

# INTRODUCTION OF APPROPRIATE TECHNOLOGY PROGRAMME

## Technology Initiation Programme (TIP)

### A. Objectives\_:

1. To put an effort to initiate the application of appropriate technologies for socio-economic development of the State, particularly for uplifting the living condition of the people in the society.
2. To provide an opportunity to the grass-root people to be exposed to various societal technologies which could be applied in different aspects of their day-to-day life for all round improvement of the quality of life.
3. To enable the people in the society to handle themselves various appropriate technologies which could benefit them.
4. To expose the unemployed youths to various scopes for employment generation through Science & Technology.

### B. Description :

Technology Initiation Programme (TIP) comprises of Technology Awareness Camps (TAC's), Technology Demonstration Camps (TDC's) and Technology Training Camps (TTC's). TAC is a one-day programme, basically, to generate a general awareness on Science & Technology and its scope of intervention in the society through various types of appropriate technologies. TDC is a two-day programme, basically, to demonstrate to the grass root people the various appropriate technologies for societal development. TTC is a four-day programme, basically, to train the people on how to install, use and maintain various appropriate technologies which could be useful for them in their day-to-day life. All these Camps will be mostly organised at local-level.

It has been proposed that in the current year 74 Nos. of TAC's, 54 Nos of TDC's and 44 Nos. of TTC's will be implemented. It is also to be noted that the concentration during the current financial year will be on smaller programmes spreading intensively in a larger number.

The programme will be implemented in consultation with S&T -oriented NGO's in the State and implementation will be done with the help of the S&T- based NGO's in the State.

## Technology Demonstration Programme (TDP)

### A. Objectives :

- (i) To demonstrate effectively the usefulness of appropriate technologies which have successfully been experimented in the State.
- (ii) To demonstrate the effectiveness of appropriate technologies for socio-economic development of the people, particularly for the upliftment of their living conditions.
- (iii) To popularise throughout the State the technologies successfully tried-out in the past.

### B. Description :

The present proposal is aimed at demonstrating technologies like Low Cost Community Water Filtration, Rain Water Harvesting, Charcoal Briquetting, Low Cost Community Sanitation (Ever-Clean Sanitation), Stabilised Mud-block Technology (Interlocking) and Pedal Pump. Units of these technologies will be installed in different places in consultation with S&T-Oriented NGO's/SHG's in the State in order to demonstrate their usefulness.

## Technology Experimentation Programme (TEP)

### A. Objectives:

- (i) To experiment the feasibility of the application of selected innovative technologies for socio-economic development of people of the State.
- (ii) To undertake necessary modifications of the selected technologies, which have been proved successful elsewhere to suit the local conditions.
- (iii) To popularise the usefulness of the selected technologies amongst the people of the State.

### B. Description:

The proposed technologies to be experimented during the year are describe hereunder

(i) Interlocking Stabilised Mud-Block Technology (Using diesel-operated machine): In the recent past, a number of new and innovative building construction technologies have been experimented successfully in the State. Stabilised Mud Block Technology (Using manually operated and electrically operated machines) and Cement-Brick Technology are the two new technologies experimented which have become very popular in the State.

Stabilised Mud Block Technology has become very much acceptable by the people in the rural areas and in the last two years the need for this technology has greatly been felt.

Cement-Brick Technology experimented and popularised in the State has very much been appreciated by those who have seen the technology, particularly builders and masons. Already, one manufacturing unit has come-up in the State and another unit is going to come-up very soon. These two units are the outcome of the initiative taken by SCSTE, Meghalaya to promote this technology through local entrepreneurs.

Recently, Interlocking Stabilised Mud-Blocks produced from the electrically operated machine have been tested and the result of which was found to be encouraging. The Science hall, Jowai and a Guest House in the Shillong Science Centre have been very recently constructed using this technology. However, the present technique i.e., electrically operated process has its own limitations. It cannot be taken up in places where no high power three phase

line is available. Hence, the application of this technology in remote rural areas is practically not possible.

Based on the above fact, it is now proposed to procure an Interlocking Stabilized Mud-Block making machine which is diesel-operated. The proposed equipment would be procured from the same source, i.e., Hydraform, from where the previous electrically operated machine was purchased.

It is to be noted that Hydraform Blocks are manufactured by high pressure hydraulic compaction of the mixed material in Hydraform Block Making Machine. The proposed machine can produce 200-240 blocks per hour (one hydraform block is equivalent in size to 3 - 3.25 times the conventional fired brick).

Hydraform building system replaces the conventional brick and mortar system using interlocking Hydraform Blocks. The other components of the conventional building system remain largely unchanged. Hydraform system is a dry stacked-interlocking masonry system that enables speedier construction of high quality, aesthetic and affordable building. The Blocks have an extremely appealing face-brick finish and provide a pre-pointed straight masonry. The walls may be left exposed, plastered or finished with cement paint. Hydraform Building System has been used in India in A.P, Delhi, Himachal Pradesh, Kerala, Orissa, Rajasthan, Gujarat, Maharashtra and etc.

Hydraform Building Technology is also being propagated by Building Material and Technology Promoting Council, GOI, New Delhi, and the Hydraform Blocks have also been tested and certified by National Council for Cement and Building Materials, GOI, New Delhi.

The special benefit of Hydraform Building System are:

- i. Cost effective,
- ii. Quality Product
- iii. Simplicity of use
- iv. Speed of construction
- v. Environment friendly
- vi. No-need of plastering
- vii. Minimum mortar required
- viii. Lighter than conventional masonry
- ix. Can be easily reinforced in earthquake-affected areas
- x. Not requirement of burning of blocks
- xi. Independence to make at site of construction

(ii) Ultra or Nano-Membrane Water Filtration Technology: The National Chemical Laboratory (NCL), Pune under CSIR, Govt. of India, has recently developed a technology for purifying water for drinking purposes utilizing ultra or nano membrane filtration technique. The said technology takes care of the basic pollutants in drinking water like iron, bacteria and other harmful contaminants. Various filtration units based on this particular technology have been proposed for experimentation in the state during the current financial year. Such units are of 100 LPH, 200 LPH and 600 LPH capacities.

It is to be noted that, Meghalaya has abundant water resources in the form of rainfall, rivers and springs. However, in spite of such availability of abundant water, the citizens are suffering from the scarcity of safe drinking water. The available water is polluted with micro-biological contamination, presence of iron and other harmful chemicals etc.

The State S & T Council, in the past, has experimented and implemented technologies like Terrafil Water Filtration and Membrane Iron Removal Technology. These technologies have proved successful for different users and applications but have some limitations. Hence, there is a need to explore the possibility of taking-up of some other forms of water filtration technology. For

this reason, the present scheme have been proposed.

## **Technology Popularisation Programme (TPP)**

### **A. Objectives:**

- (1) To popularise appropriate technology amongst the general masses.
- (2) To initiate the application of appropriate technologies for all-round development of the people in the society.
- (3) To provide an exposure to the general public on the various possibilities of intervention of science & technology for all-round development of the people in the society.

### **B. Description :**

The proposed scheme is comprised of two components i.e., (a) Technology Exhibition, and (b) Technology Exposure Trip.

In the proposed Technology Exhibition of three days duration, leading research agencies (especially CSIR laboratories) and few leading S&T based NGO's will be invited to participate and exhibit their latest technologies for the benefit of the people of Meghalaya.

In the Proposed Exposure Trip, a group of community leaders, representatives of NGO's & SHG's, etc., will be form to participate in the programme and proceed to the identified places alongwith the representatives of the State S & T Council. During the proposed trip, they will be able to witness the various forms of application of appropriate technology in the different parts of the Country.