

# **ANNUAL ACTIVITY REPORT**

for the year 2006 – 2007



**MANIPUR SCIENCE & TECHNOLOGY COUNCIL**  
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## **Annual Report for the year 2006 - 2007**

### **Manipur Science & Technology Council (MASTEC)**

#### **1.0 Background**

The Manipur Science & Technology Council (MASTEC) formerly, State Council of Science and Technology and Environment, Manipur was set up in the year 1985 with the initiatives from the Department of Science and Technology, Government of Manipur. . The Chief Minister, Manipur and the Minister in charge (S&T), Manipur are the Chairman and the Vice Chairman of the Governing Body of the Council. The Secretary, S&T, Government of Manipur is the Member Secretary of the Council. The Council got registered as an autonomous organisation of the Department of Science & Technology, Government of Manipur in January 1996 under the Manipur Societies Registration Act, 1989 subsequent to a decision of the state cabinet.

The autonomous Council is served by its own Secretariat of 20 manpower supported by the Department of Science & Technology, GOI. The Council Secretariat operates with the grants received from DST, Government of India, DST, Government of Manipur and the funds received from various agencies through projects and programmes. The autonomous Council works in co-ordination with the State Directorate of S&T in various areas of activities.

#### **1.1 Objectives of the Council**

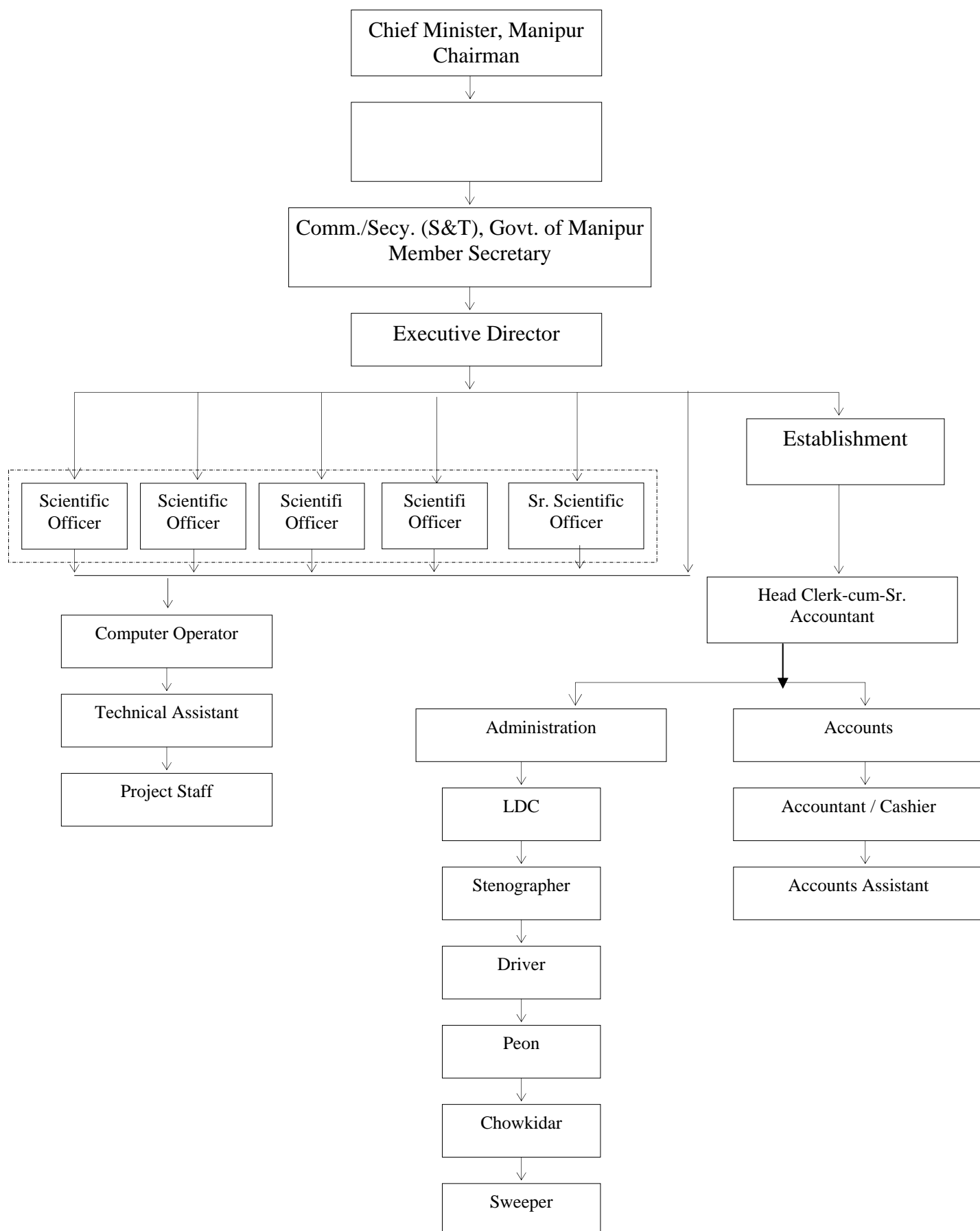
- To identify areas in which Science, Technology and Environment can be utilised for the achievement of the Socio-economic objectives of the State and in particular, tackling the problems of backwardness and underprivileged sections of Society;
- To advise on policies and measures necessary to promote Science, Technology and Environment and their utilisation for achievement of socio-economic objectives;
- To initiate, support, promote and co-ordinate Research Design and Development projects and programmes, including demonstration projects which are likely to be relevant to the problems, surveys and optimum utilisation of natural resources of the State;
- To promote and undertake activities for the popularisation of Science and Technology and the spread of a Scientific Temper and attitude among the people of the State;
- To supplement and complement the ongoing technical efforts of the State Government;
- To interact with other State, National and International Science and Technology bodies having similar or related objectives;
- To identify priority areas of Science, Technology & Environmental need for long term development of the State;

- To safeguard and promote the ecology and environment in the State of Manipur;
- To utilise Remote Sensing Techniques for planning, implementation and monitoring of development programmes with S&T inputs and to promote and support the activities of the Remote Sensing Centre;
- To promote, support and undertake the application of renewable sources of energy for the benefit of the people;
- To accept donations, raise subscriptions and receive grants, loans and subsidies from Government of India, Government of Manipur and other supportive agencies in India and abroad and to invest the resources towards the achievement of the objectives of the Council.

## **1.2 Organisation**

The Council has a Governing Body which consists of a wide distribution of membership having expertise in various fields, with the Chief Minister as the Chairman, and the Minister in charge, S&T, Manipur as the Vice Chairman. At present there are 46 members (including project staff) in the Council. The Council has an Executive Committee to assist the activities towards achieving the objectives of the Council. The Vice-Chairman of the Governing Body of the Council heads the Executive Committee as its Chairman. The Secretary, S&T, Government of Manipur is the Member Secretary of the Council. The Member Secretary is the Chief Executive of the Council Secretariat.  
(See MASTEC Organisation Chart)

### 1.3 Organisation Chart



## 1.4 Existing Staff

### Scientific Staff:

Sl.No	Name	Qualification	Designation
1.	Th. Surendranath Singh	M.Sc., PGDCA, LLB	Executive Director
2.	Dr. L. Dinachandra Singh	M.Sc., PGDRS, Ph.D.	Sr. Scientific Officer
3.	Dr. L. Minaketan Singh	M.Sc., PGDRS, Ph.D.	Scientific Officer
4.	Kh. Rakesh	M.Sc.	Scientific Officer
5.	Ch. Sarat Singh	B.Tech.(Civil), M.Tech.	Scientific Officer
6.	Dr. R.K. Pritamjit Singh	M.Sc., Ph.D.	Scientific Officer

### Technical Staff :

7.	Ch. Shivaji	M.Sc., PGDCA	Computer Operator
8.	Mrs H. Binodini Devi	B.Sc.	Technical Assistant
9.	Y. Shyamsunder Singh	B.Sc., LLB	Technical Assistant

### Ministerial Staff:

10.	K. Nara Singh	B.A.	Head clerk cum Sr.Accountant
11.	Mrs R.K. Bhanisana Devi	B.Sc.	Accountant
12.	H. Thangthianmang	B.A	L.D.C.
13.	A. Tombi Devi	B.A.	Stenographer
14.	L. Ronel Singh	M.Com.	Accounts Assistant
15.	L. Boyai Singh	VIII Passed	Driver
16.	L. Open Singh	X Passed	Peon
17.	S. Deven Singh	X Passed	Peon
18.	Jamkhanmuan	VIII Passed	Peon ( Dak Runner )
19.	Mrs. Chingthanching	VIII Passed	Chowkidar
20.	Kh. Leidou Maring	VIII Passed	Sweeper

### Project Staff :

21.	Dr. Indira Devi	M.Sc., Ph.D.	Research Associate
22.	Dr. Kadanlung K.T Panmei	B.V.Sc	Project Officer
23.	Ningchuimi Singnaisui	B.E. (Civil )	Project Engineer
24.	Th. Churjit Meetei	MCA	Computer Operator
25.	Miss W. Phajaton Devi	M.Sc.	J.R.F.
26.	L. Romen Singh	M.A. Geography	J.R.F.
27.	L. Surjit Singh	M.Sc.	J.R.F.
28.	N. Gojen Singh	M.Sc.	J.R.F.
29.	Ph. Gopinchandra Singh	M.Sc.	J.R.F.
30.	Th. Shyam Singh	B.Sc. (Agri)	Field Assistant
31.	L. Lolini Devi	B.Sc.	Project Assistant
32.	Shri Manghen Vaiphei	Class VIII passed	Helper
33.	L. Hemanta Singh	Class VIII passed	Skilled Mason
34.	Mr. Tonglunthang	Class VIII passed	Skilled Mason
35.	N. Jumbojit Singh	Class XII passed	Helper
36.	L. Sanajaoba Singh	Class X passed	Unskilled mason
37.	N. Megha Singh	Class VIII passed	Unskilled mason
38.	Ch. Ingobi Singh	Class VIII passed	Unskilled worker
39.	Thangal Shingshit	Class VIII passed	Unskilled worker
40.	Mrs Manzangai	Class X passed	Skilled Helper

## 2.0 Activities

The Manipur Science and Technology Council (MASTEC) organised various centrally sponsored workshops / trainings relevant to the state including science popularisation to fulfil the objectives for establishment of the Council. The Council receives overwhelming response from all sectors of the scientific community in the state while organising S&T programmes and organised with a big success.

The following were the programmes implemented by MASTEC during the year 2006-2007.

### 2.1 Science Meet-2006

Since the year 1987, National Science Day has been celebrating in the country on February 28. The decision to designate such a day was taken by the Government of India in December 1986 and the choice of the date is linked to the discovery of the **Raman Effect (1928)**. The occasion is intended to instill and build in the confidence in ourselves and in our own abilities to think of and do entirely new things on our own. Thus, efforts are made to popularize science & technology, estimate and nurture scientific attitudes and temperament among our people, as part of the National Science Day celebration. The Department of Science & Technology, Government of India, New Delhi announced the national theme of this year 2006 as "*Nurture Nature for Our Future*".

India conducted 5 (five) successful underground nuclear tests on May 11 and 13, 1998 at Pokhran. May 11 is being celebrated as **National Technology Day** since 1999 in commemoration of these successful nuclear tests. The basic idea of the National Technology Day is to focus national attention especially on technology and technologists and also to stimulate and promote a technological temper among the people. Major milestones in the fields of nuclear science, defence research and aviation technology all achieved on May 11, 1998 made it easy to designate this day as the **National Technology Day**. The objective is to focus attention of the nation - students, teachers, engineers, researchers, entrepreneurs, and thinkers - on issues of technology development of the Nation.

Since the year 1997, Manipur Science & Technology Council (MASTEC) in coordination with the leading science NGOs of the state has been continuously organising state level science festival named - **Science Meet** as an annual feature in commemoration of the **National Science Day** and **National Technology Day**. Science Meet is a multi-activity state level mega festival aiming to create a common platform for students, science lovers, scientists and common people to further the cause of Science Popularisation in the State. This year too, MASTEC in association with the leading science NGOs of the state like - Science Teachers' Forum Manipur (STFM), Generation De New Image (GENIM), Manipur Association for the Promotion of Science (MAPS) and Manipur Science Communicators' Association (MASCA) organised a 5-day long **Meet** during May 11-15, 2006 at Khuman Lampak Main Stadium, Imphal with the inclusion of 3 new activities - Essay Competition, Brain Storming Session and Photo Exhibition.

#### Activities of Science Meet 2006

This year Science Meet was organized with the inclusion three new activities. The main activities of the Science Meet 2006 are:

- |                              |  |
|------------------------------|--|
| 1. Science Quiz Competition  | 12. Model Exhibition                           |
| 2. Painting Competition      | 13. Face-to-Face with distinguished scientists |
| 3. Science Model Competition | 14. Popular Science Talk                       |
| 4. Declamation Contest       | 15. Scientific Film Shows                      |
| 5. Essay Competition         | 16. Science Drama                              |
| 6. Science Behind Miracles   | 17. IT Shows                                   |
| 7. Puppet Shows              | 18. Brain Storming Session                     |
| 8. Book Exhibition           | 19. Low Cost Teaching Aid                      |
| 9. Poster Exhibition         |  |
| 10. Photo Exhibition         |  |
| 11. Popular Science Gallery  |  |

These activities were jointly organised in association with leading science NGOs of the state - Science Teachers' Forum Manipur (STFM), Manipur Association for the Promotion of Science (MAPS), Manipur Science Communicators' Association (MASCA) and Generation De New Image (GENIM).

### **Activities of STFM**

Science Teachers' Forum Manipur (STFM), the only organization of science teachers in the state has been associating the Science Meet since the year 1997. This year too, STFM in coordination with MASTEC took part the meet in organizing the activities - Popular Science Gallery (Interactive Science Models, Science on Stamp, Mathematics Lab etc.) and Low Cost Teaching Aids.

### **Popular Science Gallery**

Popular Science Gallery or Interactive Model display was a grand success with visitors thronging the stall everyday to try their hands or to display their skills. Altogether 10(ten) interactive science models were exhibited during the Meet. They also displayed Science on Stamp, Mathematics Lab and many other wall posters relating to the science of Physics.

### **Low Cost Teaching Aids**

During the meet, the volunteers of STFM arranged many interesting teaching aids for the young minds so that they can act and play the basics of science without any fear and hesitation. Some of the teaching aids are:

- |   |                             |
|---|-----------------------------|
| 1. Balloon Rocket                                 | 7. Barometer                |
| 2. Bottle Rocket                                  | 8. Falling Body             |
| 3. Hover Craft                                    | 9. Smoke Goes Down          |
| 4. Inertia of Motion                              | 10. Water Balance           |
| 5. Dispersion of Light                            | 11. Water Rheostat          |
| 6. Mouse: A device for eyes exercise for Children | 12. Beat the Drum Vibration |

### **Activities of GENIM**

Generation De New Image (GENIM), Ningthoukhong in co-ordination with MASTEC took the responsibility of activities like Science Model Competition, Science Drama and Explaining Science Miracles during Science Meet 2006.



## Science Model Exhibition & Competition



*Science Model Competition*

The competition was opened to students reading in class VIII - XII. Altogether 63 (sixty-three) models were exhibited by 107 (one hundred and seven) students (73 boys and 34 girls) in the competition. The models were based on varied themes - Issues on Environment & Health - 11 models, Electronic & Electrical Gadgets - 18 models, Technological Applications - 22 models and other themes of interest - 12 models. The competitors were from 17 different Schools & Higher Secondary Schools of the State.

## Science Drama

The artists of Generation De New Image performed two science Dram/Short Play based on the focal theme of the "Nurture Nature for Our Future". The titles of the plays were "Nakhoibu Hingnaba Eikhoibusu Hinghallu (Save Us to let You Live)" and "Jibagi Hourakpham (Origin of Life)".



*Science Drama*

## Explaining Science behind Miracles

Scientifically Explaining Miracle was one of the most popular scientific shows of the Meet. Miracles or magics are age-old human activities, which make people wonder or confuse and in mislead the general public. The expert members of GENIM demonstrated many items behind miracles during Science Meet 2006 and the scientific backgrounds of the shows were also explained on the forth day of the meet. During the 5-day programme of the Science Meet 2006, Science Behind Miracles was kept for 3 (three) days of 2(two) hours duration each day and every day hundreds of students & general public had witnessed the show and many of them could learn how science is related with miracles.

## Activities of MAPS

Three activities - Science Quiz, Essay Competition and Face-to-Face & Brain Storming Session were organised by Manipur Association for Promotion of Science (MAPS) in coordination MASTEC during Science Meet 2006.

## Quiz Competition

The competition was for students currently reading in class XI-Degree in Science/Technology. 8 (eight) teams from and colleges registered for the competition. Each team of two students from the same school/college, written Quiz was held on May 15, 2006 at 9.30 a.m. teams were selected for the final round. The final Quiz was held on May 15, 2006 at 12.00 noon and in the competition there were oral as well as audio and visual rounds. The Quiz was on the subjects to science and technology.



*Science Quiz Competition*

## Essay Competition

The Competition was open to individual students currently reading in Class XI Science -Degree in Science/Technology. The topics of the competition were: 1)

**Nurture Nature for Our Future 2) Biological Resources of Manipur and its Harvesting and 3) Accelerated Expansion of the Universe (Dark Energy).** Hundreds of students participated the competition held on 12<sup>th</sup> May, 2006 at 1.30 p.m. The duration of the written essay was 1 hour with a maximum length of 1500 words.

### **Face-to-face & Brain Storming Session**

A face-to-face interaction programme with distinguished scientists was organised during the 5-day Science Meet 2006. Two local scientists were invited in the face-to-face programme to interact with the students on the topics of their specialized fields. The programme was kept for 2 days of 1 hour duration daily during the 5-day meet. The speakers were giving lecture for 20 minutes and then invited questions/quarries from the audience. Hundreds of students took part in the interaction session of the programme and they could gain maximum knowledge.

The names of resource persons and their topics are as follows:

- |  |   |
|--|---|
| 1. Prof. H.N.K. Sarma                    | <b>Einstein and After</b>                 |
| Physics Department, Manipur University   |   |
| 2. Prof. N. Rajmuhon Singh               | <b>History of Science: Turning Points</b> |
| Chemistry Department, Manipur University |   |

A new activity- Brain Storming Session was also held on 15<sup>th</sup> May. 2006 on the topic **"Present Trend of Mathematical Science in India"**. Prof HNK Sarma of Department of Physics, Manipur University, Prof N. Rajmuhon Singh, Department of Chemistry, Manipur University and Shri H. Jayentakumar Singh, Lecturer, Department of Mathematics, D.M. College of Science, Imphal were the resource persons and Dr. L. Ranendra, MAPS was the moderator. Many students, science activists and general public were participated the discussion with many questions of their interests.



*Brain Storming Session*

### **Activities of MASCA**

Manipur Science Communicators' Association (MASCA), a leading science NGO of the state, in coordination with MASTEC took part in organising activities - Spot Painting Competitions (3 groups), Declamation Contest, Puppet Show, Book Exhibition and Photo & Poster Exhibition during Science Meet 2006.

#### **Spot Painting Competition**

The competition was organized in 3(three) groups viz., i) Sub-Junior Group (Class III—V) ii) Junior Group (Class VI-VIII) and iii) Senior Group (Class IX-X). The competitions were held on May 14, 2006 at 10.00 a.m. at the Khuman Lampak Main Stadium, Imphal.

##### **Sub-Junior Group**

The theme of the painting was **"Love Animals as they are parts of Nature like Us"** and 142 students of class III-IV from different schools participated in the competition.



*Spot Painting Competition*

## Junior Group

The theme of the painting of this group was **"We Belong to Nature like Trees, Rivers and Hills, Let us Save them"**. The competition was open for the students reading in Class VI-VIII and 149 students participated in the competition.

## Senior Group

The competition was for the students currently reading in class IX-X on the theme **"Let us Save Nature from pollution of Air and Water"**. Altogether 55 students participated in the competition.

## Declamation Contest

The competition was opened to students currently reading in Class XI-Degree in Science & Technology streams. The declamation contest was in 3(three) topics viz.,

- 1) Disaster Mitigation
- 2) Rabies Outbreak in Manipur
- 3) Application of Radiological Science in the 3<sup>rd</sup> Millennium

Fourteen students from various institutions participated in the competition and the competition was held on May 13, 2006 at 12.00 noon.

## Puppet Play

Today, the art of puppetry is very much effective for communicating science to our people. Members of MASCA presented 3(three) puppet shows based on current epidemic in the bird flu, rabies and rain water harvesting during Science Meet. The titles of the plays are : 1) **Bird Flu** 2) **Hui Angaoba** and 3) **Nongi Ishing Yokpa**. These puppet plays were much impressive and visitors could realize how puppetry can take key role as a medium of S&T communication in the society.



*Science Puppet Play*

## Book Exhibition



*Book Exhibition Stalls*

As in the earlier Meets, this year too, Scientific Book Exhibition was also kept as an activity during the 5 (five) day long Science Meet 2006. A good number of students, teachers and parents paid visit at the book exhibition stalls and also bought many books of their interests. Three local book store/library, collections of MASCA and MASTEC were also displayed in the book exhibition.

1. Sangam Book Store : A leading book store of scientific books, journals and newspapers.  
Paona Bazar, Imphal
2. Sharma Book Agency : A leading book store  
Paona Bazar, Imphal in Manipur in scientific books.
3. Job Centre : A leading book store in the books of competitive examinations and also the information centre of competitive examinations and employment news.  
Babupara, Imphal

4. MASCA, Imphal : Exhibits its library in connection with newsletters, journals, books on science which are not available in print outs.

### **Photo and Poster Exhibition**

Scientific photo and poster exhibition was also kept as one of the activities during Science Meet-2006. About 40 (forty) scientific posters and many photographs of flora and fauna of the state were displayed during this Meet. Photo exhibition was the new activity from this year only and the photographs were contributed from different individuals and coordinating organizations. Many & visitors were so impressed to these photographs and posters.

### **Activities of MASTEC**

Manipur Science & Technology Council (MASTEC) organised the activities of IT Show and Scientific Film Show during the Science Meet 2006.

### **IT Show**

The revolution of Information Technology (IT) has been the most important development in the world during the last few decades. Events in any part of the world can directly influence the events in the remotest areas. Internet has transformed the entire perspective of communication. Science Meet is occasion an where we can introduce IT to our students in a very effective way and hence MASTEC invited local computer institutions/firms and also provided internet connectivity during the SM-2006. Three local computer institutions/firms were participated and displayed many advanced technologies and interacted with the visitors. The bullet proof technology display of M/s Alert Enterprises, Sagolband Tera, a branch of ACE INDOCANADA. New Delhi was one of the interesting stall of the meet. Hundreds of students enjoyed this display and internet facility and many people appreciated this activity.

The computer institutes/firms that took part in the IT shows are:

1. Swift Computers, Leima Shopping Plaza, Imphal
2. AMT Computers, Babupara, Imphal
3. M/s Alert Enterprises (ACE INDOCANADA, New Delhi)

### **Special Lecture**

As requested, Shri N. Shreth Chongtham, a student of P.G. & Research Dept. of Zoology, Loyola College, Chennai delivered a lecture on **H5N1 - Killer on the Loose**. He presented very systematically the causes and measures related to human beings about the killer virus H5N1 (Avean Influenza)

### **Scientific Film Shows**

One hour duration scientific film show was kept on all 5 days of Science Meet-2006. These scientific films were the collections of MASTEC and EMMRC, Manipur University Altogether eight scientific films were screened viz.,

1. **Our Sun**
2. **Waterworks India**
3. **Medicinal Plants - an Introduction**
4. **Orchids of Manipur**
5. **Parakhi**
6. **Banana Tree - The Gift of Nature**
7. **Arvari**
8. **Village Republic**

### **Best Appreciation Award**

The most prestigious award of Science Meet, **Best Appreciation Award** was kept on the last day of SM-2006. The award was introduced by MASTEC since the year 1997 given to an individual student who proves to have gained the maximum knowledge of science from the Meet as judged by questionnaire response and personal interview. The Best Appreciation Award 2006 for SM-2006 was selected from 75 participants of different standards. The award was given to **Mr. Achom Thunder** of Vignan's CBSE School, Imphal by Dr. S. Pravabati Devi, Retd. Lecturer, Imphal College, Imphal. The award carries a certificate of merit with a cash prize of **Rs. 2,000/-**

### **Closing Function**

The closing function of the 5-day long Science Meet 2006 was held on May 15, 2006 at 3.00 p.m. at Khuman Lampak Main Stadium, Imphal with Shri M.A. Sattar, Commissioner (S&T), Govt. of Manipur in the chairs as Chief Guest. Secretary/President along with other members of the coordinating organizations; MAPS, MASCA. STFM and GENIM and many other invitees/dignitaries were present at the closing function.

Cash prizes with citations for the various competitions were distributed to the prize-winning students during the closing function by the Chief Guest and President. Shri Th. Surendranath Singh, Executive Director, MASTEC gave the concluding remark of the Science Meet 2006 expressing the Science Meet 2006, the state level science festival organised by MASTEC in commemoration of the **National Science Day 2006** can help the state for promotion and popularization of Science & Technology. Thus ended the 5-day long Meet 2006 organised in commemoration of **National Science Day 2006 and National Technology Day 2006**

## **2.2 Nature Orientation Camp**

### **Nature Orientation Camp held in five (5) Hill Districts of Manipur**

Under a specific module developed by National Council for Science and Technology Communication (NCSTC), Department of Science and Technology (DST), Government of India, Manipur Science and Technology Council, Imphal had already organized a State level Training Workshop on Nature Orientation Camp for generating local resource persons in the state. After, the state level workshop, Manipur Science and Technology Council, Imphal (MASTEC) had also organized a first round Nature Orientation Camp in all the 9 districts of Manipur. Based on the outcomes and good response of the earlier camps, NCSTC, DST, GOI for a second time has sanctioned district level Nature Orientation Camp for organization in all the 9 districts of Manipur.

The main objective of the district level nature camps is to educate the children about the nature with many practical programmes using low cost or no cost equipments with nature as study object through a series of hands on experiments. District level camp is oriented at guiding the children in exploring the environment by themselves for developing an intimate understanding about science and nature in particular.

Out of the total 9 districts of the state 5 districts are Hills and are mainly forest areas inhabited by the tribal people. In these hill districts, the forests are degrading very fast and hence give a direct impact on the survival of various flora and fauna of the state. Fast deforestation for commercial purpose and jhum and terrace cultivation often lead to soil erosion. Executive Committee of Manipur Science and Technology Council felt that such nature camp will be very helpful to check deforestation in the hills upto certain extent and a



decision was taken to organize the first phase camps in the hill districts. Therefore, in the first phase of the 2<sup>nd</sup> round district level camp on Nature Orientation, 5 camps were organized in the hill districts. All the participants, Resource persons and officials of MASTEC were camped together in such type of Nature study. In the 2<sup>nd</sup> phase of the second round, four nature camps will be organized in the valley districts of the state when NCSTC, DST, GOI releases the 2<sup>nd</sup> installment.

### 2.2.1 Chandel District Nature Camp:

The Chandel district Nature Camp was organized in association with Jawahar Navodaya Vidyalaya (JNV), Chandel during September 28 – October 1, 2006 at JNV, Chandel. The camp was inaugurated with Shri S. Sanamacha Singh, Principal, Jawahar Navodaya Vidyalaya (JNV), Chandel as the Chief Guest and Dr. L. Dinachandra Singh, Senior Scientific Officer as the President of the function. The inaugural function was also attended by Dr. S. Pravabati Devi, Retd. Reader, Imphal College, Imphal and Shri L.Somarjit Singh, Selection Grade Lecturer, Modern College and Secretary, MASCA as Guests of honour. Shri Kh.Rakesh, Programme Co-ordinator highlighted the significance of the programme module by sharing the positive feedback of the earlier camps. Later, Shri Kh. Manigopal Singh, Key resource person gave a key note address about the camp.

MASTEC had co-ordinated the overall programme of the camp. As a co – ordinating Institute, JNV – Chandel had provided local support by arranging food, accommodation of the campers and mobilizing the participants. The participants were drawn through wide publicity in various media.

Altogether, 40 participants comprising of 8 guide teachers and 32 students of class VI – X from different schools of Chandel district participated in the camp. The list of participants is at **Table – I**.

Three (3) key resource persons and two (2) resource persons imparted nature education to the participants especially the students. During the camp period, the key resource persons, officials of MASTEC, guide teachers and students were camped in at the camp site. The key resource persons involved in the Chandel district camp were –

- 1) Shri L.Somarjit Singh, Selection Grade Lecturer, Modern College, Imphal
- 2) Shri Kh. Manigopal Singh
- 3) Shri I. Sushilkanta Singh

Apart from the Key resource Persons, 2 other resource persons were also involved. They were –

- 1) Dr. S. Pravabati Devi, Retd. Reader, Imphal College
- 2) Shri Ch.Rajendra Singh, Selection Grade Lecturer, Imphal College.

Dr. S. Pravabati Devi gave a lecture on classification and identification of animals and demonstrated some low cost science experiments. Shri Ch.Rajendra Singh gave a lecture on disaster management and demonstrated earthquake kit. The topics covered during the camp were–

- ✓ Classification and identification of animals
- ✓ Classification and identification of plants
- ✓ Nature walk and sample collection
- ✓ Sorting analyzing and preserving samples
- ✓ Biodiversity, an overview to ecology
- ✓ Environmental awareness
- ✓ Low cost experiments on science
- ✓ Sky watch
- ✓ Fun with plants – studying the parts/processes and exploring the whole

- ✓ Looking at small animals
- ✓ Field trips
- ✓ Science Songs
- ✓ Living together – study of habitat/ecosystem
- ✓ The micro world
- ✓ Role plays
- ✓ Science Games
- ✓ Film shows on “Our Sun”, “Pluto”, “Mushroom Cultivation”
- ✓ Green House effect
- ✓ The physical nature – soil, water and air
- ✓ Kitchen gardening
- ✓ Water and soil testing using kits
- ✓ Food testing using food adulteration kits
- ✓ Seed Germination experiment.

The camp was concluded on the last day i.e. the 1<sup>st</sup> October 2006 with a closing function. Dr. L. Dinachandra Singh, SSO, MASTEC, Shri L. Somarjit Singh, Modern College, Shri Ch.Rajendra Singh, Imphal College and Mrs. Devala Devi, Vice Principal, JNV – Chandel were on the dias. During the closing function, a set of low cost experiment (simple microscope, tripod lens, doublet lens, hand lens, thermometer) and a set of study materials (Books) were distributed to the participating schools. Participation certificates were also distributed to all the participants. A best camper (student) was also selected based on the overall performance in terms of his skill, knowledge and active participation in the camp. B. Anil Sharma, a student of class IX of JNV – Chandel was selected as the best camper. He received a cash prize with gift hampers (books). On the closing function, all the participants took pledge towards conserving and nurturing the nature for future generation. The camp was closed with concluding remarks from Dr. L. Dinachandra Singh, SSO, MASTEC.

### CHANDEL DISTRICT NATURE CAMP



*Shri L. Somarjit Singh delivering a lecture*



*Participants performing activities*



*Participants looking at small aquatic animals*



*Field study in a forest*

### 2.2.2 Senapati District Nature Camp:

The Senapati district Nature Camp was organized in association with H.M. Higher Secondary School, Keithelmanbi during December 18 – 21, 2006 at H.M. Higher Secondary School, Keithelmanbi. It was inaugurated with Dr. L.Dinachandra Singh, SSO – MASTEC as the Chief Guest and Shri S. Singsit, Secretary, H.M. Higher Secondary School, Keithelmanbi as the President of the function. Principal, H.M. Higher Secondary School, Keithelmanbi, Dr. S. Pravabati Devi, Retd. Reader, Imphal College, Imphal and Shri L.Somarjit Singh, Selection Grade Lecturer, Modern College were the guests of honour. In the inaugural function, Shri Kh. Manigopal Singh, Key resource person gave a key note address about the camp.

The camp was organized in association with H.M. Higher Secondary School, Keithelmanbi. The school had mobilized the participants through wide publicity and they had arranged food and accommodation for the campers. Forty(40) participants from 6 different schools of Senapati district took part in the nature study camp. Of the total participants, 39 were students and 1 was guide teacher. The students were selected from class VI – X standard. The list of participants is at **Table – II**.

Three (2) key resource persons and two (2) resource persons imparted nature education to the participants especially the students. During the camp period, the key resource persons, officials of MASTEC, guide teachers and students were camped in at the camp site. The key resource persons involved in the Chandel district camp were –

- 1) Shri L.Somarjit Singh, Selection Grade Lecturer, Modern College, Imphal
- 2) Shri I. Sushilkanta Singh

Apart from the Key resource Persons, 2 other resource persons were also involved. They were –

- 1) Dr. S. Pravabati Devi, Retd. Reader, Imphal College
- 2) Shri Ch.Rajendra Singh, Selection Grade Lecturer, Imphal College.

Dr. S. Pravabati Devi, gave a lecture on classification and identification of animals and demonstrated some low cost science experiments. Shri Ch.Rajendra Singh gave a lecture on disaster management and demonstrated earthquake kit. The topics covered during the camp were–

- ✓ Classification and identification of animals
- ✓ Classification and identification of plants
- ✓ Nature walk and sample collection
- ✓ Sorting analyzing and preserving samples
- ✓ Biodiversity - an overview to ecology
- ✓ Environmental awareness
- ✓ Low cost experiments on science
- ✓ Sky watch
- ✓ Fun with plants – studying the parts/processes and exploring the whole
- ✓ Looking at small animals
- ✓ Field trips
- ✓ Science Songs
- ✓ Living together – study of habitat/ecosystem
- ✓ The micro world
- ✓ Role plays
- ✓ Science Games
- ✓ Film shows on “Our Sun”, “ Banana Tree”, “Orchids of Manipur”
- ✓ Green House effect
- ✓ The physical nature – soil, water and air





In his inaugural speech, the chief guest mentioned about the needs of organizing such nature camps in all the hill districts as the no. of flora and fauna decreases due to fast habitat exploitation. He also said that, people in the Hill districts of Manipur mainly depend on the forests for their livelihood. Over exploitation of forest will definitely lead to a horrible stage which is difficult for our survival. Dr. O. Shashikumar Singh, Guest of honour appealed to all the participants not to use dynamite or poison while fishing, since it may affect the fingerlings or eggs of fishes. Shri L. Somarjit Singh, Guest of honour said that this nature camp is not a one way teaching system in which the teachers give lectures and the students hear but an interactive and play type learning in which lots of activities, experiments will be performed by the students. He further added that most of the topics to be covered in the camp are upto the standard of Class X and as such the participants could easily understand various topics to be interacted during the course. Dr. L. Dinachandra Singh, president of the function appealed all the participants to co-operate with the resource persons for a successful camp. Shri Kh. Manigopal Singh, Key resource person gave a key note address about the camp. Altogether 40 participants from 7 different schools of Churachandpur district comprising of 38 students and 2 guide teachers took part in the nature study camp. The students were selected from class VI – X standard. The list of participants is at **Table – III**.

Three (3) key resource persons and two (2) resource persons imparted nature education to the participants especially the students. During the camp period, the key resource persons, officials of MASTEC, guide teachers and students were camped in at the camp site. The key resource persons involved in the Chandel district camp were –

- 1) Shri L.Somarjit Singh, Selection Grade Lecturer, Modern College, Imphal
- 2) Shri I. Sushilkanta Singh
- 3) Shri Kh. Manigopal Singh

Besides the Key resource Persons, 2 other resource persons were also involved. They were –

- 1) Dr. O. Shashikumar Singh, Reader, D.M. College of Science, Imphal
- 2) Shri Ch.Rajendra Singh, Selection Grade Lecturer, Imphal College.

Dr. O. Shashikumar Singh, gave a lecture on classification and identification of animals. Shri Ch.Rajendra Singh gave a lecture on disaster management and demonstrated earthquake kit. The topics covered during the camp were–

- ✓ Classification and identification of animals
- ✓ Classification and identification of plants
- ✓ Nature walk and sample collection
- ✓ Sorting analyzing and preserving samples
- ✓ Biodiversity and overview to ecology
- ✓ Environmental awareness
- ✓ Sky watch
- ✓ Fun with plants – studying the parts/processes and exploring the whole
- ✓ Looking at small animals
- ✓ Field trips
- ✓ Science Songs
- ✓ Living together – study of habitat/ecosystem
- ✓ The micro world
- ✓ Role plays
- ✓ Science Games
- ✓ Film shows on “Our Sun”, “ Medicinal plants of Manipur”, “Orchids of Manipur”
- ✓ Green House effect
- ✓ The physical nature – soil, water and air

- ✓ Water and soil testing using kits
- ✓ Food testing using food adulteration kits
- ✓ Seed Germination experiment.

The camp was concluded on the last day i.e. the 19<sup>th</sup> January 2007 with a closing function. Dr. L. Dinachandra Singh, SSO, MASTEC, Shri Brojen Singh, President, Meitei Youth Organisation, Churachandpur, Shri L. Somarjit Singh, Shri Ch. Rajendra Singh were on the dias.

On the closing function, a set of low cost experiment (simple microscope, tripod lens, doublet lens, hand lens, thermometer) and a set of study materials (Books) were distributed to the participating schools. Participation certificates were also distributed to all the participants. A best camper (student) namely T. Mandeiniang, class X of Chingkham Modern High School, Zomi Colony, Churachandpur was also selected and awarded cash prize and a set of books based on the overall performance in terms of his skill, knowledge and active participation in the camp. On the closing function, all the participants took pledge towards conserving and nurturing the nature for future generation. The camp was closed with concluding remarks from Dr. L. Dinachandra Singh, SSO, MASTEC.

### CHURACHANDPUR DISTRICT NATURE CAMP



*Chief Guest Shri B.C. Sharma, DIG, 27 Sector Assam Rifles, Churachandpur addressing the inaugural speech*



*Shri Kh. Manigopal Singh demonstrating a terrarium*



*Participants of the Churachandpur camp*



*Dr. O. Shashi Kumar Singh delivering a lecture*

#### 2.2.4 Ukhrul District Nature Camp:

The Ukhrul district Nature Camp was organized in co-ordination with Manipur Development Agency, an NGO located in Murei Village, Ukhrul district. It was organized during January 29 – February 1, 2007 at United Christian Academy, Riha, Ukhrul district. The camp was inaugurated on January 29, 2007 and in the inaugural function Shri L. Somarjit Singh, Selection Grade Lecturer, Modern College, Imphal, Dr. O Shashikumar Singh, Reader, D.M. College of Science, Mr. Martin Muivah, Secretary, Manipur Development Agency, Murei, and Mr. K.S. Honreikhui, Principal, United Christian Academy, Riha were attended as the honoured guests. In the inaugural function, Shri Kh. Manigopal Singh, Key resource person gave the key note address.

Altogether 44 participants from 8 different schools of Ukhrul district comprising of 36 students and 8 guide teachers took part in the nature study camp. The students were selected from class VI – X standard. The list of participants is at **Table – IV**.

Three (3) key resource persons and two (2) resource persons imparted nature education to the participants especially the students. During the camp period, the key resource persons, officials of MASTEC, guide teachers and students were camped in at the camp site. The key resource persons involved in the Chandel district camp were –

- 1) Shri L.Somarjit Singh, Selection Grade Lecturer, Modern College, Imphal
- 2) Shri I. Sushilkanta Singh
- 3) Shri Kh. Manigopal Singh

Besides the Key resource Persons, 2 other resource persons were also involved. They were –

- 1) Dr. O. Shashikumar Singh, Reader, D.M. College of Science, Imphal
- 2) Shri Ch. Rajendra Singh, Selection Grade Lecturer, Imphal College.

Dr. O. Shashikumar Singh gave a lecture on classification and identification of animals. Shri Ch. Rajendra Singh gave a lecture on disaster management and demonstrated earthquake kit. The topics covered during the camp were

- ✓ Classification and identification of animals
- ✓ Classification and identification of plants
- ✓ Nature walk and sample collection
- ✓ Sorting analyzing and preserving samples
- ✓ Biodiversity - an overview to ecology
- ✓ Environmental awareness
- ✓ Sky watch
- ✓ Fun with plants – studying the parts/processes and exploring the whole
- ✓ Looking at small animals
- ✓ Field trips
- ✓ Science Songs
- ✓ Living together – study of habitat/ecosystem
- ✓ The micro world
- ✓ Role plays
- ✓ Science Games
- ✓ Film shows on “Our Sun”, “ Medicinal plants of Manipur”, “Scientoons”
- ✓ Green House effect
- ✓ The physical nature – soil, water and air
- ✓ Water and soil testing using kits
- ✓ Food testing using food adulteration kits
- ✓ Seed Germination experiment.

The camp was concluded on the last day i.e. the 1<sup>st</sup> February 2007 with a closing function. Dr. L. Dinachandra Singh, SSO, MASTEC, Shri L. Somarjit Singh, Shri Ch. Rajendra Singh and the Vice - Principal, United Christian Academy, Riha were on the dias.

On the closing function, a set of low cost experiment (simple microscope, tripod lens, doublet lens, hand lens, thermometer) and a set of study materials (Books) were distributed to the participating schools. Participation certificates were also distributed to all the participants. Mr Yurseem Jajo, class IX of Morning Colony Educational Institution, Ngarumphung, Litan was selected as best camper and awarded cash prize and a set of books based on the overall performance in terms of his skill, knowledge and active participation in the camp. On the closing function, all the participants took pledge towards conserving and nurturing the nature

for future generation. The camp was concluded with many valuable remarks from Dr. L. Dinachandra Singh, SSO – MASTEC.

### UKHRUL DISTRICT NATURE CAMP



*Participants studying small aquatic animals*



*Participants and resource persons during the discussion session*



*Participants during the sample collection*



*A resource person explaining the plant growth rate experiment*

**Table – I**

**Participants of the Chandel district Nature Orientation Camp held at Jawahar Novodaya Vidyalaya, Liwa Khullen Sarei during September 28 – October 1 , 2006.**

Sl. No.	Participant Name	Name of Schools	Designation/Class
1	Chhetry Lalbahadur	Oriental Academ, Japhu Bazar, Chandel	Teacher
2	Rt.Thumtha Anal	„	VIII
3	Z Soromi Thangkhul	„	IX
4	Kh.Kankhuwal Anal	„	VII
5	Kh.Weingmayo Tangkhul	„	X
6	W.Achouba Singh	Anallon Christian Institute Lambung Chandel District	Teacher
7	S Indira Devi	„	VIII
8	Ws Rohini Anal	„	IX
9	Lovsson Kamei	„	IX
10	Daryal Joyngam	„	IX
11	Borphaning Moyon	St. Paul H/School, Chandel	Teacher

12	Florence Monsang	„	IX
13	Sk Bungpen	„	IX
14	Tc Tytus	„	X
15	Sr Jenifer	„	X
16	Ch Dinakaran	JN V Chandel, Liwa - Khulen	Teacher
17	S Ramkrishana	„	VIII
18	B.Anil Sharma	„	IX
19	Princy Hijam	„	X
20	K Rebica Devi	„	IX
21	Bhim Pradhan	St.Joseph School, Panchai, Chandel	Teacher
23	Sk Thamdang	„	IX
24	Rt.Claimberi	„	X
22	Lv Rengtin	„	X
25	Bd John	„	IX
26	Sng .Joyfui	St.Peters School, Pallel	X
27	Ts Joyrita	„	X
28	Rs Teresa	„	X
29	Ps Phetha	„	X
30	Rs Angtun	„	Teacher
31	S Lashmon	Tmt Institute, Chandel	Teacher
32	Kamal Khatwada	„	IX
33	Lv. Kamwar	„	IX
34	Hemanta Khtiwada	„	X
35	Ph Kothil	„	X
36	Hb. Romila	„	Teacher
37	Kl Nemnaring	„	X
38	Ch Jesper	„	X
39	Angesha Rana	„	IX
40	Angam Maring	„	IX

BEST CAMPER:- B Anil Sharama. (JNV Chandel)

**Table - II**

**Participants of the Senapati district Nature Orientation Camp held at H.M. Higher Secondary School, Keithelmanbi during December 18 – 21, 2006**

Sl. No.	Name of participant	Name of School	Teacher/Student
1	P Mangcha	Genal Govt. H/School, Genal.	Teacher
2	Chinneilhing	„	Student
3	Hoineineing	„	„
4	Hatjalhing	„	„
5	Kimneivah	„	„
6	Jems Singson	HM Hr. Sec. School, Keithelmanbi	„
7	M Thongminlen Haokip	„	„
8	Thangmingou Vaiphei	„	„
9	Seiginmang Haokip	„	„
10	Ngamminlen Baite	„	„
11	Santosh Pradhan	„	„
12	Letminlen Singson	Keithelmanbi H/Schooll, Keithelmanbi	„
13	Chungminlen	„	„
14	Th Mangminlen	„	„
15	Kamjinthang Simon	„	„
16	Bhim Bahadur Chouhan	Gorkha H/Schlool, Kalapahar	„
17	Krishna Dahal	„	„
18	Krishna Gautam	„	„
19	Ram Bahadur Thapa	„	„
20	Lhingpichong	P M A Kangpokpi	„
21	Lamneilhing	„	„
22	Hatneivah	„	„
23	Tingneilhing	„	„
24	Lamboichong	K T School Kangpokpi	„
25	Lamneivah	„	„
26	Tingneihoi	„	„
27	Nemhoichin	„	„
28	Tingneichong	„	,

Sl. No.	Name of participant	Name of School	Teacher/Student
29	Joyngam Anal	Keithelmanbi Govt. H/School.	„
30	Rengtin	„	„
31	LK Haokip	Gorkha H/School	„
32	Ashing Kamei	„	„
33	SK Thamgang	HM Hr. Sec School	„
34	Joyrita T S	K T H/School	,
35	Kothil Khonsai	„	„
36	Lashmon Kamei	PMA School	„
37	Tytus Maring	„	„
38	Claimbert Anal	„	„
39	KK Haokip	Keithelmanbi Govt. H/School.	„
40	Mangcha Anal	Genal H/School, Genal	„

**Table – III**

**Participants of the Churachandpur district Nature Orientation Camp held at St. Joseph School, Nehru Marg, Churachandpur during January 16 -19, 2007.**

Sl. No.	Name of Participant	Name of School	Designation/Class
1	Kamtinlal	St. Joseph, School, Nehru Marg.	IX
2	Robert	„	VII
3	H Radha	„	VII
4	Indira	„	Teacher
5	S Robinson	Don Bosco H/School	X
6	Kapkhan Mang	„	X
7	L. Rakesh	„	X
8	M Manisana Singh	„	IX
9	Aijin	Children Training Hr.Sec.School.	X
10	S Robindro	„	X
11	Ramzan	„	X
12	H Nebita Devi	„	VII
13	H Bijen Singh	„	IX



14	Vicky	„	IX
15	H Malemsana	„	IX
16	T Mandeiang	Chingkham Modern School	X
17	Rajesh. Th	„	X
18	Kim Rose	„	X
19	Jessica	„	X
20	M David	Sielmat Christian Hr. Sec.School	IX
21	Naocha Kh	„	IX
22	S Sachin Singh	„	VIII
23	Ph Rajesh	„	IX
24	I Chinglemb	„	VI
25	Mary Lhingneikim	Royal Acadamy	X
26	Suonlalmuon	„	X
27	Manneihkim	„	X
28	Chin Lankim	„	X
29	Soson Gangte	„	Teacher
30	M Shobhachangra	Assembly Of Gog School . C C Pur	X
32	Md.Azizkhan	„	X
33	H. Ratan	„	IX
34	K Dijen	Sielmate Christian Hr. Sec. School	VI
35	K Mani	„	VI
36	M .Lio	St. Joseph School	VII
37	Jekhopmang	Don Bosco H/School	X
38	Lal Moya	„	IX
39	Kalpana Sarangthem	A G School	IX
40	Lk. Haokip	„	IX

BEST CAMPER:-T. Mandeiniang

**Table –IV**

**Participants of the Ukhrul district Nature Orientation Camp held at United Christian Academy, Riha during January 29 – February 1, 2007.**

Sl. No.	Name	Name of the School	Designation/Class
1.	Robenson	Riha Jr. High School, Riha	Asst. Teacher
2.	Ramhorla	- do -	Class VIII
3.	Penyao	- do -	Class VIII
4.	M.U. Yur Peithan	- do -	Class VII
5.	L. Aboynao	- do -	Class VI
6.	P.S. Jolynah	Holy Trinity Co – Educational Institute, Yaingangpokpi	Asst. Teacher
7.	Th. Vesochon	- do -	Class VI
8.	K.S. Wonreishon	- do -	Class VIII
9.	B.K. Maho	- do -	Class VII
10.	K.S. Soreiya	- do -	Class VI
11.	W. Pari Meitei	M & D Coming English School, New Canaan, Yaingangpokpi	Asst. Teacher
12.	A.S. Mary	- do -	Class X
13.	MH. Leiyami	- do -	Class X
14.	MKS. Mahosang	- do -	Class IX
15.	AS. Ramimung	- do -	Class IX
16.	Jesu Kashung	United Christian Academy, Riha, Ukhril District	Asst. Teacher
17.	AS. Northstar	- do -	Class X
18.	K.S. Mayashim	- do -	Class X
19.	M.K. Joshua	- do -	Class IX
20.	Sharon Kasar	- do -	Class IX
21.	Themila Ningshen	Hills Academy, Khamlang, Kasom Khullen	Asst. Teacher
22.	Chihanthing	- do -	Class X
23.	Phameising	- do -	Class IX
24.	Soshimchan	- do -	Class VII
25.	Mahaiyo	- do -	Class VII
26.	M.V. Tamthingla	U.C.A., Riha	Class VII

27.	P. Sofinah	- do -	Class IX
28.	J.S. Mercy	- do -	Class VIII
29.	K.S. Ningthem	- do -	Class IX
30.	K.S. Phaoreichan	- do -	Class X
31.	Yursem Jajo	Morning Colony Education, Ngarumphung, Litan	Class IX
32.	Mathanso Mahongnao	- do -	Class IX
33.	Thansok	- do -	Class IX
34.	Thanmingam Jajo	- do -	Class IX
35.	Vanrhngam Kashung	Chadong Jr. High School, Chadong	Asst. Teacher
36.	K.S. Ningkham	- do -	Class VIII
37.	K.S. Kanchui	- do -	Class VIII
38.	M.U. Soreingam	- do -	Class VII
39.	K.S. Tunmaso	- do -	Class VI
40.	Hungyo Romeo	STNBA High School, Irong	Asst. Teacher
41.	Chithung Ningrim	- do -	Class VIII
42.	Keishing Peimi	- do -	Class VIII
43.	R.G. Wuimila	- do -	Class VI
44.	Chithung Yuingam	- do -	Class VIII

BEST CAMPER – Yursem Jajo

### 2.3 Vigyan Prasar Edu-Sat Network Programme

Vigyan Prasar(VP), an autonomous organisation of Department of Science & Technology, Government of India, New Delhi in association with Development and Educational Communication Unit (DECU)/ISRO has established a two way audio-video interactive network for science & technology communication in the country using EduSat – the satellite for Education, Science & Technology launched by ISRO in 2004. For the first phase DECU/ISRO has setup 1 teaching end terminal at Vigyan Prasar and 20 nos. of class room end terminals (SITs) covering the entire country. MASTEC has been recognised as one of the SITs and also installation works (Disk Antenna & other equipments) have been completed at MASTEC Complex, Takyelpat, Imphal. Transmission of programmes has already begun on a trial basis.



Training Programme on Astronomy Kit for School teachers

The mode of the interaction would be:

- Experience sharing – between various parts of the Network
- Training – using distance education mode

- Access to quality – interaction with the experts in various fields to distant and far-away places in the country
- Sharing of resource materials – by way of file transferring

The main target groups (TG) will be:

- Science clubs, teachers
- School students & children
- Young adults (College students and higher)
- General public like – women, industrial labours, rural audience etc.

Till now, more than 20 programmes like – quiz, lecture-cum-demonstration, training etc. for students, teachers, science activists on different issues have been participated at our SIT.

## 2.4 State Training Workshop on Disaster Management

Manipur Science & Technology Council (MASTEC), Imphal has organized a 3-day State Level Training Workshop on “Disaster Management” during July 20-22, 2006 in the Conference Hall of State Youth Centre, Khuman Lampak, Imphal. The Programme was sponsored by National Council for Science & Technology Communication (NCSTC), Department of Science & Technology, Govt. of India.

The main objective of the Training Workshop was to impart training to the volunteers of the State about the most commonly occurring Disasters in Manipur and its management so that the volunteers may take active role in dissemination of the knowledge gained and in the management of disasters in the future.

The target group of participants were Science Teachers, PG students (Science), Activists from NGOs/Clubs, village Authorities etc. Altogether 46 participants from all over the state participated in the said Training Workshop.

The Resource Persons engaged for the Training Workshop were 1) Prof. S. Ibotombi Singh, Head. Dept. of Earth Science, Manipur University, Imphal. 2) Dr. R.K. Lenin, Associate Professor, Psychiatry Dept., Regional Institute of Medical Sciences Lamphelpat, Imphal. 3) Shri Ch. Rajendro Singh Selection Grade Lecturer, Physics Dept. Imphal College Imphal & Visiting Faculty State Academy of Training, Imphal 4) Prof. O.P. Goel, Earth Science Dept. Manipur University, Imphal. 5) Shri L. Birbabu Singh, Deputy Superintendent of Police, Traffic Police Manipur. 6) Dr. Jugindro Singh., Consultant Shija Hospital & Research Institute, Langol, Imphal. 7) Shri Y. Arun Kumar Singh, Lecturer, Manipur Institute of Technology Takyelpat, Imphal. 8) Shri L. Nabachandra Singh, Sub-officer, Manipur Fire Service, Imphal and 9) Shri K. Kamini & O. Ratan Singh, Civil Defence Personal, director of Civil Defence Manipur.



Inaugural Function

On the first day of the Training Workshop there was an Inaugural Function. The Hon'ble Manipur (S&T), Govt. of Manipur, Shri Md. Alauddin Khan was the Chief Guest of the Inaugural Function. Shri Uttam Chand Laishram, Director, Department of Science & Technology, Govt. of Manipur and Shri Th. Surendranath Singh, Executive Director, Manipur S& T Council were the Guest of Honour and the President of the Inaugural Function respectively.

In his inaugural speech Shri Md. Alauddin Khan highlighted about the importance organizing awareness programmes on Disaster Management in today's society. He appealed to all the participants that we must always be prepared for disasters to come as we cannot stop the disasters but can reduce its impact. He added that if we have the ideas of how to tackle the disasters, we may be able to reduce the quantum of losses of properties and valuable lives. He also appealed to all the participants to spread the knowledge gained from the Training Workshop to their friends, relatives, neighbors and other groups of people so that everyone in the state will be aware of the concepts of Disaster Management so that all of us can take prevention and mitigation measures in the occurrence of any disaster. He also pointed out that in the last few years, importance of disaster management has been given adequate attention due to increasing natural and man-made disasters. He said that now emphasis should be on pre-disaster management since more or less some kind of system already exist for post disaster management. He highlighted that government policy on disaster management now is focused on pre-disaster management and each Department is given facilities for quick and timely actions to avert disasters.

He further added that the Government has taken up some significant steps in this direction by enabling instant video conferencing in the 9 districts through NIC and by opening 36 Community Information Centres (CICs).



*Releasing of Disaster Management Hand book by Hon'ble Minister S&T*

In this presidential remark the Executive Director, Manipur Science & Technology Council (MASTEC), Imphal, Shri Th. Surendranath Singh highlighted that Disaster Management has become one of the most important issues all over the world and the Central Government has also selected Disaster Management as one of the thrust areas in the Science Popularisation activities in the Country. He said that as Manipur falls in the Zone-V of the vulnerable earthquake. He also mentioned that it is not the time to take shelter under tables or beds during earthquake safety components in consultation with engineers. He further

added that since man is the most intelligent animal, all kinds of artificial disasters can be averted.

The English version of the hand book on Disaster Management published by Manipur Science & Technology Council (MASTEC), Imphal and edited and translated by Shri Ch. Rajendro Singh, Selection Grade Lecturer, Imphal College Imphal was also released by the Hon'ble Minister (S&T), Manipur in the Inaugural Function of the 3-day Training workshop on Disaster Management.

On the first day of the Training Workshop three lecturers were delivered by three Resource Persons. The first lectured was delivered by Shri Ch. Rajendro Singh, Selection Grade Lecturer, Dept. of Physics, Imphal College Imphal and visiting Faculty, State Academy of Training Manipur on the topic "Why do we need Disaster Management". The next lecture was delivered by Prof. S. Ibotombi Singh, Head, Earth Science Dept., Manipur University, Imphal. He delivered a lecture on the topic "Geological Setting and Land slide in Manipur" followed by the lecture of Prof. O.P. Goel, visiting Professor, Earth Science Dept., Manipur University, Imphal on the topic "Seismic Awareness with Special Reference to Manipur."



*Fire Service Personals demonstrating fire fighting*

Seismic Awareness with Special Reference to Manipur."

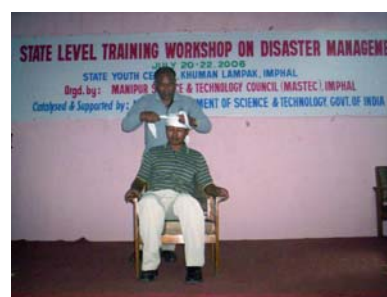


*Fire Service Personals  
demonstrating rescue operations*

There were two lectures and two lecture cum-demonstration sessions on the 2<sup>nd</sup> day of the Training Workshop. Dr. Jugindra S., Consultant, Shija Hospital & Research Institute delivered a lecture on the topic “Rescue after Disaster from Medical Side. He highlighted the Case-study of Bhuj Earthquake, Gujarat in which he himself took part in the rescue operation with a team of doctors. Many photographs taken during the rescue operation were also shown to the participants. Shri Y. Arunkumar Singh, Lecturer, Manipur Institute of Technology, Imphal delivered a lecture on Repairing, Restoration and Strengthening of Buildings. He highlighted some building designs which are safe from earthquake. He also expressed the idea of strong column-weak beam design in the construction of buildings. Shri L. Birbabu Singh, Deputy Superintendent of Police, Traffic Police, Imphal conducted a session on “Road Accident and Role of Traffic Police” He highlighted the traffic rules and demonstrated some of the road safety activities. There was a lecture cum demonstration session on “Fire prevention/fighting” by a group of 4 Fire Service Personals of Manipur Fire Service, Imphal leaded by Shri L. Nabachandra Singh, Sub-officer. They have shown some new tools and equipments to the participants, which are used in fire fighting ranging from small fire to a huge fire. They have taught the use of commonly used fire extinguishers generally installed in public buildings like Hospitals, Theaters, Institutions etc. Shri L. Nabachandra Singh explained the ways and means to fight fires with respect to the source of fire. They also demonstrated some equipments which are also used in rescue operations apart from fire fighting.

On the last day of the programme there were two lectures, one demonstration and group presentation by the participants followed by interaction and valedictory function. Dr. R.K. Lenin, Associate Professor, Dept. of Psychiatry, Regional Institute of Medical Sciences(RIMS), Imphal delivered a lecture on Psychological Response after Disaster - Mental Health Response. He explained in depth what are emotional effects, physical effects, cognitive effects and interpersonal effects of a disaster victim. He also mentioned about the protective factors that may mitigate negative effects and types of psychological first aids that may be given to a disaster victim.

Shri Ch. Rajendro Singh, Selection Grade Lecturer, Physics Dept., Imphal College, Imphal and visiting Faculty, State Academy of Training Manipur delivered one more lecture on “Community Based Disaster Management”. He explained about the necessity of involving each one of us in a community in developing preparedness skills, in making strategies for mitigation at the time of disasters and rescue and relief after a disaster. A lecturer-cum demonstration session was conducted by two Civil Defense Personals from Manipur Civil Defense viz., i) K. Kamini Singh and ii) O. Ratan Singh. They explained how to use locally available material such as short ropes, clothes etc in the rescue operations. They demonstrated how knots are made in joining different pieces of ropes. They also demonstrated about artificial respiration, how to give first aid to a disaster victim. Some demonstrations on transportation of casualties by one/two rescue persons and tying of bandage to the wounds at different parts of the body were also demonstrated to the participants.



*Demonstration of Dressing head  
injury of Disaster Victim*



In the group presentation part of the programme, the participants were divided into 5(five) groups and different topics were given to each group for discussion among the group members. One group leader from each group delivered a presentation on the topic provided to them followed by interaction among the participants.

The Training Workshop was concluded with feed back reports from the participants, followed by distribution of certificates to all the participants by Shri Th. Surendranath Singh, Executive Director, MASTEC, Shri Ch. Rajendro Singh, Selection Grade Lecturer, Physics Dept Imphal College Imphal & visiting Faculty, State Academy of Training, Manipur and Dr. L. Dinachandra Singh, Senior Scientific Officer, MASTEC.

In his concluding remark Shri Th. Surendranath Singh, Executive Director, MASTEC mentioned that Science Popularization has become so important to-day for inculcating scientific temperament to all sections of people in the society. He also pointed out that Dept. of Science & Technology, Govt. of India, NCSTC in particular is giving maximum input for popularization of science throughout the Country. He also listed out the activities taken up/going to take up by MASTEC under the sponsorship of DST, Govt. of India.

## 2.5 Celebration of National Science Day - 2007

The country is celebrating the National Science Day on February 28 every year since the year 1987. The decision to designate such a day was taken by the Government of India in December 1986, and the choice of date is linked to the discovery of the "Raman Effect" by the great Indian Scientist Prof. C.V. Raman in 1928. The occasion is intended to instill and build in the confidence in us and in our own abilities to think of and do entirely new things of our own. Thus, efforts are made to popularise Science & Technology, estimate and nurture scientific attitudes and temperament among our people, as part of the National Science Day Celebration.

Manipur Science and Technology Council (MASTEC) has a mandate of promoting science and bringing appropriate technologies to the State for Socio-economic applications. Since, the year 1997, MASTEC has been continuously observing the National Science Day (NSD) by organising activity on February 28 and organising a state level science festival "Science Meet" under the banner of National Science Day. The theme of the NSD- 2007 as identified by Dept. of science & Technology, Govt of India is **More Crop Per Drop**.

This year too, MASTEC under the financial support of NCSTC, DST, Govt. of India, Department of Science & Technology, Govt of Manipur has observed the National Science Day- 2007 on February 28, 2007 at Manipur Science Centre, Takyelpat, Imphal. Painting competition for school students, National Science Day 2007 observation function and prize distribution ceremony were the main activities of the day.



*Dignitaries on the Inaugural Function*

Painting competitions on the theme "More Crop Per Drop" were organized at three Categories - Sub Junior (Class: III-V), Junior (Class VI-VIII) and Senior (Class IX-X) as a part of the activity of NSD - 2007. The duration of the competition was one and half hour. In the Sub -junior category 20 students from various schools of the state participated in the competition and 46 students took part in the Junior category and 16 students participated in the Senior category. Two Judges from Imphal Art College, Imphal namely Shri Th. Tombi

Singh and Shri M. Kulachandra Singh were engaged for examining the performance of the participants. After careful examination, the following students were declared as the winners. Grading of marks was considered on the basis of the chosen theme as well as the drawing skill of the participants. The winners are;

**Sub Junior Category:**

Position	Name	Class	School	Prize
1st	Nongthombam Priyanka Devi	IV	Sacred Heart School, Porompat	Rs.2000/- + Citation
2nd	Maria Thokchom	IV	MariaMontessori School, Koirengei	Rs.1500/- + Citation
3rd	Kiyam Juris Singh	V	Little Bird School, Moirang	Rs.1000/- + Citation

**Junior Category:**

Position	Name	Class	School	Prize
1st	Nongthombam Newtonjit	VIII	Sacred heart School, Porompat	Rs.2000/- + Citation
2nd	Ksh. Rojesh Singh	VIII	Shantilata Memorial School	Rs.1500/- + Citation
3rd	Rahul Yumlembam	VIII	Brighter Academy, Imphal	Rs.1000/- + Citation

**Senior Category:**

Position	Name	Class	School	Prize
1st	Thiyam Devajit Meitei	IX	Oriental Art Centre, Keibi	Rs. 2000/- + Citation
2nd	Kshetrimayum Baby Devi	X	Shantilata Memorial School	Rs. 1500/- + Citation
3rd	Loitongbam Nirpen	X	Little Bird School, Moirang	Rs. 1000/- + Citation



*Prize distribution by the Chief Guest*

National Science Day Observation function and prize distribution ceremony was also held on the same day i.e. February 28, 2007 at Manipur Science Centre, Takyelpat, Imphal with Commissioner, Science & Technology, Govt. of Manipur as the Chief Guest, Dr. N. Rajmuhon Singh, Professor & Head, Chemistry Department, Manipur University, as the Guest of Honour and Shri Th. Surendranath Singh, Executive Director, MASTEC as the president of the function. In his speech, Shri M. A. Sattar

mentioned about the importance of science in every aspects of life. He added that science learning does not require sophisticated equipments or a well equipped laboratory, science is everywhere and can be learnt by any one irrespective of caste or creed, important facts about learning science is observation, experimentation and analysis, he added. Prof. N. Rajmuhon Singh, Guest of Honour of the function gave a 45 mins. talk on the theme of the NSD - 2007 "More Crop Per Drop" and Life of Prof. C. V. Raman. In the presidential remarks Shri Th. Surendranath Singh expressed about the needs for popularising science in



the state particularly among the students. He highlighted some of the science popularisation programmes to be taken up by MASTEC in the near future. Prizes along with Certificates of merit to the winners of the Painting Competition for 3(three) categories on NSD - 2007 were distributed by the dignitaries on the dais.

### 3.0 Official Visit of Officers on deputation

Sl. No.	Name & Designation	Date/Period	Purpose and Venue
1.	Th. Surendranath Singh	August 2, 2006	Project Review Committee Meeting of S&T Mapping Projects at INSA, New Delhi
2.	-do-	November 11 – 12, 2006	Meeting and Sensitization session on S&T communication of Water Resources at Guwahati
3.	-do-	March 5 – 6, 2007	Meeting on Pottery Modernisation Project at CGCRI, Kolkata
4.	Dr. L. Dinachandra	August 24-25, 2006	4th R&D Session of INCOH at BHU, Varanasi
5.	-do-	October 31, 2006	13 <sup>th</sup> Group Monitoring Meeting of State S&T Related proposals at INSA, New Delhi
6.	-do-	March 13, 2007	Expert Committee on Landslide Hazard Projects at DST, GoI, New Delhi
7.	Dr. L. Minaketan Singh	February 12-16, 2007	Attended the five days training on Entrepreneurship Development held at NISIET, Hyderabad
8.	-do-	March 23, 2007	Attended National Workshop on S&T with emphasis on Soil Testing Facility held at Agra, U.P.
9.	-do-	October 2007	Attended Group Monitoring Workshop of Projects at INSA, New Delhi
10.	-do-	October 2007	Visited Central Avian Research Institute (CARI), Izatnagar, Barielly, U.P.
11.	Kh. Rakesh	June 6 – 7, 2006	6 <sup>th</sup> Meeting of the task force on Biotechnology based programme for women at Department of Biotechnology, Government of India, New Delhi
12.	-do-	July 7 – 9, 2006	Consultation Meet in connection with celebration of International Year of Planet Earth at Pune
13.	-do-	October 30, 2006	26 <sup>th</sup> Meeting of PEG for State Councils on S&T related proposals at INSA, New Delhi
14.	-do-	November 11 – 12, 2006	Meeting and Sensitization session on S&T communication of Water Resources at Guwahati
15.	-do-	February 24 – 26, 2007.	3 days Orientation Programme on Edusat, Basics of Satellite Communication at Bhubaneswar
16.	Ch. Sarat Singh	October 30 – 31, 2006	26 <sup>th</sup> PEG meeting and Group Monitoring meeting of DST, GoI at INSA, New Delhi
17.	-do-	March 5 – 6, 2007	Meeting on Pottery Modernisation Project at CGCRI, Kolkata
18.	Dr. R.K. Pritamjit Singh	July 7 – 9, 2006	Consultation Meet in connection with celebration of International Year of Planet Earth at Pune
19.	-do-	February 24 – 26, 2007.	3 days Orientation Programme on EduSat, Basics of Satellite Communication at Bhubaneswar

#### 4.0 PROJECTS (ongoing)

Research as well as application oriented pilot projects sponsored by various central agencies/departments are being implemented by the Council. **The following are the projects supported by various central government agencies/organisations and being implemented by the professional manpower of the Council assisted by project staffs**

##### Highlights of the Projects:

#### 4.1 Water Harvesting and Water Conservation in Imphal East I Block, Imphal East District, Manipur – Sponsored by Ministry of Water Resources, New Delhi.

##### Objectives:

- (I) To identify the surface and ground water resources
- (II) To investigate ground water potentiality.
- (III) To assess the quality of the surface and ground water for domestic and irrigation purposes.
- (IV) To carry out the management practices for deteriorated water.
- (V) To construct suitable water harvesting and conservation structures.

##### Progress:

Database on surface and subsurface water resources has been developed and resource mapping of the area is also done. Five water harvesting and water conservation structures have been constructed. The project is completed by 31<sup>st</sup> March 2007.



Spring water conservation at Sanasabi Village, Imphal East



Installed Hand Pump at Heingang Mayai Leikai, Imphal East

#### 4.2 Low Cost Housing using Stabilised Mud Blocks – Sponsored by State Councils Division, Dept. of Science & Technology, Govt. of India.

##### Progress:

TARA Balram Earth Compressed machine has been used for preparation of stabilised mud blocks. Cement (5%) has also been mixed with local soil as stabiliser. Under the project 5(five) houses have been constructed. Local artisan and youth have been aware about the technology. The project is completed by May, 2007.



*Boulder Foundation*



*Construction Stage of Mud Block House*



*Stabilised Mud Block House for KYDC Club*



*Stabilised Mud Block House for DEWALI, Club*

#### **4.3 Dailong Micro Hydel project – Sponsored by State Councils Division, Dept. of Science & Technology, Govt. of India**

##### **Objectives:**

- (i) To design and develop the cross-flow turbines suitable for (2x50kw) capacities. The packages consist of turbine and electronic load controllers for a micro-hydel station at Dailong Village, Tamenglong, Manipur.
- (ii) To study the problems of and set guidelines for installation, operation, maintenance and energy utilisation associated with Micro Hydel Units in remote hilly terrains. Micro hydel units are environmentally clean and eco-friendly suited to decentralised power generation.



*Laying of penstock*

##### **Progress: Civil Works**

- i) Construction of Desilting tank and Forebay tank have been completed. Earth work in excavation for penstock trench have been completed.
- i) Joining/welding of 60 nos. of penstock pipes have been completed
- ii) Laying of 20 penstock pipes including RCC supports/saddle blocks at the joints have been completed and the work is in progress
- iii) Construction of Power House has been completed.



*Power House*



*Fore bay tank and diversion weir*



## Electromechanical Equipments

Two AC Generators, two Control Panels and two Electronics Load Controllers and two turbines have been received and are yet to be installed.

### 4.4 Pilot Project on Turkey farming

#### 4.4.1 Approved Objectives :

- i) To introduce and popularise Turkey farming in the region
- ii) To study effectiveness of turkey farming for income generation

#### 4.4.2 Summary of progress:

- i) Four numbers of rearing cages (two layers) 16 x 5 sq. ft. have been fabricated by engagement of local artisans (carpenters).

- ii) The PI and Project Officer (Veterinary Doctor) visited Central Avian Research Institute), Bareilly, U.P. for expert consultation specially on management of poults, feeding, medication etc. with Dr. S. Majumdar, Scientist in Charge, Turkey Research Unit, Central Avian Research Institute(CARI), Bareilly.



*Turkev Farm*

- iii) Seventy five numbers of day old turkey poults (white colour) and 200 hatching eggs have been purchased (collected) from the Turkey Research Unit of CARI (Central Avian Research Institute), Bareilly, U.P. However, five turkey poults were found dead during transportation from CARI to Imphal
- iv) Out of the 200 eggs, 150 eggs have been incubated at the hatchery of the ICAR, Imphal centre and 50 eggs at the Hatchery of State Veterinary Department, Imphal. However, the hatching percentage was found very low.
- v) A Hatchery unit has been established with the installation of one Incubator cum hatcher for a capacity of 4000 eggs.



*Hatchery unit established at MASTEC Complex, Takyelpat, Imphal*

#### 4.4.3 Specific Observation:

- i) The male turkey live birds of about two and half months old weigh  $2\frac{1}{2}$  kg to 3 kg in average where as female birds of the same age weigh 2 kg in average.
- ii) It is also observed that the birds are fond of eating leafy vegetables including grass cut into small pieces. Some male birds are kept separately and they are provided locally available feeds including green vegetables to study weight gain or loss in comparison with other turkey birds who are fed with feeds from Feed processing mills. They were kept for three months for observation. The weight of the male turkeys kept under such conditions with feeding of locally available feeds were found almost equal to that of the turkeys who were fed with processed feeds. The male live turkeys when they become 5 months old carries an average weight of 7 kg.



*Longitudinal view of the two layer cage*



*Male adult turkeys being used for breeding*

- iii) The male turkeys, at the age of 7 months (adult stage) were found to have weight of 9-11 kg in average and the female were 5-6 kg in average. The rate of growth was quite satisfactory.
- iv) Breeding and hatching:

The existing turkeys are mature as they are seven months old. The female turkeys have started laying eggs in the month of March 2007. Earlier the male and female turkeys were kept separately from each other. As they have been quite mature, they have been kept in the ratio of 1:10 i.e. 1 male is to 10 female as advised by the experts of Turkey Research Unit, CARI, Bareilly. Collection of fertile eggs have been started for incubation and hatching. The existing centre is presently having 40 female (adult) and they are doing well. Rest were male. The males were in excess. After keeping the desired number of males in appropriate ratio, the rest male turkeys had been sold out @ Rs 150/- per kg (live) to the interested public.

The first batch 70 eggs collected from the turkey farm has been put in the hatchery on 17<sup>th</sup> March 2007 and its date of hatching falls on 13<sup>th</sup> April, 2007.



*Fertile eggs of turkey*



*Comparison of eggs in size*

Another second batch of 70 eggs have also been put for incubation on 30.03.07 and date hatching will be 25.04.2007. The result of percentage of hatching is being awaited. Collection of fertile eggs is continuing for multiplication of hatching process.

#### Cost Benefit Analysis :

Fixed Asset : Rearing shed, brooder, feeder, waterer, land

Considering 75 live turkeys

(A)

- i) Number of day old turkey poults = 75
  - ii) Total amount paid for 75 poults @ Rs 45/- per poult = Rs 3375/-
  - iii) Number of turkey poults survived = 70 ( considering 7% mortality rate)
  - iv) Expenditure on feeds upto 3 ½ months time = Rs 20,000/-
  - v) Total expenditure on medicines and other misc. items = Rs 2000/-
  - vi) Fuel / electricity = Rs 3000/-
- Total expenditure for rearing = Rs 28375/-

(B)

- i) Average weight of male turkeys 3 ½ months old = 5 ½ kg
- ii) Number of male turkeys (identified) = 26
- iii) Weight of female turkeys = 4 kg each
- iv) Number of female turkeys = 44
- v) Total weight of 70 live turkeys ( 26 male and 44 female )  
= 26 x 5.5 kg + 44 x 4 kg = 143 + 176 = Rs 319 kg.

Existing market rate per kg = Rs 200/- ( In and around Imphal)

(C)

Case -I

However, considering market rate at a reduced price @ Rs 150/- per kg, total amount for sale of 70 live turkeys i.e. 319 kg = Rs 47850/- -----

(i)

Case -II

Considering selling price @ Rs 120/- per kg, total amount for sale of 70 live turkeys

= Rs 38280/- -----( ii)

Profit:

When the market rate is Rs 150/- kg, Net profit = Rs 19475/-

When the market rate is Rs 120/- per kg, Net profit = Rs 9905/-

#### 4.4.4 Linkages developed :

MASTEC has developed good linkages with State Veterinary and Animal Husbandry Services, Govt. of Manipur and ICAR, Imphal Sub centre. The Head, Animal Sciences Department, CAU, Imphal shared his expertise and provided personnel encouragement in the project. Turkey research unit of CARI extended expert advice as and when required.

#### 4.4.5 Replication Potential : The final replication potential is yet to be studied.

#### 4.4.6 People's response : The turkeys at the existing farm attracted people of the surrounding area. Villagers / farmers keep visiting to the centre. Some local level chicken centres (small scale businessmen on poultry) of the surrounding area have approached us to provide them live turkeys on regular basis on an mutually agreed price so that they may sell it to the public at their own determined rates. However the

decision is not yet finalised as our aim was to give maximum priority to the farmers to earn income but not to the businessmen.

There is good demand of turkey meats in the market. Specially during Christmas and New Years eve, peoples mostly tribal who were Christian by religion came to the project centre for purchase of turkey meats for their Christmas and Post Christmas meals. Some of them appreciated this Council for starting turkey farming in the state. Selling of some male turkeys which were in excess, could not satisfy the demands of the interested public. The Principal Investigator receives quite a number of queries over phone from far flung hill areas about cost benefit analysis of turkey farming. Visitor said that they wished to start turkey farming when MASTEC has made poult as well as hatching eggs available to the farmers.

#### 4.4.7 Works which remains to be done under the project:

- i) Awareness Training programme for farmers on turkey farming
- ii) Popularisation of turkey farming with available media
- iii) Efforts to make eggs as well turkey meats available in the market
- ii) Making hatching eggs or poult as available to the farmers

#### 4.4.8 Future plan of action after completion of project:

- i) Since the Council has set up its own hatchery unit at its permanent land, attempt will be made to extend hatching facility to the interested farmers in the post project period. Consultation services will be extended to farmers as and when required.
- ii) The Council will keep parent stocks in the post project period for future activities

### 4.5 Drip Irrigation System for Rabi Crops of Manipur sponsored by State S&T Councils Division, DST, GoI, New Delhi

#### Objectives :

- i) To substitute the flooding method/manual method of giving water to each plant by drip irrigation system
- ii) To eliminate land levelling in undulating/hilly region.
- iii) To maximise utilization of available water
- iv) To increase the cultivable area and yield of the crops.



Drip Irrigation to Cauliflower at Maklang



Drip Irrigation to Banana at Lukhambi

**Progress Achieved:**

- i) Drip irrigation system has been installed at the first site in a plot measuring about 0.5 acres and two different rabi crops viz., Tomato and Brinjal have been grown.
- ii) Drip Irrigation systems have also been installed in the 2<sup>nd</sup> year of the project at two project sites Lukhambi Part-II, Tamenglong District (Hill station) and Maklang village, Imphal West District in plots measuring 0.5 acres each.
- iii) Tomato, Brinjal and Cauliflower have been grown at Lukhambi Part-II and Brinjal, Tomato and Cucumber have been grown at Maklang village.
- iv) In the final year of the project Banana trees have been planted at the Lukhambi Part –II project site

#### **4.6 Database Management System of the Medicinal Plants of Manipur sponsored by State S&T Councils Division, DST, GoI**

**OBJECTIVES :**

- i) Survey and investigation of the Medicinal Plants of Manipur.
- ii) To make awareness amongst the villages about preservation/conservation of medicinal plants of Manipur.
- iii) To formulate a database information system of Medicinal Plants of Manipur.

**PHYSICAL PROGRESS**

- i) Intensive surveys have been conducted in the valleys as well as some places in the hills of Manipur and collected data of medicinal plants in consultation with some local publicly known traditional medical practitioners (Maibas).
- i) Data of 400 medicinal plants including 100 indigenous plants have been entered into the computerized database.
- ii) Designing of a web-page of 400 medicinal plants for uploading in the website has been completed and ready to launch.
- iii) Project period has been completed on the 31<sup>st</sup> March, 2007. Final project report is likely to be submitted within April, 2007





**Local Name:** Khongjainapi

**Habit** : Profuse hispid herb

**Parts Used** : Stem, Flower & Leaf

**Mode of Preparation** : Fresh leaves crushed for juice. Leaves used for preparation of local hair lotion (Chenghi). Leafy shoot is crushed for decoction. Flowers crushed in water for extract. Also used as a fodder.

**Mode of use** : Decoction, Fresh & Local Application

**Ingredients** :  $\beta$ -Caryophyllene,  $\gamma$ - &  $\delta$ -Cadinene, Eugenol, Methyleugenol, Ocimene,  $\alpha$ - $\alpha$ -Pinene etc. are reported in essential oil of the plant. Seeds-Linoleic, Palmitic, Oleic and Stearic acids are reported.

**Ailment Treated:** Leaf juice is good for application on fresh injuries. Leaf hair lotion is good for scalp. Leafy shoot decoction is used in diarrhoea, dysentery & other gastro-intestinal ailments.

**Source:** Gregarious in both valley and hills particularly in paddy fields and along the road sides.

**Common Name**

**English** : Goat weed

**Hindi** :

**Manipuri** : Khongjainapi

**Scientific Name**

**Group** : Angiosperm (Dicotyledon)

**Family** : Asteraceae

**Genus** : *Ageratum*

**Species** : *conyzoides* Linn.



**Local Name:** Kokal

**Habit** : Small tree

**Parts Used** : Leaf

**Mode of Preparation** : Fresh leaves crushed with water for juice.

**Mode of use** : Fresh

**Ingredients** : Leaves contain  $\beta$ -Amyrin acetate, triacontanol and  $\beta$ -sitosterol. Presence of ankorine, anabasine and venoterpene are also reported.

**Ailment Treated:** Leaves are used in worm diseases. The juice of the leaves along with honey is given in cough, asthma and colic.

**Source:** Wild/cultivated.

**Common Name**

**English** :

**Hindi** :

**Manipuri** : Kokal

**Scientific Name**

**Group** : Angiosperm (Dicotyledon)

**Family** : Alangiaceae

**Genus** : *Alangium*

**Species** : *chinese* (Lour.) Harms.



#### 4.7 CGCRI, Kolkata & MASTEC joint ventured project on Pilot Scale Demonstration of Ceramic Membrane Based Iron Removal Plants in Manipur:

##### Progress:

- 1) Two sites have been identified one at Shri Shri Govindaji Temple complex, Imphal and the other at Science & Technology Complex, Takyelpat, Imphal.
- 2) Drilling of two hand pumps (one each) at the two sites have been completed.
- 3) Civil works in site preparation and shed construction have been completed at the two sites.
- 4) Plastic water storage tanks have been procured and construction of one Ferro cement tank (5000 ltr. Capacity) for storage of raw water at one of the project sites is completed.
- 5) CGCRI, Kolkata is yet to install the ceramic membrane technology to the project sites.



*Drilling of tube well at  
The Govindajee Temple, Imphal.*



*Shed for Iron removal plants with Water Storage Tank  
at the Govindajee Temple*

#### 4.8 Identification of Strategy for Mapping of S & T needs in a State sponsored by Dept. of Science & Technology, Govt. of India

##### Objectives:

- Inventorization and Mapping of problems in relevant sectoral areas of the entire state requiring S&T intervention based on secondary sources.
- Documentation of problem including areas drafting of specific and well defined problem statements mapped together with S&T interventions in one priority district.

##### Achievements:

The project has been completed on 31<sup>st</sup> March, 2007 with the following achievements;

- Collected secondary information from different Government & Non-government Departments and Institutions.
- Surveyed all the 38 Sub-divisions.
- Digitized Maps of Manipur at Sub-Divisional level.
- Entered and coded the information from secondary and field survey.
- Problems identified for 10 sectors, viz. – Agriculture, Health, Drinking Water, Animal Husbandry, Transport, Environment & Ecology, Natural Resources, Forest, Tourism and Fishery.
- Preparation of Final Report.

#### 4.9 Project on Community Information Centre (CIC) sponsored by Ministry of Information Technology, Govt. of India.

##### Objective:

1. To proliferate the use of Information Technology (IT) for Socio-Development up to the Block Level
2. To develop databases, locally relevant contents, finally leading to e-governance, e-commerce, e-learning etc.

MASTEC, NIC, Govt. of India, Imphal center and DST, Govt. of Manipur play a key role in jointly implementing the above mentioned project. NIC supports the technical know how, DST, Govt of Manipur shares in the overall administration and MASTEC handles the financial matter including the payment of monthly honorarium to the project manpower/ staffs engaged on contract basis in the project.

So far 33 (thirty three) CICs have been set up in 33 developmental blocks in the state. Each CIC has got 6 numbers of computers connected to the Internet through a VSAT

##### Users:

Panchayat representatives, Student members, Women Development Organisations, Youth Club Members, NGOs, Entrepreneurs, Educational Institutions, Common men etc.

##### Benefits to the rural people :

- i. Internet access and e-mail connectivity
- ii. Access to data base /developmental information of national importance.
- iii. Training through distance learning techniques and connectivity to leading educational and research institutions in the country
- iv. Awareness of IT at block level

#### 5.0 List of Scientists/Visitors to MASTEC :

The following scientists made official visits to MASTEC in connection with the programmes shown below.

Sl. No	Name & Address	Date of Visit	Purpose of visit
1	Dr. A.N.Rai Scientist D., NSTMIS Division DST, GOI, New Delhi	October, 2006	To attend the LPAC Meeting of the Project "Database Management System of the Medicinal Plants of Manipur"
2	Mrs. C.P. Sehgal Adviser, Department of Science & Technology, Govt. of India	October 11, 2006	To attend the 2 <sup>nd</sup> G.B. Meeting of Manipur Science & Technology Council (MASTEC)
3	Dr. R.K. Sharma RRL (CSIR), Jorha	- do -	- do -
4	Dr. D.R. Das Head, Regional Office, MNES, Guwahati	- do -	- do -

#### 6.0 Library :

MASTEC has made a modest attempt to build up its own library. The collection is about 400 (three hundred) volumes of various disciplines. In addition, a number of periodical journals, newsletters, bulletins, local papers, science publications etc. are received regularly. MASTEC aims at strengthening the library of the Council.