



# MIRSAC Newsletter

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

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## ITERATING THE GEOSPATIAL IMPACT IN 2022 (Introspecting & Innovating for focused impact)

Technology, in general, has gone through a cycle of changes and developments for decades resulting in the evolution of better and advanced application-focused solutions. The decadal cycles of iteration in the area of technology research & development has also brought measurable impacts in the scope of technology applications - reaching far-fetched contributions to society and economy. Geospatial technology is one such solution & data-driven facet of advancing technology that has seen leaps and bounds in its utilization in varied spectrum of sectors. Its ability to integrate and bond with mainstream technology has enabled it to find common ground in applications that involve people, governments, resources and infrastructures. Its contribution towards the theoretical evolution of science and application of the science in emerging analytical research has also seen phenomenal achievements recently.



Pi Renu Sharma  
Chairman  
MIRSAC Gov. Body



Pu Lalmalsawma Pachuau  
Vice Chairman  
MIRSAC Gov. Body

### Governing Body of MIRSAC

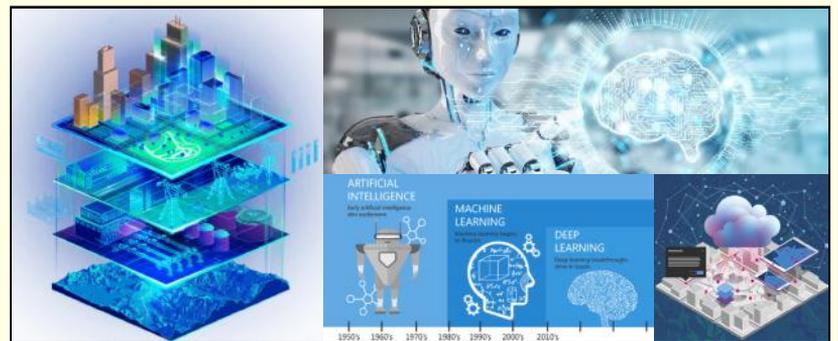
- Chairman : Chief Secretary  
Govt. of Mizoram
- Vice Chairman : Secretary  
Planning & Prog.  
Implementation Dept.  
Govt. of Mizoram
- Member Secretary : Chief Scientific Officer  
Dte. Science & Technology
- Members : 16 members from various  
Depts. of the State, viz.,  
Planning & Prog.  
Implementation, Finance,  
Environment Forest &  
Climate Change, PWD,  
PHED, P&E, DM&R, Irrigation  
& Water Resources, UD&PA,  
Agriculture (Crop Husbandry),  
Horticulture, Rural Dev.,  
Land Resources, Soil & Water  
Conservation, Land Revenue &  
Settlement, Geology & Mineral  
Resources, & Sericulture.

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Today there is a lot of buzz about advanced technologies like Big data, Block chain, 3D & Digital twin, automation, location intelligence, artificial intelligence, machine learning, deep learning and emerging tech-concepts like Metaverse. All these technologies require a platform to interact and collaborate to bring out solutions to the increasing real-life challenges of the present. Geospatial provides a conducive environment for such collaborations and a common platform to make best possible use of these technologies - imbibing their inherent capabilities and utilizing it to the best potential. The present day's complex problems require reliable insights and understanding which can only be achieved through iterative process of analysis to arrive at the best possible solution. Geospatial technology further aids in this process through better visualization with robust tools/applications.

We have observed a number of the advanced technologies impacting our way of lives during the past. The pandemic has shed light on this and made us realize the value of these technologies in times of emergencies. As life continues on earth and with our impending agenda to curb climate change, we would at some point of time depend on these technologies to assist us in our endeavors and imbibe them as a way of decision-making. What was a highly valued technology in the past will continue to have its impact on the future as the whole ecosystem undergoes an iterative process of evolution with scientists driving this process. Artificial intelligence and its allied branches like machine learning & deep learning are some of such technologies that have propelled to recognition and importance in the 4<sup>th</sup> Industrial revolution owing to their iterative impact on cognitive and adaptive algorithms that today's science requires and which has found an important place under the realm of Geospatial technology.



## Editor's desk



*Spatial data creation and updation is a continous process of asset creation and becomes a pre-requisite for any user involved in the area of geospatial & allied technology. With the liberization of data creation and procurement by the government, it is expected that GIS asset creation will soon become a valuable sector in the market for startups and budding technologists. Although the norms have been set at the global and regional levels, the validation of such newly created assets will be of utmost importance given the fact that Geospatial technology has etched reliability on a global platform.*

*Departments, organizations and agencies with decades of experience in the technology ought to be recognized in this aspect not just to validate data created but also as reference point for data integrity, reliability and avoid redundancy of spatial data. On the wee-side, these organizations also have additional responsibility towards credibility and accountability of the data validated which could be achieved through adoption of advanced data validation procedures automated by time-tested algorithms and techniques capable to handle volumes of data. Ensuring a stable framework to execute such processes smoothly is the need of the hour.*

## Staff Meeting & Orientation for 2022

The first Officer & staff meeting of MIRSAC for 2022 was held on 10<sup>th</sup> January, 2022 at the Conference room of Dte. of Science & Technology. The meeting was chaired by Pu Z.D. Laltanpuia, Senior Scientist. The meeting was also organised as an orientation towards achieving the goals set by the Centre for the new year. Er.H.Lalsawmliana, CSO & Member Secretary & Pi Hmingthanpuii, Principal Scientist addressed the meeting on these points of orientation and also gave motivational speeches for the officers and staff present at the meeting. Deliberations on various aspects of improvements in general administration, resource & time management, discipline, project work, were made and discussed in this meeting.



## FIELD LEVEL TRAINING FOR SIS-DP (UPDATE) PROJECT

The second phase of SIS-DP (Space based Information Support for Decentralized Planning) has been initiated with an objective to update the layers prepared during the first phase of mapping and to incorporate any changes during this period. The updation process is being carried out based on interpretation of satellite imagery acquired during 2018 and ground observations to resolve doubtful areas during interpretations. This requires a thorough knowledge of visual interpretation technique, field observation and its incorporation into updated layers to ascertain the type and cause of changes in land use. This will further aid in value-addition of the updated repository layers for its users.

As part of the project orientation process, the mapping team and field assistants were imparted on-site (field) training. They were shown the basic procedures to be followed during field survey, field map interpretation, site data collection and correction of field data for post-field validations. Sample sites were selected close to Aizawl city - Thiak & Hmuifang areas for this field exercise. Sample field maps & equipments were also carried along to perform hands-on exercises at the sample sites selected prior to the trip.



## UAV MAPPING & DGPS SURVEY FOR SAITUAL MASTER PLAN



Creation of baseline spatial data and image to assist in the preparation of master plan for Saitual town is being taken up by the Centre as per user demand from the Town & Country Planning, UD&PA Dept., Govt. of Mizoram. This is the second phase (after completion of Kolasib town) of mapping using UAV and DGPS surveys in the selected towns of the state. Data pertaining to high resolution drone image, contours and building footprints of survey area will be generated for the user department.





## CONCLUDING WORKSHOP ON GEO-TAGGING OF ASSETS UNDER NERTPS

The concluding workshop for the project on Geo-tagging of assets created under NERTPS programme of CSB in North Eastern Region was the culmination of an initiative taken to highlight valuable contributions of space technology in quantifying and archiving Sericulture related assets in the North eastern states. The project utilized the location services of Indian Regional Navigation Satellite System (IRNSS) or in current terms NAVIC technology to create a repository of sericulture infrastructure which can assist decision makers in planning and implementation of textile promotion in the north-east through the NERTPS (North Eastern Region Textile Promotion Scheme) programme of Central Silks Board (CSB), Ministry of Textiles, Govt. of India. The workshop was attended by officials & scientists from CSB, State Sericulture Departments of the north east region, scientific institutions in the country, state remote sensing centres and media personnel.



Pi Hmingthanpui, Principal Scientist and Pu Robert Lalchhanhima Sailo, Senior Scientist attended the closing workshop at Assam Administrative Staff College, Guwahati on 19<sup>th</sup> April, 2022. For the state of Mizoram, MIRSAC in collaboration with NESAC has been involved in this project for GIS & location based asset creation and coordination with field staff and concerned Sericulture Department, Govt. of Mizoram. In this aspect, a total of 2028 plantations, 2579 civil infrastructures covering 2355 beneficiaries in all districts of Mizoram have been geo-tagged and uploaded into the central repository of CSB. A brief presentation of the achievements made for the state was given by the Principal Scientist, MIRSAC.



### ON-GOING PROJECTS

#### 1. Monitoring of IWMP activities using Geospatial tools

Land use interpretation and report preparation are being done. Out of 78 reports to be sent, 67 reports have been completed and submitted to NRSC/NESAC. The project duration has been extended till 31<sup>st</sup> May, 2023 as some additional project work was appended. The project for the state is expected to be completed by end of September, 2022.

#### 2. National Wetland Inventory & Assessment (NWIA) project - Mizoram

Interpretation on 1:25,000 scale of the wetlands using IRS LISS-IV is completed and the database has been subjected to quality checking as well. Final database is submitted to NESAC for incorporation into the nationwide repository.

#### 3. Space based Information Support for Decentralized Planning (SIS-DP)-Update

Land use / Land cover mapping for 24 blocks in the state has been completed and interpretation for remaining 2 blocks (parts of Lunglei district) is being carried out. Completed blocks will go through Internal quality checks and further subjected to External quality checks. Project duration has been extended to March 2023 and current work is expected to be completed by end of 2022.

#### 4. Monitoring of NEC Projects (Geo-tagging)

Geo-tagging of project sites has culminated with additional 58 geo-tagged sites added to the repository during the reporting period. The current phase involves geo-monitoring of the previously geo-tagged sites where such sites are revisited to monitor the progress of project work.

#### 5. Village level Development plan for six selected villages

The project has been officially launched in the selected villages during the month of June and the Centre will be involved in geo-monitoring of project sites in these villages. Preliminary monitoring has been done for Lungdai, Sailam and Sekhum villages through UAV survey and imaging. The rest of the sites will be covered upon initiation of project work.

#### 6. Large Scale Mapping of WRC Potential area in Mizoram

The project is funded by NEC, Shillong and will involve mapping and identification of potential wet rice cultivation areas in the state on a large scale. A consultative meeting with the State Agriculture Department was held on 14<sup>th</sup> June, 2022 to develop a collaborative framework for execution of the project. Initial project work flow pertaining to procurement of hardware, software and reference image/data is being carried out.



## NEWS & ACTIVITIES

MIRSAC AT A GLANCE

\* **MIRSAC participated in the Science Week Festival (Vigyan Sarvatra Pujyate) organized by MISTIC, Directorate of Science & Technology from 21<sup>st</sup>-25<sup>th</sup> February, 2022. Exhibit stall displaying the projects and activities of the Centre was setup for public view.**



MIRSAC stall at Science Week Festival

\* **Pu R.Lalfamkima, Scientist was detailed to attend the “Zonal Conference on PM Gati Shakti National Master Plan for North East States” at Guwahati on 28<sup>th</sup> February, 2022. He was part of the Mizoram team led by the Secretary, Planning & Programme Implementation Dept.**

\* **Pu C.Vanlalengkima, Scientist was detailed for ground data collection/Geo-tagging of project sites under the NEC project monitoring activity within Serchhip, Aibawk, Reiek and peripheral parts of Aizawl city from 4<sup>th</sup> - 7<sup>th</sup> March, 2022.**

\* **Pi Hmingthanpuii, Principal Scientist and Pu Robert Lalchhanhima Sailo, Senior Scientist attended the NERTPS Closing Workshop at Assam Administrative Staff College, organized by NESAC, Dept. of Space and Central Silks Board, Govt. of India on 19<sup>th</sup> April, 2022. Consequently, they also attended meetings at NESAC, Umiam in connection with Plan of Action projects which were to be executed shortly.**

\* **Pu R.Lalfamkima, Scientist accompanied a team of officers from Planning & Programme Implementation Dept., Govt. of Mizoram for the meeting related with PM Gati-Shakti project at BISAG, Ahmedabad from 18<sup>th</sup> - 23<sup>rd</sup> April, 2022.**



AKAM Exhibition 2022

\* **MIRSAC participated in the 3 days Exhibition event of Azaadi Ka Amrit Mahotsav (AKAM) celebration organized by Govt. of Mizoram at Dawrpui Multipurpose Centre, Aizawl from 2<sup>nd</sup> - 4<sup>th</sup> May, 2022.**

\* **Dr. Lalramdina & Pu Vanlalnghaka, Scientists & Pu David Vanlalfela Pachuau, FA were detailed for ground survey at Saitual under project work for Saitual Master Plan (Base map preparation) from 9<sup>th</sup> - 13<sup>th</sup> May, 2022.**

\* **Er.H.Lalsawmliana, CSO & Member Secy, and Pi Vanlalmuansangi, Scientist participated in the two day event of NEUIM (NESAC User Interaction Meet) held at NESAC, Dept. of Space, Umiam from 23<sup>rd</sup> - 24<sup>th</sup> May, 2022.**

\* **Pu R.Lalfamkima, Scientist & Pu David Vanlalfela Pachuau, FA attended the Kickoff Programme of Village Level Development Planning (VLDP) project at Lungdai village on 2<sup>nd</sup> June, 2022. Prelim Project on-site monitoring using UAV was also conducted by them.**



VLDP Kickoff programme at Lungdai

\* **Dr. Lalramdina, Pu Vanlalnghaka, Scientists and Pu C.Lalzawngliana, FA were detailed for Preliminary on-site monitoring of VLDP project at Sekhum, Lunglei district and ground survey at Saitual under project work for Saitual Master Plan (Base Map preparation) from 6<sup>th</sup> - 10<sup>th</sup> June, 2022.**

\* **Consultation meeting with Agriculture Department, Govt. of Mizoram on the NEC funded project - Large Scale Mapping of WRC potential area in Mizoram was organized at the Conference room of Dte. of Science & Technology on 14<sup>th</sup> June, 2022.**