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**Pastoralism in a  
Changing World:  
Patterns of Adaptation  
Among the Rabaris of  
Kutch, Gujarat**

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## INTRODUCTION

Since Independence in 1947, the Indian state has adopted a 'modernisation' pattern of planned socio-economic change to promote economic growth. The capital-intensive industrialisation process, steered by a coalition of capitalists, rich farmers and a political-bureaucratic alliance [Bardhan 1984], has uprooted and dispossessed many of those who are the intended beneficiaries of 'development'. At the same time, the impact of exploitative development strategies on the rural environment is becoming increasingly evident in the degradation and deforestation of land, and excessive use of chemicals in agriculture [Rao 1994].

Nomadic pastoralists have no voice in the making of 'development' policies, and those who seek to promote modern agriculture often marginalise traditional land users [Gadgil 1982]. The pastoralists of Gujarat, who migrate all over the State, are profoundly affected by the dwindling availability of fodder resources for their animals [Agrawal 1992; Vira 1993], and increasing curbs on lands they may use. Mutual flexible access by pastoralists to fodder areas and migratory routes, ensuring access to essential resources to all, is a traditional pastoral ethic:

*"We don't fight, we are all brothers after all. We move with understanding"*  
[personal communication, Gora Sana, Vagad Rabari, 1995].

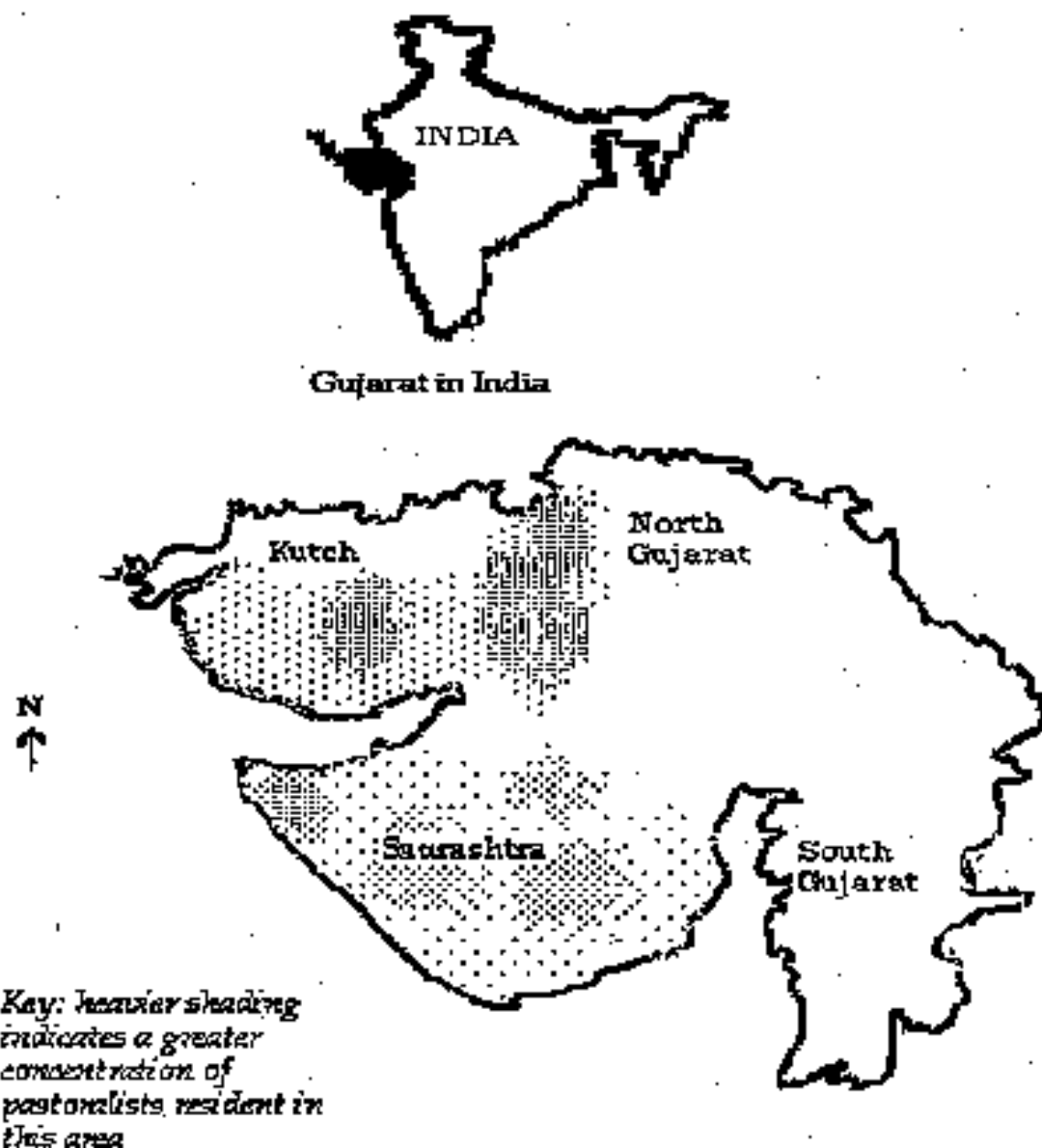
However, that ethic is increasingly hard to maintain, for the land they can use is shrinking year by year. Ever resourceful, pastoralists seek alternatives by which to adapt to their changing situation. This paper illustrates the remarkable variety in adaptation strategies adopted by the largest group of Gujarat's pastoralists, the Rabaris, focusing particularly on those who live in Kutch - some 90,000 people.

## PASTORAL ZONES IN KUTCH

Pastoralism in Gujarat is an ancient practice, as can be seen from archaeological evidence dating back to the Harappan society (1400 - 1700 B.C.) [Choksi 1991]. Pastoralists are distributed all over Gujarat, but are concentrated in Saurashtra and Kutch, and in the border area between Kutch and Northern Gujarat (Fig. 1). They husband camels, sheep, goats, cattle and, increasingly, water buffaloes in different concentrations from area to area, depending on climatic conditions and the local ecology.

Kutch is an arid, semi-desert area with temperatures that can climb to 49°C during summer. Rainfall is erratic, ranging from 300 to 400 mm per year, and droughts are very frequent. Much of Kutch is barren and uncultivable: only 15% of the land, mostly in a 50 mile wide belt along the coast, is under cultivation. Poor conditions for agriculture and the existence of grasslands have generated a strong dependence on animal husbandry: the District has an animal population of 1.72 million as opposed to a human population of 1.05 million [GoG 1989]. The ecology of Kutch is extremely fragile, and the situation is worsening because of deforestation, uncontrolled grazing, soil erosion, desertification, and ingress of sea water.

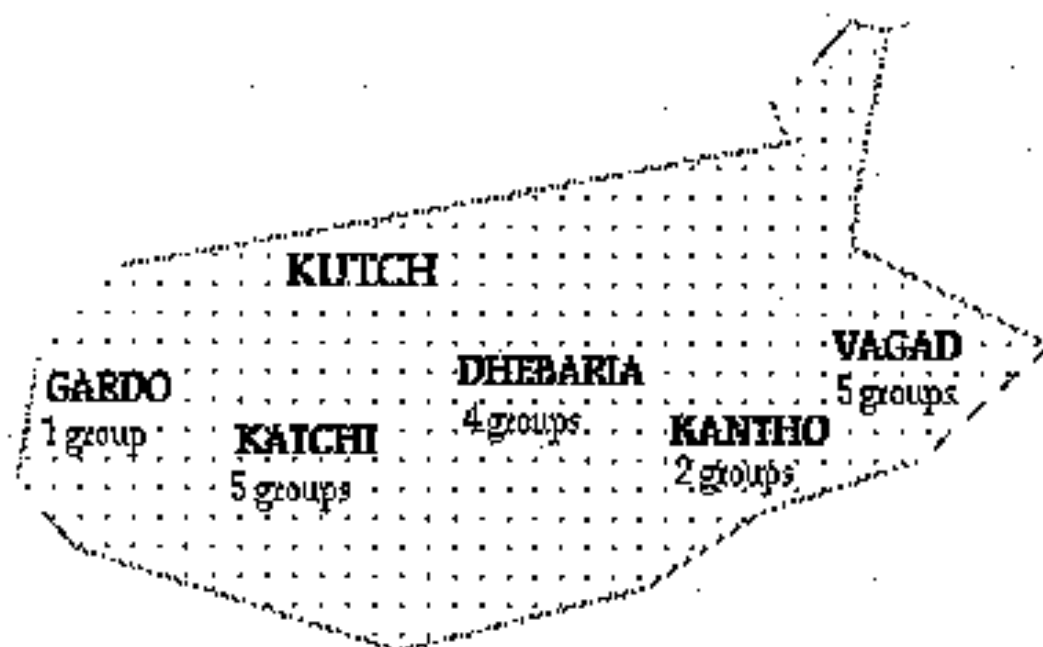
Figure 1: Pastoral zones in Gujarat



The sandy and arid plain of North Gujarat, which adjoins Kutch and is inhabited by some members of the easternmost Rabari group, receives about 400 mm of rain in the western salty, treeless zone where Rabaris live. The western landscape merges into the desert but is relieved by sand dunes, amid which freshwater ponds form, to provide, for some of the year at least, a source of potable water which pastoralists exploit. The low rainfall and soil type support thorn bushes mixed with *acacia capparis*, *euphorbia*, *zizyphus*, and grasses.

The Rabaris of Kutch are subdivided into five territorial sub-groups each of which is endogamous<sup>1</sup>, although those from different sub-groups may eat together. Social customs are shared, with minor differences from group to group such as in jewellery, clothing and tattoos. Rabaris, who are Hindu, remain largely isolated from other social groups, and prefer to live in settlements peopled only by members of their own group. To the west of Kutch are two closely linked groups, the Gardo Rabaris, and the Rabaris of Maghpat, the latter known as Katchi Rabaris; in the area around Anjar are the Dhebaria Rabaris; in the far east of Kutch are the Vagad Rabaris; and between Dhebars and Vagads are Kantho Rabaris (Fig. 2).

Figure 2: Sub-groups of Rabaris of Kutch



<sup>1</sup> Marriage only taking place within the sub-group.

## THE PASTORAL ECONOMY: PATTERNS OF CHANGE

Traditionally, the Rabaris were camel breeders, but have now diversified. They were recognised as excellent herders, and also as reliable guides for those who needed to pass through uninhabited jungle areas. They gained a reputation for their honesty and bravery, and pastoralism was a vital and integrated part of the local economy. Bullocks, cows and camels were much in demand, especially since Kutch is a desert area, and camels were the main means of transport.

Unless they keep cattle, Rabaris have always been transhumant. Those who had cattle were able to sustain themselves within Kutch, pursuing a sedentary or semi-sedentary lifestyle, depending on the number of animals they had. They grew grass for fodder and maintained grasslands in such a way that they always had a chance to regenerate. The Kankreji and Gir cattle they still breed are recognised as among the world's best tropical cattle breeds [George 1985]. Those who husbanded sheep, goats and camels needed to migrate for most of the year in search of water and fodder, as their animals require green fodder, so cannot be kept in a single place. Their sheep and goats are typical of those native to fragile zones, with low fertility, small size and light weight, low productivity and coarse wool [GoI 1987].

Scarcity of water has been always a problem for Kutch, but in the past, an arm of the Indus river flowing into western Kutch provided enough water to the area. Fodder growth was good, since the inflowing river provided sweet water and silt for different grasses to flourish. The renowned grassland area of Banni had small sweet water ponds to sustain both humans and animals. Drought was a constant problem, but fodder would regenerate well when rainfall came back to normal. Pastoralists divided up pasture lands according to the area they inhabited. As Banni was the traditional preserve of the neighbouring Maldharis, Rabaris were forced to seek fodder from other sources, via a system of migration. Those from the north-east and north-west of Kutch, and others with very large flocks, mostly migrated to Sindh, where some of them worked on paddy fields, receiving rice in exchange for labour; while those from south-east and central Kutch migrated towards south Gujarat and Saurashtra.

Migration was both a necessary way to sustain animals, and also an income-generating activity. Farmers mainly harvested only a single, monsoon crop, so fields lay fallow for much of the year, and farmers largely depended on animal manure for regenerating the soil (1000 sheep provide 500 kg of droppings and 700 litres of urine per day [Trivedi 1995]). Pastoralists migrated from area to area in search of fodder and water, spending a couple of nights on

a given field, where crop residues could provide good fodder. In exchange for the fertiliser their animals provided, the Rabaris received grain or money, which helped towards their cash needs, along with the sale of ghee (clarified butter), wool, and animals. The sale of milk, however, was taboo and seen as akin to selling the blood of one's child; selling of animals for meat took place, but only on a small scale. All sales took place either through a middleman or a shopkeeper who had a long established relationship with a pastoral family; trust was the main criterion for any transaction.

The survival of animals was perceived as in the hands of God, conditioned by a pastoralist's skill in ensuring its survival. Judicious choice of pasture areas and an intimate knowledge of suitable fodder for a given type of sheep ensured that the flock kept healthy; in case of disease, indigenous medicine was practised. Disaster could never be ruled out, but there was overall an equilibrium between the key elements of pastoral society: God - Rabari - animal - Nature. The interdependence between the ecology, farmers and pastoralists allowed all three to flourish, and pastoralism was based on a moral, rather than market, economy.

## STATE DEVELOPMENT POLICIES AND SHRINKING PASTURES

Over time, natural disasters and the impact of 'development' have upset this balance. A major earthquake, followed by further tremors, made the Indus change its course, leaving Kutch without its water. On Partition (in 1947), pastoralists could no longer freely move to Sindh, which fell into the newly formed Pakistan, closing off that migratory route. Deforestation, silting and dam building have resulted in a lack of sweet water, increase in salinity and loss of fodder and fodder species. The increasing human population has overburdened the limited natural resources, and there is no longer enough to go round.

### Forestry

One of the earliest losses to pastoral grazing resources was precipitated by the British, who needed wood for railways and ship building. This resulted in massive tree felling, and the notion that the forest should be protected, both from illicit felling and from uncontrolled grazing of grasslands within forests.

From the turn of the century, forests were reserved and demarcated, restricting the access of traditional users. In 1920, Khengarji of Kutch established reserve forest areas, within which pastoralists' right to fodder was recognised and regulated by *panchsari*, a nominal annual tax for grazing animals. This was a straightforward legal arrangement: *'We used to have a right to pastoral land and we paid to use it'* [personal communication, Kama Nathu, Katchi Rabari, 1995]. Movement was also free, on payment of the appropriate dues: *'the Kutchi Maharao had a remit for his people up to a certain point. Then the next Rajwada also used to take a tax, called gantar, so some took 1p., some 2p., - they used to pay this money and go ahead'* [personal communication, Bhagatbhai, Dhebar Rabari community leader, 1995].

'Protected' forests notwithstanding, the tree cover in the country has dwindled from 40% in 1854 to 22% in 1954 and 13% in 1995 [Singh 1995]: in Gujarat, loss of plant cover is allowing sand to encroach on farm land, and is accelerating soil erosion. Reserving forests, ostensibly to protect them, has had other ecological repercussions: as *firewood is no longer easily available* (68% of the population of Gujarat uses wood as a fuel [GoG 1984]) people have turned to burning dung cakes instead, depriving the soil of natural fertiliser and contributing to a lowering of its quality. Forests now have a commercial value, as they support timber-based industries: in Gujarat for example, there are over 1600 saw mills, two paper and pulp mills, and numerous cottage industries making wooden toys, pencils, packing cases, bobbins, shuttles, etc. [GoG 1984].

Pastoralists, who used the grasslands within forests, were forced to seek other sources of fodder for their animals, putting further pressure on common sources such as wasteland and village grazing lands. The state has failed to protect the interests of traditional forest dwellers and other users:

*"The management of forests by government has...entirely focused on meeting commercial needs, totally ignoring the traditional needs of the rural population, or at best treating these requirements as privileges most grudgingly conceded and cancelled at the first opportunity".* [Gadgil 1982: 19].

The Forest Department's response to soil erosion, land degradation and salinity has been to protect agricultural land by planting a non-indigenous acacia, *prosopis juliflora*. *Prosopis* is extremely invasive and, its seeds transported via animal dung, it is now rapidly taking over areas of grass and land on which the indigenous acacia has flourished, leaching water from the soil. The only animal it does not affect is the buffalo, which flourishes on its pods. But those pods are

very alkaline and can cause lockjaw, while the thorns of *prosopis* become embedded in hooves and go septic, which causes the animal to limp. The Forest Department has taken over and afforested wasteland which pastoralists were wont to use. These plantations have closed off access to many traditional grazing lands while plantations on roadside strips have also deprived pastoralists of land across which to migrate, forcing them to move along highways instead of on neighbouring land, causing danger to animals and havoc to traffic.

### Agriculture

Prior to the Green Revolution of the 1960s, farmers struggled to meet the demand for foodgrains that increased with the expanding population. Technology remained largely unchanged, and irrigation grew slowly, so farmers adopted a strategy of extending the area farmed rather than increasing the yield per unit of land through intensification. Because extensive cultivation has high human and animal labour requirements, it is associated with a significant increase in the cattle population, which in turn placed a strain on grazing land. Farmers sought avenues to expand: Khoshoo [1986] estimates that, country-wide, as much as half the total forest area lost was brought under the plough; village common land and forest land were also encroached on as a result of land reforms, designed to redistribute land to the landless [Nadkarni 1987]. The Green Revolution, with its emphasis on high-yielding varieties of seeds and fertilisers [Rao 1994], has ushered in a strategy of intensive agriculture which has translated into aggressive promotion of chemical fertilisers, and promotion of irrigation. As a result, farmers in the arid and semi-arid zones of Saurashtra and North Gujarat no longer rely only on dry farming and the monsoon season.

Fields that once lay fallow for much of the year now have year-round standing cash crops. New chemical fertilisers have displaced the demand for manure. Modern technology has replaced draught animals with tractors, buses, and other forms of mechanised transport. At the same time, farmers have taken wasteland and common grazing lands, turning them into farmland, and blocked off pastoralists' access to water. The mutually beneficial relationship between pastoralists and agriculturists has broken down and, in contrast to the relative harmony in the past, there are now fights and tension.

## Industry

Industrial development of Gujarat rested primarily on the textile industry until 1960, when the discovery of oil and natural gas assisted the development and diversification of industry. Most industrialisation is along the Golden Corridor running up the mainland from Bombay; the Golden Corridor has been built on the wastelands that pastoralists depended on for migration. Kutch is rich in minerals such as bauxite, so large areas of wasteland, which were fodder sources for pastoralists, have been given over to cement, salt and bauxite production.

## Overall loss of land to the pastoral economy

The cumulative effect of the developments described above is a sense of increasing insecurity, which has reached such a degree that pastoralists feel the whole world is against them:

*"Where there is stone, government has made forest, where there is wasteland, farmers have made fields. Where can we go? How can we sustain ourselves?"*. [personal communication, Yojabhai, Dhebar Rabari, 1995].

As the table next page illustrates, this question is highly pertinent, for land loss to the herding population has been extensive.

## Diary policy

Operation Flood, which began in 1970, aimed at 'the expansion, intensification and transformation of India's dairy production and marketing system on such a scale as to be labelled a white revolution' [NDDB, cit George 1985: 7]. In a well-balanced rural economy, pastoralists who maintain their animals from grasslands, do not compete with agriculturalists as the areas suitable for crops and animal breeding, in which milk is a by-product, are clearly separated. But in the Operation Flood model, food and dairy production compete for agricultural resources [George 1985].

**Table 1: Loss of land for potential pastoral use, 1960 - 1980**

<u>Land category</u>	<u>1960-61</u> <u>(in %)</u>	<u>1970-71</u> <u>(in %)</u>	<u>1979-80</u> <u>(in %)</u>	<u>% loss to</u> <u>pastoralists,</u> <u>1960-1980</u>
Forest	6.2	8.4	10.4	4.2
Barren and uncultivable land	25.9	13.6	13.3	12.6
Land put to non-agricultural use	2.2	4.1	5.6	3.4
Permanent pasture and other grazing lands	5.7	5	4.5	1.2
Land under misc. trees, etc.	0.2	0.1	0	-
Cultivable waste*	4.2	10.5	10.6	6.4
Current fallow	1.9	1.9	2.8	0.9
Other fallow	2.3	2.1	1.9	1.4
Net area sown	51.4	51.5	50.9	0.5
Total reporting area (lakh hectares)	183	188.2	188.2	

Source: Statistical Atlas of Gujarat, GoG 1986 and our calculations for final column

Note: \*Area in the cultivable waste category increased in 1970-71 when 139,146 hectares of barren and uncultivable land of Kutch district were re-classified as cultivable waste.

Operation Flood's concentration on milk yield has stimulated the development of new varieties of crossbred cows. This has **devalued indigenous cows**, whose other products were prized such as dung, hides and traction. At the same time, pastoralism as a way of life has been **devalued**, since agriculturalists are now keeping more buffaloes on their farms as a source of income. Farmers now use crop residues for their own animals rather than letting pastoralists have free access to them. Dairy related incentives have encouraged farmers all over Gujarat to keep water buffaloes; farmers from the south of the state are sending their animals to Banni, the carrying capacity of which is now greatly exceeded. Some pastoralists, who were cattle breeders in the past, have now become buffalo herders for richer, southern farmers.

### Ecological impact of industrial and agricultural development

As these examples have shown, traditional resources have been appropriated by the more powerful; this has upset traditional patterns of land-use between rural populations and those with the least power who nevertheless could bring important assets to farmers, such as dung. In addition, excessive pressures on the ecology of Kutch have contributed to climatic change. There were 18 years of scarce rainfall in Kutch in the 19th century, but the number of hard years increased to 34 between 1910 and 1988. In recent decades, a triennial drought pattern has emerged: 1960-63, 1965-67, 1971-74 and 1985-87 have been periods of prolonged drought. Rainfall over each three year period has remained approximately the same, but its distribution has been different, and this has disturbed plant life:

*"The vegetation here has been very good at dealing with 1-2 year droughts, and there are seeds which will sprout after 3 years of lying dormant. But the third year has reduced the number of seeds that can handle the situation. Fodder plants do survive, there are grasses, particularly saline grasses and some sweet ones too, but the trees do not support it".* [personal communication, Jan Vikas NGO representative, 1995].

Triennial droughts contribute to the overall impoverishment of the land **reducing the amount and variety of fodder available**: 'because of the *accumulative deterioration of the land and of the biomass over the last 15 years, the drought is felt more acutely than it was 20 years ago*' [personal communication, Jan Vikas NGO representative, 1995].

## ADAPTATION AND CHANGE: NEW MIGRATORY ROUTES

The collapsing ecology, the state's development policies, and political change, have combined to make it increasingly difficult for pastoralists to assure the basic element of a pastoral existence - adequate supplies of fodder and water for their animals. With increasing pressures on them, pastoralists have tried to sustain their occupation by searching out alternative places for fodder and water. This process, which began with Forest reservations, was precipitated by political upheavals which set new boundaries that cut arbitrarily across geographical zones.

### Gardo and Katchi Rabaris

Partition of India and Pakistan affected Rabaris from both the west and east of Kutch, who consequently altered their migratory routes. Pastoralists to the west (Gardo and Katchi) became completely dependent on the local resources of Kutch, instead of being able to exploit those available in Sindh during the summer, as they had before. However, their lot was improved by the local princes' recognition of their services, and subsequent donations of agricultural land (*verduka*) on which they could settle and grow fodder, or engage in dry farming. Gardo Rabaris mainly tend cattle, and do not migrate except in drought years, in which case they use the government fodder and water depots en route towards the green areas of Surat and Valsad. Katchi Rabaris, who tend small numbers of camels, mixed with cattle, sheep and goats only migrate locally, during the summer, whereas those with larger camel holdings migrate to other areas of Gujarat.

### Dhebar Rabaris

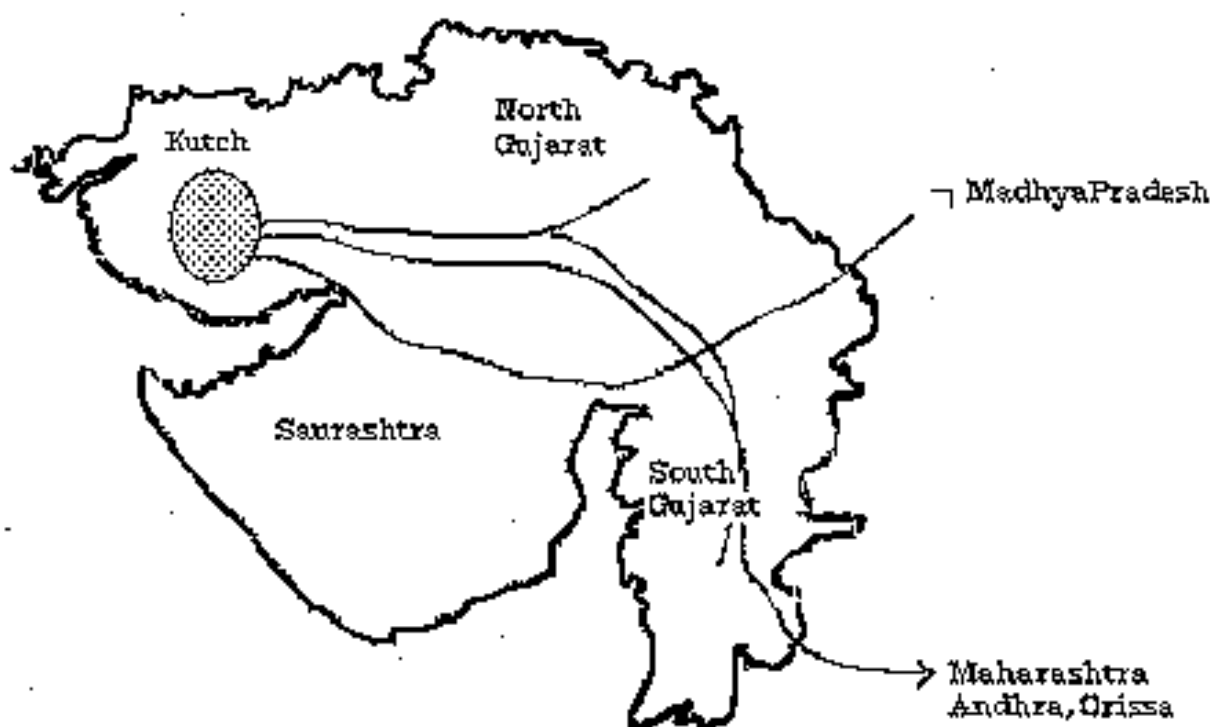
Dhebars have always had larger numbers of sheep and goats than the other Rabaris of Kutch, and because of the size of their flocks they have adopted a very different migratory pattern. The whole sub-group's pattern was initiated through the enterprise of one man:

*"Pakistan was open in the past so whenever there was a drought, they used to go to Pakistan. Then it was closed. So they go on long migrations. Otherwise, the furthest point they went was to Ahmedabad. The first person to go on long migration was from Mindiyari, in 1952, his name was Hira Kachra. Then Bura Sava from Varsamedi. They were the*

*first to go abroad. After them, others followed. Once they have gone on long migration, they can't come back". [personal communication, Bhagatbhai, Dhebar Rabari community leader, 1995].*

They now have large flocks in Madhya Pradesh, Maharashtra, Andhra Pradesh and Orissa, where they migrate locally (Fig. 3). Animals do not return to Kutch. In the new locations, territorial boundaries and routes are defined and maintained, but they are no longer transhumant, as they must instead migrate all year round.

Figure 3: Dhebar migratory routes



At first, the Dhebars' move was a successful gambit: their flocks grew and flourished because there was plenty of fodder and water to sustain them. But the success of a few led others to follow, and with that, the problems from which they had escaped now pursued them: overgrazing of resources, problems with Forest reservations....shrinking pastures all over again. Because they are not native to their new states of residence, pastoralists are legally required to pay taxes for grazing areas. Their need is exploited by Forest officials who, anxious to enhance their own income, invent new 'rules':

*"The land is in the hands of the Forestry Officers, not the government, and once you change areas you meet another of them, and they threaten to fine Rs 20000, but say it is better to take a receipt of Rs 5000 so*

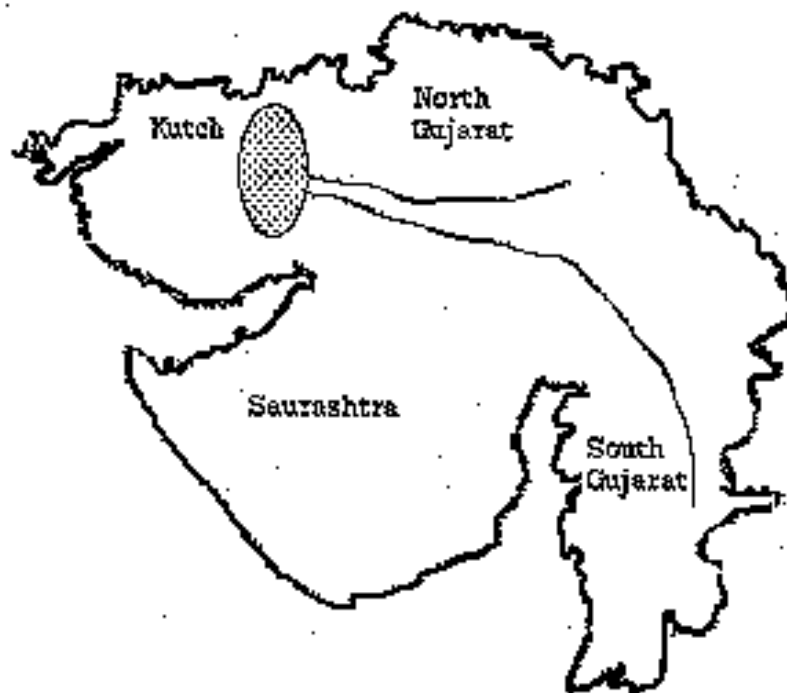
*instead of having to pay 20000 they make a compromise [bribe] for Rs 5000. We have to go in the forest areas, otherwise how can we feed our animals? We can't put our animals in a field, if there is wasteland we can put them there for a night, but otherwise what can we do, we have to move. All of us have spent a day or two in jail, according to the Forest Department laws. Once they take us to jail we have to pay the police as well, to get out. All the police are involved with the Forest Department".* [personal communication, Ranchodbhai, Dhebar Rabari 1994].

Although there are opportunities for making a good income, Dhebars are now disenchanted with practising pastoralism under circumstances which make it too expensive to be worth while. They are returning in ever-increasing numbers to Kutch, where they seek other means of making a living. Dhebars with smaller flocks migrate to other areas of Gujarat, including Saurashtra (either as a final destination or en route), after exploiting the open grasslands of Kutch during monsoon. They follow the strategies adopted by the Vagads, described below.

### Vagad Rabaris

In the east, the sheep and goat-keeping pastoralists of northern Vagad have adapted by merging into the existing North Gujarat route used by the southern Vagads. During the monsoon period, they use any non-agricultural land available to them in Kutch. After that, they move towards the western zone of North Gujarat, large parts of which still depend on dry farming. Migration is regulated so they do not arrive in this extensively cultivated zone until all the standing crops are harvested; cotton being the final one, which gives them only a couple of months grazing before the monsoon. If the year is good, these pastoralists can manage comfortably. If the preceding rains were poor, they must move towards the south of Gujarat, where rains are more reliable (Fig 4).

Figure 4: Migratory routes of Vagad Rabaris



In either case, they now have to pay their way, as they are no longer welcome to stay on the fields for as long as they want. In the past, as a goodwill gesture, the pastoralists would contribute a donation to the local temple, but now, farmers are becoming more commercialised and profit-oriented:

*"Farmers have got clever, they realise the village, farm and fodder are theirs, why should they pay us for our manure? They used to ask us to come and sit but now they have realised we have to sit, so they dictate the prices. We haven't got another option. They didn't know how to give and take money then, but now they see that we take their money and graze their fields, so they should not give us". [personal communication, Sunibai, Vagad Rabarin, 1994].*

The voluntary donation has become a fee to graze village fields for a stipulated length of time, negotiated with the villagers by the head man (*mukhi*) of the migratory group (*dhang*). Instead of mutual need, the farmer/pastoralist relationship is now regulated by a contract in which the pastoralist is the more dependent party. This also puts *dhangs* into competition with each other for villages. They prefer to return to the same village, where they have long-standing relationships with farmers. Such special relationships matter, but in times of shortage, or where there is no special relationship, the *dhang* that offers a better price gains the grazing.

Notwithstanding the competition between *dhangs*, migration based on 'grazing contracts' appears to have evolved into a successful and enduring strategy. Pastoralists have a moral responsibility not to abuse the system, but occasionally they do put their animals into fields that are not covered by the agreement, or where there are standing crops. The subsequent dispute is then settled by the village Panchayat and the offending pastoralist, and the guilty party is fined. If the bargain is not kept, that pastoralist will not be accommodated in the vicinity again.

### From vocation to business

In the past, Rabaris used the wool from their sheep for domestic purposes. Increasingly, it was sold on the external market, to be converted into garments, carpets, etc. However, sale of wool does not supply an adequate cash income on which to manage, and pastoralists have begun to sell greater numbers of animals to satisfy the demand for meat from the Gulf and local markets; goats and sheep provide meat that is acceptable to Hindu sentiment. Cattle herders have also begun to sell their animals' milk. The sale of milk, which was earlier seen as the same as selling blood, has now become accepted, but sale of animals for human consumption is still regarded as a moral outrage. Rabaris, who are very pious, believe that many of their troubles stem from this sacrilegious act. Rather than seeing it as a vocation, as they did in the past, Rabaris' perceptions of pastoralism are beginning to change, with a gradual shift towards use of modern medicines and government facilities, and a heightened interest in the cash they can earn through greater commercialisation.

A side effect of the increasing commercialisation of the pastoralists' market is that Rabaris feel cheated by those they used to trust. Pastoralists are only partly aware of the market economy, nor do they recognise that it has overtaken the moral economy within which they still try to work. They know little of the fierce competition among sheep and wool merchants and when prices fluctuate, Rabaris, who may get less for their wool or sheep than they did last time, feel they are being cheated.

### Purchasing village land

Any resident of a village is entitled to use of the village land, and the local forest area. Some pastoralists have found an ingenious solution to shortages of grazing land: *'Now they have learnt a new policy. In many areas, people do not*

*allow them to stay, so they purchase a field near a village so one cannot drag them out. They purchase land and many families are now settled in this area'* [personal communication, Hamirbhai, Katchi Rabari community leader, 1995]. This option has been used by Dhebars, who are rich enough to afford to buy land, and who keep their flock to a manageable size of about 500-700 animals. Katchis are reluctant to allow this to become a widespread practice, *'in all our villages 2-3 Dhebar families have purchased land and now they are settled there. We do not like to let them stay here because there will be too many animals on our land and they will fight with us'* [Vanka Patel, Katchi Rabari community leader, 1995].

### Purchasing agricultural land

Most pastoralists have some land, even if only an acre or so; and they generally see land as an insurance policy, for if the rain is good it will bring a useful profit, although it never supplies the main source of income. *In Kutch, those who have purchased a little more land and keep animals simultaneously leave the working of the land to other communities, i.e. Kanbis, with whom they share the profits on a 50: 50 ratio.* The government's promise that the irrigation schemes planned for the waters of the Narmada will make Kutch green has led many pastoralists to invest in land: *'if god puts Narmada here we will be king of the world, all will be well, then we won't need to go to Gujarat'* [personal communication, Somabhai, Vagad Rabari, 1995].

### Change of animals

Some pastoralists are aligning themselves with the government *view that cattle and buffaloes are more productive animals, particularly since they allow the owner to remain sedentary, and to send milk daily to a dairy.* They can get *loans to buy these animals, insurance for them, and state support in years of drought.* *For sheep and goat owners who are getting tired of land pressure and stress, changing to animals that allow a sedentary lifestyle is attractive.* The trend is towards buffaloes, who do not suffer from grazing on acacia, and whose milk fetches the best profits. The purchase of land often goes hand in hand with a change from sheep and goat to larger animals - since pastoralists can then grow fodder on their own land.

## OTHER MODES OF ADAPTATION

### Sedentarisation, education and change of occupation

Sedentarisation often begins when animals have been lost. In such cases, pastoralists earn money through unskilled labour - clay digging, agricultural labour, labour in salt mines, etc. If some 15-20 sheep and goats are left, one family member will herd them, while others (including women and children) seek wage labour. Pastoralists who settle in towns can get unskilled jobs where trust is important, such as night watchmen on construction sites, as their honesty is legendary. They are also employed in other jobs where money is exchanged: on petrol pumps and in shops. Otherwise, the transport business is a favourite choice, for keeping on the move is in their blood. Those who quit pastoralism by selling animals can afford to buy a vehicle - jeep, chugdo (motorbike with attached trailer, used from transporting people) or truck - which they drive, and they often work as drivers for others.

Formal education can really only follow sedentarisation, in the absence of any provision for mobile schooling. Education is increasingly seen as important, although less as a mode of adaptation, than as a means of leaving pastoralism as a way of life. From their own experience and what others tell them, pastoralists have come to believe that education can help them survive in the modern world:

*"Previously we didn't think of education because we were self-sufficient, we had fodder and water. Now, day by day the forests are decreasing so if we still don't make our children educated, there won't be anyone as unhappy as us. No-one will be able to feed themselves from this business. When the day comes that your children aren't able to survive they will curse you for keeping them illiterate so they can't do anything else. But if they have learned two words at least they will be able to do something else". [personal communication, Asha Deva, Gardo Rabari community leader, 1995].*

*"Because we have no education we can't speak up. That's why we're beaten. Police harass us, and so do villagers. Forest officers are a problem. If someone writes a letter saying a pastoralist has damaged something a pastoralist can't do anything about it. He may not have any money to feed his children but he has to pay the officers. This is why the community is deteriorating, because it has no education. How can it get out of this: they don't know the law so they're stuck in a vicious circle. We get implicated in police cases and because we are illiterate we don't know what to do next. Our situation is bad but it's time to think hard how to improve it". [personal communication, Bhudhabhai, Vagad Rabari, 1994].*

To help them cope with the modern world, and to ensure the survival of their families, pastoralists acknowledge a role for school education. Formal schooling is seen as an escape route if the traditional occupation fails; and also a way of learning how to talk back to those who cheat, threaten and oppress them. They also see a role for adult literacy, which would enable them to read bus boards, write letters, read prices and bus tickets, ration cards, and contracts. Having reached this conclusion, however, pastoralists find that their migratory way of life is not compatible with gaining education of any sort<sup>2</sup>. This provides an incentive to settle.

Pastoralists who have settled or who are semi-sedentary use schools, but as yet rarely reach further than the end of the upper primary level. They see education as a qualification to provide access to jobs such as helper on a petrol pump, or in a shop. High caste, merchant Baniyas who have migrated to places like Bombay sometimes take with them Rabari boys with this level of education, and give them jobs at low wages, but including food and shelter. Such jobs are acceptable to pastoralists because they provide some security, and the income is greater than they can earn in their villages, where opportunities are very limited. Usually one or two family members migrate in search of work, leaving behind the others, who practise pastoralism, dry farming or unskilled labour work. This type of work confers on the individual, his family, and the wider Rabari community a status that is envied by others.

Sedentarisation inevitably bring greater exposure to the value systems of other social groups, who rarely value pastoralism. Such exposure, coupled with the influence of formal schooling, which follows an urbanised model, accentuates stratification among Rabaris. In particular, it has allowed the rise of a new class of community leaders, who gain their status because of their capacity to mediate between non-literate pastoralists and the outside world. None of these leaders still practises pastoralism, which they see as outmoded and backward.

They see the 'traditional' Rabari as barbaric (*jungli*) and stubbornly resistant to change:

*"If you want to improve this community the first step is to stop them from herding sheep and goats. Once they stop the business, they'll come in contact with people from other communities in the villages. At present, they stay in the jungle and they don't get any day to day news there."*

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<sup>2</sup> We have examined these problems and perceptions in a two and a half year research project, Literacy for Nomads, sponsored by the Economic and Social Research Council [Dyer, Choksi and Jeffery 1996].

*When an advertisement comes through the media, 700 million Indian people will know about the product next day. How will the Rabari know about this? He has no links, no facilities. If there is no facility, how can improvement come about? So we start by telling them to look, other communities are doing things this way, why aren't we? We can only bring change after looking at other communities. Others don't wear this type of jewellery or clothing. So we talk about those communities first, then talk about change". [personal communication, Hirabhai, Dhebar Rabari community leader, 1995]*

Such views are endorsed by educated Rabaris, who understand and support the direction of change these leaders advocate. The new leaders' message makes an impact for various reasons, which are often interconnected. It is illustrated by the example of others' success in business, which has been facilitated by education. It is seen to be practically relevant because the inability to read, write and answer back appropriately to educated people are handicaps that individuals have experienced. What leaders say is believed because leaders are respected as authority figures and their words should be followed.

## THE FUTURE OF PASTORALISM AMONG THE RABARIS OF KUTCH

The threat to pastoralists' ability to sustain themselves has always existed, in the form of natural disasters such as drought or disease; but now, they are compounded by the changing nature of the world around them. Still, despite these negative messages, and pastoralists' subsequent demoralisation, most do not feel that there is anything intrinsically wrong with their occupation: migration is a way of life, not a hardship, and money can be made:

*"If the time is good, there is no-one as happy as a Rabari. He doesn't care about the world, only his family and his flock. Whichever direction the world is going, all he cares about is to eat, look after his family and enjoy. The only concern he has is which direction to take in the morning so he gets good grazing and water, and his flock will be happy". [personal communication, Gelabhai Barot, Katchi Rabari bard, 1995].*

However, apart from the physical changes, the world has also changed more fundamentally, for it is no longer governed by the moral order that prevailed in the past. This new moral order is not conducive to the Rabari way of life, for traditional pastoral values are out of kilter with modern developments.

Pastoralists have done what they can to adapt to changing circumstances, but if pastoralism is to survive in Western India, it will almost certainly have to operate on a market and business-oriented strategy. This implies an adaptation that threatens the Rabaris' traditional occupation more than any other, for it demands a fundamentally different approach to pastoralism, based on economic rather than ethical considerations.

The long-term prognosis for pastoralism with small animals is not good, unless the potential contribution of sheep and goats to the national economy is adequately recognised by the state [personal communication, Sheep and Wool Development Board officer Dr. K. R. Ramakrishnan, 1995]. Some basic facilities for breeders of sheep and goats have been set up, but pastoralists are very hesitant to use them. This is due in part to their characteristic wariness of change, but also because they do not realise the nature of the threat to their livelihood, itself a by-product of the state's failure to involve pastoralists in planning for the future.

Officials themselves must shed their perception of sheep and goats as non-productive, if sustained efforts to orientate pastoralists to the requirements of the modern economy are to result. But how this might be done? Even Rabari leaders, who advocate participation in the market economy, now also share the view that nomadic pastoralism is economically and socially backward. Those with influence see pastoralists as a nuisance that could be contained by sedentarisation and a switch to large, dairy animals. Yet they do not see that these measures are likely to cause further environmental degradation, and result in large-scale unemployment.

Rabaris and the government urgently require a mechanism by which they can talk together, through an agency which could mediate between the need of the state for the animal products which pastoralists could provide and the need of the Rabaris for culturally appropriate options for improved systems of production by which their occupation can be assured in the future.

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The Drylands Programme aims to contribute towards more effective and equitable management of natural resources in semi-arid Africa. It has built up a diverse pattern of collaboration with many organisations. It has a particular focus on: soil conservation and nutrient management; pastoral development; and land tenure and resource access. Key objectives of the programme are to: strengthen communication between English and French speaking parts of Africa; support the development of an effective research and NGO sector; and promote locally-based management of resources, build on local skills, encourage participation and provide firmer rights to local users.

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