

# ***RAPID ASSESSMENT OF TRACHOMA IN INDIA***

## **A REPORT**

**National Program for Control of Blindness in India,  
Directorate General of Health Services,  
Ministry of Health & Family Welfare,  
Government of India, New Delhi**

**Coordinated by:  
NPCB &  
Community Ophthalmology Unit, Dr. R.P. Centre for Ophthalmic Sciences,  
AIIMS, New Delhi**

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**RAPID ASSESSMENT OF TRACHOMA IN INDIA**

**A REPORT**

**Study Conducted by:**

**Christian Medical College, Ludhiana, Punjab**

**Dr. R.P. Centre for Ophthalmic Sciences, AIIMS, New Delhi**

**J.N. Medical College, Aligarh, UP**

**SEWA Rural, Jhagadia, Dt. Bharuch, Gujarat**

**St. Stephens Hospital, New Delhi**

**Venu Eye Institute, New Delhi**

**Data Entry & Analysis**

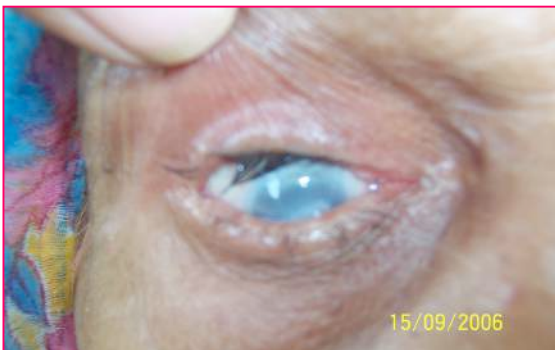
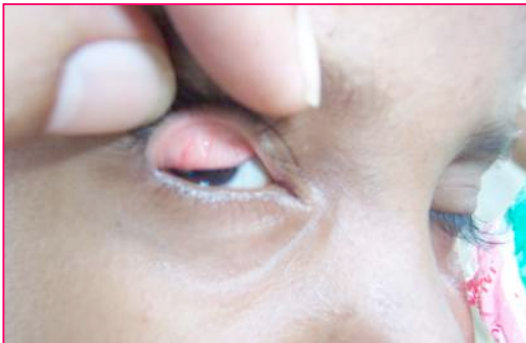
**Mukund Soft, New Delhi**

**Technical Support & Report Finalization:**

**Community Ophthalmology Unit,**

**Dr. R. P. Centre for Ophthalmic Sciences, AIIMS, New Delhi**

## GALLERY: RAPID ASSESSMENT OF TRACHOMA IN INDIA





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## **Executive Summary:**

India was Trachoma endemic country in the late 1950s and 1960s. However evidence over the next two decades showed a significant reduction in Trachoma prevalence in India. There is no recent evidence on the magnitude of trachoma and related blindness in India. It was therefore decided by Govt. of India to conduct a rapid assessment in the previously known hyper-endemic states in India.

The rapid assessment was conducted in 10 districts in the country covering the 6 previously endemic states (Uttar Pradesh now having been split into 2 States). The number of districts to be covered in each State, were selected based on the population of the States living in the previously known endemic areas.

The major objectives were to assess whether active trachoma continues to be of public health significance in previously known hyperendemic areas in India and to determine the load of blinding trachoma among adults and the need for surgical services for Trichiasis.

The identification of the districts was made using socio-developmental indicators and the list was prepared by district authorities including the District Blindness Program Manager.

Two districts of the originally identified ones in the State of Rajasthan had to be dropped due to extensive damage due to floods and these were substituted by two other socially and developmentally backward districts.

The districts covered were Hoshiarpur (Punjab), Mahendergarh & Mewat(Haryana), Bikaner, Dholpur & Tonk(Rajasthan), Pauri Garhwal (Uttaranchal), Bulandshahr (Uttar Pradesh) and Kutch & Banaskanta (Gujarat).

The WHO guidelines for Rapid Assessment were basically used for the Rapid Assessment. In order to reflect the situation in India, some modifications were felt necessary and have been incorporated to the standard prescribed methodology. These

relate to the number of villages covered (more than WHO protocol). All clinical protocols were exactly the same as recommended by WHO.

The study was conducted by one reputed eye care institution in each State.

All the teams were trained over a five day period by the Community Ophthalmology Unit, Dr. Rajendra Prasad Centre for Ophthalmic Sciences, AIIMS, New Delhi (WHO Collaborative Centre).

Agreement of the graders with the WHO slide set was conducted and agreement analysis was done and the Kappa values were shared with the graders. The agreement analysis was repeated twice during the training. The agreement ranged between 80-100% for all the ophthalmologists.

The total time taken for data collection was 6 weeks and data analysis and report compilation took 6 weeks.

The district authorities provided a list of the 10 most backward and likely to have poor sanitation villages in each district. In one district (Uttar Pradesh) 11 such villages were generated by the district authorities and all were included.

This procedure was adopted so that the poorest villages could be identified as they would be more likely to have trachoma if trachoma did exist. This convenience sample also meant that if there was no evidence of trachoma as a public health problem in these villages, then it would be unlikely that trachoma would be a significant problem in the villages which had better socio-developmental indicators.

Some modifications in the WHO methodology were made for the RA in India. This was felt necessary due to the large populations of most of the districts in India (populations generally range between 2-3.5 million in each district) and due to the relatively larger size of the villages in India. It was therefore decided to select 10-11 villages per district and if the population exceeded 1000, then the village would be segmented so as to yield a minimum population size of 500 per segmented cluster in the village. For identifying the

appropriate cluster in the village, key informants were interviewed and the poorest segment of the village was identified for the RA.

A focus group discussion was also conducted in each village to obtain community perception on trachoma and the common local names which they used to refer to trachoma.

In the poorest 'segment' of the village, the most deprived houses were identified through a process of consultation and observation. Fifty children aged 1-9 years were examined from the identified houses. The grading was made according to the WHO simplified grading of trachoma using recommended procedures.

A list of all individuals provided by the key informants as 'suspected trichiasis' were examined at home using the standard recommended WHO protocol. In addition, all adults present at home at the time of examination for active infection were also examined for trichiasis.

A total of 101 villages spread across 10 districts of North India were included in the Rapid Assessment. A total of 2772 households were contacted in the 10 districts in the 6 States.

As against popular perception that there is no transmission of trachoma in India, it was observed that all districts showed active cases. The districts in Gujarat had the lowest percentage of active infection. Bikaner district in Rajasthan had a high percentage of children with TF/TI and in one village more than 30% of the examined children had TF/TI. District Mewat in Haryana and district Pauri Garhwal in Uttaranchal also showed that a number of villages had high percentage of children with TF/TI.

The load of TT was very low in all the study areas. There was no association between TF/TI magnitude and TT load in all the districts.



Environmental sanitation was extremely poor in almost all the villages in all the districts. Access to schools etc. was consistently good but access to PHC and surgical facilities for TT were not easily accessible in most villages.

The study shows that control efforts to control active infection are still needed in the country and some of the districts still have foci of infection. Augmenting efforts for improved personal and environmental hygiene and the availability of antibiotics would go a long way in ensuring that the country is able to eliminate trachoma related blindness by 2020.

## **Overview**

India is the second most populous country in the world and is home to more than a billion inhabitants. The country spans an area of 3.29 million square kilometres. Though it is the 12<sup>th</sup> largest economy in the world (US\$ 691 billion), due to the sheer size of the population, the per capita GDP makes India a poor developing economy (US\$ 640 in 2004).

The country also has a high prevalence of blindness. Recent surveys in the country show that the prevalence of blindness (vision < 6/60 in the better eye) has declined over the years and 8.5% above the age of 50 years are blind. More than half the blindness is due to cataract or cataract related conditions like aphakia or surgical complications. A national survey conducted in the country in 1986-89 showed that the prevalence of blindness in the general population was 1.49% (< 6/60 presenting).

India is committed to the goal of Right to Sight and is endeavouring to eliminate avoidable blindness in the country. Trachoma is one of the priority conditions identified for immediate action in the context of Vision2020 in India.

## **Trachoma:**

WHO estimates suggest that 150 million people worldwide are affected by Trachoma and 6 million of them are blind or at risk of visually disabling complications. Today trachoma is found in underprivileged communities living in poor environmental conditions. It is responsible, at present, for more than 3% of the world's blindness but the number keeps changing due to the effect of socio-economic development and current control programmes for this disease. In spite of this, trachoma continues to be hyperendemic in many of the poorest and most remote poor rural areas of Africa, Asia, Central and South America, Australia and the Middle East. The sequelae of active trachoma appear in young adulthood and in middle-aged persons. In hyperendemic areas active disease is most common in pre-school children with prevalence rates as high as 60-90%. It often strikes the most vulnerable members of communities--women and children. Adult women are at much greater risk of developing the blinding complication of trachoma than are adult men. This increased risk has been explained by the fact that women generally spend

a greater time in close contact with small children, who are the main reservoir of infection.

A global initiative to eliminate trachoma as a blinding disease, entitled GET 2020 (Global Elimination of Trachoma), was launched under WHO's leadership in 1997. Through this initiative control activities are instituted through primary health care approaches that follow the evidence-based "SAFE" strategy. This consists of lid surgery (S), antibiotics to treat the community pool of infection (A), facial cleanliness (F); and environmental changes (E). VISION 2020 national plans that address trachoma are in consonance with the GET2020 "SAFE" strategy and recommendations.

Trachoma presents both in children and adults. The disease has two classical presentations:

1. Inflammatory (Active) trachoma which is generally seen in children aged 2-10 years.
2. Scarring trachoma generally seen in adults and the precursor to trichiasis, which, by causing corneal scarring ultimately leads to blindness. This is 3 times more common among females compared to males.

In assessing the load of trachoma at community level, it is important that both stages are considered. It is also recognised that in certain situations only mild infective trachoma is found in children with no evidence of trichiasis among the adults.

#### **Magnitude of Trachoma in India:**

WHO estimates that 3,423,900 need to be treated in the endemic areas in India (2003) while 2,668,000 are in need of surgery for trichiasis. The prevalence of active trachoma among children aged < 10 years has been estimated by WHO at 2.02%. However, the WHO perceives that there is a lack of information from countries like India and China. Fresh estimates from these countries will help in determining the load of trachoma globally as these two countries are the most populous countries in the world.

A number of surveys have been conducted in India over the past five decades and these have been used to track the trends in relation to active disease and blindness due to trachoma in India.

The prevalence of trachoma in India was first established over the period 1959-63 as part of the Trachoma Control Pilot Project in the country (Table 1).

**Table 1: Prevalence of Trachoma in India (1959-63)**

State	Prevalence rate of active infection (TF/TI)	Level of endemicity
Punjab	79.1	High
Rajasthan	74.1	High
Uttar Pradesh	68.1	High
Gujarat	56.0	High
Madhya Pradesh	40.3	Moderate
Bihar	35.1	Moderate
Assam	25.2	Moderate
Mysore (Karnataka)	22.6	Moderate
Jammu & Kashmir	16.8	Low
Maharashtra	11.3	Low
Kearala	8.6	Low
Andhra Pradesh	5.3	Low
Madras (Tamil Nadu)	4.6	Low
Orissa	2.7	Low
West Bengal	0.5	Low

Based on the information on prevalence the Pilot Project initiated control measures including mass prophylaxis with topical Tetracycline ointment in the hyperendemic States in the country. All the hyperendemic States were characterised by hot, dry and dusty climate.

The National Survey on Blindness in India (1986-89) observed that the prevalence of active infection had significantly reduced in all the previously known hyperendemic States in the country (Table 2).

**Table 2: Prevalence Rate of Active Infection (1986-89)**

State	Prevalence rate of active infection (TF/TI) 0-14 yrs	Prevalence rate of active infection (TF/TI) < 10 yrs
Punjab	21.79	6.94%
Rajasthan	17.11	4.19%
Uttar Pradesh	11.73	9.49%
Gujarat	10.24	4.76%
Haryana	15.0	3.83%

It was observed that no State remained in the hyper-endemic zone in 1986. Even among those aged < 10 years, the prevalence was below 10% in all States. The composite State of Punjab in 1956, was split into 3 States and therefore Haryana was an independent entity in the 1986-89 survey. At the turn of the century, Uttar Pradesh was split into 2 States – Uttar Pradesh and Uttaranchal (Uttarakhand) and therefore subsequent data pertains to two different States.

Trachoma is a blinding disease and therefore blinding trachoma and active infection need to be considered separately for control purposes. The proportionate prevalence of blinding trachoma among all causes of blindness in the general population was estimated in the 1986-1989 survey. Overall in the country, 0.39% of all blindness in the country was attributable to Trachoma. This would be an underestimate as the survey denominator also includes children < 10 years of age. Based upon this data, the National Program for Control of Blindness in India felt that Trachoma was no longer a significant cause of blindness in India.

Very few studies since then have looked at either active or blinding trachoma in the country. In 1995, a survey was done among school aged children (5-15 years) in two districts of the present Uttaranchal State and active trachoma was observed in 8.5% of the children. Results were also confirmed using Chlamydia antibody detection tests. A

subsequent study among school children in Delhi observed a prevalence of active infection of 18%. However both studies were done on very small samples and would not be representative of the population.

The available evidence on trachoma in India is more than a decade old. It is also true that the available data showed that trachoma ceased to be a public health problem in India. However there is no recent data to say whether the trends observed over the past two decades have continued in the same pattern or whether there was a reversal in trends. Due to the lack of scientifically valid data on trachoma in the country, it was proposed to conduct a Rapid Assessment to identify whether trachoma still continued to be a problem of public health significance in India. It was envisaged that if the evidence in the rapid assessment showed that trachoma is still a problem, then other quantitative epidemiological methods would be adopted (i.e. population based survey after appropriate sampling).

#### **Rapid Assessment of Trachoma:**

The rapid assessment was conducted in 10 districts in the country covering the 6 previously endemic States (Uttar Pradesh now having been split into 2 States). The number of districts covered in each State, were selected based on the population of the States. For Uttar Pradesh only the districts in Western Uttar Pradesh which formed the previously known hyperendemic area were covered.

The districts identified and covered for the Rapid Assessment were as follows:

**Table 3: States and Districts where RA was conducted**

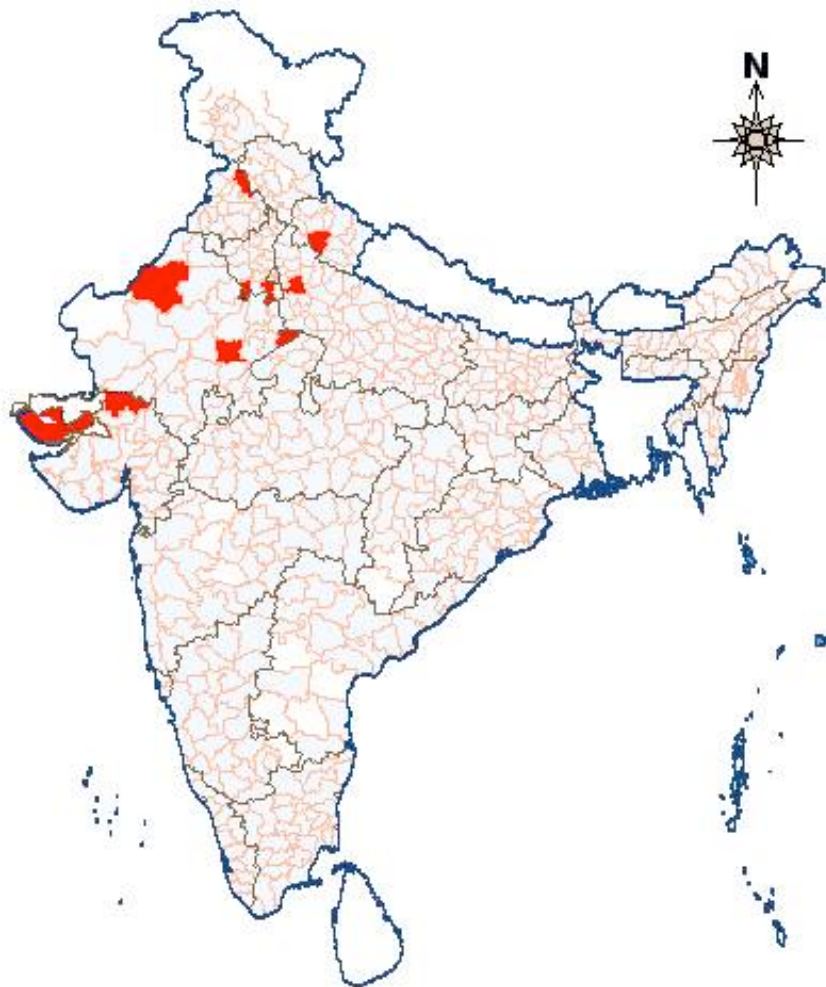
State	Number of districts	Name of districts
Punjab	1	Hoshiarpur
Haryana	2	Mahendergarh; Mewat
Gujarat	2	Kutch; Banaskantha
Uttar Pradesh	1	Bullandshahr
Uttaranchal	1	Pauri Garhwal
Rajasthan	3	Bikaner; Dholpur; TOnk
Total	10	-

## Objectives:

The objectives of the Rapid Assessment were:

1. To assess whether active trachoma continues to be of public health significance in previously known hyperendemic areas in India.
2. To determine the load of blinding trachoma among adults and the need for surgical services for Trichiasis.
3. To identify people's perception of trachoma and blinding trachoma
4. To suggest actions for policy formulation on control of trachoma in India.

**Figure 1: Districts and States where Rapid Assessment Was Conducted**



## **Background Information on Study Area:**

Ten districts were identified for the rapid assessment through participatory approach. The State officials including the State Blindness Control Program Officers were asked to identify the most backward districts in each of the study States, depending on the number of districts to be covered in each State.

After identification of the districts, the district administrators were approached and they were asked to provide a list of the 10 most backward villages in the district. In some States, the district officials gave equal weightage to more than one village and therefore 11 villages were covered in the rapid assessment in one district.

Initially, in Rajasthan the districts identified as the most backward in the State were the districts of Banswara, Bikaner and Barmer. While the study was being done in Bikaner a major flood occurred in Banswara and Barmer and the rapid assessment had to be stopped in these two districts. The State and district officials stated that these two districts needed major rehabilitation work and that no survey or rapid assessment would be possible before January 2007. Since the Rapid Assessment had to be completed before that, the State administration was asked to identify the next two backward districts and the initially identified districts of Barmer and Banswara were replaced by Dholpur and Tonk.

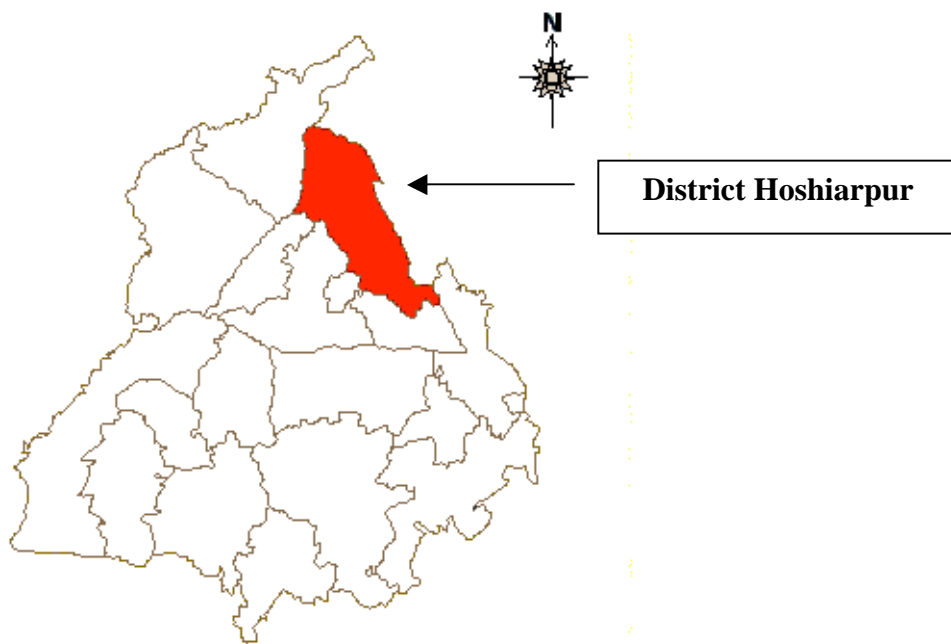
The profile of the different districts, included in the study is as follows:

**Table 4: District Hoshiarpur, Punjab**

Parameter	Number
Total Population	1480736
Rural Population	1188662 (80.3%)
Scheduled caste population	507544 (34.3%)
Tribal population	-



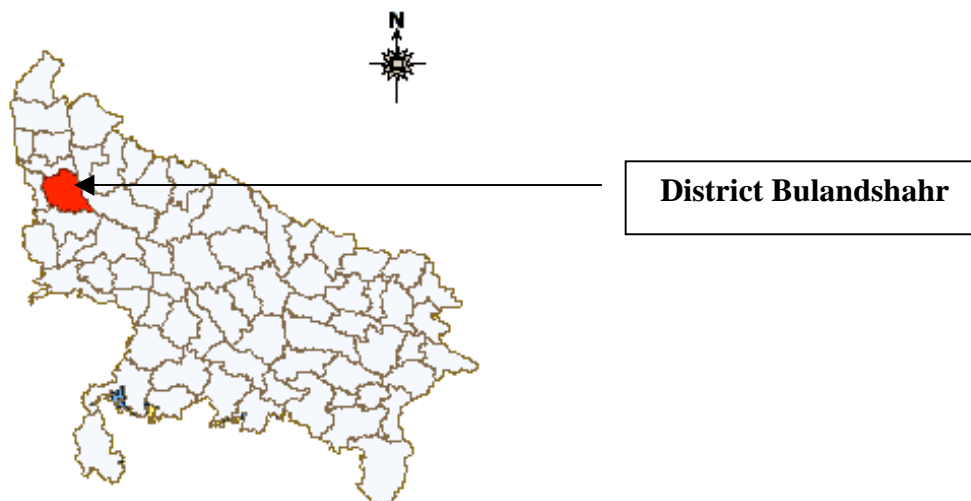
**Fig 2: District Hoshiarpur, Punjab**



**Table 5: District Bulandshahr, Uttar Pradesh**

Parameter	Number
Total Population	2913122
Rural Population	2238664 (76.8%)
Scheduled caste population	588683 (20.2%)
Tribal population	-

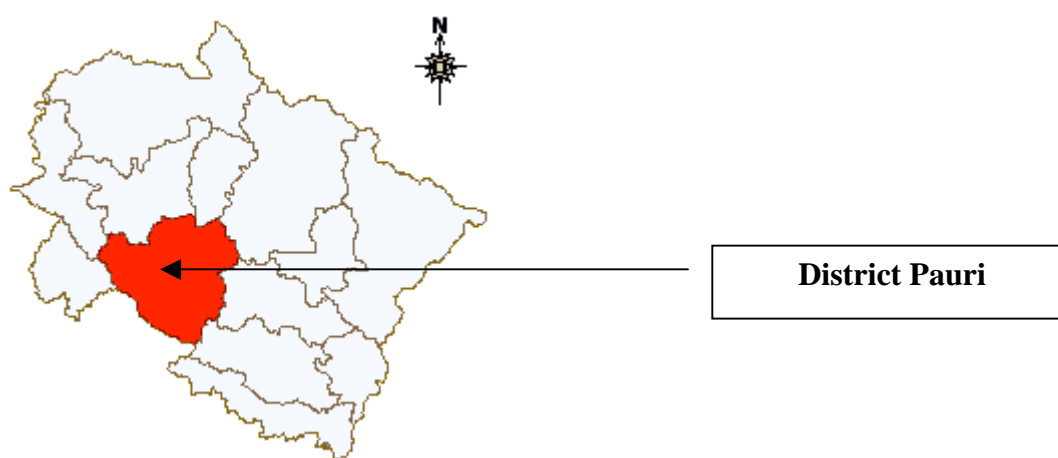
**Figure 3: District Bulandshahr, Uttar Pradesh**



**Table 6: District Pauri Garhwal, Uttarakhand**

Parameter	Number
Total Population	331061
Rural Population	281706 (85.1%)
Scheduled caste population	106653 (32.2%)
Tribal population	1594 (0.5%)

**Figure 4: District Pauri Garhwal, Uttarakhand**



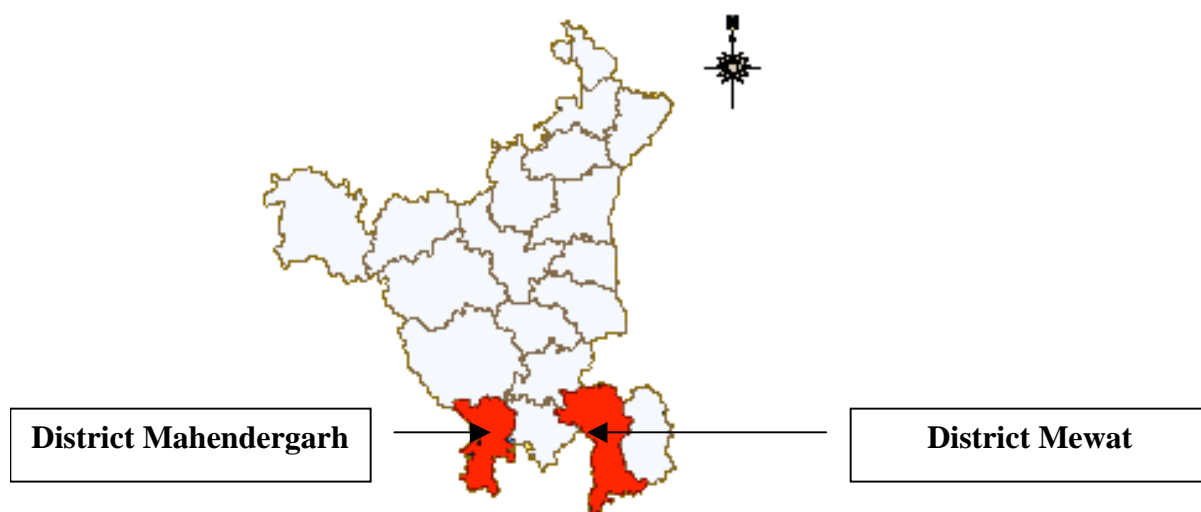
**Table 7: District Mahendergarh, Haryana**

Parameter	Number
Total Population	812521
Rural Population	702885 (86.5%)
Scheduled caste population	132512 (16.3%)
Tribal population	-

**Dist Mewat, Haryana**

Parameter	Number
Total Population	993617
Rural Population	923400 (92.9%)
Scheduled caste population	78802 (7.9%)
Tribal population	-

**Figure 5: District Mewat & Mahendergarh, Haryana**



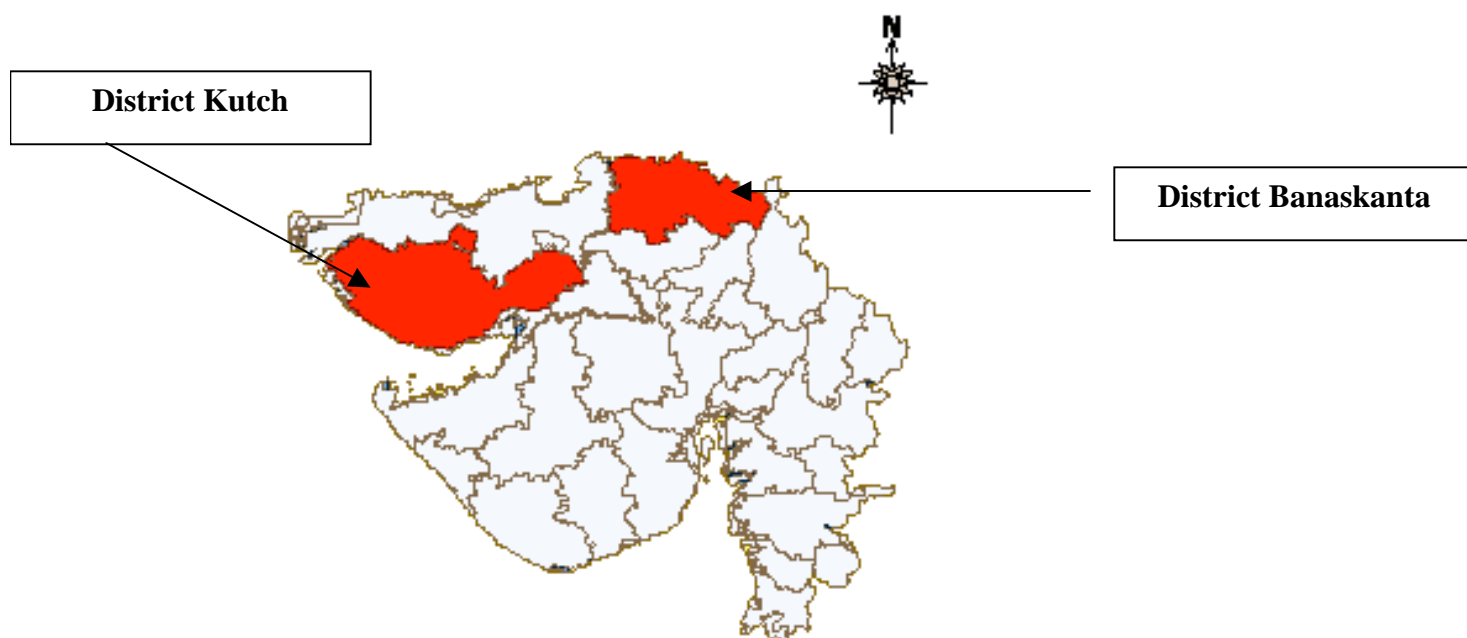
**Table 8: District Kutch, Gujarat**

Parameter	Number
Total Population	1583225
Rural Population	1108333 (70.0%)
Scheduled caste population	185932 (11.7%)
Tribal population	130138 (8.2%)

**Table 9: District Banaskantha, Gujarat**

Parameter	Number
Total Population	2504244
Rural Population	2228743 (89%)
Scheduled caste population	271484 (10.8%)
Tribal population	205904 (8.2%)

**Figure 6: Districts Covered in Gujarat**



**Table 10: District Tonk, Rajasthan**

Parameter	Number
Total Population	1211671
Rural Population	958503 (79.1%)
Scheduled caste population	233084 (19.2%)
Tribal population	145891 (12.0%)

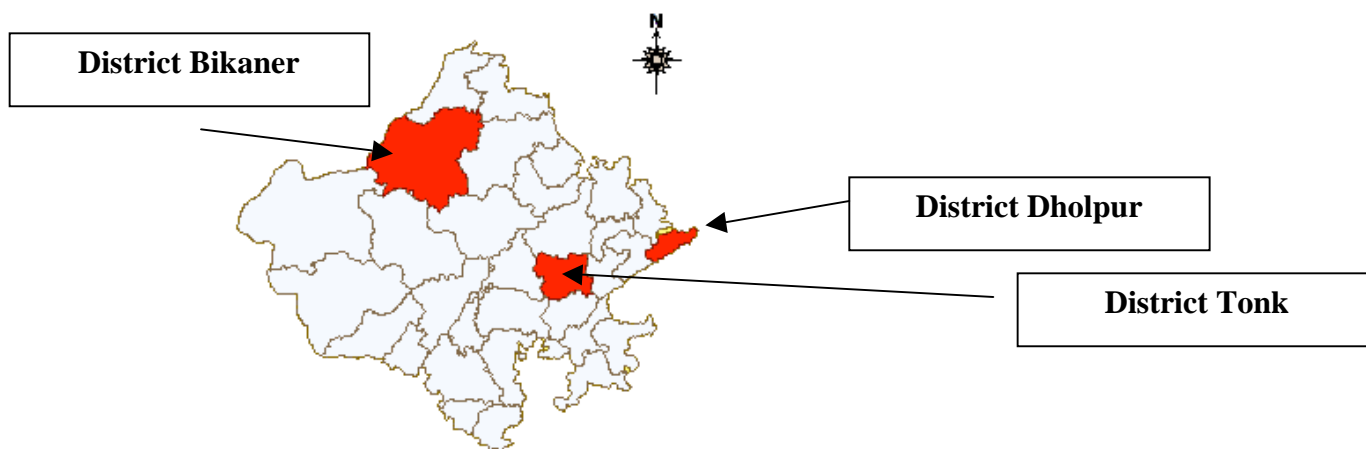
**Table 11: District Dholpur, Rajasthan**

Parameter	Number
Total Population	983258
Rural Population	806640 (82.0%)
Scheduled caste population	197895 (20.1%)
Tribal population	47612 (4.8%)

**Table 12: District Bikaner, Rajasthan**

Parameter	Number
Total Population	1674271
Rural Population	1079235 (64.4%)
Scheduled caste population	334242 (20%)
Tribal population	5945 (0.4%)

**Figure 7: Districts Covered in Rajasthan**



## **Methodology**

The WHO guidelines for Rapid Assessment were basically used for the Rapid Assessment. In order to reflect the situation in India, some modifications were felt necessary to the standard prescribed methodology.

## **Study Teams**

Six independent study teams were constituted (One team for each State) to expedite the process.

<b>Institution</b>	<b>State &amp; Districts Covered</b>
St. Stephen's Hospital, New Delhi	Uttaranchal (Pauri Garhwal)
Christian Medical College, Ludhiana	Punjab (Hoshairpur)
Dr. R.P. Centre for Ophthalmic Sciences, AIIMS, New Delhi	Haryana (Mewat; Mahendergah)
SEWA Rural, Bharuch, Gujarat	Gujarat (Banaskanta; Kutch)
J N Medical College, Aligarh, UP	Uttar Pradesh (Bulandshahr)
Venu Eye Institute, New Delhi	Rajasthan (Dholpur; Bikaner; Tonk)

## **Study Personnel**

Each study team was constituted of the following core personnel:

✂	Study Coordinator	–	One
✂	Ophthalmologist	–	One
✂	Epidemiologist	–	One
✂	Optometrist	–	One
✂	Field Supervisors	–	Two
✂	Field Investigators	–	Four

## **Training and Pilot:**

All the teams were trained over a five day period at the Community Ophthalmology Unit, Dr. Rajendra Prasad Centre for Ophthalmic Sciences, AIIMS, New Delhi (WHO Collaborative Centre). The training provided the background information and rationale for the Rapid Assessment. The training schedule included lecture demonstration, grading

of the trachoma slide set by the ophthalmologists and optometrists, role play on how to interview key informants, orientation to the different formats for data collection, filling up the tally sheets and clinical examination. Pre pilot and pilot were conducted in a village in Haryana and the urban slums in New Delhi. Agreement of the graders with the WHO slide set was conducted and agreement analysis was done and the Kappa values were shared with the graders. The agreement analysis was repeated twice during the training. The agreement ranged between 80-100% for all the ophthalmologists.

***Study Duration:***

**The data collection was completed in one week per district. The total time taken for data collection was 6 weeks** and data analysis and report compilation took 6 weeks. A Review Workshop was held after preliminary analysis and all outputs shared with the participating teams and representatives of the National Program for Control of Blindness. Feedback and additional information that was required was provided by the teams and this was incorporated in the final report.

***Analysis of Data:***

All data from the districts was collated and entered by Mukund Soft Pvt. Ltd under the technical supervision and guidance of the Community Ophthalmology Unit at Dr. R.P.Centre for Ophthalmic Sciences. Data was analysed in Excel spreadsheets and analysis was done using Strata 9.0.

**Selection of villages for RA:**

In selecting the villages for the RA in each district, a participatory approach was adopted. The district administrators of each district were contacted and they were asked to provide a list of the 10 most backward and likely to have poor sanitation villages. In one district 11 such villages were generated by the district authorities and all were included.

This procedure was adopted so that the poorest villages could be identified as they would be more likely to have trachoma if trachoma did exist. This convenience sample also meant that if there was no evidence of trachoma as a public health problem in these villages, then it would be unlikely that trachoma would be a significant problem in the villages which had better socio-developmental indicators.

Some modifications in the WHO methodology were made for the RA in India. This was felt necessary due to the large populations of most of the districts in India (populations generally range between **2-3.5 million** in each district) and due to the relatively larger size of the villages in India. It was therefore decided to select 10-11 villages per district and if the population exceeded 1000, then the village would be segmented so as to yield a minimum population size of 500 per segmented cluster in the village. For identifying the appropriate cluster in the village, key informants were interviewed and the poorest segment of the village was identified for the RA.

In order to ensure that the correct villages were covered, the exact census code was provided to each team and through this the correct village could be identified in the districts.

Since nearly all villages in India have access to primary school and potable water these criteria could not be used for the selection of the villages. Therefore the overall socio-developmental indicators including **poor literacy levels** were suggested to the district administration in identification of the villages.

### **Liaison with local authorities**

The district administration and the District Program Manger for Control of Blindness in the district were informed in advance of the team visit and were also asked to provide local logistic support including the services of the health centre staff for identification of the villages and for helping in the rapport building exercise.

### **Approaching the Community**

On arrival in the village, the team identified potential key informants. These included school teachers, village panchayat members, anganwadi workers, health centre staff, women's self help groups, mahila mandals, local health practitioners etc. A knowledgeable person who could provide information on the socio economic stratification in the village and the population distribution in the village were targeted as the key informants. The village leaders and the potential key informants were contacted and explained the purpose of the visit.



A focus group discussion was also conducted in each village to obtain community perception on trachoma and the common local names which they used to refer to trachoma. Individuals whom the key informants or the participants of focus group discussions could identify as suspected trichiasis were recorded so that they could be contacted and examined. To facilitate this process, standard pictures and hand drawings of trichiasis and descriptions of the same were shared with the participants of focus group discussions. The list of questions prepared by the WHO was translated into the local languages and used during the discussions. Information on village facilities was also collected during the course of the interviews.

### **Observation of Village Environmental Conditions and Facilities**

The team first went around the village and recorded their observations on the estimated number of households, likely population, water facilities, environmental sanitation and local facilities like market, drug store etc. The visit also enabled them to identify the poorest segment of the village which was confirmed by discussing with the local leaders and village elders. All such information was recorded in appropriate formats. Around 50 households were examined for environmental factors. Since houses in India are clustered next to each other, the distance of 20 metres would be too much and therefore presence of animal pens/ latrine etc. were observed for their presence whether within the house boundaries or just outside the house. In villages with scattered houses, the distance criteria of 20 metres as recommended by WHO was followed.

In recording the distance to a facility like PHC/trichiasis facility, it was decided that distance to all facilities within the village would be recorded in walking time while for all facilities outside the village it would be recorded in time taken by public transport.

For identifying a market, respondents were queried about the distance to shops selling groceries, vegetables and other items for daily living. Similarly for a pharmacy, respondents were queried about facility where common medicines for fever, malaria, cough and cold etc. were sold.

### **Examination of children for active infection**

In the poorest 'segment' of the village, the most deprived houses were identified through a process of consultation and observation.

Fifty children aged 1-9 years were examined from the identified houses. Tally sheets were used to ensure that equal number of children below, and, above the age of 5 years were examined. All children were examined by an ophthalmologist and the findings confirmed with the WHO standard set on clinical features. In the smaller villages all available children were examined. All examinations were conducted at home. The clinicians graded each eye separately and recorded observations in the WHO Rapid Assessment simplified grading format.

Observation of facial hygiene was done on all the children examined for active trachoma. Unclean faces were defined as:

- Presence of discharge from the eyes / nose
- Crusting of discharge around the eye or nose.
- Presence of flies on the discharge around eye / nose.

### **Assessment of trichiasis**

A list of all individuals provided by the key informants as 'suspected trichiasis' were examined at home using the standard recommended WHO protocol. In addition, all adults present at home at the time of examination for active infection were also examined for trichiasis. The presence of a single eye lash rubbing against the eye was identified as trichiasis.

### **Assessment Indicators Used**

The following indicators were considered in ranking the districts and the villages within the districts:

- Number of cases of trichiasis
- Percentage of active trachoma among examined children.

The extent of the problem both in terms of active infection and scarring were analysed using the cut offs recommended by WHO.

***Active Infection (TF/TI) in children aged 2-10 years:***

- No evidence of active trachoma
- < 10% children aged 1-10 yrs have active trachoma
- 10 – 29.9% have active trachoma
- $\geq 30\%$  have active trachoma

***Trichiasis among Those Aged  $\geq 15$  years***

- No evidence of trichiasis
- < 1% have TT
- 1 – 4.9 % have TT
- $\geq 5\%$  have evidence of TT

## Results

A total of 101 villages spread across 10 districts of North India were included in the Rapid Assessment. The total population of these villages was **246995**(**mean population / village: 2445.5**) while the population of the segment of the village where the RA was done was **65795** (**mean population / examined segment: 651.4**). A total of 2772 households were contacted in the 10 districts in the 6 States.

### Status of Trachoma in Gujarat

The different villages covered in the districts are shown in Table13.

**Table 13: List of villages covered in Gujarat State (Kutch)**

S.No.	Villages	Tehsil	Total population	Population of examined segment	No. Of Households covered
<b>District Kutch</b>					
1.	Lodai	Bhuj	3132	1380	30
2.	Jikadi	Bhuj	1298	310	29
3.	Siyot	Lakhpat	480	480	30
4.	Fulra	Bhuj	1269	400	24
5.	Fulay	Abdasa	1381	550	30
6.	Tera	Abdasa	2627	730	30
7.	Chopadva	Bhuj	1051	400	27
8.	Chobari	Bhuj	6119	1850	30
9.	Thoriari	Rapar	1087	900	29
10.	Taga	Rapar	1459	700	30
	<b>Total</b>		19903	7700	289
<b>District Banaskanta</b>					
1.	Benap	Vav	4445	500	30
2.	Morwada	Vav	4094	1000	30
3.	Mavsari	Vav	2304	400	30
4.	Dhanpura	Amirgarh	3957	2200	25
5.	Naroli	Tharad	3148	900	30
6.	Navavas	Danta	3481	790	28
7.	Tadav	Vav	3782	1700	30
8.	Hadad	Danta	3144	550	30
9.	Surela	Amirgarh	800	800	30
10.	Semalpani	Danta	1098	350	30
	<b>Total</b>		30253	9190	293

### Active Infection in Gujarat

Two districts (20 villages) were covered in Gujarat. In district Kutch, 8 villages showed no active infection while the remaining 2 villages < 10% children examined had active disease. **In Banaskanta district, 5 villages did not show any active cases while the remaining 4 showed that < 10% children had TF/TI.**

Figure 8: District Profile of Trachoma in Gujarat

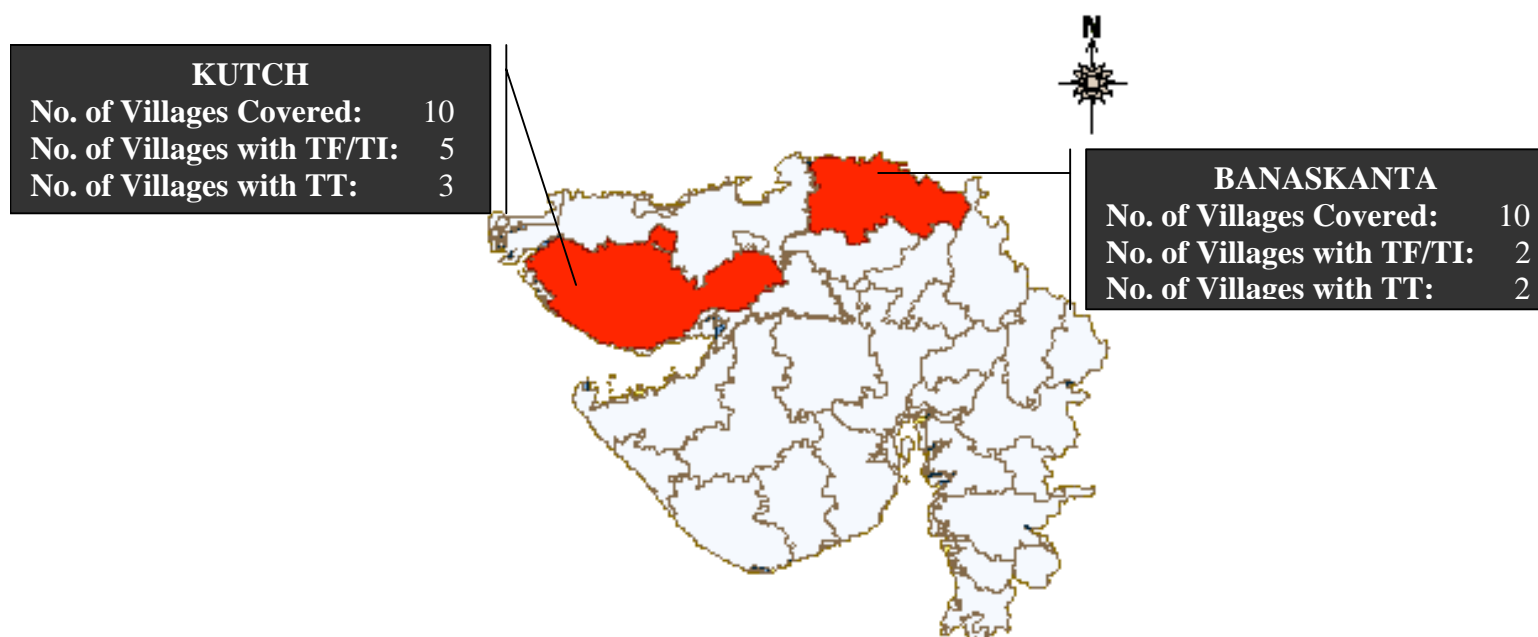
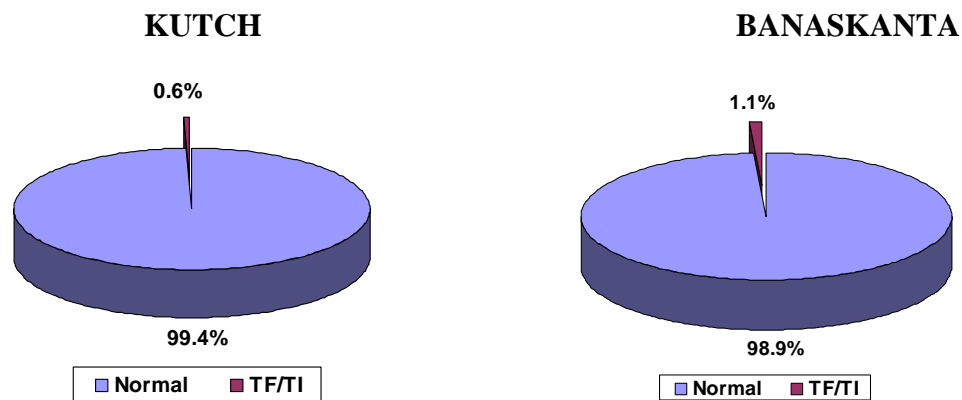


Table 14: Distribution of Active Infection in Gujarat

Villages	No. children examined	No. with TF	No. with TI	No. with TF/TI	% children with TF/TI	% Unclean faces
<b>District Kutch</b>						
Thoriyari	53	1	1	2	3.8	50.9
Chopavade	51	1	0	1	2.0	19.6
Lodai	55	0	0	0	0.0	40.0
Jhikadi	56	0	0	0	0.0	42.9
Siyot	53	0	0	0	0.0	22.6
Fulra	50	0	0	0	0.0	40.0
Phulai	53	0	0	0	0.0	28.3
Tera	52	0	0	0	0.0	38.5
Chobari	53	0	0	0	0.0	18.9
Taga	54	0	0	0	0.0	25.9
<b>Total</b>	<b>530</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>0.6</b>	<b>32.8</b>

District Banaskanta						
Sebalpani	50	0	2	2	4.0	32.0
Navavas	52	0	1	1	1.9	21.2
Morvada	53	0	1	1	1.9	24.5
Naroli	54	0	1	1	1.9	25.9
Tadav	55	0	1	1	1.8	36.4
Benap	51	0	0	0	0.0	29.4
Mavsari	52	0	0	0	0.0	24.5
Dhanpura	52	0	0	0	0.0	42.3
Handad	53	0	0	0	0.0	40.4
Surela	53	0	0	0	0.0	25.9
<b>Total</b>	<b>525</b>	<b>0</b>	<b>6</b>	<b>6</b>	<b>1.1</b>	<b>30.5</b>
<b>State Total</b>	<b>1055</b>	<b>1</b>	<b>9</b>	<b>9</b>	<b>0.9</b>	<b>31.7</b>

**Figure 9: Active Infection in Gujarat**



***Trichiasis Load in Gujarat***

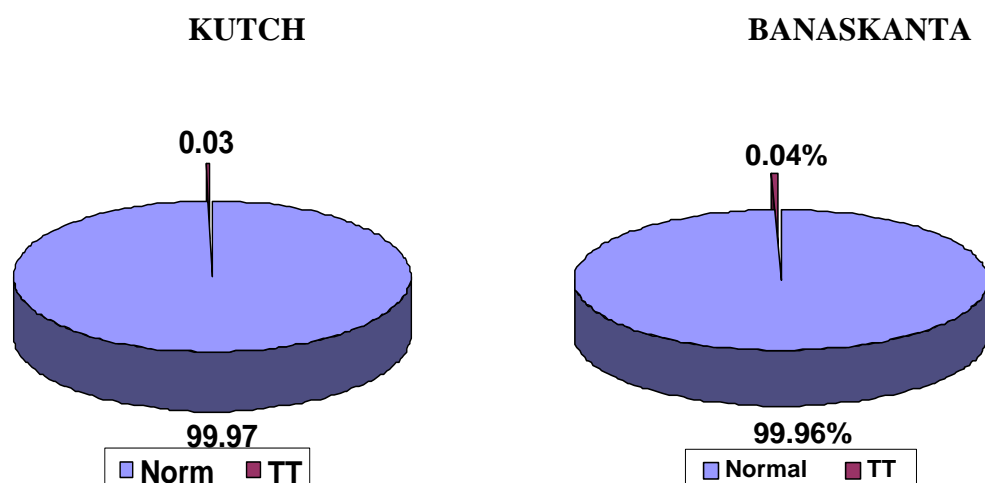
Only 2 villages in Kutch district and 3 villages in Banskanta showed the presence of TT.

It appears that the trachoma is well under control in the two districts and no village could be considered as a 'high priority' village based on the clinical presentations.

**Table 15: List of TT cases in villages in Gujarat**

Villages	Without CO	With CO	Recurrent Case	Total_cases	Suspected Case	Segment Population	% with TT among examined
<b>District Kutch</b>							
Siyot	1	0	0	1	0	480	<b>0.21</b>
Chobari	1	0	0	1	0	1850	<b>0.05</b>
Lodai	0	0	0	0	0	1380	0.00
Jhikadi	0	0	0	0	0	310	0.00
Fulra	0	0	0	0	0	400	0.00
Phulai	0	0	0	0	0	550	0.00
Tera	0	0	0	0	0	730	0.00
Chopavade	0	0	0	0	0	400	0.00
Thoriyari	0	0	0	0	0	900	0.00
Taga	0	0	0	0	0	700	0.00
<b>Total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>7700</b>	<b>0.03</b>
<b>District Banaskanta</b>							
Sebalpani	1	0	0	1	0	<b>350</b>	<b>0.29</b>
Naroli	2	0	0	2	0	<b>900</b>	<b>0.22</b>
Tadav	0	1	0	1	0	<b>1700</b>	<b>0.06</b>
Benap	0	0	0	0	0	500	0.00
Morvada	0	0	0	0	1	1000	0.00
Mavsari	0	0	0	0	0	400	0.00
Dhanpura	0	0	0	0	0	2200	0.00
Navavas	0	0	0	0	0	790	0.00
Handad	0	0	0	0	0	550	0.00
Surela	0	0	0	0	0	800	0.00
<b>Total</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>9190</b>	<b>0.04</b>
<b>State Total</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>500</b>	<b>0.00</b>

**Figure 10: Load of TT in Gujarat**



### Environmental Indicators

Lodai was the most disadvantaged village in Kutch district as all the households had to walk more than 30 minutes to reach a source of water. In district Banaskanta, only one village (Morwada) was water access a problem. In both the districts, the majority of the households had an animal pen wither in the household premises or the near vicinity. Very few households had a functional latrine in the house premises. It therefore appeared that the environmental sanitation overall was poor in both the districts covered in Gujarat.

**Table 16: Distribution of houses by environmental status**

Village	HH observed	Water Availability		Animal Pens		Functional Latrine	
		<30min	>30min	Yes	No	Yes	No
<b>District Kutch</b>							
Lodai	30	0	30	26	4	6	24
Jikadi	29	29	0	11	18	4	25
Siyot	30	25	5	26	4	8	22
Fulra	24	24	0	14	10	4	20
Fulay	30	30	0	21	9	0	30
Tera	30	30	0	29	1	6	24
Chopadva	27	27	0	12	15	1	26
Chobari	30	30	0	26	4	2	28
Thoriari	29	29	0	14	15	2	27
Taga	30	30	0	30	0	0	30



<b>Total</b>	289	254	35	209	80	33	256
<b>District Banaskanta</b>							
Benap	30	30	0	25	5	2	28
Morwada	30	17	13	28	2	0	30
Mavsari	30	30	0	19	11	0	30
Dhanpura	25	25	0	16	9	0	25
Naroli	30	30	0	21	9	0	30
Navavas	28	28	0	11	17	16	12
Tadav	30	30	0	30	0	0	30
Hadad	30	30	0	30	0	0	30
Surela	30	30	0	30	0	0	30
Sembalpani	30	30	0	18	12	0	30
<b>Total</b>	293	280	13	228	65	18	275
<b>State Total</b>							

### Access to facilities

District Kutch did not have good access to a trichiasis facility and the access to primary health care was better. Primary schools were within easy walking distance but market facilities or availability of pharmacy was not good. District Banaskanta had much better access to all the facilities compared to Kutch, except with regard to surgical facility for trichiasis which was equally inaccessible.

**Table 17: Reported/ Observed Access to Different Facilities**

Villages	Distance to Facility				
	By public transport		Walking time		
	Primary Health Care	Trichiasis Surg. Facility	Village Pharmacy	Market	School
	<30min=1; 30min-2hr=2; >2hr=3				
<b>District Kutch</b>					
Lodai	2	3	3	1	1
Jikadi	2	3	3	3	1
Siyot	1	3	2	2	2
Fulra	2	2	3	3	1
Fulay	2	3	3	3	1
Tera	1	3	2	2	1
Chopadva	2	2	2	2	1
Chobari	2	2	1	2	1
Thoriari	1	2	3	3	1
Taga	2	2	2	2	1

District Banaskanta					
Benap	2	2	2	2	1
Morwada	1	2	2	2	1
Mavsari	1	3	1	1	1
Dhanpura	1	2	2	2	1
Naroli	1	2	2	2	1
Navavas	1	2	1	1	1
Tadav	2	3	1	2	1
Hadad	1	3	1	1	1
Surela	1	2	2	2	2
Sembalpani	1	2	1	1	1

### Access to Surgical Facility for TT

Dist: Kachchh

Table 18: Travel time by public transport

Villages	< 30 min	30 min - 2 hr	> 2 hr
Lodai			
Jhikadi			
Siyot			
Fulra			
Phulai			
Tera			
Chopavade			
Chobari			
Thoriyari			
Taga			

Dist: Banaskanta

Table 19: Travel time by public transport

Villages	< 30 min	30 min - 2 hr	> 2 hr
Benap			
Morvada			
Mavsari			

Dhanpura			
Naroli			
Navavas			
Tadav			
Handad			
Surela			
Sebalpani			

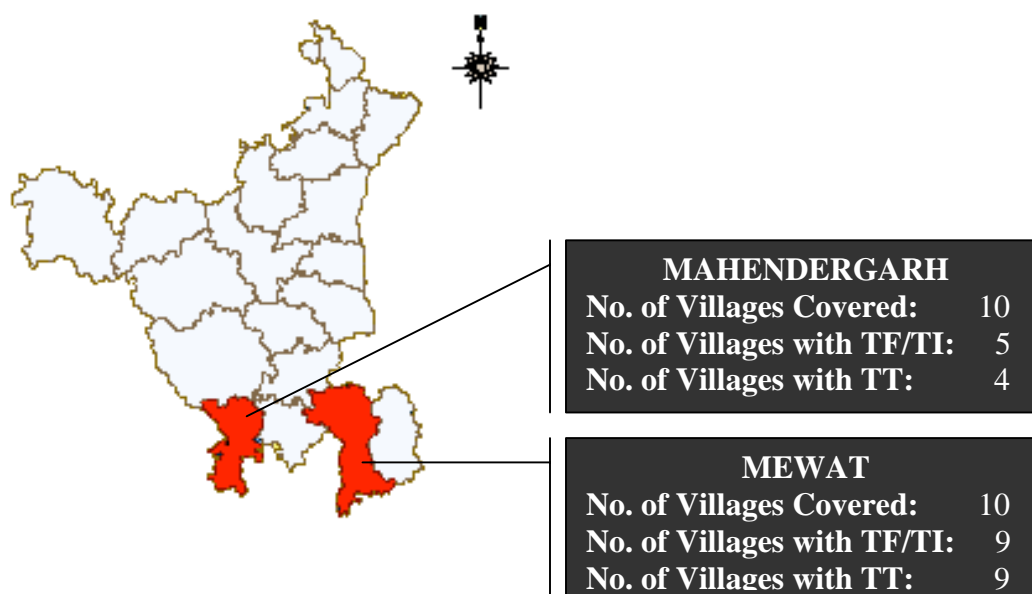
## Status of Trachoma in Haryana

Two districts were covered in Haryana (Table 20 ) for Raid Assessment.

**Table 20: List of villages covered in Haryana State**

S.No.	Villages	Tehsil	Total population	Population of examined segment	No. Of Households covered
<b>District Mahendergarh</b>					
1.	Bhushan Kalan	Narnaul	2200	740	36
2.	Kalba	Narnaul	2600	850	32
3.	Nain	Narnaul	8000	800	32
4.	Chhapra Salimpur	Narnaul	1210	655	36
5.	Asrawas	Narnaul	1800	950	29
6.	Kothal Kalan	Mahendergarh	2295	710	33
7.	Jailab	Narnaul	1400	730	44
8.	Antri	Narnaul	1300	700	37
9.	Mosnota	Narnaul	6000	640	39
10.	Banihari	Narnaul	1700	930	36
	<b>Total</b>		28505	7705	354
<b>District Mewat</b>					
1.	Bhadas	F. Jhirka	5814	650	26
2.	Nasirwas	F. Jhirka	1400	435	24
3.	Sunehra	Punahana	1500	600	23
4.	Marora	F. Jhirka	5500	525	21
5.	Jalalpur	F. Jhirka	6000	600	22
6.	Jaisinghpur	Nuh	6000	750	24
7.	Nawli	F. Jhirka	3000	650	25
8.	Nagal Mubarkpur	F. Jhirka	5000	650	23
9.	Madi Khera	F. Jhirka	3500	535	30
10.	Kheli Khurd	F. Jhirka	1400	600	30
	<b>Total</b>		39114	5995	248

**Figure 11: Trachoma Profile in Haryana**



**Active Infection**

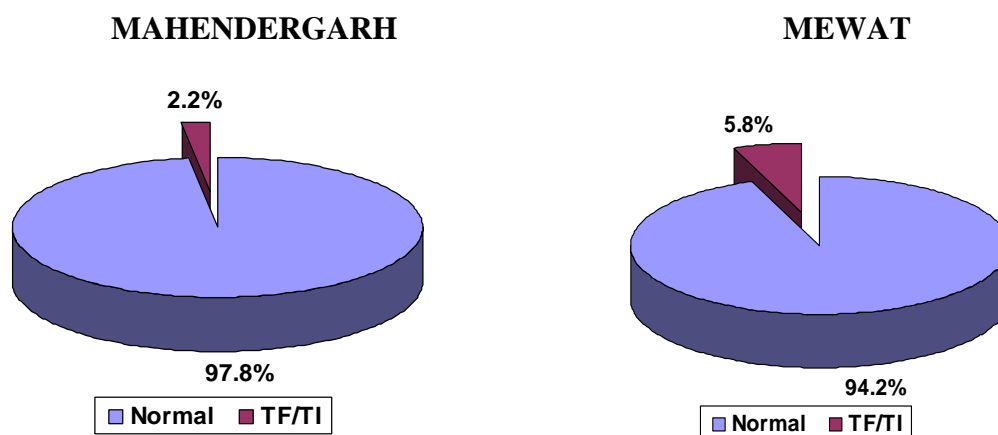
Two districts were covered in the State of Haryana (Mahendergarh and Mewat). Mewat is one of the most underdeveloped districts in the country and has an abysmally low literacy rate especially among females. Active infection was observed in 5 villages in Mahendergarh and 9 (90%) of the villages in Mewat district. One village (Asrawas) could be considered as a village with medium priority for trachoma control while all the other villages in the district were of low priority. In Mewat district, 2 villages could be considered as medium priority and 7 villages as low priority. The proportion of children with unclean faces was significantly higher in Mewat district compared to Mahendergarh district.

**Table21: Active Infection in Haryana (2-10 yrs old children)**

Villages	No. children examined	No. with TF	No. with TI	No. with TF/TI	% children with TF/TI	% Unclean faces
<b>District Mahendergarh</b>						
Asrawas	50	2	4	6	12.0	20.0
Mosnota	50	0	2	2	4.0	16.0
Bhushan Kalan	50	1	0	1	2.0	4.0
Antri	50	0	1	1	2.0	10.0
Kalba	50	1	0	1	2.0	0.0
Nain	50	0	0	0	0.0	16.0
Chhapra	50	0	0	0	0.0	2.0

Salimpur						
Kothal Kalan	50	0	0	0	0.0	8.0
Jailab	50	0	0	0	0.0	8.0
Banihari	50	0	0	0	0.0	2.0
<b>Total</b>	<b>500</b>	<b>4</b>	<b>7</b>	<b>11</b>	<b>2.2</b>	<b>8.6</b>
<b>District Mewat</b>						
Jalalpur	50	4	1	5	10.0	38.0
Kheli Khurd	50	4	1	5	10.0	18.0
Sunehra	50	4	0	4	8.0	38.0
Marora	50	3	1	4	8.0	68.0
Nawli	49	2	1	3	6.1	28.6
Bhadas	50	1	2	3	6.0	64.0
Nagal Mubarkpur	50	1	1	2	4.0	26.0
Madi Khera	50	2	0	2	4.0	10.0
Nasirwas	50	1	0	1	2.0	14.0
Jaisinghpur	50	0	0	0	0.0	18.0
<b>Total</b>	<b>499</b>	<b>22</b>	<b>7</b>	<b>29</b>	<b>5.8</b>	<b>32.3</b>
<b>State Total</b>	<b>999</b>	<b>26</b>	<b>14</b>	<b>40</b>	<b>4.0</b>	<b>20.4</b>

Figure 12: Active Infection in Haryana



### *Trichiasis Load*

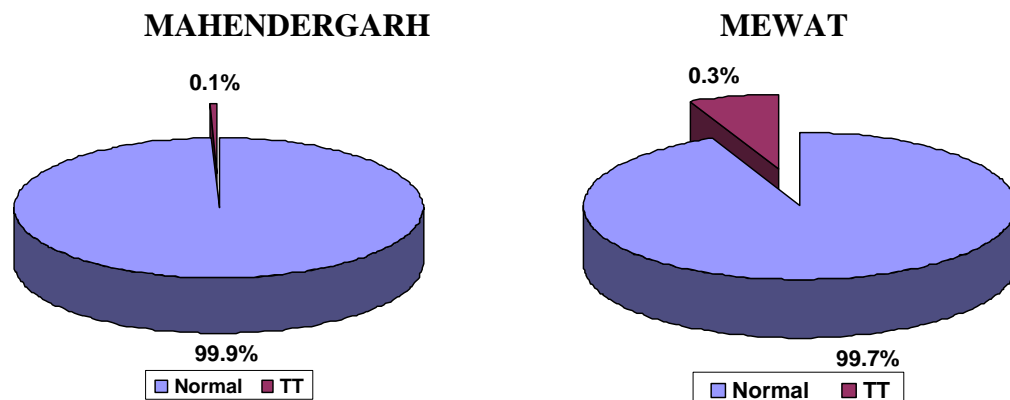
All the villages in Mahendergarh district had either no cases or very few cases and therefore of low priority. However in Mewat district as with active trachoma, only one

village did not show TT and 2 villages had significant number of cases and therefore were categorized as villages with medium priority for control.

**Table22: List of TT Cases in Haryana**

Villages	Without CO	With CO	Recurrent Case	Total cases	Suspected Case	Segment Population	% with TT among examined
<b>District Mahendergarh</b>							
Kalba	0	2	0	2	0	850	0.2
Jailab	0	1	0	1	0	730	0.1
Antri	1	0	0	1	1	700	0.1
Banihari	1	0	0	1	3	930	0.1
Bhushan Kalan	0	0	0	0	0	740	0
Nain	0	0	0	0	0	800	0.0
Chhapra Salimpur	0	0	0	0	0	655	0.0
Asrawas	0	0	0	0	0	950	0.0
Kothal Kalan	0	0	0	0	0	710	0.0
Mosnota	0	0	0	0	1	640	0.0
<b>Total</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>7705</b>	<b>0.1</b>
<b>District Mewat</b>							
Marora	5	2	5	7	7	525	1.3
Jalalpur	5	1	0	6	8	600	1.0
Kheli Khurd	4	1	0	5	1	600	0.8
Sunehra	2	1	0	3	2	600	0.5
Nawli	2	1	0	3	5	650	0.5
Madi Khera	0	2	0	2	0	535	0.4
Bhadas	2	0	0	2	0	650	0.3
Jaisinghpur	1	1	0	2	2	750	0.3
Nagal Mubarkpur	1	0	0	1	2	650	0.2
Nasirwas	0	0	0	0	0	435	0.0
<b>Total</b>	<b>22</b>	<b>9</b>	<b>5</b>	<b>31</b>	<b>27</b>	<b>5995</b>	<b>0.5</b>
<b>State Total</b>	<b>24</b>	<b>12</b>	<b>5</b>	<b>36</b>	<b>32</b>	<b>13700</b>	<b>0.3</b>

**Figure 13: Observed Cases and Load of TT in Haryana**



***Environmental Factors***

District Mahendergarh reported good access to water availability. 68.9% of the villages were observed to have animal pens in the premises or the vicinity while a functional latrine was very rare in both districts. In Mewat 75.1% villages had animal pens in the household premises /vicinity while 96% of the villages had a water source within 30 minutes of walking time.

**Table23: Distribution of houses by environmental factors**

Village	HH observed	Water Availability		Animal Pens		Functional Latrine	
		<30min	>30min	Yes	No	Yes	No
<b>District Mahendergarh</b>							
Bhushan Kalan	36	36	0	9	27	16	20
Kalba	32	32	0	22	10	0	32
Nain	32	32	0	25	7	0	32
Chhapra Salimpur	36	36	0	31	5	6	30
Asrawas	29	29	0	21	8	0	29
Kothal Kalan	33	33	0	25	8	3	30
Jailab	44	44	0	38	6	0	44
Antri	37	37	0	26	11	0	37
Mosnota	39	25	14	25	14	1	38
Banihari	36	36	0	22	14	4	32
<b>Total</b>	<b>354</b>	<b>340</b>	<b>14</b>	<b>244</b>	<b>110</b>	<b>30</b>	<b>324</b>



District Mewat							
Bhadas	26	26	0	20	6	0	26
Nasirwas	24	24	0	20	4	0	24
Sunehra	23	0	23	22	1	0	23
Marora	21	21	0	18	3	0	21
Jalalpur	22	22	0	20	2	0	22
Jaisinghpur	24	24	0	21	3	0	24
Nawli	25	25	0	23	2	0	25
Nagal Mubarkpur	23	23	0	22	1	0	23
Madi Khera	30	30	0	20	10	0	30
Kheli Khurd	30	30	0	22	8	0	30
<b>Total</b>	248	225	23	208	40	0	248
<b>State Total</b>	602	565	37	452	150	30	572

### *Access to facilities*

Access to primary health care was similar in both the districts and access to trichiasis surgical facility was equally poor in both districts. Schools were available in all villages while market facilities were generally between 30 minutes to 2 hours.

**Table24: Access to facilities in Haryana**

Villages	Distance to Facility				
	By public transport		Walking time		
	Primary Health Care	Trichiasis Surgery Facility	Village Pharmacy	Market	School
	<30min=1; 30min-2hr=2; >2hr=3				
	<b>District Mahendergarh</b>				
Bhushan Kalan	2	3	2	2	1
Kalba	2	3	3	2	1
Nain	1	3	2	2	1
Chhapra Salimpur	2	2	2	2	1
Asrawas	2	3	2	2	1
Kothal Kalan	2	3	2	2	1
Jailab	1	3	2	2	1
Antri	1	3	2	2	1
Mosnota	2	3	1	2	1
Banihari	2	3	2	2	1

District Mewat					
Bhadas	2	3	1	1	1
Nasirwas	1	3	2	2	1
Sunehra	2	3	3	2	1
Marora	1	3	3	3	1
Jalalpur	1	3	1	2	1
Jaisinghpur	2	3	2	2	1
Nawli	2	3	2	2	1
Nagal					
Mubarkpur	2	3	3	2	1
Madi Khera	1	3	1	2	1
Kheli Khurd	2	3	2	2	1

### Access to Surgical Facility for TT

Dist: Mahendergarh

Table 25: Travel time by public transport

Villages	< 30 min	30 min - 2 hr	> 2 hr
Bhusan Kalan			
Kalba			
Nain			
Chappra Seelampur			
Asrawas			
Kothal Kalan			
Jailaf			
Antri			
Musnota			
Banihari			

Dist: Mewat

Table 26: Travel time by public transport

Villages	< 30 min	30 min - 2 hr	> 2 hr
Bhusan Kalan			
Kalba			
Nain			
Chappra			

Seelampur			
Asrawas			
Kothal Kalan			
Jailaf			
Antri			
Musnota			
Banihari			

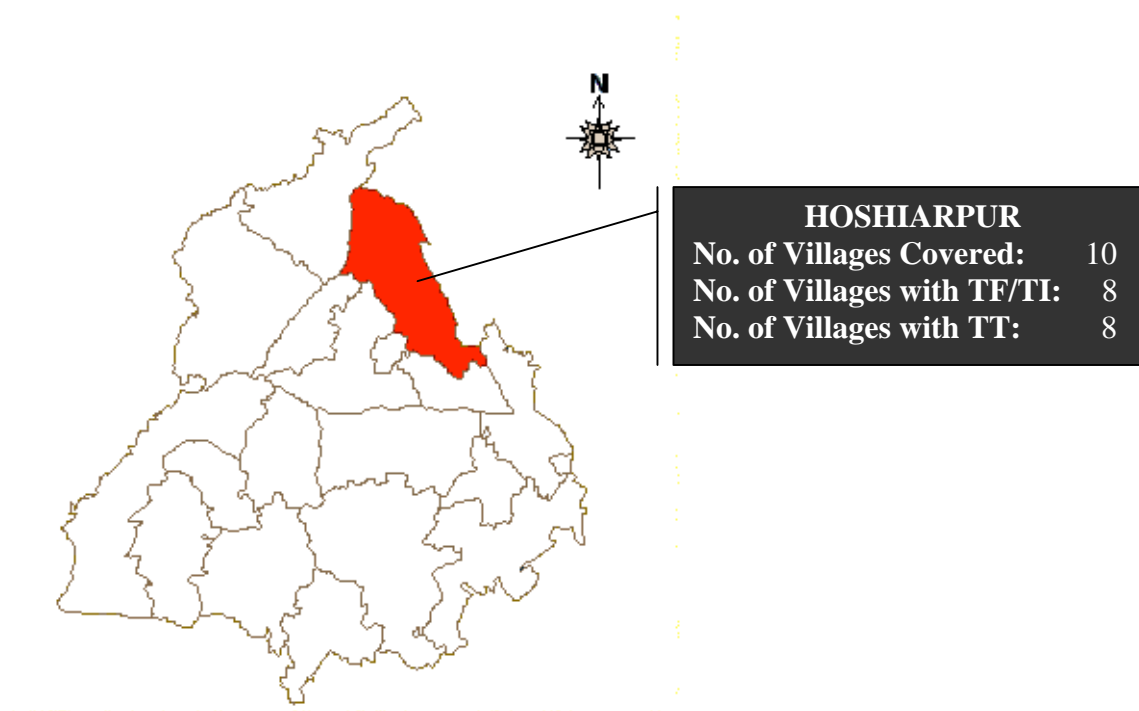
### Status of Trachoma in Punjab

The district of Hoshiarpur was covered in Punjab.

**Table 27: List of villages covered in Punjab State**

S.No.	Villages	Tehsil	Total population	Population of examined segment	No. Of Households covered
<b>District Hoshiarpur</b>					
1.	Jandoli	Garhshankar	3067	1000	23
2.	Jaja	Dasua	3061	550	23
3.	Pandori Malhian	Dasua	518	400	24
4.	Adamwal	Hoshiarpur	3053	150	27
5.	Jhanjowal	Garhshankar	720	500	27
6.	Majari	Garhshankar	571	500	27
7.	Malkowal	Garhshankar	961	150	25
8.	Rampur	Dasua	1237	700	29
9.	Lalwan	Garhshankar	1193	700	29
10.	Biggowal	Mukerian	736	300	26
	<b>Total</b>		15117	4950	260

**Figure 14: Profile of Trachoma in Punjab**



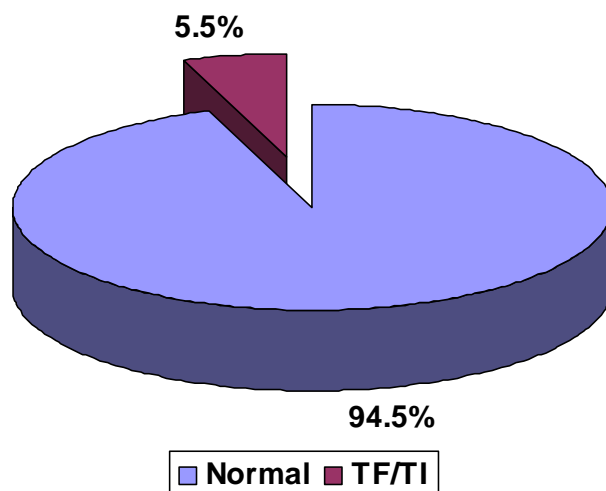
**Active Trachoma**

Active trachoma cases were seen in 8 villages. One village (Rampur) had a prevalence of >10% and therefore was classified as a village with medium priority. Overall 5.5% of children examined across the state had active infection.

**Table28: TF/TI in villages in Hoshiarpur**

Villages	No. children examined	No. with TF	No. with TI	No. with TF/TI	% children with TF/TI	% Unclean faces
<b>District Hoshiarpur</b>						
Rampur	57	7	1	7	12.3	12.3
Adamwal	56	5	0	5	8.9	12.5
Jandoli	50	4	0	4	8.0	8.0
Malkowal	51	4	0	4	7.8	2.0
Jaja	57	4	0	4	7.0	14.0
Majari	59	4	0	4	6.8	10.2
Pandori Malhian	51	1	0	1	2.0	5.9
Lalwan	54	1	0	1	1.9	5.6
Jhanjowal	57	0	0	0	0.0	7.0
Biggowal	56	0	0	0	0.0	5.4
<b>Total</b>	<b>548</b>	<b>30</b>	<b>1</b>	<b>30</b>	<b>5.5</b>	<b>8.4</b>

**Figure 15: Active Trachoma in Hoshiarpur**



### Load of TT

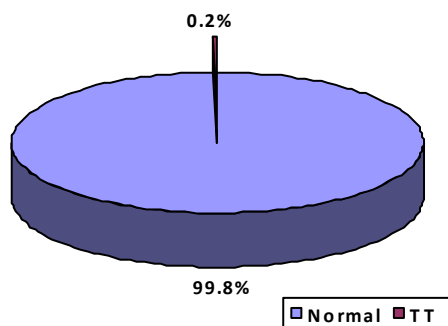
Trichiasis was observed in 8 villages in the district. One village (Biggowal) was categorized as medium priority as 1% of those examined had TT.

The percentage of TT in the 10 villages put together was 0.2%

**Table 29: Number of Cases of TT in District Hoshiarpur**

Villages	Without CO	With CO	Recurrent Case	Total_cases	Suspected Case	Segment Population	% with TT among examined
<b>District Hoshiarpur</b>							
Biggowal	2	1	0	3	0	300	1.0
Malkowal	0	0	1	1	0	150	0.7
Adamwal	0	1	0	1	0	150	0.7
Lalwan	0	2	0	2	1	700	0.3
Jaja	1	0	0	1	0	550	0.2
Jhanjowal	1	0	0	1	0	500	0.2
Majari	1	0	0	1	0	500	0.2
Rampur	1	0	0	1	0	700	0.1
Jandoli	0	0	0	0	1	1000	0.0
Pandori Malhian	0	0	0	0	1	400	0.0
<b>Total</b>	<b>6</b>	<b>4</b>	<b>1</b>	<b>11</b>	<b>3</b>	<b>4950</b>	<b>0.2</b>

**Figure 16: TT in Hoshiarpur**



**Environmental factors**

The district had better environmental factors compared to other districts included in the Rapid Assessment. The access to water sources was good and less than 50% households had an animal pen in the vicinity while a third of the houses had a functional latrine in the household premises.

**Table 30: Environmental factors at household level**

Village	HH observed	Water Availability		Animal Pens		Functional Latrine	
		<30min	>30min	Yes	No	Yes	No
<b>District Hoshiarpur</b>							
Jandoli	23	23	0	5	18	6	17
Jaja	23	23	0	12	11	6	17
Pandori Malhian	24	24	0	13	11	4	20
Adamwal	27	27	0	24	3	1	26
Jhanjowal	27	27	0	14	13	5	22
Majari	27	27	0	11	16	8	19
Malkowal	25	25	0	7	18	14	11
Rampur	29	29	0	15	14	15	14
Lalwan	29	28	1	2	27	3	26
Biggowal	26	26	0	11	15	5	21
<b>Total</b>	<b>260</b>	<b>259</b>	<b>1</b>	<b>114</b>	<b>146</b>	<b>67</b>	<b>193</b>

### Access to facilities

Access to a village pharmacy and school were better than access to a primary health care set up or surgical facility for trichiasis

**Table 31: Access to facilities**

Villages	Distance to Facility				
	By public transport		Walking time		
	Primary Health Care	Trichiasis Surgery Facility	Village Pharmacy	Market	School
	<30min=1; 30min-2hr=2; >2hr=3				
<b>District Hoshiarpur</b>					
Jandoli	3	3	1	2	1
Jaja	1	2	1	1	1
Pandori Malhian	1	2	1	3	1
Adamwal	1	1	1	1	1
Jhanjowal	1	3	1	1	1
Majari	2	2	1	2	1
Malkowal	2	3	1	2	1
Rampur	1	2	1	1	1
Lalwan	2	3	1	2	1
Biggowal	2	3	1	1	1

### Access to Surgical Facilities for TT

**Table 32: Travel time by public transport**

Villages	< 30 min	30 min - 2 hr	> 2 hr
Jandoli			
Jaja			
Pandori Malhan			
Adamwal			
Jhanjowal			
Majari			
Malkowal			
Rampur			
Lalwan			
Biggowal			

## Status of Trachoma in Rajasthan

Three districts were covered in Rajasthan for the Rapid Assessment. Two of the initially identified districts had to be replaced due to floods.

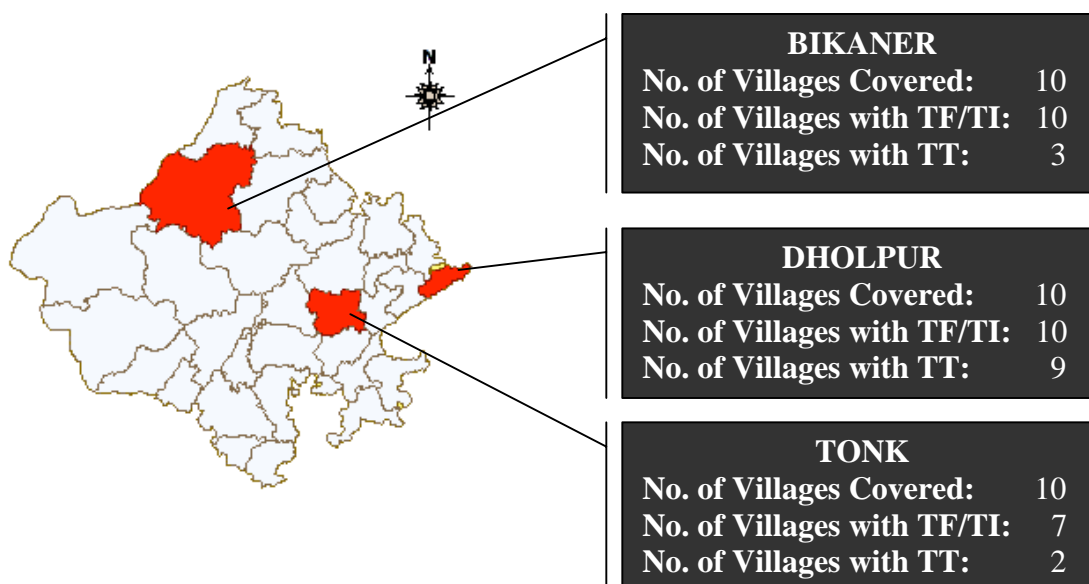
**Table33: List of villages covered in Rajasthan State**

S.No.	Villages	Tehsil	Total population	Population of examined segment	No. Of Households covered
<b>District Bikaner</b>					
1.	Dheengsari	Nokha	2825	500	28
2.	Kharbara	Chhatargarh	3640	500	25
3.	Molaniya	Bikaner	1100	1100	25
4.	Shobholai	Lunkaransar	1260	550	21
5.	Baladesar	Lunkaransar	684	870	21
6.	Raowala	Kolayat	2605	500	22
7.	Kisnasar	Kolayat	1263	700	22
8.	Hansasar	Nokha	2655	600	21
9.	Badrasar	Poogal	1596	700	21
10.	Bajju Tej Pura	Kolayat	1925	500	22
	<b>Total</b>		19553	6520	228
<b>District Dholpur</b>					
1.	Beechhiya	Dholpur	1121	600	29
2.	Odi	Dholpur	800	800	23
3.	Khinnot	Baseri	650	650	25
4.	Dadroni	Baseri	1186	1000	26
5.	Beeloni	Bari	1319	600	23
6.	Madanpur	Baseri	830	750	26
7.	Indaun	Dholpur	609	500	23
8.	Hingota	Baseri	1292	600	27
9.	Silawat	Rajakhera	816	750	22
10.	Garhi Jafar	Rajakhera	800	800	21
	<b>Total</b>		9423	7050	245
<b>District Tonk</b>					
1.	Polyara	Deoli	1310	700	28
2.	Chandsinghpura	Deoli	1298	650	21
3.	Mohammad Garh	Uniara	1551	700	24
4	Mor Bhatiyani	Todarisingh	1430	660	24



5.	Talibpura	Tonk	800	800	25
6.	Panwaliya	Todarisingh	4468	600	26
7.	Sawariya	Todarisingh	2700	510	32
8.	Naya Teela	Peeplu	2000	600	22
9.	Kalmanda	Malpura	1500	550	31
10.	Dadiyan	Tonk	805	605	24
	<b>Total</b>		17862	6370	257

**Figure 17: Profile of Trachoma in Rajasthan**



### ***Active Infection***

Three districts were covered in the Rapid Assessment in the State of Rajasthan. The worst affected villages were in Bikaner district which is on the Western boundary of the country, adjoining Pakistan. One village was categorized as high priority as the 30.2% of the examined children had active stages of trachoma, while four villages in Bikaner could be categorized as medium priority. All villages in the district reported active infection. The percentage of children with unclean faces was also high in all villages and was very high in 4 of the 5 villages with medium priority.

In district Tonk, 7 villages reported cases and one village was categorized as a medium priority village. In district Dholpur, all villages reported active cases and one village was categorized as a medium priority village.

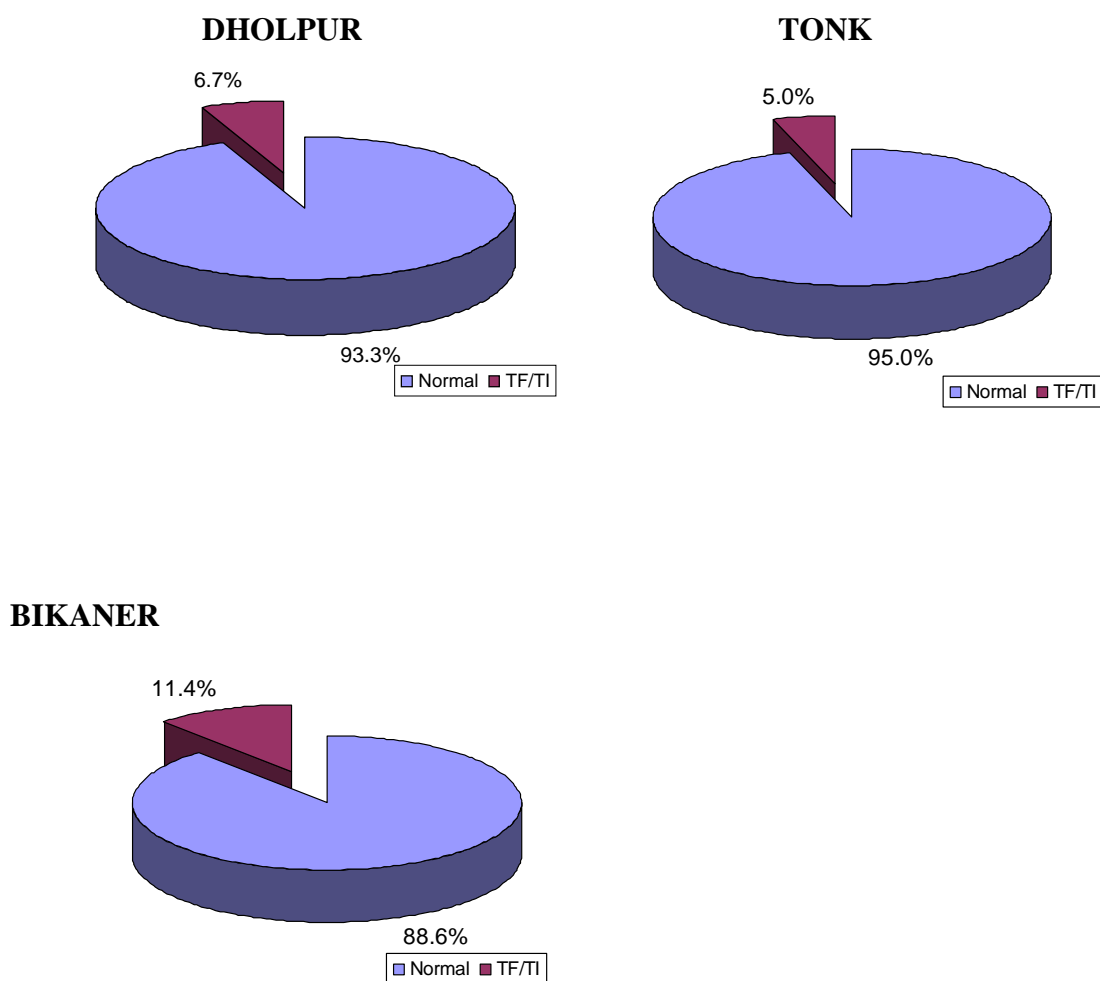
The percentage of people with TT (Table34) was not as alarming as active infection in these districts. 3 villages in Bikaner, 2 in Tonk and 9 in Dholpur reported TT cases but none could be categorized as medium/high priority for immediate intervention.

**Table34: Village level distribution of TF/TI**

Villages	No. children examined	No. with TF	No. with TI	No. with TF/TI	% children with TF/TI	% Unclean faces
<b>District Bikaner</b>						
Badrasu	53	13	3	16	30.2	71.7
Hansasar	59	11	4	11	18.6	83.1
Kharbara	53	7	0	7	13.2	56.6
Bajju Tej Pura	55	6	4	7	12.7	87.3
Shublai	50	5	1	5	10.0	36.0
Khindasar	59	5	0	5	8.5	78.0
Raowala	50	4	0	4	8.0	74.0
Baladesar	52	3	1	3	5.8	28.8
Molaniya	54	0	1	1	1.9	59.3
	51	2	0	2	3.9	56.9
<b>Total</b>	<b>536</b>	<b>56</b>	<b>14</b>	<b>61</b>	<b>11.4</b>	<b>63.8</b>
<b>District Tonk</b>						
Chandsinghpura	53	8	2	9	17.0	60.4
Kalmanda	51	3	2	4	7.8	29.4
Mor Bhatiyani	51	3	2	4	7.8	60.8
Nayateela	52	2	2	4	7.7	57.7
Panwalia	52	3	0	3	5.8	61.5
Mohammad Garh	51	1	0	1	2.0	45.1
Polayaka	52	1	0	1	1.9	50.0
Talib Pura	52	0	0	0	0.0	48.1
Sanwaria	50	0	0	0	0.0	62.0
Dadariya	51	0	0	0	0.0	29.4
<b>Total</b>	<b>515</b>	<b>21</b>	<b>8</b>	<b>26</b>	<b>5.0</b>	<b>50.5</b>
<b>District Dholpur</b>						
Bhichia	62	17	1	18	29.0	87.1
Khinnot	51	4	0	4	7.8	66.7
Indhon	50	3	0	3	6.0	42.0
Auddi	51	2	0	2	3.9	72.5
Gadijafar	52	2	0	2	3.8	63.5
Hingota	50	0	1	1	2.0	70.0
Dadroni	50	1	1	2	4.0	78.0
Biloni	50	1	0	1	2.0	80.0

Madanpur	52	1	0	1	1.9	53.8
Silawat	52	1	0	1	1.9	80.8
<b>Total</b>	<b>520</b>	<b>32</b>	<b>3</b>	<b>35</b>	<b>6.7</b>	<b>69.8</b>
<b>State Total</b>	<b>1571</b>	<b>109</b>	<b>25</b>	<b>122</b>	<b>7.8</b>	<b>61.4</b>

**Figure 18: Active Trachoma in Rajasthan**

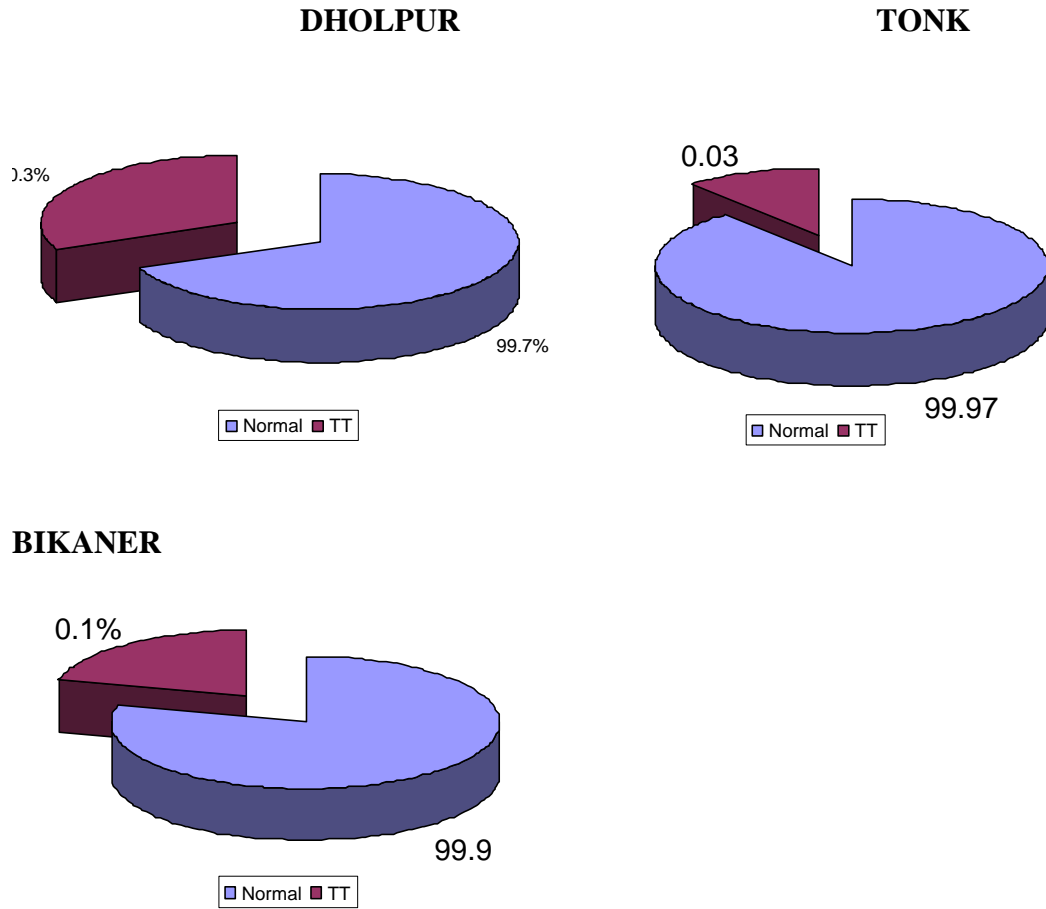


**Table35: Village level TT cases observed in 3 districts of Rajasthan**

Villages	Without CO	With CO	Recurrent Case	Total cases	Suspected Case	Segment Population	% with TT among examined
<b>District Bikaner</b>							
Hansasar	1	1	2	2	0	600	<b>0.3</b>
Shublai	0	1	1	1	0	550	<b>0.2</b>
Molaniya	0	1	1	1	0	1100	<b>0.1</b>
Dheensari	0	0	0	0	0	500	<b>0.0</b>

Kharbara	0	0	0	0	0	500	<b>0.0</b>
Baladesar	0	0	0	0	0	870	<b>0.0</b>
Raowala	0	0	0	0	0	500	<b>0.0</b>
Khindasar	0	0	0	0	0	700	<b>0.0</b>
Badrasu	0	0	0	0	0	700	<b>0.0</b>
Bajju Tej Pura	0	0	0	0	0	500	<b>0.0</b>
<b>Total</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>0</b>	6520	<b>0.1</b>
<b>District Tonk</b>							
Dadariya	1	0	0	1	0	600	<b>0.2</b>
Mohammad Garh	1	0	0	1	0	700	<b>0.1</b>
Polayaka	0	0	0	0	3	700	<b>0.0</b>
Chandsinghpura	0	0	0	0	0	650	<b>0.0</b>
Mor Bhatiyani	0	0	0	0	0	660	<b>0.0</b>
Talib Pura	0	0	0	0	0	800	<b>0.0</b>
Panwalia	0	0	0	0	0	600	<b>0.0</b>
Sanwaria	0	0	0	0	0	510	<b>0.0</b>
Nayateela	0	0	0	0	0	600	<b>0.0</b>
Kalmanda	0	0	0	0	0	550	<b>0.0</b>
<b>Total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>	6370	<b>0.03</b>
<b>District Dholpur</b>							
Bhichia	1	2	0	3	0	600	<b>0.5</b>
Madanpur	4	0	0	4	0	750	<b>0.5</b>
Silawat	2	2	0	4	0	750	<b>0.5</b>
Auddi	3	0	0	3	0	800	<b>0.4</b>
Biloni	1	1	0	2	0	600	<b>0.3</b>
Khinnot	1	1	0	2	0	650	<b>0.3</b>
Gadijafar	2	0	0	2	0	800	<b>0.3</b>
Hingota	0	1	0	1	1	600	<b>0.2</b>
Dadroni	0	1	0	1	0	1000	<b>0.1</b>
Indhon	0	0	0	0	0	500	<b>0.0</b>
<b>Total</b>	<b>14</b>	<b>8</b>	<b>0</b>	<b>22</b>	<b>1</b>	7050	<b>0.3</b>
<b>State Total</b>	<b>17</b>	<b>11</b>	<b>4</b>	<b>28</b>	<b>4</b>	19940	0.1

**Figure 19: Load of TT in Rajasthan**



**Environmental sanitation**

Access to water sources was good in all three districts while animal pens were most commonly within the household premises in all districts. As with most other districts in the country the availability of functional latrines within the household premises was poor.

**Table36: Household level sanitation parameters**

Village	HH observed	Water Availability		Animal Pens		Functional Latrine	
		<30min	>30min	Yes	No	Yes	No
<b>District Bikaner</b>							
Dheensari	28	19	9	28	0	2	26
Kharbara	25	0	25	23	2	1	24
Molaniya	25	19	6	10	15	3	22
Shublai	21	12	9	20	1	0	21
Baladesar	21	21	0	6	15	10	11
Raowala	22	21	1	21	1	6	16
Khindasar	22	22	0	22	0	0	22
Hansasar	21	2	19	21	0	1	20
Badrasu	21	19	2	16	5	1	20
Bajju Tej Pura	22	22	0	22	0	0	22
<b>Total</b>	<b>228</b>	<b>157</b>	<b>71</b>	<b>189</b>	<b>39</b>	<b>24</b>	<b>204</b>
<b>District Tonk</b>							
Polayaka	28	28	0	25	3	0	28
Chandsinghpura	21	21	0	21	0	0	21
Mohmmad Garh	24	24	0	24	0	1	23
Mor Bhatiyani	24	24	0	24	0	0	24
Talib Pura	25	25	0	25	0	0	25
Panwalia	26	26	0	26	0	0	26
Sanwaria	32	32	0	32	0	0	32
Nayateela	22	22	0	22	0	0	22
Kalmanda	31	31	0	31	0	0	31
Dadariya	24	24	0	24	0	0	24
<b>Total</b>	<b>257</b>	<b>257</b>	<b>0</b>	<b>254</b>	<b>3</b>	<b>1</b>	<b>256</b>
<b>District Dholpur</b>							
Bhichia	29	29	0	29	0	0	29
Auddi	23	23	0	23	0	0	23
Khinnot	25	0	25	25	0	0	25
Dadroni	26	0	26	26	0	0	26
Biloni	23	23	0	23	0	0	23
Madanpur	26	26	0	26	0	0	26
Indhon	23	23	0	23	0	1	22
Hingota	27	27	0	27	0	0	27
Silawat	22	22	0	22	0	0	22
Gadijafar	21	21	0	21	0	0	21
<b>Total</b>	<b>245</b>	<b>194</b>	<b>51</b>	<b>245</b>	<b>0</b>	<b>1</b>	<b>244</b>
<b>State Total</b>	<b>730</b>	<b>608</b>	<b>122</b>	<b>688</b>	<b>42</b>	<b>26</b>	<b>704</b>

## Access to facilities

The access to village pharmacy, market and schools was uniformly good in all three districts. Access to other facilities was poorer.

**Table37: Access to facilities in Rajasthan**

Villages	Distance to Facility				
	By public transport		Walking time		
	Primary Health Care	Trichiasis Surgery Facility	Village Pharmacy	Market	School
	<30min=1; 30min-2hr=2; >2hr=3				
<b>District Bikaner</b>					
Dheensari	2	2	2	2	1
Kharbara	2	3	1	1	1
Molaniya	2	2	2	1	1
Shublai	2	3	2	2	1
Baladesar	1	3	1	1	1
Raowala	2	3	1	1	1
Khindasar	2	3	2	2	1
Hansasar	2	2	2	1	1
Badrasu	1	1	1	1	1
Bajju Tej Pura	2	3	2	2	1
<b>District Tonk</b>					
Polayaka	2	2	2	1	1
Chandsinghpura	2	3	2	1	1
Mohmmad Garh	2	2	2	1	1
Mor Bhatiyar	1	2	1	1	1
Talib Pura	1	2	1	1	1
Panwalia	1	1	2	1	1
Sanwaria	1	1	2	2	1
Nayateela	2	2	2	1	1
Kalmanda	1	2	1	1	1
Dadariya	2	2	2	1	1
<b>District Dholpur</b>					
Bhichia	1	1	1	1	1
Auddi	1	1	1	1	1
Khinnot	1	3	1	1	1
Dadroni	1	3	1	1	1
Biloni	2	3	2	1	1
Madanpur	2	3	2	1	1
Indhon	2	3	2	2	1
Hingota	1	3	1	1	1
Silawat	2	2	2	2	1
Gadijafar	2	2	1	2	1

**Access to Surgical facility for TT****Dist: Dholpur****Table 38: Travel time by public transport**

<b>Villages</b>	<b>&lt; 30 min</b>	<b>30 min - 2 hr</b>	<b>&gt; 2 hr</b>
Bhichia			
Auddi			
Khinnot			
Dadroni			
Biloni			
Madanpur			
Indhon			
Hingota			
Silawat			
Gadijafar			

**Table 39: Dist: Tonk: Travel time by public transport**

<b>Villages</b>	<b>&lt; 30 min</b>	<b>30 min - 2 hr</b>	<b>&gt; 2 hr</b>
Polayaka			
Chndsngpur			
Mhd. Garh			
Mor Bhatya			
Talib Pura			
Panwalia			
Sanwaria			
Nayateela			
Kalmanda			
Dadariya			



**Table 40: Dist: Bikaner: Travel time by public transport**

<b>Villages</b>	<b>&lt; 30 min</b>	<b>30 min - 2 hr</b>	<b>&gt; 2 hr</b>
Dheengsari			
Kharbara			
Molaniya			
Shobholai			
Baladesar			
Raowala			
Kisnasar			
Hansasar			
Badrasar			
Bajju Tej Pura			

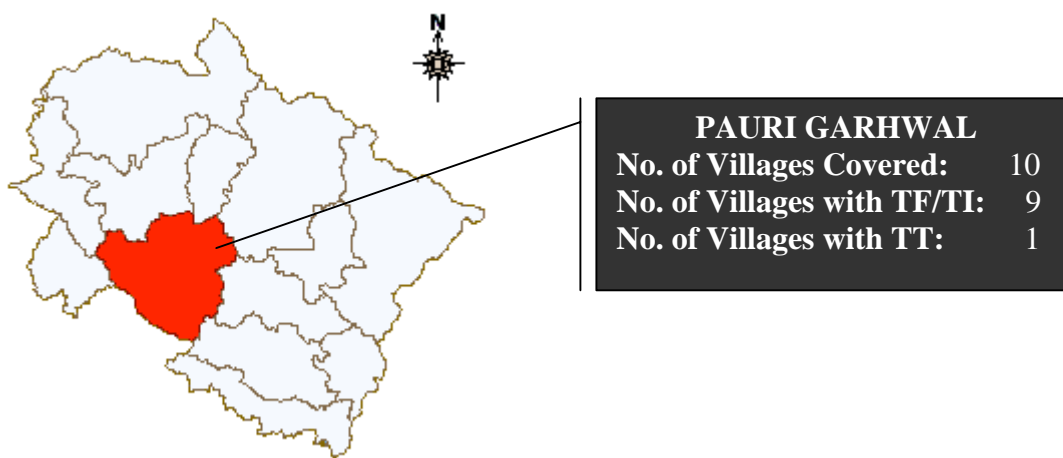
## Status of Trachoma in Uttarakhand

One district was covered under the Rapid Assessment in Uttarakhand. This district is different from all the other districts where RA was done as it is a cold, dry place located in the lower Himalayas.

**Table 41: List of villages in Uttarakhand**

S.No.	Villages	Tehsil	Total population	Population of examined segment	No. Of Households covered
	<b>District Pauri Garhwal</b>				
1.	Simkhet	Pauri	592	592	27
2.	Khilasu	Lansdowne	152	152	20
3.	Malli	Pauri	407	407	27
4.	Gweeth Gaon	Thali Sain	510	510	28
5.	Ghiri	Pauri	156	156	19
6.	Jiwaye	Thali Sain	580	580	30
7.	Bhimsinghpur	Kotdwara	598	598	28
8.	Jawar	Kotdwara	396	396	29
9.	Musansaun	Lansdowne	210	210	30
10.	Sari Malli	Lansdowne	414	414	26
	<b>Total</b>		4417	4015	264

**Figure 20: Profile of Trachoma in Uttarakhand**



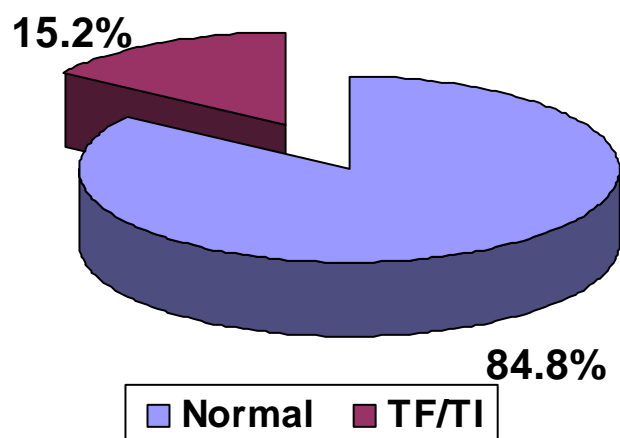
### *Active Trachoma in Uttarakhand*

Active infection was observed in 9 of the 10 villages covered for RA. 8 villages could be categorized as medium priority districts as > 10% of the examined children had active trachoma. However unclean faces were seen in a smaller number of children compared to many other States where RA was done.

**Table 42: TF/TI in different villages in Pauri Garhwal District.**

Villages	No. children examined	No. with TF	No. with TI	No. with TF/TI	% children with TF/TI	% Unclean faces
<b>District Pauri Garhwal</b>						
Khilashu	28	6	1	7	25.0	25.0
Gweeth Gaon	50	12	1	12	24.0	40.0
Jiwai	50	11	0	11	22.0	36.0
Bhimsinghpur	53	9	0	9	17.0	17.0
Ghiri	30	5	0	5	16.7	20.0
Musansaun	43	7	0	7	16.3	16.3
Malli	50	8	0	8	16.0	24.0
Simkhet	51	8	0	8	15.7	29.4
Jawar	57	3	0	3	5.3	5.3
Sari Malli	50	0	0	0	0.0	22.0
<b>Total</b>	<b>462</b>	<b>69</b>	<b>2</b>	<b>70</b>	<b>15.2</b>	<b>23.4</b>

**Figure 21: Active Trachoma in District Pauri Garhwal (Uttarakhand)**



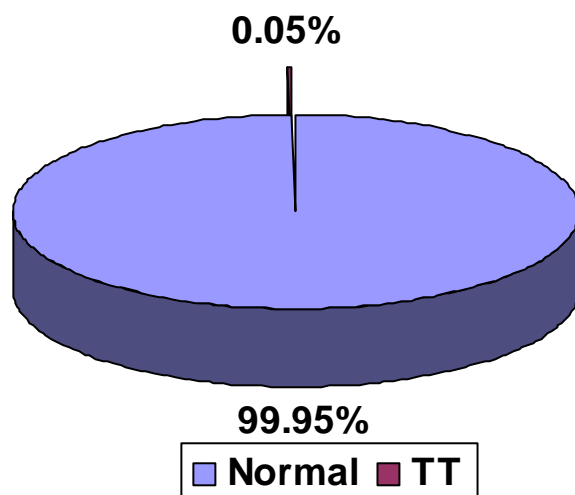
## TT Load

As against active infection, TT was seen in only one village and all the villages either did not have any cases of TT or were of low priority (one village).

**Table43: Distribution of TT in villages in District Pauri Garhwal**

Villages	Without CO	With CO	Recurrent Case	Total cases	Suspected Case	Segment Population	% with TT among examined
<b>District Pauri Garhwal</b>							
Jiwai	1	1	0	2	0	580	0.3
Simkhet	0	0	0	0	0	592	0
Khilashu	0	0	0	0	0	152	0
Malli	0	0	0	0	0	407	0
Gweeth Gaon	0	0	0	0	0	510	0
Ghiri	0	0	0	0	0	156	0
Bhimsinghpur	0	0	0	0	0	598	0
Jawar	0	0	0	0	0	396	0
Musansaun	0	0	0	0	0	210	0
Sari Malli	0	0	0	0	0	414	0
<b>Total</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	4015	0.05

**Figure 22: Load of TT in villages in Pauri Garhwal District (Uttaranchal)**



## Environmental sanitation

More than 60% households had access to water within 30 minutes walking time. Animal pens were found in a significant number of households while no household had the facility of a functional latrine in the household premises.

**Table 44: Distribution of households with regard to sanitation facilities**

Village	HH observed	Water Availability		Animal Pens		Functional Latrine	
		<30min	>30min	Yes	No	Yes	No
<b>District Pauri Garhwal</b>							
Simkhet	27	0	27	27	0	0	27
Khilashu	20	0	20	15	5	0	20
Malli	27	27	0	27	0	0	27
Gweeth Gaon	28	28	0	28	0	0	28
Ghiri	19	0	19	15	4	0	19
Jiwai	30	0	30	30	0	0	30
Bhimsinghpur	28	28	0	28	0	0	28
Jawar	29	29	0	27	2	0	29
Musansaun	30	30	0	27	3	0	30
Sari Malli	26	26	0	26	0	0	26
<b>Total</b>	264	168	96	250	14	0	264

## Access to facilities

Primary schools were within walking distance in 9 villages. Market facilities and access to primary health care units was better compared to many other districts.

**Table 45: Access to facilities**

Villages	Distance to Facility				
	By public transport		Walking time		
	Primary Health Care	Trichiasis Surgery Facility	Village Pharmacy	Market	School
	<30min=1; 30min-2hr=2; >2hr=3				
<b>District Pauri Garhwal</b>					
Simkhet	1	2	1	1	1
Khilashu	1	3	2	1	1
Malli	2	2	2	2	1
Gweeth Gaon	2	3	2	2	2

Ghiri	2	3	3	2	1
Jiwai	2	2	2	2	1
Bhimsinghpur	1	2	1	1	1
Jawar	1	2	1	1	1
Musansaun	3	3	2	2	1
Sari Malli	3	3	3	2	1

**Access to Surgical Facility for TT**

**Table 46: Dist: Pauri Garhwal**

**Travel time by public transport**

Villages	< 30 min	30 min - 2 hr	> 2 hr
Simkhet			
Khilasu			
Malli			
Gweeth Gaon			
Ghiri			
Jiwaye			
Bhimsinghpur			
Jawar			
Musansaun			
Sari Malli			

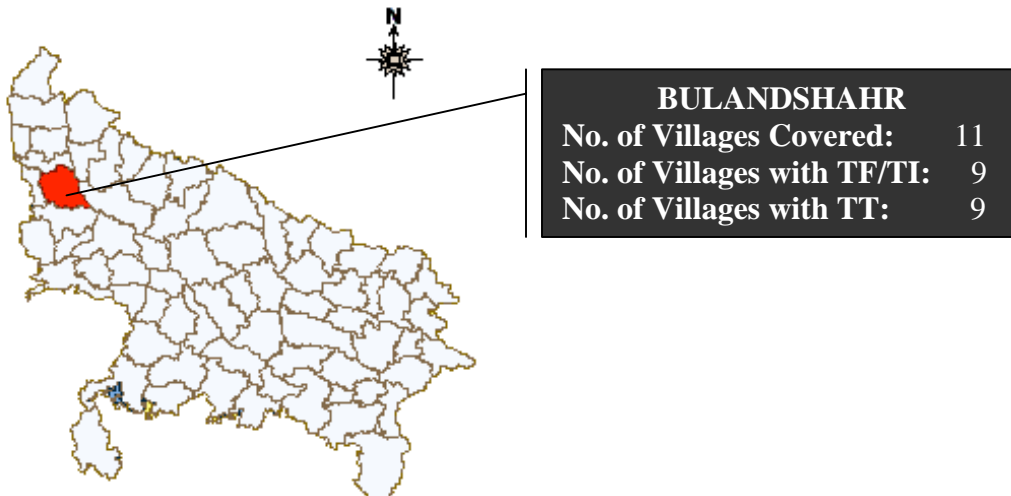
### Status of Trachoma in Uttar Pradesh

Only one district was covered for RA in Uttar Pradesh, the most populous State in India. Previous studies indicated that the problem was more prevalent in the Western part of the State and therefore Bulandshahr district was identified for the RA.

**Table 47: List of villages in Uttar Pradesh**

S.No.	Villages	Tehsil	Total population	Population of examined segment	No. Of Households covered
<b>District Bulandshahr</b>					
1.	Chirauri Taluka Jargwan	Debai	3000	500	31
2.	Niwari Bangar	Debai	4000	500	32
3.	Chaudhera	Shikarpur	16000	500	31
4.	Daulatpur Khurd	Debai	6500	500	30
5.	Man Karora	Anupshahr	1350	450	28
6.	Sankhani	Anupshahr	12000	750	32
7.	Sanda Faridpur	Khurja	4000	500	29
8.	Agarai	Sikandrabad	2800	700	33
9.	Chandyana	Siana	7000	700	30
10.	Dhalna	Siana	2100	700	27
11.	Basi Bangar	Siana	4500	500	31
	Total		63250	6300	334

**Figure 23: Profile of Trachoma in Uttar Pradesh**



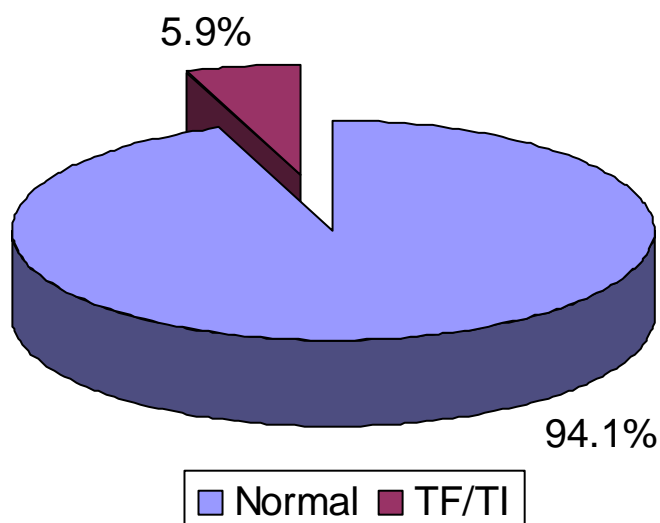
### Active Trachoma

Active stages were seen in 8 villages and three with > 10% of the examined children showing signs of active infection could be categorized as villages with medium priority for control. Percentage of unclean faces was lower than in Rajasthan and Gujarat and the Mewat district of Haryana.

**Table 48: Distribution of Active infection in villages**

Villages	No. children examined	No. with TF	No. with TI	No. with TF/TI	% children with TF/TI	% Unclean faces
<b>District Bulandshahr</b>						
Daulatpur Khurd	55	7	0	7	12.7	34.5
Dhalna	57	6	1	7	12.3	17.5
Chirauli Jargawan	54	5	2	6	11.1	37.0
Chandyana	54	5	1	5	9.3	53.7
Chaudhera	58	4	0	4	6.9	43.1
Agrai	67	3	0	3	4.5	29.9
Sanda Faridpur	52	2	0	2	3.8	25.0
Niwari Bangar	59	2	0	2	3.4	40.7
Mankarua	54	1	0	1	1.9	22.2
Sankhni	56	0	0	0	0.0	42.9
Basi Bangar	63	0	0	0	0.0	22.2
<b>Total</b>	<b>629</b>	<b>35</b>	<b>4</b>	<b>37</b>	<b>5.9</b>	<b>33.4</b>

**Figure 24: Active Trachoma in District Bulandshahr (UP)**





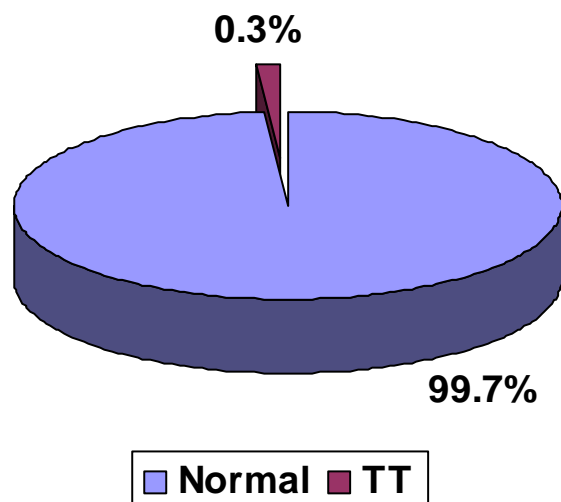
### TT Case Load

TT cases were seen in 9 of the 11 villages covered for RA. However no village was in the medium/high priority for control as in all the 9 villages, the proportion of those with TT was < 1%.

**Table 49: Distribution of TT in Uttar Pradesh**

Villages	Without CO	With CO	Recurrent Case	Total cases	Suspected Case	Segment Population	% with TT among examined
<b>District Bulandshahr</b>							
Chandyana	1	3	0	4	0	700	0.6
Basi Bangar	0	3	0	3	2	500	0.6
Chaudhera	0	2	0	2	1	500	0.4
Daulatpur Khurd	0	2	1	2	1	500	0.4
Sanda Faridpur	0	0	2	2	0	500	0.4
Chirauli Jargawan	0	1	0	1	6	500	0.2
Niwari Bangar	1	0	0	1	1	500	0.2
Sankhni	0	0	1	1	4	750	0.1
Dhalna	0	1	0	1	4	700	0.1
Mankaroa	0	0	0	0	0	450	0.0
Agrai	0	0	0	0	1	700	0.0
<b>Total</b>	<b>2</b>	<b>12</b>	<b>4</b>	<b>17</b>	<b>20</b>	<b>6300</b>	<b>0.3</b>

**Figure 25: Load of TT in Bulandshahr District (UP)**



## Environmental Factors

All villages had access to water within 30 minutes walking time. More than 70% had an animal pen in the premises or vicinity while the access to a functional latrine within the premises was poor as with most other districts.

**Table 50: Distribution of households with regard to sanitation and water facilities**

Village	HH observed	Water Availability		Animal Pens		Functional Latrine	
		<30min	>30min	Yes	No	Yes	No
<b>District Bulandshahr</b>							
Chirauli Jargawan	31	31	0	31	0	0	31
Niwari Bangar	32	32	0	30	2	0	32
Chaudhera	31	31	0	31	0	0	31
Daulatpur Khurd	30	30	0	30	0	4	26
Mankarua	28	28	0	25	3	2	26
Sankhni	32	32	0	6	26	13	19
Sanda Faridpur	29	29	0	27	2	2	27
Agrai	33	33	0	32	1	1	32
Chandyana	30	30	0	23	7	3	27
Dhalna	27	27	0	25	2	0	27
Basi Bangar	31	31	0	12	19	1	30
<b>Total</b>	334	334	0	272	62	26	308

## Village Facilities

Access to schools was good in all villages. The availability of market and village pharmacy were also better than many other districts. 6 villages had access to primary health care facilities within 30 minutes by public transport while only one village had similar access to a surgical facility for TT.

**Table 51: Access to different facilities**

Villages	Distance to Facility				
	By public transport		Walking time		
	Primary Health Care	Trichiasis Surgery Facility	Village Pharmacy	Market	School
	<30min=1; 30min-2hr=2; >2hr=3				
<b>District Bulandshahr</b>					
Chirauli Jargawan	1	2	1	1	1
Niwari Bangar	2	2	2	2	1
Chaudhera	1	2	1	1	1
Daulatpur Khurd	1	2	1	2	1
Mankaroa	1	2	1	2	1
Sankhni	1	1	1	1	1
Sanda Faridpur	1	2	2	2	1
Agrai	2	2	2	2	1
Chandyana	2	2	1	2	1
Dhalna	2	2	2	2	1
Basi Bangar	3	3	1	2	1

## Access to Surgical Facility for TT

**Table 52: Dist: Bulandshahr**

*Travel time by public transport*

Villages	< 30 min	30 min - 2 hr	> 2 hr
Chirauri Jargwan			
Niwari Bangar			
Chaudhera			
Daulatpur Khurd			
Man Karora			
Sankhani			
Sanda Faridpur			
Agarai			
Chandyana			
Dhalna			
Basi Bangar			

### Comparison Across Districts

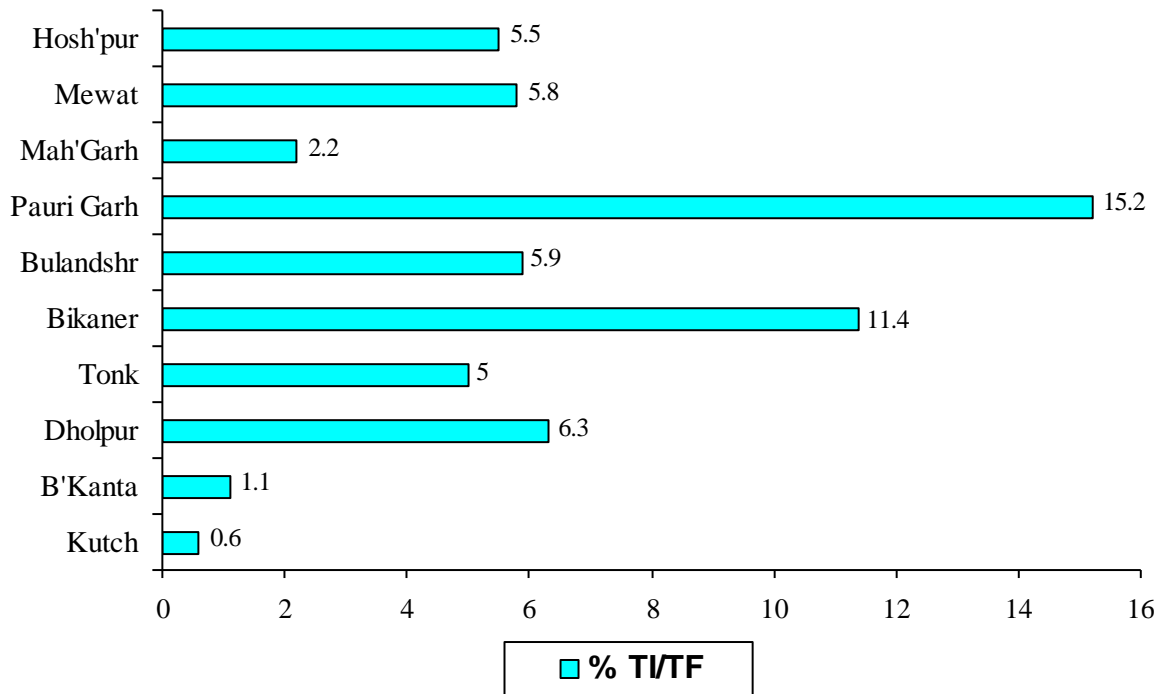
Active cases of trachoma in children were seen in all the districts covered by RA.

Districts Pauri Garhwal and Bikaner had the highest proportion of children with active disease. .

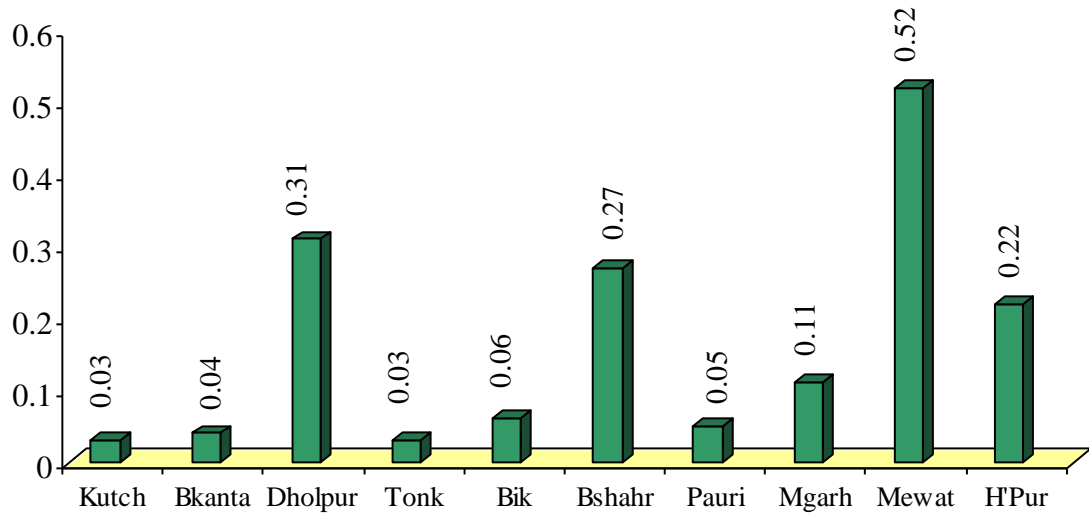
The proportion of people with TT was much lower in comparison with active infection.

Both districts which reported high proportion of children suffering from active trachoma reported low TT load.

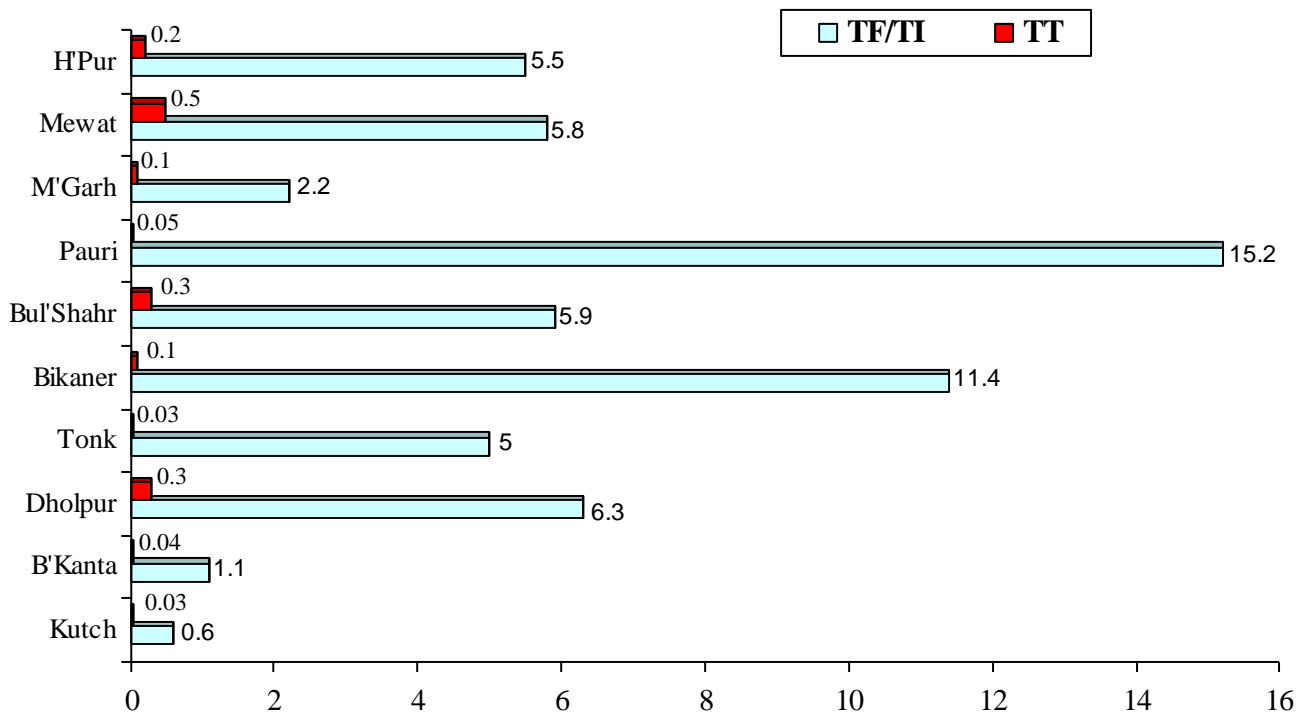
**Fig 26: Distribution of TF/TI Across Districts In North India**



**Figure 27: TT Load Across Districts In North India**  
 (%TT among examined individuals)



**Figure 28: Comparison of magnitude of TF/TI (%) and TT load(%) in districts**



**Table 53: Comparison of Access to Primary Health Care facility**

<b>PRIMARY HEALTH CARE CENTRE</b>		<b>&lt;30 min</b>	<b>30 min- 2 hr</b>	<b>&gt;2 hr</b>
<b>PUNJAB</b>	HOSHIARPUR	50%	40%	10%
<b>HARYANA</b>	MAHENDERGARH	30%	70%	-
	MEWAT	40%	60%	-
	<b>TOTAL</b>	35%	65%	-
<b>UTTRANCHAL</b>	PAURI GARHWAL	40%	40%	20%
<b>UTTAR PRADESH</b>	BULANDSHAHR	54.5%	36.4%	9.1%
<b>RAJASTHAN</b>	BIKANER	20%	80%	-
	DHAULPUR	50%	50%	-
	TONK	50%	50%	-
	<b>TOTAL</b>	40%	60%	-
<b>GUJARAT</b>	BANAS KANTHA	80%	20%	-
	KACHCHH	30%	70%	-
	<b>TOTAL</b>	55%	45%	-

**Table 54: Comparison of Access to Surgical Facility for TT**

<b>TRICHIASIS SURGERY FACILITY</b>		<b>&lt;30 min</b>	<b>30 min- 2 hr</b>	<b>&gt;2 hr</b>
<b>PUNJAB</b>	HOSIARPUR	10%	40%	50%
<b>HARYANA</b>	MAHENDERGARH	-	10%	90%
	MEWAT	-	-	100%
	<b>TOTAL</b>	-	5%	95%
<b>UTTRANCHAL</b>	PAURI GARHWAL	-	50%	50%
<b>UTTAR PRADESH</b>	BULANDSHAHR	9.1%	81.8%	9.1%
<b>RAJASTHAN</b>	BIKANER	10%	30%	60%
	DHAULPUR	20%	20%	60%
	TONK	20%	70%	10%
	<b>TOTAL</b>	16.7%	40%	43.3%
<b>GUJARAT</b>	BANAS KANTHA	-	70%	30%
	KACHCHH	-	50%	50%
	<b>TOTAL</b>	-	40%	60%

**Table 55: Comparison of Access to Village Pharmacy**

<b>VILLAGE PHARMACY</b>		<b>&lt;30 min</b>	<b>30 min- 2 hr</b>	<b>&gt;2 hr</b>
<b>PUNJAB</b>	HOSIARPUR	100%	-	-
<b>HARYANA</b>	MAHENDERGARH	10%	80%	10%
	MEWAT	30%	40%	30%
	<b>TOTAL</b>	20%	60%	20%
<b>UTTRANCHAL</b>	PAURI GARHWAL	30%	50%	20%
<b>UTTAR PRADESH</b>	BULANDSHAHR	63.6%	36.4%	-
<b>RAJASTHAN</b>	BIKANER	20%	30%	50%
	DHAULPUR	10%	70%	20%
	TONK	10%	20%	70%
	<b>TOTAL</b>	13.3%	40%	46.7%
<b>GUJARAT</b>	BANAS KANTHA	50%	50%	-
	KACHCHH	10%	40%	50%
	<b>TOTAL</b>	30%	45%	25%



**Table 56: Comparison of Access to Markets**

<b>MARKET</b>		<b>&lt;30 min</b>	<b>30 min- 2 hr</b>	<b>&gt;2 hr</b>
<b>PUNJAB</b>	HOSIARPUR	50%	40%	10%
<b>HARYANA</b>	MAHENDERGARH	-	100%	-
	MEWAT	10%	80%	10%
	<b>TOTAL</b>	5%	90%	5%
<b>UTTRANCHAL</b>	PAURI GARHWAL	40%	60%	-
<b>UTTAR PRADESH</b>	BULANDSHAHR	27.3%	72.7%	-
<b>RAJASTHAN</b>	BIKANER	20%	20%	60%
	DHAULPUR	-	80%	20%
	TONK	10%	20%	70%
	<b>TOTAL</b>	10%	40%	50%
<b>GUJARAT</b>	BANAS KANTHA	40%	60%	-
	KACHCHH	10%	50%	40%
	<b>TOTAL</b>	25%	55%	20%

**Table 57: Comparison of Access to Primary Schools**

<b>SCHOOL</b>		<b>&lt;30 min</b>	<b>30 min- 2 hr</b>	<b>&gt;2 hr</b>
<b>PUNJAB</b>	HOSHIARPUR	100%	-	-
<b>HARYANA</b>	MAHENDERGARH	100%	-	-
	MEWAT	100%	-	-
	<b>TOTAL</b>	100%	-	-
<b>UTTRANCHAL</b>	PAURI GARHWAL	90%	10%	-
<b>UTTAR PRADESH</b>	BULANDSHAHR	100%	-	-
<b>RAJASTHAN</b>	BIKANER	80%	10%	10%
	DHAULPUR	100%	-	-
	TONK	100%	-	-
	<b>TOTAL</b>	93.3%	3.3%	3.3%

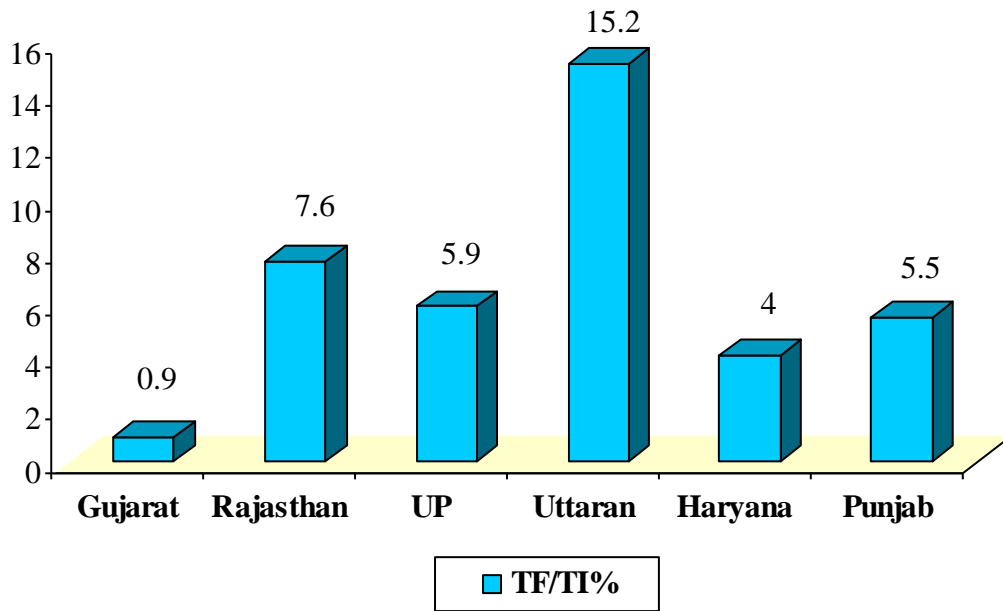
<b>GUJARAT</b>	BANAS KANTHA	90%	10%	-
	KACHCHH	90%	10%	-
	<b>TOTAL</b>	90%	10%	-

### **Comparison Across States**

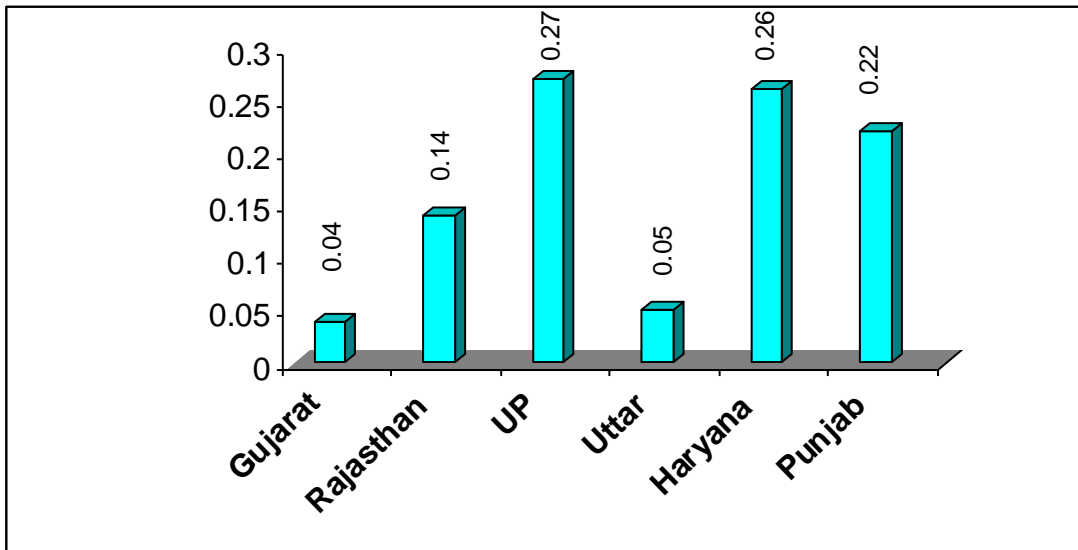
Cumulating the data from all districts in a State, it was observed that except in Gujarat where very low levels of active infection was reported, all the other States reported more cases. Trichiasis did not appear to be a major problem in any of the States where RA was conducted. Similarly an association between magnitude of TF/TI on the one hand and TT load on the other was not observed. The need for antibiotic treatment and face washing and improved environmental sanitation was perceived to be more important compared to the immediate creation of surgical facilities for TT. However since scaring is of more concern as a blinding condition and because access to facilities for surgical intervention was poor across all the districts and States covered by RA, it is imperative that some mechanism should be devised to prevent those with TT from going blind.

The districts of Bikaner, Pauri Garhwal, Mewat and Bulandshahr need more attention. Since the two districts of Barmer and Banswada, which were originally planned to be covered are adjacent to, or very near, to Bikaner it is likely that both these districts may have a similar extent of the problem as Bikaner. Unfortunately due to floods and heavy rain, it was not possible to cover both these districts.

**Figure 29: Distribution of TF/TI Across States In North India**



**Figure 30: TT Load Across States (% with TT)**



**Figure 31: Comparison of magnitude of TF/TI (%) and TT load (% TT among examined) across States**

