ACHIEVEMENT OF STATE COUNCIL OF SCIENCE TECHNOLOGY & ENVIRONMENT (SCSTE)

MEGHALAYA

(2017-2018)

I. POPULARISATION OF SCIENCE PROGRAMME, various activities were successfully implemented during the 2017-18 these are:

i. Season Watch Programme: The State Council of Science, Technology & Environment, Meghalaya participated in the Nation-wide project initiated by National Centre for Biological Science(NCBS) and WIPRO to systematically monitor the behaviour of plants(flowering, fruiting and leafing) in different season. Schools, eco- clubs and individuals across the State were engaged in watching the flowering plants in their vicinity and feed the information online in the Season Watch Portal. SCSTE has been able to developed a specific website- Season Watch-Meghalaya Chapter in which trees growing in Meghalaya are listed. This Website was launched by Dr. Mukul Sangma, Hon'ble Chief Minister, Meghalaya during the World Environment Day, 2017

ii. **A Winter Camp** : for School Eco Clubs was also organised during 15-19 January, 2018 at Shillong and 22-26 January,2017 at Bolmoram, East Garo Hills under the Season Watch Programme where the low Cost Hydroponics techniques were taught by to the members of the School Eco-clubs. The programme was very meaningful and appreciated by the participants. Through these techniques the School Eco clubs can raise Nutritive kitchen Garden, Nursery in a limited space also.

iii. Fun- Sci Programme: The State Council of Science, Technology & Environment & Meghalaya in collaboration with TREE Foundation, in the 1st Phase, organised Fun-Sci camps in 12 schools located at 12 C&RD Blocks which falls in the 7 Districts of the State. Fun-Sci is an activity based learning aimed at generating interest in science education, encouraging creativity and awareness.11

trained unemployed science graduates were trained as facilitators by Resource persons Gajanan Vaidya and Rajiv Natoo from and volunteers from Pune, Mrunal Sawant, Shidhi Shedge and Yogesh Patil.

iv. National Children's Science Congress 2017 –

This is an ongoing programme. NCSC is a Nation wide programme which provide a platform for children between the age group of 10-17years to express their innovativeness and creativity to solve societal issues at local level. It is conducted in 5 stages. The NCSC was organised across the State and 8 projects were selected for the National Level, which was held at Science City, Ahmedabad, Gujarat during the 27th-31st December, 2017.

v. **Weekly Science Serial in Local Languages:** The Science Duco-Drama of 30 minutes in Khasi Language are being aired through AIR, Shillong every Saturday at 9.10AM-9.40AM; Garo Language are being aired through AIR, Shillong every Wednesday for 15 minutes from 5.40PM-5.55PM and relay from AIR,Tura at 6.30PM and Jaintia Language on every Wednesday at 5.40PM-5.55PM. The theme for the Science Serial in Khasi is "Sustainable Development" and for Garo and Jaintia, the theme is "Traditional Knowledge System for sustainable Development. The Serial are listened by many dedicated listeners in the Medium Waves. The programme is being organised in collaboration with Vigyan Prasar, New Delhi.

vi. SCI-CONNECT PROGRAMME- Connecting Science with Young Talent: This programme is a programme initiated and sponsored by Vigyan Prasar. The State Council of Science Technology & Environment, Meghalaya took the initiative to implement it in the whole State. 336 students registered out of 14 schools from Tura West Garo Hills and Mahendraganj, South West Garo Hills Nongstoin, West Khasi Hills, Mawkyrwat, South West Khasi Hills and Shillong, East Khasi Hills.

JNV, Mahendraganj, South West Garo Hills represented the State in the Regional level Competition held at Guwahati, Assam.

vii. Award for Meritorious Students: During the programme, Awards were given to the Meritorious Students who scored highest marks in Science and Technology in the MBOSE, 2017 Examination.11 Students were awarded.

II. SCIENTIFIC RESEARCH AND DEVELOPMENT OF APPROPRIATE TECHNOLOGY - is one of the major thrust programmes of the council where thrust areas are those relating to housing, sanitation, energy, water, post-harvesting, waste re-cycling, value addition, etc, aim to uplift socio-economic development in the society. Since the ninth plan period emphasis had been shifted to the programme on the **Introduction of the Appropriate Technology** keeping in view that Science and Technology can play a role in uplifting the living condition of the society, especially the rural communities.

Technology on wheels-go green:

2(two) numbers of 4 wheelers vehicles were procure for the mass outreach of appropriate technologies, especially to far flung areas of the State, technology intervention had been already taken-up in a convergence mode with MBDA, SIRD, VECs, etc. On the following aspects in villages within the 39 C&RD Blocks of the State relevant to basic amenities and needs of villagers

i. Scouting of Technology required of the villagers.
ii. Scouting of Skills and interests of the villagers.
iii. Identification of basic technologies like sanitation, housing, safe drinking water, energy, value addition, etc.
iv. Skill training programmes

Fig.1 (Wheel-Go Green)

Fig.2. (Villagers partake on Go Green Technology)

III. REMOTE SENSING :

Setting up of GIS Training Centre at the Office of the State Council of Science Technology & Environment.

1. Project Proposal under Remote Sensing Application Programme (RSAP) for setting up of GIS Training Centre in the office of SCSTE has been prepared and sanctioned for Rs.20.00 lakh for the financial year 2016-17.

   The main objectives of the Proposal are highlighted below:-

   i. To conduct Short term training course for the student especially for the underprivileged and dropouts and to build up the capacity of the school and college teachers in the field of Remote Sensing and GIS.
   ii. To act as a Facilitating Centre for the colleges to do their academic practical in Remote Sensing & GIS and minimal fees will be charge from them in order to sustain and maintain the asset
   iii. To build up the capacity of the Village Employment Committee for integrated village development plan under GIS platform.

   An Advisory cum Working Committee for implementation of the Project has been formed and the 1st Meeting of the Advisory cum Working Committee was held on the 26th March, 2018 at 11:30 A.M at the Officer Chamber of the Officer on Special Duty (OSD), State Council of Science Technology & Environment (SCSTE) Meghalaya.

   Photo: GIS Room

2. **10 (Ten) Days Training On Detail Market Mapping For Waste Management at Mawkyrwat Market. (27th June to 1st July, 2017)**

   A 10 days Training Programme on Detail Market Mapping for Waste Management was conducted at Mawkyrwat during the month of June- July, 2017. The training was conduct in collaboration with the Basin Develop Unit (BDU) South West Khasi Hills and the Mawkyrwat Market Committtee. After the Programme a Draft Map of the Mawkyrwat Market was produced.

   Mawkyrwat Market (Iew) formerly known as Iew Mawthengbah came into existence long before the massive earthquake 1897. The story behind the name of the market "Iew Mawkyrwat" all began when a leader from the "Lyngdoh Ryngait" clan popularly known as "Kyrwat Lyndoh Ryngait", headed his clan to lift a huge rock approximately 50 feet tall from the west of Mawten Village to be positioned at Mawkyrwat Village.It is because of Kyrwat's initiative in relation with the "shifting" that the village folks thus named the village/market Mawkyrwat, "Maw" meaning Stone and "Kyrwat "named after the legendary leader itself "Kyrwat"

The Mawkyrwat market is governed by a group of 5 clans commonly known as “San Kur”. San Kur comprises of the “Lyndoh Ryngait” Clan, “Shangdiar Bah” Clan, “Shangdiar Nah” Clan, the “Shylla” Clan and the “Wanniang” Clan.

Photo : Mawkyrwat Market

Market Timing: the market is opened from 6:00 AM till 9:00PM but sometime it is extended up to 10:00PM.

All the traders come from nearby villages and the last destination is to the local consumers as well as to Shillong if the product is from Mawkyrwat and nearby villages. On the first day, the sighting of the market was done. The structure, its location and the characteristics of the market were identified and scrutinized. Two personnel from the Basin Development Unit (BDU) were assigned to help the SCSTE team during their stay at Mawkyrwat.

Many findings and problems were identified and had surfaced in relation to waste disposal in the market. The amount of waste produced by each shop was analysed and taken into account. There are over 600 shops in the market and an average of 1kg of waste per shop was produced, the waste production is almost double than a normal day.

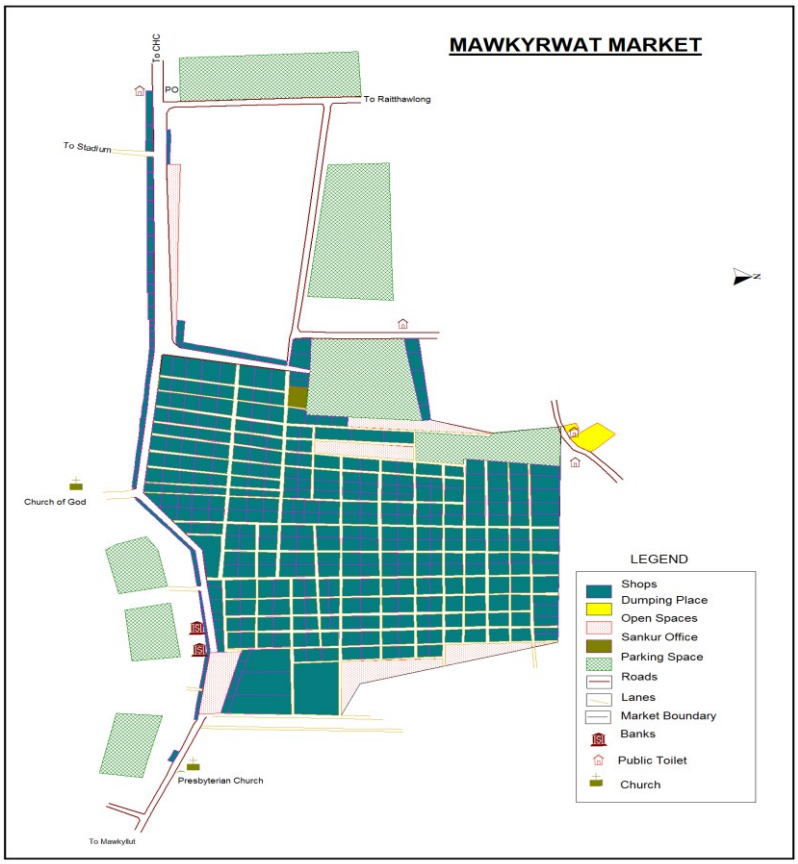
A Garbage Collector appointed by the Sankur generally collects the garbage from each shop everyday for a weekly rate of ₹20 - ₹50 per shop. Despite the regular collection of garbage, the waste management of the area is very low which seems to be posing a threat not only to the environment but also to the health of the settlers in the area.

Photo: Survey done with the shopkeepers and street vendors

The team visited Hilan, a place where the new proposed dumping site is located which is about 7km from the market area. All the market wastes were disposed in the area.

Photo: Hilan: the Proposed Dumping Site

The team along with the manager of the Sankur together had a discussion and field survey of the market in order to get the information on the present scenario of the market and to get detailed information of the market. The manager also handed over the old map of the Mawkyrwat market which was made during the time of its inception. The team of SCSTE prepared the draft market map based on the field survey and information gathered from the Sankur.



Map: Mawkyrwat Market

IV. SPECIFIC PROJECT :

(i) ACTION RESEARCH ON BEE BOX MAKING USING STABILISED MUD BLOCK

SCSTE has taken up action-research work in the above in Mooshrot villages, Laskein Block, West Jaintia Hills Dist where bee keeping is an important to occupation by most farmers in the villages also provide that the village produces a good quality of honey.

Capacity building programme on SMB construction was conducted for members of VECs and village community, and farmers SMB were constructed in large numbers, and initiatives are being taken to construct bee hives. SMB bee hives has also been constructed by one villager and has found by using SMB bees tend to remain inside for a longer period, since SMB retains the heat, in this way more honey can be produced.

(ii) WATER TREATMENT OF ARECANUT FERMENTATION POND :

Soaked Arecanuts are seen in Khasi hills and Jaintia hills, wherein 20% to 50% of the fresh Areca nuts are soaked in pits/fermentation tanks and are fermented for 3-5 months, graded and sold in the market. Excess water over flow is considered good for keeping the fruit fresh. However, the excess water overflow from this fermented pond is polluted and not fit for domestic use and it is very stinky and the polluted water is discriminately dispose into the stream causing the water to be polluted and unfit for any domestic purposes.

An Action research on treatment of water using Bio Engineering Technology is constructed near the fermentation Pond. The Treatment plant consists of :-

- a sewage collection tank where all the waste water from the fermentation pond is collected

- a settler or screen chamber where the contaminants are filtered through a process called bio filtration. Bio-filters can be constructed using various materials such as compost, straw, wood chips, peat, soil, and other inexpensive biologically active materials
- The phytorid bed can be constructed in series and parallel modules / cells depending on the land availability and quantity of wastewater to be treated.
- The phytorid technology treatment is a subsurface flow type in which wastewater is applied to cell / system filled with porous media such as crushed bricks, gravel and stones. The hydraulics is maintained in such a manner that wastewater does not rise to the surface retaining a free board at the top of the filled media
- The system consists of the following three zones: (i) inlet zone comprising of crushed bricks and different sizes of stones, (ii) treatment zone consisting of the same media as in inlet zone with plant species, and (iii) outlet zone
- The treated water is then released to the stream

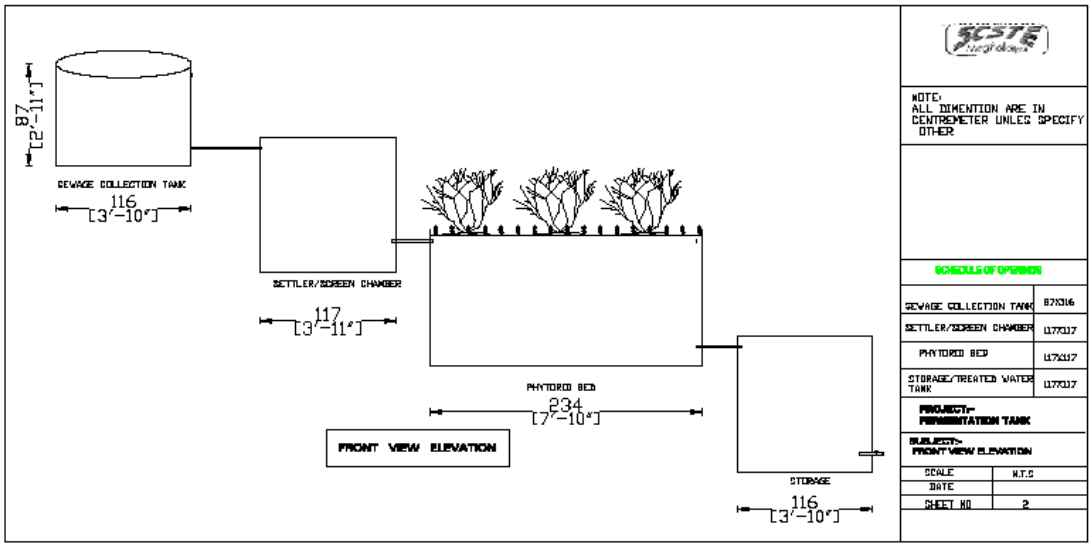


Figure showing the water treatment plant constructed at Arecanut Fermentation Pond, Pongtung Village.

(iii) <u>Mapping of Historical Monuments of Jaintia hills: The need for their preservation and promotion of eco-tourism in the region</u>

Project Proposal under Specific Project Programme (SPP)) for "Mapping of Historical Monuments of Jaintia Hills: The need for their preservation and promotion of eco-tourism in the region has been prepared and sanctioned for Rs.2.5 lakh for the financial year 2016-17.

The State Council of Science Technology & Environment (SCSTE) Meghalaya in collaboration with the Department of History, Thomas Jones Synod College, Jowai Jaintia has done the 1st Project Report on Mapping of Historical Monuments of Jaintia hills: The need for their Preservation and Promotion of Eco-Tourism in the Region. The aims and objectives of the study is to examine the development of historical monuments and to propose methods regarding their preservation so as to promote tourism within the region as well as enrich the knowledge and understanding of tribal arts and architecture.

As the sources of Art History are quite limited with reference to Jaintia Hills, the used of textual sources will only be reviewed for crystallizing the relevant source materials. Therefore, field collection is very important. After completion of the field visits/surveys we could trace the Royal Highway of the Jaintiapur king from Muktapur up to Nartiang Village and identify some of the ruin and unpreserved historical monuments as follows.

1.Royal Highways from Muktapur to

2.The Kali Temple (near Muktapur)

3. The Rupasor Bathing

4.Mahadei bathing pond

5. The Rupasor Megalithic Bridge

6.Image of an Elephant carved on stone

7. Ganesh Rock Carving (Dur U

8. Ancient Mahadev Temple

9. Krem Suret

10.Umiaknieh Stone Bridge

11. Thlumuvi Stone Bridge

12. Deiňchdooh (Staff) U Bailon Khyriem

13.Durga Temple at Nartiang

V. LIBRARY & DOCUMENTATION :

Under the S&T Library & Documentation Programme, a number of activities have been incorporated besides collection the volumes of books, journals and magazines, leaflets, brochures and information folders highlighting the activities of the Council had been published , technology brochures, an appropriate technologies and also brochures on Science Popularisation Programmes also had been brought out, as part of the knowledge management Programme, SCSTE also compiles and documents, the daily activities particularly those relating on the implementation of schemes and programmes. The Council had also brought out the Annual Activities Report of the past financial year.

The Council has produced a 10 Year Calendar from 2017 -2026 which is partly funded by NESAC and the Council is also developing interactive IEC materials on various Livelihood Themes and Environment. The Council is also building up the capacity of the interns to documents the activities of the Council as well as indigenous traditional knowledge.

6. S & T ENTREPRENUERSHIP DVELOPMENT PROGRAMME :

Objective: To expose the unemployed youths (Particularly those with S&T background to innovate technologies viable for income generation and to motivate these youths to go for self employment activities with the help of science and technology).

Under the above Programme, the Council has identified technology sectors like Energy, Water, Green building, Hydroponics, Value addition of farm produce or Post harvesting, etc.

i. Energy-Micro Hydro Power(MHP): Workshops and capacity building programmes have been conducted especially for unemployed engineers of the State, a consultant on MHP was appointed for this purpose, i.e, for site feasibilities for power generation, potential site for MHP were identified and works are on progress to study the power generated by free falling waters, the sites are:

(i) Photkynthei river, Nongstoin,West Khasi Hills

(ii) Umphung river, Patharkhmath,Ri-Bhoi District

(iii) Ganpati, Patharkhmah, Ri-Bhoi District

A training programme was also conducted on the local fabrication of turbines for use in MHP generation.

(Survey on MHP Installation)

ii. Solar or Green Energy: Capacity building programme were identified and conducted on 'Solar Energy' for student of ITI,Shillong on how to assemble, install and repair of solar devices. An awareness on 'safe disposal of batteries' was also conducted in Nongstoin,West Khasi Hills, Jowai Jaintia Hills and in Shillong. A consultant on Solar Energy was also identified by the council for coordinating the Programme.

(Training on Solar or Green Energy)

iii. Hydroponics Technology : Initiatives had also been taken implement for ornamental plants and vegetable for food security and training schedules and modules have been developed to train entrepreneurs and farmers in the technology.

Installed Hydroponics Technology

VII. CONVERGENCE PROGRAMME :

(i) World Environment Day Celebration, 5th June, 2017 at Sangmein football ground, Upper Shillong in which 54 schools Eco clubs, 24 Village Employment Council and 23 Individuals Environment Champions from across the State were documented and participated in the World

Environment Day Exhibition highlighting the activities of their respective groups and best School Eco Clubs were awarded. Mass tree plantation by the school children and public in the catchment area of U Lum Shillong were organised. The Season Watch Website-Meghalaya Chapter was also launched by Dr. Mukul Sangma, Hon'ble Chief Minister, Meghalaya.

8. ACTION RESEARCH PROGRAMME :

Under the above Programme, action-research activities or different S&T sectors will be taken up at par with issues/problem and technology gaps identified. The above programme is being funded by MBDA. The following are the Action- research programme:

(i) Integrated farming at BRDC Experimental Farm:

The activities involved are diverse in nature on the following:

(i) Demonstration plot: For conservation of indigenous medicinal and aromatic plants.

(ii) Production Vegetable: Vegetable such as code crops, winter crops green leaf vegetable

(iii) Intercropping of different companion crops.

(iv) Production of Verni, NADEP and non-soil composts

(v) Rearing of local fish breeds

(vi) Alder-based Agro forestry system s

(vii) Cultivation different indigenous and exotic ornamental plants.

(viii) Propagation of Temperate trees, fruits, ornamental and economically important.

(ix) Cattle rearing local breed for milk productions

(ii) Demonstration of Green Building using locally available raw materials for the seed bank, Cham Cham, E.J Hills

Activities to be taken up are to use locally available materials found I and around the backyard like bamboo, sand, stone, wood, etc by scientific input method. The project also aims to build up the skills of local workers and youths in the construction process.

The building to be constructed is for the seed bank meant for putting up sale or destitution to farmers; the cost of the green building constructed could be recovered form the sale proceeds of the seeds on a sustainable basis.

(iii) Bokoashi Piggery at 3 Agro-Climatic Zones in Meghalaya

Bokashi piggery is a Japanese and Korean pigs rearing and conservation technical. The technical keeps the pig pens, ensuring hygienic practices, better health and faster growth of pigs. The technical will be applies for the traditional pig rearing system of the rural poor farmers of the state. The process has also an advantage where it provides organic compost as a by- product for use as a manure by farmers.

The project aims to evaluate the effectiveness of the technology and to create awareness among the community focusing on shill enhancement of potential farmers.

(iv). Low-cost Hatchery at 3 Agro-Climatic Zones in Meghalaya.

Low-Cost hatchery includes minimal expenditure and can be done by any lay man. The process involves using of Kerosene lantern for hatching eggs into chickens instead of eclectic incubators.

The project aims to enhance reproductive efficiency to produce eggs in large numbers and to develop the skills of poultry farmers to promote entrepreneurial activities for rural livelihood.

(v). Production and Usage of Bamboo Vinegar And Bamboo Charcoal.

Bamboo vinegar or oil is a natural liquid that is collected during the carbonization process of bamboo charcoal.

Bamboo vinegar is good for improving skin and hair condition, removing bacterial and germs, stopping removing order, repelling insects, improving soil properties and plant growth.

The project will have a good impact for application in the state, since plenty of bamboo forest are available in the state, it will also help entrepreneurs and available in the State, it will also help entrepreneurs and farmers to increase their earning being a natural product, it will have more marketing preferences than a chemical product.

(vi). Bamboo Plastic Board from Waste Plastic and Bamboo Strips:

The Project is to re-cycle the waste and discarded plastic combined with bamboo strips /chips, using the property of adhesiveness from the plastic only which melts at around 70° temperatures. The products are the “Bamboo- Plastic- Board” which can be used for making of furniture and other bamboo materials.

The person identified will be trained in making bamboo plastic boards, it will also add as an employment avenue right from collecting of waste plastic and therrmocol, cleaning, melting, arranging and polishing the prepared bamboo plastic board into final usable form.

The project will create a clean environment free from plastic and also add a value to it.

(vii). Making Boards from Waste Pine Needles:

The Project is to utilize the fallen dried pine needles for making boards. The use of this resource serves two advantages, one is to avoid forest fire and save biodiversity and environment. Second is to supply boards and plants which a scarcity in market now due to ban on tree felling.

The board pine needles embedded with adhesive and compressing under very high pressure and temperature. The technology will be modified according to the need for making board mainly from pine needles. However other materials like bamboo dust, etc. either mixed with pine needles or above will also be used for making boards, these boards will be used as Wooden planks for making packing boxes and other light furniture items.

(viii) . Micro Hydro Power Project at Nongstoin:

Micro-Hydro Power (MHP) being generated out of water will bring electricity especially to remote communities in and around the state. It will reduce pollution and the danger of using kerosene for lighting purposes.

Catchment area for MHP is the Photkynthei river located at Nongstoin, West Khasi Hills, the power generation expected is 1.5- 3KW for lighting the slaughter house located nearby.

Work done in progress:

- Site selected
- Designed of dam, turbine, motor etc.
- Turbine fabrication
- Capacity building of unemployed engineers

(ix) Solar Power Drying Yard:

The aim of the project is to design and develop appropriate solar drying yard and to train farmers in the construction technique.

The technique is to dry the seeds using solar power devices, due to erratic weather changes, leads to decrease in shelf life of the seeds and hence affects production, sun drying entails a lot of waste and leads to decrease and low quality production.

(x) Solar-Biomass Hybrid Dryer for Fruits and Vegetables:

Small- scale drying based on electricity, cord. LPG and other fossil fuel is normally expensive. However to overcome these problems, biomass combined with solar power is potentially an important option for small scale industries. The system is designed in such a way that drying process during sunny weather can be operated by using solar energy and use of biomass during raining or cloudy weather.

The main advantage of using the gasifier stove is that the dryer can be operated continuously for several hour with a steady heat input, with minimum attention. The dryer was constructed with brick and mortar and is more efficient than a connectional solar cabinet made of steel or aluminum.

Considering the low-hand holding of marginalized rural farmers, the dryer is ideal for them as they can dry small quantities of agricultural products that are harvested by the farmers.

(xi) Local Fabrication of Hydraulic Ram Pump (HRP):

HRP technology works in the process of lifting water from a certain height by hydropower. However it has been observed there is and S&T gap in the procurement and repair where technical help from outside is required.

Work had already been in progress where site feasibility at Umsaitsning village, Ribhoi district was conducted and found ideal for HRP application.

Local fabrication for the Ram pump machine and also assembled as an HRP system and trial conducted.

(xii) Action Research on Dew-Fog Technology :

An Action Research on Dew-Fog Technology started in the month of November, 2017. A Resource Person Mr. S. Shashank from Institute of Livelihood and Research Training, Bhopal along with Staffs from SCSTE surveyed the area in East Khasi Hills and West Khasi Hills to find the potential sites that can be used to harness the dew and fog that can be used as a supplementary source of water especially in areas where there is scarcity of water.

A brief description about dew and fog is mentioned below:

Dew is atmospheric water vapor which condenses on a surface (wind shields, blades of grass) which has been cooled below the *Dew point temperature* of the surrounding air by losing heat to the sky via radiation. Moisture from dew is an important means of survival for plants, arthropods and other organisms in water scarce semi-arid and arid environments. Fog is a complex atmospheric phenomenon. It is a visible mass consisting of cloud water droplets or ice crystals suspended in the air at or near the Earth's surface. Fog can be considered a type of low-lying cloud and is heavily influenced by nearby bodies of water, topography, and wind conditions.

Implementation:

An Action Research on fog technology has been initiated and the potential sites have been identified. They are

- Sohra, Ram Krishna Mission School
- Phlangwanbroi, Mawsynram
- Mylliem

(xiii) <u>ESTABLISHMENT OF LIVELIHOOD INCUBATION KENDRAS(LINKS) :</u>

Objectives:

- To identify potential partners for value chain to conduct counseling, training, incubating them or identified technologies liable for socio-economic benefits

- To conducted action-research based on potential value chain and issues.

SCSTE along with its partner organization, MBDA had come up with the ideas of setting of Links in all the 45 C&RD blocks of the state in order to benefits villagers within each blocks. Appropriate technology infrastructure processing on livelihood and life improvement will be created, these are:

- Sustainable green building- Stabilised Mud Block & Bamboo technologies on any other alternative locally available.
- Energy efficient device- solar devices, improved chulha bio gas, etc zero energy cool chambers/ storage.
- Health and sanitation- Even clear latrine, twin-pit.
- Water conservation- rain water harvesting, Jaalkend, pedal pump, and water filtration technologies.
- Waste management- composting (organic) & waste re-cycling
- Education and communication- Child grooming and e-learning and C.B. Radio.

- Value addition of potential crops and vegetable.

The project will be implemented along with MBDA,MIE,C&RD,MSRLS and other allied organization in the state, where as technical support will be coordinated with CSIR labor atones, S&T councils NIF, Technical NGOs & financial Institutions.

Initially, these centers will be managed and run by recourse persons engaged who will be trained on the job basis after which the management of the Kendras will be handed over to partnering VECs and entrepreneurs developed over the 5 years period. These partners will register themselves as a cooperative society and run the larder on a business model and pay the resource person accordingly from the project accrued and re-flow the amount invested on the infrastructure to a corpus fund for this purpose.

9. NEW INITIATIVES :

(i) Setting –up of Pattern Information Centre :

Description

It is worth mentioning here that in the last scouting of Innovators initiated under the MBDA – SCSTE collaboration wherein at least 44 innovators were identified across the State and for which 2 have been selected by NIF as innovation and the process of patenting etc is in progress. At present the State do not have any IPR Information Centre or PIC and it is the mandate of all State Council of Science, Technology & Environment to establish such a Centre. All states have established IPR Information Centre however Meghalaya has not been able to establish such a Centre in the State till date due to fund constrain and lack of manpower. The setting-up of the IPR Information Centre is now being pursued by SCSTE on a "war footing" with DST, GOI and it is expected to get some financial assistance in this regard in a year or so.

Objective :

- To create awareness about IPR's especially patents in the State of Meghalaya.
- Enable patent and trademark searches for the Universities, Industry, Government Departments and R&D institutions in the State.

(ii) Setting-up of a Living Root Bridge Museum & School :

MBDA and SCSTE, Meghalaya have been undertaking exercises for the last many months to identify recipients for the award money of Rs.5,00,000/- awarded by NIF for the innovative community driven initiatives i.e living root bridge but have not arrived at a consensus for its proper utilization till date. We have organised/ participated in many Durbars (community dialogue) for the same. But it appears that the process may take some more time.

Meanwhile, based on the community dialogue a concept of 'Living root museum and school' was conceived wherein it was envisaged that a museum depicting the various stages of

growth of living root bridges, the science behind identifying roots, soil texture, constituents, etc will be explained to the visitors. The school will teach the younger generation of Khasi, Jaintia and Garo people how to make these bridges and continue the tradition. The activities related to the museum and school will be undertaken in partnership with the communities so that they are empowered ultimately.

The Proposed Business Plan is as follows :

(i) Rs.25, 00,000/- kept as fixed deposit will be earning an interest @ 6-8 % per annum.

(ii) The interest works out to Rs.1,50,000/- to Rs.2,00,000/- per annum or Rs.12,500 to Rs.16,000/- per month.

(iii) Stipend to school children/dropout Rs.1050/- per month (@ Rs.35/day x 30 days) 4 nos.

(iv) Development of living root bridges museum – IEC materials, assets, creation, honorarium of Resource Person, etc. Rs.5,000/- to Rs.6,000/- per month.

(v) Travel of these youths, Resource Person to other villages/sites/schools, and popularizing of this concept for enhancing their skills, etc. Rs.5, 000/- to Rs.6,000/- per month.

(vi) Contingency : Balance amount.

(iii) Setting-up of Community Radio :

Radio is an important tool for the rapid diffusion of important messages on new agricultural production ideas and techniques as well as on health, nutrition, family planning and other social and cultural issues. It can promote dialogue and debate on the major issues of rural development as well as providing a platform for the expression of rural women's needs, opinions and aspirations. Radio enables women to voice their concerns and speak about their aspirations with external partners such as national policy-makers and development planners. Finally, radio is a tool that can be used to develop community cohesion and solidarity. Community involvement is fundamental for the successful use of radio with rural populations. Radio programmes are most effective when produced with audience participation, in local languages and with consideration for cultural traditions. Successful features include live public shows, quizzes and village debates. Low-cost audio and visual media, such as video, slide sets, filmstrips, audiocassettes and flipcharts, are valuable tools to motivate and assist in training groups. These technologies have been improving and developing over the years, and equipment is now cheaper, lighter, battery-operated and portable, thus making it suitable for use in rural areas. Audiovisual media can be used with women effectively at convenient times and places: women farmers do not have the time or money to travel to training centres and, for cultural reasons, often cannot attend training sessions.

OBJECTIVES

- To serve as a recognizable community.
- To encourage participatory democracy.
- To offer the opportunity to any member of the community to initiate communication and participate in program making, management and ownership of the station.
- To use technology appropriate to the economic capability of the people, not that which leads to dependence on external sources.
- To motivate by community well being, not commercial considerations.
- To promote and improve problem solving.
- Creation of a platform for the community to share their grievances/issues with stakeholders and vice versa.
- To create awareness on issues addressed by SCSTE/MBDA on various scripts.

Operation of Community Radio

The broadcasters and the management council determine the broadcast hours for a community radio on the basis of the following:

- As per Community Need Assessment (Here community will decide their timing, hours, days, type of program topic etc. – specifically women section will decide-on what issues, they want to listen program i.e. women health, information on govt. schemes for women etc. Young-adolescent, farmers and other different groups will suggest their choice and all need information.
- Generally, in the initial stage of broadcast, we can start it with 4 hours of broadcast (2 hours fresh program and 2 hours repeat broadcast).
- Every station should have a one fixed point chart with specific broadcast time and program name and type-if there is an electricity issue, then we have to think for power backup for un-interrupted broadcast.
- Needs of the audience
- A pre-assigned and dedicated workforce

(iv) MY SPACE- Setting-up of Incubation Centre:

Objectives: To enhance the entrepreneurship skills of youth in the state with special focus on local resource.

SCSTE, Meghalaya has come up with the innovative idea to create entrepreneurs owing to the fact the rise in unemployment especially educated youths with S&T background. These entrepreneurs would evolve from such youths trained and incubated in different technology sectors and science programmes of the Council.

The above centre is being housed in office of SCSTE the aim of the Centre is to train, incubate, guide the youths so that they come up as successful entrepreneurs. The sectors identified are those viable for self-employment, these are green building technologies, Green energy devices, water and sanitation, value addition and Post harvesting etc.

Under the above Programme, the Council had received 87nos of aspirants who registered through the Council's website, are now being screened for mentoring. There are 4 nos. of staff identified to work in this Centre and trained in Green technologies, Micro-Hydro power and Energy saving devices.

Under MY- HEALTH, 3 nos. of youths are being identified for incubating and mentoring in traditional indigenous food for healthy living, and identification of traditional plants for nutritional values. There are also other aspirants that will be screened and monitored in the following fields:

(i) Identification and mobilizing traditional healers to share knowledge in collaboration with BRDC, Shillong.

(ii) Scouting of innovators and innovative technologies to be piloted with NIF-India.

(v) Setting-up of Women Technology Park at Bolmoram :

The Women's Technology Park is spread over 7 hectares of land given to SCSTE, Meghalaya by the Headman of Bolmoram, East Garo Hills District. Typical visitors to the park will include students, farmers, government officials, development practitioners, researchers, ad entrepreneurs. However, everybody is welcome to visit. The visitors will learn about new technologies and practices for suitainable land use and natural resources management.

The Park operates on the concept that 'seeing is believing'. Accordingly it has been designed as an open space for green housing technologies, water management and sanitation, etc.

The technologies, approaches, and practices showcased in the park can be described as climate friendly, "green" or low carbon. Technology Park will promote their use through demonstration, hands-on training, and information sharing so that mountain people residing in NE region can used them to move towards a greener economy.

Action Research activities will taken up on mapping and remote sensing, metreological & climate change, indigenous plants and animals, season watch, etc.

The park will also house an Information Centre where visitors can learn about the different technologies to be demonstrated through publications and videos. It will also host a Green Shop where visitors can buy Agarbati sticks, bamboo furnitures, handmade paper etc., besides organic vegetables, fruits, fish and other products depending on the seasons.