

# **Report of the Two-days' State level Workshop organised by Ministry of Tribal Affairs Government of India**

**Subject** : Sicklecell Anaemia and use of satelite-based Technology for identifica-  
tion of Water bodies

**Venue** : Van Sansodhan Kendra, Gandhinagar

**Dates** : 11, 12/04/2015

**Tribal Research and Training Institute**  
**Gujarat Vidyapith, Ahmedabad-380 014**  
**Year : 2015-2016**

## **Sickecell Anaemia and use of Satelite-based Technology for identification of Water-bodies**

### **Introduction :**

In India, we find serious diseases like Sicklecell Anaemia, Malaria, Leptospyrosis etc. especially in those States having tribal population. There is close connection between Malaria and Sickle Cell Anaemia. More Sickle Cell Anaemia cases are found where there is more prominence of Malaria. Among 8.6 per cent of tribal population, the cause of death in case of 50 per cent of cases is Malaria. That is why, we find more number of Sickle Cell Anaemia cases in tribal communities. This is a case of grim concern for both the Ministry and Department of Tribal Affairs. Alongwith problems of health care in tribal areas, there is acute shortage of drinking water. Concrete efforts are required to address the issues like shortage of drinking water as well as for economic upliftment of tribal communities.

Our Prime Minister Shri Narendrabhai Modi has expressed his keen desire to see that the cases of Sickle Cell Anaemia of parents as well as their children or those found to carry its symptoms are properly diognised and proper consultation services are provided to them. He has also stressed the need for preparing directive action plan by the Ministry of Tribal Affiars for pre-mariage counselling services for Sicklecell Anaemia affected cases; and that the Ministry should work with Health Research unit to carry out an indepth research on genetic cause for the diseases. It was also suggested that the Ministry may make gainful use of satelite based mapping for identifying existing and prospective water bodies, which in later period can be used for fishery after their proper development through MGNAREGA. The Ministry was also directed to identify economic centres among tribal areas and explore possibilties for their ultimate development as Growth Centres for development of tribal areas.

Keeping all these directions issued by Hon. Prime Minister of India in view, the Ministry of Tribal Affairs had consultative discussions with the Health Research Unit as well as with Space Research Department and it was decided to conduct two days' Workshops at State level. As a part of the strategy, a two-days' workshop in the State of

Gujarat was held at Gandhinagar in Van Sansodhan Kendra (FRC) during 11th and 12nd April, 2015. The Workshop was focussed on Sickle Cell Anaemia and Use of satellite based technology for identification of Water sources, and it was held under joint auspices of Ministry of Tribal Affairs, Government of India, Tribal Development Department, Government of Gujarat and Tribal Research and Training Institute, Gujarat Vidyapith, Ahmedabad.

The First day of the Workshop was devoted to Sickle Cell Anaemia investigation, management, counselling and care. On the second day of the workshop various presentations were made by respective experts on Geo-pdf maps for surface level water bodies in tribal districts of Gujarat State, Use of remote sensing technology for Soil-study, Fisheries on existing water sources for tribal communities, prevention of diseases, nutrition, possibilities for economic upliftment, Growth Centres etc. After each of these presentations, discussions by participants followed including their queries and questions, opinions expressed by other experts, discussions on need for policy formulations etc.

Total number of participants in the Workshop was 393 including from :

- Forest Department
- Education Department
- Water Management Department (Narmada Nigam)
- Health Department including ICDS, and watershed
- Information Department
- Irrigation Department
- BISAG - Bhaskarcharya Institute of ...
- Revenue Department including Land record
- Rural Development Department
- Fisheries Department
- Ministry of Tribal Affairs, GOI, New Delhi
- Tribal Research and Training Institute, Ahmedabad

Both the representatives from MOTA and from TRTI had shared the responsibilities

for effective management of the Workshop. The main dignitaries attending this Workshop included Dr. Rishikesh Panda, Secretary, Ministry of Tribal Affairs, GoI; Dr. Manojkumar Pingva, Joint Secretary, MOTA, GoI; Shri R.C. Meena, Secretary, Tribal Development Department, Government of Gujarat; Shri J.P. Gupta, Secretary, Health & Family Welfare; Dr. Chandrakant Upadhyay, Director, TRTI, Ahmedabad etc.

During the Workshop, in order to find solution of the problem pertaining to any other department, all the co-participants shared their views and experiences and worked as a Team, to address such issues. In the following few pages, an effort is made to present brief account of discussions / deliberations including a report of press conference which followed the Workshop proceedings.

### **Day one : 11-04-2015**

#### **Welcome to delegates :**

Dr. Chandrakant Upadhyay, Director, TRTI, Ahmedabad, in his Welcome address said that he was overwhelmed with the response to this Workshop. He mentioned that the disease of Sickle Cell Anaemia is a world-wide nuisance and unfortunately, its total eradication is not possible in these days. He further mentioned that it is found among tribal communities due to genetic causes and it is passed to next generation. In Gujarat State, the population of tribals is 15% of the total population of the State; and 10% of these tribal population of tribals is 15% of the total population of the State; and 10% of these tribal people are under its influence. Untill some curative drugs and medicine is made available, he said that, only awareness, investigation and counselling services can help us to save new born children from its impact. Gujarat has made sustainable efforts to identify this diseases, but still we have to go a long way to its total eradication. He hoped that the discussion in this Workshop will help to provide assistance to thousands of tribal people to get rid of it.

He further said that we all are aware about the difficulties faced by the Sickle Cell Aneamia patients and their family members. We have best ICMR experts. I call upon them to work vigourously in this direction.

He informed the delegates that the second day of the workshop will be devoted

towards identification of water bodies through satellite image technology, in tribal areas; so that new water bodies can be developed in this area through MGNREGA scheme; with a long term objective to provide excess sources for fishery and thereby to contribute to their family income as also to provide source for nutritive food.

He once again gave a warm welcome to all participants and dignitaries.

### **Inauguration :**

Flower bouquet and Fruit baskets were presented to the dignitaries and experts including to Dr. Manojkumar Pingva, (Jt. Secretary MOTa, GoI), Shri R.C. Meena (Secretary, TDD, GoG, Gandhinagar), Shri J.P. Gupta, (Secretary Health and F.W. GoG, Gandhinagar), Dr. Chandrakant Upadhyay (Director, TRTI, Ahmedabad), Dr. Malay Mukharji (Dy. Director IC MR, Mumbai), Dr. Gyanchandji (NIRTH Jabalpur), Dr. Girish Pujar (Scientist, NRSC Hyderabad) etc. to greet them with warmth and respect.

After a formal introduction session, the fruit baskets presented to respected guests were then distributed to the ICDS Anganwadi workers for Anganwadi Children, symbolically to address the problem of malnutrition prevalent among women and children. According to holy Indian tradition, the workshop was formally declared open with lighting of a lamp at the hands of Hon. Guests, who wished the workshop a greet success. During all these auspicious events, Sanskrit verses were recited giving a sweet musical touch to the inaugural function.

### **Inspiring Speeches :**

#### **Shri R.C. Meena, Secretary : (Tribal Development Department, GoG) :**

Shri R.C. Meena, I.A.S. Secretary T.D.D. in his pioneering speech mentioned that the Government intends to combat with the challenging issue like this with the help of team work, wherein the Tribal Development Dept., the Health Dept., the Education Dept. will work jointly and in a co-ordinated manner. Referring to Sickle Cell Anaemia problem in particular, he said three is much yet required to be done. In his most appealing speech, he gave certain illustrations also regarding the patients and their treatment and stressed upon the need for stratetic planning; taking expert assistance from ICMR

team and others. He concluded his speech, once again reinforcing the need for co-ordinated joint planned efforts.

**Shri J.P. Gupta, I.A.S., Commissioner of Health & F.W. GoG. :**

Shri J.P. Gupta, Commissioner of Health & F.W. in his brief talk categorically said that though Sickle Cell Anaemia is referred to be an incurable disease, and which is more prevalent in tribal areas and among tribal people, it can surely be prevented if proper care is taken. He stressed on the need for intensive awareness building programmes as well as on willful commitment. He said that we do have necessary resources and there is no paucity of funds; but we have to make meticulous planning. He assured that all the medical experts will join hands to wage the war against Sickle Cell Anaemia; and see that we succeed in our task.

**Shri Manojkumar Pingwa, Joint Secretary, MOTA, Gol :**

Shri Manojkumar Pingwa, Speaking about Sickle Cell Anaemia heartfully expressed his pleasure that Gujarat State has done landmark work on sickle cell Anaemia and in a survey conducted by Gol, it has been found that Gujarat State is quite ahead in its efforts. He however expressed his concern that people at large know very little about treatment of this disease. He said that this programme is on priority list of Government of India. He said that the entire infrastructure should be deployed to eradicate this disease from the country. He suggested that this goal should be percolated below till remote Anganwad of rural areas.

Unfolding the strategic efforts, he said that after the survey of the disease, the vulnerable people are given Health cards. He however said that this is only an initial effort; but people at large should be alerted and time bound programme should be launched to meet with the social issues involved. While he generously appreciated the work done by Gujarat State in both identifying the disease and providing proper care and treatment to all concerned; still he felt that for all-round awareness, many more training programmes and workshops need to be organised all-round. He also advised to complete the remaining survey and screening work. He said that while sample test devise survey carried out by ICMR provides us information about intensity of the

disease among the country; unless we translate this information in getting all the affected persons to take regular treatment and counselling, the survey results will have only superfluous benefit. He particularly stressed on the need for pre-marriage counselling, for which he suggested that here too, team work only will give fruitful results. He said that when Hon. Prime Minister of India has suggested to combat this disease, it becomes our duty to make people aware and alert. Again appreciating Gujarat initiative in this matter, he said that Gujarat State has provided a beacon light for all other States, because it has completed first phase of the task. He also said that while Health Department will provide expert services and guidance, the main responsibility lies on Tribal Development Department, "More and More people come to know, less will be the intensity of the disease" he concluded.

**Dr. Malay Mukherji, Dy. Director, National Institute of Immunohimatology (ICMR) Mumbai :**

Dr. Malay Mukharji from National Institute of Immuno Himotology (ICMR) Mumbai, who was specially invited as an expert in this Workshop, made a power presentation on Sicecell Anaemia and contented in his presentation that the disease was discovered by Dr. James Herrick in the year 1910. The first instances of the disease were found in tribal communities of Lehman and Katbas of Nilgiri hills. He informed that the disease has direct connection with red cells in blood; resulting into disturbance in hemoglobin system. Describing further about disturbance in two groups in Hemoglobin system viz. Himoglobinopathies and Thalassaemia, he clarified the concepts of normal and abnormal conditions in blood cells. He also explained that like Sickle Cell Anaemia, the sickle cell traits also can be inherited by children from the parents.

With this technical background of Hbs Traits, he also informed the participant delegates, about existing proportion of Hbs traits among various groups of tribals in various States of India; drawing the attention of Govt. Officials present there that such traits are more prevalent in the States of Orissa, Maharashtra, Madhya Pradesh, Chhattis Gadh and Gujarat. He opened out his treasure of information by mentioning intensity of presence of Hbs traits among various tribes and among various tribal districts of Gujarat.

He said that NIIH Mumbai has got this information in respect of all tribal communities in all the States. On more technical side of the issue, he showed on projector what is Solubility test, Hemoglobin Electrophoresis, capillary electrophoresis, Bio-red variant, Chromatograph CE, HPCL, Neo-natal screening, HPLC, B<sub>s</sub> mutation, PCR - RFLP detection, ARMS, CRDB analysis etc., vis-a-vis DNA analysis.

He shared with the members the practical measures that can be taken to prevent Sickle Cell Anaemia in the family and in the community; which include early detection right at the neo-natal Stage by investigation of every new born child, awareness building programmes, pre-marriage counselling etc.

Dr. Italiya provided information about activities of blood donation centre, Valsad and shared his valuable experiences with the group.

**Dr. Kamlesh Upadhyay, Professor, Dept. of Medicine, B.J. Medical College and Civil Hospital, Ahmedabad.**

Dr. Kamlesh Upadhyay, discussed about pathology of Sickle Cell Anaemia, its investigation, its diagnosis before birth and investigation of new born child; using a medium of power presentation.

He began his talk saying that co-incidentally, to-day is World Parkinson's day, World Safe motherhood day and also 146th Birth day of Kasturba Gandhi. He said that on Nation's Mother's Birthday, we will talk about Mother and her health.

Explaining about how Sickle cell Anaemia develops, he contented that there are red cells, white cells and plasma in our blood. The oxygen is carried by Hemoglobin from the lungs to the cell; and Sickle Cell Anaemia can develop if the structure of Hemoglobin is disturbed. Besides, sickle Cell Anaemia is an outcome of genetic disorders. He said that the normal red-cell can survive upto 126 days, the red cell with Sickle Cell can hardly survive for 20 days. He also clarified the co-relation between Malaria and Sickle Cell Anaemia. Among the tribal Communities of Africa, maximum toll is taken by this disease.

Dr. Upadhyay became more cautious and concerned when he said that the preventive and curative work will be required to be carried out with backward people in



lower Socio-economic strata; and therefore along with sensitivity, it should be done in a Mission mode. When we use the word "Mission" it means, we have to pour our heart in the task.

In his multifarious talk, he covered the topics like

- Significance of public health
- Definition of Sickle Cell and explanation about red/white cells and plasma in human blood
- Distinction between normal red cells and red-cells affected by Sickle Cell anaemia.
- Distinction between patho. Physiology and Hemolysis and Vaso-occlusion.
- Hemoglobin element in Asia and African countries,
- Hbs Thelesyma G6 Pd
- Sickle Cell Anaemia and WHO
- Proportion of Sickle Cell anaemia in India  
(Every year in India 5200 Sickle cell Anaemia patients are born and in various tribal communities, the proportion is in the range of 5 to 34 percent.
- Condition of Gujarat in relation to Sickle Cell Anaemia in various districts.
- Illustrative information as to how parents pass on their sickle Cell Anaemia to their offspring.
- Initial characteristics of the disease
- Hemolysis and Vaso-occlusion
- Diagnosis and Prognosis through laboratory testing
- Genetic Counselling, Mass Screening,
- Technical option Analysis, Ante-natal screening, new born screening , pre-natal Screening
- Amniocentesis and CVS policy
- Standard Protocols

**Dr. Twinkle Patel, Associate Professor of Medicine, Government Medical College and New Civil Hospital, Surat**

In afternoon session on first day, Dr. Twinkle Patel talked at length about Sickle Cell Anaemia Management, through powerpoint presentation. She covered following topics in her session :

- The disease of Sickle Cell Anaemia, per se
- Causes, impact and consequences of the disease
- Early death Risk due to Anaemia
- Vaso-occlusive crisis, Painful crisis
- Bone pain, effects on Bone-marrow due to bone pain
- Arthritis and arthralgia, Rheumatic fever
- Infection, fever, de-hydration, acidosis, cough and cold, mental tension and stress, physical discomfort and other symptoms due to the disease
- Painful crisis treatment - use of medicines
- Home based treatment
- Osteomyelitis and septic Arthritis
- Dactylitis
- Humeral and Femoral Osteonecrosis AVN
- Abdominal Pain Crisis and treatment
- Acute Chest Syndromes (ACS) Etiology Diagnosis,
- Respiratory Support Anti-biotics
- Transfusion in SCD
- Splenic Sequestration Crisis
- Cerebrovascular
- Disease and key risk factors
- Transcranial Doppler- TCD for investigation
- Acute and Chronic Therapy, Priapism and risk factors
- Hydroxyurea and Blood Transfusion

Covering such a wide range of topics on Sickle Cell Anaemia management, she concluded her talk saying that if these matters are kept in view, the management of the disease is facilitated.

**Dr. Sangita Trivedi, Additional Professor of Paediatrics Government Medical College, Surat :**

Dr. Sangita Trivedi, through power-point presentation on Sickle Cell affected children's management started her talk with symptoms of disease and the difficulties arising out of this.

She, deliberating on the topic, went step-by-step on why child patient needs special care and treatment, what are the objective of its management, what steps are to be followed for its management, what are the critical conditions and how they have to be stabilised, what to do and what not to do in home-bound treatment etc.

She particularly stressed on individual disturbances, prevention of painful crisis through management strategy, symptoms of Dactylitis, symptoms of Spicaemia etc. She also talked at length about infection and its prevention through immunisation. She also talked about management of splenic sequestration episodes, priapism, stroke, transformation of iron cells, Acute chest syndrome etc.

She talked about problems related to lung, kidney, stem cell Transplantation Therapy etc. She concluded her talk saying that social management is a big responsibility and a great challenge.

**Dr. Gyanchand from National Institute for Research in Tribal Health, Jabalpur :**

A noted expert Dr. Gyanechand from NIRTH, Jabalpur had tried to cover a couple of issues in his talk viz. cases of Malaria as found in various States of India, inter-connectivity between Sickle Cell and Malaria and types of cases of Malaria as found in the State of Gujarat. In his power point presentation he contented :

- As per Report on Malaria by WHO, 2009; in that year, in South Asia 24 lakh cases of Malaria were recorded; of which nearly 75 percent (i.e. 18 lakh) were recorded from India only.
- Almost 60 percent of Malaria cases in India are in the States of Orissa, Chhattisgarh, Madhya Pradesh, Jharkhand, North Eastern States and West Bengal.

- By providing timely treatment, Malaria can be cured; but at present, we have a challenge of diagnosis of Malaria cases.
- In India 8.6 percent population is tribal, 30 percent of tribal population have been suffering from Malaria and 60 percent of these cases are Phalsipheram Malaria.
- In tribals, 50 percent of deaths occur due to Malaria or Phalsipheram Malaria.

Dr. Gyanchand vividly described the Malaria status in India from 1961 to 2014 graphically; and indicated those districts having largest number of Malaria cases. He also explained about number of deaths that take place in various States, including in the State of Gujarat, due to Malaria and Plasmodium Phalsipheram.

Saying about the risky factors causing Malaria, he stressed on Vectors, parasites, geographical areas, human factors, logging of Water, few cloths on body resulting in large part of bodies exposed to Malaria vectors, dirt and insanitation and above all carelessness. For prevention of Malaria, he suggested that pits on land should be evenly filled to avoid logging of water on surface, fishes to be put in water-sources use of anti-mosquitos spray and mosquito-net. He pointed out that, wherever new development sites are located, the temporary habitation take place around and the migrant population occupy such temporary, unhealthy habitation without adequate sanitation facilities. This gives ground for spread of Malaria. He illustrated this point with the examples from Panna and Jabalpur districts.

In later part of his talk, he explained about different diagnosis system for detection of Malaria, and various treatment strategies. For bringing awareness, he suggested public instructions media like wall- slogan, students' rally, Folk dances, puppet stories etc. He, however gave more significance to the role to be played by most committed health personnels.

In quickies he showed slides on what is Malaria, how it takes place, what are its favourite sites, how mosquitoes breed, how that can be prevented, now fishes also can be deployed to check the nuisance of mosquitoes and how to treat Malaria fever etc.

He provided first hand information about functioning of various units against Sickle Cell Anaemia in MP, characteristics and symptoms of Malaria and Sickle Cell Anaemia etc especially among tribal people with special reference to various tribes in MP.

**Dr. Dinkar Raval from Sickle Cell Anaemia Control Programme Department of Health and Family Welfare, Gujarat State :**

The topic of discussion by Dr. Dinkar Rawal was care and counselling in Sickle cell Anaemia. Logically also, after covering two major aspects viz. Screening and Management of S.C.A; this third step viz. care and counselling was quite in sequence. As an expert on Sickle Cell Anaemic Control, Dr. Dinkar Raval also talked through power point presentation. He said that any person from any country or any class is exposed to Sickle Cell traits. The disease; he contented, is not restricted to poor and deprived only. Nevertheless, he said that of course, largely poor and deprived sections of society are more exposed to it. The main reason for this is lack of awareness. He said that in order to reinforce the awareness, a specific Logo is prepared. He stressed on the need for cultivating scientific approach. After giving preliminary information about SCA in terms of its causes, how it is transmitted from generation to generation and how disformation of red-cells in blood cause SCA, he said that this disease take toll of 20 percent of children, before they attain the age of two years. According to 1989 survey, 30 percent of tribal children do not attain adulthood and become prey of this disease.

Dr. Dinkar Raval provided valuable information about Gujarat Government initiative in this matter. He said that the Health and F.W. Department of the Government, since 2006 (to February, 2015) have carried out screening of 77 lakh of tribal people including 1.25 lakh pregnant women. Still however, as on to-day, we have 7 lakh Sickle Cell Traits and 29,266 Sickle Cell Anaemia patients. He explained about initial symptoms of SCA and the kind of conditions it causes to patients as also critical symptoms of the disease also. He provided information about medical treatment and care, especially in case of children. He said that, often the disease creates acute and unbearable pain; but the pain is not constant but at irregular intervals during the day. When it occurs, the pain is so acute that the child has to take rest in the bed and has to sacrifice his schooling. He said that children should be given a glass of water every hour and should be well protected against both cold and heat. He advised that the complain of pain should be taken very seriously, and should never be ignored, else it can cause serious consequences.

He also provided in depth information on socio-psychological issues. He informed that at present more than 180 full time trained and well-equipped social workers are posted to provide counselling to SCA parents, pregnant women and pre-marriage counselling to prospective bride / bridegroom. He also informed that besides this specialised counselling services, even the medical officers and physicians are also trained and made equipped with Genetic Counselling, IEC (Information, Education and Counselling), Investigation etc. He said that counselling is not just plain piece of advice. It is a scientific process containing GATHER i.e.

- G- Greet the patient with love and warmth
- A- Attend to him properly and Accept him
- T- Talk to him to make him comfortable
- H- Hear him with patience and empathy
- E- Educate him about symptoms etc.
- R- Respond to his psychological needs.

The session proved to be quite interesting, educative and inspiring.

### **Concluding Session of Day one :**

The whole day was quite busy with a number of inter-acting presentations by experts from respective fields covering three broad areas of Sickle Cell Anaemia viz. Screening, Management and Care and Counselling. The experts, at the end of their presentation had provided explanation to any individual query responded to questions raised by participants or provided more information whenever needed. All this had a good stuff for future policy formulation.

**Shri R. M.Patel**, proposing a vote of thanks to all experts and participants expressed his heart felt feelings that we have been working for those who are, by nature, shy and silent. Therefore, we have to be more humane to them. He expressed his pleasure that people in such a large number have come, despite the fact that it was officially a non-working day. He declared the deliberation of the day to be most successful and once again thanked the delegates, for their lively participation.

## **Day Two : 12-04-2015**

### **Warm Welcome :**

In the starting of the second day session, all the dignitaries were given warm welcome with the basket of fruits. Among those who were greeted with, were

- Dr. Rishikesh Panda, Secretary, MOTA, GoI, New Delhi
- Dr. Manojkumar Pingwa, Jt. Secretary, MOTA, GoI, New Delhi
- Shri R. C. Meena, Secretary, Tribal Development Department, GoG, Gandhinagar
- Dr. Malay Mukharji, Dy. Director, ICMR, Mumbai
- Dr. Girish Pujar, Scientist, NRSC, Hyderabad etc.

After extending warm welcome and introducing them to the audience, the fruit baskets were re-distributed to Anganwadi Workers of ICDS, for use of beneficiary children of Anganwadis.

The formal session of next day began with the Welcome address by Shri R.C. Meena, I.A.S. Secretary, Tribal Development Department, Government of Gujarat. He specifically mentioned that it is his proud privilege to welcome Dr. Panday, Senior IAS, Secretary Ministry of Tribal Affairs, Govt. of India. Under his guidance, the entire nation gets benefit of his leadership in the area of tribal development. Introducing Dr. Panda, he mentioned that he was a topper of 1979 IAS batch; and that ever since his joining the first cadre posting as SDM in Orissa in 1981 he rose to this position since 1st January, 2014, after working in Panchayat Ministry also, and has been rendering very useful services to the Government of India. He mentioned that with his auspicious presence in the workshop, the workshop has achieved a new height.

He also mentioned that the workshop is a step in the direction of eradication of SCA which is one of the dreams of our Hon. Prime Minister of India. He expressed great satisfaction with the first day's deliberation in the Workshop and expressed his thanks to all experts who led the workshop discussion on right track. He also bid welcome to other guests and dignitaries.

As directed by Dr. Rishikesh Panda, Secretary, MOTA, Gol, Dr. Kamlesh Upadhyay gave a brief report of first day's proceedings; highlighting the topics of Screening, Management and Care and Counselling for SCA.

**Dr. Rishikesh Panda, Secretary, MOTA, Gol, New Delhi :**

Dr. Rishikesh Panda, Senior IAS, Secretary, Ministry of Tribal Affairs, Government of India in his key note address on second day of the workshop mentioned that tribal population in India consists of 8.6 percent of total population, wherein almost 90 percent deaths occur due to Phalsipharam Malaria. This was a great cause of concern for the Government. Besides, among tribals, 20 percent pregnant women do not take tetanus immunization, which cause danger to their lives during child birth. He informed the gathering that according to 2011 census, 9 percent of tribal population suffer from sickle cell Anaemia; which in itself is an alarming issue and if continued, it will create serious conditions in future.

Analysing the causes of ill-health among tribals, he said that medical and para-medical staff have a tendency to avoid posting in remote tribal areas. Consequently, the health of tribals suffer. Referring to his own experience of his first posting in Orissa, he said that it was a predominantly tribal area; and 70 percent of people there did not know what was Sickle cell Anaemia disease. He further said that when in 1981, he was functioning as DDO in one district, the disease of leprosy was considered to be a social stigma; and if a doctor declares that a patient is suffering from leprosy he was almost boycotted by other family members. The patients used to give up treatment to avoid such social stigma. He said that in such circumstances he advised the doctors not to give name of the diseases, but to continue the treatment and to keep the record. He said that his advice was in the interest of the patients only and to make a patient comfortable and take treatment without any mental reservation, and without a fear of stigma.

He also remembered those days when "DOTS" was not so much prevalent and drugs in adequate quantity was not available also. In order to do away with the false beliefs about Leprosy, he had conducted a people's campaign on a mass scale, involving the Panchayat members, Panchayat Secretary, Sarpanch, caste-panchayat



and tribe Panchayat members, doctors, local leaders and social workers etc. He, in this campaign, advocated 'DOTS' treatment and its utility. This resulted in acceptance by patients and the society at large.

He also referred to the issue of female foeticide which according to him was a very serious social issue. He said that often he had to meet Haryana women in connection with problem of female foeticide; and that women were very shy to talk openly to men and were always covering their face with a veil, while talking. He used to ask them, why you are killing your daughters even before their birth, they used to argue that girls are burden on the family; that one has to pay huge amount of dowry at the time of their marriage and that girls, after all belong to other families, and that if her chastity is at stake; it will be a great stigma to the family etc etc. Dr. Panda said that he used to retort to them that these all are your excuses; and that you conduct female foeticide simply because you are conservative in your thoughts and beliefs and you consider a woman to be inferior in the society and therefore you kill them.

He also recalled his experience of talking to young women about sexual harassment. He said that often parents of such girls, instead of registering an FIR, ask the girl to commit suicide; because for them, the incident would bring disgrace to the family, and they considered a girl to be responsible for this. Dr. Panda, at this stage, very emphatically and assertively mentioned that, for sexual harassment of a girl, a man is responsible, not a girl. If any body should feel shame or fear, it is he, and not the family of the girl. He concluded that people, out of such false feelings of fear and shame, avoid taking police action and become victims of exploitation and injustice. This is an obstacle in development. In past, in Panchayat or Gram Sabha meetings, women did not participate on equal footings with men; but now the situation has changed. He therefore said that in cases of Sickle Cell Anaemia also, such fear, shyness should be avoided. Such fear and shyness are deadweight on social progress and development.

He focussed on the idea that in prevention of Sickle Cell Anaemia, children, parents, marriagable youth are our target groups and we have to work with them closely. He said that Dadara Nagar Haveli in Gujarat has provided us an example which should be followed.

He also said that the information we provide to the people should be long lasting and it should be preserved at various level for use and re-use. It can be preserved with a village Panchayat, PHC, Doctors, school teachers etc. In the end, he stressed the need for timebound programme for prevention of SCA through joint efforts of trained workers.

**Dr. Girish Pujar, from NRSC Hyderabad :**

Dr. Girish Pujar, a technical expert scientist spoke on Geo-Pdf maps regarding surface level water bodies in tribal districts of Gujarat as well as on use of remote sensing technology in the study of natural resources and land.

Just before his effective power point presentation on the topics Shri Meena, Secretary TDD drew the attention of the delegates that this presentation assumes much more significance in view of present day problem being faced in tribal areas, especially with regard to availability of water and means of livelihood.

Dr. Pujar classified his content into four parts viz. Remote Sensing overview, Geo-spatial products and trends, Geo PDF handling and online Interface for tribal affairs.

He presented several satellite based images such as RS or bits, GPS orbits. Advanced orbits etc. He also explained about Highest Resolution Imaging and multiresolution Remote Sensing through GAGAN system constellation Worldview. He explained with illustrations about analytical technology viz AWIFS, LISS III, LISS IV, cartosat. 1 etc. He presented there and there only about existing surface level water bodies to all concerned district delegates of Bharuch, Dahod, Navsari, Dangs, Narmada, Panchmahal, Tapi, Vadodara and Valsad districts; through GEO PDF product.

He focussed on four essential aspects of use of GEO PDF viz. Opening location, layer selection and Attribute display. In order to show these with greater details, he used zoom camera technique in his presentation. He also provided useful information on Bhuvan Softwear developed by ISRO.

Dr. Pujar provided most essential information on use of satellite technology and relevant surface level information for construction of new water bodies in remote areas.

He explained how the land and location should be selected for construction of such water bodies. He explained that one needs to make use of satellite map to locate the suitable place for construction of water bodies as per season. He categorically said that water bodies should always be constructed on the waste land and on such clay which can absorb water and where drainage of water is also possible.

Thus, the information provided by Dr. Giris Pujar was of very practical significance in terms of identifying water sources or creation of new water bodies for drinking water, irrigation, fisheries etc. The presentation of Dr. Pujar was attended by delegates with total concentration and to the best content of their hearlo.

**Shri N.R. Patel, Dy. Commissioner of Fisheries, Government of Gujarat :**

Shri N. R. Patel made a power point presentation of opportunities for fisheries in existing water bodies for tribal communities, presentation of diseases, nutrition and economic earning.

He said that Gujarat is a Maritime State and if has 1600 kmts of Sea-shore. This has a great potential for fishery industry. Giving a statistical data, he said that in 2013-14 Gujarat has produced 695metric tons of salt-water fishes and 103 thousand metric tons of Sweet Water fishes; and that every year the export of fishes is also on increase. He also explained various acts on fisheries and Government Policy on fishery.

He further mentioned three types of fisheries viz. Marine Fisheries, Inland fisheries and Brackish water Aquaculture.

Speaking about various kinds of fish-species he mentioned about Katla, Rohn, Marigal, Sondhiya etc. He informed that at present, in the State of Gujarat, there are five first-seed production centres of which two are located in tribal areas. Besides these 5 centres, there are six more centres in private sector.

He mentioned about Reserviour leasing policy. The fishery industry has developed on village ponds also. He mentined that as many as 1,59,279 tribal people who are fishermen by occupation. There are Fisheries Training centres in tribal areas providing fisheries training for 3 months, and which provide a stipend of Rs. 1000/- per month, and Rs. 2500/- as a tool-kit after successful completion of fishery course.

Lastly he referred to Brackish lease policy which is operated by Revenue Department. His presentation was very useful and a number of new things were unfolded by him enlightening the group of participants. He mentioned that out of 89,34,091 hectares of land, 59,000 hectares of land is allotted for fishery industry. Government provides very generous assistance such as fish, seed, fish-rearing, sale, boat, net and other kit as also assistance for construction of houses. He also gave information about key culture project of Ukai.

**Dr. R.J. Patel, Back ground information on Growth Centre :**

Shri A.D. Bagul who has been working as Project Administrator at Valsad under Tribal Development Department, GoG had made a power point presentation on the subject of Growth Centre. Before this presentation however, Dr. R.J. Patel had given a background information about the concept of Growth Centre. He had referred to the statement of the then Chief Minister and present PM Shri Narendrabhai Modi, who had observed that in the tribal areas, there are some villages who have carved out their own way of Growth and have been making slow but steady development in their own way. Shri Modi, had then mentioned that weekly Hat Bazar, which is also known as Hatwada, being regularly organised at certain key points is an example of tribal people's indigenous device of marketing.

These Hatwada are installed every week on some definite day, wherein temporary stalls are launched by small traders to sell food grains, medicines, other items of requirements for day to day purpose. Even tribals come here both for sell and purchase. Besides a regular Bazar; it has also been recognised as social meeting place for tribals from surrounding areas. Unfortunately the tribals cannot get the adequate returns from their sell because they lack bargaining power. The ex- Chief Minister had a dream to develop such indigenous Hatwadas into a regular sophisticated market system where the traders, tribal farmers, traditional professionals get all primary facilities at this place including facilities for roads, transportation and communication. It can serve as a Community Centre where the modern marketing facilities can be made available at local level - a form of Mini Market Yard. After a series of discussion - meetings with different stake holders, the concept of Growth Centre had emerged. The present Chief

Minister had made an announcement that in 12 tribal districts of Gujarat State, about 40 to 45 Growth Centres will be created.

In this background information provided by Dr. R.J. Patel, Shri A.D. Bagul made a power point presentation about a Growth Centre developed at Nana Pondha village of Kaprada taluka of Valsad district.

**Shri A.B. Bagul, District Project Administrator, Valsad :**

Shri Bagul gave introduction about Nava Pondha village, Kaprada taluka and that of Valsad district. He explained what is a Growth Centre; what do people believe about it and what do they expect out of it. He explained, why Nana Pondha was selected for this purpose, what are infrastructural facilities available there and what infrastructural facilities are lacking. He showed through the pictures, the activities being carried out there including cultural activities, commercial activities, training, Animal Husbandry, Household industries, various kinds of Vegetable and other agricultural crops etc. The presentation proved to be very informative and thought provoking.

**Question-Answer Sessions and discussion on Policy Formation :**

**Screening on Sickle Cell Anaemia :**

1. About 70% to 80% screening on SCA is over in Gujarat State, what about remaining ones ?
  - 1.1 All patients visiting hospitals should be given a screening kit.
  - 1.2 Co-ordinated efforts should be made by Health & F.W. Department and Tribal Development Department for treatment of pregnant mothers.
  - 1.3 Pre-natal and Anti-natal screening should be done.
  - 1.4 Compulsory Sickle Cell Screening should be carried out for all students entering schools and colleges.
  - 1.5 Regular meetings of all stake holders should be held to identify the issues. At Collector level, the review meetings should be held.
  - 1.6 Usually in tribal families, there is a traditional trend for delivery at the house.

They should be encouraged for institutional deliveries in PHCs CHCs or the Hospitals. This will facilitate various tests including screening and any emergency treatment, if so needed.

- 1.7 The planning should be done at village level with all concerned stakeholders, Proposals should be prepared to get finance under Gujarat pattern. All concerned officials should be included.
2. Often, in cases of emergency, when the serious patients are required to be shifted to District level hospital when the taluka level hospitals do not have adequate facilities of treatment, it takes a long time in such cases. How can we reduce the time factor ?

The best course is to provide better services at taluka level hospitals only. For the purpose, the Health and F.W. Department should approach T.D.D. for special funding.

3. If a mother is not suffering from SCA but if a father does, can the couple give birth to a child ?

As such, there is no harm in giving birth to a child; but before that, social mobilisation, Pre-natal diagnosis and doctor's advice is necessary.

4. If there is any harm during Pre-natal diagnosis, what to do ?

There is no such possibility at all. Pre-natal diagnosis is quite safe and the team of doctors would take responsibility for its safe undertaking.

### **Questions - Answers on Sickle Cell Anaemia Management :**

1. When the patient is seriously ill, the treatment becomes expensive and a family cannot afford to undertake such costly treatment. Is there any possibility for assistance through a package ?

For treatment of a patient, the services of PHC, CHC or a referral hospital is available nearby. For taking a patient to the hospital, 108 emergency vehicle can be called which is free and prompt. The patient will be given a health card; which can be used for availing of 108 emergency services. This scheme is in pipeline

and will start soon. Even drugs and medicines prescribed by doctor will be supplied on that health card.

2. What is the arrangement for follow-up treatment ?

‘Asha’ worker visits patients every month regularly; and a check up in PHC or CHC can be done every three months, where the patient can be brought through 108 emergency van. During follow up visit, patient is provided with necessary treatment and counselling.

3. Is a patient educated about his disease ? Yes, patient is made aware about all Do<sup>s</sup> and Don’t<sup>s</sup> during treatment.
4. We have been paying more attention on screening, diagnosis, treatment, management etc. However, more attention is required on demand generation and awareness generation as well as on behaviour change advocacy, communication etc.
5. A full-proof tracking system is necessary whereby, immediately after screening and diagnosis, step by step follow up of treatment is much necessary and useful.
6. In case of children of migrant families, the children should have facility for screening and follow-up as and when required, by the school, employee or health personnel.
7. Those not covered under screening so far should be covered immediately phase-wise.
8. If any child is found to be limping or hobbling, the teacher or a principal should immediately arrange for his/her medical check-up.
9. For SCA, Comprehensive services should be provided and necessary intervention should be made.
10. Arrangement also should be made to see that SCA management is handled by totally dedicated sickle cell expert team and by national child protection workers.
11. Comparitively North Gujarat Vis-a-vis South Gujarat is less aware about SCA. It should be made compulsory that each school conduct screening for all its new entrants and record be maintained that of.

12. Each tribal community has its regular tribe conventions (meetings). They can be the best forum for raising awareness about health, education and any burning social issues. A team of dedicated workers can handle this task in each district. Mere providing health card is not enough and adequate. Often people lose this card. Efforts should be made to help people realise the significance of Health Card.
13. A child Sickle Cell Anaemia patient only above the age of 3 or 5 years should be given Hydroxyurea. It is risky to give it to the case earlier to it. It can cause cancer.

### **Question-Answer Session on Counselling :**

During last session of First Day when this topic was taken up Secretary, TDD (GoG) Shri R.C. Meena, Shri R.M. Patel, Dr. Malay Mukharji and Dr. Dinkar Raval were present on the dais and provided useful guidance.

**Shri R.C. Meena, Secretary T.D.D.** observed that we have seen where does Gujarat stand in SCA management. He said he was pleased with the level of discussion, and he said that he is aware that a large number of persons around thirteen lakh people are yet to be provided with Health Cards. He said that SCA cards is nothing but our commitment to eradicate SCA from the State. He said that we have to provide other inputs also to fulfil this task. He frankly observed that the State has no problem of spending money, nor there is any difficulty in providing training to any person, anywhere. He however observed that now we have to concentrate on coming together and work jointly in a co-ordinated manner for planning out proposals. He suggested that more emphasis will be laid on preventive measures, because that can go a long way in eradication of a disease. He also said that we have to involve the village Panchayats and Gram Sabha etc. in our campaign. He assured that acquiring physical resources is not a problem because under existing schemes only they can be ordered and purchased. He once again stressed that only team work and co-ordinated approach will be useful in eradication of SCA from the State.



### Questions and Answers :

1. As regards remaining work, it is largely related to migrant workers. How this will be done ?

There is a need to create a Migration tracing unit to reach the migrant workers. It will keep a track on migration per se. It can pass on message to all needy people.

2. It was argued that in North Gujarat districts, there is less awareness about SCA problem. One of the reasons for this is, when the workers approach the school, the school authorities demand for a letter from Education Department. In view of this, the Education department should issue a general circular to all the schools, to get all the students screened. Besides, the school teacher should be trained about Sickle Cell Anaemia, illness and traits so that they can identify child patients. Both Health and Education Departments should issue a mandatory note to make teachers alert and aware and they also should be well trained to take appropriate action at appropriate time.
3. It was also brought out that the private schools do not co-operate in SCA management programmes. It was decided that the Collectors of respective districts should issue a circular letter to private schools.
4. Dr. Malay Mukharji suggested that when 70 to 80 percent Screening has been completed in Gujarat State; it should not stop at the screening stage only and should take up further follow up functions. All steps should be taken for treatment and care.
5. Both the Health and Tribal Dev. Depts. should make joint planning at Taluka and District level.
6. The availability of blood is a problem in tribal areas. It is necessary to strengthen the Blood Banks of districts. Blood test should be done not only for diseased persons; but that of healthy people also should be done. A record of Blood donors should be maintained along with their contact numbers.

7. Shri R.C. Meena, Secretary T.D.D. showed concern for as many as 27,000 Sickle Cell Anaemia patients. He asked what is being done to them.

It was informed that the counsellor visits the patient every month, provides them with Folic Acid tablets, provides necessary guidance; and immediate actions are taken in case of seriousness of illness. However there are no adequate number of counsellors to reach upto migrant population. More number of counsellors need to be appointed.

8. As regards level 1,2,3 in SCA; what facilities are available at PHCs and CHCs ?

It was felt that for effective SCA treatment, a very competent net work is required to be created at village-taluka and district level. If all the PHCs and CHCs cannot be made fully equipped, selective 3-4 centres in each taluka can be made well equipped. To prevent infection, immunisation dose should be provided.

9. Screening in respect of children below the age of 2 years is pending and the specialised immunisation is also not available. This should be attended to.
10. There are not adequate no. of physicians in Health Centres for providing Hydrocyuria. To address this issue, MOU can be done with private physicians and services be borrowed on outsource basis.

The draft Sickle Cell Treatment Policy is still in pipeline. After getting it properly edited, it will be brought out soon. This policy provides for all necessary specialised treatment facilities.

**Question - Answer Session for Use of Satellite based technology to identify water sources in tribal areas :**

1. Can we, for example, see water sources in Kaprada Taluka of Valsad district on Geo-pdf map ?

Yes. We can see water sources and water bodies in any taluka and in any district of tribal areas on Geo- pdf map. This was actually demonstrated and various district / project / taluka officials peeped in Geo-pdf Map to locate such water sources in respective areas.

2. While locating water bodies under satellite based technology, can we make out, whether the place is Government one or a private one ?

No, it is not possible to know it at present.

3. Can we make out the depth of small or big water body through satellite image ?

Yes, it can be know.

4. Is there a seperate system to identify water bodies during winter and summer ?

Yes, that facility exists in satellite-based technology.

5. During illegal encroachment, how the water bodies can be kept out ?

Ground system cadestral Information System can perhaps help.

6. Often, in a single hamlet in tribal areas, even after 25 deep water bores, water is not available. Can remote sensing technology help in this matter ?

Yes, Rajiv Gandhi drinking water mission provides for this.

7. Dr. Panda, Secretary, MOTA, GoI, intervened in the discussion and informed that in Google, Google water bodies data base provides a lot of information. This is off line information; and it is 2009 data. You may feel that this is then quite old. But, we donot have information about all water bodies, and we have to identify them. Therefore, this data too is very important. He suggested that these officials should always refer to circular issued by MOTA and act accordingly.

8. Shri R.C. Meena, Secretary, T.D.D., GoG also informed that our intention is to increase the facilities for drinking water and for irrigation as well, through use of remote sensing technology. He also said that the funds for the purpose will be available under Gujarat pattern.

9. Dr. Panda, Secretary, MOTA, GoI suggested that a system should be developed to provide regular source of income to the tribal people who are associated with fishing occupation. When the water bodies dry out in summer, we must put lime stone in such water bodies, which will become much beneficial, Besides, the fish-pond can be priveded to tribal people in a village through a resolution in the Panchayat meeting.

10. Shri R.C. Meena, Secretary T.D.D. GoG also made a point that there is great potential for economic upliftment of tribal people in a fishing occupation. It is our dual responsibility to provide them better sources of income and protect them from SCA and Malaria. Through use of new technology. We must also find out water bodies for fishing purpose for tribal people, It was informed that in a tribal area, fishery cannot be started without permission of a Gram Panchayat. It was pointed out that the fishery department is ready to start fishery if such permission is accorded in tribal area.
11. As regards Growth Centre, Dr. Panda, Secretary MOTA, GoI, suggested that it should be considered that instead of providing many facilities on a single Growth Centre, let few facilities be provided to many centres. e.g. you can establish a School at Centre A. then you may establish a Hospital at Centre B. In case of all concentrated facilities at a single place would turn a centre into any Urban place; and that would create new problems which cannot be handled by us. He further said that whatever be our level of knowledge and information, there is always a scope for new addition; because at no level, it is complete. Even Newton's Law was required to be improved upon, because that too was not complete and final. There is always a scope for addition and modification.

He therefore insisted that we always need to update our knowledge and information. For this, we should make more and more field visits. We have to collect information about new invention, discoveries, experimentation events, research etc. Sooner we come out of the illusion that we know every thing, better it is for us to think about something new, something unique, something better.

### **Concluding Session :**

A two days' workshop was now coming to an end. In its concluding session, Dr. Rishikesh Panda, IAS (Secretary, MOTA, GoI), Shri R.C. Meena, IAS (Secretary, TDD, GoG), Dr. Girish Pujar (Scientist, NRSC, Hyderabad), Dr. Manojkumar Pingva (Jt. Secretary, MOTA, GoI) and Shri R.J. Patel were on the dais.

In the beginning, Shri R.C. Meena expressed his heart felt thanks to the Ministry of Tribal Affairs, Government of India, and especially the Secretary Dr. R. Panda for plan-

ing and implementation of the workshop in Gujarat. He said that the workshop has provided very valuable information on Sickle Cell Anaemia, Fisheries, Growth Centre and identified and non-identified Water bodies. The experts have indeed enriched our brains and minds with a lot of information. He, however, added that the information and knowledge are always boundless and we will collect still more knowledge and we will use it in the interests of tribal development.

Here are some of the quick responses received from its active participants and field officials :

**Shri A.D. Bagul, Project Administrator, Valsad :**

We have got rich information from this workshop. Now we will plan meetings for eradication of Sickle Cell Anaemia and will jointly plan for collective action. Till now there seemed to be lack of co-ordination. We will now do away this lacking and will now march ahead quickly. We will request our District Collector to plan out co-ordination meeting at his level; because that can facilitate our task. I feel that such Workshops should also be planned and all stockholders should be invited to participate. That will indeed accelerate the tempo of work.

**Shri N.M. Makwana, Project Co-ordinator, Godhra :**

Through this workshop, we realised that co-ordination is a key to successful implementation of a task. We could realise the value of team work, especially for working in tribal areas. Now, we will provide the benefit of the scheme, having a joint meeting of officials of various departments. We could realise now that use of media and local resources will be much useful.

**Shri I. K. Chhabra, Joint Director, FRA Cell : Gandhinagar**

I would like to suggest that in order to create nation - wide awareness about Sickle Cell Anaemia, a specific day in a year should be identified as SCA day and intensive campaign should be planned on wider scale.

**Shri D. M. Joshi, Watershed Dahod :**

When I received an invitation to participate in a Workshop on Sickle Cell Anaemia,

I thought that it must be an administrative mistake; because, I never knew if watershed had anything to do with SCA. But in last two days, through continuous deliberation, I realised now various tasks are inter-related and how co-ordination and team work can make a difference. I am now having a lot of information on Sickle Cell Anaemia and that will always keep me alert that I, too can be a partner in the task of its eradication.

**Shri Vaidya, Assistant Commissioner, Valsad :**

This Workshop has provided me very useful information on Sickle Cell Anaemia. Society at large is very much unaware of it; 20-30 percent Screening in tribal areas should now be taken up on priority basis. I would like to suggest that people seeking tribe certificate or financial assistance for the scheme of Kuvarbainu Mameru, should be compulsorily asked to get screened.

At this stage, however Shri Meena, Secretary TDD responded that let us not mix up screening and benefit of schemes; because that will create other problem or often human dignity can be at stake. He said we donot want to make it compulsory and conditional.

**Smt. Jyotiben Patel, Joint Secretary, T.D.D. Gandhinagar :**

Let the traditional therapist called Bhagat- Bhuva be trained in Sickle Cell Anaemia management programme.

**Smt. Arpitaben, Accounts Officer, T.D.D. Gandhinagar :**

Both these days were fully informative. Let such workshops be organised at District and Taluka level.

**Shri C.K. Pandya, Dy. Chitniss Chhota Udepur :**

The patients of Sickle Cell Anaemia should be provided financial assistance.

**Concluding Address by Dr. Rishikesh Panda, Secretary, MOTA :GOI**

In Delhi, I find a number of posters on Thelasemia diseases but none on Sickle Cell Anaemia. This shows that on SCA, people at large are not aware. This is a task we must pay proper attention on. In Gujarat, whereas first step is almost completed, the

second step of giving Health Cards, Counselling and Treatment are now required to be completed in a year.

I am indeed much happy to meet you all here. There have been good interaction on various subjects like Sickle Cell Anaemia, fisheries, Growth Centre, Remote Sensing etc. I particularly appreciate the session by Dr. Girish Pujar. We must make use of such modern satellite based technology for identifying waterbodies and their development. I suggest that when we provide adequate funds for training and technology. We have to make co-ordination of all these there aspects for development of tribals.

**Press Meet :** Dr. Rishikesh Panda, Secretary, MOTA, GoI, Shri R.C. Meena, Secretary, TDD, GoG and Shri J.P. Gupta, Secretary, Health and F.W. jointly addressed the media representatives on Sickle Cell Anaemia issue.

#### **Memento to Guests and Speckers :**

Tribal Research and Training Institute, Ahmedabad presented famous Varli paintings as memento of the Workshop to Rishikesh Panda, Dr. Manojkumar Pingwa, Dr. Girish Pujar and other guests.

#### **Conclusion :**

A two day State level workshop organised by Ministry of Tribal Affairs, GoI on "Sickle Cell Anaemia and use of satellite based technology for identification of water bodies met with a great success. The topics covered were :

- Screening, Management, Care and Counselling for control of Sickle Cell Anaemia in tribal areas.
- Use of satellite based technology for identification of water bodies and their development.
- Employment, Nutrition and Malaria Control through Fishery
- Growth Centres in tribal areas

The experts made power point presentations on these topics. The participants of the Workshop were from Tribal Development Department, Health and Family Welfare

Department, Education Department, Forest Department and Fisheries Department. The Workshop was concluded with a Key note of co-ordination and team work by all concerned.

The Workshop could get benefit of experts and experienced persons and dignitaries like Dr. Rishikesh Panda, Secretary, MOTA, GoI, Dr. Manojkumar Pingwa, Jt. Secretary, MOTA, GoI, Shri R.C. Meena, Secretary, TDD GoG, Dr. J.P. Gupta, Secretary, Health Department, GoG and many other knowledgeable personalities.

The Workshop proved a special event with its Question - Answer component leading to policy formulation suggestions. The discussions and deliberations were interactive. At the end, all of the participants decided to commit themselves to the cause and make joint and co-ordinated attempts. Thus the workshop was a great success.

TRTI Ahmedabad is grateful for everybody's heartfelt co-operation.