CHAPTER 7

CONSERVATIONISTS, AGARIAS AND LITTLE RANN OF KACHCHH

7.1. Sanctuary, Guards and Wild Asses

‘Are you a journalist?’ Almost every forest and sanctuary official asked the researcher the moment he entered their office. Officials pointed out the heightened interest of both local and national media in the Rann in the last few years. They tended to state that in view of reports in some sections of the press portraying them as ‘enemies of the Agarias’, it is necessary to be careful while speaking to the media persons. In the same breath, officials added that they do not hold any grudge against the Agarias and it is essential to restrict the entry of Agarias inside the area for the production of inland salt only to protect the biodiversity of the Rann. Analysis of interview transcripts with other conservationists reveals that a similar view was also expressed at the beginning of the interview by most respondents in this category in order to clarify their stand on the livelihood and conservation debate. One member of an NGO working on environmental issues stated, ‘we are friends of the fragile ecosystem of the Rann and not foes of the communities dependent on the Rann’.

To substantiate their argument, they elaborately discussed the physiography and biodiversity of the Rann and underlined the role played by them to conserve the unique flora and fauna of LRK. Unlike the description of Rann provided by Agarias and discussed in the next section of this chapter, the lexicon of conservationists was loaded with scientific jargon. According to them, it is essential to describe the Rann and its biodiversity using words defined in the manuals of conservation science. Emphasising upon the importance of a standard vocabulary for conservation science, Salafsky et al. (2007) have stated that such a vocabulary enables conservation practitioners to communicate their understandings through common databases. Conservationists interviewed for this study relied upon terminologies drawn from geography, ecology and zoology to describe the Rann and its biodiversity. The interview transcripts show that they frequently prefixed the word ‘scientific’ to words like ‘conservation’, ‘wildlife
management’ and ‘land-use’ in an attempt to prove that their description of the Rann bears the stamp of scientific authority. This dominant perception of conservationists highlighting their belief in the superiority of their scientific knowledge over the more ‘traditional’ experiential understanding gained by Agarias is one of the major causes of their deemed conflict with the local communities.

This description of Rann provided by conservationists to the researcher has been substantiated in the study conducted by a consortium of development organisations (PEACE, ELDF, Samrakshan and NR International) in 2007 under the Biodiversity Conservation and Rural Livelihoods Improvement Project (BCRLIP) of MoEF, GoI. According to this study, the entire Rann can be divided into five major physiographical entities:

1. The Little Rann: It is a saline flat land containing high quantity of sodium salts and gypsum and drained by several ephemeral rivers like the Machhu, Brahmani, Kankavati, Umai, Fulku etc. from the south, the Rupen and Saraswati from the east and Banas from the northeast during the monsoon.
2. The Bets: They comprise of the 74 sandy or rocky salt free higher grounds amidst the Rann. Pung is the largest and Mardak is the highest Bet. These Bets remain above the flood level during the monsoon.
3. The Fringe: The saline and sandy transitional area between low lying Rann and the upland villages.
4. The Gauchars or Revenue Wastelands: The undulating, sandy or rocky village uplands. These areas are mostly common property lands used as low productive pasture lands.
5. Tidal creeks in Gulf of Kachchh: These creeks extend upto south-western part of the Little Rann.

According to conservationists, the unique ecosystem of the Rann can be attributed to this physiographical diversity and the seasonal flooding of the area by the sea and rivers during monsoon and its subsequent transformation into a muddy desert during the rest of the year. A senior scientist working on the ecology of the Rann pointed out that the Bets have the richest biodiversity among the all five physiographic divisions and since
they are not inundated during the monsoon season and have a better foliage cover, they provide critical breeding habitat to several species during the monsoon. According to the study conducted under the BCRLIP, the fringe areas in LRK form the transitional zone between the slightly elevated mainland and the saline desert area of Rann. The diverse vegetation cover of these areas which provide shelter to many species of animals can be attributed to the edge effect. It further stated that the fringe areas function like a ‘buffer’ for the WAS, contain several seasonal water bodies and are also a part of the macro watershed areas of ephemeral rivers flowing into the Rann, (p.5).

According to this study, the draining of water from rivers into the Rann is important for maintaining hydrological and nutrient dynamics of the Rann. The researcher was informed that the mixing of this freshwater from the rivers with tidal water from the Gulf of Kutch flowing into the Rann from the creek make the area a preferred nursery ground for prawns during the monsoon.

The ecological study of the Wild Ass Sanctuary published by GEER has provided a detailed account of the biodiversity of the Rann. Conservationists and most of the recent reports on the Rann have referred to this study to highlight the rich biodiversity of the area. According to this study, the vegetation of LRK is of xerophytic type with a ground cover composed of mostly the ephemerals species. The exotic species *Prosopis juliflora* dominates the vegetation which also includes indigenous plants like *Suaeda* sp., *Aeluropus lagopoides*, *Salvadora persica*, *Capparis decidua*, *Calotropis porcera*, *Cressa cretica* etc. The study has recorded 93 species of invertebrates, 4 species of amphibians, 29 species of reptiles and 22 species of fishes in the area. The sighting of 81 species of terrestrial birds, 97 species of water birds and 61 species of mammalian fauna have also been reported in the study.

Based on interviews with wildlife experts in various universities, research institutes and organisations across Gujarat and in Delhi it was found that in addition to the Indian wild ass, several other species of plants and animals occupy important position on the agenda of conservationists. Among the plant species, *Prosopis juliflora*, locally known as *Gandobavar*, is at the centre of man and wildlife conflict in the context of the LRK. This exotic species was introduced into the Indian sub-continent from South America in 1877 and was initially planted in the Rann by the Nawab of Radhanpur in 1900 and
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later by the forest department under the Desert Development Programme (DPP) and Drought Prone Area Programme (DPAP) to prevent the desertification of the area (Muthana and Arora, 1983; N.D Lea International Ltd., 2002). Pandey, Pandey, and Bhatt (2012) have pointed out that Prosopis juliflora is an ‘alien and invasive’ species and has adverse ecological impact in several situations (p.302). Due to its adaptability to arid environments and tolerance for drought and disease it has surpassed all indigenous species in covering arid and semi-arid tracts (Saxena, 1998). Conservationists including the forest officials have stated that Prosopis juliflora has suppressed the natural vegetation of the Rann which consisted of grasses and herbs. The importance of two other plant species, Suaeda sp. and Aeluropus lagopoides as biological indicators of salinity in the area has also been discussed in the study (p.35).

Among the reptiles, spiny-tailed lizard (Uromastyx hardwickii), a threatened species is distributed all over the sanctuary along with twelve species of snakes including six poisonous species (Singh et al., 1999). The study has recorded 11 species of prawn including the famous Metapenaeus kutchensis which is caught by fisherfolk in twenty prawn fishing grounds in the Rann. The Hadakiya Creek at Surajbari is the traditional and most important prawn fishing ground. Experts pointed out during the interviews that being located on the migratory route of birds and due to its proximity to the Gulf of Kutch, the Rann is a preferred location for breeding, feeding and roosting of both resident and migratory birds. According to the GEER study, the terrestrial bird, Houbara bustard (Chlamydotis undulata) and the water birds, Greater Flamingo (Phoenicopterus ruber), Lesser Flamingo (Phoenicopterus minor), White Pelican (Pelecanus onocrotalus), Dalmatian Pelican (Pelecanus crispus), Common Crane (Grus grus), Great Crested Crebe (Podiceps cristatus) and Caspian Tern (Hydroprogne caspia) are the indicator species of the WAS. In addition to the Indian Wild Ass (Equus hemionus khur), Chinkara (Gazella bennettii), Blackbuck (Antilope cervicapra), Nilgai (Boselaphus tragocamelus), Wild Boar (Sus scrofa), Wolf (Canis lupus) and Desert Boar (Vulpes vulpes) are important members of the class mammalia found in LRK.

Among the nine species of mammals found in the LRK, the area has become famous across the world due the presence of the endangered Indian Wild Ass which has been listed in the schedule I of the Wildlife (Protection) Act (WLPA), 1972 (Singh et al.,
The Indian wild ass (*Equus hemionus khur*) is one of the six geographically isolated subspecies of *Equus hemionus* and has also been classified as EN Endangered B1ab(iii,v)C2a(ii) in the IUCN Red List (Duncan, Ryder, Asa, and Feh, 1992; Feh et al., 2002). In Asia there are two species of the wild asses, Asiatic wild asses (*Equus hemionus*) and Kiang (*Equus kiang*) (Feh et al., 2002). One of the subspecies of the Asiatic wild asses, The Syrian Wild Ass (*Equus hemionus hemippus*) has been extinct since 1927 (Srivastav and Nigam, 2010). Based on the work of Duncan et al., (1992) the subspecies of the Asian wild asses and Kiang have been listed below:

I. *Equus hemionus*  
   - *Equus hemionus hemionus*  
     North Mongolian dziggetai  
   - *Equus hemionus luteus*  
     Gobi dziggetai  
   - *Equus hemionus khur*  
     Indian Wild Ass  
   - *Equus hemionus kulan*  
     Kulan  
   - *Equus hemionus onager*  
     Onager  
   - *Equus hemionus hemippus*  
     Syrian Wild Ass

II. *Equus kiang*  
   - *Equus kiang holdereri*  
     Eastern Kiang  
   - *Equus kiang kiang*  
     Western Kiang  
   - *Equus kiang polyodon*  
     Southern Kiang

The extinction of the Syrian wild ass and the categorisation of the Indian wild ass as endangered in the IUCN red list have been highlighted by many conservationists to support their arguments for stringent conservation initiatives in the area. A talk on the endangered status of the Indian wild ass always precedes the guided wildlife safaris into the LRK. Observations made during one such session shows the manner in which protected areas are associated with national pride by the tour guides. In the observed session a group of wildlife enthusiasts from cities were oriented about the LRK before embarking upon the day long safari trip across the Rann by their guide who is also a wildlife activist. The guide pointed to the dotted lines on the distribution map of the Asian wild asses (Figure 7.1) prepared by the IUCN/SSN specialist group on Equids and stated in a tone which highlighted the gravity of the situation that few hundred years ago the Asian wild asses used to roam across a very large part of our continent.
He added pointing to the small points on the map, ‘today their area distribution has reduced substantially and one of the subspecies, the Indian wild ass is only found in our LRK region of Gujarat’. After a pause he threw a volley of questions to the group, ‘Don’t you think it is matter of pride that our state has the last surviving population of ghurkhads in the entire world? Don’t you think it is our duty to protect the last surviving population of the species for our future generations?’ Everyone nodded their heads in affirmation and at that instant one engineer working in a Mumbai based software company shouted, ‘Bharat Mata ki Jai’ to the sound of clapping by the entire group.

Source: (Duncan et al., 1992; p.20)

Note: Past Distribution = Dotted Line; Kulans = Trinagles; Onagers = Filled Star; Indian Wild Ass = Open Star; Dziggetals = Hatched; Western Kiangs = Dense Dots; Southern Kiangs = Darkest Shading; Eastern Kiangs = Sparse Dots

**Figure 7.1: Past and Present Distribution of the Asiatic Wild Ass**

Conservationists feel that the entrustment of the responsibility of conducting a comprehensive ecological study of LRK to GEER foundation by the Government of Gujarat in 1997 was a significant step towards the protection of biodiversity of the Rann. The ecological study of WAS published by GEER provided a detailed account of the ecology, natural history and habitat of the Indian wild ass. This study was prominently displayed in the offices of persons on either side of the livelihood and conservation debate and all of them referred to facts and suggestions given in the study to uphold their arguments. The researcher was referred to this study by most
conservationists when he requested them to provide a description of the Indian wild ass. Few respondents had themselves read out the relevant section pertaining to wild asses from the study. Conservationists were of the opinion that an accurate description of the Rann and the behaviour of wild asses can only be provided by a study which meets the rigor of scientific research. They further stated that such a description is essential for the conservation of species in the LRK.

Focussing on the ecology of the Indian wild ass in the LRK, this study has reported that in addition to the Bets, the Rann area and the fringe area, the wild asses can be seen upto a distance of 5-10 kilometres outside the boundary of the sanctuary. This movement of wild asses outside the sanctuary extends to an area beyond 10 kilometres in the southern fringe. According to the study, this increase in the sighting of wild asses outside the area of the sanctuary can be attributed to the increase in the population of wild asses and also to an expansion of the area under cultivation near the southern fringe. It has been highlighted by conservationists during interviews that while the former showcases the success of various initiatives to protect the endangered species, the later underlines an upsurge in human activities near the sanctuary and the associated challenges involved in the management of wildlife in LRK.

The conservationists pointed out that initiatives to conserve the Indian wild ass assume significance in view of the fact that the species was on the verge of being wiped out from the planet just fifty years ago. This point has been discussed in almost all the studies conducted on the Indian wild ass. Based on the figures of wild asses provided by Dr. Salim Ali in 1946 & 1960 and by E.P. Gee in 1963, Singh (2000) has stated that the wild ass population of LRK had drastically declined between 1946 and 1963 due to the epidemics of surra caused by Trypanosoma evansi and South African horse sickness (Figure 7.2). This steep decline could also be ascribed to the frequent droughts in the area during that period and to the possible over estimation of the number of wild asses in the earlier enumerations (Singh et al., 1999). According to Singh, the population of wild asses has increased consistently between 1976 and 1999. The Forest Department of Gujarat has reported that the population of wild asses has increased to 3863 as per the census of January 2004 (Meena, Verma, and Korvadia, 2005; p.13). Pardeshi et al. (2010) have mentioned that the number of wild asses in the Rann have reached the figure of
4038 in 2009. It was repeatedly pointed out by conservationists that this noteworthy increase in the number of wild asses in the last few decades is due to the notification of WAS and their relentless efforts to protect the species. One official of the forest department posted in Dhrangadhra said that the increasing scientific knowledge about the Rann and its biodiversity is a crucial factor behind the success of conservation efforts.

![Population Trend of the Indian Wild Ass in LRK (1946-2009)](image)

**Figure 7.2: Population Trend of the Indian Wild Ass in LRK (1946-2009)**

A conservation biologist in Wildlife Institute of India (WII), Dehradun pointed out that there is a preponderance of available scientific literature on the conservation of the Indian wild ass due to its status as an endangered species. These studies have mostly discussed population characteristics, social organisation and behavioural ecology of the species. Feh et al. (2002) have stated in their study on the *Equus hemionus* that the Asiatic wild asses weigh around 200-260 kilograms. The adult sex ratio of the Indian wild ass in LRK is 1 male : 2 females (Singh et al., 1999). Breeding is a seasonal activity for the Indian wild asses and due to the abundant vegetation cover during monsoon, it is the preferred time for mating and foaling (Singh et al., 1999; Srivastav and Nigam, 2010). It has been reported that the fluctuations of resources of the species during the breeding period can inversely impact the success of breeding of the Indian...
wild ass (Shah 1993; as cited in Singh et al., 1999). Elaborating further upon the social organisation and behavioural ecology of the Wild asses, Srivastav and Nigam have added that ‘dominance hierarchy’ is witnessed among the Wild asses and during the breeding season the males higher up in the hierarchy have better habitat conditions compared to the subordinate males who are relegated to inferior territories (p.2). They have added that females of the species move between territories and select mates who have the best territory.

According to the conservationists, a detailed understanding of the ranging pattern, habitat use and population dispersal of a species is essential for the development and implementation of a successful management strategy to conserve species in a protected area. They are of the view that though various studies including the ecological study of the WAS conducted by GEER have provided significant insights upon these characteristics of the Indian wild ass in LRK, there is a lot of scope for further research on these aspects of the species. The GEER study has noted that the ranging pattern of the animal is dependent on the availability of resources, environmental factors, social structure and external disturbances. According to Srivastav and Nigam (2010), the Equids are generalist herbivores with large water requirements which restrict their range. The researcher was informed that wild asses mostly prefer to feed on the Aeluropus lagopoides and Suaeda sp. inside the Rann. During the summer they subsist on the pods of Prospis juliflora. The wild asses of LRK regularly feed on the croplands of the nearby villages.

The major locations of wild asses and their home ranges are situated within a radius of 2-3 kilometres from the source of water on the fringe (Singh et al., 1999, p.125). The diurnal movement and the home range sizes of the wild asses of LRK have been shown in Table 7.1. The study has noted seasonal shifts in the home range and fidelity in the seasonal use of these home ranges by the Indian wild ass. Based on the discussion on the group size, habitat use, carrying capacity and dispersal of the wild ass population in the GEER study it can be concluded that the group size of 60.4% of the wild asses is small (3-20) to medium (21-40). The study has also reported sightings of large herds consisting of 86 wild asses with many foals during November. According to this study, the low density scrubland dominated by Prospis juliflora is the most preferred habitat.
of the wild asses throughout the year. The crop land and the fallow land are also visited throughout the year. It has been reported by Srivastav and Nigam (2010) that the activity pattern of the Indian wild asses remains consistent throughout the year. They remain active during the night and fed during this time. During the night they raid agricultural fields throughout the year and return to the vegetative zone in LRK between the barren Rann and the agricultural fields at dawn using definite paths (Singh et al., 1999, p.125). The dispersal of wild asses and the associated escalation of the human-wildlife conflict is at the same time a cause of concern and as pointed out in the GEER study, this natural process of dispersion can also provide scope to the wildlife managers to expand the habitat of the Indian wild asses.

Table 7.1: Diurnal Movement & Home Range Size of the Indian Wild Ass

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Type</th>
<th>Diurnal Movement (km)</th>
<th>Home Range Size on Fringe (sq. km)</th>
<th>Annual Home Range Size (sq. km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Family Herd</td>
<td>3.7 - 5.2</td>
<td>4.3 - 12.5</td>
<td>18.9</td>
</tr>
<tr>
<td>2.</td>
<td>All-Male Herd</td>
<td>4.4 - 6.4</td>
<td>5.1 - 13.4</td>
<td>18.6</td>
</tr>
<tr>
<td>3.</td>
<td>Dominant Stallion</td>
<td>7.7 - 10.5</td>
<td>4.2 - 5.8</td>
<td>8.0</td>
</tr>
</tbody>
</table>

Source: (Shah, 1993; as cited in Singh et al., 1999; p.126)

The forest officials have stated that the increase in the number of wild asses after 1976 can be directly attributed to the notification of the sanctuary in 1973. An ecologist interviewed in Kachchh underlining the positive role of the sanctuary in the conservation of the Indian wild ass added, ‘…even till the late seventies people thought that the Indian wild ass might become extinct before the next century…I am certain that it is only because of the sanctuary that today we are even talking about the animal occupying the areas where it roamed in the past…’ The conservationists were not only unanimous in their view that the notification of WAS was a major step towards the conservation of the Indian wild ass and the unique ecosystem of the LRK, they also argued in favour of applying further restrictions on the human entry inside the protected area. This argument was based on the fact that the Indian wild ass is the only surviving natural population and gene pool of the subspecies (Rodgers et al., 2000; Pardeshi et al., 2010).
Some of the respondents in this category in order to defend their argument also referred to the following recommendations made in the context of the Indian wild ass by the IUCN/SSC specialist group on Equids in 1992 and 2002:

1. A wild population of the Equid which included the Indian wild ass of LRK should have a minimum size of 2,500 individuals, the status and management of the sanctuary should be raised to that of a National Park and the salt pan expansion and grazing pressure on the sanctuary should be reduced (Duncan et al., 1992).

2. The status of the Wild Ass Sanctuary should be maintained and further strengthened and mitigation of the effects of various canal building projects and continued salt mining on the sanctuary (Feh et al., 2002).

It has to be pointed out that the IUCN group on Equids in 1992 had also recommended the initiation of projects which integrated the conservation of wild asses and local development (Duncan et al., 1992; p.26). Interestingly, this part of the recommendation was not mentioned to the researcher by any of the conservationists.

While highlighting the notification of the wild ass sanctuary as a landmark step towards the conservation of the biodiversity of LRK, few conservationists noted that the efforts of Prime Minister Indira Gandhi were central in ensuring that the wildlife of India was protected for the future generations. They feel that it was due to her initiatives that the WLPA (1972) was passed and that she was also the instrumental force behind the notification of the WAS in 1973 and the other national parks and sanctuaries notified in Gujarat during her tenure. Conservationists and development sector professionals working with Agarias also highlighted the administrative complexities arising out of the notification of the sanctuary. According to them, the revenue wasteland included in the WAS as per the government notification falls under the jurisdiction of collectors of the five districts bordering the Rann. This creates administrative difficulties in the management of the WAS. The collectors of these districts kept renewing the salt leases inside the LRK for several years even after the notification of the sanctuary. Table 7.2 provides a detail of the number of villages in the ten talukas which surrounded the LRK. Mr. H. Pandya of AHRM informed the researcher that the administrative ambiguity over the jurisdiction of the WAS is heightened by the fact that no survey has been conducted in the LRK and as a result the entire area does not have any survey.
number. Mr. Pandya informed that this fact came to light only after he had filed an application under the Right to Information Act (2005) in 2007.

Table 7.2: District wise Number of Villages and Talukas Bordering the WAS

<table>
<thead>
<tr>
<th>S.N.</th>
<th>District</th>
<th>Taluka</th>
<th>Number of Villages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Kachchh</td>
<td>Rapar</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bhachau</td>
<td>09</td>
</tr>
<tr>
<td>2.</td>
<td>Rajkot</td>
<td>Maliya</td>
<td>15</td>
</tr>
<tr>
<td>3.</td>
<td>Surendranagar</td>
<td>Halvad</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dhrangadhra</td>
<td>08</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dasada</td>
<td>13</td>
</tr>
<tr>
<td>4.</td>
<td>Patan</td>
<td>Sami</td>
<td>04</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Radhanpur</td>
<td>01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Santalpur</td>
<td>15</td>
</tr>
<tr>
<td>5.</td>
<td>Banaskantha</td>
<td>Vav</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>108</td>
</tr>
</tbody>
</table>

Source: PEACE, ELDF, Samrakshan & NR International (2007, p.6)

Based on the observations and interviews conducted in the office of the Wild Ass Sanctuary in Dhrangadhra, it can be concluded that the overlap of the jurisdiction of different forest divisions and ranges in the LRK is also a major impediment in the functioning of the wildlife officials. While the WAS is under the administrative jurisdiction of the Dhrangadhra Sub-division of the Junagadh Wildlife Circle, the territorial divisions of Junagadh, Kachchh and Banaskantha Circles has control over the forest lands in the area outside WAS. In addition, for certain matters concerning the management of the WAS, the wildlife officials are also required to coordinate with the social forestry division in the area. One official lamented that the lack of proper coordination between various divisions leads to long delays in the completion of tasks associated with the sanctuary. Adding to this, an upper division clerk in the office commented in a jocular vein, ‘…when people ask me about the time needed for the completion of a task in the sanctuary office, I request them to take a walk along the entire Rann and then come back….’

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While acknowledging the contribution of various NGOs and individuals working on wildlife issues, most wildlife officials declared that the credit for the successful management of the wildlife in LRK goes to the forest department. The researcher was informed that the WAS management team is headed by the Conservator of Forests of the Junagadh Wildlife Circle with a Sanctuary Superintendent who is of the rank of an Assistant Conservator of Forests (ACF) immediately below him. The Range Forest Officers (RFO) of the Dhrangadhra, Bajana and Adeswar ranges report to the ACF (Figure 7.3). The forest guards with whom the Agarias come into frequent contact are at the lowest rung of the hierarchical ladder of the forest department. A senior forest official remarked that all officials of the WAS have to work assiduously throughout the year to protect the biodiversity of the WAS. He stated while underlining the current figure of wild asses in the WAS, ‘this increase in the number of wild asses has not happened overnight due to some miracle…this is the result of several decades of dedicated efforts by everyone in the department…from our PCCF sahebs to the forest guards…’ In addition to human efforts, officials said that normal rainfall in the region over past several years is also an important factor in the increase in the number of asses. Most forest officials noted that it is unfortunate that while everyone is ready to blame them for every issue involving the sanctuary, hardly anyone gives them their due share of credit for the tasks accomplished by them.

Source: (Meena et al., 2005; p.22)

**Figure 7.3: The Administrative Set up of the WAS**
The various tasks undertaken by the Wildlife Division are prominently displayed in the notice boards of the sanctuary office along with graphs which showed the rising number of Indian wild asses and other animals in the sanctuary. The major activities include the provision of drinking water for animals in the Bets and fringe areas, improvement of the habitat of species found inside the protected area and the upkeep of wetlands for water birds including the migratory species. In addition to these activities, the division is also responsible for the conduct of the census of wild asses and other animals, prevention of poaching, mitigation of man and wildlife conflict and promotion of eco-tourism. The researcher was informed that various research institutes seek the assistance of the forest department for carrying out studies based on the LRK. A few officials also mentioned that the division worked with local institutions to make villagers aware about the benefits of protecting the biodiversity. While dwelling upon problems faced by sanctuary officials, the researcher was told that the task of protecting the biodiversity of Rann is made arduous by the shortage of adequate staff at all levels. Adding onto this, senior administrators in Gandhinagar pointed out that due to paucity of funds, the protected area managers cannot be provided with latest equipment and computer applications for wildlife management. Based on the review of the research papers on conservation and livelihood, it can be stated that there has been an upsurge in the use of technology in conservation practice. Quinn and Alexander (2008) have highlighted that wildlife management practice has greatly benefitted from the application of latest advancements in GIS & Remote Sensing and Web based mapping tools. A senior conservator while explaining the advancement in protected area management remarked, ‘when we look at the technology at the disposal of our counterparts in the west, it seems we are still in the dark ages…’

Among the conservationists, the wildlife activists, those working with environmental NGOs and research institutes said that wildlife officials do not deserve all the credit for the increase in the number of wild asses in the sanctuary. While accepting the fact that wildlife officials deserve the loudest round of applause, most of them said that without their efforts the conservation goals could have never been met. The wildlife activists added that their contribution is as important as that of the forest officials. According to them, forest officials sat idly for years after the notification of the sanctuary as salt
leases were renewed and human activities inside the sanctuary increased. They pointed out that in all probability the sanctuary would have been de-notified to further the interests of industrial groups had it not been for their efforts to protect its status in the early nineties. A senior member of an Ahmedabad based wildlife protection group told the researcher, ‘’…before you give all the laurels to government officials, do reflect on the contribution of wildlife activists whose efforts were vital in the notification of the sanctuary in the first place…’’

Except this minor difference over the sharing of honours, conservationists are unified in their stand that humans and their activities inside the sanctuary are the greatest threat to plants and animals of LRK. They believe that only ‘fences’ can protect the biodiversity of the Rann. As noted earlier, the conservationists repeatedly stated during their interviews that they are not against communities inhabiting areas bordering the WAS. They were of the opinion that it is essential to stop salt production and other anthropogenic activities inside the sanctuary which are inimical to conservation initiatives. Many of them said that prior to the declaration of the area as a biosphere reserve they had proposed the declaration of the LRK region as a national park. This would have imposed further restrictions on human activities inside the sanctuary. A senior official in Gandhinagar pronounced with an air of authority, ‘’it is an established fact that activities related to salt pans and livestock grazing are the biggest threat to species inside the Rann…to ensure that our efforts do not go down the drain we have to keep the area free from these activities….it is the duty of every citizen of the country to protect the voiceless animals.’’

When conservationists were asked to comment on the possible loss of livelihood of the Agarias due to the notification of the sanctuary, all of them stated that alternate livelihood opportunities should be provided to them. Most of them believe that the forest department is not liable for the provision of livelihood to Agarias. As pointed out by a field biologist, ‘’…Agarias can search for their livelihood in other places…if you go to the Rann you will find that they are in fact looking for other opportunities…however for the wild asses and the flamingos, the sanctuary is their only home…’’ Senior officials of the forest department also dwelled at length about the meticulous process of determination of the impact of any particular livelihood on the
ecology of the sanctuary. They added that the recognition of rights to the persons involved in prawn fishing in the LRK under the Forests Rights Act (2006) proves that they do not blatantly restrict the entry of communities inside the sanctuary. They also took the opportunity to inform the researcher about the inclusion of LRK region into the Kachchh Biosphere Reserve which is the 13th Biosphere Reserve of India and stated that this declaration mandates that officials of the department initiate eco-development activities in the transition zone of the biosphere reserve.

Conservationists stated that Agarias are unaware of the ecological significance of the region. This response indicates the failure of government efforts towards spreading awareness among the local residents. All of them are aware of the emphasis laid by international conservation bodies on the involvement of local population for the effective implementation of protected area management strategies and feel that local people can at most assist the field level workers of the forest department. In the context of the LRK, conservationists said that considering the severe staff crunch in the forest department, it will be easier to manage the sanctuary if the local communities like that of the Agarias assist the field level workers of the department rather than harming the habitats of species. These respondents feel that conservation is a scientific pursuit and pointed out that with the advancement of science there will be an increasing reliance on the use of technology for the management of protected areas in near future. These viewpoints further highlighted the perception among conservationists that rather than contributing to conservation initiatives, Agarias through their various livelihood activities damage the ecosystem. By defining a limit to the extent of involvement of Agarias in the conservation initiatives, they emphasised upon the superiority of their knowledge and undermined the conservation beliefs of Agarias.

Drawing upon the discussion of Hannigan (1995) on the essential factors for the construction of environmental problems, it can be said that all the factors noted by him can also be identified in the conservation initiatives undertaken in the LRK. The international and national scientific community through its research validated the claims of conservationists regarding the threat to biodiversity in LRK due to human activities. Once stamped with scientific authority, the ‘popularisers’ (p.77) which in this case comprises of the forest officials and wildlife activists, disseminated the claims among
wider public. The abundance of print and electronic media reports on the LRK and especially on the wild asses indicates the important role played by media. Most reports present the issue of conservation in the LRK from the perspective of conservationists. The researcher himself came to know about wild asses after he viewed a programme broadcast on national television on the threats to the animal and the urgent need for its protection from human activities.

The symbolic and visual dramatisation of the threat to biodiversity of the LRK through still photographs and videos of the Indian wild asses, who are depicted as silent sufferers of the human actions destroying their only habitat in the world, has also drawn the attention of the public towards the claims of conservationists. The need to protect the unique biodiversity of Rann for future generation has been noted as the major incentive for conservation initiatives during the interviews and also in the publications related to the LRK by the conservationists. It is seen that these initiatives to protect biodiversity are mostly government funded. Discussed in detail in chapter 8, a few development sector professionals working with the Agarias have pointed out that prospective economic benefits are also causing private sector companies to fund the conservationists and their campaigns.

This discussion on conservationists and their viewpoints can be concluded by stating that they are convinced about the threat to biodiversity of LRK by human activities. Through the frequent usage of words and phrases like ‘threat’, ‘threatened’, ‘endangered’, ‘loss of gene pool’ and ‘extinction of species’ they attempted to describe a looming crisis which can only be thwarted by applying the scientific knowledge of conservation. According to them, keeping people away from the area is essential for the success of their conservation strategies. They wanted to convey that the existence of the only natural population of the Indian wild asses in Gujarat should be seen as a matter of pride for the people of the state and also for the country. They wished to convince everyone that it is the duty of every citizen to support their efforts as losing this endangered species will be a matter of shame for the state and for the country.

The emphasis laid by conservationists on the need to protect the biodiversity of the Rann for the future generations and in view of the intrinsic importance of the various
species, especially when some species like the Indian wild ass has only one gene pool left, highlight both anthropocentric and biocentric positions on conservation. Their underlying assumption about an existing balance of nature alluded to by Adam (1997) can be noted from the discussions with them. It also emerged from the interviews with these respondents that they seek advancement in scientific research on the issue of biodiversity in the LKR, wish for further technological advancement in protected area management and feel that the use of advanced equipment and applications is essential for efficient wildlife management. It is evident from the interviews with conservationists associated with LRK that they want to delineate conservation from the various socio-political processes in contrary to the theoretical claims that conservation was not only a scientific practice but also a socio-political process (MacDonald, 2003; Colchester 2003; Sarkar, 2005). It is also very clear from the interviews that they value the protection of the flora and fauna above the welfare of local communities in the area. This stand is highlighted by the argument forwarded by a senior scientist in favour of the restriction on salt production, ‘...the cost borne by the Agarias is minimal compared to the price that the entire human race has to pay when a species becomes extinct...’

7.2. Spirits, Pigeons and Salt Dunes

‘...may the noble spirits residing in the Rann protect me from evil and allow me to dig the earth to sustain my family...may I be forgiven if I harm any creature of the Rann unintentionally....’ These prayers are offered by most Agarias on the small altar built by them near their hut before they initiate activities related to salt production for the season. The key ingredients for the description of the Rann and its biodiversity by the Agarias came from their association with it through their livelihood activities. This description differed distinctly from the one provided by conservationists in the earlier section. While conservationists spoke of the Rann in terms of physiographic and taxonomic terminology, Agarias depicted the Rann through their stories, songs and parables. A major difference between these two descriptions also arose from the fact that conservationists emphasised upon the use of a common scientific language, while the stories told and the tunes hummed by Agarias to narrate their association with the Rann, varied with each respondent. Before embarking upon a discussion on these
Chapter 7

descriptions, it has to be pointed out that during the interviews most Agaria respondents of the second and third groups under Category I described their connections with nature very briefly, even after the questions seeking the information were rephrased several times. The stories and songs which spoke of their lives in the Rann and detailed in this section have been mostly collected when the researcher participated in the daily activities of their lives during his stay with them in the village and in the Rann. The observations made during their religious festivities and social functions threw further light on these connections.

The origin of the Rann is a part of the story narrated by Agarias regarding the beginning of salt production in LRK. They mentioned that during the time of their ancestors massive earthquakes shook the earth, ‘the earth trembled like a leaf for many days due to the dharti kamp (earthquake)’. As a result of the earthquakes the sea which extended upto their villages receded and its bed was elevated, which became the Rann. Agarias associate the formation of Bets with trees and drinking water in the midst of the barren tract to the epic of the Mahabharata. Respondents said that being the daughter of Panchal Pradesh in Gujarat, Draupadi and the Pandavas spent a considerable period of time in the area near LRK during their thirteen year exile. On one occasion when they were required to cross the Rann, Bhima, using his mace created the Bets on the Rann for the family to rest and quench their thirst during this journey.

Agarias believe that both noble and evil spirits reside in the Rann, its Bets and in the jungles on the fringe area between their villages and the Rann. Every Agaria is scared of the evil spirits of the Rann and feels that most mishaps in the Rann are caused by them. The respondents explained that these evils exist as hawa (wind) and possess tremendous powers which include the ability to take human shape. It is believed that these spirits harm humans, mostly small children and pregnant mothers in several ways; they make people lose their direction in the Rann, cause diseases and kill cattle. Pregnant women staying inside the Rann have to take precautions against these spirits, as miscarriages can occur due to their influence. Most misfortunes related to salt production like the sudden drying of the brine in the well, formation of clumps of salt in the pata even after it is raked daily and the collision of the trucks transporting the salt to the villages from the Rann are also attributed to these spirits. Agarias think that though
these spirits move throughout the Rann, they prefer to stay in jungles in the fringe area and in the Bets. The elders pointed out that sometimes these spirits also hover over the talab (pond) near the villages after afternoon and drown people who come for a swim or to catch fish. Fire is considered by Agarias as the agent of purification and protection against these spirits. According to the village Bhūva, fire is essential to ‘cure’ any person from the influence of these evil spirits. The Bhūva performs the ritual of purification of Agaria village once every four years on the day of Kalichaudas (14th day of the dark half of Ashwin month) during which he circles the entire village with a goblet of fire. It is believed that the fire would prevent evil spirits including the ones causing contagious diseases from entering the village.

Agarias also seek protection from these evil spirits by praying to noble spirits and matas (goddesses). Noble spirits are mostly the souls of their dead ancestors who live in the Rann after their ashes have been customarily immersed in the Jinanand Kund in Jhilakeswar/Jhilandhar Bet. The Bets along with jungles on the fringe are considered very sacred by Agarias as these are the resting places of their ancestors, noble spirits and matas who protect them from evil spirits. Many places inside the Rann are also considered sacred because of their association with local legends. One such place is the Wasraj Solanki Bet. Agarias consider a visit to the temple dedicated to the Rajput hero, Wasraj Dada on this Bet to be very auspicious. This Bet also provides shelter to hundreds of stray cattle, which are cared for in the gaushala (cowshed) constructed by the temple trust. It is believed that the kund in the Bet never dries up and that its water can cure any person suffering from hydrophobia.

The respondents laid a lot of importance on showing reverence to the mata. Each mata is worshipped for a specific purpose. While Malrima, who lives in the jungle protect the women during childbirth; Shitalama and Shaktama, protect her followers from small pox and contagious diseases respectively. Due to the presence of several varieties of poisonous snakes, Mansama who is the goddess of snakes is worshipped by almost everyone to seek protection against snake bites. Goddesses likeDashama, Ranekima, Rajbai Mata and Todalia are worshipped for the overall wellbeing of families. In addition to worshipping these goddesses, other Hindu gods and pirhs, Agarias also offer their prayers to local goddesses who protect their family, locality and the village. The
mata in this category are neither placed inside temples nor are shrines erected in their honour. They are mostly represented inside the village by placing a trishul (trident) on a stone slab which is smeared with red vermillion. In the Rann, Agarias mark the spot of the mata by placing a red flag on top of a large heap of stones and surrounding its circumference with red cloth. It is a common practice for Agarias to build such sites at the spots inside the Rann where a mishap had occurred. They believe that by invoking the mata, they will be protected from evil spirits residing in that particular spot. It was observed that such sites are scattered all across the Rann and Agarias bowed their head on each occasion they crossed such spots. Every Agaria household also placed flags on the altar build near their huts in the Rann. These flags represent the Hindu god, Hanuman and other family deities. Before venturing into the Rann they offer their prayers to these gods and request them to accompany them, as without them the evil spirits residing in the Rann can harm them.

While on one hand the Agarias rever the Rann as a sacred place, they are also terrified by evil forces residing in it. It was found that the members of the community associate various taboos with the Rann. It is forbidden for Agarias to visit the Bet s and jungles in the Rann during the monsoon as spirits stay inside them during this period. Elders repeatedly point out to people going to the jungle to collect firewood that they must not touch the tender branches of trees as mata rests on them. One Agaria pointed out, ‘…we are able to live in the Rann only because noble spirits protect us when we are there, if we destroy their abode and incur their wrath then we will not be able to even step inside the Rann...’.

Religious and cultural taboos are intertwined in the conservation practices of various communities (Rangarajan, 2001; Shahabuddin, 2010). Discussing the eco-cosmology of the Makunas of Northwest Amazon, Århem (1996) has opined that imposition of restrictions on the use of natural resources through the assignment of cosmological significance to some sites is a way of efficiently managing the available resources. Though none of the Agaria respondents in the second and third group portrayed their beliefs as conservation practices, it can be inferred that the ecology referred to by conservationists is embedded in the cosmology of the Agarias. Århem has referred to this as ‘a cosmology turned into ecology’ (p.200).
Agarias are also certain that the Rann is endowed with human attributes. They perceive the Rann as someone who has sustained their community. This role ascribed to the Rann is evident from the description of their association with the Rann during successive stages of salt production. Elaborating upon the selection of the time for migrating inside the Rann the elders said, ‘…the air blowing from the direction of the Rann tells us when we should go inside the Rann…once the Rann is ready to receive us, one of us would also hear the voice of the Rann calling us…this has been happening from the time of our forefathers…’. According to Agarias, the Rann not only speaks to them but also listens to their prayers and directs them to spots where they can find brine. They believe that during the period of their stay inside the Rann for salt production, the Rann plays the role of a protector; shielding them, their families and their salt from the evil spirits. Based on the multiple roles played by the Rann in their lives, almost every respondent described the Rann as their parent. They said, ‘…like a mother feeding her child; the Rann offers us brine to sustain our families…’, The statement, ‘the Rann is like our parent’ occurs in the transcripts of almost all the Agaria respondents.

Drawing upon the findings of studies on communities around the world by different scholars, Bird-David (1993) has pointed out that the ‘adult - child caring’ metaphor is relied upon by the members of various communities to express their relationship with nature (p.118). In addition to this description of the Rann as a parent, the researcher heard several Agarias telling their small children that ‘if they are not obedient, the Rann devta will come and take them away’. According to Greider and Garkovich (1994), such multiple interpretations of a physical space are entrenched in the symbolic transformation of the natural environment into ‘landscapes’ by cultural groups (p.2). They have highlighted that these symbols and meanings are constructed socially using culture as a resource.

Muhlhausler and Peace (2006) have argued that language has always been relied upon to explore the connection between human and nature. As seen above, it is the language of Agarias which throws light upon their association with the Rann. Agarias speak of the Rann, as if they are describing the attributes of a living person. This relationship between nature and society can also be viewed by as either ‘a natural constitution of
society or as a social construction of nature’ (Eder, 1996; p.7). He has added that domination is a marked feature of the connection between nature and society in naturalistic theories of society. He has contrasted this with the social construction of nature, as a constituent of the ‘social evolution of society’ (p.8) which views nature to be created symbolically through experiences and perceptions based on the guidelines set down by society and has rejected the view of nature as a mere objectivity. Eder has viewed social construction of nature as an amalgam of cognitive description and moral symbolisation. According to him, while the former provides a pathway for the empirical understanding of nature, the later determines the manner of interaction with nature.

The individual interactions with nature which shape the manner in which we perceive and create our own account of nature are in turn determined by our ‘culturally embedded’ experiences and expectations (Goedeke and Herda-Rapp, 2005; p.4). Building upon the argument of Berger and Luckmann (1966) that social facts are socially constructed, Herda-Rapp and Marotz (2005) have also argued that nature is constructed socially. While acknowledging the physical reality of what individuals perceive as nature, they have added that beyond the existential confirmation of various entities, individuals ascribe social meanings to them and in the process socially construct nature. According to them, this differential construction is essential for gauging human relationships with nature as it determined how individuals related to nature. This construction can also be viewed as a product of the ways in which communities related to nature. The differential constructions of the Rann by members of the Agaria community alluded to in this section also highlight that the summation of individual experiences with the Rann establish the linkage of the entire community with the Rann.

Based on the multiple images of Rann provided by the Agarias, it can be stated that members of the community describe the Rann both as a non-human and human entity. While as a non-human entity it is visualised as a residing place for both good and the evil, the human attributes ascribed to this barren expanse are that of a ‘benevolent parent’ and a ‘fiery god’. The description of the Rann as a ‘benevolent parent’ highlighted the dependency and close relationship shared by the community with the
Rann whereas the image of the Rann as a ‘fiery god’ who punished the ones who flouted its tenets pointed out the prevalent belief among Agarias that they should peacefully co-exist with the other living entities and use their resources judiciously. An exploration of the perceptions of different categories of respondents on whether this belief has been reflected in the current use of natural resources by Agarias threw open a can of divergent views which shall be discussed in the next chapter.

During his stay with the community, the researcher also observed that in addition to showing veneration to the Rann and the spirits residing in it, the Agarias also worship gods who represent elements of nature like rain, wind, fire etc. This reverence indicates the dependence of the community on these forces for the successful completion of their livelihood activity inside the Rann. Several respondents underlined the importance of a good monsoon for the inundation of the Rann and the subsequent recharge of brine wells. They further added that the earth becomes softer after monsoon showers and this makes their task of digging the wells easier. When the monsoon gets delayed, the girls of the community who have not attained puberty make a meghala, (a mound of earth on a wooden stool) and visit every house in the village singing songs inviting the rain. In every house a bowl of water is poured over the mound and it is believed that suffocated by the pouring of water, the rain god will be forced to send the rains.

The wind played an important part in indicating the suitability of the time for venturing into the Rann after monsoon. Elders pointed out that the characteristics of the wind blowing from the direction of the Rann differed throughout the year. Elaborating upon this relationship between seasonal variance in the characteristics of the wind and conditions inside the Rann they said, ‘...the wind brings messages from the Rann...to decipher it you have to stand facing the Rann and allow the wind to blow into your face...during summer, when the earth is very dry, the wind will prick your face and your eyelashes will be covered with sand particles...during monsoon the moisture in the wind will make your face and eyelashes sticky...after the rains, the day when the wind just dries your face without pricking it, we know that the time has arrived for us to load our tractors...’ Looking at the researcher attempting to ‘read’ the wind, the elders said, ‘...stay here and when your hair turns white like ours you will also be able to talk to the wind...’ In addition to signalling the time for venturing
into the Rann, the wind also plays a vital role in recharging the Rann. According to them, ‘...it is the wind which brings the sea to the Rann every year during the monsoon...’. The respondents said that the forces of nature occupy a plane which is higher than the one where all living creatures including the humans existed. Respondents added that they are also very frightened of these forces, as they believe that when angry they can destroy the lives of humans and other living beings. They said that just one untimely shower during winter and a strong gust of wind before the salt is transported from the *pata* is enough to ruin all their efforts and push them into years of penury. Respondents attempted to point out that all livelihood related activities of the Agaria are linked to the Rann and the other forces of nature and that conservation is engrained in each step they undertake to meet their livelihood needs in the barren Rann.

Centred on their belief that animals, plants and humans occupy the same plane and are created together by God, respondents informed the researcher that they consider all other living creatures as their friends. The repeated use of the word ‘friend’ when they discussed their association with other creatures of the Rann imply an attempt to justify their assertion that their livelihood activity is not inimical to the interest of wildlife as portrayed by conservationists. Most animals of the Rann are part of the beliefs, stories and customs of Agaria society. Agarias reported that many a times when someone lose their way in the Rann, the *Ghurkad* guides them back to the nearest human habitation. This is linked to the popular belief among Agarias that the noble spirits residing in the Rann rescue those who get lost by entering the body of a wild ass since it is one of the fastest creatures of the Rann. The researcher during his stay in the Rann also heard several stories where the wild ass is depicted as a friend. Village elders pointed out that long ago the asses and Agarias lived together, however with time, asses moved into the forests inside the Rann and Agarias stayed back in their villages. They said that even today when a child is born or an Agaria dies inside the Rann, asses come to meet their old friend. In their everyday usage, Agarias commonly used adjectives like ‘fast’, ‘strong’, ‘sturdy’ etc. in relation to the wild asses. It was also found that almost all references to the wild ass include the statement that the animal was a ‘silent creature’. A community leader pointed out that like members of a single family, all creatures of the
Rann including the Agarias share this trait of remaining silent under all circumstances. According to him, this trait is the biggest deterrent to raising voices against the injustice meted out to the community.

Agarias described the behaviour of wild asses and other animals of the Rann by attributing human values to them. Such ascription of anthropomorphic values to animals, as pointed out by Moore (2009), highlight that animals are valued by the community due to a close relationship shared with its members. Agarias said that during their stay in the Rann, animals are their only friends and they share a bond with not only the wild asses but with all the other animals of the Rann. They added that during the prolonged dry spells in winter, animals come near their huts and they provide them water from their own stock. They claimed that inspite of the severe crisis of water inside the Rann, no Agaria has ever chased a thirsty animal away. By using phrases like, ‘*we drink water from the same source*’, Agarias tried to describe that they do not compete with wild asses for drinking water, but share the most precious resource in the Rann with the animals. They told the researcher that the act of sharing the scarcest resource in the Rann with the wild asses clearly indicate that animals of the Rann and Agarias constitute one family.

Members of the community also discussed in detail the manner in which they gauge the behaviour and movement of wild ass herds by observing their hooves and dung.

The nilgai (*Boselaphus tragocamelus*) and the cow are considered very sacred by them. The cow is worshipped on *Bor Chuath*, the fourth day of the dark half of the month of *Shravan*. The chinkara (*Gazella bennetti*) also finds mention in several stories of the Agarias. In one of these stories, the animal guides a very poor Agaria who removed a thorn from its foot to a pot of gold hidden in the *Bets*. Such stories commonly narrated to the children, reiterate the close linkage of the community with the animals. These stories highlight the importance of caring for animals and also tell the children about the habitat and behaviour of the animals. Some elders noted that years ago several herds of blackbucks (*Ántilope cervicapra*) used to roam in the jungles near their villages. The Agarias think of wild boars (*Sus crofa*) as a menace and repeatedly told the researcher, ‘*beware of the wild boars*’ every time he had to go in the open to answer nature’s call in the dark.
Besides wild boars, Agarias are scared of snakes. It was observed that the worship of Mansama, the goddess of snakes is an integral part of the daily lives of Agarias and can be linked to the frequent cases of death due to snake bite in areas near the Rann. The researcher was informed that among the commonly found snakes, common blind snake, ‘chakaran’ (Typhlops braminus) and rat snake, ‘dhaman’ (Ptyas mucous) are non-poisonous whereas the bite of the snakes; saw scaled viper, ‘phoorsa’ (Echis carinatus), cobra, ‘nag’ (Naja naja), common krait, ‘kalotaro’ (Bungarus caeruleus) and russel’s viper (Daboia russelii) cause instantaneous death of the victims. Agarias also pointed out the association of the community with avifauna of the Rann. They told the researcher that pigeons ‘kabootar’ (Columba livia) and sparrows ‘chakki’ (passer domesticus) are considered by them as family members and that these birds also migrate into the Rann with them. These birds were seen nesting on the walls of each Agaria household in the Rann and they endure the harsh conditions of the Rann. In addition to these birds, the crested lark ‘ghaghas chandul’ (Galerida cristata), rose-ringed parakeet ‘popat’ (Psittacula krameri), chestnut-bellied sandgrouse ‘batavdo’ (Pterocles exustus), spotted owlet ‘chibri’ (Athene brama), common Indian nightjar ‘deshi chhapo’ (Caprimulgus asiaticus), yellow wagtail ‘pilakiyo’ (Motacilla flava), swallow ‘ababil’ (Hirundo rustica) and sunbird ‘phul chakli’ (Nectarina asiatica) find mention in the stories narrated by Agarias. Agaria women consider the common crane ‘kunj’ (Grus grus) as their brother. It is believed that married women share their woes of living in the Rann with the crane and the bird takes the message from the Rann to her maternal home. Children rush out of their huts in the Rann and shout ‘mama ki jaan’ (the marriage procession of our uncle) when they see cranes flying across the sky. Respondents stated that they are aware of the migrating birds visiting the Rann during the winter for breeding. Due to the popular belief that hurting the birds or their eggs make people childless, no Agaria harms these visitors.

The community possesses extensive knowledge regarding the economic value and medicinal properties of various plants in the region. To explore this association, the researcher took guided field trips with the local medicine man and members of the Agaria community to the jungles on the fringes of Kharaghoda and the Bets inside the Rann. Illegal charcoal making from Prosopis juliflora was going on in the Bets visited.
by the researcher. In couple of Bets, the persons involved in the process of making charcoal doused the fire mistaking the researcher to be someone from the forest department. The researcher was informed that an alliance between rich land owners and forest officials ensured that charcoal making continues unabated inside the Rann.

Based on his discussions with Agarias, the researcher found that the community is connected to the plants around them through their ‘janma nakshatra’ (birth constellation). Each member of the community is assigned a plant species by the local priest based on the birth constellation and it is the duty of the person to take care of plants of that species. In addition to the allocated plant species, the community attributes religious significance to the ‘vad’ (Ficus benghalensis), ‘pipal’ (Ficus religiosa) and ‘ambo’ (Mangifera indica). A stock of dried leaves of Henna plant (Lawsonia intermis) is maintained in every Agaria household in the Rann. Agarias use the leaves as a coolant against the heat produced inside their gum boots during the long hours of work inside the salt pan. The scientific names, local names and use of the plants as identified and described by the local medicine man during the field trips have been listed in Appendix VI. The medicine man stated during the discussion on traditional system of medicine that based on the principle of ‘oneness of all living creatures of a particular region’, medicines derived from plants in LRK region are fully effective on people belonging to that region. Referring to the mythological story of Lord Hanuman fetching the ‘sanjeevani’ herb from the Himalayas, he added that in this system it is not only essential to diagnose the disease but also to make a remedy from the plants found in the region to which the patient belongs. He firmly believed that altering the harmony of this oneness by either removing any plants species, animals or humans will be detrimental for all other creatures of the region.

While the local medicine man and Agarias stress upon the unity of Agarias and the Rann, the presumption of Agarias being a part of their environment is contrary to western thought. The nature-culture dichotomy reinforced by the Cartesian distinction between mind and body has been fundamental to western thinking (Howell, 1996; Moran, 2006). This view of humans being separate and above the environment in which they inhabit proceeds from the conceptual split between nature and society and has led to the conquest of the former by the latter (Goedeke & Herda-Rapp 2005; Sutton & Anderson, 2010). Ingold (2000) has pointed out the underlying ‘master narrative’ of
humans transforming themselves through their mental ability and labour and rising above other animals (p.78). This Cartesian dichotomy of Western society is not a rule and has not been witnessed in cultures around the world where humans have always been considered as a part of nature and not separate from it (Moran, 2006).

The distinction between the western and non-western understanding of the relationship between humans and non-humans can be further elaborated from the work of Ingold (2000) with hunter-gather societies. Contrasting the ‘economy of knowledge’ (p.47) as conceived in western anthropology with that of the people themselves, he has remarked that the western view distinguishes interactions between the organism and the environment from the social realm consisting of the ties of the person with the society (Figure 7.4). Ingold has added that in the accounts of hunter-gathers, the division of the world into nature and society disappears and humans figure as ‘organism-persons’ (p.47) and are connected to all other entities in their environment. He has further commented that in such societies humans acquaint themselves with the plants and animals by getting involved with them directly, in a manner similar to the process of familiarisation with other people in the society.

![Figure 7.4: Western Anthropological Economy of Knowledge](image)

The beliefs of Achuars of the Upper Amazon considering plants and animals as persons with rules of social behaviour (Moran, 2006), lack of system of categorisation for animals among the Chewong of Malay rainforest (Howell, 1996), the notion of masa which refers to the ‘humanness’ of all beings and dictates the actions of Makuna of Northwest Amazonia (Århem, 1996; p.200) are evidences in support of the argument...
that the dualist model is incapable of describing the relationships between humans and their environment across diverse cultures. Moran has argued that the dualistic model has failed to explain the realities of both non-western and western cultures. Rather as remarked by Århem, reciprocity which marks the social practices of subsistence cultures shape the relationship between humans and their environment in these cultures. Howell has further suggested that such societies conceptualise humans as intrinsic part of the natural world and not as separate entities.

In the opinion of Descola (1996) one must refrain from applying the dualistic view of universe on cultures which do not fit into this conceptualisation. To conclude, it can be stated that the belief of the local medicine man that his remedy for snake bite will not cure Agarias who violate the sanctity of forests, the reverence shown by members of the Agaria community towards the Rann and other forces of nature while carrying out their livelihood activity, the linkage of customs and rituals of the community with nature and the association of Agarias with the flora and fauna of the region depicted in songs and tales narrated by them highlight the reciprocity in the interaction between Agaria and Rann.

It can be further argued that the dualistic model which considers humans as separate from their environment and is fundamental to the tenets of scientific conservation fails to explain the relationship shared by Agarias with the Rann. Agarias believe that conservation is entrenched in every activity of their daily life performed during their stay in the village or while they stay inside the Rann. Unlike the viewpoint of conservationists, Agarias consider themselves to be a part of Rann and that they should not be seen as an entity separate from it. Describing this association between the Rann and members of the community, a ninety-three year Agaria old lady said, ‘…when I was a child the Rann was my guardian, as a youth I spoke to it as my friend, now as an old lady I see the Rann as my own child and very soon after my death we shall become one…’