

EXPLORING THE INTERPLAY OF PASTURELAND GOVERNANCE DEGRADATION AND LIVELIHOOD VULNERABILITY: A STUDY IN SOUTHERN RAJASTHAN, INDIA

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Abstract

Pastureland in Rajasthan has a special significance for a range of reasons. The state has acute adverse biophysical and climatic conditions where income from agriculture is uncertain. As a result, most rural inhabitants make ends meet by raising livestock. This study attempts to understand the biophysical condition, governance of the pastureland, and its impact on the livelihood of the rural poor. It uses an exploratory research design to explore the key drivers of deteriorating pastureland. The study was conducted in 15 villages in southern Rajasthan spread across three districts: Bhilwara, Chittorgarh, and Pratapgarh. To fulfil the study objectives, Focus Group Discussions and individual interviews were conducted with community members and Gram Panchayat (Village Council) officials. The findings depict the dismal picture of pastureland governance at the grassroots level, resulting from multiple factors such as overgrazing, the ineffectiveness of protection rules, and encroachment. The study suggests that appropriate management and protection of the pastureland are urgently needed to sustain the rural community's livestock and livelihood.

Keywords: Pastureland, Governance, Livelihood, Common Property Resources, Rural Poor.

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Introduction

India is a developing nation, progressing slowly and steadily. Around 70 per cent of the country's population lives in rural areas, and more than 50 per cent is engaged in agriculture and animal husbandry for livelihood (DoACFW, 2021). India is expected to add up more than 1.3 billion population by 2050 (UN-Pop, 2017); therefore, food production needs to be increased substantially in the coming decades along with changing dietary preferences like higher demand for animal-sourced products (Komarek et al., 2021; Alexandratos & Bruinsma, 2012). The increased population has created tremendous pressure on the land. The demand for the land area has been a result of the utilisation of land for various purposes such as agriculture, settlement of urban and rural populations, industrial mining, and other infrastructure development (Banerjee et al., 2021; Roy et al., 2015; Kumar, 2011). The pasture and other grazing land areas are shrinking due to the diversion of the land for such usage.

Pastureland forms a considerable part of Common Property Resources (CPRs) on which the livelihood of the rural poor depends (Singh et al., 2021; Mphande, 2016; Pradhan & Patra, 2011). CPRs are broadly defined as those resources on which a well-defined group of people has shared user rights, characterised by rivalry and non-exclusivity of the resource (Saha & Goswami, 2019; Chaturvedi et al., 2015; Jodha et al., 1998). CPR provides critical support in drought period sustenance, carrying out additional crop activities and petty trading, handicraft, income, and employment generation opportunities in the lean season of agriculture. Moreover, CPR functions for greater social and ecological well-being by playing its role in groundwater recharge, resource conservation, sustainability of the farming system, sustenance of poor households, supply of renewable resources, and improving micro-environment and climate (Bennett et al., 2015; Jodha, 1990a). The only extensive National Sample Survey Organisation Report (1999) on the role of land, water, and forest commons in the life and economy of rural Indians has revealed that

CPRs provide 54 per cent of the total income to the poorest section. The rural household also receives 58 per cent of fuelwood requirements and up to 25 per cent of fodder requirements. Between 84 to 100 per cent of rural poor households depend on CPRs, including the pastureland, to gather consumer goods such as food, fibre, fuelwood, fodder, and other products for household consumption and sale (Rao et al., 2018; Qureshi & Kumar, 1998; Jodha, 1986). Pastureland and other grazing land are prime *de jure* (legal) CPR, which backs rural households in maintaining and sustaining their livestock and livelihood.

For ages, CPRs were traditionally managed by community members all over the world. With the exploded population, changes in socio-economic and political conditions, and the emergence of the capitalist market economy (Bala, 2013), the management and governance system of the Commons also changed. It weakened the traditional customary practices of CPR governance after the emergence of a new modern legal process (Jodha, 1989; Damodaran, 1987). The gradual extension of state control over these resources resulted in the decay of the community management system. The NSSO report (1999) shows a large-scale depletion of CPRs, with CPR lands in rural India declining by almost 2 per cent every five years. CPRs available to the villagers declined substantially over the years (Gaur et al., 2015 & Chaturvedi et al., 2015). CPRs have become the most neglected part of development planning across the country (Jodha, 1990b).

Understanding Pastureland in the Context of Rajasthan

Rajasthan is one of the largest states of India in terms of geographical extent. Compared to other states, Rajasthan has diverse biophysical and climatic conditions like low and erratic rainfall, frequent droughts, high temperature, high evapotranspiration, and poor water resources (Sharma, 2013), which supports 5.66 per cent of the country's total population. The water scarcity and low quality of agricultural land pose a serious

livelihood challenge for the entire population. Rajasthan is highly prone to droughts. Since 1901, the state has confronted 48 droughts in the duration of 102 years (Rathore, 2004). In such a scenario, animal husbandry becomes a significant economic activity in lieu of agriculture in terms of growth, stability, resource conservation, and uplifting the socio-economic status of the inhabitants. The rich livestock wealth of the state provides livelihood during the monsoon failure. Rajasthan contributes 10.58 per cent of the livestock population of the country (Economic Review, 2020-21). The state is one of the major contributors to various livestock products like milk, meat, and wool. Animal husbandry is a significant source of supplementary income and attracts massive efforts to fulfil the requirement of feed and fodder for such a large livestock population. Adequate availability of CPRs supports livestock production in the state. According to a report, CPRs spread over 23.86 per cent of the total land area of the state (4.86 % of permanent pasture, 8.08 % of forest land, and 10.92 % of the wasteland and other miscellaneous tree covers) (Agricultural Statistics of Rajasthan, 2019-20). A drastic decline in the products collected from the CPR lands by the rural poor (compared to early 1950) is the major indicator of the degradation of CPRs (Jodha, 1990a). With the depleted forage potential and changed vegetation composition, commons can now survive only small ruminants like goats and sheep.

The present study targets pastureland, specifically the permanent pasture, owned by the Village Panchayat and registered as Charagah or Permanent Pastureland in the revenue records. As reflected in the 73rd amendment of the Indian Constitution enabling greater role to Panchayati Raj Institutions (PRIs) and later enactment of the Mahatma Gandhi National Rural Employment Act with the provision to the creation of productive assets in the rural areas provide the suitable ground for the institutions to safeguard and better govern CPRs. Despite several policy and legal provisions, the decline in the productivity and area of CPRs is happening at a large scale (Kapur et al.,

2012). Understanding the governance and management of pastureland is pivotal to ensuring its judicious use.

Materials and Methods

Field Setting: This study was conducted in the cluster of three adjacent districts of the semi-arid agro-climatic zone of Rajasthan located in the north-western part of India. In the past, several studies have been undertaken in the arid and hyper-arid zones of western Rajasthan (Gaur et al., 2020; Chaudhary et al., 2011; Bhati et al., 2018; Khan et al., 2009; Shanmugratnam, 1996; Jodha, 1985) but semi-arid plain of southern Rajasthan has remained under-researched in the CPRs' perspective (Singh, 2018). Pastureland is the major CPR available along with other common resources in southern Rajasthan and plays a crucial role in livestock raising. Three districts, namely Bhilwara, Chittorgarh, and Pratapgarh, were chosen purposively for the study. This region observes significant dependency of rural households on CPRs for fuel, fodder, water, and fibre needs. Steadily fragmentation of farmland, low soil productivity, and water scarcity in the semi-arid region increase villagers' dependence on the CPRs.

All the studied villages were part of the preceding princely Mewar state, sharing a common culture and history. These districts have a considerably higher percentage of pastureland than the state average. Bhilwara is currently part of the Ajmer division, whereas Chittorgarh and Pratapgarh are part of the Udaipur division, separated for revenue administrative purposes. Bhilwara is well-known for its textile industry, whereas Chittorgarh is emerging as the leading cement-producing hub in Rajasthan. Land utilisation for industrial growth in both districts creates new skilled job opportunities while threatening the local CPRs. Pratapgarh is a predominantly tribal district; agriculture is the prime source of livelihood, along with stock-raising. The tribal household of this district receives non-timber forest products from the forest and other CPRs to

supplement their livelihood. These districts are appropriate for the research because agriculture, livestock, and CPRs have strong inter-relations. Additionally, the combined proportion of pastureland in all three districts is higher (average 8.93%) than the state average (4.86%), which makes it an excellent location to investigate the resource condition, its contribution, and pastureland governance mechanism in southern Rajasthan (Agricultural Statistics of Rajasthan, 2019-20).

Methodology

For this study, a total of 15 villages, comprising five villages from a block of each district (See Table 1), were selected. The purpose of selecting three districts was to generalise the findings for the region of southern Rajasthan. Revenue village was taken as a basic unit for the study. To select the village for the study, the following criteria were followed: (i) Villages with more than 20 hectares of pastureland were included in the study to understand the condition of pastureland resources, governance, and its contribution to livelihood protection. (ii) Villages getting external financial support from any Civil Society Organisations for pastureland development were excluded from the study to eliminate the influence of external factors.

The study follows an exploratory qualitative research design. The design is meant to investigate the research question that is not addressed in erstwhile research or intends to investigate the context-specific issue. However, research studies are constantly being conducted on CPRs in Rajasthan but there is a dearth of studies specifically on pastureland governance in southern Rajasthan. Semi-structured key informant interviews and focus group discussions were conducted with Gram Panchayat officials and community members, respectively, to collect the data. Interviews with officials were conducted in the Gram Panchayat office, while group discussions with community members were conducted in the commonplace of the village. The basic demographic information of the village was

collected from the Gram Panchayat office using secondary sources. Information regarding the nature and extent of Soil Water Conservation activities, issues discussed in Gram Sabha, and pastureland governance mechanisms were collected through semi-structured interviews with one or two officials or public representatives (Secretary or Sarpanch) of each Gram Panchayat. The researcher conducted focus group discussions in each village with 8 to 12 members (as per availability), including women, to understand their dependency, resource condition, and status of traditional governance mechanisms. The researcher cross-checked and validated the information provided by the Gram Panchayat officials regarding the rules of pastureland protection, mechanism of benefit sharing, nature and extent of activities undertaken for pastureland development, and the major issue discussed in Gram Panchayat meetings related to pastureland in each village with the community members. Collecting information from Gram Panchayat officials through interviews took 30 to 45 minutes, whereas group discussions with village community members lasted 45 minutes to an hour in each village. To present the analysis, qualitative data were arranged and analysed thematically. During the field visit, the researcher himself visited each pastureland plot (to observe and understand the bio-physical condition of the resource). Therefore, field observation was utilised efficaciously to analyse and interpret the data. Primary data findings were also supported by secondary sources and a review of the literature to validate the findings.

Results and Discussion

This study attempts to understand the existing condition and governance of the pastureland in the current scenario. It explores the key drivers of decreasing pastureland by following an exploratory research design in the study locale of southern Rajasthan. First, it presents an overview of the study area and then discusses the factors affecting the resource condition and governance.

Table 1*Demographic Profile of the Study Area*

Districts	Blocks	Name of the villages ^a	Area of pasture in hect. [@]	No. of households [*]	BPL households (%) [#]	No. of livestock [*]
Bhilwara	Sahara	Govliya	27	368	17	1051
		Khankhala	125.6	1212	9.6	1541
		Satliyas	90	381	15.57	400
		Sangas	33.3	125	28.69	320
		Khajuriya	27.5	124	35.48	553
Chittorgarh	Begun	Leerdi	41	127	25.19	200
		Luhariya	90	150	4.25	850
		Jodhpuria	159	225	10.98	925
		Aakodia	48	150	9.4	390
		Dugar	92	552	35.64	2190
Pratapgarh	Chhotisadri	Manpura Jagir	74.5	200	30.7	480
		Barwara Deval	37.8	147	11.97	620
		Kavar Chauki	24	86	36	435
		Satola	251.9	486	14.96	620
		Rawatpura	74.5	200	30.7	480

Notes: ^aAn interview and a group discussion were held separately in each village; [@] Apna Khata Govt. of Rajasthan; ^{*} Gram Panchayat Offices (n.d.); [#] BPL Census (Rural) Govt. of Rajasthan.

Profile of the Study Area

The study area is characterised by the rural population dependent on agriculture with low technological advancement. Agriculture is a primary source of income, while animal husbandry complements it. An overview of the study area reveals that almost one-fifth of the population lives in poverty. Various studies indicate that poor people in arid and semi-arid areas are highly dependent on CPRs for their survival (Kuchimanchi et al., 2019; Soe et al., 2019 Chattopadhyay, 2016; Jodha, 1995). The present study also reveals that a substantial area of pastureland is available in each

village, but its poor upkeep and management are affecting productivity.

Physical Condition of the Pastureland

Village communities in all the studied villages practice open grazing throughout the year. Unregulated open grazing destroys the palatable grasses and shrub shoots just after the regeneration in the monsoon season. It affects the growth and sustainability of the pastureland plot. Very low vegetation and scattered tree cover are present.

Table 2*Type and Extent of Soil Water Conservation Measures in the Studied Villages*

Soil Water Conservation activity (SWC)	No. of villages (N=15)	No. of villages (in %)
Integrated watershed development project#	3	20
Contour trench/ staggered trench/plantation	2	13.33
Talai (pond) de-silting/ repairing#	3 (2*)	20
Boundary demarcation/ cattle protection trench#	5	33.33

*Exclusively Talai de-silting/repairing activity undertaken

#multiple activities undertaken

Source: Field Survey (2022)

The pastureland has become highly degraded in this region. Analysis of Soil Water Conservation (SWC) activities from Table 2 can be summarised as follows:

- i. For soil water conservation, integrated watershed development work was undertaken in three villages of the Pratapgarh district, namely Manpura Jagir, Rawatpura, and Satola. Under the integrated watershed development, staggered trenches, counter trenches, plantation, and wire fencing activities were undertaken.
- ii. In two villages of Bhilwara, Khankhala, and Sangas, exclusively contour-tranche intervention for water conservation and arrest of soil erosion was carried out.
- iii. De-siltation and boundary wall repair work were carried out in three villages, namely Manpura Jagir, Barwara Deval, and Satliyas, to ensure the availability of drinking for the livestock. Talai (pond), constructed long ago, had lost its water holding capacity due to silt deposition and the boundary wall had suffered damages. There has been a long tradition of conserving water resources since ancient times.

- iv. Boundary wall is a primary requirement to protect and conserve the pastureland. In the studied villages, it is found that no village has a pucca or kuchha stone constructed boundary wall to protect the pastureland resource in the village. Out of the total 15 studied villages, only five villages, namely Kavar Chauki, Rawatpura, Govliya, Khankhla, and Sangas, have cattle protection trenches around the pastureland.

The further qualitative analysis of SWC intervention reveals that except for the three villages from one district, no other village in any district has undertaken an integrated approach to improve the condition of the village pastureland. This integrated intervention too was undertaken on a small patch out of the total pasture. This small-scale intervention is insufficient to improve the overall condition of absolute pastureland resources. Other SWC activities trenching, Talai de-silting, and plantation were also undertaken on the piecemeal land area. Out of the 15 studied villages, SWC interventions were carried out only in seven villages, and only one village realised the benefit of increased fodder, where the intervention of an integrated watershed was taken up. It was observed in the field visit that more than 50 per

cent of the pasturelands are dotted with the exotic shrubs *Barahmasi* (*lantana camara*) and *Vilayati Babool* (*acacia juliflora*), which does not allow palatable grass to survive (Bekele et al., 2022).

In a key informant's interview, when an official was asked why *Gram Panchayat* so poorly manages the watershed work, he replied on condition of anonymity that

"Watershed committee formed for the implementation exists only on papers. Most of the committee members are government employees; they have their own tasks to do, and no one is concerned about the watershed work."

(Interview No.02/Barwara Deval)

It is evident from the above statement that the government agency has followed a top-down approach in the planning and implementation of this project. It shows a lack of efforts to sensitise and mobilise the villagers to ensure their participation in making the watershed a people's project. The objective of decentralised governance cannot be realised until or unless the project implementing agency and *Gram Panchayat* ensure the active participation of all stakeholders. Not protecting the pastureland by the boundary wall turns pastures from CPR to open access resources. Overgrazing

and poor upkeep cause vegetation and tree cover loss. The absence of a boundary wall makes the resource more susceptible to encroachment and overexploitation. In the interview, one *Sarpanch* stated that

"Uncontrolled encroachment on the pastureland and government land is happening around all the villages. Realising the rampant encroachment cases, some villages, including ours, demarcated the resource boundary by cattle protection trench to protect the pastureland from further encroachment".

(Interview No.12/Khankhala)

In this study, empirical evidence shows that the land use pattern of pastureland is changing. The land is being encroached on for human settlement, agriculture expansion, and rural infrastructure building like *Anganwadi*, schools, community halls and other purposes. It is also being diverted for illegal stone and soil mining. It is evident from the field observation that village institutions have not undertaken much concrete steps to improve the resource condition. All these factors are contributing together to the tragedy of the pastureland resource. Landless labourers and households living Below Poverty Line are becoming the worst sufferers as productivity and expansion of pastureland are shrinking.

Table 3

Status of Various Governance-Related Indicators at the Village Level

Indicators of pastureland governance	No. villages (N=15)	No. of villages (in%)
Discussion related to pastureland in <i>Gram Sabha</i> meeting	13	86.66
Presence of encroachment on pastureland	12	80
Cases of encroachment reported	4	33.33
Pending cases of encroachment at GP for action	4	100
Demand for pastureland development work	11	73.33
Action taken by GP for development work	7	46.66
Existence of rule for pastureland protection	9	60
Existence of rule for benefit-sharing	0	0

Source: Field Survey (2022).

Indicators of Pastureland Governance at The Village Institution (*Gram Panchayat*)

Gram Panchayats are authorized and empowered by the 73rd Constitutional Amendment to govern and develop the natural resources and pasturelands, specifically in rural areas. To understand the governance of the pastureland in the village, the involvement of the community members and *Gram Panchayat* was taken into consideration. Major discussions, decisions, and actions taken by the village community and *Gram Panchayat* are documented.

It becomes essential to understand the indicators of pastureland governance and their status in the study area. Table 3 illustrates the following point:

- i. In most of the villages (13/15), villagers discussed various issues related to the pastureland in Gram Sabha in the last year. Villagers have raised their concerns for the removal of encroachment from the pastureland. They requested Gram Panchayat to undertake the conservation work under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), whereas some villages also demanded the eradication of the Barhamasi (*Lantana camara*).
- ii. The majority (11/15) of villages added activities like Chokadi Khudai (trenching), plantation, and Talai Gaharikaran (Pond de-silting) in Gram Panchayat Development Plan (GPDP).
- iii. In most of the villages (12/15), pastureland has been encroached upon to some or greater extent, but just one-third of villages (4/12) reported cases of encroachment to the Gram Panchayat. Even after reporting, all the cases are still pending with Gram Panchayat for the necessary intervention.
- iv. In more than two-thirds of villages (11/15), community members requested Gram Panchayats to undertake the pastureland development activities, but only half of the villages (5/9) undertook some SWC measures.

- v. Study data shows that customary rules for pastureland protection exist in most villages (9/15). It includes rules regarding the ban on cutting green trees (*Kulhadi bandi*), prohibition from encroachment, and no soil and stone mining allowed.

Discussion in Gram Sabha regarding various issues associated with pastureland indicates that the villagers are concerned about pastureland governance. Incorporating the number of activities in the development plan shows their concern for improving the condition of pastureland resources.

Widespread encroachment is one of the reasons for land degradation and deterioration. To a question on why pastureland is being encroached on in the village, a participant of the group discussion replied that “everyone in the village, small or large in size, has land for cultivation, but no one has control over their greed.” (FGD No.10/ Dugar)

Steadily, an increase in market value and greed out of scarcity of land are the factors contributing to the encroachment of pastureland. It was observed that land encroachment in rural areas requires investment for preparing the land for cultivation, fencing for protection from cattle, and developing irrigation facilities to get a return on the investment along with having higher social status.

If we dig deeper into the analysis of encroachment, caste, class, and political power dynamics in the villages prevent the people from reporting the encroachment cases. People from almost all social groups have encroachment on the land in different villages. Except in some cases, generally dominant castes have encroached on the larger patches of the pastureland prominently for agriculture, while other castes have encroached on comparatively smaller patches majorly for settlement purposes. Land grabbing favours the dominant caste and class households having strong socio-political and administrative nexus at the local level. Having proportionately adequate capital helps them to encroach, invest, improve, and grab this land. These factors always favour

influential people while the weaker section of society becomes looser (Jahnavi et al., 2021).

The community is aware of the protection rules in most villages, but the lack of mechanisms to monitor and keep checks on violations makes it ineffective. Gram Panchayat has not taken any lead to reinforce or revive customary rules that were suitable to protect pastureland. One of the key objectives of MGNREGS being implemented in rural areas is creating productive assets to improve the condition of natural resources. Gram Panchayats have extremely failed in effectively governing the pastureland and utilising the rural development schemes to improve the condition of pastureland resources.

Vulnerability among Rural Poor Household

Although all rural households, poor and non-poor, depend on the CPRs, people experiencing poverty have a high degree of dependency due to low resource endowment (Meena, 2021; Chattopadhyay, 2016; Sarkar, 2016). As seen in the study, pastureland in southern Rajasthan is exposed to many degrading factors like low vegetation, encroachment, change in land use, and slacking social and institutional governance system, further deteriorating productivity. Rural households are highly dependent on the pastureland for fodder and fuel-wood needs. Dependency ranges from 4 to 8 months throughout the year. Even though villages have a considerable pastureland plot, livestock keepers do not obtain surplus fodder other than open grazing.

Table 4

Dependency of Poor Households

Dependency on pastureland for fodder and fuelwood needs	4-8 months (Approx.)
<i>Karonda</i> and <i>Tendu</i>	2 (villages)
Other fodder*	3 (villages)
Housing and thatching material	9 (villages)
Benefit from SWC activity (total)	1 (7) (villages)

*Leaves of Palash and Khajur trees used as livestock feed in the summer season

Source: Field Survey (2022)

Households in all the villages collect fuelwood from pastureland, although the quantity of fuelwood has decreased drastically. When asked to quantify the lots of fuelwood gathered from pastureland, community members could not generalise due to insignificant and irregular supply. In the current scenario, collecting fuelwood from pastureland has become a frivolous job due to low shrub and tree cover along with increased human-animal pressure. This has increased the burden on people experiencing poverty to walk a long distance to

collect the fuelwood. Ultimately, it forces them to use LPG for cooking food, creating an extra financial burden.

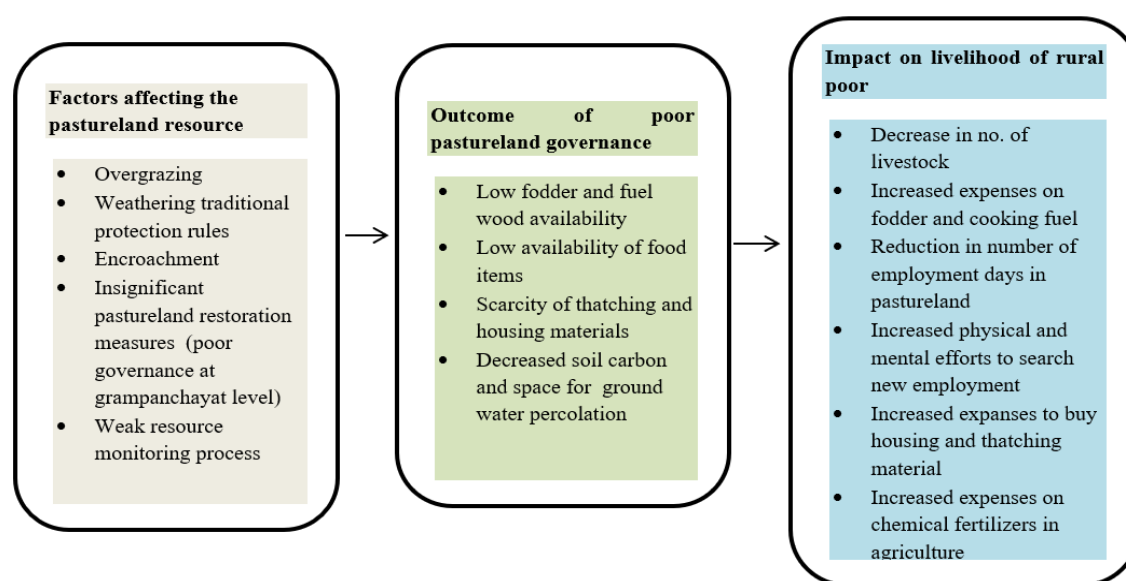
In Kavar Chauki and Barwada Deval of Pratapgarh district, *Karonda* (*Carissa carandas*) and *Tendu* (*Diospyros melanoxylon*) fruits are also harvested in piecemeal. Earlier, villagers used to sell these products in the market; however, due to reduced production, it is now limited to family consumption. Rural households in three villages, Leerdi, Luhariya, and Dugar of Chittorgarh district,

were found to have a practice of feeding leaves of *Palash* (*Butea monosemy*) and *Khajur* (*Phoenix dactylifera* L.) in the dry summer season when the green fodder is scarce. It provides insurance to poor livestock keepers in the lean season.

A group discussion in the Bhilwara community concluded that “*small ruminants in the village have decreased and remained one-third as compared to 15-20 years back.*” (FGD No. 8/Gopalpura).

Figure 1

Interrelationship between Different Factors of Poor Pastureland Governance and Livelihood Vulnerability of the Rural Poor



Source: Author's Construct, 2023.

Figure 1, based on data analysis and field observation, explicitly identifies the various factors affecting the pastureland resource. The factors affecting the pastureland resource negatively impact the resource productivity. Reduced productivity of the pastureland resource is further leading to livelihood vulnerability among the rural poor. Poor households have little say in improving governance, and they do not have the power to grab resources for personal use individually. Degrading pasturelands and decreasing number of family members are spotted as the main reasons for the fall in number of livestock. The discussion revealed that people are shifting from small ruminants to large animals and free grazing to stall feeding as it is becoming economically more viable

for them. Poor households are becoming extreme sufferers of pastureland degradation and shrinkage. Making big animals (cattle) economically beneficial requires extra care, green fodder, and external concentrated feed, which is an onerous job for poor households with small landholdings and no irrigation facility. Therefore, landless and small landholders are consequently being reduced to daily wage labourers. This process leads to further pauperism of the pastureland resources and the rural poor.

Conclusion

The findings depict the dismal picture of pastureland governance at the grassroots level,

resulting from multiple factors such as overgrazing, the ineffectiveness of protection rules, encroachment, and diversion of pastureland for other usage. Gram Panchayats have been extremely ineffective in governance of the pastureland as it is apparently visible from indicators of governance, measures of watershed development and poor status of other soil moisture conservation activities. Reduced area and productivity of the pastureland resources are further leading to livelihood vulnerability among the rural poor.

Demarcation of the pastureland resource plays a pivotal role in its conservation and protection. The study found that no village has a pucca or kuchha stone constructed boundary wall to protect the pastureland resource. Only five out of the total 15 studied villages, namely Kavar Chauki, Rawatpura, Govliya, Khankhla, and Sangas, have cattle protection trenches around the pastureland. The unavailability of the boundary around the pastureland makes it an open resource for exploitation and encroachment. It was observed in the field visit that more than 50 per cent of the pasturelands are dotted with the exotic shrubs *Barahmasi* (lantana camara) and *Vilayati Babool* (acacia juliflora), which does not allow palatable grass to survive. Therefore, pastureland resources are degrading qualitatively and quantitatively. SWC interventions were carried out only in seven villages and only one village realised the benefit of increased fodder, where the intervention of an integrated watershed was taken up. In more than two-thirds of villages (11/15), community members requested Gram Panchayats to undertake the pastureland development activities, but only half of the villages (5/9) undertook some SWC measures. Gram Panchayats carried out the development intervention in a small area, which was insufficient to improve the condition of the resource as a whole. The study shows that customary rules for pastureland protection exist in most villages (9/15). It includes rules regarding ban on cutting green trees (*Kulhadi bandi*), prohibition on encroachment, and soil and stone mining. But in practice, no rule is

strictly followed to protect this resource. As pastureland degrades day by day, poor households are becoming extreme sufferers, and lack of fodder availability pushes them to sell their livestock in distress.

Way Forward

A holistic and integrated approach is required for effective governance and development of pastureland. Overgrazing must be regulated for at least four months during the monsoon season for better grass and vegetation growth. According to traditional practice, livestock keepers need some open space for grazing; therefore, pastureland can be divided into small patches by fencing as required and can be reserved for regeneration naturally on an alternate basis each year. Before implementing any pastureland development intervention, the community needs to be mobilised, sensitised, and imparted with the required knowledge and skills for effective planning, implementation, and sustainability.

A watershed development committee or pastureland development committee needs to be formed democratically at the village level to implement and monitor the work. Village-level institutions should be given greater autonomy to plan, implement and monitor pastureland development activities. Integrated watershed development programmes need to be planned and implemented with the active involvement of all stakeholders with a bottom-up approach. MGNREGS, which aims to provide employment opportunities to the rural poor and improve the natural resource base, gets the highest budget allocation among all rural development schemes. This scheme has a provision to utilise 60 per cent of the allocated budget to conserve natural resources, but limited measures of pastureland development in the study area hint at the scope for improvement. Therefore, there is a huge potential to effectively utilise MGNREGS to protect and revive natural resources to ensure the well-being of the rural poor through wage employment and allied

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Author's Contribution:

Fateh Lal Bheel: Tool Design, Methodology, Data collection, Data analysis, Writing Original draft.

Jagdish Jadhav: Conceptualisation, Methodology, Writing reviews, and editing

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