



Newsletter

CLIMATE ACTION IN MIZORAM

3rd ISSUE (April 2022 to July 2022)

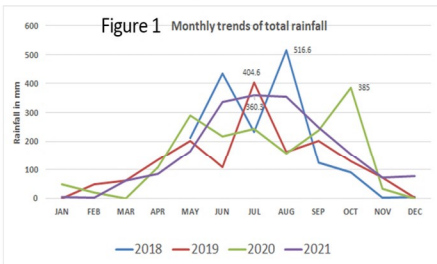
Tri-annual newsletter published by Mizoram State Climate Change Cell

Insights on rainfall pattern of Aizawl city over the past 4 years

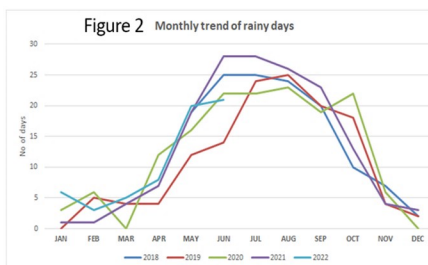
Over the globe, the variability and regularity of precipitation in any forms determine for an area; their vegetation type, climatic regions as well as productivity in agriculture, etc. For areas like Mizoram, which falls under tropical and subtropical region, the temporal and spatial distribution of rainfall has been a significant indicator to the variability of climate. The arrival of south-west monsoon winds determines the vibrant vegetation growth. However, the occurrence and intensity of hazards and disasters like windstorms leading to flash floods and landslides, etc are closely linked to it. Studies has been carried out by the State Climate Change Cell under Mizoram Science, Technology & Innovation Council (MISTIC) and couple of reports are available to read in the website of www.mistic-mizoram.gov.in.

In this short article, an insight of the rainfall pattern in Aizawl city over the recent years and their comparison with the past trend is highlighted from the available data collected from State Meteorological Centre, DST, Govt. of Mizoram . It is to be noted that the following graph and figure do not evolve out of a robust scientific study rather a simple presentation that can be comprehended by general public.

Figure 1 shows the monthly trend of rainfall in Aizawl for the past four years. It shows that during the traditional monsoon season June to September



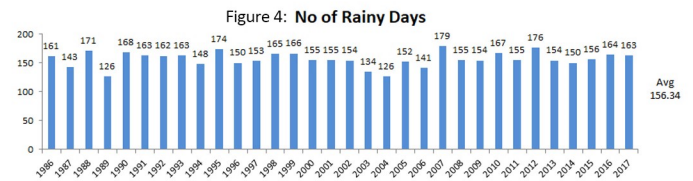
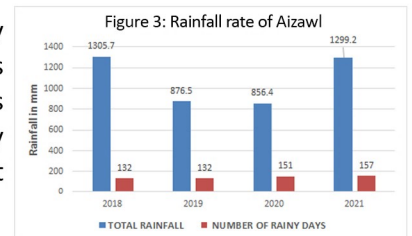
rainfall are highest with high variability in peak months falling between June, July and August across the years. The same trend can be seen for the whole state (Mizoram) data (1986 to 2017). The year 2020 which has immediate rise in May with following three months reduced but having its peak in



October. The number of rainy days of Aizawl city, however do not have high variability during monsoon with trend following somewhat of a

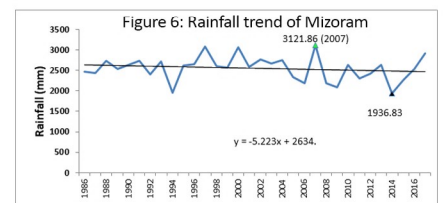
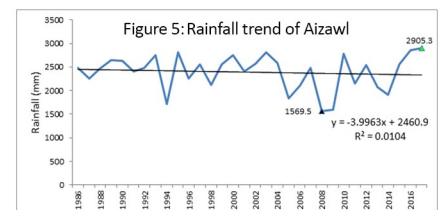
normal distribution curve except for the case of 2020 having its peak at October followed by a sharp decline (figure 2).

The number of rainy days in a year in Aizawl as shown in figure 3 does not seem to significantly deviate from the past years trend (figure 4)



However, the total rainfall received for the past four years has significantly decline in comparison to the prior 31 years data. Figure 5 shows the trend of total rainfall in Aizawl during 1986 to 2017 in which minimum rainfall was received in 2008 which is 1569.5 mm.

Figure 6 shows the trend of total rainfall in Mizoram during 1986 to 2017 in which minimum rainfall was received in 2014 which is 1936.83 mm. The trend showed in figure 5 and 6 is a declining trend with yearly decrease of



3.99 mm for Aizawl city and 5.22 mm for the whole state of Mizoram. The decline during the past four years of Aizawl as shown in figure3 seems to be quite significant as they are way below the minimum rainfall received over the 31 years prior.

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Climate change Thematic 3D Model Exhibition

The Mizoram State Climate Change Cell (SCCC) under Mizoram Science, Technology & Innovation Council (MISTIC) in collaboration with Science Teacher Association of Mizoram (STAM) organized a programme on Climate Change Thematic 3D Model exhibition on 5th July 2022 at the Auditorium of Innovation Facility Centre (IFC), Mizoram New Capital Complex, Khatla, Aizawl, Mizoram.

The course of preparation for the event started in May 2022 by consultation meeting of the organizers to decide on the level of participation and guidelines of exhibition. A total of 34 high schools from different districts of Mizoram identified by STAM were selected to participate in the exhibition. Approval for engaging students and teacher of selected schools was sought at the Director, School Education Department, Govt. of Mizoram and notification were sent to schools through District Education Officers.

A total of 21 schools from 10 districts in Mizoram turned up and participated at the exhibition. At afternoon around 4 O'clock, a closing function was held in which prize winners were announced and awarded to top three models, participation prizes and certificates were also awarded to all the participants.



Programme documentary can be watched at youtube channel of School Education Department (https://www.youtube.com/watch?v=s5Kgpix_0EA)

Sericulture in the Process of Climate Action in Mizoram

- ▶ Planting of trees, afforestation, conservation of wildlife, banned of Industrial effluent and air pollution are the known factor for tackling climate change. Planting of food plants for Mulberry, Eri and Muga silkworms in Sericulture can also significantly contribute in repairing our eco-system.
- ▶ The Sericulture Department, Govt. of Mizoram as on today has made plantation area of 2133 ha, which in return has benefitted the 3 (three) Silkworm races. At the same time, it also provides food and haven for bees, insects, birds and wild animals like wild boar and deer.
- ▶ The Muga (*Antheraea Mylitta/Antheraea assama*), due to the effect of rising temperature has drifted their habitat from Assam to Mizoram, where its natural food plant Som (*Litsea polyantha*) and Sualu (*Machilus bombycina*) flourish abundantly in the wild forest of Mizoram. Muga, which become endangered in Assam can now get a new horizon of survival in Mizoram.

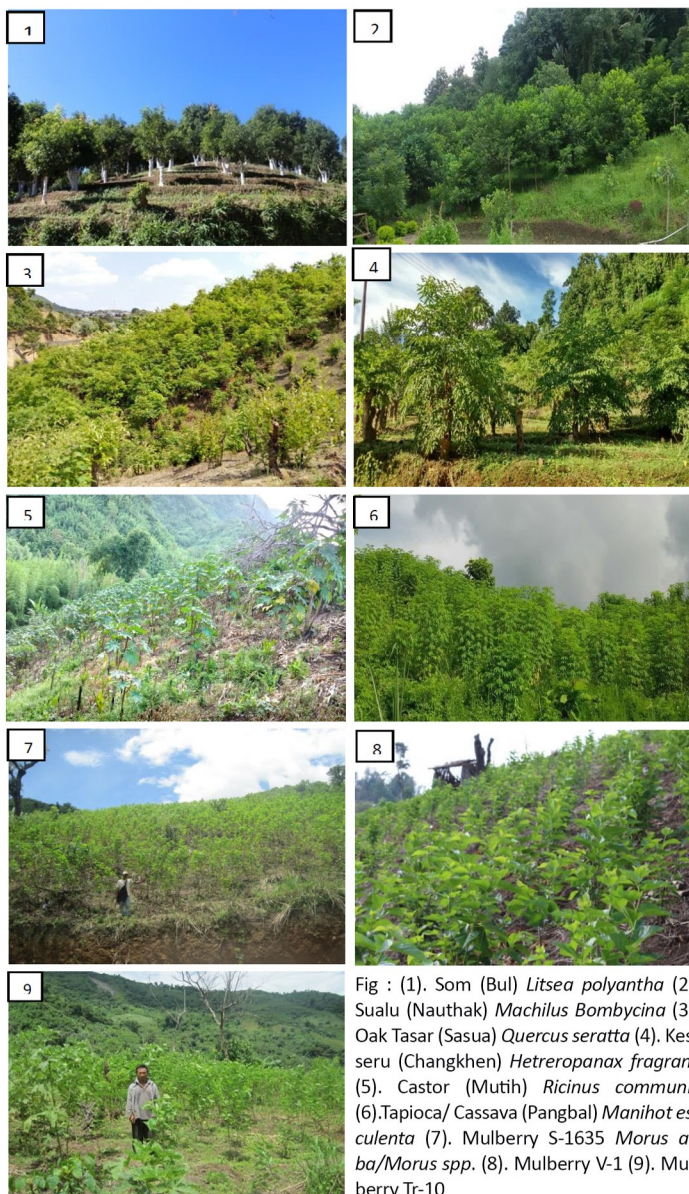


Fig : (1). Som (Bul) *Litsea polyantha* (2). Sualu (Nauthak) *Machilus Bombycina* (3). Oak Tasar (Sasua) *Quercus seratta* (4). Kesseru (Changkhen) *Heteropanax fragrans* (5). Castor (Mutih) *Ricinus communis* (6).Tapioca/ Cassava (Pangbal) *Manihot esculenta* (7). Mulberry S-1635 *Morus alba/Morus spp.* (8). Mulberry V-1 (9). Mulberry Tr-10

Climate Change Mitigation Under Swachh Bharat Mission (Urban)

Ever since the launch of Swachh Bharat Mission (SBM) by the Government of India in 2014, Mizoram has been one of the key players amongst the North Eastern States. The state has been proactive in tackling issues relating to solid waste, its impact on the environment and its linkages with public health.

In line with the vision of SBM (Urban) 2.0 to ensure Clean Air, Clean Water and Clean Land, the **Urban Development and Poverty Alleviation Department (UD&PA)**, Govt. of Mizoram has taken up a wide spectrum of activities, among which **cleanliness drives**, **tree plantation drives** and **awareness campaigns** are the major ones.

Every year since 2017, Cleanliness Competition has been organized to make citizens aware of the objective towards a healthier environment- a Cleaner and Greener Mizoram. With the UD&PA All urban towns of Mizoram have been massive contributors in combating Climate Change. With a set of various indicators including rejuvenation of water bodies, improving urban greenery, improving air quality and initiatives to minimize plastic pollution,

Mass Tree Plantation Drives. Every year since the launch of Swachh Bharat Mission (Urban), mass plantation and nurturing of trees have been carried out in all urban towns of Mizoram, enabling mass citizens participation and also making them aware of their responsibilities in protecting their surrounding environment.

To upscale the impact of this project, urban towns are advised to plant specific type of trees that would help in improving air quality.



As urbanization continues, cities are fast becoming concrete jungles with lesser green spaces. With the rising global temperature, it is crucial to add greenery more than ever to not only improve the air quality but to add to the beautification of our city/ town. Thus, in an effort to promote greenery in the heart of the cities/ towns, initiatives have been taken towards creation of urban forestry through conversion of Garbage Vulnerable Points (GVPs) to green spaces, restoration of parks, roadside tree plantation etc.



Rejuvenation of water bodies

Surface water bodies like lakes, rivers, streams etc. have been regularly cleaned up by the citizens groups, NGOs, community-based organizations etc. Apart from cleaning up, tree plantation drives have been periodically carried out along the river banks for restoration of the water bodies



DID YOU KNOW?

ABOUT 250 MILLION YEARS AGO TOWARDS THE END OF PERMIAN ERA, THE TEMPERATURE OF THE EARTH ROSE BY ABOUT 10°C WHICH RESULT IN THE DEATH OF 90 PERCENT OF THE EARTH'S SPECIES. LESS THAN 5 PERCENT OF THE ANIMAL SPECIES IN THE SEAS SURVIVED. ON LAND LESS THAN A THIRD OF THE LARGE ANIMAL SPECIES MADE IT. NEARLY ALL THE TREES DIED.

Water Conservation Plan with Inventory of Water Bodies and Water Harvesting Structures for Aizawl District, Mizoram

Water resources have been affected by the growth of population, increasing industrial and other developmental activities. The impact of climate change may severely increase pressure on the water sector. Hence, water conservation is and will be a wise practice. The first and foremost step in water conservation of a particular area is inventory and assessment of water bodies along the existing Water Harvesting Structures (WHS).

For Aizawl district of Mizoram, 'Catch the Rain' campaign has been carried on under the guidance of Deputy Commissioner where Public Health Engineering Department has been given the responsibility to identify and make inventory of water bodies and water harvesting structures using GIS technology. A database has also been created using field data and satellite imagery of sufficient resolution.

Various steps involved in the methodology are furnished as a flow chart in the figure below.

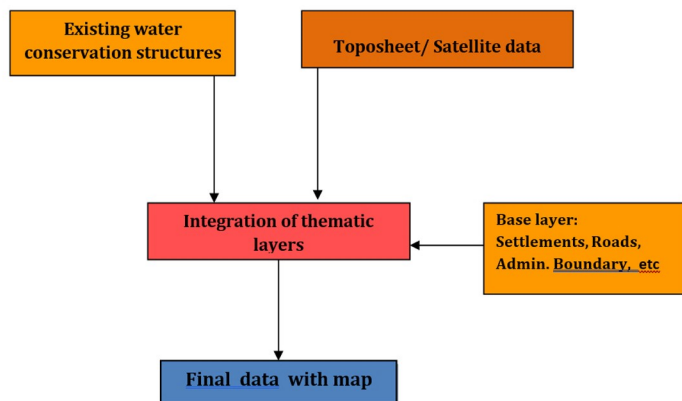


Figure 1: Flow chart of methodology

The methodology can be divided into two main parts. The first part consists of thematic mapping which deals with preparation of individual thematic maps also called layers i.e. surface water like river, stream, lakes, ponds and the existing water conservation structures from various line departments. The second part deals with the integration of various water bodies and water conservation structures with base layer which comprises settlement, roads and administrative boundaries.

The first step in thematic mapping is on-screen interpretation of data in which the input satellite data, topographic maps and georeferenced GIS map, etc in digital format are displayed on to a screen of the computer system and the hydrological information are mapped based on on-screen visual interpretation using image interpretation techniques. The interpreted data are cross-checked and corrected with ground truth information collected during the limited field work, as a mandatory. Resultant

output from this will be in vector format, comprising of point, line and polygon features, which supports complex GIS analysis.

All the relevant elements for understanding the water conditions are systematically studied and considered in an orderly manner for mapping as missing of one element may also lead to erroneous conclusions. Existing water conservation structures and other water resources data which were documented in written form were also plotted in the GIS environment.

After the thematic layers were analysed and finalised, they are integrated with base layers so that they can be utilized and managed according to the administration, the users and the accessibility since base map normally consists of Administrative boundaries, Settlements and Road network.

Planning for water conservation is also incorporated in the report which can be utilised for developmental activities. All the thematic and base layers were stored in a GIS compatible file format for future references and updating.

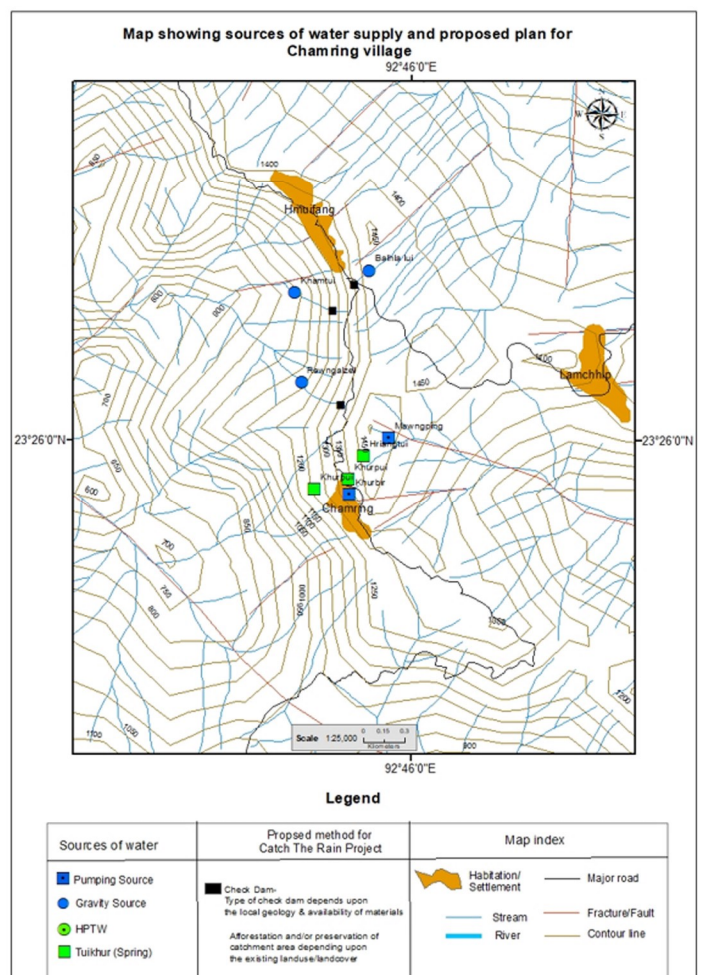


Figure 2: One of the outputs of the project work