

Annual Report

2020 - 2021



Manipur Science & Technology Council

Science & Technology Complex, Takyelpat, Imphal-795001

Website: <https://mastec.nic.in> email: mastec@nic.in

Annual Report 2020 - 2021



MANIPUR SCIENCE & TECHNOLOGY COUNCIL

(An autonomous body of the Dept. of Science & Technology, Govt. of Manipur)

Science & Technology Complex, Takyelpat, Imphal - 795001

Phone:0385-2443451; TeleFax: 2460037; e-mail: mastec@nic.in

Annual Report 2020-2021
MANIPUR SCIENCE & TECHNOLOGY COUNCIL

CONTENTS	Page
1.0 BACKGROUND:	1
1.1 OBJECTIVES OF THE COUNCIL	1
1.2 ORGANISATION	2
1.3 EXISTING STAFF.....	3
2.0 SHORT-TERM ACTIVITIES INCLUDING SCIENCE POPULARISATION:	3
2.1 DR. IBEYAIMA INNOVATION AWARD 2020.....	3
2.2 NATIONAL MATHEMATICS DAY 2020.	3
2.3 AWARENESS WORKSHOP ON COVID-19 PANDEMIC	4
2.4 NATIONAL SCIENCE DAY 2021.....	4
2.5 STUDENTS' ESSAY WRITING COMPETITION	5
2.6 DECLAMATION CONTEST.....	5
2.7. RELEASE OF EXPERIMENTAL KIT.....	5
3.0 PROJECTS:	6
3.1 COMMON FACILITY CUM DEMONSTRATION CENTRE FOR FOOD PROCESSING	6
3.2 MAPPING OF S&T NEEDS IN THE STATE.....	8
3.3 CAPACITY BUILDING AWARENESS PROGRAMME AND PRODUCTION/BROADCAST OF RADIO SERIAL ON TRADITIONAL KNOWLEDGE SYSTEM IN THREE LANGUAGES/DIALECTS	10
3.4 ARTIFICIAL INTELLIGENCE: 52 EPISODE RADIO SERIAL.....	11
3.5 PATENT INFORMATION CENTRE (PIC)	11
3.6 CAPACITY BUILDING AND AWARENESS CAMPAIGN ON CLIMATE CHANGE ISSUES IN MANIPUR	14
3.7 MANIPUR SCIENCE AQUARIUM.....	14
3.8 VIGYAN PRASAR EDUSAT NETWORK	15
3.9 DAE TECHNOLOGIES DISPLAY & DISSEMINATION FACILITY	15
3.10 YEAR OF AWARENESS ON SCIENCE & HEALTH (YASH).....	16
3.11 DEVELOPMENT OF INTEGRATED MODEL VILLAGES (3 NOS.) IN MANIPUR.....	17
4.0 MEETINGS ATTENDED	20
5.0 LIBRARY	21

1.0 Background:

The Manipur Science & Technology Council (MASTEC) formerly, State Council of Science, 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 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.

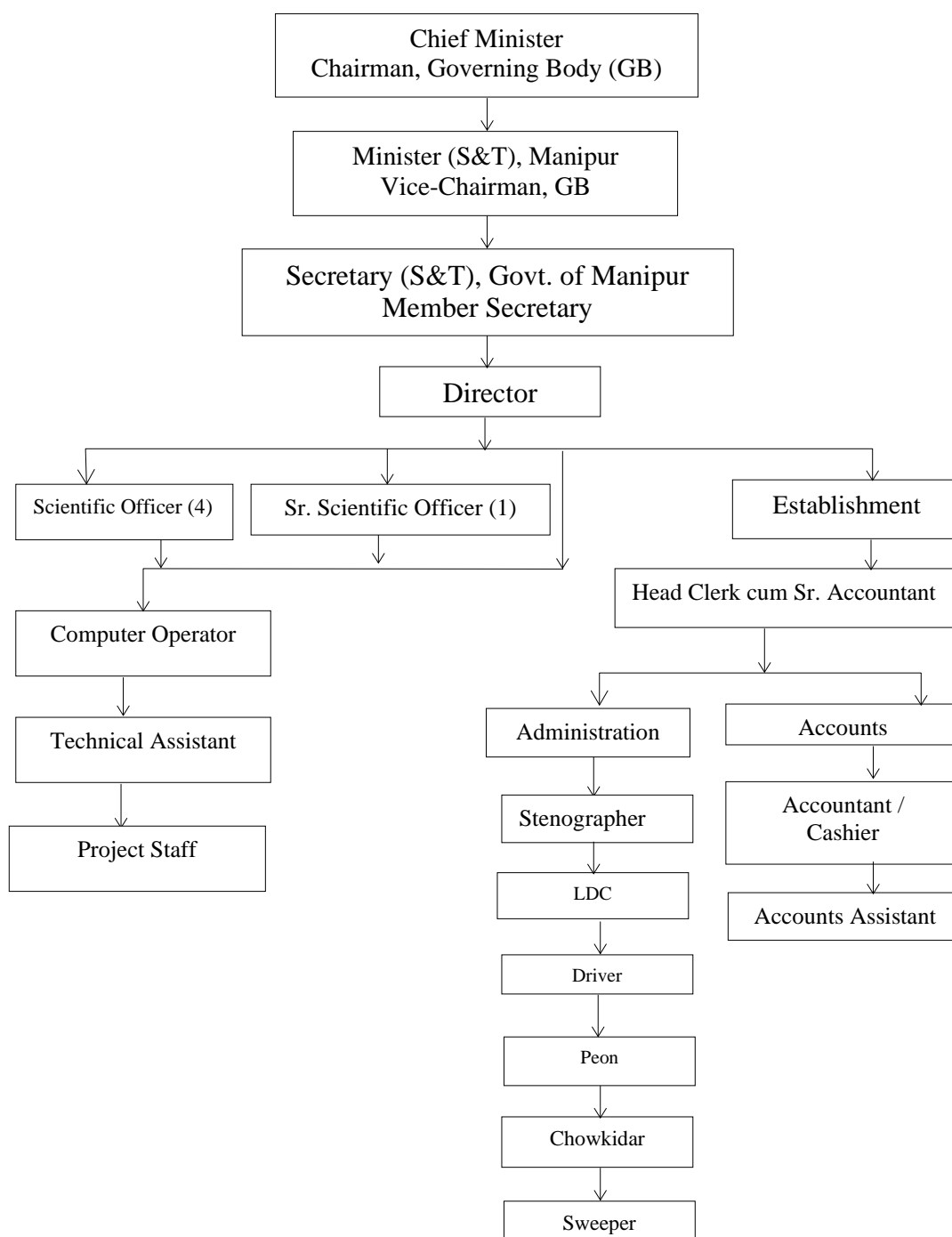
The autonomous Council is served by its own Secretariat of 20 (twenty) manpower supported by the Department of Science and Technology (DST), Government of India. The Council Secretariat operates with the grants received from DST, Government of India, DST, Government of Manipur and the funds received from various agencies through projects and programmes. The 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 S & T bodies having similar or related objectives;
- To identify priority areas of Science & Technology for long term development of the State;
- To promote, support and undertake the application of renewable sources of energy for the benefit of the people;
- To accept donations and receive grants, and subsidies from Government of India, Government of Manipur and other supportive agencies 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 24 employees (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/Commissioner (S&T), Government of Manipur is the Member Secretary of the Council. The Member Secretary is the Chief Executive of the Council Secretariat. The organisation chart is shown below.



1.3 Existing Staff

Altogether 20 manpower (6 Officers including Director, 3 technical staff and 11 ministerial staff) supported by DST, Govt. of India are working in the Council. In addition, four project staff including one Junior Research Fellow (PIC) works in the Council

2.0 Short-term Activities including Science Popularisation:

The Manipur Science and Technology Council (MASTEC) organised various centrally sponsored programmes/workshops/trainings relevant to the state including science popularisation to fulfil the objectives for establishment of the Council. The following were the short-term programmes implemented by the Council during 2020-2021.

2.1 Dr. Ibeyaima Innovation Award 2020

MASTEC established the Dr. Ibeyaima Innovation Award donated by the Manipuri Association of Canada (MAC) based in Whitby, Ontario, Canada in memory of its member (Late) Dr. Hijam Ibeyaima Devi. The award is administered under the direction of a Trust. The event is Biennial. The Award is given to any individual (scientist/technologist/Innovator/entrepreneur) or any organization such as academic institution/R&D organization, NGO (excluding political & religious organizations) domiciled in Manipur for outstanding contributions towards causing and promoting scientific & technological innovations provided the innovation is purely originated from establishments within the state of Manipur.

The selection of Dr. Ibeyaima Innovation Award 2020 was done on 11th December 2020 by a Selection Committee. The display of the innovative products followed by presentation by Innovators was held on 11.12.2020 in the Training Hall of MASTEC at Takyelpat, Imphal West. The Committee, recommended **Shri Y. Brajamani Singh** of Keinou, Bishnupur District for conferring Dr. Ibeyaima Innovation Award 2020 on the product “**Taro Harvester**”. The Award was presented to the Awardee i.e. **Shri Y. Brajamani Singh** on December 22, 2020.



Product: Taro Harvester



Resource Person delivering lecture

2.2 National Mathematics Day 2020.

Manipur Science & Technology Council, Imphal organised “Celebration of National Mathematics Day 2020” on December 22, 2020 at Manipur Science & Technology Council (MASTEC) Complex, Takyelpat, Imphal. The programme was organised strictly following the SOPs for COVID-19 pandemic. Therefore altogether

80 participants consisting of students and teachers from various schools in Manipur attended the programme. The programme was catalysed and supported by National Council for Science & Technology Communication (NCSTC), Department of Science & Technology, Government of India, New Delhi.

The main feature of the programme was invited lectures by Resource Persons. Shri M. Joy Singh, Commissioner (Science & Technology), Govt. of Manipur, Shri E. Ibocha Singh, Director, Dept. of Science & Technology, Govt. of Manipur, Prof. N. Rajmuhon Singh, Chemistry Dept., Manipur University, Imphal and Dr. L. Dinachandra Singh, Director, Manipur Science & Technology Council, Imphal were the Chief Guest, Guests of Honour and President respectively of the Celebration. A lecture on “Life and Works of Srinivasa Ramanujan” was delivered by Prof. N. Rajmuhon Singh, Chemistry Dept., Manipur University, Imphal followed by interaction with the participants. A 4-day continuing programme of Celebration of National Mathematics Day 2020 will be organised when the schools are reopen. The programme will feature various activities such as Mathematics Model Exhibition-cum-competition, Mathematics competition for school students of various classes, Mathematics Quiz, Maths Magic, Origami, Hands on activities, Lecture-cum-Demonstration, Science/Maths Film Shows, Science/Maths Drama etc. when the situation of COVID-19 pandemic is improved and schools in the State of Manipur are fully open.



A section of participants

2.3 Awareness Workshop on COVID-19 Pandemic

MASTEC, in association with Mangolnganbi College, Ningthoukhong organised one Day Awareness Workshop on COVID-19 Pandemic on December 28, 2020 at the Mangolnganbi College, Ningthoukhong, Bishnupur District. Prof. N. Mohilal Meetei, Head of Zoology & Botany Department delivered a lecture on COVID-19, precautionary steps to prevent from COVID-19 such as handwashing techniques, S.O.Ps to be followed etc. and interacted with the participants. The students, faculty of the college, invitees, media representatives etc. attended the programme.

2.4 National Science Day 2021

Manipur Science & Technology Council, Imphal observed National Science Day 2021 on February 28, 2021 at the Training Hall of Manipur Science & Technology Council, Science & Technology Complex, Takyelpat, Imphal. The programme was catalysed and supported by **National Council for Science & Technology Communication (NCSTC), Department of Science & Technology, Government of India, New Delhi.** The theme for National Science Day 2021 was “**Future of STI: Impacts on Education, Skills and Work**”. The programme was organised strictly following SOPs of COVID 19



Resource Person delivering lecture

pandemic. About 100 participants consisting of students and teachers from various schools and colleges in Manipur attended the programme.

The programme was inaugurated by Shri M. Joy Singh, Commissioner (Science & Technology), Govt. of Manipur. Prof. S. Dorendrajit Singh, Dept. of Physics, Manipur University, Canchipur, Imphal and Dr. L. Dinachandra Singh, Director, Manipur Science & Technology Council, Imphal were the Guest of Honour and President respectively of the programme. In his Inaugural speech Shri M. Joy Singh mentioned about why National Science Day is celebrated. He also explained about discovery of Raman Effect and the objectives of organising National Science Day Celebration. He also mentioned about the benefits of organising such programmes and stated that such programme will motivate the young minds to think scientifically and act scientifically with innovative ideas. Prof. S. Dorendrajit Singh, Physics Dept., Manipur University, Imphal delivered a lecture on the focal theme **“Future of STI: Impacts on Education, Skills and Work”**



Participants in the Observation of National Science Day 2021

The Celebration of National Science Day 2021 will continue with a 5-day State Level Mega Science Festival under the banner of “Science Meet 2021” with various activities such as Science Model Exhibition-cum-Competition, Science Short Play Competition, Spot Painting Competition, Computer Painting Competition, Declamation Contest, Science Quiz Competition, Best Guide Teacher Award, Best Appreciation Award, Science Drama, Science Film Show, Science Behind Miracle Show, Book Exhibition, IT Show etc. when the situation of COVID-19 pandemic is improved and schools in the State of Manipur are fully opened.

2.5 Students’ Essay Writing Competition

The **Essay Writing** competitions were organized for two categories **Junior Category (School students reading in Class XI-XII) & Senior Category (College students reading in TDC)** on March 21, 2021 on the theme “COVID-19”.

2.6 Declamation Contest

The Declamation Contest for school students reading in Class IX-XII was held on March 21-22, 2021 at the Training Hall of MASTEC. Altogether 54 (fifty-four) students from different schools registered for the contest out of which 36 students participated in the contest.

2.7. Release of Experimental Kit

An Experimental Kit in the form of a resource material for Learning by Doing developed by N Shyamkishore Singh, Science Teacher at St. George School, Imphal East, Play way Activities compiled by Dr. Ch. India Devi, Lecturer in Chemistry at Johnstone Higher Secondary School, Imphal, Posters, and a Compact Disk containing Power Point Presentations on different issues related to “Climate Change” supported by Vigyan Prasar, DST, GoI, Noida, were released by the Director, MASTEC on March 22, 2021.

3.0 Projects:

MASTEC implements time bound research as well as technology transfer projects and entrepreneurship programmes funded by various organisations. The following projects are being carried out during the year 2019-2020.

- 3.1 Common Facility Cum Demonstration Centre for Food Processing supported by DST, Govt. of India.
- 3.2 Mapping of S&T Needs in the State supported by DST, Govt. of India.
- 3.3 Capacity building awareness programme on climate change issues and production/broadcast of Radio Serial on Traditional Knowledge System in three languages/dialects- A Joint Programme with Vigyan Prasar, DST, GoI.
- 3.4 Artificial Intelligence: 52 – Episode Radio Serial.
- 3.5 Patent Information Centre supported by DST, Govt. of India.
- 3.6 Capacity building awareness programme on climate change issues.
- 3.7 Manipur Science Aquarium supported by DST, Govt. of Manipur.
- 3.8 Vigyan Prasar Edusat Centre.
- 3.9 DAE Technologies Display & Dissemination Facility Centre supported by BARC, Govt. of India.
- 3.10 Year of Awareness on Science & Health (YASH) supported by DST, Govt. of India.
- 3.11 Development of three Integrated Model Villages in Manipur supported by DST, Govt. of India.

Project Progress Report:

3.1 Common Facility cum Demonstration Centre for Food Processing

Manipur is an important grower of pineapple, passion fruit, plum, orange, lemon, kiwi fruit, guava, banana, peach, pear, bamboo shoot and mushroom. Besides, a variety of minor fruits are available in substantial quantity such as amla, wild apple, black berry. The spices like turmeric, ginger and king chilli (u-morok) are also grown in large quantities. The project has been taken up with the following objectives

- Setting up a common facility cum demonstration Centre for food processing
- Setting up of Soymilk and Soy Paneer processing Unit
- Motivate entrepreneur/SHG to create self confidence in them to start and manage the venture
- Providing escort service and guide the entrepreneurs in establishing marketing of their products and possible risk factors in running the business.

Methodology

Phase - I: Setting up of a Common facility cum demonstration



Common facility cum demonstration centre for food processing



Soy Milk Machine

with installation of equipment and machineries.

Phase - II: Identification of trainees, priority will be given to women, ST/SC and ex-trainees of MASTEC who had attended the EDP and organisation of one week refresher training on food processing for preparation of selected items.

Phase - III: The trainees will be trained in handling and operation of the machineries and will guide them to launch manufacturing activities with the facilities available with Common Facility Centre.

Phase – IV: Trained entrepreneurs will be guided in marketing activities and tie up with large scale processor.

Summary of Progress:

A work shed of size 1200 sq. ft. which is to be utilised as Common Facility Centre for food processing has been erected at the complex of Manipur Science and Technology Council, Imphal under the project. Major food processing equipment and machineries have been procured and installed in the Centre. Soya milk and soya paneer processing unit which is one of the major equipment/ machineries of the project has also been installed and operational.

After a series of interactions with consultant food technologist and entrepreneurs who had received EDP training on food processing organised by MASTEC, trial for production of various food items was run with the available facilities in the centre and varieties of products had been produced. Preliminary training in handling and operating the available equipment was organised for entrepreneurs who were groomed by MASTEC and the items such as Soya paneer, Soymilk, Rasgula, Besan, Squash (lemon, orange and pineapple), Jam, Candy (Ginger, Pineapple), Pickle (Fish, Chicken, lemon) were prepared.

Because of pandemic COVID – 19, the activities of the project were put on hold for about 7-8 months since March 2020 and we could not organise full training programmes during that period.

The Common facility centre is fully functional and with the improvement of the COVID–19 situations, the 1st Skill Development Training Programme on processing of different value-added products of fruits & vegetables, spices and soy milk products has been organized at the centre from March 1 to 6, 2021.

The trainees were selected after screening of candidates and out of 59 (fifty-nine) applicants, 36 (Thirty-six) candidates were shortlisted for participation. The training programme covered the following topics with practical classes.

1. Introduction of Programme with reference to the prospect & challenges of Food Processing Industries in the State.
2. Importance of Nutrition of locally available foods during epidemic / pandemic.
3. Licensing & Registration of food business operator/petty food retailer.



Trial production of Soy Milk



Bottling of Soy Milk

During the 6 days course, the following items were prepared -

- Pickles items: Chicken, Fish, King Chilli, Fermented bamboo shoot, mix vegetable pickle, Amla pickle.
- Candy/Jam/ Jelly group Chutney: Ginger candy, pineapple, Kiwi, amla, papaya, tuti-Fruity, orange jam, Oleaster chutney.
- Fruit Juice/beverages - Orange squash
- Other products: Gram flour (Besan), Soy Paneer, Plain cake, Black rice cake



Trial Production of Soy Paneer

The closing/valedictory function was held on 6th March, 2021 at the Training Hall of MASTEC. Shri M. Joy, Commissioner, Science & Technology, Mrs. Hongmila Hongrei, Director, Dept. of Science of Technology, Manipur and Dr. L. Dinachandra Singh, Director, Manipur Science & Technology Council were the Chief Guest, Guest of honour and President



Participants and officials along with dignitaries on dais



Distribution of certificates by chief Guest

respectively. During the closing function feedbacks from the trainees were obtained and most of the trainees opined that the training duration was short. The Chief Guest of the function Shri M. Joy Singh, Commissioner, Science & Technology while giving his address assured that the duration of the next training will be of 10 days duration.

3.2 Mapping of S&T Needs in the State

The project involves identification of areas in different sectors such as agriculture, fishery, industry, education, health care, water & sanitation etc. for intervention of science & technology, which in turn, may lead to sustainable development of the society and create a spatial data base, linking with socio-economic & demographic data in such a system that the data can be stored, retrieved, analysed as and when required for future developmental planning. The mapping exercise would be carried out from state to district level.

Strategies for implementation

The meeting of State Science & Technology Programme (SSTP) held in 2020 in Delhi (Just before first wave of COVID -19 Pandemic started spreading out) arrived at a conclusion that the Sustainable Development Goals (SDGs) will be considered as the common framework for mapping the S&T Needs. DST further asked the State S&T Councils to consider some SDGs from the point of view of S&T interventions. The State Councils of

S&T were free to select the appropriate SDG for Mapping the S&T needs. Geospatial technology may be used to map the S&T needs and compile the information and also make available the data to the line departments/ stakeholders for further planning activities at their end.

Objectives:

- i) Identification/Inventorisation of S&T needs in different sectors (SDG wise)
- ii) Creation of spatial & non spatial database in GIS platform & make the data available to the stakeholders & interested organisations

Work so far done:

1. Literature Survey

The project team has consulted some literatures and also Manipur Vision 2030 volume published by State Govt. to be the back bone of the project.

2. Selection of SDGs

The project team is working on the identified /selected areas such as i) SDG (Zero Hunger), ii) SDG (Good Health & Wellbeing), iii) SDG (Quality education) and iv) SDG (Clean water & Sanitation).

3. Activities during First wave of COVID-19 pandemic

The Corona virus epidemic first broke out in Wuhan city of Hubei Province in China. It spread slowly to other countries and became pandemic. India was facing the difficulties due to COVID-19.

As part of the S&T Mapping project & as advised by DST, GoI, the Council took part in contributing some S&T inputs in the COVID-19 management to stop spread



MASTEC – CSIR, NEIST prepared Alcohol based Herbal Hand Sanitizer



Release of MASTEC - CSIR NEIST, prepared Alcohol based Herbal Hand Sanitizer by Secretary to Hon'ble C.M.

of the pandemic disease in the state. The Council, in association with the North East Institute of Science & Technology (NEIST), CSIR, Imphal Unit developed some Alcohol based Herbal Hand Sanitizer and distributed to members of various communities in the state *including the Hon'ble CM (S&T Minister)'s Secretariat, office of Commissioner (S&T), Govt. of Manipur, Dy. Secretary (S&T), Govt. of Manipur, Staffs at S&T Section Officers Office at Secretariat, Director, DST, Govt. of Manipur & his staff, Manipur Science Centre, Manipur Remote Sensing Application Centre, IT, media workers (print & electronic), Home for blind, some interested individuals etc. In addition, the sanitizers were distributed to all the employees working at the Council and interested individuals. The sanitizers were also kept at the entry point of the council office and the visitors/employees used it before entering the office.*

Altogether, 40litres (40,000 ml.) of MASTEC-CSIR, NEIST prepared hand sanitizers, have been distributed to different sections of the community.

4. *Infrastructure Set up*

A minimum GIS infrastructure has been set up with purchase of one Arc GIS from ESRI (Environmental Systems Research Institute) India Technologies Pvt. Ltd. who are the authorised manufacturer/distributor of ArcGIS suite of Software in India. The system has already been installed and become operational for GIS applications.

5. *Data Collection*

As the COVID-19 first wave pandemic was in a better scenario in the state, the project team has started visiting some govt, organizations for discussion and collection of published data/information including Economics & Statistics Department, Govt. of Manipur, Department of Census, Govt. of India. Data collection was still going on.

However, the present situation of 2nd wave of COVID-19 pandemic due to which lock down followed by curfew imposed by State Govt. to contain COVID-19, has kept the activities for this project now, on hold.

3.3 Capacity building awareness programme and production/broadcast of Radio Serial on Traditional Knowledge System in three languages/dialects

Under the project, the Council started producing and broadcasting Radio Serial through All India Radio, Imphal in Manipuri language, Thadou/Kuki and Tangkhul dialects. The programme was taken up to sensitise people about the traditional knowledge and about the role of the government in taking up administrative reforms/planning in validating the traditional knowledge and because of its vast coverage, radio has been chosen as medium for assimilating traditional knowledge.

Radio Serial on Traditional Knowledge System;

The topics of the Radio Serial had been identified by a team of experts. Of the 29 topics identified, 26 synopses had been developed. From the synopses, scripts were developed in Manipuri language, Thadou/Kuki dialect and Tangkhul dialect.

Broadcast of the 3 radio serials - Manipuri language, Thadou/Kuki dialect and Tangkhul dialect had already been started. The 26 episodes radio serial on Traditional Knowledge System in Manipuri Language titled “Sida Yai Nada Yai” was launched on November 13, 2019. The Manipuri Serial with each episode of 30 minutes was broadcasted on every Wednesday at 7.00 a.m. in both Kangla and Sangai Channel of AIR, Imphal and repeat broadcast on every Sunday at 9.00 p.m. in Kangla Channel. The broadcast of all the 26 episodes serial in Manipuri language was already completed on August 25, 2020.

The 52 episodes Radio Serial on Traditional Knowledge System in Thadou/Kuki dialect titled “Damthei Phatthina” was launched on February 5, 2020 and continued on every Wednesday at 5.00 p.m. in both Kangla and Sangai Channel of AIR, Imphal. The duration of each episode in Thadou/Kuki dialect was 15 minutes. Broadcast of all the 52 episodes was made from AIR, Imphal

The Radio Serial of 52 episodes on Traditional Knowledge System in Thagkhul dialect titled “Achalakha Wui Zatkhana” with each episode of 15 minutes was launched on July 8, 2020 and will continue on every Wednesday between 6.05 p.m. and 6.20 p.m. in both Kangla and Sangai Channel of AIR. Till 31st March 2021, 32 nos. of episodes had been broadcast and the remaining episodes will be continued on the same programme and same chunk.

For wide publicity of the 3 serials, efforts like promos, live microphone publicity, face book page were made. From the completed serial in Manipuri language, surprisingly we have

received tremendous feedback from young and elderly people and much of the feedback were received while doing field-based programmes. More than 200 letters were received from the listeners and on average 8 letters were received per episode. About 200 nos. of Phone calls/SMS/e-mails were also received from the listener.

3.4 Artificial Intelligence: 52 Episode Radio Serial

Under the catalyzation and support of Vigyan Prasar, Noida and in association with All India Radio, Imphal, Manipur Science and Technology Council (MASTEC) has started broadcasting the 52-episode radio science serial on Artificial Intelligence (AI). MASTEC being the co-ordination agency has to supply scripts to AIR and submit report to Vigyan Prasar. The Science serial on AI in Manipuri language was launched on February 28, 2021 in both Kangla and Sangai Channel of All India Radio, Imphal and will continue on every Sunday at 7.00 a.m. in both the channels. For wide publicity of the serial, promos were made to attract listeners. Till 31st March 2021, 5 episodes had been broadcast on radio and each episode had also been uploaded in the youtube channel to cover maximum listeners. So far, 28 scripts had been developed in Manipuri language.



Meeting with AIR, Imphal officials for launching of the serial



Recording of the curtain raiser episode at AIR studio

After each episode, one question related to the particular episode was put to the listeners and the answers were received through a designated e-mail ID and of the correct answers received, two winners were selected by drawing lottery. By clubbing 3 episodes, prizes consisting of Vigyan Prasar publications (Books, CD, Kits etc.) will be distributed to the winners of each episode. Prizes to the winners of the first 3 episodes were distributed.

3.5 Patent Information Centre (PIC)

The Patent Information Centre has been working to fulfil the following objectives:

1. Introduce patent information as a vital input in the process of promotion of R&D programmes.
2. Provide patenting facilities to scientists and technologists in the country for Indian and foreign patents on a sustained basis.
3. Keep a watch on developments in the area of IPR and make important issues known to policy makers, scientists, industry etc.
4. Create awareness and understanding relating to patents and the challenges and opportunities in this area including arranging of workshops, seminars, conferences etc.

Achievements:

Patents Filed:

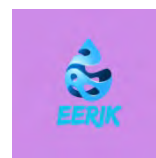
- i) Complete specification of Potential mono herbal formulations in Treatment of broader aspects of metabolic Syndrome features which can also be used for topical healing in parallel. Patent Application No.: 201931028255

Searches and also submitted to TIFAC:

- i) Novel user-friendly design and hydrolysis process of volatiles

Trade Mark Registration Applied:

- EERIK



- EMALEIBAK



Trade Mark Searches:

- EERIK
- EMALEIBAK
- MACHII

Published in Trade Mark Journal:

1. LOKTAK VIEW RESORT: Trade Marks Journal No: **1950**, 01/06/2020
2. POON: Trade Marks Journal No: **1950**, 01/06/2020
3. EMALEIBAK: Trade Marks Journal No: **1977**, 07/12/2020
4. EERIK: Trade Marks Journal No: **1989**, 01/03/2021

Trade Mark Registered:

1. LOKTAK VIEW RESORT: Trade Mark No. 4391110, 27/10/2020
2. POON: Trade Mark No. 4391109, 27/10/2020
3. NONGIN: Trade Mark No. 4392746, 08/09/2020
4. LEEKLAM: Trade Mark No. 4338498, 23/08/2020

Workshop/Seminar:

One day workshop on Intellectual Property Right (IPR)

One day workshop was organised on 23rd March 2021 by Patent Information Centre (PIC), Manipur Science & Technology Council, Imphal in association with IPR Cell-NEILIT, Imphal. The objective of the workshop was to create awareness about IPRs among the students and faculties of the institute. Dr. R.K. Pritamjit Singh, In-charge PIC-Manipur and Scientific Officer, MASTEC highlighted different forms of IPR and importance during the workshop. About 100 participants including teachers and students of the institute attended the workshop.



Workshop on Intellectual Property Right in progress

IPRs disseminated through webinar/Lectures by PIC-Manipur:

Sl.No.	Name of Awareness Programme	Date	Venue/Organiser	Name of PIC Official
1	Intellectual Property Rights (IPR) Cluster Development Program (CDP) Scheme of Fund for Regeneration of Traditional Industries (SFURTI)	11/11/20	Webinar organized by MSME- DI, Imphal	Dr. R.K. Pritamjit Singh
2	Intellectual Property Rights (IPR) Cluster Development Program (CDP)	21/11/20	Webinar organized by MSME- DI, DIMAPUR	Dr. R.K. Pritamjit Singh
3	6 week entrepreneurship cum skill development programme on food processing	08/03/21	MSME-DI, Imphal organized by MSME-DI, Imphal	Dr. R.K. Pritamjit Singh
4	6 week entrepreneurship cum skill development programme on food processing for unemployed ST youths at Chandel	24-03-21	Salemphai, Sugnu organized by MSME-DI, Imphal	L. Surjit Singh
5	Agri-Clinics & Agri-Business Training	25/03/21	Green Biotech Eco-Solutions Pvt. Limited, Lamsang	Dr. R.K. Pritamjit Singh

3.6 Capacity Building and Awareness Campaign on Climate Change Issues in Manipur

Capacity Building and Awareness Workshop on Climate Change is one of four components of a multifaceted programme “Radio Programme on Traditional Knowledge System, Brain Storming and Capacity Building on Climate Change Issues in Manipur and Nature Camps” implemented by Manipur Science & Technology Council, Science & Technology Complex, Takyelpat, Imphal. The programme is supported of Vigyan Prasar, Department of Science and Technology, Government of India, Noida. This programme is to be conducted in the hill districts of the state. The main objectives of the programme are;

1. To bring awareness amongst farmers, women, panchayat members, officials and students about climate change related issues;
2. Capacity building and training on environment, dynamics of nature including climate change to various stake;
3. To teach how to reduce and to adapt to the changing climatic conditions;
4. Preparation of resource material on climate change and related issues;
5. Involving students and teachers in hands-on-activities on understanding dynamics of nature and climate change.

The programme “One Day Capacity Building and Awareness Campaign on Climate Change Issues in Manipur” was formally launched at Khoupum, Noney District on March 26, 2021 at Khoupum Higher Secondary, Khoupum. The programme was jointly organised by Manipur Science & Technology Council (MASTEC), Takyelpat, Imphal and Namkaolong Farmer’s Development Society, Khoupum, Noney District. Thirty participants comprising of farmers, women, panchayat members, govt. officials and students. Dr. L. Sanjoy Meitei, Lecturer, D.M. College of Science, Imphal delivered a lecture on Climate Change Issues in Manipur and Shri N. Shyamkishore Singh of Science Teachers Forum Manipur made a demonstration of the KIT “Learning by Doing” which contained a set of 14 hands on activities based on Climate Change and Global Warming. A set of 6 posters, a CD containing Power Point Presentations on various issues of Climate Change & Global Warming and an activity booklet were also distributed to the participants for further dissemination of the programme to their respective places. Dr. L. Dinachandra Singh, Director, MASTEC and President, Namkaolong Farmer’s Development Society, Khoupum were the presidium members of the campaign.



Lecture being delivered during Awareness campaign on climate change



Demonstration on climate change during awareness campaign

3.7 Manipur Science Aquarium

Manipur Science Aquarium established by Manipur Science and Technology Council (MASTEC), Imphal has been functioning in the premises of D.M. College Campus, Imphal

since 31st March 2011. Presently, the Centre is run with the support of Department of Science & Technology, Govt. of Manipur. The centre is open on all working days for the general public. Apart from the normal visitors, students and faculty members of various institutions in the state visited the centre for their academic purposes. The Fishery Officer of the centre demonstrates and explains to the visitors about the scientific aspects- such as physio-chemical parameters, classification, food and feeding, breeding habits, diseases, behaviour etc. of different fish species (exotic and indigenous) available in the centre.



Manipur Science Aquarium

3.8 Vigyan Prasar EduSat Network

Vigyan Prasar (VP), an autonomous organisation of Government of India, New Delhi in association with Development and Educational Communication Unit (DECU) of Indian Space Research Organisation (ISRO) established Satellite Interactive Terminals (SITs) in the country. SIT is a two-way audio-video interactive network for science & technology communication using EduSat – the satellite for Education, Science & Technology launched by ISRO in 2004. MASTEC was recognised as one of the SITs and network facilities were installed at MASTEC Complex, Takyelpat for the first time of such network in the state. The mode of the interaction is:

- Experience sharing – amongst the SITs in the Country
- Training – using distance education mode
- Access to quality – interaction with the experts/scientists at one end and teachers, students etc. on the other end 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 included

- Science clubs, teachers
- School students & children
- Young adults (College students and higher/technical/university students)
- General public for awareness programmes

The centre has been conducting quiz, trainings, summer science festivals, lectures etc. regularly on various topics from time to time round the year and benefitted students, teachers, science activists etc. of the state. The distance learning training programme on Remote Sensing, GIS and GPS under the Indian Institute of Remote Sensing (IIRS), Dept. of Space, Dehradun was also conducted regularly.

3.9 DAE Technologies Display & Dissemination Facility

(DTDDF) Centre supported by BARC, Govt. of India

MASTEC set up the DTDDF Centre Imphal under the guidance of BARC, Mumbai by providing necessary infrastructures such as land, building, manpower etc. BARC supported the project. MASTEC procured and installed six DAE technologies including Tissue Culture Lab. under the guidance and supervision of BARC.

Some DAE Technologies have been transferred to one of the local organisations, Green Foundation Kwakeithel, Imphal. The agreement for transferred of the DAE technologies to Green Foundation was signed. Further, MASTEC has developed a 40m x 20m land in its

complex itself for plantation of banana. About 300 (three hundred) banana plants have been transplanted in the land. Some of the banana plants were brought from the tissue culture Lab. of BARC and some were the Nurseries prepared in the Tissue Culture Lab. of the DTDDF Centre, Imphal. For giving sufficient water to the banana plants during dry season, drip irrigation system has also been installed in the banana farm.

3.10 Year of Awareness on Science & Health (YASH)

As part of activities on Year of Awareness on Science & Health (YASH) focusing COVID-19 catalysed & supported by NCSTC, DST, Govt. of India, Manipur Science & Technology Council (MASTEC) organised Essay Writing Competition & Declamation Contest for students of Manipur on the Theme “COVID -19”.

Essay Writing competition:

The Essay Writing competitions were organized for two categories Junior Category (School students reading in Class XI-XII) & Senior Category (College students reading in TDC) on March 21, 2021 (Sunday) at the Hall of Model Higher Secondary School, Takyel, Imphal. Altogether forty-two students from different schools registered for the competition for Junior category out of which thirty-three students sit in the competition on the topic “Impact of COVID-19 on Education”.



Essay Writing for Senior Category in progress



Invigilator on duty is monitoring the Essay Writing



Essay Writing for junior Category in progress

Miss Maghna Chanam of Jawahar Navodaya Vidyalaya, Khumbong Imphal West got the first prize (cash award with a certificate). Lensanglen Lupheng of C. C. Higher Secondary School and H. Leona Devi of Model Higher Secondary School won the second and third prizes respectively.

For the senior category, students wrote the Essay on the topic “Role of Civil Society Organisations for public awareness of COVID-19”. Miss Sara Siamthianhoih of D.M. College of Science, Imphal won the first position. Jesyca Adhikarimayum of St. Edmund’s college, Shillong and Ratna Naorem of G.P. Women’s College, Imphal won the second and third positions respectively.

Declamation Contest

The Declamation Contest for school students reading in Class IX-XII was held on March 21-22, 2021 at the same venue. Altogether 54 (fifty-four) students from different schools



Declamation contest of students reading in class IX – XII (boys & girls) from different schools in progress

registered for the contest out of which 36 students participated in the contest. Prof. O. Joychandra Singh of Jawaharlal Nehru Institute of Medical Sciences (JNIMS), Imphal, Shri L. Somarjit Singh, Former Head, Life Sciences (Botany), Imphal College and Shri O. Anand Singh, Former Senior Lecturer in English, T.G. Higher School, Imphal took the contest as the Judges.

Naorem Benson of Mother's Pride Academy, Kwasiphai, Bishnupur won the first position. Daisy Longjam of T.G. Higher Secondary School, Imphal and Laishram Surajsagar of Mother's Pride Academy, Kwasiphai received the second and third positions respectively. The cash prize and certificates were distributed to the winners of the competitions on 22nd March 2021 at the Training Hall of MASTEC at 4.30 p.m.



Competitors of Declamation contest

An Experimental Kit in the form of a resource material for Learning by Doing developed by N Shyamkishore Singh, Science Teacher at St. George School, Imphal Play way Activities compiled by Dr. Ch. Indira Devi, Lecturer in Chemistry at Johnstone Higher Secondary School, Imphal, Posters, and a Compact Disk containing Power Point Presentations on different issues for a campaign- "Capacity Building and Awareness Workshop on Climate Change" supported by Vigyan Prasar, DST, GoI, Noida, were also released by Dr. L. Dinachandra Singh, Director, MASTEC during the prize distribution function of Students' Essay Writing Declamation contest.

3.11 Development of Integrated Model Villages (3 Nos.) in Manipur

Introduction:

Himalayan Environmental Studies and Conservation Organisation (HESCO), Dehradun has developed some rural technologies suitable for rural/remote hill areas. HESCO has already developed some villages in Uttarakhand as Integrated Model Villages with various technologies developed by HESCO as well as other institutions/organisation in the country. Under DST, Govt. of India sponsored project, 3 (three) villages in the hills at high altitude,

mid-altitude and low altitude in the State of Manipur were to be developed as Integrated Model Villages as was done in Uttarakhand.

Objectives:

- i) Development of Model Villages in different Agro-climatic zones and social setup
- ii) Integration of technologies available with different institutes in the development of models.
- iii) Partner with civil societies as facilitator to connect knowledge with the local community.

Methodology:

The project villages were to be developed as Integrated Model Villages with the intervention of rural technologies of Himalayan Environment Studies and Conservation Organisation (HESCO), Dehradun and other Institutions in the Country.

List of Technologies for intervention:

Sl. No.	Resource/Technologies	Source of Technology
1.	Agriculture (Crops & vegetables)	CAU/ICAR (Imphal), VPKAS (Almora)
2.	Water Conservation and Application (water harvesting, micro irrigation/drip irrigation)	HESCO (Dehradun), VPKAS
3.	Energy (solar and bio-gas/fuel efficient chullah)	HESCO
4.	Bio Farming (piggery, poultry, vermi-composting, beekeeping)	CAU/ICAR (Imphal), VPKAS
5.	Fisheries (integrated fish farming using polytanks, ornamental fish farming)	College of Fisheries (Assam Agricultural University), Directorate of Cold Fisheries (Bhimtal)
6.	Mushroom Cultivation (spawn preparation, cultivation, harvesting techniques, product development)	Bodoland University (Kokrajhar, Assam), VPKAS

Project Sites:

Out of the 3 (three) villages to be developed as Integrated Model Villages two project villages have been identified and some works have already been started. The two identified villages are: i) Longa Koireng, Kangpokpi District and ii) Jangmol village (Koubru Laikha), Kangpokpi District The third site/village is yet to be finalised.

Progress/Achievements:

Inspite of continuous lock down and curfew for many days/months and partial opening of offices in the State of Manipur to fight against Covid 19 pandemic the following progress have been made for the project.

- i) Agreements have been signed between Manipur Science & Technology Council (MASTEC), Imphal and village Authorities of the two identified villages for development of Integrated Model Villages in their villages.
- ii) Baseline survey for the two villages have been conducted/completed.
- iii) Construction of Mushroom Hut at Longa Koireng and Jangmol (Koubru Laikha) villages have been completed.
- iv) Construction of Poly Houses at Longa Koireng and Jangmol (Koubru Laikha) villages are under progress.
- v) A 1-day online Training on Integrated Fish Farming has been organised by HESCO, Dehradun in collaboration with Kaathkuni Edu Tourism, Bhimtal, Uttarakhand on June 29, 2020. Altogether 10 beneficiaries from 2 project villages participated in the said training.
- vi) A 3-day online training on Fruit Processing has been organised by HESCO, Dehradun in collaboration with Kaathkuni Edu Tourism, Bhimtal, Uttarakhand during November 24-26, 2020.



Mushroom Hut at Longa Koireng



Mushroom Hut at Jangmol



Common Facility Centre at Longa Koireng



Common Facility Centre at Jangmol

- vii) A 1-day online training on Biomass Geyser has been organised on July 29, 2020.
- viii) A 1-day online training on Briquetting machine has been organised on August 24, 2020.
- ix) A 1-day online training on Fuel Efficient Daksh Chulha has been organised on October 17, 2020.
- x) Construction of Common Facility Centres at 2 project villages/sites, i.e. Longa Koireng and Jangmol have been completed

4.0 Meetings attended

Sl. No.	Name of Officers with designation	Online Meeting/Brain Storming/ Webinar	Date
1.	Dr. L. Dinachandra Singh, Director & Dr. Kh. Rakesh, Scientific Officer	Meeting with DBT and State S&T Councils of NER states for taking up some activities in the NER	June 12, 2020
2	Dr. L. Dinachandra Singh, Director & Dr. Kh. Rakesh Scientific Officer	DBT-IBSD with State S&T Councils meeting/brain storming	June 16-18, 2020
3	Dr. L. Dinachandra Singh, Director & Dr. Kh. Rakesh Scientific Officer	2 nd Review Meeting of DBT Scientific and Technical Appraisal and Advisory Group Meeting	August 5, 2020
4.	Dr. Kh. Rakesh Scientific Officer	Review meeting of the radio serial on Climate Change and Global Warming and new radio serial on Artificial Intelligence	August 31, 2020
5.	Dr. L. Dinachandra Singh, Director & Dr. Kh. Rakesh Scientific Officer	Meeting with TERI on Green Skill Development	November 26, 2020
6.	Dr. L. Dinachandra Singh, Director & Dr. Kh. Rakesh Scientific Officer	5 th Expert Committee meeting of DBT Skill Vigyan	November 27, 2020
7	Dr. R.K. Pritamjit Singh Scientific Officer	Geographical Indications: Socio-Economic Development Tools & Preservation of Cultural Rights organised by Rajasthan Science & Technology	June 16,2020
8	Dr. R.K. Pritamjit Singh Scientific Officer	E-symposium on Handloom sector in the emergent North-East India: Strategies and development imperatives organised by IIM-Shillong	July 20, 2020
9	Dr. R.K. Pritamjit Singh Scientific Officer	Webinar on New Espacenet Software: International patent information resources to monitor competitors and create landscape reports organised by European Patent Office & EBTC	July 22, 2020
10	Dr. R.K. Pritamjit Singh Scientific Officer	Webinar on EPO: Initiatives and Tools organised by EPO and European Business & Technology	July30,2020
11	Dr. R.K. Pritamjit Singh Scientific Officer	Webinar on Living with Corona organised by V P New Delhi	July 31, 2020

12	Dr. R.K. Pritamjit Singh Scientific Officer	Webinar on Patent search for Researcher and Scientist organised by IPR Cell - Kerala	August 6, 2020
13	Dr. R.K. Pritamjit Singh Scientific Officer	Webinar on WIPO Match: Leveraging Intellectual Property for Development organised by NRDC, WIPO	August 11, 2020
14	Dr. R.K. Pritamjit Singh Scientific Officer	Virtual round table conference on GI - Protection & Promotion in India organised by NLSUI, Bangalore	August 20, 2020
15	Dr. R.K. Pritamjit Singh Scientific Officer	Webinar on How to leverage brand protection for business growth organised by Europ-India IP Forum	August 21, 2020
16	Dr. R.K. Pritamjit Singh Scientific Officer	Webinar on Patent drafting organised by KLIPFC	October 16, 2020
17	Dr. R.K. Pritamjit Singh Scientific Officer	Webinar on Significance of Trade Mark in startup and business enterprises organised by IPRIC-Kerala	October 21, 2020
18	Dr. R.K. Pritamjit Singh Scientific Officer	Webinar on IP intelligence on Trademark organised by MSME-DI Chennai & MABIF IPFC	January 21-22, 2021
19	Dr. R.K. Pritamjit Singh Scientific Officer	Webinar on Marketing & digital sales of GIs in post COVID world organised by Geographical Indication Festival of India (GIFI)	February 6, 2021

5.0 Library

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