



DROUGHT AND RESILIENCE AMONG PASTORAL NOMADS: A CASE STUDY OF DHANGAR COMMUNITY IN THE STATE OF MAHARASHTRA

Author: Dr. Narayan Narbat

Assistant Professor

SNDT Women's University, Mumbai

Email: narayan9821@gmail.com

Abstract:

Dhangars, a pastoral nomadic tribe, has been rarely researched and poorly documented. The critical factor of drought vulnerability has amplified their challenges in livelihood and sustenance. The study uses qualitative methodology (in-depth interviews and focus group discussions) to explore the plight of the Dhangars during drought, its impact on their livelihood and their community resilience. Drought has affected both settled Dhangars and those who are following traditional livelihood. Many push and pull factors have led this community to give up their traditional livelihood practices. Due to nomadic life, the community seems vulnerable to three types of risks, i.e., risk to life/survival, risk to livestock resources, and risk to self-respect and dignity. Pasture and water scarcity have compelled this community to succumb under various types of vulnerabilities. The drought vulnerability has severely affected traditional livelihood and agricultural production. At the same time, the state response and policy discourses on this vulnerability seems too poor and unfavorable. With the land-use changes, Dhangars are getting excluded from customary grazing rights. Cultivation of barren land has created restrictions on the movements of this community. The community is still finding a dilemma between continuing pastoralism and settling down and are struggling to get sustainable livelihood options. The key findings indicate that despite Dhangars' significant economic contribution to livestock production, their role is not recognized in policy level discourse.

Key Words: Dhangar, drought vulnerability, livelihood, Maharashtra, pastoral nomads, pasture,

Introduction:

Pastoralists in semi-arid regions are also at risk of being socially and economically marginalized, as their livelihoods are often not recognized or supported by government policies and programs. This can make it difficult for them to access the resources and services they need to cope with the impacts of drought. Drought is a major environmental problem that affects many regions around the world (Mishra & Singh, 2010), including the state of Maharashtra in India (Katalakute et al., 2016). The Dhangar community, which is one of the largest nomadic communities in the state of Maharashtra, India, has been severely impacted by the recurring droughts in recent years (Dadas, 2023). This paper examines the impact of drought on the Dhangar community and the coping measures they have taken to mitigate the effects.

The Dhangar community in Maharashtra, India, largely depend on pastoralism which is supported by agriculture activities (Sonthiemer,1997; Kishore and Köhler-Rollefson, 2020). This is termed as agro-pastoralism under which their livelihoods are particularly vulnerable to the impacts of drought. Drought can lead to crop failures and loss of income, as well as reduce access to water for both irrigation and domestic use. This can cause food



insecurity and poverty for the community. In addition, drought can also lead to decreased availability of grazing land for livestock, resulting in loss of income from the sale of animals and reduced production to milk and other animal products for household consumption. This can cause food insecurity and poverty for the pastoral nomads, who often lack the resources and alternative livelihood options to cope with the impacts of drought.

Drought can have a significant impact on natural resources in India, including water, land, and vegetation. In addition, pastoralists may be forced to move their herds to new areas in search of water and grazing lands leading to increased competition for resources between pastoral nomads and settled communities. This can lead to conflicts with other communities over resources (grazing lands and water), as well as increased pressure on already fragile ecosystems. This can result in the degradation of grazing lands, reduced vegetation cover, and increased risk of wildfires. This can lead to socio-economic marginalization for the pastoral nomads and increased vulnerability to human rights violations.

Background of the Dhangar Community:

Jost (2002) reported that two important aspects of animal husbandry in pastoral societies are herd composition and size. Both are ruled by environmental conditions, family subsistence needs, cultural precedent and the need to minimize risk. The livelihood of the Dhangar community depends primarily on the rainfall. As the study area of Satara district, Maharashtra is drought-prone, persistently, the community is facing several problems to fulfil their livelihood needs. Drought is also forcing people to diversify their livelihood but getting into other occupations is difficult as there is lack of scope. There have been changes in the community's livelihood with this effect as the area is experiencing droughts most of the years. Recently, some of the groups from this community have settled down and changed their occupation, lifestyle, and nomadic way of life (Dadas, 2023). According to Gemtessa (2005), the pastoralists' have diversified their livelihood strategies and taken up alternatives such as crop production, petty trades, remittance of wages, firewood and charcoal production. This trend is also observed in the area under the effect of drought. Many pastoralists are experiencing livelihood risks due to the drought. Further, in the migrated areas, they do not get suitable accommodation, nutritious food, or even safe drinkable water, so they face multiple health problems. Their living conditions in the huts being poor with lack of electricity and proper sanitation conditions make them vulnerable to malaria-like diseases.

Impact of Drought on the Community:

Therefore, drought has affected the socio-cultural aspects of the community. This can be substantiated through the findings of Kala (2017), who stated that i.e., agriculture and allied occupations such as livestock rearing have adversely impacted their livelihood. Drought affects the more extensive ecological, environmental, social, and economic settings. Therefore, it is crucial to analyze the relationship between drought and the community's livelihood (Shingare, 2017). Drought is one of the major factors that create a larger impact on both the human and animal life. Drought is a dangerous climatic natural hazard which has potential to turn into a disaster due to man-made reasons. It affects vast regions for months or years. It impacts food production and reduces life expectancy (WHO, 2024) and the economic performance of large areas or entire



countries for that matter. Drought is a recurrent feature of the climate, occurring in almost all climatic zones, and its characteristics vary significantly among regions. Drought differs from aridity in that drought is temporary; aridity is a permanent characteristic of regions with low rainfall. Drought is an insidious hazard of nature and is related to a deficiency of precipitation over an extended period of time, usually for a season or more. This deficiency results in a water shortage for some activity, group, or environmental sectors.

Drought is a regular affair in India; 68 percent of the sown area is vulnerable to it and impacts 50 million people every year (Rai, 2022). Livestock is both the victim and the hope during drought. Sometimes it results in a large number of casualties. Lack of drinking water and the rising price of fodder forces people to abandon their cattle. In Maharashtra, facing severe drought after the winter crop failed in 2012, farmers left thousands of cattle due to scarcity of water and fodder (Udmale et al., 2014).

On the other hand, livestock is the much-sought-after drought shield for farmers. A good livestock asset can ensure sustenance in the face of agricultural loss. While the emergency relief focuses on human beings, the only relief offered to livestock is a few feeding centers. India does not have enough fodder. The deficit of dry fodder, concentrates, and green fodder is 10, 33, and 35 percent respectively. Food production is increasing, but the change in cropping pattern—commercial crops replacing the traditional cereal crops—has nullified its impact on the availability of crop residues. There is no inventory for water availability for livestock. Various diseases result in an 18 percent loss of potential in the livestock economy (Mahapatra, n.d.). According to Shokri (2011), drought has an impact on the lives and livelihood of pastoralists, which the paper tries to explore.

Objectives:

Due to migration and the nomadic way of life, several problems and challenges in livelihood are seriously affecting the Dhangar population. In addition, drought has created double vulnerabilities in the community. The selected area is drought-prone and hilly witnessing growing challenges in fulfilling livelihood needs and overall development of the Dhangar people.

Moreover, there is limited literature available on this community, and it does not capture the areas related to livelihood in the context of drought. Studies have focused on the socio-economic and traditional lifestyle of the Dhangar community. Therefore, studying the issue of their livelihood in the context of recurring droughts is crucial in formulating policies. This study would help work on issues related to the community's livelihood in the context of droughts.

Thus, the paper highlights the following objectives:

1. To study the drought vulnerabilities faced by the community and its consequences on the livelihood and socio-cultural lives of the community.
2. To understand the livelihood sources of the Dhangar community and its present situation.



Methodology:

The study has followed a qualitative methods approach to understand the community's situation in drought and its consequences on the community. The exploratory research design was used to explore the livelihood issues of the community in the context of drought since there is less literature available on this community.

The Dhangar community living in the drought-prone region of Satara district of Maharashtra was chosen. Villages were selected purposively where a majority of the Dhangar population resides in the Maan block of Satara district.

Location of the study

The Satara district is divided into two distinct zones according to rainfall patterns. The western part receives the highest rainfall; therefore, it is a wealthy area. This area becomes a grazing ground during the summer season for the Dhangar pastoralists. The eastern part receives the lowest rainfall, including the Maan Block. Since there is poor rainfall, the pastoralists and agriculturalists communities are prone to livelihood vulnerabilities. The eastern part of the Satara district (Maan Block) is home to pastoralists, their population being the highest in number.

Study Tools:

In-depth interviews

An interview schedule was used to collect the data related to the respondent's socio-economic profile and assess the state's response to the livelihood of Dhangars. Two separate interview schedules were used to assess the views of the traditional and settled populations about the continuity and changes in the livelihood pattern because of drought.

FGDs

Focus group discussion (FGD) was used to collect data from the study participants using the FGD guide. This method helped to collect data in a group context about the drought-associated vulnerabilities of the respondents. Four FGDs were conducted (one in each village) with traditional Dhangars and settled Dhangars.

Result and Discussion:

Drought can have a significant impact on pastoralists in semi-arid regions, as it can lead to a reduction in the availability of grazing lands and water sources for their livestock. This can lead to loss of income from the sale of animals, reduced access to milk and other animal products for household consumption, and food insecurity.

Water:

Drought conditions can lead to reduced surface and groundwater availability, which can impact the availability of water for irrigation, domestic use, and industrial use. This can lead to water shortages, conflicts over water resources, and reduced water quality. From the key points that emerged from the FGDs, the underlying notion on water issues can be understood.

All the respondents have stated that there is an impact of drought on the production of livestock. Due to less availability of water during drought, the livestock production system is affected. Climate change has indicated decreased water levels on land, ponds and lakes,



surface reservoirs, decreased flows from rivers and streams, springs, loss of forest cover, migration of wildlife, escalation of human-animal conflicts and mental anxiety on biodiversity. Reduced flow rate and wetland disappearance may influence salinity.



Land:

Drought can lead to soil erosion, desertification, and land degradation (Boyd, 2023). This can affect the productivity of land, making it less suitable for agriculture, forestry, and other land-based activities. In selected villages, it was found that there has been an occurrence of droughts during the last five-year period. While discussing this with the respondent named Dasu Bhagat, he shared that:

“Severe droughts have a terrible impact on the pasture land and forage availability of the area too. He responded that due to drought, pasture lands have shrunk, and shepherds do not get the pasture within the area. So, due to the non-availability of green forage and pasture, shepherds have to migrate to the high rainfall and forage area.”

Vegetation:

Drought can lead to reduced vegetation cover and increased risk of wildfires. This can have a negative impact on biodiversity and the ability of ecosystems to provide services such as carbon sequestration and water regulation.

Livestock:

Drought can lead to reduced availability of grazing lands and water sources for livestock (Bogale & Erena, 2022), which can lead to loss of income from the sale of animals and reduced access to milk and other animal products for household consumption. All the respondents have stated that there is an impact of drought on the production of livestock. Due to less availability of pasture land and water during drought, the livestock production system is affected. During FGDs, the same concern was raised as drought keeps affecting livestock production. The respondents stated that,

“It was found that, during the drought, due to scarcity of the water and fodder, the livestock production has come down, and abortion of the sheep and goat has taken place. The growth of livestock is also getting slow due to the scarcity of water and fodder. So, drought has a direct negative implication on the pastoral production system and income coming out of it. Drought also causes the death of the livestock, but due to nomadism and migratory way of life, the pastoralists in this area have overcome the drought situation. So, there seems to be a smaller number of livestock deaths due to drought situations. But in the study area, more economic losses have been reported due to the reasons mentioned above. Due to this, sedentarisation process has been observed among many of the traditional families.”

Aquatic life:

Drought can also affect aquatic ecosystems and the species that depend on them. Low water levels in rivers and reservoirs can lead to increased water temperatures, reduced oxygen levels and altered chemical conditions, which can harm fish and other aquatic organisms. Greater groundwater depletion rates and reduced recharge have the potential to damage aquifers and negatively impact water quality (e.g., salinity, acidity, dissolved oxygen, turbidity), which may result in a potential loss of biological productivity in soils over the long term.

Impact on Livelihoods:

The Dhangar community primarily relies on pastoralism and agriculture for their livelihoods. Drought conditions have a significant impact on their ability to earn a living.



With reduced water resources, the grazing lands become scarce, leading to a decrease in the number of livestock that can be supported. This results in decreased milk production, which is one of the primary sources of income for the Dhangar community. Drought also affects agriculture, as it reduces crop yields and affects the quality of the crop output. This has a direct impact on the food security of the community. The respondents have given up sheep rearing occupation and settled in their respective villages. Many factors have played a key role in pushing the Dhangar population to leave their livelihood, including continuous drought, hardship in herding, lack of secure and settled life, etc.

During the informal discussions, it was shared by Ramu Shinde that:

“Scarcity of fodder and water was the main reason for leaving shepherding. I have settled now in Karad Taluka where rainfall is enough, and fodder and water are available. I have shifted from sheep herding and bought buffalo and now selling milk and earning my livelihood there.”

Health and Nutrition:

The lack of water and food resources due to drought conditions can lead to malnutrition and water-borne diseases. The Dhangar community is particularly vulnerable, as they are often unable to access medical facilities and clean drinking water. The reduced availability of food can lead to malnutrition and weaken the immune system, making the community more susceptible to diseases. The FGD participants have shared their experiences about the status of health of Dhangars; the following description will help in understanding the status of health in detail:

‘We live in remote areas and migrate from one place to another in search of livelihood. The government announces schemes like Janani Suraksha Yojana. But Dhangars cannot benefit from these facilities because of the traditional way of life. On the migratory route, if a Dhangar woman is pregnant at the delivery time, timely health facilities are not available. So, they complete the delivery process using the traditional method, leading to higher maternal mortality rates. Those who have left their traditional livelihood pattern and migrated to urban areas work on construction sites. They are infected with throat diseases because of dust pollution, and some get infected with tuberculosis (TB).’

Displacement:

In some cases, the recurring droughts have become so severe that the Dhangar community has been forced to abandon their settlements and migrate to other regions in search of food and water. This displacement can lead to the loss of their homes, assets, and livelihoods, exacerbating the impact of the drought.

Recommendations:

Mitigation measures/Suggestions to build resilience:

It is important for government and other stakeholders to implement strategies to manage and conserve natural resources, such as water harvesting and conservation, sustainable land use practices, reforestation, and afforestation, as well as to integrate traditional knowledge and practices of local communities, to build resilience towards the impacts of drought.



The Dhargar community has taken various measures to mitigate the impact of drought on their lives. Drought can also increase vulnerability to diseases and parasites among the livestock, due to the reduced availability of water and grazing lands, which can further exacerbate the impact of drought on pastoralists' livelihoods. Some of these measures include:

Diversifying livelihoods:

Encouraging pastoralists to diversify their livelihoods by introducing alternative income-generating activities can help them cope with the impacts of drought. This can include activities such as agro-pastoralism, non-farm-based income-generating activities, and ecotourism.

Water management:

Improving water management and conservation practices can help ensure that pastoralists have access to water during times of drought. This can include the construction of water storage and irrigation infrastructure, as well as the use of drought-resistant crops and practicing rainwater harvesting.

Pastoralist-led land use planning: Involving pastoralists in land use planning can help ensure that their needs and perspectives are taken into account. This can include the design of grazing reserves, range management, and the development of early warning systems for drought.

Building community-based institutions:

Building strong community-based institutions can help pastoralists better cope with the impacts of drought. This can include the formation of pastoralist cooperatives, which can help pastoralists access easy credit and other financial services, as well as provide them with a collective voice in decision-making.

Adaptive and flexible policies:

Governments should design policies that are adaptive and flexible to the pastoralists context, to ensure that pastoralists have access to the resources and services they need to cope with the impacts of drought.

Education and training:

Providing education and training to pastoralists on sustainable land management and water conservation practices, as well as on harnessing early warning systems, can help them better prepare for and cope with the impacts of drought. It is important to note that building resilience among pastoralists requires the involvement and participation of various stakeholders including government, civil society organizations, local communities, and pastoralists themselves.

Drought can have a significant impact on the grazing of livestock in India. Drought conditions can lead to a reduction in the availability of grazing lands and water sources, which can make it difficult for livestock to find sufficient food and water. This can lead to malnutrition and reduced body condition and capacity of the animals, which can in turn



lead to decreased milk production, reduced fertility, and increased risk of diseases and parasites.

Additionally, the reduced availability of grazing lands can also lead to overgrazing and degradation of the remaining vegetation, which can further reduce the quality and quantity of forage available for livestock and damage the vegetation. This can lead to a decline in the productivity and health of the animals, and ultimately, severely affect the livelihoods of herders and farmers.

The impacts of drought on grazing can also lead to increased competition for resources between livestock and wildlife, as well as conflicts with other communities over resources. This can result in the displacement of livestock, and in some cases, the loss of animals due to starvation or predation.

In order to mitigate the impact of drought on grazing, it is important to implement drought management and mitigation strategies, such as water harvesting and conservation, sustainable land management practices, and grazing land management. It is also important to involve pastoral communities and herders in the decision-making process and to integrate traditional knowledge and practices to ensure that their needs and perspectives are taken into account.

Community-led initiatives:

The community has come together to implement various initiatives such as setting up community-managed water sources and community-run livestock feed banks.

The community has adopted various water conservation techniques such as rainwater harvesting, and building check dams to conserve water for their livestock.

Recommendations and Conclusion:

The recurring droughts in Maharashtra have had a significant impact on the Dhargar community. The community's over-reliance on pastoralism and agriculture has made them particularly vulnerable to the effects of drought. However, the community has taken various measures to mitigate the impact and to adapt to the changing climatic conditions. Despite these efforts, the Dhargar community continues to face challenges in the face of drought. It is essential that government and non-governmental organizations provide support to the community to help them overcome these challenges and to ensure they can practice sustainable livelihoods.

It is important for government and other stakeholders to recognize the importance of pastoralism as a livelihood and to implement policies and programs that support pastoralists, such as water harvesting and conservation, sustainable land use practices, and alternative livelihood options. In addition, involving pastoralists in the decision-making process and integrating traditional knowledge and practices can help in building resilience towards the impacts of drought.

Building resilience within pastoral nomadic communities to cope with the impacts of drought is essential. This can include measures such as water conservation and management, harnessing appropriate irrigation and water storage infrastructure, and the cultivation of drought-resistant crops. Community-based organizations and government



agencies should work together to provide education and training to pastoral nomads on sustainable land management and water conservation practices.

It is important to also ensure access to credit and other financial services on easy terms, as well as providing alternative livelihood options, such as non-farm-based income-generating activities, to help people of this community to cope with the deadly impacts of drought. Investing in health and education of the community can also help build resilience by creating a more educated and healthy population that is better equipped to adapt to and recover from the effects of drought.

References:

- Bogale, G.A., Erena, Z.B. 2022. Drought vulnerability and impacts of climate change on livestock production and productivity in different agro-ecological zones of Ethiopia, *Journal of Applied Animal Research*, 50(1), pp. 471-489, DOI: 10.1080/09712119.2022.2103563
- Boyd, D.R. 2023. The overlooked environmental and human rights crisis: Desertification, land degradation and drought. Policy Brief No. 4. United Nations Human Rights Special Procedures. June.
- Cahn, M. 2002. Sustainable Livelihoods Approach: A Concept and a Practice Devnet Conference 2002- Contesting Development: Pathways to Better Practice, Massey University. Retrieved May 21, 2006, Available at: http://www.devnet.org.nz/conf2002/papers/Cahn_Miranda.pdf
- Dadas, D.R. 2023. Indian Pastoralism Amidst Changing Climate and Land Use: Evidence from Dhangar Community of Semi-arid Region of Maharashtra in S. Nautiyaletal (eds.) *Palgrave handbook of socio-ecological resilience in the face of climate change* (pp. 85-97). https://doi.org/10.1007/978-981-99-2206-2_7 85
- Gemtessa, K. (2005). *Impact of Drought on Pastoralism*.
- International Institute for Sustainable Development (IISD) 2003. Conceptual Framework Prepared by the Task Force on Climate Change, Vulnerable Communities and Adaptation: International Institute for Sustainable Development, Canada.
- Jost, C.C. 2002. *Facilitating the survival of African pastoralism in the face of climate change: Looking back to move forward*. M.A. thesis, Fletcher School of Law and Diplomacy, Tufts University
- Katalakute., Panaskar, D., Mukate, S., Vagh, V.M. 2016. Impact of Drought on Environmental, Agricultural and Socio-economic Status in Maharashtra State, India. *Natural Resources and Conservation*, 4(3), pp. 35-41. DOI:10.13189/nrc.2016.040301
- Kishore, K., I. Köhler-Rollefson. (2020). *Accounting for pastoralists in India*. League for Pastoral Peoples and Endogenous Livestock Development, Ober-Ramstadt, Germany.
- Mahapatra, R. 'nd' Drought and livestock. *Down to Earth*, Available at: <https://www.downtoearth.org.in/blog/drought-and-livestock-38686>
- Malhotra, K. C., Gadgil, M. 1931. The ecological basis of the geographical distribution of Dhangars. A Pastoral caste cluster of Maharashtra, in *South Asian Anthropologist** Ranchi, 1931. 2(2) pp. 49-59.



- Mishra, K., Singh, V.P. 2010: A review of drought concepts. *J. Hydrol.*, pp. 391, 202–216. <https://doi.org/10.1016/j.jhydrol.2010.07.012>.
- Rai, D. 2022, August 18. More and more droughts: How both India and the world is getting affected and what it will lead to. *India Today*. (online) 18 August. Available at: <https://www.indiatoday.in/diu/story/droughts-india-world-climate-change-global-warming-monsoons-un-1989548-2022-08-18>
- Scoones, I. 1998. Sustainable Rural Livelihoods: A Framework for Analysis. Brighton: IDS working paper: 72.
- Shokri et. al. 2011. Examining the natural impacts of the drought on the Nomads in Kerman province of Iran, International Conference on Environmental, Biomedical and Biotechnology IPCBEE vol.16 (2011) IACSIT Press, Singapore.
- Sontheimer, G., et al. 1997. *King of hunters, warriors and shepherds: Essays on Khandoba*, New Delhi. Indira Gandhi National Centre for Arts.
- Udmale, P., Ichikawa, Y., Manandhar, S., Ishidaira, H., Kiem A.S. 2014. Farmers' perception of drought impacts, local adaptation and administrative mitigation measures in Maharashtra state, India. *International Journal of Disaster Risk Reduction*, 10(A), pp. 250-269.
- WHO. 2024. *Drought*. World Health Organisation. Available at: https://www.who.int/health-topics/drought#tab=tab_1