



# MIRSAC Newsletter

Mizoram Remote Sensing Application Centre  
(An Autonomous Govt. Institution under Science & Technology, Planning Department, Govt. of Mizoram)

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Successful launching of PSLV -C16 carrying ResourceSat-2 on 20th April 2011, shows the high capability of India in Space Technology

## Executive Committee of MIRSAC

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## ACTIVITIES OF SCIENCE & TECHNOLOGY IN MIZORAM



Dr. R.K.Lallianthanga

In the present issue, I would like to highlight in brief the activities of Science, Technology & Environment Wing, Planning Dept. which is the parent Department of MIRSAC. Science, Technology & Environment Wing was established in 1986 under Planning Dept. Ever since its establishment, despite limited man power, it has carried out various developmental projects and works for the State of Mizoram and has been instrumental in keeping the pace of Science & Technology advancements within the State.

The activities of Science & Technology accomplished so far are –

- 1) Mizoram Remote Sensing Application Centre (MIRSAC) – A centre established to carry out all scientific works related to utilization of Remote Sensing and GIS technology.
- 2) Human Resource Development – An approach to fulfill the need of scientific man power in educational institutions and to further expand student's scientific education and knowledge.
- 3) Assistance to Scientific Research Project – A scheme to provide financial assistance for scientific research projects in Mizoram.
- 4) Science Popularization Programme – The programme aims to create awareness among students and mass population about advancements in Science & Technology through organizing Science exhibitions, expos, seminars, symposiums etc.
- 5) Low Head Microturbine projects – Pilot/demonstration projects to evaluate the power generating capacity from rivers in Mizoram has been carried out at Sihmit river, Bulfekezawl village, Champhai district.
- 6) Meteorological Observatory – An observatory to record meteorological data has been installed in collaboration with Indian Meteorological Department at Aizawl in 1996. A Class-I Meteorological observatory is also being installed at Mizoram Science Centre.
- 7) Mizoram Science Centre – The centre was established in 2003 with support and guidance from National council of Science Museums, Kolkata. It provides an opportunity for students and local masses to experience, educate and create awareness in different streams of Science in its ambient environment.
- 8) Patent Information Centre - A facility to address the need for safeguarding patent rights of indogenous products and to create awareness of patent information in Mizoram.

The accomplishments of these activities still impends upgrading of Science and technology in Mizoram through setting up of Planetarium at Mizoram Science Centre with a seating capacity of about 100 persons. Further, an impending task to establish a Bio-resource Centre to study and make use of the rich bio-resources of the State, is still at hand.

## From Editor's desk

The year 2011 has turned out to be another busy and challenging year for the centre in carrying out various projects. Moving a step forward into the realms of advanced remote sensing and GIS technology, the centre has seen progress in the nature and type of projects that are being taken up for the current year. With such advancement comes greater responsibilities on the part of utilizing the technology, which the centre will continue to achieve in this race for better knowledge and output.

Ever since its establishment in the state as an autonomous Govt. Institution, the centre has collected a wealth of valuable spatial data ranging from different thematic backgrounds to socio-economic profiles. The present work completed for hazard zonation of landslides in towns of Mizoram are an added wealth of information to aid relief & rehabilitation measures. Likewise, with the trend and necessity of scientific land development plans, these data are proving their importance and provide quick assistance to command area development.

## Important Visitors at MIRSAC



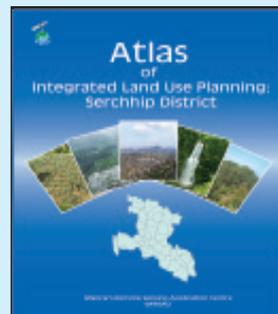
14 Jan. 2011: NEC Financial Advisor, Pu.H.Vanlalhluta visits MIRSAC to supervise projects undertaken under NEC funding.



5th April 2011: Dr.S.Sudhakar, Director NESAC and Dr.K.K.Sarma, Scientist SE, NESAC visited MIRSAC

## Integrated Land use planning Atlas, Serchhip District

This project envisages the utilization of Remote sensing and GIS data for scientific planning of land and water resources. It was executed as an in-house project funded by Science & Technology, Govt. of Mizoram. To facilitate operational level planning for each village in the district, the mapping was done at 1:10,000 scale using IRS P6 LISS III, LISS IV and Cartosat-1 imagery. Village-level ground information was also incorporated during survey. The Atlas contains Serchhip District land use plan map and statistics as well as land use plan maps of 41 Village in the district, along with their corresponding proposed land and water resource development plan.



The Atlas was released by the District Commissioner, Pu.H.Darzika at a function organised at Serchhip on 28th March 2011. The programme was conducted under the chairmanship of Pu.Lalnunsiamia Colney, Senior Scientist, MIRSAC. Prior to the release, a brief presentation on the technical report and contents of the Atlas was made by Pi. Hmingthanpuii, Scientist, MIRSAC. Copies of the Atlas was distributed to the Village council members from each village attending the function.

## NEWS FLASH

# Dr. R.K.Lallianthanga, Project Director & Member Secy, MIRSAC left for Hyderabad on 14th June 2011 for an important meeting.

# Pu F.Lalramchuana, Pu Z.D.Laltanpuia & Pu F.Lalbiakmawia, Scientists attended a 3 day training programme of Rajiv Gandhi National Drinking Water Mission (RGNDWM) project at NESAC from 14th - 16th June 2011.

# The centre will be launching its official website in a few days. The site will be hosted by NIC, Aizawl for which the contents have been prepared and delivered by the centre.



## **DMS PROJECT IN PROGRESS**

### ***Landslide Hazard Zonation of Mizoram***

The centre has taken up projects for mapping and studying the natural disasters prevalent in the state. Among these disasters, Landslides are the most prevalent form of natural disasters in Mizoram. Considering this factor, Landslides of major towns in Mizoram has been mapped and zonation prepared at 1:5,000 scale using High resolution satellite data. The study highlights the different landslide hazard zones classified as *Very High, High, Moderate and Low* in each of these 10 towns (Kolasib, Mamit, Saitual, Khawzawl, Champhai, Hnahthial, Serchhip, Lunglei, Lawngtlai & Saiha) & Aizawl city. The reports and maps have been completed in the form of an easy reference Landslide Atlas. Similar maps have also been completed for all 8 districts of Mizoram at 1:50,000 scale, replicating the methodology adopted at micro-level mapping. The mapping at district level illustrated in 'Atlas of Landslide Hazard zonation of Mizoram' gives a more holistic view of landslides in the 8 districts of the state. On the contrary, the 'Atlas of Micro-level Landslide Hazard zonation of Aizawl City and selected towns of Mizoram' gives more detailed hazard zonation of the selected towns, including Aizawl city. Both these studies are parts of the Disaster Management System (DMS) project, funded by NEC.

### ***Mapping of Flood Prone Areas of Mizoram***

This project was started to identify and study the flood prone areas in Mizoram. The project is also a part of Disaster Management System (DMS) Project, funded by NEC, Shillong. The current study of flood prone areas gives specific importance to the flood plains and major river banks which are prone to be sub-dued during peak monsoon seasons. The Atlas contains illustrated maps (toposheet wise) and statistics of the flood prone areas in all districts of the state. Specific flood prone areas are enlarged to enhance visual perception. The mapping was done at 1:50,000 scale.

### ***Wind & Cyclone Hazard Mapping***

A project executed by the centre to map areas vulnerable to cyclone and high wind velocities which is also a part of Disaster Management System (DMS) Project. The mapping analyses hazardous areas taking into account various factors like aspect, elevation & distance from coastline. Maps are prepared at 1:50,000 scale and is at its final stage of completion.

## **PROJECTS COMPLETED**

### ***Preparation of Data for Land use Planning for NLUP Implementation***

Following the success of Land use planning for Zawngling village, Saiha district and upon the request of NLUP Implementing Board, thematic mapping of 7 villages in Mizoram namely - Khawbel, Sialsuk, Thingdawl, Pulo, Bungtlang, Rengdil & Thiltlang was done to provide maps for monitoring land use pattern, prior to the launch of NLUP programme in these villages. The maps were prepared using Cartosat-1 and IRS LISS III imagery. The maps and other data provided additional information and insights to the current ground conditions of these villages and was appreciated by the NLUP implementing board.

### ***Spatial Assessment of Soil Carbon Pool***

This is a nationwide project for assessing the soils of different regions in India. The project is coordinated by NESAC, Shillong for Northeast India. The project was executed by the centre during the previous financial year by soil scientists of the centre. As per the project requirement, soil samples were collected from different parts of Mizoram and sent for analysis.

## **ON-GOING PROJECTS**

### **1. Integrated Land Use planning of Saiha District**

Following the release of the ILUP for Serchhip District, this project was initiated as a continuation of Land Use planning for Saiha district adopting more or less similar methodology implemented in Serchhip district. The project is at its final stages of completion.

### **2. Space Based Information Support for Decentralised Planning (SIS-DP)**

A nationwide project initiated by ISRO under NNRMS programme for which the first phase of the project (i.e., satellite data orthorectification) for Mizoram is being carried out with technical guidance from NESAC, Shillong. Satellite data from this project will be instrumental in carrying out various projects commissioned for national and state level development planning projects.

### **3. National Urban Information System (NUIS)**

This is a collaborative project with NESAC in which mapping of urban information for two towns - Lunglei and Champhai is being done. The project is at its final stage of completion.

### **4. Other On-going projects at MIRSAC - Hazard, Risk & Vulnerability Analysis of Aizawl District, Groundwater Prospect Mapping under Rajiv Gandhi National Drinking Water Mission (RGNDWM), Forest Working Plan Inputs.**

## NEWS &amp; ACTIVITIES

\* Pu. H.Vanlalhluta, NEC Financial Adviser, Shillong visited the centre on 14th January 2011 in connection with supervision of projects at the centre funded by NEC.

\* Wng.Cmdr. Lalnghinglova, Chairman - NLUP Marketing board visited MIRSAC on 25th January 2011. He was shown the lab facilities available at the centre and current projects executed by the centre.



NLUP Marketing Board at MIRSAC

\* Mr. Robert Lalchhanhima Sailo & Pu. H.Lalmachhuana, Scientists of the centre were detailed for project work at NESAC during 8th-27th February 2011 for finalization of Wasteland CA project and first phase of Forest Working Plan input project.

\* Mr. Lungmuana Singson, Scientist was detailed for soil sample collection at Saiha for the ILUP- Saiha project during 7th-11th March 2011.

\* Pu.Vanlalengkima, Scientist was detailed for preliminary project work at NESAC for SIS-DP project from 13th-19th March. Consequently, he was again assigned to similar work at NESAC during 9th-27th May 2011.

\* Pu. K.Lalrammuana, Senior Scientist, Pu. H.Lalmachhuana, Scientist, Pi. Lalzarzovi, Scientist and Field Assistants were on field duty for data collection and interaction with VC members of Saiha district from 14th-19th March 2011 in connection with ILUP - Saiha Project.

\* Pu Lalnunsiamia Colney, Senior Scientist, Pi. Hmingthanpuui, Scientist, Pu.Vanlalengkima, Scientist and Field Assistants were detailed to Serchhip for the release function of the Atlas of Intergrated Land use planning - Serchhip district on 28th March 2011. The Atlas was released by Pu H.Darzika, DC, Serchhip at DC's conference hall and attended by Govt. officials and village representatives of Serchhip district.



Team of Scientists at Serchhip

\* It was a day of celebration for the Centre when our fellow scientist Pu Z.D.Laltanpuia tied the knot with his life partner Ruth Ramngaihawmi at Baptist Church, Republic Vengthlang, Aizawl on 24th March 2011.

\* Dr. S.Sudhakar, Director NESAC and Dr. K.K.Sarma, Scientist SE, NESAC visited the centre as a follow up action of the State Interaction meeting held on 14th Feb 2011 at NESAC. An interaction meeting to discuss the on-going projects with officers and scientists of the centre was held at MIRSAC conference room.

\* Pu R.Lalfamkima was detailed for SILKS project work at NESAC from 16th-24th May 2011.

\* Pu Lalnunsiamia Colney, Senior Scientist presented a paper on 'Use of GIS and IT in watershed delineation, codification, database portal development, online monitoring and evaluation etc.' on 30th May 2011 at a training held for 'Sensitization of Senior officers on common guidelines and preparation of DPR on Watershed development' at Rural Development Dept. Conference hall, Aizawl.

\* MIRSAC Governing Body meeting was held on 1st June 2011 at the office chamber of Pu.Lalmalsawma, Commissioner & Secy, Planning Dept.



Training programme for Watershed Development