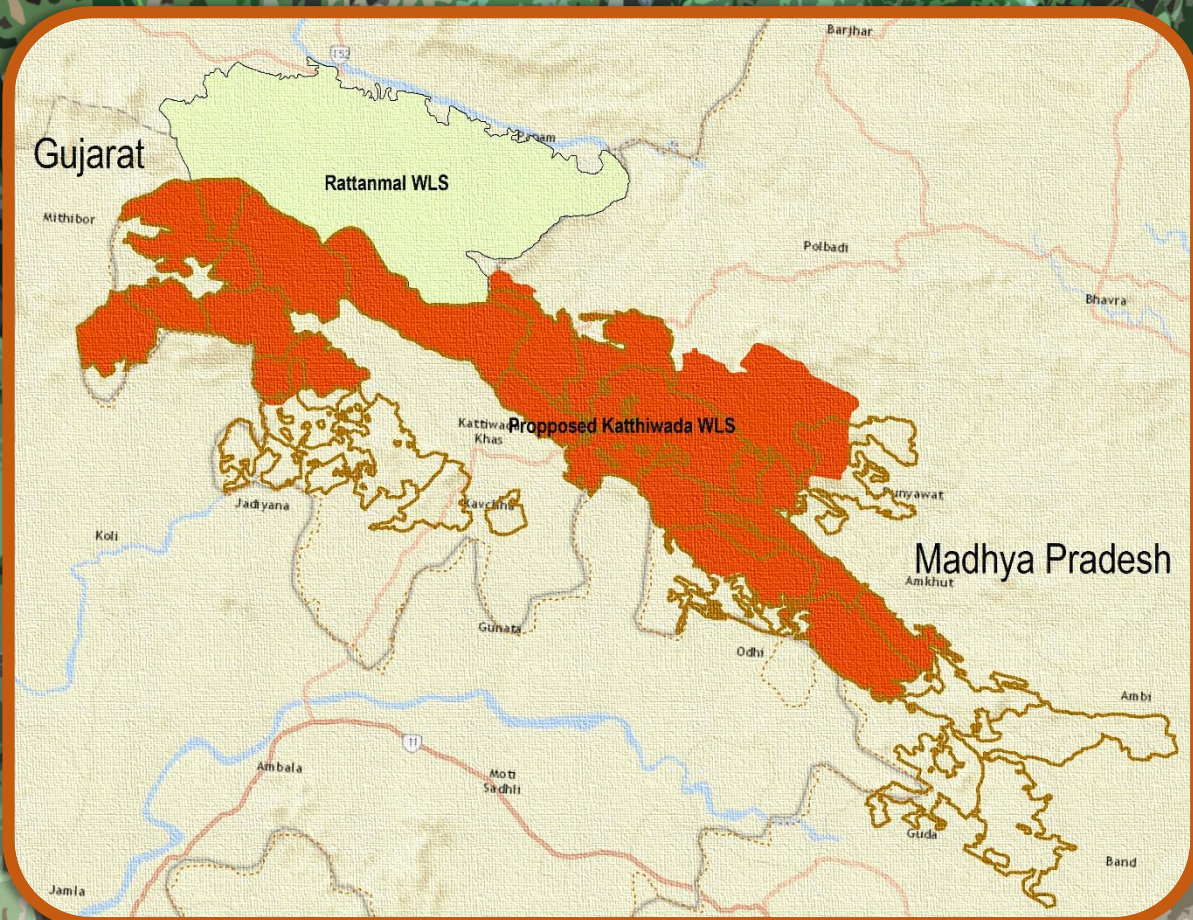


Feasibility Study of Proposed Katthiwada Wildlife Sanctuary, Madhya Pradesh Rapid Assessment Report



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Chapter 1 - Introduction - Feasibility Study of Proposed Katthiwada Wildlife Sanctuary, Madhya Pradesh

- 1.1. The Government of India, MoEFF &CC, vide its memo no. 3-87/80-IA (08.09.1987), accorded the diversion of 133385.45 hectares (92731.00 ha only in Madhya Pradesh) of forest land for the Sardar Sarovar Project (SSP). However, on the condition no. (xii) vide memo dated 6th January, 1989, GoI, MoEF & CC suggested to set up a committee to take up necessary steps for conservation and management of wildlife at the cost of the SSP. Consequently, the committee recommended the constitution of Mathwad and Katthiwada as wildlife sanctuaries in Madhya Pradesh.
- 1.2. The Government of Madhya Pradesh, Narmada Valley Development Authority (NVDA) requested the Narmada Control Authority (NCA) to examine the issues pertaining to setting up of the proposed WLS. The NCA decided on the it's 42nd meeting at the Environment Sub-Group to conduct an EIA of proposed WLS. Consequently, the NVDA outsourced the study entitled "*Evaluation of the Ecological and Socioeconomic Consequences of Setting up of Proposed Mathwad Wildlife Sanctuary and Katthiwada Wildlife Sanctuary, Madhya Pradesh*" to the Wildlife Institute of India, Dehradun under a Memorandum of Understanding (MoU) signed in January, 2007.
- 1.3. The WII team conducted the study from February 2007 to October, 2007 involving desk review; field data collection on ecological and socio-economic characteristics; assessment of human disturbance and remote sensing and GIS analysis.
- 1.4. On the basis of evaluation of the available forest cover, wild animal presence, landscape attributes (ridges, valleys, water sources, village settlements, proximity to forest areas) – attributes that are vital for survival and reproduction of wildlife occupying and using the area and also considering the socio-economic assessment, the study recommended the establishment of only the proposed Katthiwada WLS but not the Mathwad WLS. The study recommended the inclusion of forest compartments 468 to 475, 453 and 532 of Bhabhra Range (13.67 Km²) in the proposed Katthiwada WLS as it provides additional habitat of good quality to a number of wildlife species. The total area of proposed Katthiwada WLS would be 106 Km².
- 1.5. The study also found that socio-economic and cultural context wherein a predominantly Adivasi population of *Bhils* and *Bhilalas* reside and eke out a livelihood from the farm and forest of these areas. This presents specific challenges as well as opportunities for

conservation in the area. The households depend on forests for fuelwood, fodder and NTFP for subsistence or sale. These resources are vital to the households and there is little or no capacity within these households to purchase fuels and source fodder. Farm productivity also being low on account of poor soils and lack of adequate farm inputs, people resort to seasonal ‘out migration’ and cultivation along sub-marginal tracts within the forests.

- 1.6. The Environment Sub-Group of the NCA during its 48th Meeting held on 1st April, 2010 identified that the declaration of Katthiwada WLS as per recommendation is required to be accomplished in time and NVDA was requested to provide an action plan towards the same. Officers of the State Govt. of Gujarat assured no objection in charging of cost of Katthiwada WLS to Unit-I of the SSP. In pursuance, the NVDA submitted an action plan for ensuring notification for the sanctuary with approvals of the Wildlife Committee. The M.P Forest Department further suggested, based on the WII report 2007, that the establishment of the Katthiwada WLS would involve relocation of 6 villages and overall costs were estimated to be INR 64.67 crores in 2008 that would be shared among States.
- 1.7. In order to facilitate timely declaration of WLS, the NCA committee sub-Group conducted a follow-up field survey of the ground realities in proposed Katthiwada WLS, between 22nd – 23rd October, 2010. The committee suggested that misinformation in the minds of the local inhabitants should be addressed. The committee recommended that existing rights of the inhabitants which include *nistar* rights be maintained. The committee also recommended that Govt. of Madhya Pradesh notify Katthiwada WLS under section 18 of Wildlife Protection Act, 1972, as early as possible and funds may be allocated for disposal to the Forest Department, Madhya Pradesh.
- 1.8. The Secretary, Govt. of India, MoEF & CC vide D.O letter No. 3/87/80-IA-I(pt) dated 21st July, after discussions with Govt. of Madhya Pradesh 2016 directed WII, Dehradun to carry out a quick survey of the proposed WLS and submit a feasibility report of Katthiwada forest to be declared as ‘Sanctuary’ or ‘Natural Reserve’ as ground situation may have changed radically following the initial EIA study that was conducted in 2007.

In response to the aforementioned request, vide letter No. WII/DWII/Misc/03/2014 dated 24th July, 2016, a team of WII faculty and researchers was constituted to conduct a rapid assessment of the feasibility of establishing Katthiwada Wildlife Sanctuary, Madhya Pradesh. Two external scientists who were part of the earlier study were also co-opted.

The present study was conducted with the following objectives:

1. To conduct a rapid assessment of bio-diversity values of the proposed Katthiwada WLS
2. To conduct a rapid assessment of social sentiments regarding the proposed Katthiwada WLS from relevant stake holders and project proponents.
3. Suggest feasible recommendations and mechanisms based on ground situation of Katthiwada

The conclusions and recommendations made in this study involve inferences made from a visit of the proposed Katthiwada WLS along with various officials of the Forest Department staff and NVDA, and the discussions held with NCA officials and villagers of the concerned area from the period of 2nd August to 6th August 2016.

Chapter 2 – A rapid assessment of bio-diversity values of proposed Katthiwada Wildlife Sanctuary (KWLS)

2. Scope of the Assessment

The task broadly included a rapid appraisal in two stages viz. (i) desktop review from existing sources and field visit to assess existing values associated with biodiversity of the proposed Katthiwada Wildlife Sanctuary (KWLS, Fig 1) (ii) GIS and remote sensing based assessment of changes that may have occurred since its last assessment in 2007 by WII. As the study area has been extensively studied earlier in context of its characteristics for suitability as a wildlife protected area, this current assessment only addresses three main concerns towards wildlife, i.e.

- a) Assess the viability of such an area as a conservation unit for long term conservation benefits, keeping in mind earlier assessment and likely change (2007 to 2016) in ground reality
- b) Suggest appropriate scientific management interventions for enhancing effectiveness of PA as a compensatory measure against the SS project impact to ensure long term conservation benefits

Keeping this broad framework, the following objectives were visualized:

2.1 Objectives

- a) Assess the quality of forest cover changes in the Proposed Katthiwada WLS study area (KWLS)
- b) Assess the spatial presence of animals namely large carnivores and herbivores in the study area
- c) Assess anthropogenic pressure in terms of domestic livestock and human-wildlife conflict in the study area

2.2 Methodology

2.2.1 Desk Review

Secondary information from existing studies by WII, SFRI and NCA as well as the working plans of the Jhabua/Alirajpur District were obtained. Wildlife Census data from 2001 and 2011 were gathered from the Forest Department.

2.2.2 Field Visit

The field visit was undertaken between 2nd August to 5th August, 2016. It was considered that a rapid evaluation using standard format for animal assessment and disturbance data collection be adopted. We selected three trails of varying length for confirmation of animal presence (animal signs and tracks) based on existing information. These trails were intensively searched for mammalian species, their presence was determined through scats, pugmarks, hoof marks, claw marks, pellets, scrape marks and vocalizations.

Inquiries were made with the Divisional and Range level centers of the Forest Department regarding wild ungulates, carnivore and conflict issues pertaining to wildlife within Katthiwada range as well as in its surrounding areas.

2.2.3 Remote Sensing and Geographical Information System

Forest cover mapping classification (FSI 2014 & 2006) that was acquired was used for land cover assessment. The imageries have a spatial resolution of 23.5 m. These images have been spatially verified by the FSI and contain information pertaining to five standard cover classes (3 forest openness classes and 2 non-forest categories). We subjected the imageries to a change detection algorithm and generated class-wise change statistics for each class using ArcMap 10.2 (ESRI). Available information from forest department, i.e. (2015-16) range level census data to generate an animal intensity distribution map across various beats and compartment contained within the proposed KWLS was used.

2.3 Results

2.3.1 Ecological intactness of the Katthiwada forest tract is significant in terms of its location and forest quality. The initial observations made support earlier reports by WII (2007) as well as NCA (2010). The area has good forest cover to support wildlife. The area is still contiguous with the Ratanmal WLS in the State of Gujarat. Connectivity also is possible with the Jambughoda WLS in the South-west corner of the study area. Precise estimates of sloth bear and leopard as well as ungulate species are unavailable, however indirect evidences indicate moderate activity of wild mammals in the area.

2.3.2 Systematic sign surveys conducted across various beats revealed a healthy presence of wild fauna. A total of 9 beats had presence of leopards, 6 beats had presence of sloth bears, 5 beats contained sloth bear presence and 1 beat contained presence of jackals. Therefore, according to the census data 50% of the study area contained signs of wild carnivore species. These signs are distributed across the proposed WLS (Table 1). In comparison with the 2007 WII study, 4 beats (Bhabra, Kasatpani, Khattal and Nanibar) that were additionally sampled contained carnivore presence and overlaps between the two datasets suggesting intactness of wildlife values of proposed KWLS.

2.3.3 Grazing by livestock prominently occurs in the study area. Beat wise grazing profile displayed (Fig 2-7) approximately 10,000 goats in stock around 18 beats. Umerwada ($n = 2545$) and Andharheeri ($n = 2298$) beats face maximum pressure due to browsing by goats. The average holding of livestock per beat was estimated to be 480 ± 107.62 Cows, 549.77 ± 172.72 goats and 1030 ± 258.08 buffaloes across 18 beats that contained livestock.

2.3.4 A total effort of 11 km was walked in three trails across the proposed sanctuary and we found evidence of prey species. 3 beats viz. Harod, Kachla and Nakti were surveyed. Namely evidence of Nilgai (*Boselaphus tragocamelus*) and wild pig (*Sus scrofa*) was found. It was also observed that sloth bear primarily used the undulating terrain of the area as a wildlife corridor as well as a refuge. The sign encounter rate of Nilgai was 0.5 signs per km, while of wild pig was 1 sign per km. Bear claw marks were noted at one location. Domestic livestock encounter rate was found to be 0.50 ± 0.38 signs/km. The area is frequented by domestic herders as well as for other anthropogenic activities such as mahua (*Madhuca indica*) and tendu leaf (*Diospyros melanoxylon*) collection and other NTFP collection.

2.3.5 Secondary local ecological information from beat guards revealed that leopard, hyena, sloth bear, Indian fox, jackal, grey and Indian mongoose were reported to occur in the aforementioned beats. While among prey species; nilgai, wild pigs, Indian hare, langur, rhesus macaque and Indian peafowl occur in low to medium numbers. Therefore, large carnivore presence is indicative of the KWLS as a pristine habitat with moderate disturbance in the form of grazing and other extractive disturbances (Fig. 5). Figure 5 shows distribution of leopard, hyena and sloth bear in the proposed KWLS area. There have been 23 cases of

bear attacks on humans since 2013, of which 3 have been fatal, leading to loss of lives in the area.

2.3.6 The forest cover of the area has been classified as 5A/C1b Southern Tropical Dry Teak- Dry Deciduous, 5A/C3 Southern Tropical Mixed Dry Deciduous and 6A/C1 Southern Tropical Thorn Forest by Champion & Seth, 1968. A change analysis of forest cover class (Table 2, Fig 9) showed no change in 79.20 Km² of the forest area inside the proposed KWLS. It was found that 16.31 km² of open forest changed to non-forest between 2006 to 2014, while 11.25 km² of Moderately dense forest changed into open forest categories. The KWLS contains about 18.41 km² of Non forest area, 18.69 km² of Open forest area and 70.04 km² Moderately dense forest area. The vegetation type is mostly characterized as predominantly Dry Mixed Deciduous forest, Dry Teak Forest and Dry Scrub Forest.

Fig 1. Map of proposed Katthiwada Wildlife Sanctuary (KWLS) with beats

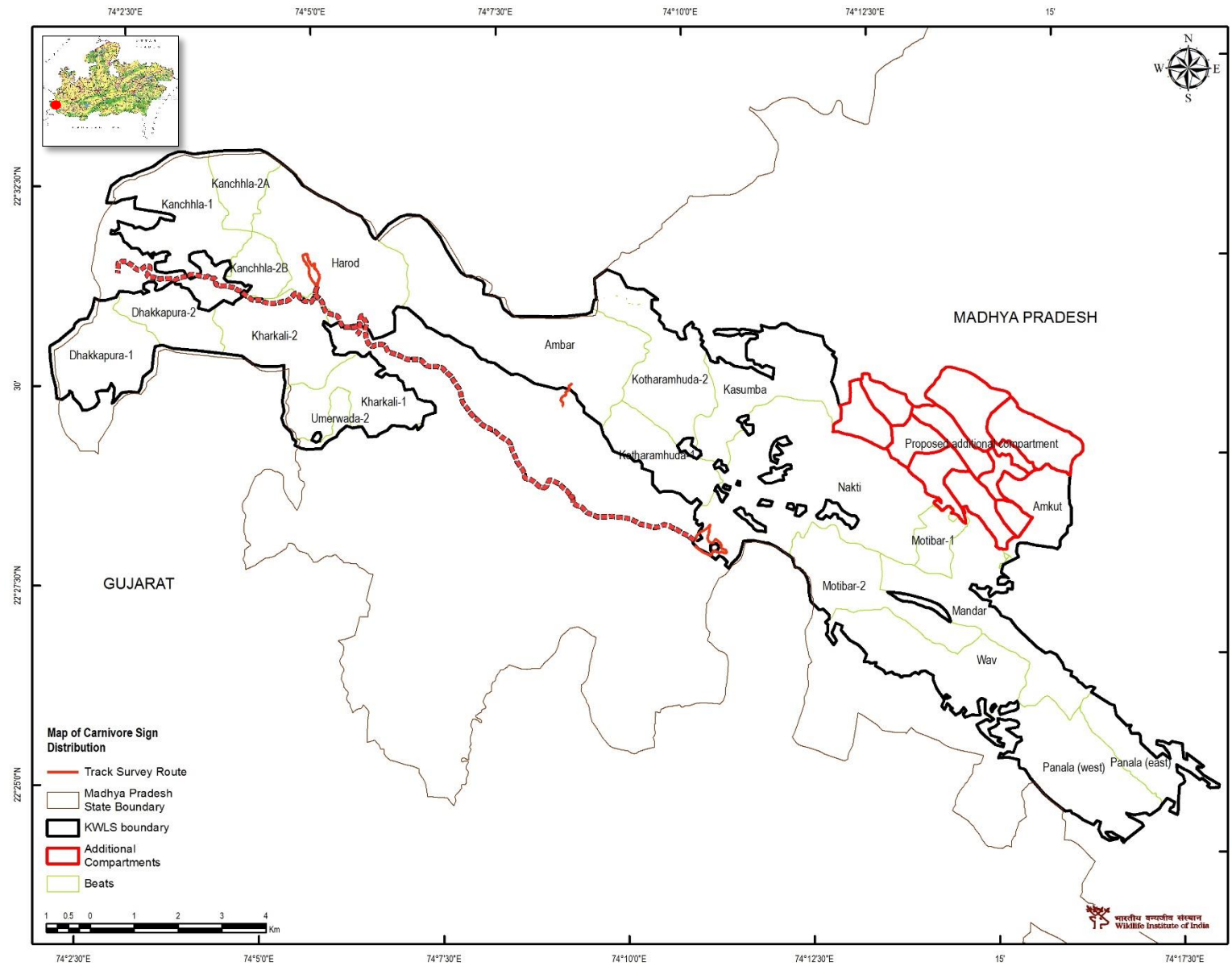


Table 1: Beat wise presence of Large carnivores in study area (source RFO 2015-16)

S.No	Beat	Compartment Presence	Leopard	Sloth Bear	Hyena	Jackal	Sign Type	2007 study
1	Kachla-A	495	Yes				Pugmarks	Leopard, Hyena, Sloth Bear, Jackal, Jungle Cat
2	Kachla-B							
3	Kotharamhuda-A	516, 485	Yes				Pugmarks	
4	Kotharamhuda-B	517, 518, 484		Yes	Yes		Pugmarks/Claw Marks	
5	Ambar							
6	Harod	490,491	Yes		Yes		Scat	Sloth Bear
7	Dhakkapura							
8	Kharkali-1							Sloth Bear
9	Kharkali-2							Hyena, Jackal
10	Umerwada-1							
11	Umerwada-2	505		Yes	Yes		Pugmark	
12	Andharjheeri-1*	513	Yes			Yes	Sighting and Scat	
13	Andharjheeri-2*							
14	Mandar							Sloth Bear
15	Amkhut	531,532		Yes	Yes		Scat	
16	Wav	540, 543	Yes	Yes			Scat	
17	Kusumba	519, 520	Yes		Yes		Scat	Sloth Bear
18	Nikti	523, 526	Yes	Yes				
19	Motibar	537	Yes					
20	Dangargav*							
21	Panala East							
22	Panala West	544, 546	Yes	Yes			Pugmark/Scat	
23	Kanera*							
24	Sarli*							

*Beats lying outside proposed KWLS

Table 2a & b. Change in forest cover class between 2006 to 2014 in KWLS.

2a.

Class	Non Forest (km ²)	Open Forest (km ²)	Moderately Dense (km ²)	Total Change (km ²)
Non Forest to	-	-	-	-
Open Forest to	16.31	-	-	16.31
Moderately Dense to	0.37	11.24	-	11.61
Net Total	16.68	11.24	-	27.93
No Change	79.20			
Grand Total	107.12			

2b.

Class	2006 (km ²)	2014 (km ²)
Forest Cover		
Non Forest	10.87	16.68
Open Forest	16.53	11.24
Mod. Dense Forest	79.72	79.20
Total	107.12	107.12

Fig 2: No. of Goat stock owned in a beat wise distribution

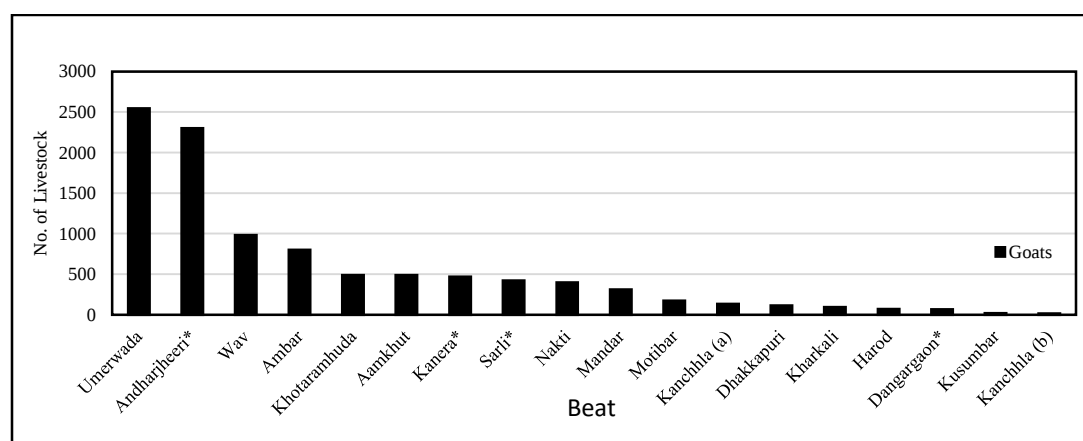


Fig 3: No. of Cattle (cow) stock owned in a beat wise distribution

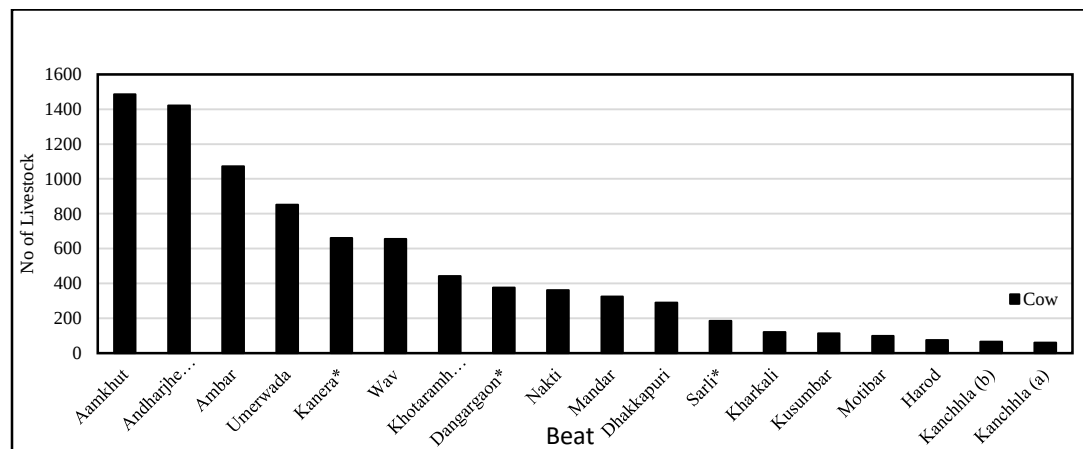
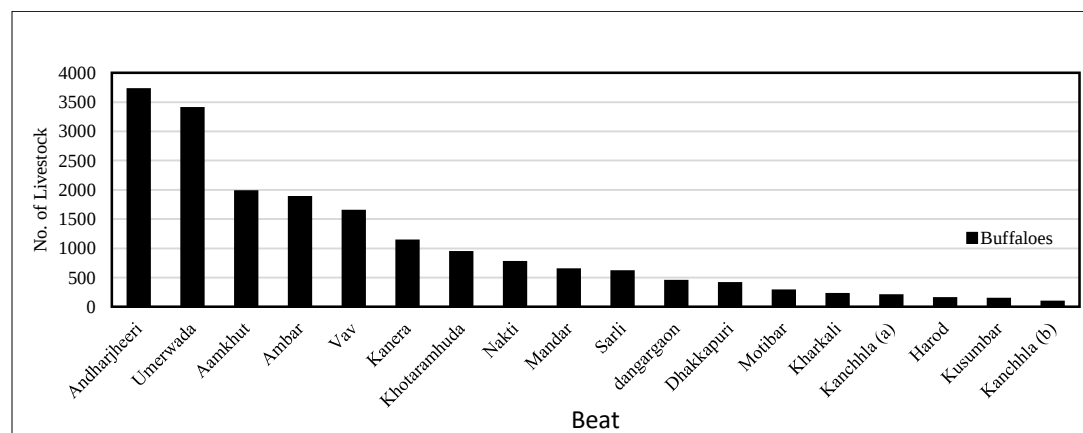


Fig 4: No. of Cattle (Buffaloes) stock owned in a beatwise distribution



*beats outside proposed KWLS

Fig 5. Beat wise Carnivore presence in proposed Katthiwada WLS

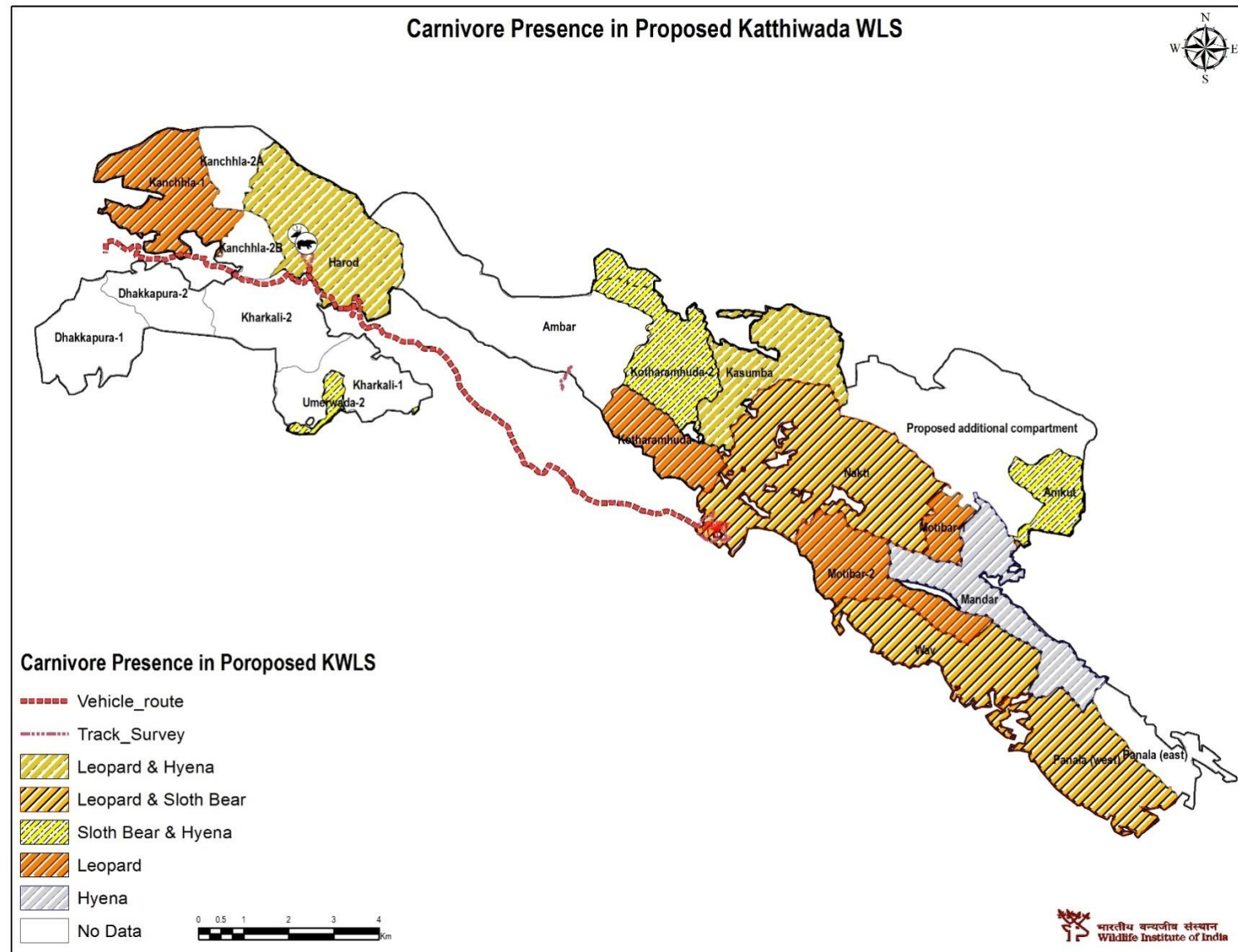


Fig 6. Beat wise Livestock numbers (Goats) in Proposed Katthiwada WLS

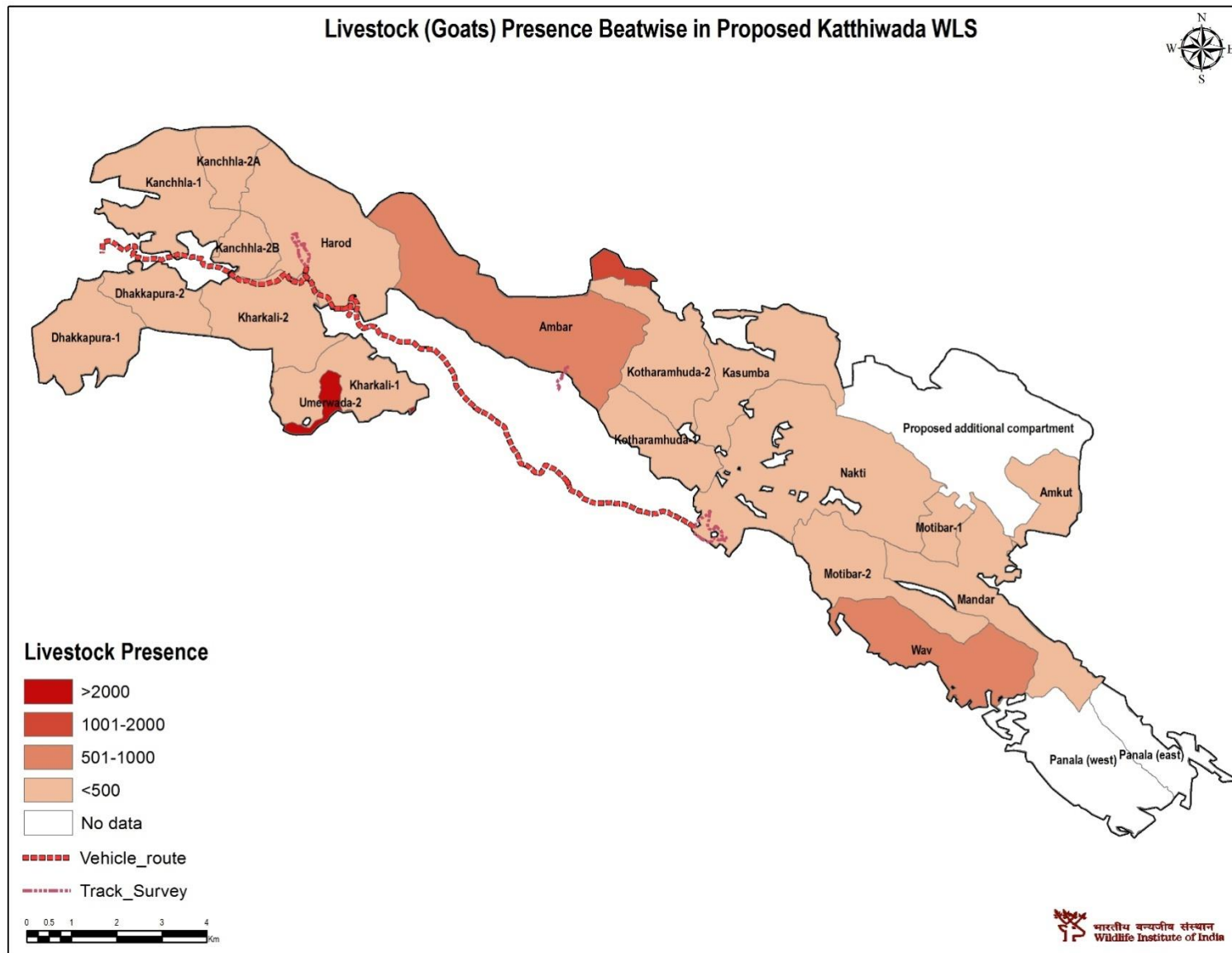


Fig 7. Beat wise Livestock number (Cows) in Proposed Katthiwada WLS

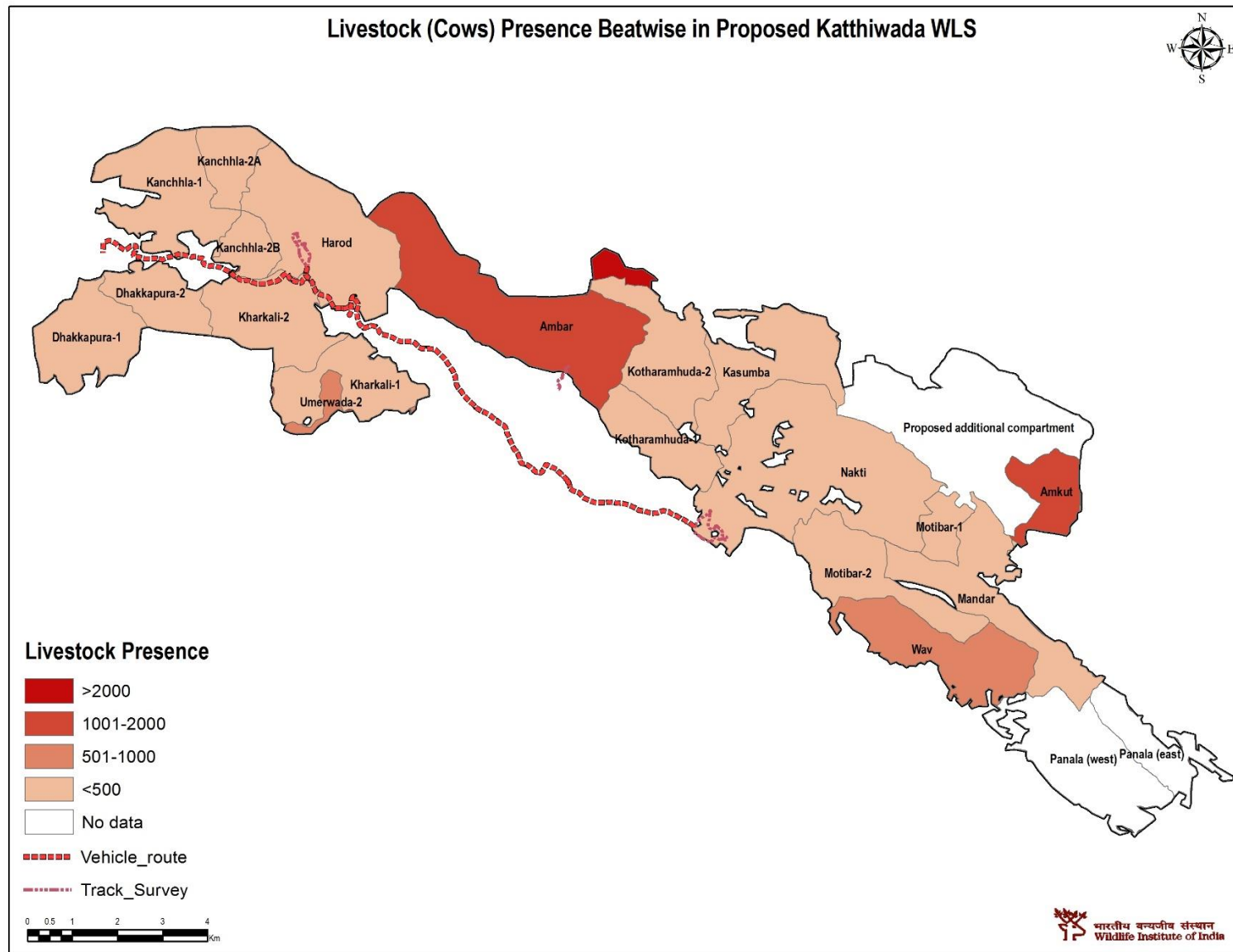


Fig 8. Beat wise Livestock numbers (Buffaloes) in Proposed Katthiwada WLS

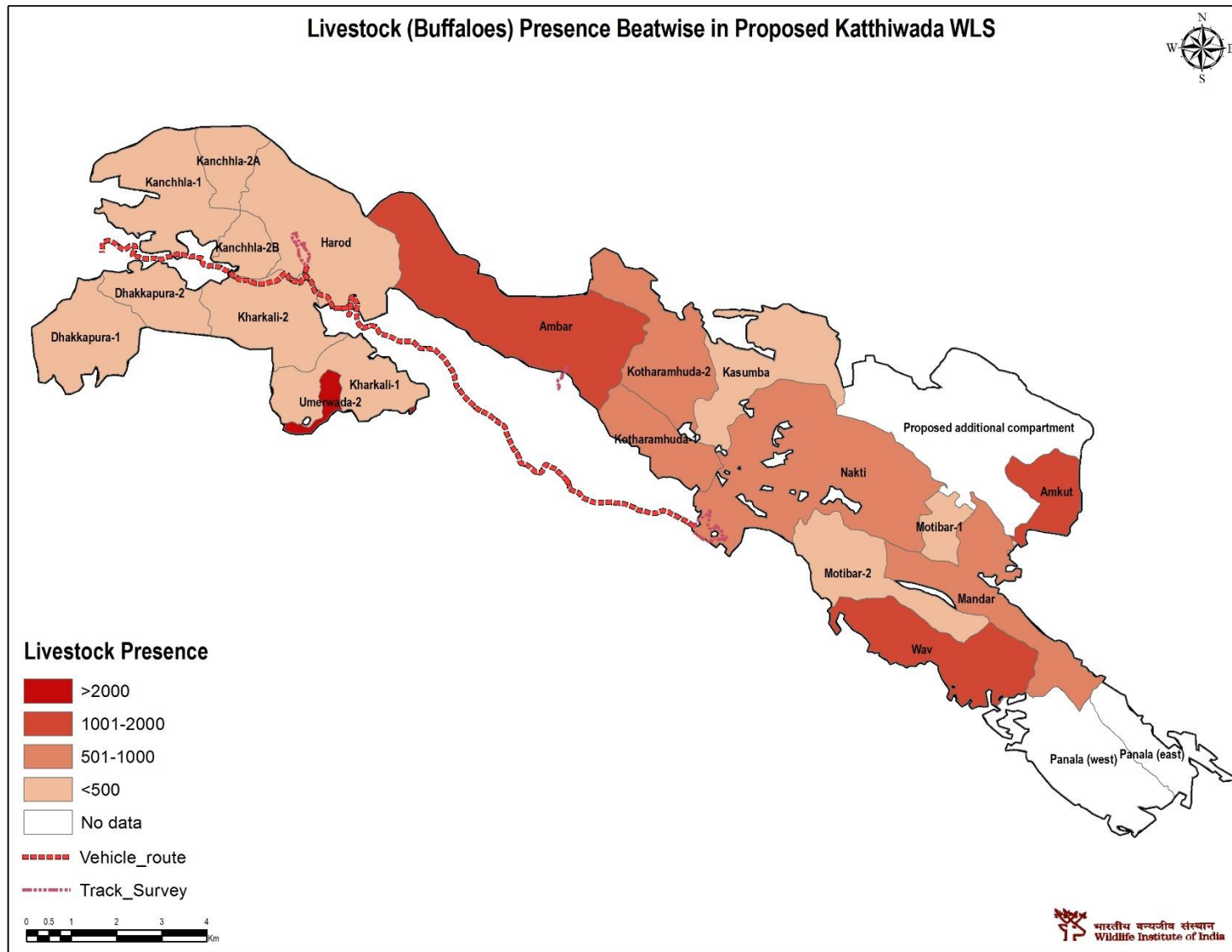
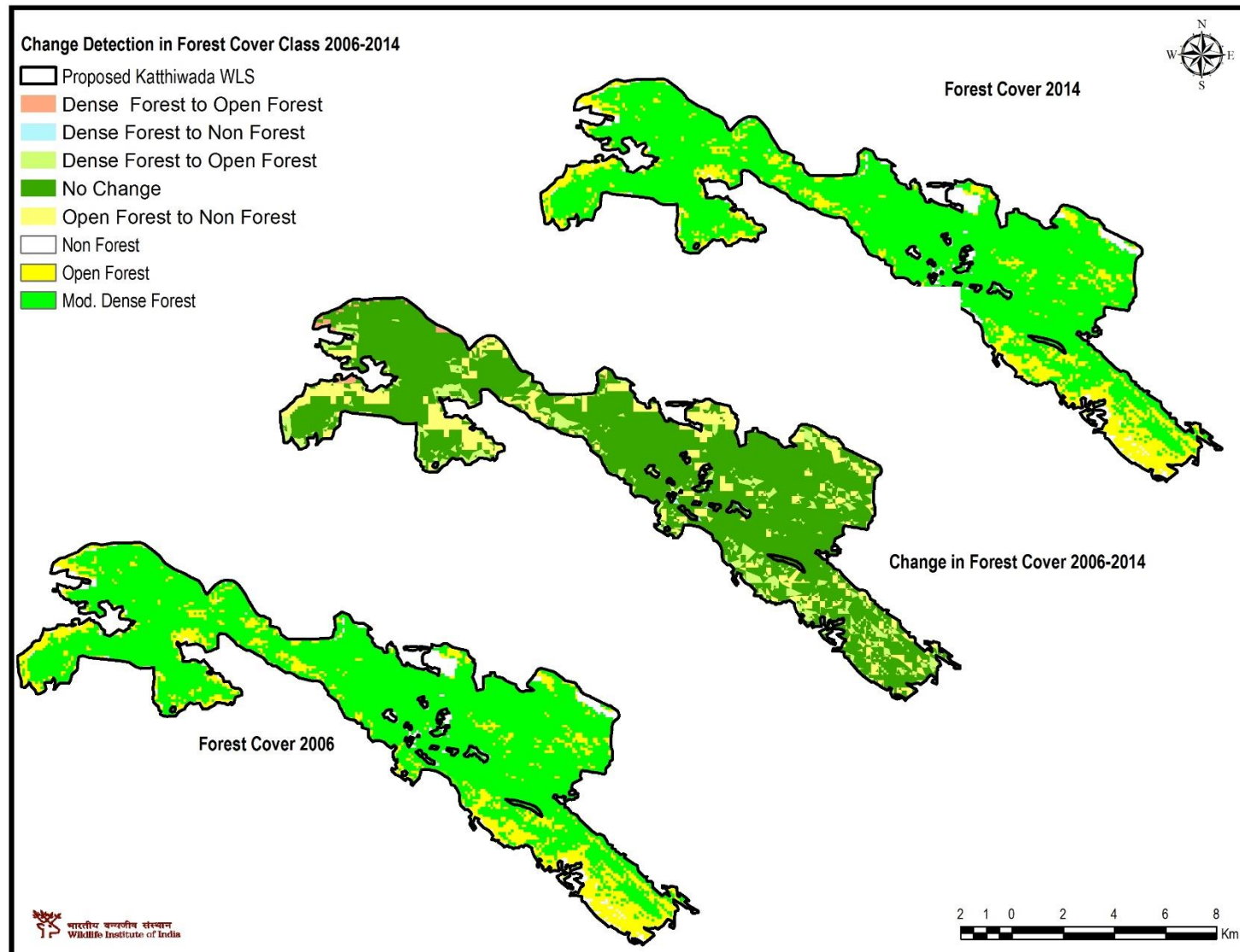


Fig 9. Change in Forest Cover Area in Katthiwada WLS between 2006-2014



Chapter 3- Sociological and Human Dimension in Feasibility Study

The study team held several meetings and interactions with the Forest Department personnel, stakeholders and villagers from Kharkali, Kaachla, Kevda, Kusumba, Nanibar, Motibar, Someshpura, Ghunt, Dhakkapura and Harod the details of which are placed (ANNEXURE VI).

Several areas of concern with regard to the protected status to Katthiwada forests and the socio-economic context of the area were touched upon in these interactions. Based on these meetings and interactions, and available secondary data the following issues emerged that need to be considered while suggesting any upgradation of legal category of forests for biodiversity conservation including the wildlife values.

1. The area is dominated by tribal communities, mainly the Bheel, Bhilala etc. Farming is predominantly rainfed. Along with the single crop (maize and some lentils) taken livestock holdings (primarily goat as evident from Table 1) and *Mahua* and other MFP are the significant livelihood sources for the population.
2. Alirajpur has the highest proportion (89%) of adivasis among all the districts of Madhya Pradesh and the proportion goes up even more for areas around Katthiwada. On perusal of the human Census of 2001 and 2011 (Table 2) one finds that the population increase is only about 12 %for the villages around Katthiwada while the Alirajpur District population growth rate was 19.45%. One of the reasons that the forests of Kathiwada have remained relatively intact is that only a fraction of the Census reported population resides in the villages in and around Katthiwada forests. Although no empirical estimates are available, yet in most of the meetings it emerged that about 60% of total worker population regularly migrate into Gujarat for working in the agricultural farms, either as daily wage labourers or as contract farmer. In other words, from almost all the families at least some members are going to Gujarat for work. Local people also suggests that whatever little prosperity one sees, is mainly associated with the opportunities in Gujarat and through remittance and working as daily wage labourers. Hence dependence of the households on the forests especially for fuelwood is actually much less than what could be estimated from the Census figures.
3. As part of the interaction with the Forest Department Staff, it was reported that while most of the tribal villages are considered quite poor, Forest Staff quickly appraise that among the villages, some are relatively more poor. These poorest of poor villages include Dabcha, Andharjhiri, Ghut, Harod, Aamjhiri, Kasatpani, Kharkali, Dhakkapura, Chimata, Kusumba, Moti bar and Nani bar. Ghunt is the poorest among all. Importantly, most of these villages are quite isolated in terms of their road accessibility. Furthermore, staff indicated that in most of the cases the lands are hilly or quite

undulating in nature and thus farmlands are smaller and difficult to manage. The agriculture land holding of majority of population is small and thus it is very difficult to produce surplus food and other items from their cultivation. Farmers mostly grow Makka, wheat, Dangar (rice), Tuar and Urdi mostly for their sustenance. Only some surplus produces are sold in market either directly or through barter system. Few large farmers also grow cotton, as cash crop, but they are in very small number.

4. Forests are also important for the food/nutritional security of tribal communities as they reported the collection of many fruits like Jamun (*Syzygium cumini*), Gular (*Ficus racemosa*) Tendu (*Diospyros melanoxylon*), Amla (*Emblica officinalis*), Chironji (*Buchhanania lanzans*) etc., leafy vegetables (like Chirothabhaji, Koliyaribhaji, Segwabhaji etc.).
5. In terms of livestock owning, goats are the most commonly reared animals with about 50-60% families have goats with average of 5-6 animals per family. Goats are reared mainly for selling for meat purpose and thus families earn about Rs. 6000 to 8000 per year. In addition, poultry is also very common. Cows are less in number but each family owns 1-2 pairs of bullocks. However, only about 50% of total household's own bullocks.
6. Local communities collect flower and fruits of Mahua (*Madhuca latifolia*) for brewing the alcoholic beverage and oil, respectively. Also, they collect Tendu leaves as part of organized collection by Forest Department. These two NTFP items alone support their livelihood in substantial terms. In 2012-13 forest department collected about 137 quintals flowers from local collectors at the rate of 15-16 Rs./kg. Later, Forest Department auctioned 118 quintals of dry flowers at the rate of 22-23 Rs./ kg. The mahua seeds have poor shelf life as it gets fungus infection and thus collectors quickly extract the oil and sell these in local market at a rate ranging between Rs. 25 to 30/ kg.
7. Tribals, being closely connected with forests and have strong traditional medicinal practices. In most of the tribal villages, it is reported that there are at least 1 or 2 knowledgeable herbal healers present. These are locally known as 'Badwa'. It is important to understand and document some of these medicinal plant related knowledge. Also population of some of the important medicinal plants (mainly herbs) which are almost at the verge of local extinction need to be conserved and restored.
8. Seed of Malkangni (*Celastrus paniculatus*) are collected by local tribal communities mainly in Kachhla, Harod, Kharkhali and Kusumba villages. The oil from the seeds have very high medicinal value and thus are in demand from Ayurvedic companies. Each household collect between half to one quintal of seeds in each season. In the local market they bartered these seeds with sugar.
9. Kala jeera or Ghodajeera (i.e. *Vernonia anthelmintica*) is another very commonly collected plant mainly from the agricultural farms. The traders, mainly from Madhya Pradesh purchase about 10 truckloads of these seeds every year. Later they sell the item in the local market with a small margin

of profit. On an average each household collects about 50-60 kg of its seeds at the rate of Rs. 150/kg.

10. Some of the other commercially important forest produces collected from the Katthiwada forests include Safed musli (*Chlorophytum borivilianum*), Karanj seeds (*Pongamia pinnata*), Achar (*Buchanania lanzan*), Baheda (*Terminalia bellerica*), Dudhi/ Kuda (*Wrightia tinctoria*), Khakhra gum (*Butea monosperma*), Dhavda gum (*Anogeisus latifolia*), Bel fruit (*Aegle marmelos*), Marodfali (*Helicteres isora*) etc.
11. Potential of developing and implementing Access and Benefit sharing (ABS) mechanisms around these products will not only conserve the biodiversity but also provide livelihood/food securities of forest dependent communities.
12. It is reported in a meeting at Kachhla that almost 50% of total families in the village are ‘*Bhagats*’ i.e. they don’t hunt animals and also not eat meat or drink alcoholic liquor. This could prove to be a significant factor for implementation of community awareness programmes for wildlife conservation.
13. In almost all village meetings, people suggested that during last many years’ population of wild animals has increased substantially. Crop damage by wild boar, nilgai and monkeys is reported from all the villages. Also, incidences of livestock killing mainly goats by leopards and human injury or in few cases even the killing by sloth bear and leopard are evident from Forest Department records. However as per the Official records (Table 3) instances of human wildlife conflicts are not widespread and appear to have reduced between 2013 to 2015.
14. In a meeting with local residents and businessmen of Katthiwada village, people even discussed about the potential of the region for promoting eco-tourism. The area has good annual rainfall and has a couple of waterfalls that is visited by tourists visit during monsoon season. The area is famous for a mango variety ‘*Noorjahan*’. There are only few trees of this variety present in Katthiwada. The mango fruits of these trees grow to exceptionally large size and each fruit may weigh up to 6-7 kg. This is a great tourist attraction. Local princely estate has recently converted their palace into a hotel/resort for tourism purpose. In a sense, area have potential of developing as a good eco-tourist destination.
15. On the issues related to prospect of managing these forests as protected area, people had raised many concerns viz.

- a) The most serious concern was about their relocation, if the area was upgraded to a Sanctuary. Also, few people raised the issue of forced relocation due to Sardar Sarovar submergence and hence people are highly sensitive to this issue.
- b) One of the most common concerns was related to their access to forest and its resources. They do not want any curtailment in their existing legally acceptable rights of collecting NTFP products like mahua flowers, tendupatta, bamboo, achar fruits, etc. Also they want continuance in existing grazing rights.
- c) In the village meetings, villagers opined that when they were not harming forests and wildlife, why there is a proposal of converting it into a PA? And if the area is upgraded to a PA what kind of activities forest department will take-up? Is there any ground to be release of wild animals in this forest from other areas? And if so, how the people will cope-up with the increased level of conflicts? Will Forest Department erect a fencing wall around the forest so as to stop livestock grazing in Sanctuary?
- d) Other important concern was related to development infrastructure. Many villagers feel that if the forest area is upgraded to a sanctuary, then many essential development infrastructures like roads, electricity line, water pipeline etc. may not get permission or it will take long procedure to get permission. Thus, the area will lag behind in development.
- e) Importantly, villagers also mention that it is essential to manage these forests to get some positive outcomes like better management of forest leading to better management and control of HW conflicts; better soil-water conservation work; more focus on development of ecotourism and better development of NTFP based enterprises etc.

Table 3: Human population

Name of Village	2001 Census		2011 Census		Forest Area (ha)	Location
	HH	Population	HH	Population		
Agran	63	377	80	481	146.7	+
Airan	NA	NA	136	745	0	+
Alindra#	114	670	NA	NA		+
Ambar	82	477	88	496	196.1	+
Amkhut	403	2144	513	2169	448.1	+
Bhajiya	6	46	72	360	123.4	+
Bhumel#						+
Dhakkapura	NA	NA	66	333	227.2	+
Gadola	76	423	NA	NA		+
Ghunt	41	195	55	363	479.5	+
Golamba	NA	NA	120	638	295.2	+
Harod	40	160	51	318	647.8	++
Jetpur	48	277	66	388	223.6	+
JunaKattiwada	42	268	52	276	206.2	+
Kabricell	NA	NA	84	518	44.3	+
Kadwal	255	1593	240	1451	229.4	+
Kalmaja	51	383	53	462	196.9	+
Kanchhla	63	343	100	489	409.4	+
Karah	60	392	88	522	656.5	+
Karelimahudi	76	631	87	473	147.3	+
Kasatpani	52	307	61	382	487.4	+
Kewda	12	87	22	141	419.4	++
Kharkali	67	368	84	516	501.5	+
Khattal	16	158	21	149	198.1	+
Kotharmahua	NA	NA	42	245	129	+
Kusumba	40	247	36	198	468	++
Mal#	74	421				+
Mandhar	125	876	131	711	774.7	+
Medharpani#	24	120				+
Melamba#						++
Mordha	54	400	70	495	38.6	+
Motibar	16	100	27	201	439	++
Muljipura	26	172	31	178	0	+
Nanibar	20	136	28	150	257.2	++
Nanrampur#						+
Padola	38	276	45	242	344.4	+
Panala	91	620	105	621	335.1	+
Piprgota	100	606				+
Pratappura	67	462	84	451	312	++
Ratanmal#						+
Satpal			17	81	408.8	+
Sayda	38	284	69	383	41	+
Wav	155	1029	174	1239	337.9	+
Total	2435	15048	2998	16865	10169.7	

Not a Census Village, but a hamlet of some other village, ++ enclaved village, + located within 1 km boundary of proposed KWLS, Source: Census 2001 and 2011.

Table 4: Livestock Population (Source - Forest Department)

Table : Livestock population in Villages that falls under Kathhiwada Range				
Village	Bullock	Cattle	Goat	Buffalo
Aamjhiri	65	8	56	12
Aamkhut	319	281	622	16
Ambar	133	21	125	21
Ambi	180	120	280	80
Andharjhiri	32	5	84	16
BadiKevdi	43	14	65	12
Bainj	126	26	136	14
Bhuriamba	240	80	458	120
ChhotiKevdi	35	6	53	27
Chimata	51	24	161	30
Dagargaon	306	70	175	48
Dhakkapura	72	34	81	42
Dhyana	198	102	520	140
Dobaljhiri	40	20	318	60
Ghut	35	25	93	7
Golamba	199	32	110	62
Harod	45	21	71	13
Haveli Kheda	76	16	70	21
Indalavat	44	17	41	1
Jetpur	135	56	344	105
JunaKatthiwada	316	68	245	90
Kachhala	103	80	135	105
Kanera	200	160	300	120
Karrah	135	49	186	47
Kasatpani	108	33	219	12
Kavachha	248	60	320	80
Kewda	11	10	64	5
Khamadka	365	299	2100	280
Kharkali	92	29	190	38
Khattal	18	13	17	2
Kherva	24	2	26	2
Kolyari	75	14	74	31
Kotharmahuda	75	27	59	8
Kusumbar	9	3	21	1
Mandhar	104	85	215	18
Morgha	85	28	90	9
Motibar	76	59	123	11
Motibar	60	38	175	12
Muljipura	68	26	103	25
Nakati	30	66	87	3
NaniBadoi	87	20	78	18
Nanibar	47	12	63	6
Padola	63	55	55	0
Pratappura	120	90	170	40
Puniyavat	624	261	326	26
Sadli	94	30	235	15
Sayada	60	24	52	14
Sayada	28	14	72	9
Umarwada	36	7	34	8
Wav	209	72	357	74
TOTAL	5944	2712	10054	1956

Table 5: Cases of Human Wildlife Conflicts

Indicative list of wildlife linked injuries to livestock and human being (Source : Forest Range Office)

Type of Losses	2013	2014 & 2015
Number of Goat killed by Leopard	14	2
Number of Cow/Bullock killed by leopard	3	3
Number of Buffalos injured by Leopard	0	1
Number of human injured by Sloth Bear	20	1
Number of human killed by Sloth Bear	1	1
Source: Kathiwada Forest Range Office		

Chapter 4. Proposed Recommendations and Trade-offs

From the previous sections, it is evident that though the area has good wildlife values for declaration of a protected area, there are strong reservation among local people regarding relocation and curtailment of access to various benefits in the form of grazing rights, collection of NTFPs and movement in the area. There are six enclaved villages inside the proposed area of 106 km² and there are 42 villages within 2 km buffer from the boundary of proposed sanctuary. The rights, both individual and community, of inhabitants of all these villages will be affected by declaration of the proposed area as a sanctuary. The settlement of rights of all people affected by creation of wildlife sanctuary has also to take into consideration the provisions of Forest Rights Act, 2006 and the settlement of rights will require free informed consent of the concerned Gram Sabhas in writing. The overall observations with respect to the floral and faunal intactness were:

- a) In light of the recent visit by the WII team, the general observation was that the proposed KWLS is still an excellent habitat for wild flora as well as fauna. It represents one of the least disturbed areas that comes under the semi-arid zone of 4A and 4B. This zone constitutes only 2.70 percent of the protected area network the country. There has been almost no change in approximately 80% of the forest area in terms of forest cover.
- b) The area must be protected through sound management practices, and should involve public participation. It was observed the area has potential in terms of eco-tourism promotion, currently much of the tourism is *ad hoc* and unsustainable. Efforts must be made to enumerate scientifically the biodiversity with respect to identifying key species for the area and landscape. The area serves as an excellent habitat for Scheduled - I species such as the sloth bear and leopard.
- c) There is continual pressure from domestic livestock in the area. Over 90% of the beats are under grazing pressure particularly from domestic goats. Efforts to reduce these pressures must be formulated to ensure long term protection of the area. Tremendous amount of NTFP is being collected from the forests of proposed KWLS. These are in the form of

mahua and *tendu* leaves. A scientific method for harvesting through community participatory mode may be adopted in future to sustain biodiversity intactness of the forests.

During the field visits on 3rd and 4th August, 2016, the team comprising of WII members and officers of Alirajpur Forest Division interacted with members of some Gram Sabhas with villages falling both inside the proposed PA as well as those in 2 km. from the boundary. This exercise was also undertaken in the year 2010 at the behest of the Chief Wildlife Warden of Madhya Pradesh by the Alirajpur Forest Division. Large scale consultation with local communities of the affected Gram Sabhas of which the villages falling within the boundary of the proposed PA, Officials of District Revenue Department, Media persons, Panchayat Representatives right from Panch, Sarpanch, Janpad Adhyaksh and also CEO, Zilla Panchayat were held by the Forest Department. The villages falling within the proposed PA did not consent for creation of Sanctuary, however they consented for creation of Conservation Reserve. The resolutions of same were also passed by the concerned Gram Sabhas. The report of these consultations was submitted by the Divisional Forest Officer, Alirajpur Forest Division to the Chief Conservator of Forests (Territorial) vide office letter dated 03-09-2010.

Thus, in the present circumstances, there appears to be two possible options either to constitute the proposed area as a sanctuary or a conservation reserve if the present status of the proposed area need to further reinforced from the wildlife conservation point of view. Either scenarios are discussed below in reference to present prevailing situation in the Katthiwada area.

(i) Wildlife Sanctuary

(a) From the perspective of the Wild Life (Protection) Act, 1972

The government may declare its intention to constitute any area as a sanctuary if the area is of adequate ecological significance. If the proposed area is notified under Sec. 18 (1), then right from the date of such notification Secs. 27 to 33A shall come into force. Sec. 27 deals with restriction on entry in WLS. Sec. 27 (1) provides that no person other than public servant on duty/ person permitted to reside/ person having any right over immovable property/ person passing through along a public highway shall

enter or reside, except under a permit granted under Sec. 28 by the CWLW. Sec. 27 (2) provides that every person, so long as he resides in a sanctuary, shall be bound to prevent commission of an offence against this Act, to help in discovering and arresting the offender, to report death of any wild animal and safeguard its remains, to extinguish any fire, to assist forest/ police officer demanding his aid for preventing the commission of or in investigation of an offence. Sec. 27 (3) stipulates that no person shall alter, destroy, move or deface any boundary mark of a sanctuary. Sec. 27 (4) provides that no person shall tease or molest any wild animal or litter the grounds of a sanctuary. Sec.29 deals with destruction, etc., in a sanctuary prohibited without permit (which interalia prohibits removal of any forest produce from the notified area, destruction/ damage/ diversion of habitat of any wild animal, and also diversion/ stoppage/ enhancement of the flow of water into or outside the sanctuary. Any forest produce removed from the sanctuary the same may be used for meeting the personal bonafide needs of the people living in and around the sanctuary and shall not be used for any commercial purpose. Sec. 30 deals with prohibition of fire, Sec. 31 with prohibition of entry with weapon, Sec. 32 deals with banning on use of injurious substances which may cause injury to, or endanger, any wild life. Sec. 33 authorizes CWLW to control, manage and maintain the sanctuary. The clause 33 (a) provides that to control, manage and maintain the sanctuary, the CWLW may construct roads, bridges, buildings, fences, barrier gates and carry out works considered necessary for the purpose of the sanctuary. No construction of commercial tourist lodges, hotels, zoos and safari shall be undertaken inside a sanctuary except with the prior approval of the National Board. Sec. 33 (b) provides that the CWLW shall take steps to ensure the security of wild animals. Sec. 33 (c) provides that the CWLW may take measures for improvement of any habitat. Sec. 33 (d) provides that the CWLW may regulate, control or prohibit, in keeping with the interest of wild life, the grazing or movement of livestock. Section 33A (1) mandates the immunization of cattle within five kilometer of the sanctuary. Sec. 33A (2) stipulates that no person shall take or cause to be taken or graze, any livestock in a sanctuary without getting it immunized.

Apart from the above, under Sec. 20, there is bar of accrual of rights so that no right shall be acquired in, or over any land comprised within the limits of the area except by succession, testamentary or intestate.

Under Sec. 24(2) the collector may allow, in consultation with the CWLW, the continuance of any right of any person in, or over any land within the limits of the sanctuary.

(b) From the perspective of the local people

The people living in and around the proposed PA in Katthiwada have categorically stated that they are not willing for relocation and also their economy is dependent on various forest produces harvested from the proposed PA, *mahua* being the most economically beneficial forest produce. The DFO, Alirajpur has communicated that the estimated revenue from the *mahua* is to the tune of around Rs. 1.50 crore based on the exercise they recently conducted. Also the goat rearing is very common as it is sort of cash deposit which can easily be liquidated and fetch good value in times of distress. These goats graze in the forest area. Though the goat grazing is prohibited in Reserved Forest areas, it is still very difficult to restrict them from entering the forest areas. Also after notification of the area under Sec. 18(1), the villagers will not be able to sell and buy land in the area. Though, the relocation of villages may not be required as per Sec. 24(2), but certainly collection of forest produce for sale will have to be stopped as per Sec. 29.

Thus, under present circumstances, the declaration of area as wildlife sanctuary does not seem feasible in existing socio-economic situation. It may probably attract outside elements in instigating local people against Forest Department and create unease/unrest considering at the history of agitations related to dam construction in the region.

(ii) Conservation Reserve

(a) From the perspective of the Wild Life (Protection) Act

As per Sec. 36 (A) (1), the Government may, after having consultations with the local communities, declare any area owned by the Government, particularly the areas adjacent to National Parks and sanctuaries and those areas which link one protected

area with another, as a conservation reserve for protecting landscapes, flora and fauna and their habitat.

As per Sec. 36 (A) (2), the provisions of sub-section (2) of Sec. 18, sub-sections (2), (3) and (4) of Sec. 27, Secs. 30, 32 and clauses (b) and (c) of Sec. 33 shall, as far as may be, apply in relation to a conservation reserve as they apply in relation to a sanctuary.

The details of applicable Sections are reproduced below:

Sec. 27 (2) provides that every person, so long as he resides in a sanctuary, shall be bound to prevent commission of an offence against this Act, to help in discovering and arresting the offender, to report death of any wild animal and safeguard its remains, to extinguish any fire, to assist forest/ police officer demanding his aid for preventing the commission of or in investigation of an offence. Sec. 27 (3) stipulates that no person shall alter, destroy, move or deface any boundary mark of a sanctuary. Sec. 27 (4) provides that no person shall tease or molest any wild animal or litter the grounds of a sanctuary.

Sec. 30 deals with prohibition of fire.

Sec. 32 deals with banning on use of injurious substances which may cause injury to, or endanger, any wild life.

Sec. 33 (b) provides that the CWLW shall take steps to ensure the security of wild animals. Sec. 33 (c) provides that the CWLW may take measures for improvement of any habitat.

It is, therefore clear that in conservation reserves, there is no provisions of relocation of villages as also there is no restriction on grazing as such, however, as per Sec. 33 (c), if there is requirement on restricting grazing for the purpose of improvement of the habitat, such measure can be taken up by the CWLW. Also, there is no prohibition on entry inside the conservation reserve and there is no requirement of settlement of any rights. Since conservation reserve may only be declared after having consultations with the local communities, the provisions of the Forest Rights Act, 2006 are also fulfilled, if conservation reserve is declared after following due procedure.

The proposed area is adjacent to Rattanmal Sanctuary in Gujarat.

(b) From the perspective of the local people

The Forest Department has been having dialogues and consultations with the local communities at least since the year 2010. The villagers of villages inside the proposed area are unanimously opposed to relocation and want that their access to different forest rights should be preserved. Even during the recent field visit of WII team, same sentiments were expressed by the local communities of both inside as well as peripheral villages. Since the local economy is very much dependent on the proposed area, it will be better if declaration of the proposed area as conservation reserve is considered rather than a sanctuary, which appears to be difficult as per the prevailing socio-economic status of local communities.

4.1 Recommendations for establishing Katthiwada Conservation Reserve:

The proposed area is located in the ecotonal area of bio-geographic zones 4B (Semi Arid - Gujrat and Rajputana) and 6A (Central India). The coverage of the PA network in the Semi-Arid Zone 4 is the lowest among all the other Bio-geographic Zones amounting to only 2.70% of the area. Also, the Katthiwada is the largest block of forest in the entire region (Alirajpur and Jhabua districts). Thus establishing Katthiwada proposed PA area as conservation reserve would not only enhance the bio-geographic representation, which is an important imperative for conservation planning but also ensure long-term conservation of this remnant forests. Once the area is declared as conservation reserve, the following management issues should be addressed:

- (i) Goat rearing is a common practice in the area and therefore, in the interest of wildlife, the goat grazing need to be restricted in consultation with local communities and management committee constituted under Sec. 36 (B). A rotational grazing plan will have to be prepared and implemented through community participation.
- (ii) There are cases of crop depredation by wild pigs and blue bulls (Nilgai) both in inside villages as well as peripheral villages, the compensation mechanism has to be strengthened and made effective.
- (iii) Protection measures need to be strengthened based on patrolling camp and monitoring

- (iv) Good communication network based on wireless communication need to be established as the mobile network is poor in the area.
- (v) The area is susceptible to encroachment. These are mostly restricted to agriculture land and forest boundary. There should be a proper strategy to deal with incidences of encroachments.
- (vi) The key mammalian species of the area are sloth bear and leopard both Schedule I species and hyena which is in Schedule III of the Wild Life (Protection) Act, 1972. Special management measures involving scientific population estimation and habitat requirements for predator as well as prey species should be taken up for betterment of habitat of these species to reduce human-wildlife interactions.
- (vii) Since the local communities are highly dependent on forest based resources, eco-development planning and implementation should be undertaken in such a way to reduce pressure on forests.
- (viii) The availability and harvesting of forest produces should be on scientific lines and villagers may be provided training in entrepreneurship to empower them to get good value of these produces. Value addition may also be one aspect of such endeavor and can be implemented through ‘ Village Co-operations’
- (ix) The major occupation of villagers in this area is rain-fed agriculture supplemented by out-migration to mostly Gujarat for work. There is great scope for improvement in prevailing agriculture practices and selection of crops. A hand holding by Forest Department in bridging the gap between villagers and the Agriculture Department may result in betterment of economic gains from agriculture.
- (x) The hunting of wild animals may not be ruled out as it has been an integral part of local tribal culture. The bow and arrow and slingshots are the hunting tools of *Bhils* of the area. Anti-poaching strategies should focus on this aspect to curb poaching in the area. Local awareness programmes and participation in wildlife conservation may yield the desirable change.
- (xi) .

- (xii) The cost for implementing the above measures should be borne by the project proponent. A sum of Rs 13.97 crores (Thirteen crore and ninety-seven lakh, APPENDIX IV) been allocated already by the NCA on the 17th Aug 2008. This amount should be placed with the CWLW, Madhya Pradesh for strengthening the protection and management proposed Katthiwada Conservation Reserve and other PAs in Madhya Pradesh.

The State Government should take immediate steps to notify Katthiwada Conservation Reserve.

4.2 Additional Recommendation:

The meeting of committee for conservation and management of wildlife affected due to submergence of Narmada Sagar and Sardar Sarovar Project was held on 6.8.2016 under the chairmanship of PCCF (Wildlife) Madhya Pradesh in Bhopal. A representative of Wildlife Institute of India also participated in the meeting. The minutes of the meeting have been circulated by PCCF (Wildlife), Madhya Pradesh vide letter No./Wildlife/DM/6347 dated 12.8.2016 (attached as APPENDIX V) The committee inter-alia has recommended as follows (Page 4 of the Minutes):

1. कट्ठीवाड़ा में प्रस्तावित अभयारण्य क्षेत्र उपरोक्त कंडिका 12 के अनुसार निश्चित ही संरक्षण के लिये उपयुक्त है किन्तु यह क्षेत्र सरदार सरोवर परियोजना के डूब में आये वनक्षेत्र से 30 कि०मी० से अधिक दूरी पर है। अतः सरदार सरोवर परियोजना से प्रभावित वन्यजीवों का संरक्षण एवं व्यवस्था करने के लिये कट्ठीवाड़ा उचित क्षेत्र नहीं है। वन विभाग इसे उक्त कंडिका 12 के अनुसार पृथक से कंज़र्वेशन रिज़र्व बनाने की कार्रवाई कर सकता है।
2. मथवाड़ अथवा बोकराटा एवं अन्य समीपवर्ती वनक्षेत्र की गुणवत्ता डूब में आये वनक्षेत्र के समतुल्य है। यह क्षेत्र डूब क्षेत्र से सटे हुये भी हैं, अतः यदि इन क्षेत्रों के अंतर्गत रहवास का विकास करते हुये कालांतर में अन्य लगे हुये वनक्षेत्रों को भी विकसित किया जाता है तो यह भारत सरकार द्वारा वर्ष 1989 में लगाई गई शर्त की भावना के अनुरूप होगा।

The committee decided that (Page 5, Para 1):

1. सरदार सरोवर बांध के डूब क्षेत्र में आ रहे लगभग 2808 हेक्टेयर वनक्षेत्र के दुगने वनक्षेत्र में पर्यावरण सुधार, वासस्थल सुधार का कार्य किया जाये। क्षेत्र चयन के समय पूरे वनक्षेत्रों को सम्मिलित किया जायेगा। ऐसा करने पर यदि सम्मिलित क्षेत्र 5616 हेक्टेयर से अधिक होता है तो उसे परियोजना व्यय पर विकसित किया जायेगा। इसमें जलग्रहण क्षेत्र विकास हेतु किये जा चुके कार्यों के अनुवर्ती रहवास विकास कार्यों को सम्मिलित किया जायेगा।

In view of above analysis and decision made by the committee, it is recommended that wildlife habitat should be developed in Mathwad and Bokrata areas, which are situated on either sides of the Narmada River to provide better habitat to wildlife affected due to submergence of Sardar Sarovar Project in Madhya Pradesh. The cost of these habitat improvement activities should be borne by the project proponent.

The Wildlife Institute of India endorses the above recommendations and re-iterates the establishment of Katthiwada Conservation Reserve.



Plates (7) Left to Right: Lizard sp, Sloth bear rake marks, forest check dams, wild pig signs, nilgai pellets, consultations with Forest Dep.t staff and consultation with villagers

APPENDIX I

List of officials met and external members for feasibility study in proposed Katthiwada Wildlife Sanctuary		
1	Dr. Afroz Ahmad Office of the Member (Environment & Rehabilitation, NCA)	Mob: 9425057646 Email: apro.nca@nic.in
2	Dr. Pawan kumar Specialist, NCA (Environment)	Mob: 8085953811 Email: pawakdr@gmail.com
3	Shri Ashish Kumar Verma CCF, Indore MP Forest Dept.	Mob: 9425013559 Email: akvifdmp@gmail.com
4	Shri Amit Kumar Dubey D.F.O, Alirajpur MP. Forest Dept.	Mob: 942497510 Email: forestamit@rediffmail.com
5	Dr.A.K.Parik SDO, Alirajpur MP. Forest Dept.	Mob: 9425032863 Email: arun_parik@rediffmail.com
6	Shri Ashok K.Solanki SDO, Bhabra MP. Forest Dept.	Mob: 9429792427 Email: sdobrabra@mpforest.org.in
7	Shri B.R.Padam Range officer, Katthiwada MP. Forest Dept.	Mob: 9424792434 Email: padam@gmail.com

APPENDIX II

JUL-22-2016 17:28 From:

To:01352640117

Page:1

अजय नारायण झा
AJAY NARAYAN JHA, IAS



सत्यमेव जयते

सचिव
भारत सरकार
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Secretary
Government of India
Ministry of Environment, Forest and Climate Change

July 21, 2016

D.O. No. 3/87/80-IA-I (pt)

Dear Dr. Mathur,

As you are aware that on the recommendation of environment Sub Group of the Narmada Control Authority (NCA), the Narmada Valley Development Authority (NVDA), Government of Madhya Pradesh have entrusted EIA study to your Institute for the flora, fauna and carrying capacity studies related to impact area of Sardar Sarovar Project (SSP).

I am given to understand that your Institute has carried out EIA Study and submitted report to the Government of Madhya Pradesh. The EIA study recommended declaration of Kathiawara forest as Sanctuary for the rehabilitation of wildlife coming under the impact of submergence of SSP. Based on the aforesaid study and your recommendation, the Government of Madhya Pradesh assured the environment sub group of NCA that Kathiawara forest will be declared as 'Sanctuary' for the rehabilitation of wildlife to be impacted from Sardar Sarovar Project reservoir.

The aforesaid issue has been discussed recently and it was pointed out by the Chief Secretary, Government of Madhya Pradesh that the ground situation has since changed radically and the feasibility of locating the Sanctuary at Kathiawara is questionable. As the subsequent activities of the Environmental Sub-Group of NCA is dependent on early finalisation of this issue, it has been decided that WII, Dehradun may carry out a quick survey of the area and submit suitability of Kathiawara forest to be declared as 'Sanctuary' or 'Natural Reserve' and submit its findings within 6 weeks.

I would request you to kindly depute a team in consultation with Member (E&F), NCA, and Vice-Chairman, NVDA, Bhopal.

With regards,

Yours sincerely,

(A. N. Jha)

Dr V.B. Mathur
Director,
Wildlife Institute of India,
Post Box #18, Chandrabani
Dehradun - 248001
Uttarakhand.



इंदिरा पर्यावरण भवन, जोर बाग रोड, नई दिल्ली-110 003 फोन : (011) 24695262, 24695265, फैक्स : (011) 24695270
INDIRA PARYAVARAN BHAVAN, JOR BAGH ROAD, NEW DELHI-110 003 Ph : (011) 24695262, 24695265, Fax : (011) 24695270
E-mail : ecoinfo@wii.in or secy@wii.in or info@wii.in

APPENDIX III



भारतीय वन्यजीव संस्थान
Wildlife Institute of India

No. WII/DWII/Misc/03/2014

Date: 24 July, 2016

To

Shri Ajay Narayan Jha
Secretary,
Ministry of Environment, Forest and Climate Change
Jal Wing, Indira Paryavaran Bhawan,
Jor Bagh Road, Aliganj, New Delhi-110003
Phone: 24695262; 24695265; 24695270(F)
Email: secy-moef@nic.in, ajay.jha@nic.in

Sub.: Feasibility study in proposed Kathiawad Wildlife Sanctuary, Madhya Pradesh – reg.

Ref: Your D.O. letter No. 3/87/80-IA-I (pt) dated 21 July, 2016

Sir,

With reference to the above, I would like to confirm that in response to a request from Narmada Valley Development Authority (NVDA), the Wildlife Institute of India had conducted a study and submitted a report 'Evaluation of the ecological and socio-economic consequences of setting up proposed Mathwad Wildlife Sanctuary and Kathiawad Wildlife Sanctuary, Madhya Pradesh' in 2007.

As advised, we have constituted a team of WII faculty and researchers to conduct a rapid assessment of the feasibility of establishing Kathiawad Wildlife Sanctuary, Madhya Pradesh. We have also co-opted in the team two scientists who were part of the earlier study. The team would conduct a field visit from 2-6 August, 2016 and we would be able to submit our report within a six-weeks period.

We shall get in touch with the concerned officials of the Narmada Control Authority; Narmada Valley Development Authority and Madhya Pradesh Forest Department for conducting this study.

Thanking you.

Yours faithfully,

(Dr. V.B. Mathur)
Director

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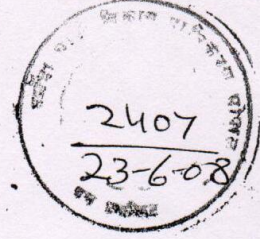
Cc:

1. Dr. Afroz Ahmad, Member (E & R), Narmada Control Authority, Indore. Email: apro.nca@nic.in, Tel.: (0731) 2555824, 2575753
2. Dr. Pawan Kumar, Director (Environment), Narmada Control Authority, Indore. Email: pawankdr@gmail.com, Tel.: (0731) 2555824, 2575753
3. Shri O.P. Rawat, Vice Chairman, Narmada Valley Development Authority, Bhopal Fax No.0755-2677535, 2677598, Email: vcnvdp@mp.nic.in
4. DGF & SS, MoEFCC, Indira Paryavaran Bhawan, Jor Bagh Road, Aliganj, New Delhi. Email: dgfindia@nic.in, sharadnegi@hotmail.com
5. ADG (WL), MoEFCC, Indira Paryavaran Bhawan, Jor Bagh Road, Aliganj, New Delhi. Email: adgwl-mef@nic.in, bonalbishan@gmail.com
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APPENDIX IV

(104)



नर्मदा घाटी विकास प्राधिकरण
नर्मदा भवन, 59, अरेरा हिल्स, भोपाल.

क्र. 290.151.ई-2/सचिव/नघाविप्रा/कार्य/08/728

भोपाल दि. 17/6/08

विषय:- सरदार सरोवर परियोजना के अंतर्गत कठ्ठीवाड़ा अभ्यारण की स्थापना बाबत।

संदर्भ:- माननीय अध्यक्ष महोदय का अनुमोदन दिनांक 16.6.08।

सदस्य वन एवं पर्यावरण के प्रस्ताव है कि सरदार सरोवर परियोजना के कठ्ठीवाड़ा अभ्यारण की स्थापना एवं विकास पर वर्ष 2002 के मूल्यों के आधार पर रु. 1397 लाख के व्यय पर नर्मदा घाटी विकास प्राधिकरण की सहमति वन विभाग को दी जानी है।

अतः नर्मदा घाटी विकास प्राधिकरण के कार्य संचालन नियम भाग-1 की कण्डिका क्रमांक 25 (ii) की आपात मंजूरी की विशेष प्रक्रिया के अंतर्गत रूपये 1397 लाख (रु. तेरह सौ सनतान्धे लाख मात्र) की स्वीकृति दी जाती है।

ADM (Sh. Bunde)

M(EF)

17/6/8

माननीय अध्यक्ष महोदय के यू.ओ.नोट क्रमांक 219/08 दिनांक 16.6.08 द्वारा अनुमोदित एवं सदस्य (वित्त) का यू.ओ.नोट क्रमांक 702 दि. 17.6.08 द्वारा पृष्ठांकित

सचिव

नर्मदा घाटी विकास प्राधिकरण
नर्मदा भवन, भोपाल.

प्रतिलिपि :-

1. सदस्य (वित्त), न.घा.वि.प्रा.भोपाल ।
2. सदस्य (पर्यावरण) न.घा.वि.प्रा.भोपाल ।
3. महालेखाकार (आडिट-2) म.प्र.भोपाल ।
4. अतिरिक्त प्रतिलिपि सामान्य शाखा न.घा.वि.प्रा.भोपाल ।
सूचनार्थ एवं आवश्यक कार्यवाही हेतु।

APPENDIX V

नर्मदा सागर एवं सरदार सरोवर परियोजना से प्रभावित वन्यजीवों के संरक्षण एवं व्यवस्था हेतु म.प्र. शासन, वन विभाग द्वारा गठित समिति की बैठक दिनांक 06.08.2016 का कार्यवाही विवरण

क्षेत्र में पर्यटन का लाभ मिल सकता है। कट्ठीवाड़ा के पूर्व शासक ने अपना महल होटल में परिवर्तित कर दिया है। इस क्षेत्र में झरने, नूरजहाँ आम के बगीचे पाये जाते हैं।

14. इस क्षेत्र का बेसलाइन सर्वेक्षण ZSI के वैज्ञानिकों द्वारा वर्ष 2007 में किया गया था, जिसके अनुसार क्षेत्र में 'रस्ती-स्पॉटेड कैट', देशी भालू, जंगली सुअर, नीलगाय, तेंदुआ एवं 107 प्रकार की चिड़िया पाई गई। BSI के अनुसार इस क्षेत्र में ऐसी कोई प्रजाति नहीं है जिसे रेयर माना जाए या जो सिर्फ इसी क्षेत्र में पाई जाती हो। अतः यह क्षेत्र BSI के लिए क्रिटिकल नहीं है। इस क्षेत्र में कोई एण्डमिक वृक्ष अथवा घोंस या घोंस की प्रजातियाँ नहीं पाई जाती।

15. सरदार सरोवर बांध के जलग्रहण क्षेत्र के उपचार का कार्य मृदा एवं जल संरक्षण की दृष्टि से पहले ही किया जा रहा है।

कमेटी द्वारा किया गया विश्लेषण :

1. कट्ठीवाड़ा में प्रस्तावित अभयारण्य क्षेत्र उपरोक्त कड़िका 12 के अनुसार निश्चित ही संरक्षण के लिये उपयुक्त है किन्तु यह क्षेत्र सरदार सरोवर परियोजना के डूब में आये वनक्षेत्र से 30 कि.मी. से अधिक दूरी पर है। अतः सरदार सरोवर परियोजना से प्रभावित वन्यजीवों का संरक्षण एवं व्यवस्था करने के लिये कट्ठीवाड़ा उचित क्षेत्र नहीं है। वन विभाग इसे उक्त कड़िका 12 अनुसार पृथक से कंजर्वेशन रिजर्व बनाने की कार्रवाई कर सकता है। इसे सरदार सरोवर बांध परियोजना से जोड़ा जाना तर्कसंगत नहीं है।
2. मथवाड़ अथवा बोकराटा एवं अन्य समीपवर्ती वनक्षेत्र की गुणवत्ता डूब में आये वनक्षेत्र के समतुल्य है। यह क्षेत्र डूब क्षेत्र से सटे हुये भी हैं, अतः यदि इन क्षेत्रों के अंतर्गत रहवास का विकास करते हुये कालांतर में अन्य लगे हुये वनक्षेत्रों को भी विकसित किया जाता है तो यह भारत सरकार द्वारा वर्ष 1989 में लगाई गई शर्त की भावना के अनुरूप होगा।

APPENDIX VI

Date	Meeting Venue	Key Participants	No. of Participants
3 Aug. 2016	Katthiwada Range Office	Frontline Staff of Forest Dept. (Katthiwada Range)	~20
3 Aug. 2016	Chimata Village	Villagers from Chimata, Dhakkapura, Kharkali, Dhaniya Ambar villages	32
3 Aug. 2016	Kachhla Village	Villagers from Kachhla, Dhakkapura, Harod and Ghut villages	45
4 Aug. 2016	Bainj village	Villagers from nearby villages	95
4 Aug. 2015	Katthiwada	Residents of Katthiwada and other nearby villages including some local newspaper reporters	14

APPENDIX VII

Meeting with local villagers at Chimata on 03.08.2016		
S. No.	Name of villager	Village
1	Bhim Singh-Damla	Dhakkapur
2	Kheem ji- Babu	Dhakkapur
3	Kal Singh-Navla	Chimata
4	Gujla-Dipaya	Chimata
5	Natda-Kaliya	Chimata
6	Bhim Singh-Ganthia	Kharkali
7	Somla-Daharia	Chimata
8	Devla-Sakaria	Chimata
9	Bijla-Bhaliya	Chimata
10	Bhachala-Chagana	Chimata
11	Dinesh-Unthia	Chimata
12	Sengla-Tetia	Chimata
13	Mehta-Thaliya	Chimata
14	Par Singh-Kagda	Chimata
15	Kul Singh-Chandiya	Dhakkapur
16	Somla-Navla	Chimata
17	Chehariya-Ramla	Chimata
18	Santosh-Pariya	Chimata
19	Sana-Bhirva	Chimata
20	Pratap-Devla	Chimata
21	Vijay-Madhiya	Chimata
22	Bachla-Rupsingh	Kharkali
23	Pir Singh-Khatriya	Kharkali
24	Rajla-Manna	Kharkali
25	Seliya-Thasia	Chimata
26	Rakesh-Shankar	Chimata
27	Khim Singh-Dhanian	Ambaar

APPENDIX VIII

Meeting with local villagers at Katthiwada on 04.08.2016		
S. No.	Name of Local Representatives and Media Persons	Village
1	Sunil Kanesh, Sarpanch	Haveli Kheda
2	Bharat Raj Singh Jadav, Janpratinidhi	
3	Prem Gupta, Nai Duniya, Pratinidhi	
4	Ramesh Bhuriya	Kewada
5	Jugnu, Patrakar	
6	Nahar Singh Juna	Katthiwada
7	Raju Vakhla, Sarpanch	Kavchha
8	Ishaq Mansoori, Chotha Sansar	
9	Dinesh Bhai Sarpanch	Moti Badoi
10	Var Singh Baria, Janpratinidhi	
11	Gohapada Tomar	Bada Kheda
12	Sonu Bhai	Haveli Kheda
13	Rati Lal Tomar	Nani Badoi
14	Shivraj Jadav	Juna Katthiwada

APPENDIX IX

Meeting with local villagers at Bainj on 04.08.2016					
S. No.	Name of villager	Village	S. No.	Name of villager	Village
1	Gudu	Motibar	46	Kan Singh	Motibar
2	Mainthu	Motibar	47	Bachchu	Motibar
3	Raju	Motibar	48	Mun Singh	Motibar
4	Moon Singh	Motibar	49	Mohan	Bainj
5	Ram Singh	Lakhabat	50	Rai Chand	Kevda
6	Ram Singh	Sayda	51	Kendar Singh	Nanibar
7	Har Singh	Lakhabat	52	Titu	Nanibar
8	Dur Singh	Bainj	53	Gulab Singh	Kusumba
9	Bhan Singh	Nanibar	54	Dhundra	Kevda
10	Dillu	Samachpura	55	Keshar Singh	Nanibar
11	Than Singh	Lakhabat	56	Dur Singh	
12	Dokaliya	Lakhabat	57	Mahesh	Bainj
13	Rakesh	Lakhabat	58	Kailash	Lakhabat
14	Desingh	Bainj	59	Narender	Kevda
15	Nan Singh	Lakhabat	60	Ajay	Bainj
16	Munia	Bainj	61	Narshu	Nanibar
17	Ida	Bainj	62	Dharmesh	Motibar
18	Sengla	Samachpura	63	Gobla	Kusumba
19	Dhan Singh	Samachpura	64	Bude Singh	Indlavat
20	Gamla	Samachpura	65	Mukesh	Kevda
21	Mohan	Kevda	66	Nathu	Lakhabat
22	Shankar	Nanibar	67	Mer Chand	Kevda
23	Thanriya	Nanibar	68	Khaliya	Nanibar
24	Juban Singh	Kevda	69	Dinesh	Bainj
25	Amla	Nanibar	70	Suresh	
26	Chimliya	Nanibar	71	Bhosla	Sametpura
27	Raju	Motibar	72	Sandeep	Bainj
28	Jhitra	Motibar	73	Fikar	Bainj
29	Chhaniya	Nanibar	74	Shankar Singh	Bainj
30	Prakash	Kevda	75	Naniya	Bainj
31	Sanjay	Kevda	76	Lalu	Bainj
32	Rakesh	Kevda	77	Sur Singh	Bainj
33	Bhart	Kevda	78	Karshan	Bainj
34	Mangla	Kevda	79	Vinod	Lakhabat
35	Khuman	Motibar	80	Ratu	Nanibar
36	Rumal	Kevda	81	Rajesh	Lakhabat
37	Nannu	Motibar	82	Devla	Bainj
38	Dhanariya	Kusumba	83	Har Singh	Bainj
39	Bhima	Nanibar	84	Naval Singh	Bainj

40	Makesh	Kusumba	85	Bhur Singh	Lakhabat
41	Shubhang	Kusumba	86	Kavi Ram	Bainj
42	Ramesh	Nanibar	87	Thawla	Bainj
43	Ter Singh	Nanibar	88	Bair Singh	Lomdiwat
44	Nathu	Motibar	89	Nanag	Saidiya
45	Methu	Motibar			