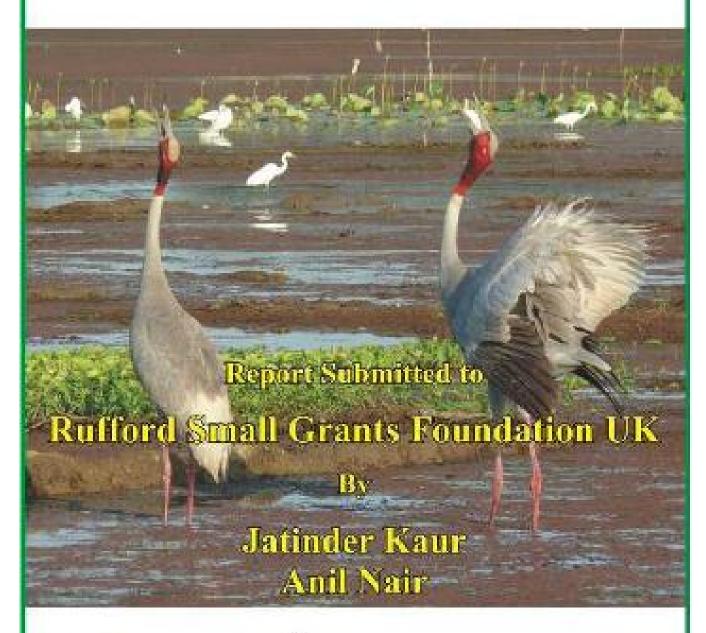
Community Involvement in Conservation of Sarus Crane Breeding Habitat in three districts of Semi-arid tract of Rajasthan, India.





January, 2011

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# Summary

The Sarus Crane- a bird species characteristic of the wetlands is categorized as "vulnerable" on the IUCN Red List. In India, Sarus cranes occur mostly outside protected areas and use these unprotected areas for feeding and breeding. They are consequently threatened by poaching and the destruction of their eggs and juveniles. To protect the crane's habitat and nests a community education and awareness campaign was carried out, using audiovisual shows and presentations in villages and schools in the vicinity of Sarus crane nesting sites in three districts of Rajasthan.

With the support of the Rufford Small Grants Foundation the field work was carried out from July 2009- Dec 2010 in Kota, Bundi and Baran and few parts of Jhalawar Districts. During the study period of 2009 the breeding had completely failed due to famine. Another breeding season of 2010 was also covered but breeding was not very successful in this year also. Infrequent and fragmented rains and canal repair work lead to less nesting in the districts. This year a total of 18 nest in 2009 breeding season with successful fledging of 19 hatchlings. In July-Nov July-Nov 2010 a total of 49 successful fledglings from the 37nests. No nest were recorded in the dry season. Information of nests being made in 2008 dry season on the river bed of Parvan River was reported by villagers.

But we hope the come year with good rainfall and our rural team we will be able to document more nests.

Between the duration of the above projects record of new wetlands and breeding sites were also documented for the first time from the districts. The wetlands covered during the project not only gave us the information regarding the Sarus Crane but other avian biodiversity and animals besides state of the wetlands in the area.

During the project we had developed shows, posters and literature in local languages for awareness in the villages and schools, closer to the breeding grounds of the species. As an experiment for the first time we distributed pamphlets in local language which were inserted in the local newspapers in rural areas and there were good response from villagers whom we were not able to get in touch directly. Besides this a short documentary film on the traditional water harvesting systems and water conservation work done by rural villagers in different parts of the country was also shown to encourage water conservation and its management without being dependent on govt. agencies or other organizations.

The awareness programmes have resulted in volunteer formation of **Twenty eight Rural Village Protection Groups/ Individuals.** 

The initiation of honouring the rural villagers with certificates and other useful materials, who helped in saving the Sarus cranes eggs and juveniles, is a token of thanks to their unconditional support in saving the species. This has inspired many villagers to come forward in saving the species. This long campaign has been successful in spreading the message for conservation of Wetlands and the Sarus Crane and their importance for us. Our experience with this project demonstrated that it is possible to re-establish a bond between villagers and nature. This work on community involvement for the Sarus crane is continuing with the involvement of more districts in Rajasthan.

#### 1. Introduction

The Sarus Crane has been recorded to be found all over the northern and central region of the Indian sub-continent historically, including the present day Bangladesh (Gole 1989, Archibald & Meine 1996, Birdlife International 2001). The Sarus Crane, a bird species characteristic of wetlands, is categorized as Vulnerable on the IUCN Red list 2007 in India and it occur mostly outside protected areas. They prefer open cultivation in well watered country, marshes, jheels, lakes and large rivers. The Sarus Crane is increasingly being forced into agricultural fields because of the deterioration and destruction of its natural wetland habitat (Mukherjee 1999, Sundar *etal* 2000). The Sarus Cranes are consequently threatened by poaching and the destruction of their eggs and juveniles. To protect the habitat and nests a community education and awareness campaign was carried out.

According to (Adams&Hulme 2001) the community conservation is considered important contemporary tool for nature conservation, but has mostly been implemented in and around protected areas rather than for the conservation of species occurring outside protected areas. Education is a vital part of any attempt to enforce legal protection for the Sarus crane (Davis 1998), and for the long term conservation of the species outside protected areas.

Kota district in Rajasthan has one of the largest reported breeding populations of Sarus cranes and located on the eastern bank of Chambal River and is drained by its tributaries. The population of Sarus Crane in Kota is dependent mainly on canal systems and natural wetlands. It is situated along the bank of river Chambal and is relatively well irrigated by the canal network of Kota barrage, resulting in reedy marshes and marginal wetlands supporting a fairly good breeding population of Sarus Cranes (Vyas 1999a, 1999b, Kaur and Choudhury 2002).

The Bundi district is situated in the south-eastern part of Rajasthan and it is bound in the north by Tonk, in the west by Bhilwara and on the south-west by Chittorgarh districts.

The river Chambal forms the southern and eastern boundaries separating the Bundi and Kota territories. Bundi is also known for its baories or step-wells. Unique to Rajasthan and Gujarat, the step-wells served as water reservoirs for the months of summer when there was a scarcity of drinking water. The district Baran is bound in the north and northwest by Kota, Jhalawar and Bundi districts and in the west by Chittaurgarh. Few places in India where the species can breed twice per year: in the wet season (July-October) and the dry season (February-May). This occurs because of the canalized system of the river Chambal.

# 2. Objectives

- 1. Survey of new wetlands in Kota, Bundi and Baran districts to identify areas important for breeding Sarus Cranes, and areas that have potential to be restored with public support and government agencies.
- 2. Carry out awareness programmes and field visits in schools and villages to help identify people interested in Sarus Crane conservation in all three districts.
- 3. Preparation and distribution of education material and lectures in local language to cater to the school children, farmers and village community for awareness and information gathering.
- 4. Create an active network comprising of farmers and children to obtain information on breeding and non-breeding Sarus Cranes.

- 5. Banding the juveniles to monitor local and seasonal movements of Sarus cranes in both wet and dry season, nesting period and information on their monitoring to be documented. (Depending on the permission received from the state forest department).
- 6. Features in the print and electronic media on the project showcasing the most outstanding individual who will enable the success of the conservation programme.
- 7. To honour the most active participant whose work helped to obtain new information, preserve nest sites, eggs and chicks.

### 3. Methodology

The project was for a period of one year duration but the field work was carried out from July 2009 to December2010 and our aims were to conduct an awareness programme for the Sarus crane with the involvement of local communities and Ngo's. Field visits to important Sarus crane nesting sites were made every week in all the three districts during the breeding season. During the study period of 2009 the breeding had completely failed and the year was declared as Famine year by the government. One more breeding season in 2010 was also covered.

The colour pamphlets, stickers and posters in local language were printed for distribution in schools, villages, Government agencies, local and national NGOs who are working for the conservation of the wildlife. The printed matter helped us to obtain more information from people about Sarus crane nesting sites and juveniles and the documentation of new wetlands for the Sarus and other avian diversity also. People gave us the information by phone and personal visits.

Audiovisual shows and lectures were done to explain the breeding biology of the species. Field visits for those schools children's staying close to nearby breeding sites and shown the nest. A quiz competition was conducted after the shows, and the prizes were given to the winners. Banners and sign board was installed at different breeding sites. During the field visits and awareness programmes villagers voluntarily came forward to form a *Rural Village Sarus Protection Group* in three districts and from the adjoining district Jhalawar.

Banding of the chicks in selected three districts according to the seasonality of the important wetlands and the secondary information received during the field visits from the villagers. In all the three districts the Sarus Crane families with juveniles were very low and it was not supportive to give us detailed information on seasonal movements in Sarus Crane families and the data on resighting, to helpful in providing the home range of the family as well as their dispersal to other sites which are important during adverse weather conditions.

The print and electronic media were regularly writing down the story on Sarus crane, wetlands and people who are voluntarily helping to save the species. A recognition award ceremony was done for the local villagers for the conservation of the species.

#### 4 Results and Discussion

#### 1. Nesting of Sarus Crane and breeding success

The villagers and farmers were instrumental in protecting adult Sarus crane from poaching and responsible for the successful fledging of 19 hatchlings from 18 nests during the wet season of July-Nov 2009 and in July-Nov 2010 a total of 49 successful fledglings from the 37nests. (Table 1). No nest in the dry season. Information of nests being made in 2008 dry season on the river bed of

Parvan River was reported by villagers. Infrequent fragmented rains and canal repair work lead to less nesting in the districts.

Table 1 Nesting by Sarus Crane during 2009 and 2010 Wet Season (first nesting) in three districts of Semi Arid Tract of Rajasthan, India.

Nesting by Sarus Crane	July-Nov 2009 Wet	July-Nov 2010 Wet
Kota District	5	14
Bundi District	4	5
Baran District	4	17
Jhalawar District	5	1
Total	18	37



Sarus Crane rolling the eggs at nest at Ummedganj



Sarus Crane with two chicks at Hindolli, IBA site

During the project a total of **141** wetlands sites were covered in three districts and out of these forty two wetlands were documented for the first time and Sarus cranes are using these wetlands for roosting or breeding (Table 2).

In Kota district a total of fifty five wetlands were covered and during July 2009- December 2010 nine were documented for the first time. In Bundi districts forty four wetland covered thirteen new wetlands and in Baran forty two wetlands were recorded and twenty were documented for the first time for Sarus Crane nesting and roosting.

Information from the adjoining district Jhalawar was also recorded and farmers and individuals from those sites were also voluntarily wanted to save wetlands and Sarus breeding sites. The wetlands covered during the project not only give us the information regarding the Sarus Crane but other avian biodiversity also.

Table 2 List of wetlands covered in three districts of semi-arid Rajasthan

S.no	Kota District	Bundi District	Baran District
1	Rawantha	Bardha Dam	Sorson Talab
2	Damadama	Banjaro Ki Maradi	Devpura Talab
3	Ranpur	Jhal Ki Jhopadiyan	Manpura Talab
4	Rankya Khedi	Talwas	Kishanpura
5	Zetiya	Chawani Dam	Neyana
6	Kasaar	Paibala Pura	Mal Bambor
7	Lakhava	Rooneja	Mangrol
8	Ummedganj	Dei Kheda	Chatri Talab
9	Simliya	Nimodha	Ayana
10	Kanwar Talai	Ganesh Talab	Jhalodha Teza Ji
11	Mordi Talai	Ram Sagar- Hindolli	Sundalak Talai
12	Chapniya Talai	Jakh Mund	Palsava
13	Ram Talai	Gudda Dam	Kachri
14	Dudhi Talai	Bakeha Dam	Kunjed
15	Sursagar	Bardha Bavadi	Ram Talai
16	Raipura	Gotda Dam	Jirodh
17	Polai Kalan	Baldevpura Talai	Ratavadha
18	Alynia	Laban Marshes	Leva
19	Polai	Kurdhi Kherli	Narsingh Pura
20	Aanwa	Hali Heda	Kali Talai
21	Hingonia	Chidhi Talai	Molaki
22	Laturi	Neenwa Talab	Harsoli
23	Moi Kalan	Arnetha	Raniheda*
24	Ladko Ki Talai	Adeela	Dunikheda*
25	Bhoara	Hingonia	Fatehda*
26	Railgaon	Ghat Ka Varna	Rani Badodh*
27	Soti Talai	Fuool Sagar	Rampuria*
28	Khajurna	Uniya	Gopal Pura*
29	Basyahedi	Keshori Patan	Samrania to Kherdai*
30	Bulahedi	Dei Ganga Sagar	Bilasgadh Nayagaon Talab*

31	Jangalhedi	Laserdha	Farm Ki Talai*
32	Godlyahedi	Budiya Talab*	Gujjara Ki Talai*
33	Rajpura	Radi Ka Talab*	Kakudia Ki Talai*
34	Bargu I	Raghunathpura*	Bhavar Gadh*
35	Bargu II	Khanpura Ka Talab*	Bilas Dam*
36	Abheda	Mendi Talab*	Utavali Dam*
37	Karadiya	Brahmano Ka Talab*	Falia Pipliya Dam*
38	Dharkedi Right Main Can	Futa Talab*	Kasam Pura (Kala Talab*)
39	Railgaon Right Main Canal	Goonth Talai*	Jodhali Tali*
40	Janakpur Right Main Canal	Rampuria Dam *	Gahu Ghat to Karadiya Parwan River (along Parwan River 10 km stretch) *
41	Foot Ka Talab	Haripura Wetland*	Sahrodh*
42	Bhandaheda	Devjhar Mahadev*	Dotti*
43	Similya (Savan Bhado Dam)*	Jamunia Island*	
44	Dulet Kanwas Talai	Khatkhad to Lakheri to Jalipura*	
45	Kawarpura Dam*		
46	Moi Kalan Talab		
47	Bandha Dharanpura		
48	Jkhakoda Talab*		
49	Hanotia Dam*		
50	Batwada, Kali Sindh River		
51	Haripura*		
52	Ramsagar Dam*	3	
53	Gunjeri Talai*	3	
54	Baogh Ka Talab (Mandana) *	3	
55	Shambupura Talab*		
	· · · · · · · · · · · · · · · · · · ·		-



Haripura (Sattur) a new wetland, Bundi District



Teja talai, Kota District



Canal repair work

#### 2. Awareness Programmes

Building on the work carried out earlier in Kota districts in 2000-2002 and 2004-2005 to encourage the participation of local people (Kaur & Choudhury 2003) in Sarus crane conservation in Kota districts, we carried out further work by covering other two additional districts named Bundi and Baran and few sites in Jhalawar. 6000 colour pamphlets, 2000 posters and 2000 stickers were distributed and this helped us to obtain more information of the nesting sites and Sarus crane with juveniles. This Kind of educational tools was effective to gather information from a wider area and from people who cannot reach directly by any other means (Kaur *etal* 2008).



Slide show in Jhal Ki Jhopdian Village



Village reading the pamphlets after slide show

The audiovisual shows and lectures and short documentary film by CSE- New Delhi, on the **conservation of water** by ordinary villagers in different parts of India. Local communities were sensitized for conservation values of Sarus Crane and wetland biodiversity. Through constant vigil and awareness programmes conducted during the project the Rural Village Sarus Crane Protection Group and individuals, schools from different villages giving us information about the nesting of Sarus crane and other disturbances they are facing in their respective wetlands. By doing this

misconceptions regarding the crane's such as stealing of egg for the egg shells for the treatment of health problem and destruction of crop. These kinds of shows made villagers, school children to know the importance the wetlands, and about the species knowledge (Table 3&4 &5). A quiz competition was conducted after the shows, and the prizes were given to the winners.



Slide show at one of the site



Talk at one of the school



Prize distribution after quiz



School children's with poster

School children residing close to the breeding sites were taken to the field and showed the nests and explained how to protect the nests and chicks.



Field visit at one of the site



Field visit at one of the site

 ${\bf Table~3~Number~of~villagers,~students~and~teachers~covered~during~the~project~in~Kota~district}$ 

S.no	Districts	No. Of Villagers	No. Of teachers and students
	Kota		
1	Polai Kalan	55	80
2	Polai Kurdhi	180	100
3	Aanwa	145	200
4	Ummedgang	100	75
5	Jhkoda	60	45
6	Alynia	225	200
7	Mandana	150	115
8	Lutri	55	44
9	Railgaon	75	40
10	Simliya	119	148
11	Sursagar	25	50
12	Bargu I	50	90
13	Bargu II	45	35
14	Rajpura	50	100
15	Rawantha	80	90
16	Devpura	45	80
17	Mandola	70	70
	Total	1529	1562

Table 4 Number of villagers, students and teachers covered during the project in Bundi district

S.no Districts	Districts	No. Of Villagers	No. Of teachers and students
	Bundi		
1	Balapura	65	55
2	Bardha	150	200
3	Arneta	100	110
4	Budiya	50	60
5	Talwas	85	135
6	Hindoli	80	200
7	Haripura	35	-
8	Jhakrund	50	-
9	Jhal Ki Jhopadiyan	70	30
10	Chanda	45	-

11	Motipura	35	35
12	Gotda Dam	60	35
13	Rampuria	45	-
14	Kapren	50	70
15	Nimodha	56	-
	Total	976	930

Table 5 Number of villagers, students and teachers covered during the project in Baran district

	Baran Districts	No. Of Villagers	No. Of teachers and students
1	Richanda	50	80
2	Bilasgadh	55	-
3	Sorson	80	50
4	Kishanganj	55	60
5	Kasampura	80	40
6	Manpura	50	-
7	Dunikheda	60	45
8	Neyana	70	55
9	Dotti	80	-
10	Kachri	70	60
11	Amalsara	150	80
12	Narsinghpura	100	90
	Total	900	560

It's all due to the efforts of local communities we got the information of fishes deaths in larger scale in Kali Sindh River at Village Kherli due to the use of pesticides ( Nair & Kaur 2010).



#### Dead fishes and Endosulphan tin



Dead fishes and Endosulphan tin

To tie up with the newspaper distributors in rural areas to put pamphlets in the news paper in all the three districts and for this distribution Rajasthan Patrika, helped us a lot for giving the contact number of the person and agencies who distribute the papers in rural areas. It was one big task and that also gave us good result and information on Sarus Crane and other wildlife in their areas. Therefore people are aware of the importance of the wetlands and Sarus Crane, by explaining the nesting season, habitat, threats and development of the chicks were undertaken.

#### 3. Wildlife Week Celebration

During the Wildlife Week various programmes were organized with Hobby Nature Club and Hadothi Naturalists Society in the urban area also. An on the spot painting competition was organized in Proposed Ummedganj Pakshi Vihar, a key Sarus Crane breeding area closer to the city.

**Ummedganj is** one of the key breeding sites of the Sarus Crane in Kota district and has **Important Bird Area (IBA) Values.** The Proposed Ummedganj Pakshi Vihar "conservation reserve" is a wetland ecosystem situated 12 kms from the city at Kota along the right main canal of the river Chambal. It's the only place in India where the tallest flying bird-Sarus Crane, can be seen breeding twice in a year close to the city. (Kaur 2009). In the proposed area three pair of the Cranes can be seen nesting every year. A committee was formed by the State Govt. To develop the Proposal and setting up the bird reserve the committee includes the Grant Receiver as one of the main expert of the committee and have submitted the "Detailed Project Report" along with "Terms of Reference" to the Committee. The report has duly acknowledged the contribution of the Rufford Small Grant towards the setting up of the bird reserve in Kota dist. The proposed Pakshi Vihar will be helpful in securing the wintering ground for 64 of the migratory bird species and 57 of the resident breeding species.



Students of M.Sc. noting details from the flex banner at proposed Ummedganj Pakshi Vihar during Wildlife Week 2009



Chief Guest – Principal, Government College, Kota, Seeing the exhibition on Sarus Crane

The second year students of Textile Designing, Commercial Arts and Interior Decoration branches of the Women's Polytechnic College- Kota were taken to Ummedganj Proposed Pakshi Vihar to understand the ecology and breeding biology of the Sarus Crane.



Students of the Women's Polytechnic College Kota attending the talk at Ummedganj



Students of the College in the field at Ummedganj



Talk on Sarus Crane at one of the site

A written quiz and collage competition was organized for these students during the Wildlife Week-2009, with Hobby Nature Club and Hadothi Naturalists Society. The winners of these competitions were given books on Butterflies, Animals and Trees.



Talk on Sarus Crane at one of the site



Chief Guest Mrs. Sandhya Gupta, HOD Zoology department JDB Girls Collage, Kota



**Prize winners during Quiz Competition** 

#### 4. Jamunia island

The National Chambal Gharial Sanctuary in Rajasthan extends over the Chambal River from Jawahar Sagar dam to Kota barrage .It has been granted the Important Bird Area (IBA) status by The Royal society for Protection of Birds, UK and Bombay Natural History Society, Mumbai after scientific documentation. The river sanctuary has only one island in the name of Jamunia which is situated 40 kms from Kota city on the downstream of river Chambal in its downward flow to Pachnada where it meets river Yamuna. The island is submerged during the monsoons or whenever water is released into the river from Kota Barrage dam. The island was visited for the first time ever in the month of September 2010 due to the information provided by the Rural Sarus Protection Group in the area and along with information on Sarus Crane for the first time we discovered the largest heronry of the region.



Jamunia Island, National Chambal Sanctuary, IBA Sites

During the Sarus breeding survey we sighted small Pratincole for the first time in Alynia wetland.



Small Pratincole In Alniya wetland

#### 5. Conservation of Sarus Crane and wetlands

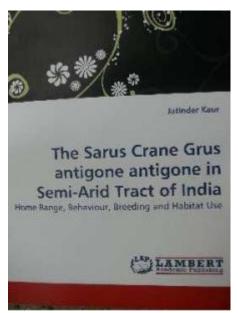
Coming to know of the implications of the present work the Dist Administration honoured me on 15th August 2010 at a function through the Home Minister of the State.

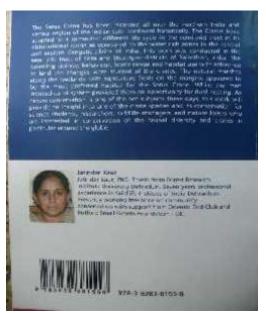


Receiving award for Conservation of Sarus Crane Wetlands

#### 6. The Lambert Academic Publishing

The LAP published a book on the work carried out on Sarus Crane for my doctoral work and the title of the book in "*The Sarus Crane Grus antigone antigone in the semi-arid tract of India*". The front cover page of the book and last cover page of the book is put in this report which includes presently working on the Rufford Small Grant Foundation, UK.





**Book Published by LAP** 

# 7. Recognition Award to Villagers

During the field visits and awareness programme local community came forward to form a Rural Village Sarus Protection Groups. They ensured not to disturb the ponds, wetlands used by Sarus crane for nesting. A total of 16 from Kota, 5 from Bundi and 4 from Baran and 3 from Jhalawar districts groups were made and they were protecting the eggs and juveniles from poaching and predation (Table 6.) grass-root enthusiasts were honoured with certificate and Field Bags (Day Pack). The presentation was made on the finding of community participation work in three districts. The programme was done with the help of *Department of Science and Technology, Kota*,

Rajasthan. One of the Sarpanch from the Digodh, Hari Prakash Sharma came forward to support this recognition award ceremony programme in DST, Kota.



Talk on Sarus during recognition award, Programme

The recognition award ceremony was success due to the active participation of *Shri Bharat Singh from Rajasthan Government Minister for Panchayati Raj and Rural Development, Jaipur*, Shri K.K. Garg, Conservator of Forest, Wildlife Division Kota, Shri Girdhari Lal Garg from Department of Science and technology, Kota and Hari Prakash Sharma, Sarpanch Digodh., Hari Singh Palikia, Member Wildlife Board, they gave away the recognition awards to all the individuals from the different districts. The active participation of individuals from Hadothi Naturalists Society, Hobby Nature Club Lectures and Students. The event and the project were given coverage by the electronic and print media (Appendix II).

The more protection groups and education and awareness programmes will be required in other breeding areas. This active network of community will facilitate improved conservation of the species, to re-establish a bond between farmers and nature (Kaur *et.al* 2008).

Table 6 List of the recipients who got the Recognition Award for Sarus Crane Conservation in four districts Rajasthan

Dist. And Village name	Name of the recipient	
Kota Dist.		
1. Haripura	Brijmohan Malav	
2 Lakhawa	Laxman Gurjar	
4. Aanwa	Puranmal Suman	
5 Aanwa	Nadkishor Gocher	
5. Polai Khurdh	Ramhater Meena	
6. Shavra	Suresh Meena	
7. Ummedganj	Surender	
8. Ummedganj	Ashok	
10 Kota	Mukesh Shakyawal	
11 Kota	Shakir Ali	
12 Kota	Hariraj Singh	
13 Kota	Promod Mewara	
14. Kota	Alfaz Ali	

15. Moi Klan	Ramesh Ji Nagar	
16.Simliya Basyahedi	Hiralal Nagar	
Bundi Dist.		
17. Jhal Ki Jhopadiyan	Jugraj Gujjar	
18. Talwas	Bithal Kumar Sanadya	
19. Rampuria Dam	Ramdev	
20. Ghendoli	Hetram, Forester	
21. Jhakrundh	Chittarlal Meena	
Baran		
22 Sorson	Brij Raj	
23. Amalsara	Aladhin, Forester	
24. Richanda	Jitender Gautam	
25. Faladi Rampuria	Yogender Berwa	
Jhalawar		
26. Chalet	Banwar lal	
27. Chalet	Brijmohan Nagar	
28. Boroli	Mahender Meghwal	



Giving Poster to Shri Bharat Singh Minister Panchayati Raj and Rural Development, Jaipur. Rajasthan.



Recognition award to one of the individual by Shri Bharat Singh



Recognition award to one of the individual by Shri Bharat Singh



Shri K.K. Garg, CCF, Wildlife Kota giving the award



Shri Hari Prakash Sharma, Sarpanch, Digodh, Giving the award to one of the Forester



Shri Girdhari Lal Garg and Hari Singh, giving the award



**Awarded Persons with Guests** 



Certificate and Day Pack given to the individual

#### 5. Conclusion

During the project the important next steps will be the *Rural Village Sarus Protection Group* which was created and to involve more active people from the villages, schools and colleges and trained them by doing small workshops. The reason of involving college student is because many students come from rural background and they gave us information regarding the Sarus crane from their areas and want to be part of the protection groups.

Detailed research on local and seasonal movements of Sarus Cranes in both wet and dry season nesting period is required by banding juveniles and information on their monitoring should be documented. This will provide information on the kinds of critical habitats to be conserved.

Inventorization of wetlands and detailed study on nesting by doing awareness programmes should be carried out in Southern Rajasthan, i.e. (Bhilwara, Banswara and Pratapgarh districts of Rajasthan by involving communities and school children, that support Sarus Crane.

Education and awareness campaigns on a prolonged basis in the three districts and adjoining district Jhalawar, But Southern Rajasthan should be covered and forming Rural village Sarus protection groups by interested youth from the villages, schools and college students.

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Appendix 1.

Copy Poster and Pamphlets







