PASTORALISTS WITHOUT PASTURE: WATER SCARCITY, MARKETISATION AND RESOURCE ENCLOSURES IN KUTCH, INDIA

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Abstract

Scarcity and uncertainty loom large over the landscape of Kutch, an arid to semi-arid district in western India, where pastoralism has been practised for generations. Despite its clear potential to tackle the dryland dynamics, the tradition of pastoralism in Kutch has been systematically denigrated and marginalised in the district over the years. Drawing on research conducted in eastern Kutch, and along the coast, this article shows how pastoralist communities have been displaced from a range of vital hydric resources – such as mangroves and water sources – in the name of development and conservation. Together, these have accelerated processes of dispossession and exacerbated both 'old' and 'new' resource scarcities.

KEYWORDS: hydric resources, water scarcity, pastoralism, dryland blindness, mangroves, Kutch

Introduction

Drylands are highly unpredictable ecosystems, characterised by low, erratic rainfall and high inter-annual climatic variability, scarcity and uncertainty. They are not uniform but extremely heterogeneous environments, with pastoralism, agro-pastoralism and rain-fed agriculture being the dominant livelihood systems (Hesse 2011). Though drylands count among the world's most variable and unpredictable environments, local communities have long learnt how to live with and harness this variability to support sustainable and productive ecosystems by developing the knowledge, experience, institutions and technologies to manage the resource base (Krätli and Schareika 2010). Nevertheless, despite the potential productivity of drylands and the innate ability of local communities to sustain them, nearly half of the population of drylands live in extreme poverty in what can be considered 'degraded environments' (Hesse 2011). The reasons for this perhaps lie, to a large extent, in how drylands are viewed in official discourses – issues we discuss further in what follows.

Our focus in this article is on the district of Kutch in Gujarat, India. This is the second largest dryland tract in India but is also home to a rich and dynamic eco-

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system, as well as a culturally vibrant society, imbued with religious syncretism (Mehta 2005; Ibrahim 2004). In Kutch, water – or the lack thereof – is an intrinsic part of everyday life and this defines the district's identity. Pastoralists have usually dealt with periods of water scarcity through different livelihood strategies – such as transhumant practices – that draw on social networks and reciprocity. In many ways, pastoralism in Kutch can be regarded as drought insurance cover par excellence (see Mehta 2005), as it ensures the spreading of risks and resources over a vast area, the optimal use of limited resources and constant adaptation to environmental variability (Bhattacharya 1995; Scoones 2004). The mobility of pastoralists should thus be understood as a strategy to deal with this variability and not, as received wisdom would have us believe, a scourge.

However, pastoralism in Kutch has been witnessing a rapid decline. State policies and programmes have systematically ignored the particular dynamics around variability, uncertainty and water scarcity as well as the experiences and expertise of local communities, especially pastoralists, to deal with these, displaying what we refer to as 'dryland blindness' (see Mehta 2005). From 2001 onwards, Kutch has also witnessed rapid industrial growth in the form of port development, mining and special economic zones (SEZs).[1] These have rapidly transformed the district's ecology, especially the coast, and have undermined the rights of pastoralists to common property resources (CPRs), such as land and water (Kohli and Menon 2016). Such developments have come largely at the cost of irreversible environmental change and dispossession from local lands and livelihoods (Srivastava and Mehta 2017). We refer to these as 'new scarcities', arising from a combination of resource capture and intensified processes of commodification.

Though local pastoralists have lived with ecological uncertainties (particularly droughts) for decades, many are now struggling to cope with these changes as they have intensified due to development activities and resource conflicts. In this article, we track these transitions in pastoral livelihoods alongside social constructions of 'old' and 'new' resource scarcities, especially with respect to hydric resources. We focus on the social embeddedness of pastoralism within the development configurations in Kutch and show how pastoralism has been consistently denigrated as a key strategy to deal with the uncertain dynamics in dryland areas. Furthermore, we argue that attempts to replace age-old water- and land-use practices with so-called 'modern' techniques and notions of modernity have simply exacerbated poverty, degradation and conflict between pastoralists and other resource users. These have also intensified with industrialisation and marketisation processes in Kutch, leading to new scarcities among the local population and the ecosystem on which it depends.

1 These are areas demarcated in a country to promote investment and trade. Business and tax laws are far more relaxed in the SEZs than in the rest of the country.

Our argument draws on multi-sited qualitative research from different studies and engagements conducted in Kutch since 1995, thus bringing in a *longue durée* perspective of one of the authors.[2] An intensive study was undertaken in three sites representing the ecological diversity of the district, primarily with *Rabari*, *Bharwad* and *Jat* pastoralists. Semi-structured interviews were conducted together with extended field observations in the three sites.[3] This local-level fieldwork was complemented by key individual interviews with policy makers and civil society organisations; textual and discourse analysis alongside some archival work further helped situate the policy-level analysis in historical perspective. Our discussion begins with background information on Kutch, its water resources and pastoralist history, before looking at how local pastoralists have historically coped with water scarcity and drought. We then look at the construction and impacts of dryland blindness and the sedentary bias of state policies and programmes on pastoralist livelihoods. Finally, the article focuses on the impacts of current industrialisation and marketisation processes before concluding with some reflections.

Kutch: From 'museum of environmental hardship' to resource frontier

Kutch is the largest district in Gujarat, with a land area of 45,612 square kilometres, constituting 23 per cent of the state (Mehta 2005). The region is like an island, bound by the sea in the south and west and by the Ranns (salt marshlands) in the north and east. Once a princely state ruled by the *Maharao* of Kutch, it was only integrated into the state of Gujarat in 1960. Today, Kutch has a population of 2,090,313 people (Government of India 2011), meaning it is far more sparsely populated than the rest of India, with a population density of only 46 per square kilometre against the latter's 382 (ibid.). Nevertheless, it has ten talukas or administrative units and, in addition to its heterogeneous social and ethnic composition, the region has nine distinct ecological zones that range from salt marshlands (the Ranns) to lush green irrigated fields and Asia's largest

2 This includes doctoral research by Lyla Mehta, which has been extensively published (see, for example, Mehta 2005) as well as research projects in recent years, including with ESRC STEPS Centre (see: https://steps-centre.org/project/mangroves/ and https://steps-centre.org/project/uncertainty/) and two NFR projects (see: https://www.nmbu.no/en/faculty/landsam/department/noragric/research/clusters/ccad/projects/climate-change-uncertainty-and-transformation/ and https://www.nmbu.no/en/faculty/landsam/department/noragric/research/our_projects/projects/node/26453). Shilpi Srivastava has been involved in the ESRC STEPS Centre project on mangroves and the NFR funded project on uncertainty and transformation.

3 In order to protect the identity of our respondents, they have either been anonymised or given pseudonyms. Pseudonyms have also been provided for the hamlets where this research was conducted.

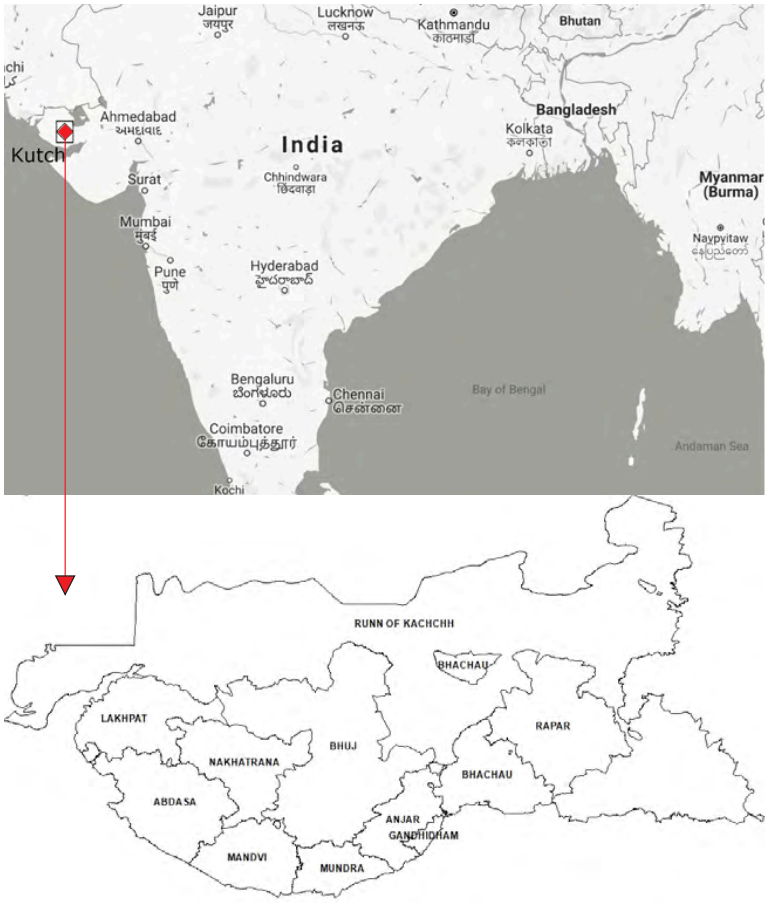

Figure 1. Map of Kutch.
Sources: GUIDE and modified Google map

grasslands, the Banni (see Figure 1). Importantly, it also has a very long coastline of about 406 kilometres, lined with dense mangrove vegetation (GUIDE 2014).

All of Kutch's 97 rivers are non-perennial and have a high run-off rate. Rainfall is erratic and variable: the average rainfall is 378.2 millimetres (CGWB 2013), and it only rains a few days per year (fifteen on average). The water endowments of the region vary considerably from place to place, ranging from

areas having abundant groundwater supplies (such as Mandvi) to vast desert-like saline tracts around the Greater Rann and Little Rann of Kutch (Mehta 2005). Combined with seawater ingression, overexploitation of the aquifer for agricultural and industrial use has led to salinity in the water and soils, as well as a sinking ground-water table. On top of this, Kutch has a markedly arid to semi-arid climate, accounting for sixty per cent of the semi-arid tract in Gujarat.

The main occupations in Kutch have traditionally been pastoralism, agriculture and fishing. These are now in transition, however, owing to changes in the regional economy following the 2001 earthquake (discussed below). In local discourse, Kutch has had a drought cycle of five years – including two years of moderate rainfall, two years of low rainfall and one year of good rainfall – but this pattern has also changed in recent decades due to climate change. Statistical data indicates that, in the last two decades, the intensity of the three-year period of consecutive low rainfall is increasing, thereby creating a severe drought situation (GUIDE 2014). Furthermore, freak events characterised by episodes of heavy rainfall and oppressive heat have also been on the rise (ibid).

There has been the widespread belief that, given the harsh climate, erratic water supply, declining groundwater sources and frequent droughts, the only way to solve the water problem in Kutch is by securing water from exogenous sources. For decades, Kutch's panacea was made out to be the Sardar Sarovar Project (SSP), a large controversial dam on the Narmada River in Gujarat. However, contrary to decades of promises, Kutch has not benefited significantly from the project (see Mehta 2005). While a pipeline from the Narmada canal now provides drinking water across Kutch, irrigation benefits have thus far been minimal. Political and state policy processes have portrayed water scarcity in Kutch to be natural and universal, thereby manufacturing consent around this one project (ibid.). In doing so, they have neglected other approaches that are more suited to tackle Kutch's dryland dynamics and have consequently naturalised scarcity in this region.

Until the late 1990s, Kutch was considered the backwater of the prosperous state of Gujarat, a 'punishment post for the bureaucrats' or a 'museum of environmental hardship' (Menon n.d., cited in Mehta 2005), owing to its distinct geography and apparent remoteness. It was also systematically neglected by the mainstream Gujarati political elites based in Gandhinagar (ibid.). After the 2001 earthquake, however, the so-called isolation was broken. Since then, Kutch has emerged as a symbol of reconstruction and development. It has also become a 'new resource frontier' (see Barney 2009), whereby the economy, nature and society have been reconfigured to create 'spaces of capitalist transition' (ibid). Tax holidays, port development and SEZs have altered both the countryside and the coast, leading to substantial changes in the demographic and resource geography of the region. However, this turn of events has done little to improve social or

human development indicators concerning education, caste discrimination and gender justice for its poor rural populations, especially transhumant pastoralists (see Dyer 2008), where illiteracy continues to be high.

Water scarcity and social differentiation in the study sites

Merka is a primarily agro-pastoral, multi-caste and multi-religious village, located in Rapar *taluka* (block), a subdistrict in the eastern part of the district of Kutch. Apart from a small Muslim population, caste is the basis for most social interactions and plays a crucial role in local water management practices. Merka's caste groups range from the erstwhile feudal lords (*Jadejas*) to the warrior castes (*Rjputs*) and pastoralists (*Rabaris, Bharwads and Dalits*). Sources of water currently include six drinking water ponds in the village, in addition to over a hundred private wells and eight bore wells for irrigation purposes (Samerth Trust 2013), all of which are increasingly under stress owing to the expansion of agriculture and groundwater extraction. Meanwhile, though the village falls within the catchment of the Narmada canal, this has yet not reached this village and 'people are still waiting' for irrigated water (15 January 2016). While Narmada water is available for drinking via a pipeline, the supply is very irregular – particularly during the summer months – and both large and small animals must be taken to the village ponds twice a day to get their drinking water.

Towards the north-west frontier of the district is the village of Jalva, about three kilometres from the Jakhau port. This is a large coastal village located in the Abdasa taluka and is predominantly Muslim. Livestock rearing is an important livelihood in this village; herders usually live in small hamlets in the *simara* (boundary of the village). Our research took place in Jimlivand, a hamlet of approximately 35 families comprising a community of *Fakirani* Jats, a sect influenced by the Sufi syncretic tradition, who have settled in various hamlets across the Gujarat coast (*The Hindu* 2017). Though fishing is one of the predominant livelihoods in the community, the identity of Jimlivand is closely linked to camel, goat and buffalo rearing. Most wells in Jalva have now turned salty and are therefore unfit to use for drinking or irrigation. Piped water supply is irregular and unreliable and, with very few sweet water wells, women and young girls have to make several trips to the wells and wait for hours for their family's provision. Here, too, animals are watered in village ponds but when they dry up in the summer, herders have to procure water from tankers to meet the water demand for their animals.

About 150 kilometres away from Jimlivand is the coastal town of Mundra, which survived the destruction from the 1998 cyclone by virtue of its 'thick' mangrove shield. It is estimated that Mundra housed nearly twenty percent of the mangroves in the Gulf of Kutch (Asher 2008), before the industries arrived in the late 1990s. Cement and thermal plants and a sprawling SEZ (extending over

10,000 hectares and covering ten villages) now take the place of the mangrove shield. On the margins of the SEZ, one finds communities of small-scale fishers and Rabari camel herders, whose livelihoods are now at risk due to large-scale industrialisation, which has made the mangroves selectively off-bounds.

The politics of sedentarisation, water scarcity and marketisation

Our focus in this article is on the social construction of hydric resources and their associated scarcities through processes of knowledge, valuation and power. Hydric resources are understood as 'volumes of water capable of satisfying water needs with regard to quantity and quality, time and space [and] conditioned by exploitation, temporal structure of demand, the available water resource systems (surface water and groundwater) and the operational rules' regarding access, use, regulation and distribution for a particular water system (Iglesias et al. 2005, 300). In our case, hydric resources constitute the different water resources available in Kutch (surface and sub-surface water and groundwater) and associated ecosystems, such as grasslands and mangroves, which directly sustain pastoral livelihoods.

Our starting point is that the natural resources pastoralists need to sustain their livelihoods and overall wellbeing are both material and symbolic in nature but can also be socially constructed to meet political ends (see Mehta 2005). We focus on how water scarcity and the associated dynamics of 'old' and 'new' scarcities have been naturalised in Kutch; as argued by Mehta (2005), political and state policy processes have portrayed water scarcity in Kutch to be natural, inevitable and universal. However, this naturalised notion of scarcity needs to be contrasted with local people's knowledge systems and livelihood strategies, which allow them to adapt to lived experiences of scarcity that are usually temporary. We show how planners have not built on pastoralist adaptive strategies vis-à-vis scarcity but have instead consistently neglected and denigrated pastoralist occupations. Planners have typically preferred flow-irrigation projects such as canals and dams, along with technical interventions associated with the Green Revolution, which have changed cropping patterns and intensified water use, thus exacerbating water scarcities.

Such 'old scarcities' are mediated by social and economic systems, formal and informal institutions and historical processes of state- and nation-building (Mehta 2005). They are tightly bound to relational properties of resources, which diverse actors relate to differently in varied contexts. These competing values also lead to competing value judgements about meanings and experiences of scarcity and whose needs should be prioritised. Such processes of prioritisation have always been beset by power struggles, but these have intensified in recent years due to rapid marketisation and the phenomena of 'land

and water grabbing' (Mehta et al. 2012). Combined, these have led to 'new scarcities', exacerbating processes of dispossession for pastoralists and other small-scale resource users such as fishers and farmers. The 'new' scarcities are linked to new priorities of development, involving various new actors (both national and international) and judgements in which pastoralism is dismissed as 'primitive'. Developments range from the land reform movement of the 1950s and 1960s (see Robbins 1998), to industrialisation and resource commodification after 2001, which have systematically undermined pastoralism in the region (see Babiker 2013).

Gilles Deleuze and Felix Guattari ([1980] 1987) aptly say that 'history is always written from the sedentary point of view' (23), and this is true in Kutch. The sedentary bias is reflected in development policies that have been drafted largely with cultivators (read: irrigators) in mind, in addition to more recent programmes concerning conservation and marketisaton. Pastoralists across Kutch have thus been turned into environmental subjects (see Agarwal 2005), through sendentarisation or what Tor Arve Benjaminsen and colleagues call 'greenmentality'.[4] As a result, nature and its relations (both human and non-human) are made technical and presented as apolitical (see Li 2007). The unmeasurable and symbolic qualities around 'waste' lands, pasture and mangroves that are linked to the identity and wellbeing of pastoralists remain either hidden or are labelled as unproductive (Kohli and Menon 2016), while state- and industry-driven programmes succeed in both depleting and privatising the commons and marginalising pastoralism. These are often justified by powerful scientific discourses that label herders as the primary cause of resource depletion, and their livelihoods as archaic and unprofitable.

Since the 2001 earthquake, new forms of social property relations have emerged, and systems of legality vis-à-vis resource ownership have been rapidly established in response to market and development imperatives (see Barney 2009). These processes have led to the formalisation of property and accumulative rights, and have thus given rise to new institutions, relations and alliances that sustain capitalist trajectories of growth (see Çalışkan and Callon 2010). In Kutch, hydric resources such as water and mangroves have been radically transformed through both conservation and industrialisation processes. This particular form of 'resource grabbing' has alienated direct local users from productive resources and reallocated rights to more powerful players (see Benjaminsen and Bryceson 2012; Mehta et al. 2012).

4 For more on 'greenmentality', see https://www.nmbu.no/en/faculty/landsam/department/noragric/research/our_projects/projects/node/26453

Pastoralism in Kutch in historical perspective

It has been argued that pastoralism is a more viable livelihood option for the region than agriculture.[5] Ecological analyses of Kutch acknowledge that its semi-arid to arid climate and shallow soils help to enhance vegetation, with a predominance of short annual grasses (GEC 1994). In fact, varied grass growth is possible *only* with about 112 millimetres of rain, and this level of grass growth is sufficient for pastoralism to flourish (see Williams 1958).

The term 'pastoralist', or *maldhari* (one who keeps livestock: literally *mal,* livestock and asset*,* and *dhari,* owner), is a blanket term to designate different groups in Kutch who made and sustained their livelihoods almost exclusively through livestock rearing. The livestock-based economy has always been one of the most important sources of livelihood in Kutch. Both pastoralists and cultivators manage livestock herds for an extra supply of nutrition, draught power or livestock products for trade. Pastoralist livelihoods are nevertheless very diverse and fluid, and not all pastoralists are nomadic or rear livestock. Indeed, it is rare to find pastoralists these days who are *not* engaged in other activities related to agriculture or off-farm employment. Such occupational pursuits have changed rapidly over the decades, however, owing to emergent ecological, socio-historical, economic and institutional factors.

In Kutch, the total livestock population has always been higher than the human population, with the average ratio being 1.31:1 (see Mehta 2005). Moreover, the total livestock in Kutch has increased in recent decades, rising from 94,097 in 1962 to 1,707,279 in 2007, which is an eighteen-fold increase in 45 years (GEC 2011)**.** The major categories of livestock have commonly been cattle, buffalo, sheep, goats and camels, meaning the diet of Kutchis is traditionally rich in milk products. For the Rabaris, it is quite common to survive for weeks during migration on little more than camel milk and millet bread. This has given rise to the saying: '*Milk, like sons, can never be sold'*, which, besides a clear gender bias, indicates the importance of dairy products in everyday life.

Since ancient times, Kutch was known for its livestock.[6] The Kutchi cow is still one of the best dual-purpose strains in India (for example, the Kankrej and Thani breeds). The *kharai* camel is unique to Kutch and has the distinct characteristic of being the world's only swimming camel that can thrive in both

5 This line of argument came to the fore in interviews with various scientists and civil society members; see Mehta (2005) for details.

6 Archaeological evidence from the sites of the ancient Harappan civilisation in Kutch points to the striking absence of any agricultural activity in the area around the second millennium BC, unlike the fertile plains flood plains of Punjab etc. According to Bisht (1986), it was the prime grazing lands that attracted the Harappans to Kutch.

marine and desert environments.[7] Apart from the prime grazing lands of northern Kutch, the vast tracts of arid and semi-arid lands in the district offer a dependable protein bank in the form of meat and milk (see also Robbins 1998). Though commonly dismissed as 'wastelands', these areas sustain the hardy livestock that thrives on the sub-nutritive grasses, forbs and scrub vegetation in Kutch.

Despite these benefits, pastoralists and the livestock they depend on are often blamed in the scientific literature for dryland degradation. Some members of the scientific community actually berate sheep and goats for causing ecological decline of the region (see GUIDE 1996). Local people contest this vehemently. Rabaris in Merka argue that, even though small ruminants might graze on tiny blades of grass and weeds, the damage is not likely to be irrevocable. Grass availability, they claim, depends largely on rainfall rather than grazing patterns. This is acknowledged in research on dryland systems where shifts in desert margins and biomass production are linked with variations in rainfall (see, for example, Swift and Ingram 1996). One old Rabari man lauds the 'jungle' (here, the commons) as a caring parent that provides sustenance for the livestock:

> Do our animals destroy the forest or pasture lands with an axe? The *jungle* is the mother of big and small ruminants and grass is their natural food. Just as parents raise children, the *jungle* nourishes our livestock with grass […]. Since time immemorial, God has put animals and the *jungle* together and they both depend on each other. (Quoted in Mehta 2005, 247)

In Jalva, too, the Jat camel herders speak of a synergistic relationship between the mangroves, or *cheria* (in local dialect), and the *kharai* camel that browses on mangrove leaves. Disputing the degradation narrative of scientists and state officials, the Jats disagree that camels could 'ever be bad for mangroves because they share a natural relationship with the *cheria*' (interview, 28–29 October 2016).

The image of the 'overgrazed pasture' is nevertheless very powerful and perpetuates the view that livestock are to blame for environmental degradation (see Robbins 1998; Agarwal and Saberwal 2004). Its persistence can be attributed to many factors: first, problematic concepts such as 'carrying capacity' are still employed in drylands; second, the persistence reflects the general ignorance and denigration of pastoralism in Kutch, especially by state actors; and third, the notion of 'overgrazing' reflects certain culturally ingrained biases towards pastoralists, who are amongst the least vocal and empowered actors in Kutch. Some of these prejudices derive from the colonial legacy. For example, Mrs Postans, the celebrated chronicler of nineteenth-century Kutch,

7 In fact, in recent years, the *kharai* camel has been recognised as a 'distinct breed' (Centre for Pastoralism 2016).

referred to the shepherd's life as 'a very vile life' (see Postans 1839, 93). The colonial state also levied heavy taxes on livestock, while goats and sheep and camels were classified as 'useless' (Mehta 2013); wandering without a licence was also not allowed.

As has been analysed in other geographical settings, native users are often blamed for producing desertification, and thus their dispossession is justified in favour of settled agriculture or other more 'productive' uses of the land (Benjaminsen 2017). Prior to partition, Sindh was an important part of the migratory route for pastoralists, especially during drought and other or associated periods of scarcity. Sindh was sorely missed after partition, and migration began to different parts of mainland India. The princely state in Kutch maintained its pastoralists by providing subsistence during times of water scarcity and drought (see Ibrahim 2004). By contrast, post-independence, the distinct identity and contribution of pastoralists were barely recognised by the Indian state.

Once Kutch was integrated into Bombay, and later Gujarat, it became a victim of the phenomenon of 'dryland blindness' among planners, who were accustomed to the lush green fertile plains of central Gujarat and the perennial rivers of the North Indian plains (see Mehta 2005), and thus blind to the uncertainties and contingencies prevalent in dryland areas. As a result, key features of drylands and the existence and needs of pastoralist populations were grossly neglected. In the Statistical Atlas of Kutch (1954), a document produced by the government of the time, the rural population was estimated to be eighty percent, with forty-two percent being engaged in agriculture. The remaining persons were classified as a 'non-agricultural population', though 'non-agricultural' undoubtedly meant pastoralist (Government of Kutch 1954; Government of Gujarat 1962).

The long-lasting effects of this flawed understanding of drylands are that Kutch continues to be judged in terms of its agricultural potential, not in terms of its potential as a rangeland or agro-pastoral economy. Until recently, there were hardly any policies for pastoralism or rangeland development in Kutch, even though pastoralism might be more suitable for Kutch's erratic and variable rainfall than crop-based agriculture. This agricultural bias is reflected in various national plans, planned and executed for the whole state from Gandhinagar, where irrigation schemes have received the lion's share of government funding (see Mehta 2005). The question as to whether intensive irrigation was a viable option for Kutch was not even raised. Strategies aimed towards improving existing techniques of dryland farming were likewise not prioritised and, until the past two decades, the focus on watershed development was minimal. In addition, the spread of the invasive weed, *prosopis juliflora,* has been a serious cause of concern because of its negative effects on arable land, grasslands, biodiversity and local species. Its thorns hurt humans and

animals alike, and livestock like cows and small ruminants suffer disproportionately (Tewari et al. 2001).

Owing to all these factors, livestock composition in Kutch has undergone a substantial change, with a phenomenal increase in the proportion of buffaloes. Until a few decades ago, camels were used for farming, patrolling and transport; however, with changes in agricultural patterns and reduced access to grazing fields, camels are no longer an asset and many once migratory pastoralists like the Jats in Jimlivand have shifted to buffalo rearing. Though buffaloes are more expensive than cows, sheep or goats, their resistance to heat and higher tolerance of *prosopis juliflora* are cited as some of the reasons for this preference. They also have the advantages of better feed-conversion efficiency, meaning they can be sustained on poor feed and forage quality whilst providing higher returns on milk (Balhara et al. 2017).

In many locations such as Jimlivand, several government and donor-sponsored conservation projects have encouraged alternative livelihoods for herders as part of the region's 'development' package (Srivastava and Mehta 2017). The resulting shift from cattle to buffalo rearing has gone hand-in-hand with the so-called 'white revolution', i.e. the commercialisation of milk and dairying activities. However, Caroline Dyer (2008) notes that dairy development, migratory routes and fodder entitlements have supported pastoralists with cows and buffaloes but not sheep and goats. In sum, development policies around water management (such as irrigation, desertification control, etc.) have led to far-reaching changes for pastoralists, leading to alterations in herds and their composition as well as the viability of their entire livelihood. In conjunction with climatic changes such as increased temperature, higher incidence of livestock diseases and shortage of water in summer, these shifts in livestock have also influenced the milk yield of all animals (GUIDE 2014). As a result, small *maldharis* are increasingly turning away from pastoralism, as we explore further in the next section.

Living with scarcity and uncertainty: the case of Merka

Merka's farmers acknowledge that their forefathers were more pastoralist-oriented than they are today. Even as little as two generations ago, cultivators kept up to fifty heads of cattle (where today it is about ten, maximum). Livestock, not farming, is central to the myths and folktales of the village. There are several stories of village heroes and heroines (such as that of the deity, Jivni) martyring themselves on account of their commitment to protect cows, camels and sheep. Of the pastoralist groups inhabiting Merka, it is believed that the Bharwads originally reared sheep and goats while the Rabaris reared camels,[8]

8 The Rabaris and the Bharwads are both Hindu pastoralist groups, hailing from north-west India, who now constitute about 16% of the village of Merka.

though this distinction does not seem valid anymore and it is doubtful that it was ever so rigid (Westphal-Hellbusch and Westphal 1964, 18).

Merka's *simara* (village boundary) has hundreds of grasses, weeds and scrubs. It is patchy and heterogeneous, and pastoralists are aware of the different soil types and fodder options to be found across this land. Indeed, what to an agricultural scientist is merely a 'weed', is in the local knowledge system either a 'sweet' or 'saline' grass, appropriate for camels, cattle or small ruminants to graze on as well a variety of other possible uses. Scientists have recorded between forty and ninety species of grass, herbs and shrubs in open lands around different Kutchi villages (see Bharwada and Mahajan 2006). Yet fodder supply and milk production vary from season to season, and rainfall can be characterised as regularly irregular.

In rural Kutch, then, the outcome of every year is uncertain. Periods of abundance are interspersed with periods of dearth and impoverishment. During lean years, migration is a necessity given the uncertainty of rainfall and forage availability in the village environs. Those with large herds can afford to migrate as far as 400 kilometres, allowing pastoralists with large herds to adapt to a variable and heterogeneous environment. With this mobility, they can exploit and access different social and ecological patches across the range: one always hopes, quite literally, that the grass is greener on the other side. However, those with fewer animals (under 100) cannot afford to migrate at all and have to make do with locally available grasses. Institutional arrangements therefore need to be highly flexible and adaptable, entailing constant decisions and responses to contingencies. Each site has its own set of forage opportunities and restrictions; the water situation is always different, as is the reception from the host community; and survival relies on constant adaptation and ad hoc arrangements.

Migratory pastoralism is only possible, then, due to the wide support and social networks spread out over a wide area, indicating the embeddedness of institutions in wider social structures. These social networks include kinship ties amongst other pastoralists but also reciprocal relationships with farmers that have been built over several generations. For example, generations of one Rabari family have regularly visited and camped in the field of a large land-owning Rjput family on the edge of the Little Rann, before starting their journey across the Rann to mainland Gujarat, and the families consider themselves to deeply connected. The relationship between cultivators and pastoralists, who use the same resource base, has also been largely synergistic. Landowners often appreciated the manure provided by the pastoralists, who were allowed to pitch camp on fallow or harvested fields during their migratory routes. In many cases, they were also allowed to water their animals in the village ponds and use local wells.

In recent years, changes in agricultural patterns and the use of subsidised artificial fertiliser have made such relationships less symbiotic, with pastoralists invariably losing out (Agarwal and Saberwal 2004). Land allocation policies have also systematically depleted the resources available for the Kutchi pastoralists. In the 1950s and 1960s, a series of state-led land reforms ceded village common land to 'low' caste and tribal groups (see Chen 1991; Robbins 1998). In Merka, this resulted in Dalits and Kolis acquiring land that was otherwise considered inferior 'wasteland' bordering the Rann. Even though much of this land lies in the saline tract of the village, it is the protein bank for the village's livestock population. Pastoralists adapted to this change by shifting the diet of their livestock from rangeland forage to dependence on crop residues and short agricultural fallows.

The privatisation of the commons has therefore denied pastoralists access to their lifeline: the *simara.* Marginal pastoralists have inevitably borne the brunt of this structural change. Those with large herds can afford to migrate. Transhumance only pays off if the herd is large (500 to 1,000 animals): four to five families get together, and the collective strength of their herds act as a buffer against the high risks of life on the move. Pastoralists with small herds cannot afford to take these risks and are therefore less able to use the 'resource' of migration in times of adversity. Further, if they lose livestock due to flooding or drought, they are unlikely to regain the stock. As a consequence, many marginal pastoralists have now given up livestock rearing in favour of small business or wage labour activities. They, of course, regret this switch (see Mehta 2005).

State policies and interventions have tended to offer agricultural subventions to cultivators and have led to the introduction of double and triple-cropping to increase agricultural productivity. The migration of pastoralists is actively discouraged, with pastoralists being fined or specific areas sealed off to decrease mobility. Until recently, there were no state policies in Kutch directed at pastoralists or for the protection of common property resources. This has led to a general lack of appreciation for the diverse ways in which different resource users use the same land and water resources. It has also led to a general undermining of the institutional flexibility displayed by cultivators and pastoralists as they adapt their livelihoods to deal with climatic and economic uncertainty.

All these changes have led to an increasing polarisation between the livelihood pursuits of pastoralists and cultivators. Farmers are less hospitable to wandering pastoralists and they often turned them away, where in the past they were given access to pasture land and local water supplies. In Merka, harvested fields were originally considered common property resources (CPRs). Today, professional grazers need to secure permission from farmers well in advance before they graze village livestock on these fields. Grazing fines, police cases

and restricted access to the commons are increasing phenomena and, often, quarrels and misunderstandings end in conflict and bloodshed. Farmers in turn tend to look down on pastoralists and treat them like simpletons of the s*imara.* Little wonder, then, that pastoralists have internalised some of these sentiments, as in the anguished self-reflection of one wandering Rabari:

> Farming is more desirable than livestock rearing. One does not need to wander about, leave home and endure all the hardships. We are not educated and street-smart. We are sometimes beaten up and driven out of villages. We are fined if one of the animals does so much as enter a stranger's field. Police cases are slapped on us. We are prohibited from entering the forest and are fined if the animals go beyond the boundary of the forest. The government does absolutely nothing for us. (Quoted in Mehta 2005, 220)

Many Rabaris have therefore given up pastoralism all together, and migrated to towns to work as security guards, taxi drivers, etc., taking their families with them (interview, 27–30 August 2016). Rabari youth no longer wish to associate their identity with the 'wandering Rabari', a livelihood they perceive as less profitable and less comfortable than urban life and labour (interview, 20 February 2016). While migration for the remaining pastoralists continues, and the Rabari and Bharwad quarters continue to have locked houses, this is not for the migratory routes but instead to work in fields, factories or as domestic workers, drivers and cleaners.[9]

Pastoralists without pasture land: resource enclosures and dispossession on the coastline

In 2005, the Government of Gujarat passed a resolution allowing for leasing 'wastelands' up to 2000 acres for twenty years to corporations and commercial farmers. Additionally, the Gujarat SEZ Act of 2004 and Special Industrial Region Act of 2009 allowed for the conversion of the commons and agricultural land to industrial sites (see Duncan and Agarwal 2017). Gujarat currently has 424 villages without any pastoral land whatsoever and the state has just one fifth of its required pastoral land (ibid.). The decline of these 'wastelands'/pastures has increased the sedentarisation of pastoralists and led to a loss of their identity (ibid.; see also Srivastava and Mehta 2017).

This is very much evident in the shifts observed in coastal Kutch, where commons have been re-allocated for industrial development aiding massive denudation and depletion of hydric resources such as mangroves and groundwater. Mangroves on the coast bear significance for Kutchi pastoralists,

9 See Duncan and Agarwal (2017) for the gendered impacts of these changes.

especially the Jat and Rabari herders, who rear the indigenous *kharai* (salty) camel. These camels are known for their ability to swim and browse on mangroves in both the sea and the desert and can survive for several days. Vasant Saberwal describes them as 'the lynchpin holding together a dynamic agro-pastoral economy in Kutch' (personal communication, 16 August 2017).

Over the course of a year, the *kharai* camel rotates through three different ecosystems – the mangroves off the Gujarat coast, the inland thorn forests and fallow cultivated fields and following the harvest of the monsoon crop (ibid). However, in recent years, their common pasture lands have come under threat from both the state and market forces. Though the mangrove areas were largely designated as commons (whereby the princely state of Kutch allocated grazing rights to the communities and collected taxes), this tax system was abolished by the Indian government after independence. Instead, most of the mangrove lands in the Gulf of Kutch were notified as forests (Bharwada and Mahajan 2007), many of which have now been re-allocated for industrial development.

Pastoralists nonetheless continue to claim ancestral rights to these lands. For instance, the residents of Phuleri *vand* (hamlet) near Mundra have primarily been camel herders. Yet the hamlet and wider village are now surrounded by industries from all sides, and pastoralists complain about the encroachment:

> This is a problem that involves 500 to 700 acres of land. We want grazing land free from companies. If we go there, they say this is forest land, and plantation work is going on inside. They are not allowing us to go inside. (Interview, August 2016)

In addition to the closure of once-common land, rapid industrialisation in the wake of the 2001 earthquake has depleted both land and water resources for these pastoral communities. This private appropriation of mangrove lands is a form of 'blue grabbing' whereby the coastal lands are seized and radically altered for the expansion of industrial and port activities (Benjaminsen and Bryceson 2012). This has threatened and displaced the livelihoods of resource-dependent communities, primarily the Rabaris and the Jat camel herders who rely on the mangroves as the main source of fodder for the *kharai* camel.

Mangroves constitute about seventy per cent of the *kharai's* diet. However, the traditional grazing routes of these camels have been blocked owing to large-scale industrialisation in coastal areas and the fencing-off of other protected areas (KUUMS 2010). Rabaris now have to walk their herds along the national highway, crossing to other parts of the district to access the sought-after mangroves (30 August 2016). Given the choice, and as per custom, they would let their animals graze right inside the mangroves as they require huge quantities of fodder; according to a Rabari legend: 'it is the camels that decide when to move

out of a grazing land. The herder just listens to the animals' (interview, 30 August to 5 September 2016). However, left with no choice due to blocked access, the herders have either been trying to change the *kharai*'s diet, risking its survival (Shrivastava 2013), or migrating to low-scale contractual jobs in the very companies that are extracting the mangroves resources from the coast.

This loss of livelihoods has also meant a loss of identity for many of these herders, especially for the Jats in Jimlivand for whom camels are central to their collective sense of self: 'What is a Jat without the camel?' ruminates an elderly man in Jimlivand, where camel rearing is now increasingly being replaced by buffalo keeping. This transition is also closely linked to the conservation programmes that started in this village in 2004, alongside the rise of the dairy business. As one elderly Jat herder narrates:

> A few decades ago, there were no organisations 'protecting' mangroves in this area. Mangroves and the sea were all that existed. We used to graze camels in the mangroves. When these organisations came, they advocated for mangrove conservation. (30 August 2016)

In several historical accounts, such as Sigrid Westphal-Hellbusch and Heinz Westphal's (1964) study on Jats in Pakistan (Westphal-Hellbusch and Westphal 1964), Fakirani Jats have been admired for their camel-breeding skills and many Jats continue to associate their group identity with camels. But now scientists and state officials actively discourage camel grazing, labelling camels as harmful for the mangrove plantations that need to be conserved (see Srivastava and Mehta 2017).

In official discourses, Jimlivand has emerged as a 'model village' and is a success story for how 'jungle people' can embrace the modern lifestyle of 'education, dairy business and pucca houses', with their livelihoods becoming more viable economically (interviews, June to October 2016). However, this notion of modernity is rejected by many elders who believe that a Jat's real identity lies with the camels and the mangroves that sustain them. As argued previously, degradation narratives are often invoked to deny access to pastures. In the scientific and policy discourses surrounding the situation in Kutch, the dependence of communities on mangroves is cited as one of the major threats to the survival of mangrove habitats. Camel grazing is also referred to as a 'bad habit' by scientists who believe that camel's saliva is harmful for the mangroves – a claim that is yet to be scientifically proven – because it disturbs mangrove regeneration (26 October 2016). The local community, by contrast, argues that camels have lived and grazed in these habitats for centuries, 'even before science arrived' (26 October 2016). They maintain that camels actually assist in the regeneration process, as their hooves press the seeds deep into the soil and help with germination – a view that is also advanced in the

documentation of the Kachchh Camel Breeders Association (2013). These claims are nevertheless disputed by many scientists, who argue that the trampling of seeds arrests the growth of mangroves as it blocks the respiratory mechanism of plants (Bharwada and Mahajan 2007).

Conservation projects that encourage livelihoods transition have increasingly been promoted in Kutch in order to reduce the mangrove dependence of these communities. These initiatives demonstrate the widespread sedentary bias of mainstream scientists and policy makers who are keen to eliminate pastoralist and transhumant livelihoods (Bharwada and Mahajan 2007). All too often, as is the case in Jimlivand, communities are turned into environmental subjects as a result of this conservation discourse and associated practices (Agarwal 2005). Discursive technologies of 'harm', 'scientific grazing' and 'bad habits' are deployed to devalue the indigenous system of knowledge and to 'nudge' traditional pastoral livelihoods towards the so-called notion of 'modernity'.

In sum, accelerated development on the Kutchi coastline has created 'new scarcities', particularly in relation to mangrove and water resources. Unlike Merka, where pastoralists have learnt how to adapt to scarcity, pastoralists on the coast are witnessing dispossession owing to cumulative resource enclosures. As the mangroves are denuded or increasingly privatised via conservation and marketisation processes, conflicts and contestations have emerged around resource use and control. In response, powerful discourses (vetted by neoliberal trajectories of growth) around ecological harm, development and conservation are deployed to legitimise these and other enclosures. Often, herders have had to resort to subversive acts of *ghuspaith* (forced entry) or instances of direct action to reclaim their commons. Creative alliances between civil society actors, such as *Sahjeevan*,[10] and pastoral communities are also emerging to revive and restore the native habitats, food stocks and grazing routes of the *kharai* camels (Sahjeevan 2016). These emergent groups and practices are bringing disparate peoples together and using innovative methods, strategies and coalitions to counter dominant and largely negative narratives of pastoralism in Kutch.

Conclusion

This article has demonstrated that pastoralism is ideally suited for the variable and unpredictable rainfall situation of Kutch. The mobility of pastoralists enables them to exploit the welcoming social and ecological patches spread out

10 A member of *IUCN*-The International Union for Conservation of Nature, Sahjeevan is a social justice organisation, based in Kutch, that is dedicated to 'supporting marginalised communities to revive their traditional ecological knowledge systems … and strengthen their livelihoods'; see online at: https://www.sahjeevan.org/pages/about_us.html (accessed 11 June 2019).

over the *simara* and adapt to water scarcity and uncertainty. However, dryland blindness has permeated a series of state interventions across several decades, and powerful narratives of environmental degradation together with modernising discourses of settled agriculture and industrialisation have resulted in the marginalisation of pastoralism in this dryland economy.

Furthermore, changes since the 2001 earthquake have dispossessed pastoralists of a range of hydric resources. Privatisation of the commons and conservation programmes alongside industrialisation on the coastline have further led to the marginalisation of their livelihoods. Narratives about ecological 'harm' and 'overgrazing' have systematically aided this process of devaluation and turned pastoral people into environmental subjects. Pastoralists are thus confronted with both old and new resource scarcities owing to interwoven ecological challenges intensified by climate change and resource depletion due to privatisation of the commons. Consequently, pastoral livelihoods are undergoing a rapid transition in Kutch as their social and symbolic relationship with hydric resources has come under severe stress.

Pastoralism today finds itself on the margins of mainstream life in Kutch and pastoralists (except for the case of the Banni, perhaps) tend to be ignored. While pastoralist groups, both large and small, have tried hard to adapt to the institutional and ecological challenges confronting them, most remain by-passed by neoliberal state interventions. Such interventions at best ignore pastoralists and, at worst, simultaneously harm and threaten their livelihoods and way of life.

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