their livestock to these pastures and set up temporary shelters made of bamboo, grass and other locally available materials. The Gujjars follow a predetermined route to these pastures which has been developed over generations and is based on the availability of water, fodder and other resources. Once they reach the pastures, the Gujjars engage in the seasonal grazing of their buffaloes, sheep and goats which are the primary source of their livelihood.

The winter pastures are located in the sub-Himalayan tracts or terai of the plains where the Gujjars graze their cattle on the dry grass and crop residues. The duration of the temporary migration depends on the availability and quality of pasture and water resources, as well as the climatic conditions. The Gujjars usually spend about six months in each pasture but may shorten or extend their stay depending on the situation¹⁴.

13. Srivastava, R. The making of pastoralisms: An account of the Gaddis and Van Gujjars in the Indian Himalaya. *Pastoralism* 12, 42 (2022). <https://doi.org/10.1186/s13570-022-00259-z>

14. Sharma, J., Gairola, S., Gaur, R.D. et al. Forest utilization patterns and socio-economic status of the Van Gujjar tribe in sub-Himalayan tracts of Uttarakhand, India. *For. Stud. China* 14, 36–46 (2012). <https://doi.org/10.1007/s11632-012-0102-9>

The route taken by the Gujjars for migration is determined by their traditional knowledge of the terrain, the location of water sources and the presence of other communities or wildlife. The Gujjars usually follow well-established trails that have been used for generations but may also change their route due to natural disasters, conflicts, or government restrictions. They have a rich and diverse culture, language, religion and social organization which reflect their adaptation to the changing environment and their interaction with other communities. The pasture lands (Dhar) are distributed among the Gujjar families according to their clan affiliation, herd size and historical rights. The Gujjars have to obtain permits for grazing from the forest department or other authorities and pay a fee or tax for using the land. The Gujjars also have to share the pasture lands with other pastoralists or farmers who may have overlapped or conflicting claims¹⁵.

The Gujjars' livelihood primarily depends on rearing buffaloes and selling milk and milk products to the settled villagers. The main source of income for the Gujjars is dairy production. The Gujjars sell their milk, butter, cheese and other dairy products to local markets or traders who buy them at low prices or exchange them for goods. The Gujjars also sell some of their animals for meat or leather when they need cash. However, their reliance on middlemen has left many of them indebted. Some Gujjars also engage in wage labor, petty trade, or handicraft production to supplement their income¹⁶. Additionally, the nomadic Gujjars struggle to claim land ownership and frequently face eviction from their temporary campsites.

Climate change is a major threat to the Gujjar pastoral community in Himachal Pradesh as it affects their livelihood and culture that depend on the natural resources of the Himalayan region. Climate change causes rapid changes in temperature, precipitation, snow cover and glacier melt in the Himalayas which have adverse impacts on the availability and quality

15. Migration and Settlement Pattern of Gujjars in the 19 th Century Himachal Pradesh | Gujjar Sansthan - Academia.edu

16. <https://www.srjis.com/pages/pdfFiles/160957588128.%20Abhishiant%20Slariya.pdf>

of pasture and water resources for the Gujjars and their animals¹⁷. Climate change also increases the frequency and intensity of natural disasters such as landslides, cloudbursts and flash floods that pose risks to the Gujjars' lives and assets. Moreover, climate change alters the distribution and abundance of plant and animal species that the Gujjars rely on for food, medicine and fodder. These impacts affect the income, food security, health, well-being, social cohesion and cultural diversity of the Gujjar community. They also reduce their adaptive capacity to cope with the changing environment and socio-economic conditions.

17. In Himachal Pradesh, climate change and unplanned development are paving the way for disasters (scroll.in)

18. Tewari, V.P., Verma, R.K. & von Gadow, K. Climate change effects in the Western Himalayan ecosystems of India: evidence and strategies. *For. Ecosyst.* 4, 13 (2017). <https://doi.org/10.1186/s40663-017-0100-4>



RESEARCH METHODOLOGY

This chapter describes the research methodology used in conducting this action research on climate impact on Gujjar pastoral community in Himachal Pradesh. Under research design, sample selection, data collection methods, and data analysis methods are discussed. The chapter also includes sections on ethical considerations and limitations to the research.

Research Design

This study used a mixed-methods approach with quantitative and qualitative data collection methods. The survey method collected numerical data from 142 pastoral community members using a questionnaire. Group discussions collected rich data from 10 groups of community members using open-ended questions. Observation documented the changes in the environment and the community's response to climate change. Case studies examined specific examples of the impact of climate change on the community's livelihoods. The mixed-methods approach collected data that complemented and corroborated each other.

Sample Selection

The survey sample is a purposive sample. The sample selection criteria was created to include members of the Gujjar pastoral community in Himachal Pradesh who are likely to have experienced the effects of climate change based on the reasoning outlined in the introduction. The selection process produced a purposive (or judgement-based) sample of 142 respondents all belonging to the Gujjar community residing in the 60 Dhar pasture villages, 30 Gram Panchayats and 12 blocks from four districts in Himachal Pradesh under the study area. The administrative districts these fall under are Chamba, Kangra, Shimal and Sirmaur. All participants selected were given a detailed structured questionnaire (Annexure 1). For the second stage, the research team conducted ten focus group

discussions and selected participants selected using purposive sampling based on their experiences with the impact of climate change to ensure diversity in the sample. The selection of the sample was aimed at ensuring the representation of diverse Gujjar pastoral communities in the area of study effectively to make the qualitative and quantitative research findings indicative of the perceptions of the community as a whole. By selecting an internally diverse sample, the research has generated findings that were relevant and applicable to the wider Gujjar pastoral community and that could inform and influence policy and decision-making processes.

Data Collection Methods

Structured Survey

A questionnaire-based survey was used to collect structured and quantifiable data from pastoralists to gauge the prevalence of a perception in the community. A structured questionnaire was administered to a sample of 142 respondents. The questionnaire was designed to cover a range of topics including the perception and experiences of climate change within the community, impact of climate change on the community's livelihood, income, and assets, costs of mitigating climate-change related losses and risk management, social costs and loss of traditional ways of living, and suggestions for climate justice policies. The survey was carried out in four districts where the Gujjar Pastoral community lives. To ensure accuracy and quality of data, the survey was conducted in person through face-to-face interviews. This approach allowed for the collection of detailed and comprehensive data directly from community members with the opportunity for clarification or expansion on responses where necessary. The use of a structured questionnaire also ensured consistency and reliability of data across the sample.

The Focus Group Discussions

The focus group discussions with members and elders of the Gujjar pastoral community across various localities were a crucial component

of the research conducted. The group discussions were led by trained facilitators who ensured that the discussions were productive and meaningful. The purpose of these discussions was to gather insights into the community's experiences with climate change and to identify the challenges they faced. The discussions were recorded and transcribed for further analysis. The analysis aimed to identify common themes and patterns in the discussions to capture an in-depth understanding of the community's perceptions of climate change. The focus group discussions were a vital data collection method that allowed for the community's voices to be heard and provided a deeper understanding of their experiences with climate change. The insights gained from these discussions helped to inform the recommendations made in the research report.

Observation Method

Observation was also used as a research approach in this study to supplement the survey and group discussions. Observations were conducted to document the impact of climate change on the Gujjar pastoral community in Himachal Pradesh. The research team conducted direct observation of the community which included observing the changes in the environment and the community's response to the impact of climate change. The observations enabled the research team to gain a deeper understanding of the impact of climate change on the community beyond what the survey and group discussions could provide. The observations provided rich data that supported the survey and group discussions' findings leading to a more comprehensive understanding of the research problem.

Documentation of Case Studies

Documentation of important case studies was as a research approach to explore the impact of climate change on the Gujjar pastoral community in Himachal Pradesh with the aim of gaining a comprehensive understanding of the experiences, perspectives and challenges faced by the community members. The case studies involved a detailed investigation of a few members of Gujjar pastoral community experiences with climate change.

This was carried out through in-depth interviews, observation and document analysis. This approach allowed for a comprehensive analysis of the complex and multifaceted issues related to the impact of climate change on the community, resulting in valuable insights into the various factors that contribute to the problem.

Data Analysis

We used a rigorous data analysis process to ensure the accurate identification of significant findings which were then used to address the research questions. The survey allowed for quantification of responses to indicate prevalence and the focus group discussions, observation, and case studies allowed us to describe and understand the processes driving the responses in the survey.

The quantitative data analysis provides a clear and concise understanding of the prevalence of responses across different variables. This type of analysis allowed us to identify prevalence and patterns in the perceptions that would have been difficult to discern otherwise. On the other hand, the qualitative data allowed for a more in-depth exploration of the underlying themes and patterns that emerged from the data.

The analysis process ultimately enabled the identification of the most significant findings which were then presented through charts and other visual aids to present the results of the study. These presentations facilitated the effective communication of the findings and provide a clear and concise understanding of the data and its implications.

Ethical Considerations

The research team strictly adhered to ethical research practices during the study. Honesty, integrity, non-discrimination, and openness guided the research process from design to publication until publication. All participants were informed about the nature of the study, their rights to

confidentiality and privacy, their right to withdraw from the study at any time. The research team ensured that the data was kept secure and that the participants were not put at risk. The research team also obtained the necessary ethical clearance before conducting the study as per the ethical guidelines of the ActionAid Association.

Limitations

The survey on the Gujjar community in Himachal Pradesh has several limitations that need to be considered when reading the report.

The topography of the area is not only diverse but also challenging to survey and the settlement pattern of the Gujjars is very scattered due to the hilly terrain. Moreover, the villages where the Gujjars reside are widely spread out and difficult to access which meant that interviewers had to walk long distances to reach them. The challenge of wide settlement and difficulty of terrain made the sampling more dependent on convenience.

Another limitation is the difficulty in estimating the loss and damage per household caused by climate change processes, as the impact of such changes is slow and gradual and there is a complete absence of a set mechanism to track the loss and damage in the community.

It is also to be noted that all processes described in this study cannot be entirely attributed to climate change, however, in all cases these impacts are largely framed as a direct result of climate change related ecological changes. All findings that describe climate change as the cause, it must be read with the caveat that climate change is a significant but not the sole cause of the impacts described.

The survey focused mainly on groups of families residing in one Dhar and respondents to survey questions were usually the head of the family or group. This had an impact on women's participation, as women are not often considered the head of the family in the Gujjar community.

Surveyors faced a challenge in ensuring women's participation in the survey, but they managed to address this limitation by ensuring Gujjar women's participation in focus group discussions.

It is also to be noted that this is a perception-based study to highlight a need for greater participation from pastoralists in climate change agendas and policies. Based on their lived experiences of climate change. The perceptions cannot be taken as a matter of fact, but as an expression of felt needs for participation, support, and accountability within the community.

KEY FINDINGS

Perceiving Changing Climate

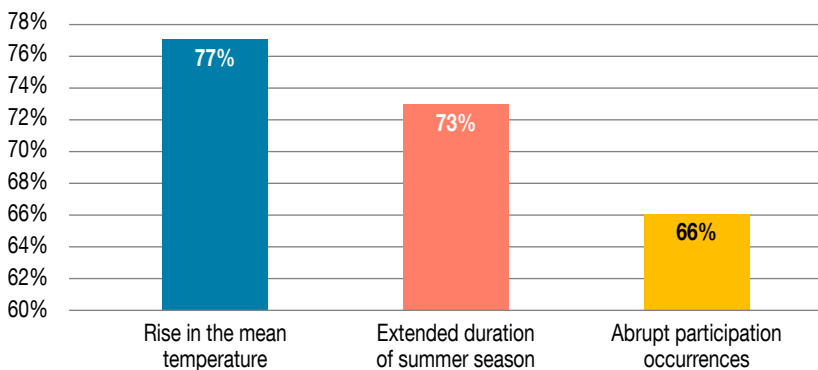
Lifetime Perceptions of Changing Climate

The survey data collected from the Gujjar Pastoral community in Himachal Pradesh provides important insights into local perceptions of changing climate patterns. According to the responses, there has been a significant rise in the mean temperature with 77% of the respondents confirming this observations. This increase in temperature is not only affecting the natural habitats of the region but also has a profound impact on the pastoral livelihoods of the Gujjar community. Hotter temperatures lead to drying up of water sources, making it difficult for the livestock to graze and find water which leads to a decline in the production of milk, meat and other dairy products.

The survey indicates that 73% of the respondents have also observed an extended duration of the summer season. The prolonging of the season causes the soil moisture to evaporate rapidly and the lack of water and forage poses a severe threat to the pastoral community's livelihood. The higher temperatures and extended summer season, along with other climatic changes, also correspond to an increased incidence of natural disasters like drought, floods and landslides. Another significant change in climate patterns identified in the survey is the occurrence of abrupt precipitation events. 66% of the respondents reported that there have been unusual rainfall patterns in the region with prolonged dry spells followed by heavy rainfall that often lead to flash floods and landslides. These events lead to soil erosion and land degradation, affecting the pasturelands and making it difficult for the livestock to find suitable grazing lands.

This information provides valuable insight into changing climate patterns in the Gujjar pastoral community in Himachal Pradesh. The rising temperature,

Changing Climate in Your Area: A Historical Perspective



extended summer seasons and abrupt precipitation events are affecting the natural habitat and the pastoral livelihoods of the Gujjar community. The increasing incidence of natural disasters like drought, floods and landslides poses a significant threat to the survival of the community.

The focus group discussion conducted with the Gujjar pastoral community at different locations highlights the urgent need for action to address the impact of climate change on their lives and livelihoods. The personal experiences shared by the participants underscore the severity of the situation and the urgent need for solutions to mitigate the effects of climate change. Many participants expressed their concerns about the increase in the frequency and severity of natural disasters such as droughts, floods and landslides. For example, one participant shared how they have been facing difficulties in finding water and grazing lands for their livestock due to the prolonged droughts in the region. Another participant talked about how their village was affected by floods last year and they had to evacuate their homes and livestock to a safer place.

Rising rising temperatures were also a common issue raised by the participants. They shared how the hotter temperatures have led to the drying up of water sources, making it difficult for their livestock to graze and

find water leading to a decline in milk and meat production. For instance, one participant mentioned how they have been struggling to maintain their cattle's health and productivity due to the heat stress caused by the prolonged summer season.

During the discussion many participants also talked about the unusual rainfall patterns in the region. They shared how there have been prolonged dry spells followed by heavy rainfall that can lead to flash floods and landslides. One participant shared their personal experience of losing their livestock and crops in a landslide last year.

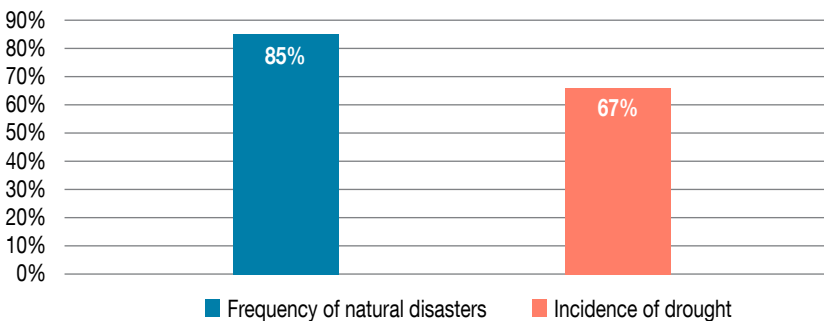
Natural Disaster Frequency and Severity

The survey conducted to assess the impact of climate change on the Gujjar pastoral community in Himachal Pradesh revealed alarming trends regarding the frequency and severity of natural disasters. When asked about the changes in the frequency or severity of natural disasters like drought, floods or landslides, almost 85% of the respondents reported an increase. This data reflects the the current situation faced by the community and emphasizes the need for immediate action.

Further, it was reported that 67% of the respondents reported an increase in the incidence of drought while 74% of the respondents from the four districts reported that their region was drought-stricken. These figures are particularly concerning as droughts have a devastating impact on the livestock-based economy of the Gujjar community. The reduction in grazing lands, scarcity of water and lack of fodder during droughts severely affect the health and well-being of the livestock leading to a significant economic loss for the community.

The increase in the frequency and severity of natural disasters is taken to be an indication of the impact of climate change on the region. The Gujjar community is highly dependent on natural resources and any changes in the climate have a direct impact on their livelihoods.

Increased Frequency of Natural Disasters

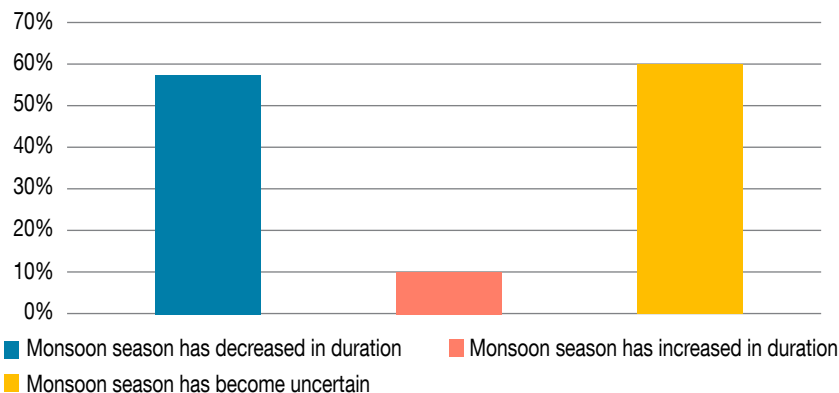


Impact on Monsoon

In response to a survey question: What are the main changes in temperature, precipitation and extreme weather events that you have observed in your area? The survey data shows that most of the respondents have observed a reduction and uncertainty in the monsoon and winter season due to climate change.

According to the survey, almost 60% of the respondents, have reported that the duration of the monsoon and winter season has decreased in

Impact on Monsoon



their area. This decrease is taken as a long term shift in climatic patterns caused by global warming. In addition, almost 60% of the respondents have reported that the monsoon and winter seasons have become uncertain, which could have serious implications for pastoral livelihoods and migration patterns. The reduction in the duration of these seasons could result in reduced water availability and decreased agricultural productivity which could, in turn, affect the overall economy of the area. The uncertain nature of these seasons could also lead to unpredictable weather patterns that can have a significant impact on farmers' crop yields and also cause flooding, landslides and other natural disasters.

Also, it should be noted that a small proportion of the respondents, accounting for almost 11 %, reported an increase in the duration of the monsoon and winter seasons in their area. This could be due to local variations or anomalies in the weather conditions which could also have implications for the local environment, agriculture and economy.

Focus group discussions conducted with members of the community, revealed that the community has observed a reduction and uncertainty in the monsoon and winter season due to climate change. Participants in all five focus group discussions reported a decrease in the duration of the monsoon and winter seasons in their area. They expressed concern about the implications of this trend on their pastoral livelihoods and migration patterns. Many shared personal experiences of having to travel further to find suitable grazing land and water sources for their livestock due to reduced availability in their area.

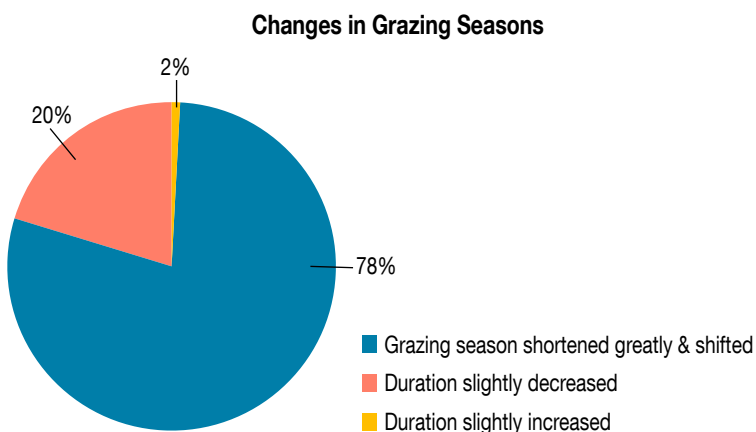
Uncertainty was another common theme that emerged from the discussions. Participants reported that the monsoon and winter seasons have become increasingly unpredictable, making it difficult for them to plan and manage their herds. Some shared stories of being caught off guard by sudden weather changes and losing their animals as a result. The reduction in the duration of the monsoon and winter seasons was also seen as a threat to the local economy. Participants noted that reduced

water availability and decreased agricultural productivity could have a ripple effect on the entire community including small businesses that rely on agriculture for their livelihoods.

Overall, the focus group discussions highlighted the urgent need for action to address the impact of climate change on pastoralists in Himachal Pradesh. As one participant stated, “We have seen the changes happening in front of our eyes and we know that we need to take action to protect our way of life and our future.”

Changes in Grazing Seasons

According to the survey responses, a 78% majority reported noticing changes in the timing and duration of grazing seasons. This indicates that the pastoral community is experiencing the impact of climate change on their traditional practices of livestock rearing. Further, it is relevant to note that of the respondents who did not report a great change in grazing season that just over 20% reported a slight decrease in duration while only a little over 1% reporting an increase. This suggests that changes in the timing and duration of grazing seasons are having a negative impact on the pastoral community’s livelihoods and food security.



The changes in the timing and duration of grazing seasons are likely linked to the rise in mean temperatures and extended duration of summer seasons reported by respondents in the previous section. These changes in climate can lead to reduced availability of water and fodder which can have a detrimental effect on the health and productivity of livestock.

Participants of FGDs reported a significant impact on their traditional practices of livestock rearing, particularly affecting the timing and duration of grazing seasons. Personal experiences shared by participants included statements such as “We used to start grazing our animals in the hills from the start of May, but now we have to wait until the end of May due to the delay in the arrival of monsoon rains,” and “We used to have plenty of green grass for our animals but now it’s scarce and we have to travel longer distances to find it.”

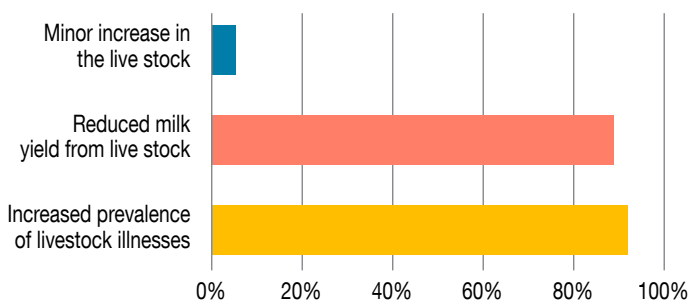
Another major concern expressed by the community was the impact of these changes on their livelihoods and food security. One participant stated, “Our income from selling milk and livestock has decreased significantly and we are struggling to make ends meet.”

Changes in Animal Health and Productivity

The responses to the question regarding changes in the health or productivity of animals show a worrying trend. The over 90% of respondents reported an increased prevalence of livestock illnesses while over 87% reported a reduced milk yield from their animals. Additionally, only about 6 % reported minor illnesses in their livestock.

Livestock illnesses are a major concern as they directly impact the income and livelihood of the Gujjar Pastoral community. According to reports from the government to the joint secretary of the Disaster Management Division of the Ministry of Home Affairs (MHA), a total of 55,926 cattle have been infected with lumpy skin disease, resulting in the deaths of 2,309 animals in Himachal Pradesh till September 2022 .This alarming data underscores

Changes in Animal Health and Productivity



the serious impact of this disease on the livestock population in the region. It is crucial to recognize the significance of this issue, as it threatens the livelihoods of pastoral communities who rely heavily on their livestock for sustenance and income. Immediate action must be taken to address this issue which has the potential to exacerbate the socio-economic backwardness already faced by these communities. The disease not only reduces the productivity of animals but also makes them unsuitable for trade.

The reduction in milk yield is another significant issue for the community, as milk and dairy products are an essential source of income. The decrease in milk yield is directly linked to the decrease in the availability of pasture and water which are essential for the animals' health and productivity.

The changes in the health and productivity of animals are directly linked to the impact of climate change on the environment. The changing weather patterns, increased temperature and reduced availability of water and pasture have made the animals more vulnerable to diseases. The community needs to be made aware of these changes and provided with the necessary support and resources to adapt to the changing climate.

Impact on Livestock Migration

The responses received from the survey indicate that almost 85% of the respondents have noticed changes in the patterns of migration or movement of their livestock in response to climate change. According to the data collected, only about 15% of the respondents have noticed no such changes. This is a clear indication that climate change is having a significant impact on the traditional practices of the community and their way of life.

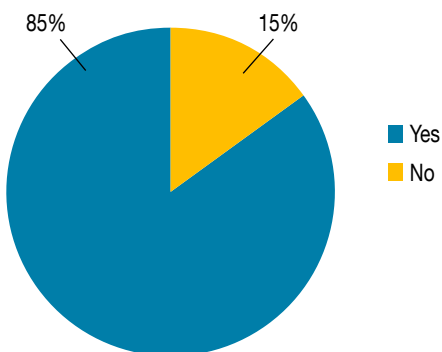
The observed changes in the patterns of migration or movement of livestock are likely a response to changes in climate patterns and weather conditions. These changes can include shifts in rainfall patterns, temperature fluctuations and changes in vegetation growth patterns. The observed changes in the movement of livestock are likely a way for the community to adapt to these changing conditions, seeking out new sources of food and water and adapting to new grazing patterns.

The implications of these changes in the patterns of migration or movement of livestock are significant particularly for the Gujjar pastoral community who depend on livestock for their livelihoods. Changes in the movement patterns of livestock can lead to disruptions in grazing patterns, shortages of food and water, and changes in the availability of resources. These changes can have a significant impact on the economic well-being of the community, as they rely on their livestock for income and sustenance.

Based on the responses received from the survey, it is evident that climate change has had a significant impact on the patterns of migration and movement of their livestock.

The Gujjar community's traditional migratory patterns have been disrupted due to changes in seasonal patterns which negatively affect their ability to travel with their animals. The community often migrates to mountainous regions and is able to stay there for little time and they are compelled

Changes in Livestock Migration Patterns



to travel frequently from one place to another in search of fodder for their animals. Animal movement reduced drastically and the availability of animal fodder has decreased leading to disruption in cattle grazing patterns. Climate change has also resulted in erosion of soil leading to loss of land, drying up of water sources, depletion in water levels, forest cover and pollution of rivers, all of which harm traditional cattle rearing practices of the community.

Additionally, there is a significant decrease in cattle population and a rise in diseases among the animals due to lack of proper nutrition. The movement of animals from one place to another has reduced and the conditions for migration have also worsened due to landslides caused by unexpected rains. The unavailability of natural animal fodder, drying up of water sources, depletion of forest covers and drying up of rivers and canals have forced community members to migrate frequently from one place to another. This has resulted in a decrease in the time available for migration due to extreme changes in the climate cycle. There is also a lack of wood and other resources required to build houses and shelters for the animals which makes it difficult to protect them from the harsh weather.

Moreover, growth in tourism has resulted in an increase in the population in the area which can be a strain on and leading to the depletion of water

sources and natural resources. The frequency of cattle herders traveling to the region from neighboring areas has decreased due to climate change which has caused a scarcity of natural resources. As a result, more pastoralists are arriving in the area, disrupting the traditional migratory patterns of the community and leading to a shift in migratory patterns. This shift is having a negative impact on the livelihoods of the community and is putting their way of life at risk.

It is clear from the survey data that the Gujjar pastoral community is feeling the impacts of climate change and that changes in the patterns of migration or movement of their livestock are just one example of this. It is important to recognize the challenges faced by this community and take steps to support them in adapting to these changes. This could include initiatives to improve water and grazing management, support for alternative livelihoods and targeted investments in infrastructure to help the community adapt to changing weather patterns. By acting now, we can help to mitigate the impacts of climate change on this vulnerable community and support their resilience and prosperity in the face of a changing climate.

Livelihood, Income, and Assets

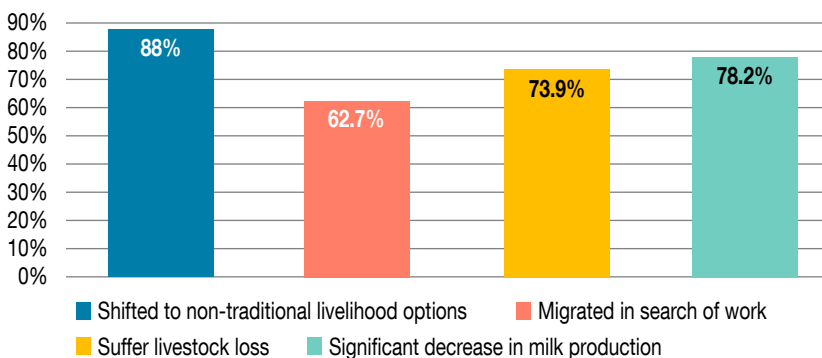
Impact on income and Economic Stability

The survey data reveals that climate change has had a severe impact on the Gujjar pastoral community's income and economic stability in Himachal Pradesh. The data collected reveals some interesting trends such as, out of the total respondents, more than 50% reported suffering from all four areas related to their income and economic stability which includes shifting to non-traditional livelihood options, migration in search of work, livestock loss and significant decrease in milk production. This indicates that climate change has had a severe impact on the community's economic stability and they are struggling to cope with the changes.

The survey findings tell us that 88% of respondents reported that they shifted to non-traditional livelihood options which is a significant change from their traditional way of life. This is a worrying trend as it indicates that the community is losing its traditional knowledge and practices which could have long-term consequences. Another concern finding is that over 62% of respondents reported that they migrated in search of work which indicates that the economic opportunities in the region have been severely impacted. This trend is likely to continue and it could lead to a significant demographic shift in the region.

Almost 79% of respondents also reported suffering livestock loss and over 78% reported a significant decrease in milk production which are the two primary sources of income for the community. This indicates that climate change has not only impacted the community's traditional way of life but also their ability to earn a living.

Impact on Income & Economic Stability

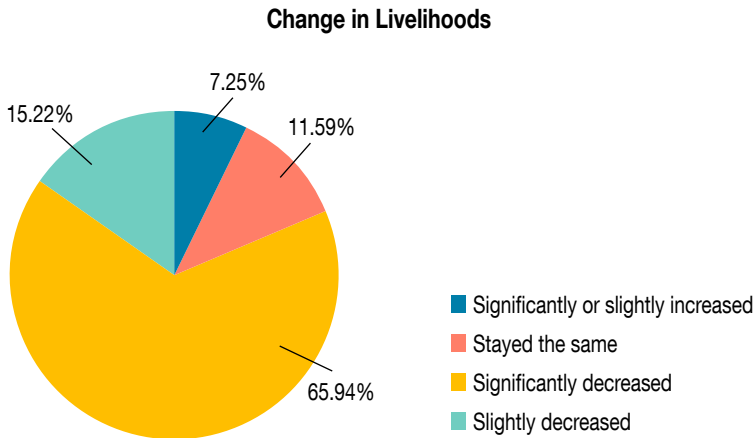


During the focus group discussion, several personal experiences were shared, stories of having to sell their herds of livestock due to a lack of grazing land and water scarcity. Some participants shared that their villages have been facing severe water shortages leading to a decrease in milk production and they are struggling to find alternative sources of income. Others shared that they had to move to the city to find work as their

traditional livelihood options were no longer viable due to climate change. These findings will be further elaborated in the following sections.

Impact on Livelihood

The survey results indicate that most of the Gujjar pastoral community in Himachal Pradesh has experienced a significant decrease in their livelihoods due to the intensity of extreme weather events in the last five years. The survey data shows that most of the respondents 70% reported that their livelihood has significantly decreased due to the intensity of extreme weather events in the last five years. Another 15% reported a slight decrease in their livelihood while only slightly over 7% respondents reported an increase (either significant or slight) in their livelihood. The remaining 12% of respondents reported that their livelihood has stayed the same.



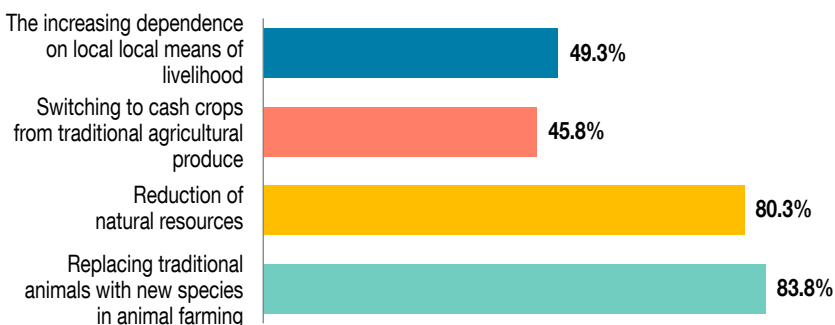
The focus group discussions revealed that extreme weather events have had a significant impact on Gujjar community livelihoods in the last five years. The respondents reported a decrease in their livelihoods due to the intensity of these events, highlighting the vulnerability of the community to climate change. Personal experiences shared by some individuals and families included losses in livestock due to floods, crop failures and the

inability to access markets during extreme weather events. One young pastoralist stated, “The floods destroyed all our crops and we had to borrow money to survive.” Another mentioned, “We had to sell our produce at a loss because we couldn’t reach the market during heavy snowfall and rain.” A village elder expressed concern about the younger generation not being interested in traditional livestock rearing practices and opting for urban jobs which could lead to the loss of valuable knowledge and skills.

Impact on Traditional Livelihood Activities

The information collected from the responders on the impact of climate change on the Gujjar pastoral community provides significant insights into the changes in the traditional livelihood activities of the community. When asked how climate change has affected their livelihood, the majority of the respondents almost 84% reported replacing traditional animals with new species in animal farming. This trend indicates a shift in the animal husbandry practices of the community which lead to the loss of traditional knowledge and genetic diversity. Another significant trend observed in the survey results is the reduction of natural resources as reported by a little over 80% of respondents. Climate change has led to changes in the availability and quality of natural resources which has impacted the traditional livelihoods of the Gujjar community. This trend is consistent with the larger picture of climate change impacts on the Himalayan region,

Impact of Climate Change on Traditional Livelihood Activities



where water scarcity, soil erosion and deforestation are some of the significant challenges faced by the communities.

The data also reveals that a over 49% are increasingly dependent on local means of livelihood. This trend indicates a shift away from the traditional agricultural and pastoral practices and a growing reliance on other income-generating activities. A switch to cash crops from traditional agricultural produce was reported by almost 46% of the respondents which is another indication of this trend. This shift in livelihood strategies is likely a response to the changing climate and its impact on traditional livelihood practices.

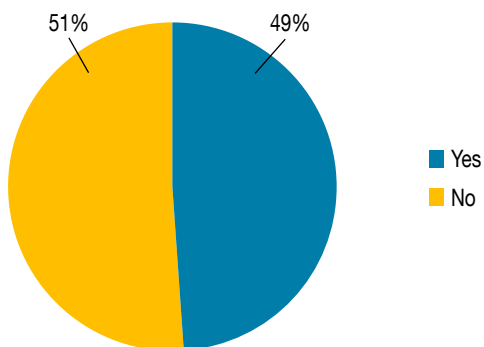
These survey results provide important insights into the impact of climate change on the traditional livelihoods of the Gujjar community in Himachal Pradesh. The data highlights the need for innovative and sustainable adaptation strategies that can help the community cope with the changing climate. The results indicate a shift in animal husbandry practices, growing reliance on local means of livelihood and a switch to cash crops from traditional agricultural produce. These trends underscore the importance of developing climate-resilient livelihood strategies that can support the community's social, economic and cultural well-being.

Alternative sources of Income

The question of whether the Gujjar pastoral community in Himachal Pradesh has had to rely on other sources of income because of financial losses caused by climate change elicited a mixed response. According to the survey data collected from 142 responders, 49% of the respondents answered in the affirmative while 51% said no. This indicates that a significant proportion of the community has had to seek alternative sources of income, possibly due to the impact of climate change on their traditional livelihoods.

The 49% of respondents who said reported relying on other sources of income can be attributed to the effects of climate change through the

Alternative Source of Income



availability of grazing lands and water resources. The traditional livelihood of the Gujjar community is pastoralism which involves rearing livestock such as goats, sheep and cows. However, with the changing climate patterns, the availability of grazing lands and water sources has been affected leading to reduced productivity and financial losses. In response, some members of the community have resorted to other sources of income such as small businesses and wage labor, to sustain their families.

On the other hand, the 51% of respondents who said no may be attributed to several factors. It is possible that they have not experienced significant financial losses due to climate change or have found ways to adapt to the changing environment. Additionally, it is also possible that the respondents did not fully understand the question or chose to answer in the negative for various reasons.

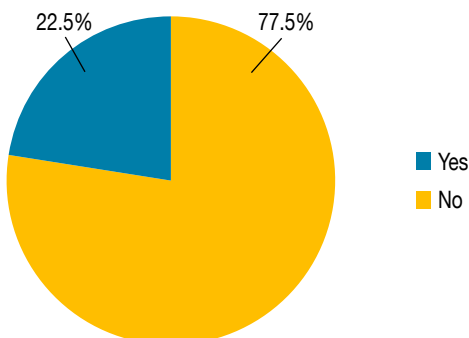
The survey data highlights the need for interventions to support the Gujjar pastoral community in adapting to the changing climate. This could include initiatives to increase access to alternative sources of income such as training in new skills or providing credit for small businesses. Additionally, efforts to promote sustainable use of natural resources and climate-resilient agricultural practices could help to mitigate the impacts of climate change on the community's traditional livelihoods.

Climate Induced Migration for Livelihood

The survey results provide clear evidence of the adverse impacts of climate change on the Gujjar Pastoral community. The community is facing significant challenges due to the impacts of climate change including the need to seek alternative livelihood options and migrate. There has been a notable increase in the trend of seeking alternative livelihood options, as observed in the previous sections, and migration as a consequence of climate-related events in recent years. Respondents reported that extreme weather events such as droughts and floods, have adversely impacted the availability of forage and water resources which has caused them to lose their livestock and other assets. Consequently, the need to look for alternative livelihood options and migrate to other areas for employment opportunities has arisen. The data revealed that almost 78% of the respondents had to seek alternative livelihood options and migrate due to the impacts of climate change while only slight more than 22% did not have to do so. This indicates that climate change has significantly impacted the livelihoods of the Gujjar community, forcing them to seek alternative options to sustain their livelihoods. This has resulted in various social, economic and environmental vulnerabilities for the community.

One of the major challenges emerged during the focus group discussions was the need to seek alternative livelihood options and migrate from

Alternative Source of Income



their ancestral lands. This has become a trend in recent years because of climate-related events. Many individuals and families shared their personal experiences and struggles of having to leave their traditional way of life behind and seek other sources of income. One individual shared, “I had no choice but to sell my livestock as I could not provide for them due to the changing climate. Now, I have started a small business selling fruits and vegetables in the nearby town.” Another participant stated, “I used to rely on the forest resources for my livelihood, but due to the changes in the environment, the forests are no longer able to sustain us. Now, I work as a daily wage laborer in construction sites.”

A village community representative expressed their concerns about the long-term impacts of migration on the community’s social fabric, saying, “The migration of our youth is leading to a gradual breakdown of our social and cultural values. We need to find ways to keep them engaged and invested in our community.”

Anticipating Future Financial Losses for Community Livelihoods

The open-ended survey question asked to the Gujjar pastoral community members was, “How do you think the financial losses due to climate change will affect your community’s livelihoods in the future?” The responses received from the members were numerous and varied, highlighting the multitude of ways in which climate change will impact their lives.

The main areas of concern were agricultural land and livestock which form the backbone of their traditional livelihood. The members reported that unseasonal rains, shortage of fruits and grains and reduced stock of livestock due to climate change will affect their income and cause a reduction in natural fodder and the number of cattle. They also reported that the cost of essential items will increase leading to financial crisis and starvation.

The members were worried that loss of natural resources and reduction in livelihood options would force them to leave their traditional occupation and shift to other livelihood options or move to other places for work. This, in turn, would lead to an increase in poverty and starvation in the community.

The responses also indicated that climate change is affecting animal husbandry and farming which will reduce the income of the community and create problems in arranging fodder for the animals. This will also affect the education of their children, as the expenses of education will become difficult to meet. The responses highlighted the critical importance of addressing climate change and its impact on the livelihood of the Gujjar pastoral community. The loss of their traditional means of livelihood could have a cascading effect on the community leading to poverty and hunger.

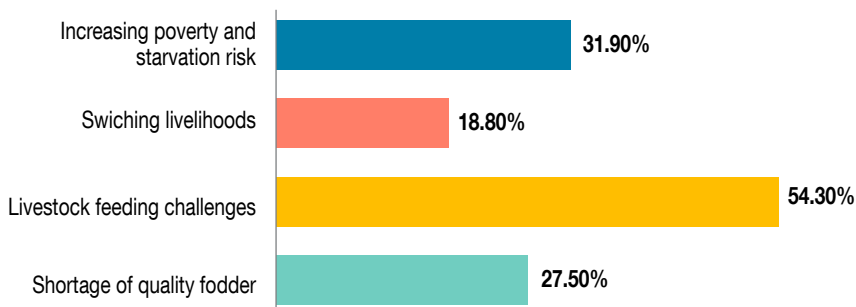
The FGDs revealed that climate change has had significant impacts on the availability and quality of forest resources which the community uses for their livelihoods. The inadequate availability of medicinal flora, insufficient forage for livestock, diminished soil fertility resulting from non-native cultivation and greater reliance on chemical fertilizers are major concerns for the community. This has caused an increase in risk management costs and highlights the financial burden that climate change has placed on the community.

Anticipating the Impact on Livelihoods

The responses to the question about the anticipated impact of climate change on the Gujjar pastoral community's livelihoods reveal some concerning trends. Over half of the respondents expressed concerns about livestock feeding challenges which could result from the shortage of quality fodder reported by almost a third of the respondents. This issue could have a significant impact on the health and productivity of the community's livestock which is a crucial source of income and sustenance for many Gujjar households. Also, over a third of respondents expressed

fears of increased poverty and starvation risk as a result of climate change impacts. This concern could be tied to the possibility of livestock losses which could further exacerbate food insecurity in the community.

Anticipating the Impact on Livelihoods



The information collected, also shows that almost 19% of respondents are considering switching livelihoods, suggesting that some community members may already be experiencing the adverse effects of climate change on their traditional ways of life. This trend could have far-reaching implications for the Gujjar community's social and economic fabric, as it could lead to a loss of traditional knowledge and practices, as well as potential disruptions to community cohesion.

During the focus group discussions, many Gujjar pastoralists shared their personal experiences and concerns related to climate change impacts on their traditional practices of livestock rearing. One young Gujjar pastoralist expressed concern about the availability of quality fodder for their livestock. "The grass is not growing as it used to be and we have to travel longer distances to find good grazing lands for our animals," they said. This sentiment was echoed by a woman pastoralist who added, "With the changing climate, the availability of water and fodder is decreasing and this is affecting the health of our livestock."

Some elder pastoralists also expressed fears of increased poverty and starvation risk as a result of climate change impacts. "We have already

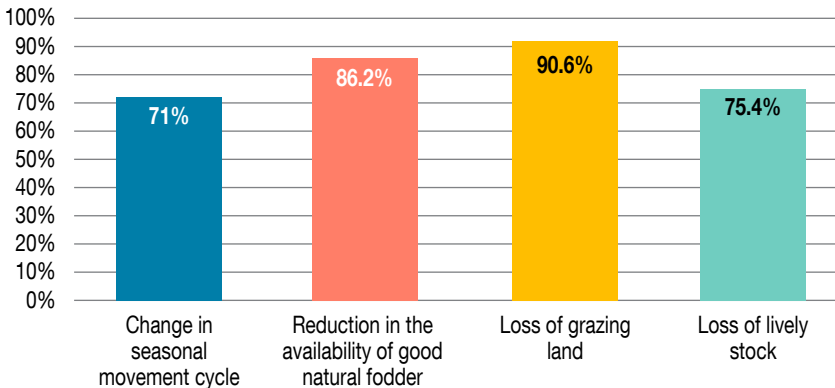
lost some of our livestock due to droughts and floods and it is becoming harder to make a living from our animals,” said one elder of the village. Another added, “If the climate continues to change like this, we may have to find alternative livelihood options and this would mean losing our traditional way of life.”

These personal experiences and statements reflect the common concerns raised by many Gujjar pastoralists during the focus group discussions. The survey data also showed that a significant number of respondents are considering switching livelihoods, indicating that some community members may already be experiencing the adverse effects of climate change on their traditional ways of life.

Loss of Assets and Damages Experienced

The information collected from responders shows that a large majority of the respondents have experienced significant losses and damage due to climate change. The data collected highlights some concerning trends. For instance, 71.% of the respondents reported a change in the seasonal movement cycle of their livestock due to climate change which could have serious implications on the availability of grazing land and fodder for the livestock. Additionally, a little over 86% of the respondents reported

Specific Losses and Damages Experienced



a decrease in the availability of good natural fodder for their livestock which could lead to malnourishment of the livestock and a decrease in milk and meat production. Furthermore, almost 91% of the respondents reported a loss of grazing land due to climate change. This could lead to overcrowding of livestock in smaller areas which could further exacerbate the problem of decreasing availability of good natural fodder. Over 75% of the respondents reported a loss of livestock due to climate change which could have serious economic implications for the Gujjar Pastoral community as livestock is a major source of income for them.

The fact that almost 64% of the respondents reported experiencing all four losses and damages due to climate change is a concerning trend. It indicates that a significant portion of the Gujjar Pastoral community in Himachal Pradesh is facing multiple challenges simultaneously due to the impact of climate change. These losses and damages are elaborated on in the following sections.

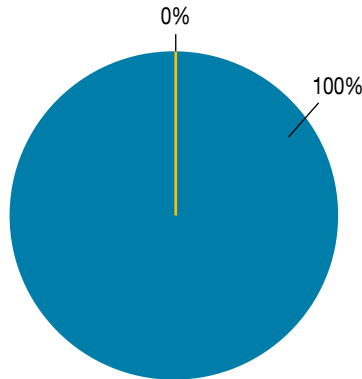
During the focus group discussions, several Gujjar pastoralists shared their personal experiences and concerns regarding the impact of climate change on their lives. One young Gujjar man mentioned how difficult it has become to find good quality fodder for his livestock which has resulted in a decline in milk and meat production. A woman from the community expressed her worries about the health of her animals due to the lack of nutritious fodder and the impact it might have on her family's income. An elder from the community shared how he has seen a significant decrease in the availability of grazing land for his livestock which has made it challenging to maintain their health and productivity.

One common demand that emerged in discussion was the need for more support from the government and other stakeholders to address the impact of climate change on their traditional way of life. They emphasized the importance of promoting climate-resilient practices and providing access to information and resources to help them adapt to the changing conditions.

Reduction of Livestock and Assets

The survey data collected indicates that the Gujjar pastoral community in Himachal Pradesh has seen a reduction in the number of livestock or other assets due to the impacts of climate change on their livelihoods.

Reduction of Livestock and Assets



The responses received show that all of the respondents have seen a reduction in their livestock or other assets. This is a concerning finding that highlights the severe impact of climate change on the community's traditional livelihoods.

The reduction in livestock or other assets reported by the respondents can be attributed to several factors. Climate change has led to a reduction in the availability of grazing lands and water resources which has affected the productivity of the livestock. Additionally, the changing weather patterns have made it difficult for the community to carry out their traditional livelihood activities leading to reduced productivity and financial losses. These factors have forced the community to reduce the number of livestock or other assets they own to cope with the changing climate.

During the focus group discussions, it was revealed that climate change has had a severe impact on their livelihoods. One of the most significant

impacts reported was the need to reduce the number of livestock or other assets. This has been a common trend among the community members and it has resulted in a decrease in their income and economic stability. A community leader, shared his concern about the increasing number of families who are being forced to reduce their livestock due to the impacts of climate change. He said, “Every year, we see more and more families selling off their animals or other assets. It is not just a financial loss but also a loss of our way of life. We have always depended on our livestock for food, milk and income and without them, we feel helpless.”

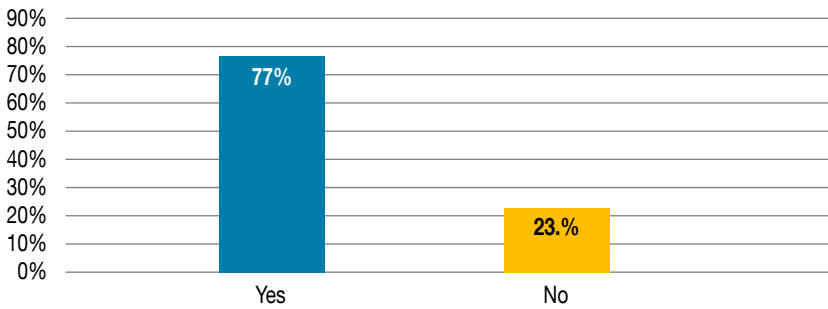
A Gujjar pastoralist woman, shared her experience of losing her buffalo due to extreme weather conditions. She said, “Last year, my buffalo died due to the extreme heat. I had raised her from a calf and she was like a family member to us. Losing her was heartbreaking and it has been challenging to manage without her milk which was a significant source of income for us.”

Loss of Property or Assets from Climate Events

The survey responses indicate that a significant percentage of the Gujjar pastoral community in Himachal Pradesh has experienced loss of property or assets due to climate-related events. As per the data, 77% of the respondents answered in the affirmative. This suggests that the community is highly vulnerable to the adverse impacts of climate change which can result in severe economic losses and further exacerbate their socio-economic backwardness.

The loss of property and assets due to climate-related events can have a devastating impact on the livelihoods and well-being of the community members who primarily rely on agriculture and pastoralism for their sustenance. The loss of crops, livestock and other assets can result in reduced income and increased debt, pushing the community further into poverty.

Loss of Property or Assets from Climate Events



The loss of property or assets due to climate-related events emerged as a major concern during FGDs. The group members reported that frequent landslides, flash floods and heavy rainfall have damaged their homes, crops and livestock. One member reported that his family lost their home to a landslide and they had to take shelter in a makeshift tent in a nearby field. A village elder mentioned that the cost of rebuilding after a climate-related disaster is often too high and they cannot afford to repair or rebuild their homes.

The members also expressed their worries about the future and anticipated financial losses. They fear that their homes, crops and livestock will continue to be at risk due to climate change and they may lose their entire livelihoods. One member stated, “We do not know what will happen to us in the future. We cannot predict the weather and the disasters that come with it. We are afraid that we will lose everything.”

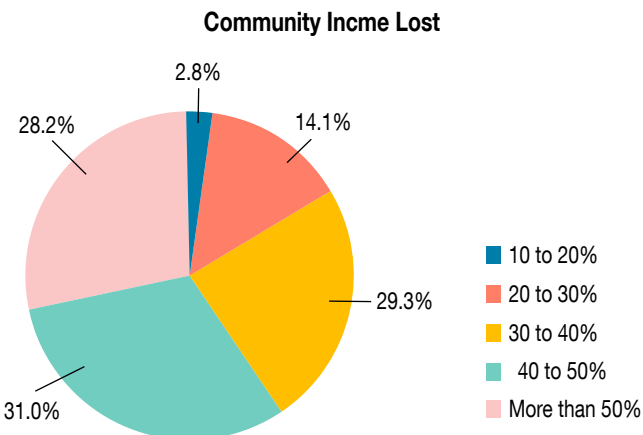
The Gujjar pastoral community recommended during FGDs that the government provide them with financial support and resources to prepare for and respond to climate-related disasters. They also suggested that the government provide them with technical knowledge and skills to mitigate the impact of climate change on their livelihoods.

The high percentage of respondents who have experienced loss of property or assets due to climate-related events underscores the need for

urgent action to address the impacts of climate change on the community. Adaptation measures such as building climate-resilient infrastructure, promoting sustainable agriculture and pastoralism practices. Also, providing financial and technical assistance to the community is essential to mitigate the adverse impacts of climate change on the community’s livelihoods and well-being.

Community Income Loss

Based on the responses received from the survey it is evident that the impacts of climate change have led to a significant reduction in their income over the past five years. Among the respondents, a little under 3% reported a reduction in income of 10-20%, a little over 14% reported a reduction in income of 20-30%, almost 24% reported a reduction in income of 30-40%, 31% reported a reduction in income of 40-50% and a little over 28% reported a reduction in income of more than 50%. These results highlight the severe impact of climate change on the livelihoods of the Gujjar pastoral community in Himachal Pradesh. The trend of increasing income loss with the severity of the impact of climate change is particularly noteworthy. More than half of the respondents reported a reduction in income of over 30%, indicating the significant financial burden that the community is facing.



The survey results clearly indicate that the impacts of climate change have severely affected the income and livelihoods of the Gujjar pastoral community in Himachal Pradesh. The majority of the respondents have reported a significant reduction in their income with over half of them experiencing a loss of over 30%. This trend of increasing income loss with the severity of the impact of climate change is particularly alarming. These findings underscore the urgent need for action to address the impacts of climate change and support vulnerable communities like the Gujjar pastoral community in adapting to the changing climate and safeguarding their livelihoods.

During the focus group discussions, it became evident that climate change has had a significant impact on income and livelihoods over the past five years. The trend of income loss increasing with the severity of the impact of climate change is particularly concerning. Participants shared how they have struggled to cope with the changing climate and its impact on their traditional way of life. Many have been forced to shift to non-traditional livelihood options which has resulted in a loss of traditional knowledge and practices.

One participant shared, “We have been facing challenges due to the changing climate and it has been affecting our lives significantly. Our livestock, which is the main source of our livelihood, is suffering and we are unable to earn enough to sustain ourselves.”

Another participant shared, “We have seen a decrease in milk production which has made it difficult for us to earn a living. We are worried about our future and how we will be able to survive in the long term.”

Access to Resources

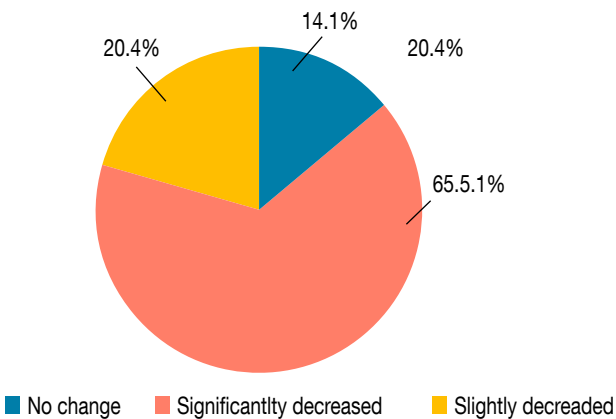
Forest Resource Changes and Livelihoods

Climate change has had significant impacts on the availability and quality of forest resources that the community uses for their livelihoods. The results

show that over 77% of the respondents reported inadequate availability of medicinal flora, and a little over 99% reported insufficient forage for livestock, almost 55% reported diminished soil fertility resulting from non-native cultivation and almost 44% reported greater reliance on chemical fertilizers.

The high percentage of respondents who reported insufficient forage for livestock indicates that climate change has led to a shortage of grazing land and reduced the availability of natural resources for livestock feed. This finding is concerning as the Gujjar pastoral community heavily relies on livestock for their livelihoods. The shortage of forage for livestock can have severe consequences for the community's income and food security.

Changes in Forest Resource Availability



Furthermore, the inadequate availability of medicinal flora reported by almost 78% of the respondents highlights the potential impact of climate change on the community's health and well-being. The Gujjar pastoral community has a rich traditional knowledge of medicinal flora and their reliance on forest resources for medicinal purposes is essential to their health and well-being. The reduction in the availability of medicinal flora can lead to an increased risk of illnesses and diseases which can have a severe impact on the community's quality of life.

The survey data also indicates that climate change has led to diminished soil fertility resulting from non-native cultivation and greater reliance on chemical fertilizers. These findings highlight the long-term impact of climate change on the natural resources that the Gujjar pastoral community relies on for their livelihoods. The reliance on non-native cultivation and chemical fertilizers can further degrade the environment and negatively impact the community's health and well-being. The survey data collected suggests that climate change has led to significant impacts on the availability and quality of forest resources that the community relies on for their livelihoods. These results are elaborated upon in the following sections.

It was highlighted during the FGD that climate change has had a significant impact on the availability and quality of forest resources that the Gujjar pastoral community relies on for their livelihoods. Several members shared that climate change has significantly impacted the availability and quality of forest resources that the community uses for their livelihoods. One member mentioned, "The forest has changed a lot in the last few years. The trees are not growing as fast as they used to and there is less undergrowth. The plants that we use for medicine are becoming scarce and we have to travel further to find them." Another member added, "The forage for our livestock is also diminishing. We have to travel longer distances to find grazing land for our animals."

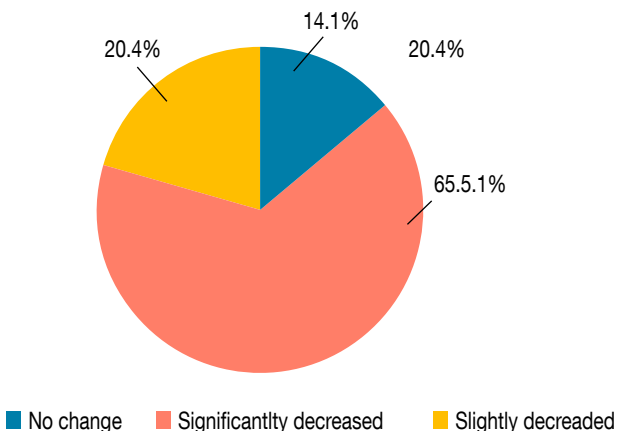
The reduction in forest resources has had a direct impact on the community's livelihoods. One member shared, "We used to earn a good income from selling medicinal plants and herbs from the forest, but now we have to travel further and spend more time to find them. It's not profitable anymore." Another member stated, "The soil fertility has also decreased because of non-native cultivation. We have to use chemical fertilizers which are expensive and not good for the environment."

Changes in Forest Resource Availability

The responses received from the survey on the availability of forest

resources suggest a concerning trend. The majority of the respondents, reported a significant decrease in the availability of forest resources while a little over a fifth reported a slight decrease. This indicates that the availability of forest resources is declining at an alarming rate in the study area. Only 14.1% of the respondents reported no change in the availability of forest resources, which suggests that the situation is dire.

Changes in Forest Resource Availability



The availability of forest resources is critical to the livelihoods of pastoral communities in the study area. Forests provide valuable resources such as fuelwood, fodder and medicinal plants. They also play a vital role in regulating the local climate, preventing soil erosion and maintaining water resources. The decline in the availability of forest resources has far-reaching impacts on the lives of the Gujjar pastoral community.

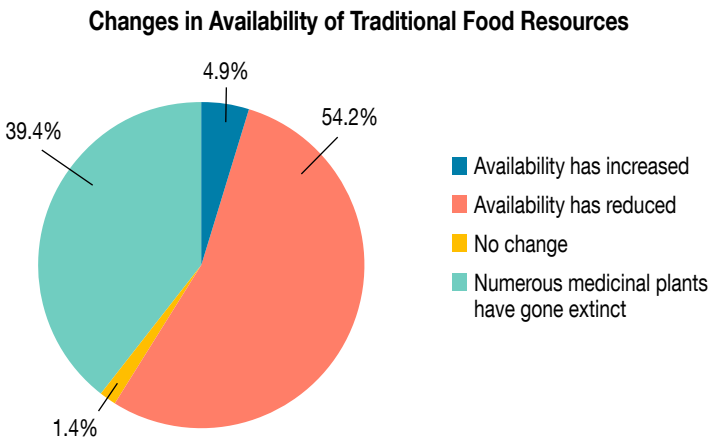
Climate change-induced changes in patterns of precipitation and temperature can affect the growth and distribution of forest species leading to a decline in forest cover. Deforestation for agriculture, fuelwood and timber is also a significant contributor to the decline in forest resources. The decline in the availability of forest resources has significant socio-economic implications for the Gujjar pastoral community. The community

depends on forest resources for their livelihoods and the decline in availability can result in reduced income and increased poverty. Moreover, the reduction in the availability of forest resources can lead to increased competition and conflict over scarce resources, exacerbating existing social tensions.

Changes in Availability of Traditional Food Resources

The responses received from the survey indicate that there has been a significant reduction in the availability of food resources in the Gujjar Pastoral community in recent years. A majority of the respondents reported a decrease in the availability of wild fruits and vegetables in their area. This is a cause for concern as these resources play an important role in the diet of the community and are a source of essential nutrients. Only a small percentage of respondents reported an increase in the availability of food resources in their area while a little over 39% reported no change. These figures suggest that the impact of climate change on the availability of food resources in the area has been predominantly negative.

The reduction in the availability of food resources can be attributed to several factors including changes in temperature and precipitation patterns,



soil erosion and deforestation. Climate change has led to an increase in the frequency and intensity of extreme weather events such as droughts and floods which have had a significant impact on agricultural production and food security in the area.

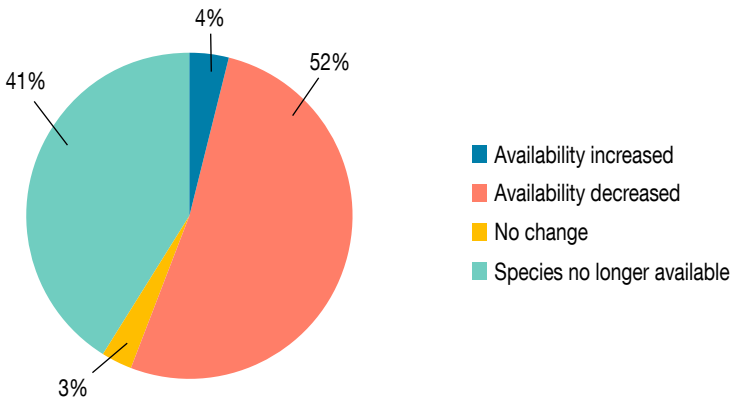
During the focus group discussion, some members shared their personal experiences of the changing availability of food resources. The community members reported a significant decrease in the availability of wild fruits and vegetables which are a significant part of their traditional diet. One member narrated “Our forefathers used to tell us stories of the plentiful fruits and nuts they used to collect from the forest during this time of year. But now, due to climate change, the availability of these resources has decreased significantly. We have to travel further and further to find these fruits and nuts which take up a lot of our time and energy.” The members also discussed the potential consequences of the decline in traditional food resources including malnutrition and health problems.

The reduction in the availability of food resources is likely to have a significant impact on the Gujjar Pastoral community who are heavily reliant on these resources for their livelihoods. This could lead to a decline in the nutritional status of community members and an increase in poverty and food insecurity.

Changes in Availability of Traditional Forest Resources in Your Community

According to the responses received from the survey, the availability of forest resources that the Gujjar pastoral community traditionally relies on for food and income has decreased significantly. More than half of the respondents reported a reduction in the availability of these resources and an over 41% reported that numerous species they traditionally rely on might be extinct. This is a concerning trend as the Gujjar community heavily relies on wild resources for their sustenance and income.

Changes in Availability of Traditional Forest Resources



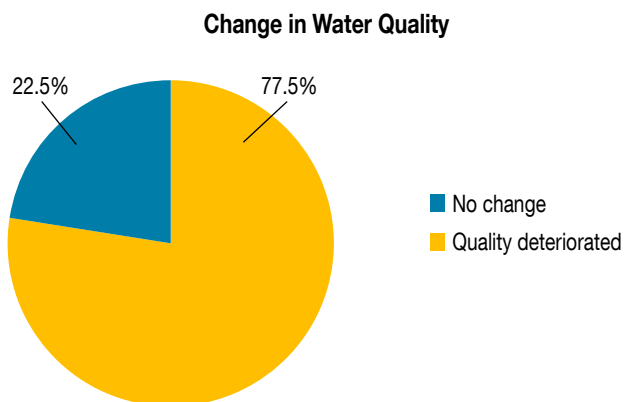
The decrease in availability of wild resources is likely due to the adverse impacts of climate change on the local ecosystem. Changes in temperature and precipitation patterns can affect the growth and distribution of plant species and the disappearance of animal species could be attributed to habitat loss and degradation. The loss of these resources has a direct impact on the Gujjar community who rely on them for sustenance and income generation.

The Gujjar community has been historically marginalized and vulnerable and the loss of these resources further exacerbates their socio-economic backwardness. The loss of income and food sources could have serious consequences for the community's overall health and wellbeing. This issue needs to be addressed urgently to ensure that the community's basic needs are met.

The reduction in availability of wild resources and the extinction of numerous species reported by the survey respondents highlights the adverse impacts of climate change on the Gujjar Pastoral community. The loss of these resources exacerbates the community's already precarious socio-economic status and threatens their overall health and wellbeing.

Water Quality Changes for Livestock and Household Use

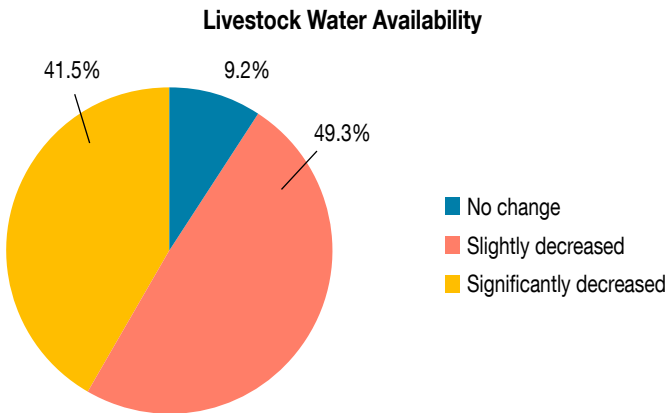
Based on the survey results, a majority of the respondents reported a deterioration in the quality of available water for their animals and household use in recent years due to the impacts of climate change. This can be attributed to the increased frequency and intensity of extreme weather events such as droughts and floods, that have negatively affected the availability of water resources leading to reduced water quality. The deteriorating water quality has significant consequences on the health and well-being of both the animals and the community members.



The trend of deteriorating water quality due to climate change impacts has been on the rise, as observed from the survey results. This is a significant concern for the Gujjar Pastoral community in Himachal Pradesh as they rely heavily on water resources for their livestock and household needs. The deterioration of water quality can lead to water-borne diseases which can have severe consequences on the health of the community members. The findings related to water availability are elaborated upon in the following sections.

Livestock Water Availability

According to the survey responses, Almost 91% of the respondents reported a decrease in the availability of water for their animals. Specifically, over 49% of the respondents reported a slight decrease while almost 42% reported a significant decrease. Only about 9% of the respondents reported no change in water availability for their animals.



The decrease in water availability can be attributed to the changes in precipitation patterns including less rainfall and increased variability in the timing of the monsoon season. This has led to a decrease in the amount of water stored in natural water sources such as rivers and ponds, resulting in a shortage of water for both human and animal consumption.

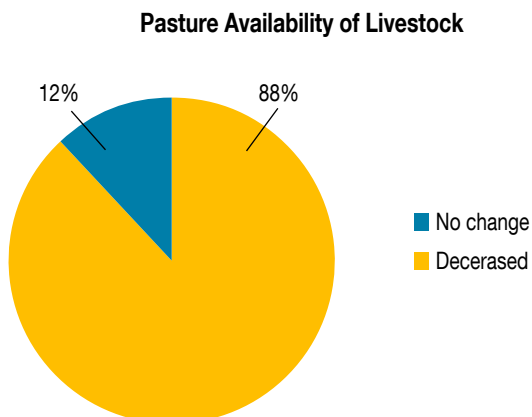
The community members shared their concerns about the decreasing water availability in FGDs. This has been a major issue for them as their animals rely on sufficient water resources to survive. The members reported that the lack of access to adequate water supply can cause dehydration and malnutrition which will lead to a loss of livestock and income for the community. The decrease in water availability also puts additional pressure on the community to seek alternative livelihood options and migrate to other areas. The members shared personal experiences of having to travel long

distances in search of water for their animals and how it has affected their daily lives. They expressed concern that this issue will only worsen in the future, causing greater financial losses and migration from the community. Possible recommendations from the Gujjar pastoral community include the development of water harvesting structures such as check dams and ponds, to conserve water resources and reduce water scarcity.

The decrease in water availability has significant implications for the community's livelihood as their animals rely on adequate water supply to survive. The lack of access to sufficient water resources can lead to dehydration and malnutrition, causing loss of livestock and income for the community.

Pasture Availability for Livestock: Recent Changes

The survey results reveal a significant trend in the reduction of available pasture for animals in recent years with 88% of respondents reporting a decrease. Out of those who reported a decrease, over 46% indicated a slight decrease while almost 42% reported a significant decrease. This indicates a substantial negative impact on the livelihoods of the Gujjar Pastoral community, as pasture is critical to the survival of their livestock which is the primary source of their income.



The reduction in available pasture can be attributed to climate-related factors such as prolonged droughts, erratic rainfall and other extreme weather events. The loss of pasture has resulted in a significant reduction in the number of livestock that the community can maintain leading to decreased income and increased vulnerability to economic and social challenges.

The survey results clearly indicate that the availability of pasture for animals has decreased significantly in recent years, posing a severe threat to the livelihoods of the Gujjar Pastoral community. It emphasizes the need for immediate and effective interventions to mitigate the impacts of climate change on the Gujjar Pastoral community. The community needs access to support and resources to help them adapt to the changing conditions and develop sustainable practices that can enhance their resilience. It is crucial to address the root causes of pasture loss and develop strategies to ensure the availability of adequate and reliable pasture in the future.

During the focus group discussions, it was highlighted that the availability of pasture for animals has decreased significantly in recent years. The community members shared their concern about the loss of natural resources and the reduction in livelihood options which might force them to leave their traditional occupation and shift to other livelihood options or move to other places for work. This would lead to an increase in poverty and starvation in the community. The village headman, Abdul, highlighted the impact of the decreasing pasture availability on the entire village community, stating, "The shortage of pasture is not only affecting individual pastoralists but also impacting our village as a whole. Our economy relies heavily on the sale of milk and dairy products, but due to the shortage of pasture, we are not able to produce enough milk. The younger generation is already seeking alternative livelihood options which could result in the loss of our traditional way of life."

Many members reported that they had to travel longer distances in search of grazing land for their livestock, resulting in increased transportation

costs and reduced time for other important tasks. Some members also shared that they have had to reduce the number of animals they keep due to the lack of grazing land leading to a decrease in their income. An individual Gujjar pastoralist, shared his experience during the focus group discussion, stating, “I have been a pastoralist all my life and I have never seen such a shortage of pasture for our animals. We used to have enough grazing lands for our cattle, but now we have to travel long distances to find suitable pasture. It takes a toll on our cattle’s health and we are not able to produce as much milk or sell them at a good price.”

The community stressed the critical importance of addressing the issue of reduced pasture availability and recommended exploring solutions such as rotational grazing, sustainable land management practices and land restoration initiatives. They also suggested the need for collaboration with the government and other relevant stakeholders to address this challenge and safeguard their livelihoods.

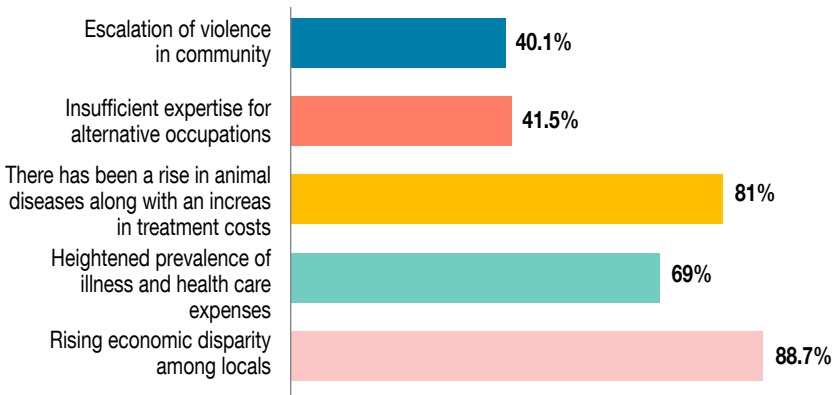
Social Costs of Climate Change

Effects on Social and Economic Status in Local Communities

The survey results indicate that the impacts of climate change have had a significant effect on the social and economic status of the Gujjar Pastoral community in Himachal Pradesh. The data shows that the majority of the respondents, almost 89%, have reported a rise in economic disparity among locals due to climate change impacts on their livelihoods. This suggests that climate change has caused financial losses leading to an unequal distribution of wealth within the community.

The survey results show that the community is facing health-related challenges due to climate change impacts. A significant proportion of the respondents, 69%, reported heightened prevalence of illness and healthcare expenses which could be attributed to a decline in the availability of quality

Effects on Social and Economic Status in Local Communities



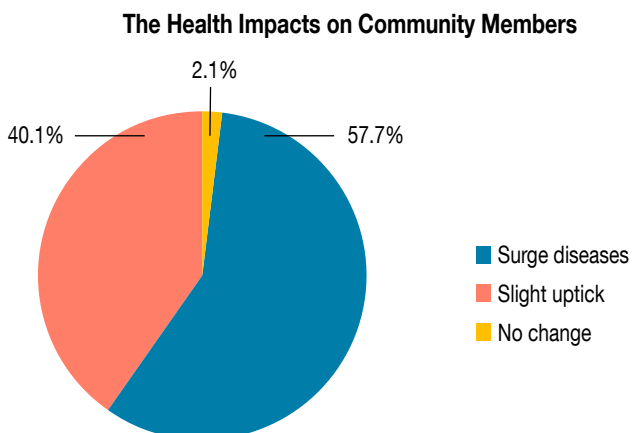
food and water resources. The survey also revealed a rise in animal diseases with 81% of the respondents reporting an increase in treatment costs which could lead to further economic burden on the community.

In addition, the data shows that the community lacks expertise for alternative occupations, as reported by almost 42% of the respondents. This implies that the community is facing difficulties in finding alternative livelihood options, further exacerbating the impacts of climate change on their economic and social status. Also, the survey revealed that the escalation of violence in the community has been reported by over 40% of the respondents. The rise in conflicts could be attributed to the increasing competition for limited resources due to climate change impacts on the availability of forage and water resources. The survey results indicate that the impacts of climate change have had far-reaching and profound consequences on the social and economic status of the Gujjar Pastoral community. The community is facing significant challenges due to climate change such as health-related issues, economic losses and social vulnerabilities.

The Health Impacts of Climate Change on Community members

The survey results pertain to the question, “Have you noticed any changes in the health of your community members in recent years?” reveal concerning trends. A majority of the respondents reported a surge in the prevalence of diseases among community members while over 40% reported a slight uptick in illnesses. Only about 2% reported no change in the health status of community members.

The high percentage of respondents reporting a surge in the prevalence of diseases among community members raises significant concerns about the impact of climate change on the health and well-being of the Gujjar Pastoral community. The data highlights the vulnerability of the community to climate change which is affecting their health and increasing the burden of healthcare costs. The increase in the prevalence of diseases among community members can be attributed to various factors associated with climate change such as an increase in extreme weather events, changes in rainfall patterns and the emergence of new diseases. The Gujjar Pastoral community’s nomadic lifestyle and dependence on natural resources for livelihood further exacerbates their vulnerability to the impacts of climate change.



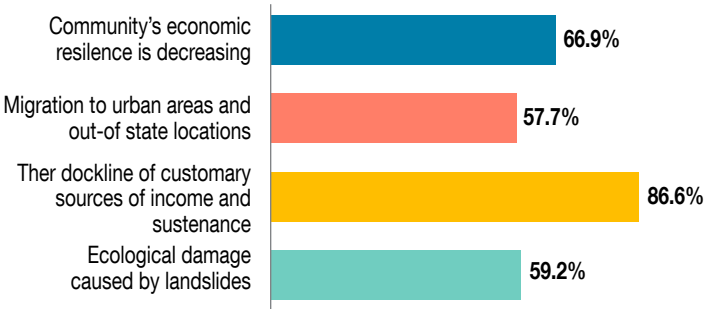
“As a member of the Gujjar pastoral community, I have noticed a significant increase in the number of people falling sick due to waterborne diseases. The water sources that we depend on have been contaminated due to pollution and changes in weather patterns. It is difficult to access clean water and many of us are suffering from diarrhea and other illnesses. This situation needs to be addressed as soon as possible to ensure the well-being of our community.” In focus group discussion, members reported the prevalence of diseases among community members including respiratory illnesses, waterborne diseases and vector-borne diseases. Participants expressed concern about the impact of climate change on the health and well-being of their community. The potential for these health issues to further disrupt their traditional way of life. Personal experiences shared by members highlighted the challenges faced by families in accessing healthcare and coping with the financial burden of treatment.

Climate Change Risks for the Community

The survey responses on the main risks faced by the Gujjar Pastoral community due to climate change reveal several alarming trends. According to the data collected, a significant proportion of the community members believe that ecological damage caused by landslides is a major risk with over 59% of responders reporting this as a concern. This finding is consistent with the existing scientific literature that highlights the increased likelihood of landslides and soil erosion in mountainous regions due to climate change

Furthermore, the survey data reveals that the decline of customary sources of income and sustenance is a significant risk with almost 87% of responders identifying this as a concern. This decline can be attributed to the changes in weather patterns, resulting in reduced availability of wild resources and a decline in livestock health which are the traditional sources of income and sustenance for the community. The increasing migration of community members to urban areas and out-of-state locations identified as a significant risk by almost 58% of responders, is another indicator of the impact of climate change on the community's livelihoods.

Climate Change Risk for the Community

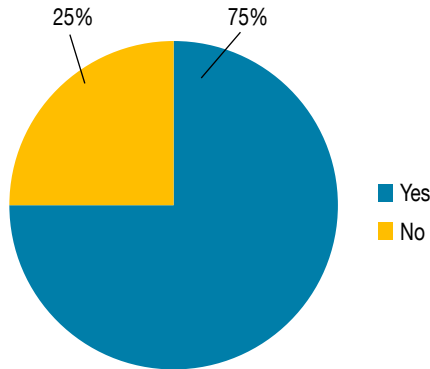


The survey data also highlights that the community's economic resilience is decreasing with almost 70% of responders reporting this as a concern. This trend is consistent with the decline in customary sources of income and the increased occurrence of climate-related events such as landslides and flash floods which are having a significant impact on the community's economic prospects. The survey responses clearly indicate that the Gujjar Pastoral community in Himachal Pradesh is facing a range of serious risks due to climate change including ecological damage, declining sources of income and sustenance, increasing migration, and decreasing economic resilience.

Impact on Traditional Social and Cultural Practices

The responses received for the question, "Have you noticed any changes in the traditional social and cultural practices of your community due to climate change?" reveal that 75% of the participants have noticed changes while the remaining 25% have not. The high percentage of responders who have noticed changes in the traditional social and cultural practices of the community is concerning. These changes could have significant implications for the community's identity, way of life and well-being. It is important to understand the nature of these changes and their impact on the community to develop effective measures to mitigate the effects of climate change.

Impact on Traditional Social and Cultural Practises



Further in response for specific detail the responses varied widely indicating that climate change has affected the community in various ways, impacting not only their social and cultural practices but also their economic conditions and community cohesion. Several respondents noted that expenses on some traditions have increased significantly leading to economic hardship for some members of the community. Some traditions have even ended completely due to the costs associated with them. Others observed that the economic conditions of the community are getting worse leading to a decline in the traditional way of life. Additionally, respondents noted that social and cultural practices are not the same as before and that some community members are abandoning traditional practices and replacing them with modern technology wherever possible.

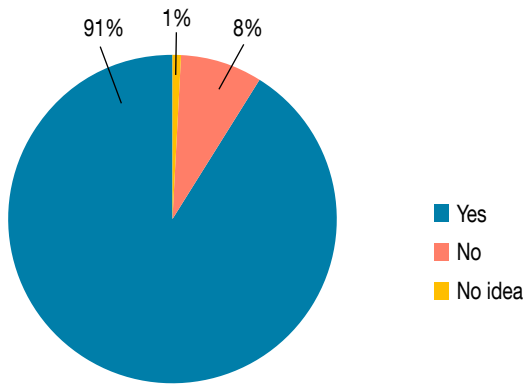
Migration, as seen in previous sections of the findings, is causing people to leave behind their traditional practices and adapt to a new lifestyle. Respondents also noted that the younger generation finds traditional life unviable and is leaving the community for better education and employment opportunities leading to a decline in community cohesion and a breakdown of traditional practices. Many respondents reported that the community's traditional practices have decreased and there has been a lot of expenditure on cultural practices.

The responses suggest that the impact of climate change on the Gujjar Pastoral community is multifaceted with economic, social and cultural effects. The community's traditional practices are declining and there is a risk of losing the cultural identity of the community. The community is also experiencing economic hardship with some practices becoming unaffordable due to increased costs and increase in other expenses. The responses indicate that the impact of climate change on the Gujjar Pastoral community is significant and far-reaching. The community is undergoing rapid changes that threaten to undermine its traditional practices, cultural identity, and social and economic well-being. Urgent measures are necessary to address these challenges and ensure that the community can adapt to the changing climate while preserving its unique way of life. It is essential to involve the community in the development of climate change adaptation strategies to ensure that these strategies are effective and sustainable in the long run.

Future of Traditional Community Life

The responses received to the question of whether climate change will affect the traditional way of life of the Gujjar Pastoral community in the future indicate a very high level of concern among the respondents. 91% responded in the affirmative, indicating that they believe that climate change will have a significant impact on their traditional way of life. Only 8% responded negatively, indicating that they do not believe climate change will have an impact and 1% were unsure. The high percentage of respondents who believe that climate change will affect their traditional way of life is a cause for concern. The Gujjar Pastoral community is heavily dependent on traditional practices for their livelihood and any changes to these practices can have a significant impact on their economic and social well-being. The community relies heavily on livestock rearing and any changes to the climate patterns can have a direct impact on the availability of water and fodder for their animals.

Future of Traditional Community Life



The most commonly cited concern among respondents was the impact of climate change on agriculture. Many respondents noted that unpredictable weather patterns such as untimely rains, could lead to crop failure and food shortages. This in turn could result in increased inflation and higher food prices which could make it more difficult for community members to afford basic necessities. Respondents also noted that the increased cost of living could force them to abandon their traditional businesses and migrate to urban areas in search of employment.

Animal husbandry was another major concern for respondents with many noting that climate change could lead to a decline in the health and productivity of their livestock. This could result in a decline in milk production and a reduction in the income of community members who rely on animal husbandry for their livelihoods. Respondents also noted that climate change could make it more difficult to find adequate water sources for their livestock which could further impact their livelihoods.

During the FGD, the Gujjar pastoral community members expressed their concerns about the potential impact of climate change on their traditional way of life. The community members reported that they have already started to experience changes in their environment which is affecting their

livelihoods. Many participants shared personal experiences of decreased availability of natural resources such as grazing lands, water sources and medicinal flora. “My family and I have been herding cattle and goats for generations. But now we are facing difficulties due to changing weather patterns. The rains have become unpredictable and we often have to travel long distances to find grazing land for our animals. This has led to increased costs and reduced profits. We are worried about our future and the future of our children.”

The women participants shared their worries about the potential displacement of the community due to the loss of traditional livelihoods. One village elder expressed “As a community, we have seen the effects of climate change on our natural resources and traditional livelihoods. The cost of essential items is increasing and it is becoming difficult for us to arrange fodder for our animals. We are worried that if this continues, we will be forced to leave our traditional occupation and shift to other livelihood options. This will not only affect our income but also lead to an increase in poverty and hunger in our community.”

The community recommended that the government provide support to develop alternative livelihood options and to mitigate the impact of climate change. They also emphasized the importance of preserving natural resources and biodiversity for future generations. It is clear from the responses that the community is aware of the potential impact of climate change on their traditional way of life. The responses indicate that there is a growing sense of urgency among the community members to take action to mitigate the impact of climate change on their livelihoods. However, it is also apparent that there is a lack of knowledge about how to adapt to the changing climate patterns.

Costs of Adapting

Costs of Adapting to Climate-Driven Changes

The Gujjar community traditionally relied on livestock rearing as their primary occupation. However, with the changes in climate patterns, they are finding it increasingly difficult to sustain their livelihoods. According to the responders from the Gujjar Pastoral community, a staggering 96% responded affirmatively to the question of whether they had to pay for additional equipment or materials to adapt to climate change. This data highlights the dire situation the community is currently facing due to climate change. This is evidenced by the high percentage of responders who are having to pay for additional equipment and materials to adapt to the changing climate.

The additional equipment and materials that the community needs to adapt to climate change are expensive and the Gujjar community is already socio-economically backward. This places a significant burden on them and threatens their already fragile livelihoods. These costs are explored in detail in the following sections.

Climate Costs: Food, Water, Medical etc.

The survey data revealed that climate change has had a significant impact on the Gujjar pastoral community with many community members reporting additional expenses for food, water and medical treatment. The most significant cost reported was veterinary costs, as many community members spent a lot of money on the treatment illnesses. This additional expense was often borne by community members themselves leading to increased financial strain.

Another significant cost reported was for the purchase of fodder for animals which was necessary due to the reduced availability of natural resources caused by climate change. Community members also reported increased reliance on market products which has led to inflation in the

region. This reliance on markets has led to increased expenses for food, water and medicines which are now necessary due to the failure of crops and drying up of water sources.

The survey also revealed that community members have observed a reduction in crop yield and food production over the past five years with many indigenous lands depending on rain for irrigation. This reduction in crop yield has led to increased reliance on chemically produced food from markets which has affected the health of community members and increased their medical expenses. This trend highlights the urgent need to develop sustainable agricultural practices to reduce the dependence on chemical fertilizers and pesticides.

The survey highlighted that the cost of medicines has increased with diseases becoming more prevalent due to the decreased availability of good quality drinking water. The drying up of traditional water sources has forced community members to spend more on pipes to transport water from neighboring regions. This additional expense has added to the financial strain faced by the community.

The data also revealed that many community members are borrowing to meet their expenses, which further adds to their financial burden. This trend suggests the need for government intervention to provide financial support to the community which could include subsidies for the purchase of animal feed and medicines, as well as support for sustainable agricultural practices.

Impact on Product Prices and Market

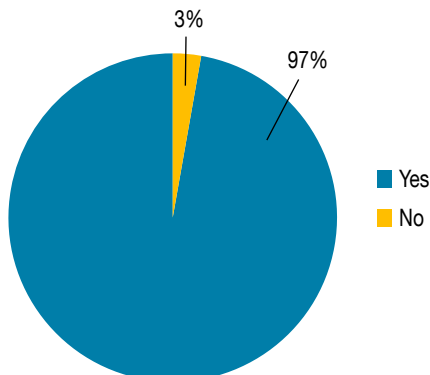
According to the survey results, 97% of the respondents reported noticing changes in the prices or market for their dairy products such as yoghurt, butter, cheese, fresh and fermented milk, among others, as a result of climate change. This finding highlights the significant impact of climate change on the economic wellbeing of the Gujjar Pastoral community in Himachal Pradesh.

The changes in the prices and market of dairy products can be attributed, at least in part, to the impacts of climate change on the availability and quality of pastureland which is essential for the production of milk and dairy products. Climate change has resulted in changes in the timing and duration of the rainy season leading to changes in vegetation patterns and reduced availability of forage for livestock. This has forced the community to rely on purchased feed leading to higher production costs and lower profits.

One of the most significant challenges mentioned by the respondents is the decrease in market value of products produced by the community. This can be attributed to an increase in counterfeit products in the market which has led to reduced trust of customers in traditional community products; the quality of the products is seen as very poor compared to the market standards and the price is not competitive. As a result, people have started to buy fewer traditional community products and instead, have become more dependent on the market.

Another major issue faced by the community is the excessive flow of products from neighboring states in the market. This has led to an oversupply of products which has severely impacted on the demand

Impact on Product Prices and Market



for community products. The data suggests that community members are unable to market their products as per the current market demand and the sales of products in the market have decreased significantly. Consequently, prices for community products have remained very low and new products flooding the market have discouraged people from buying traditional community products.

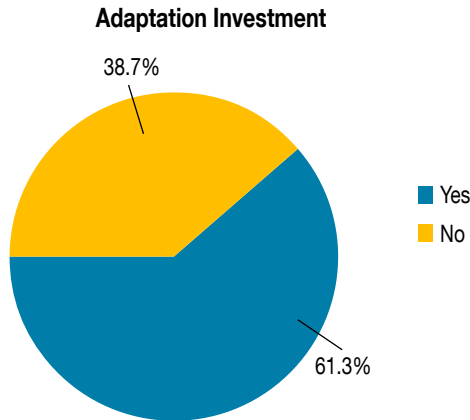
Gujjar pastoralists expressed their concerns during the focus group discussion about the impact of climate change on the prices and market for their dairy products. Many of the participants reported noticing fluctuations in the prices of products such as yogurt, butter, cheese, fresh and fermented milk, among others. These changes are having a significant impact on the economic wellbeing of the community. Participants shared their personal experiences of struggling to sell their products at a fair price leading to financial losses for their families. One participant mentioned how they had to sell their milk at a lower price to the middlemen due to a lack of demand. Another participant shared how their cheese production had been affected due to changes in the climate and market demand.

The community relies heavily on the income generated from the sale of dairy products for their livelihoods. Therefore, the changes in prices and market have significant implications for their socio-economic wellbeing. The community recommended taking measures such as improving access to markets, creating marketing cooperatives and developing better storage facilities to address the issue. They also stressed the need for government support in terms of financial assistance, training and technological interventions to improve their productivity and resilience to climate change impacts.

Adaptation Investment for Climate Change

According to the responses received from the survey, just over 61% of the participants had to undergo extra expenditure for investment in new strategies or technologies to adapt to the impacts of climate change while

the remaining 38.7% did not have to incur any additional expenses. This is a significant finding and underscores the challenges faced by the Gujjar pastoral community in Himachal Pradesh due to the adverse effects of climate change.



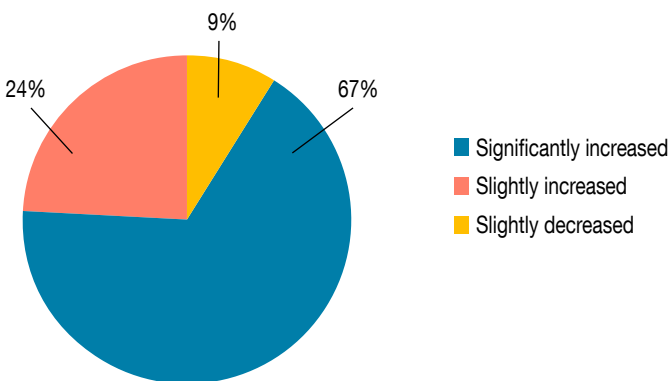
The need for additional investment in new strategies or technologies for adaptation suggests that traditional methods of coping with climate change impacts are no longer sufficient. The data also indicates that climate change is causing economic stress on the community which is struggling to maintain their livelihoods in the face of ecological and environmental changes. The additional expenditure required to adapt to these changes further exacerbates their financial burden. The fact that most of the participants have had to incur extra expenditure highlights the need for government and non-governmental organizations to provide assistance to the community to mitigate the impact of climate change. This could be in the form of financial support, capacity-building programs and the dissemination of knowledge about effectiveness.

Impact on Livestock Maintenance Costs

The responses received from the survey on the impact of climate change on the costs of maintaining and caring for livestock in the Gujjar Pastoral

community in Himachal Pradesh indicate a significant increase in the costs. The data shows that 67% of the respondents reported a significant increase in the costs of livestock maintenance while 24% reported a slight increase and 9% reported a slight decrease.

Impact on Livestock Maintenance Costs



This trend of increased costs can be attributed to several factors related to climate change such as changes in rainfall patterns, higher temperatures and increased incidence of extreme weather events like floods and droughts. These changes affect the availability and quality of pasture and water which in turn increases the costs of feed and fodder for the livestock.

In a focus group discussion, community members reported a significant increase in the costs of livestock maintenance which is one of the main sources of their income. This increase in costs is due to a decrease in the availability of natural fodder for the animals, forcing the community to rely on commercial feed which is expensive.

Individual experiences shared by community members revealed that some of them had to reduce the number of livestock they owned while others had to sell them at a lower price due to the high maintenance costs. making it difficult for him to make ends meet. As perone member of the Gujjar pastoral community, the impact of climate change on the

costs of maintaining and caring for livestock has been significant over the past few years. Ali reported that the cost of maintaining his 10 cattle had increased by 30% in the last year alone, making it harder for him to sustain his livelihood.

A woman from the Gujjar pastoral community, the rising costs of livestock maintenance have also had a negative impact on her family's income. She shared that her family has had to cut back on expenses like education and healthcare in order to afford the costs of maintaining their livestock. She shared that the increasing cost of livestock maintenance had made it difficult for her family to afford education for their children. She said that they had to choose between spending money on their children's education or on feeding their livestock.

During the focus group discussion, Hassan, another member of the community, shared his personal experience of struggling to care for his livestock due to the increased costs. He explained that the prices of essential items like fodder and medicines have skyrocketed and can be a strain on his finances. He further shared that the situation had become so dire that some community members were considering abandoning their traditional occupation of animal husbandry and looking for alternative livelihood options.

The changing climate has also increased the prevalence of diseases and pests that affect the health and productivity of the livestock, thereby increasing the costs of veterinary care and medication. This creates a vicious cycle where the community is forced to spend more money to maintain their livestock while earning less from their products due to reduced quality and quantity.

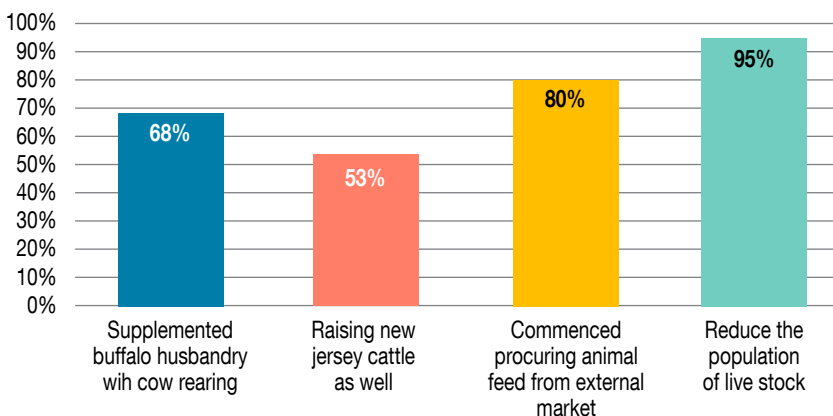
The community suggested that the government provide subsidies for commercial feed which could reduce the cost of livestock maintenance. They also recommended that the government take measures to promote the growth of natural fodder for the animals. The community emphasized

the need for urgent action to address the impact of climate change on their livelihood and ensure the sustainability of their traditional occupation.

Adapting Animal Management to Climate Change

The Gujjar Pastoral community heavily relies on animal husbandry for their livelihood. However, the community has had to adapt to the changing climate by changing the types of animals they keep and the way they manage them. When asked if they had to change the types of animals they keep or the way they manage them due to climate change, 68% of the respondents reported supplementing buffalo husbandry with cow rearing and 53% reported raising Jersey cattle as well. Additionally, 80% of the respondents reported commencing procuring animal feed from external markets and 95% reported reducing the population of livestock as observed in the responses to loss of livestock.

Adapting Animal Management to Climate Change



The high percentage of respondents who reported reducing the population of livestock is concerning as it indicates that the community is facing challenges in sustaining their animal husbandry practices due to climate change. The reduction in livestock population could lead to a decrease in the availability of milk and other dairy products which could negatively impact the community's nutrition and income.

The respondents who reported supplementing buffalo husbandry with cow rearing and raising Jersey cattle are adapting to climate change by diversifying their livestock. This strategy could help the community to reduce their vulnerability to climate change by ensuring a steady supply of milk and dairy products even in times of climate-related shocks. However, this strategy also requires significant investment in terms of resources including land, water and animal feed.

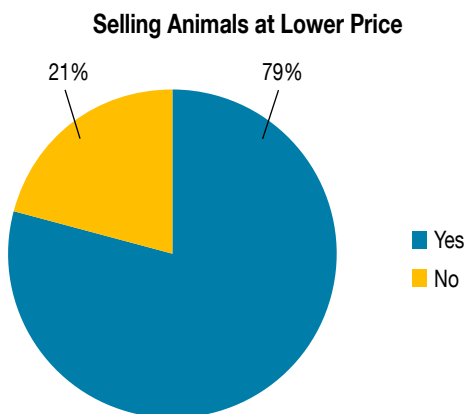
The high percentage of respondents who reported commencing procuring animal feed from external markets is indicative of the challenges faced by the community in maintaining their livestock due to climate change. The availability and cost of animal feed in external markets can be volatile which could impact the financial viability of the community's animal husbandry practices.

It was noted during a recent Focus Group Discussion that there is a trend towards supplementing buffalo husbandry with cow rearing and raising Jersey cattle as a means of adapting to climate change by diversifying their livestock. The members reported that this strategy could help them to reduce their vulnerability to climate change by ensuring a steady supply of milk and dairy products even in times of climate-related shocks. One Gujjar woman participant, highlighted the challenges they face in managing their livestock and said, "We have to be careful about what we feed our animals because the availability of natural fodder has reduced due to climate change." A member, emphasized the need for support from the government and other organizations to help them transition to new livestock practices and said, "We need help in terms of training, access to new technologies and financial support to buy new animals." The Gujjar pastoral community recommends that the government provide them with the necessary support and resources to transition to new livestock practices as a means of adapting to the impacts of climate change on their traditional livelihoods.

The Gujjar Pastoral community is facing significant challenges in sustaining their animal husbandry practices due to climate change. While some members of the community are adapting by diversifying their livestock, others are facing challenges in maintaining their existing practices. The community requires support in terms of resources including land, water and animal feed, to adapt to the changing climate and sustain their livelihoods.

Selling Animals at Lower Prices

The response received for the question “Have you been compelled to sell your livestock at lower prices due to climate change impacts?” reveals a disturbing trend. A significant 79% of the respondents reported being forced to sell their livestock at lower prices due to climate change impacts while only 21% reported not experiencing this situation. This finding highlights the critical impact of climate change on the economy of the Gujjar Pastoral community in Himachal Pradesh.



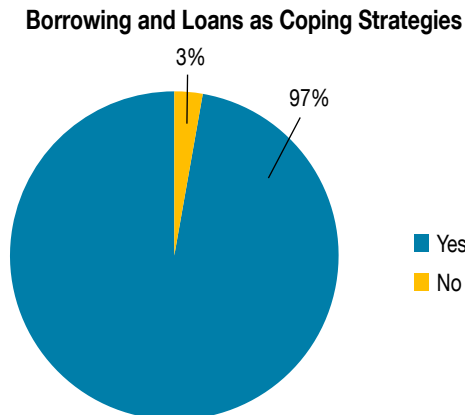
Livestock rearing is the primary source of income for the Gujjar community and the impact of climate change on this sector has been devastating. Changes in weather patterns including prolonged droughts and erratic rainfall, have led to reduced fodder and water availability which has impacted the health and productivity of livestock. This, in turn, has led to

lower prices in the market, making it difficult for the community to make ends meet.

The finding that such a large proportion of respondents reported being forced to sell their livestock in distress at lower prices due to climate change impacts is a cause for concern. It highlights the vulnerability of the Gujjar community to the adverse effects of climate change and the urgent need for interventions that can help them adapt to these changes. It is crucial to identify and implement strategies that can improve the resilience of the community's livestock-based economy in the face of climate change.

Borrowing and Loans as Coping Strategies

According to the survey data, a staggering 97% of respondents reported resorting to loans or borrowing money to manage the financial setbacks stemming from environmental shifts as discussed in the findings thus far. This data point highlights the significant economic challenges that Gujjar Pastoralists in Himachal Pradesh face as a result of climate change. The reliance on loans and borrowing to address financial challenges can exacerbate the already difficult situation for these communities, as it often leads to increased debt and financial insecurity. In the long term such practices can have severe consequences for the socio-economic



development of these communities, potentially leading to poverty and social exclusion.

It was observed that one of the common issues faced by the community was resorting to loans or borrowing money to manage the financial setbacks stemming from environmental shifts during the focus group discussion with Gujjar pastoralists. Many members shared their experiences of taking loans to manage their expenses and livestock which has increased their debt burden and led to financial insecurity.

A member shared that, "I had to borrow money from the moneylender to buy fodder for my livestock as there was a shortage of grass due to unseasonal rains. But now, I am struggling to repay the loan and it has become a burden for me." His neighbor added, "We have to take loans even for the smallest expenses such as medical treatment or children's education which has made our life difficult." It was observed that the reliance on loans and borrowing to address financial challenges can exacerbate the already difficult situation for these communities.

The community suggested that there is a need to explore alternative livelihood options and financial support mechanisms to address these challenges. They recommended that the government should provide low-interest loans and subsidies to support the community in managing their expenses and improving their financial condition. The members also highlighted the need for awareness programs on financial planning and management to reduce their reliance on loans and improve their financial resilience.

It is crucial to recognize the gravity of this situation and to take immediate action to address the underlying causes of this financial strain. Policy interventions such as targeted financial support can be effective in mitigating the negative effects of climate change on the economic well-being of these communities.

Additional Expenses Incurred on Livestock, Produce and Crop Transportation

The response received from the survey question about additional transportation costs incurred by the Gujjar Pastoral community due to changes in climate was overwhelming. 99% of the respondents reported that they had to pay for additional transportation costs for their livestock or crops due to changes in the climate. This highlights a significant economic burden on the community and indicates that climate change is impacting their livelihoods in multiple ways.

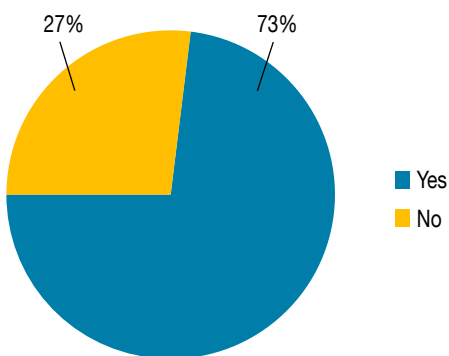
The transportation costs associated with moving livestock, produce and crops to different areas due to changes in climate patterns are substantial. These costs can include the price of fuel, vehicle maintenance and wages for drivers and laborers. For small-scale pastoralists and farmers such costs can lead to financial strain and increase their vulnerability to poverty and debt. This finding shows the need for policies that consider the economic burden faced by the Gujjar Pastoral community and other similar communities. There is an urgent need to provide financial support to these communities to mitigate the impact of climate change on their livelihoods.

Additional Risk Management Costs

The impacts of climate change on their livelihoods have resulted in additional risk management measures for 73% of the respondents. This finding suggests that climate change has increased the financial risks associated with traditional livelihoods and has forced the community to invest in risk management measures.

The high percentage of respondents who reported additional risk management costs highlights the financial burden that climate change has placed on the community. During the focus group discussions, Gujjar pastoralists expressed concerns about the additional risk management

Additional Risk Management Costs



measures they have had to adopt due to the impacts of climate change. These measures have become necessary to protect their livelihoods and assets, as the risks associated with climate change have increased. They have had to invest in measures such as constructing new sheds for their livestock, investing in water storage facilities and purchasing additional feed for their animals during the dry season. These measures are necessary to ensure the survival of their livestock which is the primary source of income for the community.

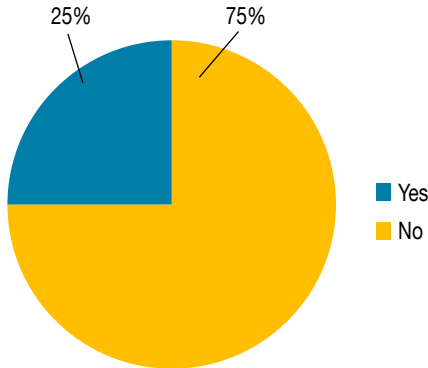
Some members shared their concerns that these measures are not sustainable in the long run and that they are struggling to keep up with the increasing costs of risk management. The community is facing challenges in accessing financial resources to invest in sustainable risk management measures.

Representation of Community Concerns in Climate Change Decision-making

The responses to the question of whether the Gujjar pastoral community's concerns and needs are adequately represented in the decision-making process regarding climate change are concerning. The data shows that 75% of the respondents feel that their community is not adequately

represented while only 25% believe that their concerns and needs are being represented in the decision-making process.

Representation of community Concerns Decision-making



This lack of representation is alarming and should be a cause for concern for policymakers and stakeholders in the region. The Gujjar pastoral community is one of the most vulnerable communities in the face of climate change, as evidenced by the previous responses. It is essential to ensure that their voices are heard and their needs are addressed in decision-making processes.

The lack of representation may be attributed to a lack of awareness and education among the community members regarding climate change and its impacts. Additionally, it could be due to a lack of participation and engagement from policymakers and stakeholders within the community. To address this issue, it is crucial to involve the Gujjar pastoral community in the decision-making process and ensure their voices are heard. This can be done by creating awareness and education programs about climate change and its impacts, as well as involving community members in discussions and consultations about climate change adaptation and mitigation strategies.

RECOMMENDATIONS FOR ACTION

1. The state government should urgently conduct a comprehensive assessment of the impact of climate change on the lives of the Gujjar pastoral community to determine the nature and extent of damage caused. Based on the assessment, suitable measures can be taken to mitigate the negative impact of climate change on the Gujjar pastoral community and ensure their well-being.
2. The state government should also recognize and address the issue of loss and damage caused by climate change in the Gujjar pastoral community. This could involve providing financial and other forms of support to help the community recover from the impacts of climate change such as crop failure, loss of livestock, or displacement. The government should work with the Gujjar pastoral community to identify the most appropriate forms of support and ensure that it is provided in a timely and transparent manner.
3. The Government should enact a comprehensive policy framework for addressing loss and damage caused by climate change in the case of the Gujjar pastoral community. This policy should provide a clear legal and institutional framework for assessing damages, providing compensation and implementing adaptation measures.
4. The state government should allocate sufficient resources and funds to implement climate change adaptation and mitigation strategies for the Gujjar pastoral community. This could include initiatives such as promoting sustainable livelihood practices, providing access to clean energy and creating climate-resilient infrastructure.
5. The state government should engage in a meaningful dialogue with the Gujjar pastoral community on climate change policies to ensure that their perspectives and concerns are incorporated in the decision-making processes. This could involve setting up a dedicated platform

for dialogue and consultation with the community and providing them with the necessary support to participate effectively.

6. The government should provide subsidized cattle fodder to climate-affected pastoralist communities such as Gujjar pastoralists, to ensure their access to adequate nutrition for their cattle.
7. The State Government should establish fodder production plants such as Khal and Choker, in the regions where pastoral communities reside. This measure will enable them to acquire low-cost animal feed.
8. The Gujjar community faces the issue of inadequate compensation for their dairy products in the market. It is imperative for the government to extend financial support to the nomadic community to help them promote their products and enhance their competitiveness in the market.
9. The state government should take steps to ensure the effective implementation of the Forest Rights Act 2006 for Gujjar and other pastoralist communities. It is essential to simplify the process of granting community and individual claims to these communities to safeguard their rights over natural resources and forests within a designated time frame.
10. The State Government should actively engage and involve the Gujjar pastoralist community in the local panchayat system. This will enable them to contribute their unique perspectives and knowledge to discussions on land use, resource management and other issues that affect their lives and livelihoods.
11. The State Government should undertake awareness-raising and education campaigns to promote the benefits of mobile pastoralism for local communities and society at large. These campaigns could include highlighting the positive impacts of pastoralism on the environment, as well as the significant economic and cultural contributions of Gujjar pastoralist community to local communities.

12. Government should ensure that sectoral policies are harmonized to avoid contradictions and conflicts that may undermine pastoralism. For example, policies related to agriculture, land use and wildlife conservation should be coordinated to ensure that they do not negatively affect Gujjar pastoralist communities.
13. The Government should urgently make provisions in MNREGA that guarantee a minimum of 250 days of employment per family per year with a daily wage of Rs. 500 for community members to address the climate change induced migration of Gujjar and other pastoralist communities. Such a provision will not only increase the income of these communities but also prevent their forced migration.
14. The government must support the Gujjar and other pastoral communities by introducing a minimum support price and directly purchasing their milk products at a fair rate to ensure their sustainability during climate-induced loss and damage cycle. This step will enable them to compete with the market and secure their livelihoods.
15. The implementation of government schemes such as the Van Bandhu Kalyan Yojana should be carried out with true spirit to provide economic support to the Gujjar and other nomadic pastoral communities.
16. The Centre Government should take urgent steps to establish a statutory commission at both the state and national levels to protect the rights of vulnerable nomadic communities affected by climate change.
17. The Government should prioritize Climate change affected Gujjar Pastoralist communities in employment-based programs such as the Aajeevika-National Rural Livelihoods Mission (NRLM) launched by the Ministry of Rural Development (MoRD) and ensure that women from these communities have access to employment opportunities through Self-Help Groups (SHGs).
18. The Government should ensure that pastoralism is integrated into National policies and strategies for rural development, biodiversity

conservation, climate change adaptation and mitigation, food security and quality, cultural heritage protection and disaster risk reduction. This will help to ensure that the needs of the Gujjar pastoralist community are taken into account when designing policies and strategies.

19. The Government should develop and implement a National Grazing Policy that prioritizes sustainable use of grasslands and takes into account the needs and interests of pastoral communities. This policy should help to promote the sustainable management of grazing lands, protect the livelihoods of pastoral communities and ensure the long-term sustainability of this important resource.
20. Government should provide incentives and subsidies for the Gujjar pastoralist community to maintain their practices and improve their livelihoods. This could include subsidies and effective veterinary services, support for marketing and value addition and access to credit and insurance.
21. Government should invest in capacity building and training for the Gujjar pastoralist community to improve their knowledge and skills in areas such as livestock management, marketing and entrepreneurship. This will enable them to better adapt to changing environmental and economic conditions.
22. Government should collaborate with pastoralist communities to develop policies and strategies that are tailored to their specific needs and circumstances. This will help to ensure that policies are more effective and better accepted by the communities they are intended to benefit.
23. The government should immediately stop large projects that are contributing to climate change and find alternative solutions. It is essential to recognize that these projects also have a significant impact on the livelihood and living conditions of pastoral communities.
24. Gujjar Pastoral communities should be encouraged to diversify their livelihoods, for example, through crop cultivation, poultry farming

and beekeeping. This will help them to reduce their dependence on livestock which is vulnerable to the impacts of climate change.

25. Access to clean water is critical for the survival of any pastoral communities. Governments should invest in the construction of water harvesting structures such as dams, wells, boreholes and revival of traditional water bodies near every pasture land to ensure year-round availability of water for both humans and animals.
26. Pastoral communities need to be educated about the causes and impacts of climate change. This will help them to understand the need for adaptation and how to adopt appropriate strategies to cope with the changes.
27. Governments and other involved Development agencies should provide Gujjar pastoral communities with improved breeds of livestock that are more resilient to the impacts of climate change. This will help to reduce the mortality rates of livestock during periods of drought, floods and other climate-related disasters.
28. Governments and other involved Development agencies should promote the adoption of climate-smart agricultural practices such as conservation agriculture, agroforestry and integrated crop-livestock systems to increase food security and reduce the vulnerability of Gujjar pastoral communities to climate change.
29. Governments should invest in the development of early warning systems that can alert all pastoral communities of impending climate-related disasters, like floods, droughts and extreme weather events. This will help them to take appropriate action to protect their families, livestock and property on time.
30. Adaptation strategies should be developed in consultation with Gujjar pastoral communities to ensure that they are appropriate and acceptable to the local context. This will help to ensure the sustainability of the adaptation measures and the resilience of the community in the face of climate change.

31. Governments should provide Gujjar pastoral communities with access to credit facilities to enable them to invest in climate-smart agriculture, diversify their livelihoods and cope with the impacts of climate change.
32. The Government must provide insurance policies for animals and loan subsidies for pastoralists to safeguard their livelihoods and promote the sustainable management of animal resources.
33. Governments should invest in disaster risk reduction measures such as early warning systems, flood control measures and drought-resistant crops. This will help to reduce the impact of climate-related disasters on pastoral communities.
34. Governments should develop policies that support the adaptation of pastoral communities including Gujjar Pastoralists to climate change. These policies can include measures to protect pastoral land rights, promote sustainable land management practices and importantly provide timely financial support for adaptation measures.
35. Government should ensure the participation of community-based institutions and organizations in the policy-making process regarding climate change.
36. Government should work with pastoral communities to develop and implement adaptation strategies that are tailored to their specific needs and circumstances. This could include measures such as diversifying income sources, improving water management and promoting sustainable grazing practices.
37. Promote sustainable land use practices to help reduce the impact of climate change on pastoral communities. This could include promoting regenerative agriculture, agroforestry and sustainable land management practices.
38. The government should prioritize the development and implementation of a comprehensive national land use policy to regulate and manage common land. The policy should take into account the interests and needs of pastoral communities and provide mechanisms for their

protection. Urgent action is needed to ensure that the rights and interests of pastoral communities are safeguarded and protected in the management of common lands.

39. Government should invest in climate-resilient infrastructure to support pastoral communities. This could include developing drought-resistant water sources, providing access to renewable energy sources and improving transportation infrastructure.
40. Education and awareness campaigns can help pastoral communities better understand the impacts of climate change and how they can adapt to these changes. Government should work with community leaders to develop and implement education and awareness campaigns on climate adaptation.
41. Government should enact policies and legal reforms that support climate adaptation and resilience in pastoral communities. This could include supporting the recognition of traditional land rights, promoting sustainable land use practices, Implementation of Forest Right Act 2006 and increasing access to financial resources for climate adaptation.
42. Gender-sensitive approaches are essential to addressing the impact of climate change on pastoral communities. Government should work to promote gender-sensitive approaches that take into account the unique needs and circumstances of women in pastoral communities.
43. Conflicts over natural resources such as water and land, are a major challenge for Gujjar and other pastoral communities especially in the context of climate change. Government should work to address conflicts over natural resources and promote collaborative approaches to natural resource management.
44. Climate change can have significant impacts on the health of Gujjar pastoral communities including increased exposure to infectious diseases, malnutrition and mental health challenges. Government


should work to ensure access to health services that are tailored to the specific needs of Gujjar and other pastoral communities.


45. Market linkages can help Gujjar pastoral communities access new markets for their products and increase their income. Government should work to support the development of market linkages that are sustainable and inclusive.






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