

ANNUAL REPORT- 2019-2020 (April 2019-March 2020)
ARUNACHAL PRADESH STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY, GOVT. OF ARUNACHAL PRADESH

A. About the council:

The Arunachal Pradesh State Council for Science and Technology (APSCS&T) established in 1992 is an autonomous organization under the state government's Department of Education and registered under the Societies Registration Act, 1860 (Extension to Arunachal Pradesh, 1978) and later brought under the Department of Science and Technology, Government of Arunachal Pradesh in 1998. Set up under the scheme "Assistance for Development of State Council for Science & Technology" initiated by the Department of Science and Technology, Govt of India, the APSCS&T Arunachal Pradesh executes the promotion of the application of science and technology to address local issues pertaining to the State of Arunachal Pradesh. It is also the nodal agency for the implementation of the programmes of the Government of India's Department of Science & Technology. Its administration and management are conducted by its Executive Committee comprising of a Chairperson, Secretary, and Commissioners to the state government. Its daily affairs and administration are looked after by the Chief Executive, i.e., the Director /Member Secretary.

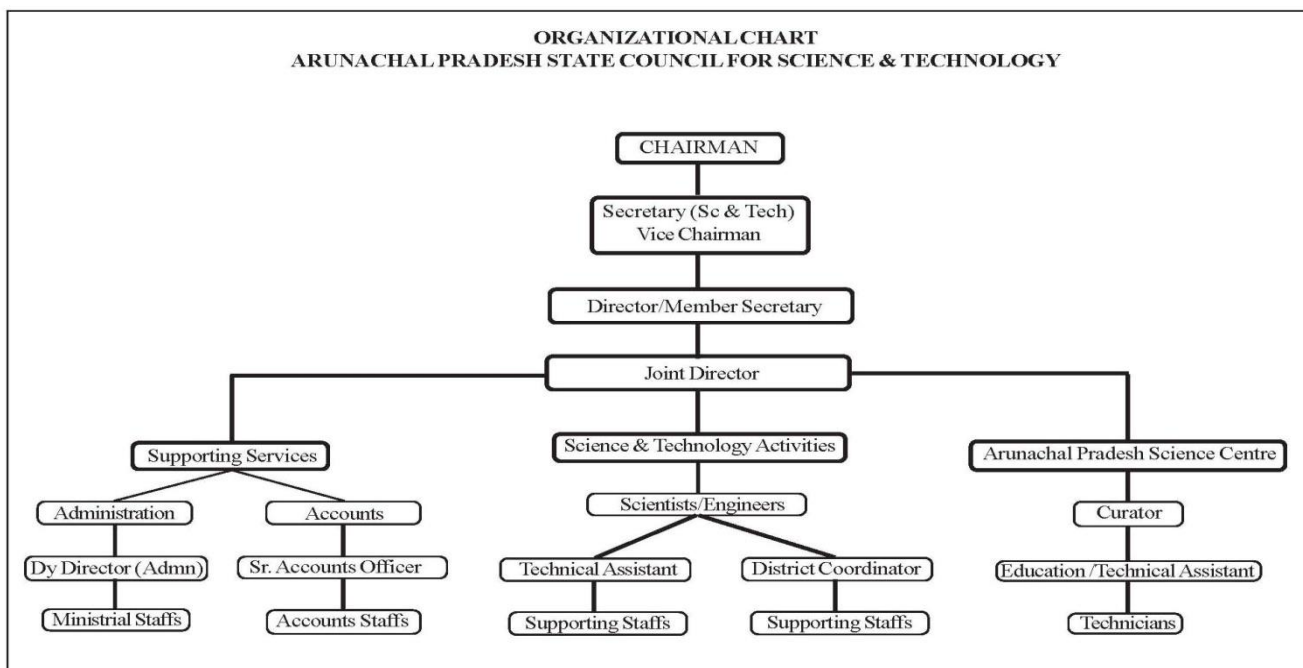
Objectives of APSCS&T

- a) To indicate optimum development of untapped new and renewable sources of energy in Arunachal Pradesh by applying contemporary scientific research and appropriate technology.
- b) To plan programmes for academic research and development in existing institutions of the state.
- c) To assist the State government in developing suitable Science & Technology structures to ensure and promote the application of proper scientific method and technology in rural areas. The Science & Technology structures will assist the administration in all matters relevant to application of science and Technology in the regional development and preparation of perspective planning.
- d) To liaise with national organizations in facilitating collaboration and transfer of scientific and technological know-how.
- e) To recommend means of popularizing the use of Science and Technology amongst the people of the State and utilization of mass media, for participation and organization of seminars, exhibitions and other such related activities and also development of application centers, Museum etc.
- f) To evolve a long term science & technology policy and programme keeping in view the natural resources/geographical features and socio-economic conditions available in the state.
- g) To ensure that Science & Technology is harnessed meaningfully for the development of the state.
- h) To evolve strong and workable mechanism for the transfer of indigenous technology
- i) To identify projects and programmes to improve the conditions of the rural population and improve the quality of their health and hygiene.

- j) To promote and fully involve the various departments connected with development schemes as well as the people.
- k) To promote all necessary activities conducive to the attainment of the objectives of the society.

Arunachal Pradesh Science centre was established under the aegis of Arunachal Pradesh State Council for Science and Technology .It was inaugurated on 3rd December 2005 by the then Chief Minister, Shri Gegong Apang at the Indira Gandhi Park in Itanagar. Since, it's establishment, it has become a centre for exhibitions and expositions that explore the knowledge unknown.

Organizational Structure



DEVELOPMENTAL ACTIVITIES IN 2019-20 UNDER APSCS&T ,ARUNACHAL PRADESH:

A. Programmes on science popularisation:

During the year 2019-20, Arunachal Pradesh State Council for Science and Technology undertook numerous programmes and activities to promote and popularise the objectives of the Department of Science and Technology.

B. Children Science Congress (District & State level):



District level, NCSC at West Kameng

Children Science Congress is a science popularization and communication programme sponsored and funded by National Council for Science and Technology Communication, Dept. of Science & Technology, Govt. of India. During 2019, National Children's Science Congress was organized both at the District and State levels by Arunachal Pradesh State Council for Science & Technology, Itanagar as per the directives and guidelines issued by National Council for Science and Technology Communication (NCSTC), Dept. of Science & Technology, Govt. of India, New Delhi. The activities of CSC-2019 continued in the state for over a period of 120 days.

The District level activities of CSC 2019 were organized and conducted successfully in all districts of the state by all the District Coordinators in collaboration with Department of Education ,of their respective districts. At the district(s) level CSC 2019, children in the age group of 10-17 years, from Middle, Secondary and Higher Secondary Level from both Government and Private sector schools participated in groups comprising of 2 members. Their projects were based on the selected sub-themes prepared under the guidance of their guide teachers. The child scientist selected in the District level had the opportunity to take part in the state level CSC conducted at Itanagar.



Inauguration of State Level CSC-2019 at Itanagar

The State level Children's Science Congress was organized in the month of November at Itanagar. The ten (10) students selected at the State Level were sent to participate at the National level to represent the State .The Students showed an enthusiastic participation at the National Level held at Thiruvananthapuram, Kerala w.e.f 27th-31st December 2019 .

2. National Mathematics Day.

“National Mathematics Day” is one of the important programmes organised by the council every year on 22nd December to promote learning of mathematics in a more joyful way and bring about better learning outcomes among the students.. The objective is also to encourage the students and to instill in them, more interest ,and curiosity about Maths. Students, teachers and science communicators are intensively involved during the celebration of this this programme.

APSCS&T Arunachal Pradesh , celebrated the National Mathematics Day on 22nd December 2019 with a day long programme. The main celebration was held at Arunachal Pradesh science centre. Students and Teachers from the adjoining schools (Govt. & private) of capital complex participated in the celebration. Various competitive activities like Quiz and Paper Pasting were also conducted.



Participants seen during National Mathematics Day Celebration- 2019

Dr.K.K.Rai, Head of the Department of Mathematics, Dera Natung Govt. College, Itanagar was the Chief guest .Shri C.D Mungyak, Director cum Member Secretary, Arunachal Pradesh State Council for Science and Technology attended as the Guest of Honour. and Dr. Arun Joram, Head of the Department of Mathematics, Rajiv Gandhi Govt. polytechnic were invited as the Key resource persons.

3. National Science Day.

National Science Day is celebrated every year on 28th February to mark the discovery of the ‘Raman effect’ by the Indian physicist Sir C V Raman on 28th February 1928. Every year a different theme is selected.

The theme for National Science Day - 2020 (NSD) was “**Women in Science**”. The programme was organized by Arunachal Pradesh State Council for Science & Technology and Conducted by Rajiv Gandhi Govt. Polytechnic, Itanagar which was also the venue for the celebration. The celebration started at 10.30 am with the lighting of the ceremonial lamp by the Chief Guest and other dignitaries and offering of flowers to the Noble Laureate Physicist, C. V. Raman.



Participants seen during NSD celebration- 2020

Dr. A.K.Tripathy ,Principal, RG Govt. Polytechnic, was the Chief Guest, Dr. Debajit Mahanta, Scientist–cum & Project Director, DBT, Department of Science & Technology, Govt. of Arunachal Pradesh was the Guest of Honour. The celebration also saw the presence of Dr Swapna Acharjee, Scientists, State Remote Sensing Application Centre, Itanagar and Dr .Chandan Tamuly, Principal Scientists, North East Institute of Science and Technology, (NEIST), Naharlagun as Resource Person who presented and delivered a lecture on the theme.

A debate on the Topic “ Does Technology get in the way of study or Does it help” and a quiz competition was held at R G Govt. Polytechnic on 27th February 2020.

4. Sci-Connect North East Programme

“Sci-Connect” Connecting Science with Young Talents is a first of its kind programme designed and initiated by the Vigyan Prasar (An autonomous organisation under the Department of Science and Technology, Govt. of India) especially for children in North-Eastern States of India .The objective of the programme is to sensitise young children in upper primary to secondary levels about science in daily life thereby helping them to practise the applications of science from their childhood and also showcase their talents and innovative ideas.



Arunachal Pradesh State Council for Science & Technology, Department of Science and Technology, Govt. of Arunachal Pradesh ,the Coordinating agency of the programme carried out this programme in association with the Vigyan Prasar since 2017. Under this programme,a one day Workshop on “Hands on Activity in Science” was organised at Arunachal Pradesh Science Centre, Itanagar on 24th June 2019.

Participants seen during Sci-con at Itanagar

5. Science on Tour: A science popularisation programme based on diversity in learning materials and teaching methods in order to meet a variety of pupils’ needs and interests:

This is a programme organised by Arunachal Pradesh Science centre of Arunachal Pradesh State Council for Science and Technology, Itanagar with a targeted period w.e.f 1st August 2019 – 30thOctober 2019.

Topics to be addressed	Science on Tour (in the Twin Capital Complex City of Arunachal Pradesh), experiments come to the schools
Target Group	Class 5 to 9
Duration of Programme	3 month (August to October, 2019)
Main innovation partners	A.P. Science Centre, Vivekananda Trust

C. RESEARCH AND DEVELOPMENT PROGRAMMES / PROJECTS TAKENUP BY APSCS&T DURING 2019-20

1. Setting up of Rural Appropriate Technology Demonstrations Centre in Arunachal Pradesh:

The Rural Appropriate Technology Demonstration Centre is being set up at Kimin, Papumpare district of Arunachal Pradesh with the aim to impart skill, training and providing Economic Sustainability to the Rural population of the state. Procurement of instruments, training of the technical staffs, cultivation of citronella and technology transfer from respective CSIR Institutes is currently being carried out. The future prospects will involve training for the farmers, entrepreneurs and women of the state on different aspects of entrepreneurial skills using science

and technology interventions for Economic Sustainability. So far the activity carried out during the year 2019-20 under the project are as follows:

- i.** On 5th April' 2019, Shri J.J. Bora from NEIST, Jorhat along with Dr .Buden Baruah and other officials from NEIST, Naharlagun visited the project site. On this day, the Citronella and Lemon Grass nurseries were initiated . Shri C.D.Mungyak, Director cum Member secretary, APSC S&T along with Project Assistant and Field Assistant were also present.



Preparation of Citronella and Lemon grass nursery

- ii.** On 19th June'2019 an Oil Distillation Unit was installed successfully at RTDC, Kimin project site. On that day ,Shri J J Borah (Principal scientist) from CSIR-NEIST, Jorhat, Assam, along with suppliers of Oil Distillation Unit, visited the site for cross checking of the machines installed in the center.



Oil Distillation Unit

- iii .** On 28th August' 2019, two Technical Officers, Mr. Niraj Singh and Mrs. Puja Singh from Coimbatore visited and successfully installed the Banana Fibre Extraction Machine at RTDC, Kimin.

- iv.** Two officials, Mr. Ashish Sharma, JRF and Mr. Vikash K. Singh, Project Helper from KNHPI, Jaipur visited Kimin and stayed for one week (from 21st to 28th Sept.'2019) for the overall survey of the project site and they took along the collected raw materials to KNHPI, Jaipur for research purpose.

- v.** In the month of October 2019 weeding of Citronella and Lemon grass nursery was done. A shed for the essential oil distillation unit was also constructed.

- vi.** On 17th& 18th February 2020, Dr Atul kumar along with his team from KNHPI, Jaipur Rajasthan visited RTDC site, Kimin and surveyed the project site. In a discussion with the Director cum Member Secretary at his office premise (APSCS&T), Itanagar Dr Atul, recommended necessary actions to be taken at the earliest.

Vii. On 19th February' 2020, an MoU between Engineering Bamboo & Interior works (Guwahati, Assam) and APSCS&T, Itanagar was signed at the office of Director cum Member Secretary, APSCS&T, Itanagar. Resource person Priyatanu Baruah was present at the Director's chamber in presence of the Director himself, and Er. Tenzin Sherap, SO along with 3 (three) project assistants of RTDC.

2. Establishment of Centre for Bio-Resources and Sustainable Development in Arunachal Pradesh as a Centre of Excellence (CoE):

The establishment of the Centre for Bio-Resources and Sustainable Development in Arunachal Pradesh was taken up by Arunachal Pradesh State Council for Science & Technology (APSCS&T), Department of Science & Technology, Govt. of Arunachal Pradesh with Department of Biotechnology (DBT), Ministry of Science & Technology, Government of India in December, 2016 with the mission for Development of Bio-Resources and their sustainable utilization through Biotechnological interventions for socio-economic growth in Arunachal Pradesh.

The centre has been operating from the makeshift temporary infrastructure developed in the permanent campus at Kimin with effect from 1st October, 2018. DG set of 200 KVA capacity, Office furniture and equipments etc. have been procured, and installed for smooth functioning of the center from its temporary setup. Internet connectivity of 50 Mbps bandwidth has been installed through Rail Wire. Internet facility has been provided in the centre with 48 port managed L2 switch along with 28 ports Gigabite managed switch and Wi-Fi router. For carrying out the Bio-Informatics activities, one High end work station along with the server has been procured and installed.

Based on the presentation made by the Project Director, DBT-APSCS&T Centre, Kimin, in the first review meeting of the DBT-Project Monitoring Committee (PMC) for the project "Establishment of Centre for Bio-Resources and Sustainable Development in Arunachal Pradesh as a Centre of Excellence (CoE)" held on 28th September, 2019 at Kimin, Arunachal Pradesh the following recommendations were made by the Committee for inclusion in the subsequent work of the Centre;

- (I) To take up programmes on the following three priority areas utilizing the budget already available with the Centre under the budget head 'Establishment of three priority processing units'. (a) State-of-the-Art Orchidarium in the main Centre at Kimin for conservation and multiplication of priority orchid species along with establishing satellite units in selected villages with a view to promote Orchid based entrepreneurship in rural areas of Arunachal Pradesh.(b) Establishment of Banana-Fiber processing unit in collaboration with other leading institutions from South India. (c) Establishment of Medicinal and Aromatic Plants Garden for ex-situ conservation of priority species along with establishing essential Oil Distillation units. Some programmes on promotion of cultivation of aroma crops at farmers level may be undertaken along with buy-back arrangements with industries.
- (II) Undertake gap analysis before starting new projects and the outputs should be utilizable for the betterment of the people's livelihood.
- (III) . Works may be taken up by the Centre on Orchid Tissue culture and promotion of it's commercial cultivation by farmers of the state as is being done by other institutes of the region. (IV) Explore more in Ethnobotanical and wild edible plants; if possible, try reporting new edible, medicinal or dye yielding plant species, work on their nutritional

elements, toxicity, drugs etc. and cited example of *Balanophora* sp. from Kashmir. To consider the (a) Propagation and cultivation method of the selected plant species unique to the region (b) Accessibility and acceptability of the particular species by the people of the area and also (c) To look for success stories from the local entrepreneurs (if any) so that the products or processing unit can go further. (V) Scientists should focus only on one topic either microbes, enzymes or endemic plants. If chosen endemic plants, pick a particular one to work upon further. PIs should see the diversity; rarity among the natural dye yielding and medicinal plants like *Rubiocordifolia*, *Coptisteeta*, *Crawfurdiaspeciosa*, *Berberisaristata* etc. (VI) Focus and identify the earliest marketable products. To get in touch with ICAR-Central Rice Research Institute, Cuttack for North East rice landraces for characterization and also to contact National Gene Bank, NBPGR, New Delhi regarding the collection and deposition of rice germplasm.

INFRASTRUCTURE AND ADMINISTRATIVE PROGRESS: -

To begin with the activities of the centre, temporary infrastructure was developed by renovating the half-completed structure available at the Kimin project site. Office, laboratory with minimum required facilities was setup for carrying out the primary experiments as well as the sample preparations. The centre has been operating from the makeshift temporary infrastructure developed in the permanent campus at Kimin with effect from 1st October, 2018. DG set of 200 KVA capacity, office furniture's and equipments etc. have been procured, installed for smooth running of the center from its temporary setup. Internet connectivity of 50 Mbps bandwidth has been installed through Rail Wire. Internet facility has been provided in the centre with 48 port managed L2 switch along with 28 ports Gigabit managed switch and Wi-Fi router. For carrying out the Bioinformatics activities, one High end work station along with the server has been procured and installed.

3. Revitalization, Up gradation and Preservation of Traditional Tribal Metal, Alloy Heritage Crafts and Artisanal Skills of Arunachal Pradesh:

Revitalization, Up gradation and Preservation of Traditional Tribal Metal, Alloy Heritage Crafts and Artisanal Skills of Arunachal Pradesh is the approved project taken by the DBT-APSCS&T with following objectives:

(i) Collection of age-old information on the traditional practices of metal, alloy crafts and craftsmanship through survey, direct contact with surviving artisans of the indigenous tribes of Arunachal Pradesh.

(ii) Documentation of know-how of the tribal traditional metal/alloy crafts and craftsmanship in written form and through video photography.

(iii) Establishment of craft training cum production centre and work in organized and sustainable manner towards development, revitalization and preservation of traditional metal, alloy crafts and craftsmanship of the tribes of the state.

(iv) Organize training programmes and encourage participation of local unemployed youths on metal, alloy crafts and craftsmanship for the development of indigenous tribal art and crafts and as well as to provide scopes to the trained youths for self-employment and income generation.

(v) Up gradation of the traditional methodologies of preparation, design and artistic component of metal, alloy handicrafts with amalgamation of modern and scientific techniques of preparation and equipments.

A. Research and achievements:

During the course of implementation of the project, field survey was carried out in the two districts of KurungKumey and Papum Pare of Arunachal Pradesh to gather, and document valuable information on indigenous tribal metal, alloy crafts prepared by several old artisans residing in various parts the two districts. A total of twenty villages spreading over five blocks dominated by people belonging to the Nyishi tribe have been covered during the period. During these field surveys, information on traditional and indigenous tribal metal, alloy crafts, products and craftsmanship were gathered and documented from old artisans of the Nyishi tribe. Several valuable information such as traditional processes and practices on raw materials being used, methods of preparation of alloy, methods of designing, time required for preparation of products, craftsmanship, utilization of the products and its estimated price, value in the tribal societies etc. were gathered through direct interaction with surviving artisans of the indigenous tribe. Their experiences and knowledge shared were recorded in written form and also through videography.

The artisans shared the constraints they currently face and also expressed about the lack of patronage. The knowledge shared and information gathered will be useful while formulating new methodologies and approaches to give their craft a new light. It will also help in efforts to garner patronage and marketing prospects so that these artisans can sustain their interest and motivation to continue with their valuable indigenous metal, alloy crafts and craftsmanship.

Training cum production centre with two room semi-permanent work-shed has been set up and developed through the partnering registered society i.e., the Arunachal Pradesh Tribal Research & Skill Development Society (APTRSDS) at its premises in Itanagar. Equipment and machinery have been procured and installed in the work-shed. A training programme was conducted in association with APTRSDS w.e.f. 2nd to 20th February, 2020. In the first phase of the training programme, twenty participants were trained in different processes of traditional metal, alloy craftsmanship, designing and preparation of various products. The trainees were given an idea of the indigenous methodology involved in the craft and also the machines and equipment used in the processes. The whole training programme has been documented.

The training programme was organized with the main objective for skill development among youths and up-gradation of skills through the use of modern tools and technology.. The traditional tribal artefacts, ornaments produced by the trainees during the training period were given the final touch by the master trainer from APTRSDS. These artefacts and ornaments produced will be marketed by the society for generating income and the income generated will be used for self-sustainability of the society. Implementation of the project is under progress towards achieving the approved objectives.

B. New Observations:

The indigenous technology used by the tribes is 'Cileperdue' i.e. 'Lost Wax Process'. The traditional tribal metal, alloy artefacts and ornaments prepared indigenously are of great importance and very popular among the rural populace of the tribal societies. However, these traditional artefacts and ornaments are now rarely available and are being treated as antiques. The main reason behind the unavailability of these traditional artefacts and ornaments is the decline in the number of artisans involved in the craft. The handful of local artisans who are involved in this traditional craft also face difficulty in getting raw materials, patronage and financial help to pursue their craftsmanship. However, the artisans agree that the traditional process involved in this form of craft requires improvement with advanced equipments and tools for better design and production without compromising with the indigenous art.

C. Innovations:

The science & technology component based on which the current project for revitalization of the traditional tribal metal, alloy art crafts and artisanal skills for upgrading and preservation of age old indigenous technologies of tribes are:

- Gathering of information on the indigenous metal, alloy crafts and craftsmanship from surviving local artisans and practitioners of the art.
- Documentation of traditional techniques of preparation, practice of metal, alloy craftsmanship of various tribes of state at the locations of survey.
- Up-gradation of the traditional methodologies of preparation, design and artistic component of metal, alloy handicrafts with amalgamation of modern and scientific techniques of preparation and equipments.

Arunachal Pradesh State Council for Science and Technology in association with APTRSDS envisages on developing the training cum production centre and conduct more training programmes during remaining period of the project and continue the same for the development, up-gradation and preservation of the traditional metal, alloy crafts and craftsmanship. Work on improvising the traditional methodologies is being carried out through APTRSDS and production of traditional artefacts is being done for self sustainability of the centre.

D. Technology Development:

The training cum production centre developed through APTRSDS is working on to generate interest among local youths on the traditional metal, alloy crafts by providing trainings, and technical guidance to the interested youths and perspective entrepreneurs for establishing cottage and small-scale industries based on metal and alloy crafts. Work on up-gradation of traditional, indigenous methodologies, skills of preparation, artistic component, designs of metal alloy handicrafts are being carried out by using the tools and equipments installed.

E. Other observation /Remark/Suggestion

OUTPUT:

The indigenous knowledge /value systems possessed by the tribal people of Arunachal Pradesh related to metal, alloy art and crafts, craftsmanship would be safeguarded and protected

from being lost and depleted. The vast treasure of indigenous knowledge systems prevalent among the tribal populace in the state are, community and location specific. Documentation of these traditional knowledge systems provides scope for use of the age-old wisdom by our future generations. The rich age-old heritage of metal, alloy art and crafts of the tribes of the state has seen major changes with the passage of time and has faded away from the society due to lack of dedicated approach towards its revitalization and simultaneously with the onset of modernization.

4. Establishment of Banana Fibre Extraction and Processing Units in Selected Districts of Arunachal Pradesh

The primary objectives of the DBT sanctioned programme entitled “Establishment of Banana Fiber Extraction and Processing Units in Selected Districts of Arunachal Pradesh” are;

- To establish Banana Fiber extraction and processing units in three selected locations of Arunachal Pradesh.
- Sustainable utilization of available wild banana resources and encouraging commercial cultivation of banana-like Bhimkhol, Bhatmanohar, Chinnia, Malbhog, Grand naine etc. The possibility of Introduction of varieties like Nendran, Monthan would also be looked into
- To demonstrate and give technical trainings and assistance to farmers, self-help groups and small entrepreneurs on extraction and processing of the banana fibers/rope and encourage them for setting up such processing units.
- Processing and value addition of the untapped resource.
- Develop niche market, marketing linkages with industries for the banana fiber as raw material and products like ropes, etc.

So far the no. of workshop/ Training cum awareness programme has been conducted and organized by the DBT Centre

5. Establishment of Medicinal and Aromatic Plants Garden for ex situ conservation of priority species along with establishing essential oil distillation units.

The major objectives of the DBT sanctioned programme entitled “Establishment of Medicinal and Aromatic Plants Garden for ex situ conservation of priority species along with establishing essential oil distillation units” are;

- To identify specific varieties of medicinal and aromatic plants based on market demand and commercial value.
- Collection and plantation of important medicinal, aromatic plants for its cultivation and ex-situ conservation of priority species.
- To optimize the growth of the medicinal and aromatic plants in the field and install aroma processing unit at the demonstration areas.
- Training to farmers, SHGs, entrepreneurs on the cultivation of medicinal and aromatic plants. Promote the introduction and cultivation of plants.
- To develop linkages with industries along with buy-back arrangements for marketing of the produce for improvement of the socio-economic status of local populace and create employment through medicinal and aromatic plant cultivation.
- Selection of target group/ individual entrepreneur/ farmers/self-help groups for training are in progress through help from district and block-level engagements.

A medicinal and aromatic plant garden for the conservation of RET species of Arunachal Pradesh has been established in the DBT-Centre, Kimin. Currently, the garden has more than 100 variety of Medicinal and Aromatic plants. The 65 no. species of medicinal and aromatic plants are been planted as a part of first phase of plantation.

6. Sanitary Napkin Production and Training for Self sustainability for Rural Tribal Women of Arunachal Pradesh:

Under the project ‘Sanitary Napkin Production and Training for Self sustainability for Rural Tribal Women of Arunachal Pradesh implemented by Arunachal Pradesh State Council for Science and Technology in Arunachal Pradesh, a number of training awareness programmes have been organized and conducted during the current year 2019 – 2020. The phase wise activities were taken up in the districts of Tawang and Namsai of Arunachal Pradesh.

Achievements

- The local MLA of Namsai has appreciated the work done by the NGO and is supporting their endeavour in bringing awareness on menstruation and menstrual hygiene .He has sanctioned an automatic sanitary production unit to the NGO which is being run by our own trained DST trainees.
- The Deputy Commissioner too has encouraged their efforts and to help their product reach out to greater mass.The NGO has been tied up with the Department of Health and Family Welfare by the DC.
- Their product is slowly being recognised and they are also receiving orders from local leaders and local women groups.
- The NGO, Namsai has set up two sanitary napkin unit in the district as of now.
- The NGO, Namsai is soon starting their own local brand called “*Uu-Nee*” which means “Stay secure or Stay Safe”



Local Sanitary Napkin “Uu-Nee” a product of KTNWS, Namsai

Impacts

The audio-visual demonstration showed positive impact on the beneficiaries. The short films have helped the women and girls of the target area to open out more comfortably in discussing the various problems they face due to menstruation. It has helped them in understanding of the topic in a much better way. Menstruation is no more a subject of taboo .The awareness programmes have also helped us in understanding the various forms of societal stigmas associated with menstruation in different cultures in the state. The rural areas have been sensitizing on what menstruation is and the benefit of using sanitary pads. The use of cloth or other unhygienic means during menstruation in the district is declining due to the awareness generated. The awareness programmes have resulted in breaking the silence on menstruation among the girls and women of the target area. The rural women, girls, school drop outs and unemployed have been provided with an opportunity to become an entrepreneur by providing them training on low cost

sanitary napkin making and educating them on the marketing strategies.. The concept of producing sanitary napkin as a livelihood option is entirely new to the state and is widely being appreciated and welcomed by the mass. The programme has boosted up the morale of the rural women to initiate the much needed change, required in this particular subject. The NGO is further taking up the work in bringing awareness on menstruation and in promoting employment through sanitary napkin making.

The awareness workshop at Tawang helped in bringing positive change even among the male members of the society that were present there. This resulted in the participation of young boys in the sanitary napkin production training workshop at Tawang .While, interactive health awareness workshops helped in promoting the use of sanitary pads by discarding the use of old cloth rags, leaves etc. and other unhygienic means during menstruation, shorter supply chain will keep prices low for the rural buyers which will provide women entrepreneurs with a fair profit.



Briefing on the Healthy diet during technical session on menstruation at Tawang



Cutting of surgical cotton strips for sanitary napkin base

7. Demonstration of the Technology on Geo-thermal energy for heating and cooling system At General Hospital, Kimin, Papumpare District of Arunachal Pradesh:

So far the work progress during the year 2019-20 under the project Demonstration of the Technology on Geo-thermal energy for heating and cooling system at General Hospital, Kimin, Papumpare district of Arunachal Pradesh.

Installation of Geo Exchange System:

- Transportation of HDPE Pipes, manifolds Pumps
- Excavation of Trench
- Laying of HDPE pipes
- Construction of Mechanical Room for installation of Manifold and Circulation Pumps
- Laying of supply and return header
- Installation of Manifold
- Connection of laid HDPE pipes with manifold
- Testing for performance and leakage of laid pipes.



Slinky loop

Installation of GSHP and Indoor Units:

- Import and transportation of GSHP to site, installation of Indoor Unit
- 3 phase electrical connection
- Installation of GSHP in mechanical room
- Interconnection with geo exchange system with providing supply and header connection to GSHP and installation of circulation pump in supply header
- Connection of GSHP with indoor Units with refrigerant pipe and electrical connection
- Testing of refrigerant pipe for leakage in GSHP system
- Filling of refrigerant in GSHP System
- Installation and Demo of AC Units

Installation of solar photo voltaic system:

- Procurement and transportation of the solar panel and other component of the system
Erection of Support structure
- Installation of SPV Panels on support structure Installation of electrical wiring and auxiliary system
- Connection with electrical panel

Indoor AC with Wall Mounted Coded Remote Control:

1. Installation of solar photo voltaic system:

Procurement and transportation of the solar panel and other component of the system
Erection of Support structure

Installation of SPV Panels on support structure . Installation of electrical wiring and auxiliary system
Connection with electrical panel

8. Study on Traditional alcoholic beverage "Black Apong, Chang" for its Preservation and Commercialization.

Black Apong viz ,Chang is a beverage made out of fermented rice and is a traditional item which occupies an important place during many traditional festivities in Arunachal Pradesh.

Traditional alcoholic beverages of indigenous community reflect their traditional knowledge of brewing and it has a potentiality to develop it as alcoholic beverage for the contemporary world and the possibility to develop it as a market compatible product. In India such examples are set by the popular product 'Pheni' – the traditional alcoholic beverage of Goa. Similar potentialities are there with different alcoholic beverages popularly produced among the different indigenous ethnic group of Arunachal Pradesh.



The proposed research work involved documentation of traditional knowledge adopting methodological tool of Rapid Rural Appraisal (RRA), Participatory Rural Appraisal(PRA), Focus Group

Discussion (FGD) and key informants interview along with process documentation of brewing. Biochemical analysis of ingredient of starter cake, rice variety used for brewing and final product adopting chromatographic techniques, HPLC, Spectroscopic techniques and chemo metric tools along with other set of test protocol for assessing alcoholic component, nutrient value and chemical constituents are being carried out. The ongoing research would be able to provide information for applying such alcoholic beverage for GI registration like 'Feni' of Goa .Efforts to Popularize the same in the contemporary market and, development of standard protocol for production and creation of a potential ground for brewing industry to introduce wine tourism in the state will continue.

The project is being implemented by APSCS&T in active collaboration with Department of Chemistry, Dibrugarh University, Assam and a Memorandum of Understanding has been signed in this regard. The research work is under progress and efforts are being made to preserve rice beers up to 8-12 months by using other stabilizing agents such as potassium sorbate, sodium benzoate etc.(ii) Controlling alcohol production between 11-12% (v/v) by fermenting ~130-140 hours only keeping at 300°C.and (iii) Reducing colloidal instability in beer, which is caused mainly by interactions between polypeptides and poly-phenols. They combine to produce visible haze that reduces shelf life of the product. Reduction of the levels of both precursors using suitable stabilizing treatments (with silica gel, polyvinylpolypyrrolidone,) will likely extend physical stability.

9 .Integrated Technological Farming System in hilly areas for Sustainable Development in Arunachal Pradesh:

Introduction:

Arunachal Pradesh is slowly developing it's economy with the objective of improving the quality of life of it's people. The tasks ahead are up hill, the resources available are plenty but the ways and means to achieve the objective are not well defined. Technology has been relegated to the back, resulting in stagnation of growth. Agriculture is the main source of income and livelihood of the villagers of the State. It has been seen that the villagers are not getting sufficient agricultural output to maintain their livelihood due to lack of appropriate technology, proper initiatives, guidance and financial conditions. The proposed project aims at sustainable development of selected area/village namely, Nampong under Piyong circle, Namsai District of Arunachal Pradesh through developing an extension centre through technological interventions. The area is situated at 27° 40' 11.51" N and 27° 32' 19.48" N latitudes and 95° 45' 26.39" E and 96° 18' 17.49" E longitudes and characterized by diversified topographical condition, suitable for various livelihood activities using appropriate and affordable technologies. Low level of productivity, capital inadequacy, lack of infrastructural support, unfavorable terrain and high cost of production are the major constraints of the area. The lands in the village area covered under the proposed project are not being used properly and in the process of degradation. A considerable extent of land is under shifting cultivation or scrub land .The project aims at addressing following problems of the projected area: a) Poor institutional support and skill b) Poor soil and water management c) institutional support and skill b) Poor soil and water management c) Degradation of forest d) Lack of appropriate technology and market tie-up. The project is funded by SEED Division department of science and technology, Govt. of India, New Delhi during 2019 at the cost of Rs. 117.392 lakh .

Objectives:

The primary objective of the project is to demonstrate technological intervention to bring about sustainable development in the projected area. To achieve the primary objective, following site specific objectives are addressed through the project: a) Enhancement of agricultural productivity and income through technological intervention. b) Promotion of organic farming in the study area. c) Up gradation and modernization of agricultural tools and implements, for the farmers of the above-mentioned village/area. d) Demonstration and development of modern techniques of soil and water conservation in the study area.

Methodology:

The proposed project would be implemented by following a methodology based on empowering women with rural technology by SIMAR, Uttaranchal:

- Organizing and strengthening of GPs, Farmer and women SHGs
- Capacity building of rural masons /marginal farmer/women regarding technological interventions •

Involvement of local community in project planning, implementation, monitoring and evaluation

- Networking with research institutions to tap their resource persons and expertise on various technological packages suitable for the project area.
- Impact assessment of project interventions.

D. SEMINAR/WORKSHOP/TRAINING AND OTHER SCIENTIFIC PROGRAMME :

1. Master Resource Person Orientation Workshop/Training for teachers and District Co-ordinators :

Orientation of Resource Person is of utmost importance for successful implementation, organization of the National Children's Science Congress(NCSC) activities in the State and also towards achieving the desired objectives of this important nationwide science popularization and communication programme.

In this direction, every year Arunachal Pradesh State Council for Science & Technology organizes State level Resource Persons' Orientation Programme. Teachers from different schools of Arunachal Pradesh, co-ordinators and members from various NGOs are invited as the participants for this programme. Fifty six (56) participants from 24 Districts of the state participated in a one day workshop conducted on 17th July 2019 at Itanagar.



Participants seen during MRTP on NCSC-2019

.Dr. Pulin B. Chakravarty, Member NAC, NCSC and Dr .Jayanta Kumar Sarma, Freelance Environmentalist were invited as Key Resource Persons for the Master Resource Persons' Training programme. Dr. A. Dhinamani Sing, Associate Professor, Department of CEC, NERIST and Ms. Duniyak Ado , Scientist- B & NAC Members, NCSC were also the Master Resources Persons in the programme .

2. Participated in the 5th India International Science (IIS) Festival from 5th – 8th November 2019 at Kolkata.

Indian International Science Festival (IISF) is an annual event organized by Ministry of Science and Technology, Ministry of Earth Science, Govt. of India. The main objective of the event is to deliberate on strengthening the ties between the Centre and State and address state specific issues, national goals and initiate improved ways for sustainable development through State Councils for Science and Technology.

Arunachal Pradesh State Council for Science and Technology, Department of Science and Technology, Govt. of Arunachal Pradesh had participated in the Mega Festival which was held at Biswa Bangla Convention Centre, Science city, Kolkata w.e.f 5th -8th November 2019. This mega event was aimed at evolving effective mechanism for dialogue and interaction at possible levels including policy makers, academicians, institutions/ Universities, S&T Councils, NGO's and individual researchers and innovators. Seven officials (Scientists & official) from APSCS&T, Arunachal Pradesh participated in this Mega event.

3. Students Solar Ambassador Workshop held on 2nd October, 2019 at Indira Gandhi Park, Itanagar.

Arunachal Pradesh State Council for Science and Technology, Department of Science and Technology, Govt. of Arunachal Pradesh organized a One-Day Students Solar Ambassador Workshop on 2nd October, 2019 at Indira Gandhi Park, Itanagar. The programme was organized to mark the 150th Birth Anniversary of Mahatma Gandhi. It was a mega event, being organized in various parts of India and outside, wherein APSCS&T, A.P., was one of the organizers. More than 1 million students across the world got an opportunity of Hands on Training on solar study lamp.

In Arunachal Pradesh, 3215 students from different schools of capital complex and 1800 students of different districts took part in the programme. Hon'ble Chief Minister of Arunachal Pradesh, Shri Pema Khandu attended the workshop as Chief Guest and lit the solar lamp while inaugurating the programme at I.G Park, Itanagar on 2nd October 2019.



Students during the programme

4. Awareness on Robotics at school level for scheduled tribe categories under ICPS programme

The Hon'ble Deputy Chief Minister Shri Chowna Mein launched the Awareness programme on Robotics at School Level at the aspirational district (Namsai), on 19th September 2019 by operating the Lego Robot amidst a gathering. Hon'ble MLA, Namsai, Shri Chow Zingnu Namchoom, Hon'ble MLA Smt. Jummum Ete Deori, Deputy Commissioner of Namsai District, Shri Bijoy Talukdar, Director-cum-Member Secretary of the Arunachal Pradesh State Council for Science and Technology Shri C.D. Mungyak and Heads of all the Departments and other Senior officers of the District were present during the inaugural programme. In a 3 months' duration, Hundred schools of Namsai District were privileged to be a part of this project.



Participants seen during the programme

5. LEGO EV3 ROBOTICS competition organized at Arunachal Pradesh Science Centre

“LEGO EV3 ROBOTICS COMPETITION ”was organized at Arunachal Pradesh Science Centre on 7thJanuary, 2020 The competition was organized by Innovation Hub of Arunachal Pradesh Science Centre under the supervision of the Director cum Member Secretary of Arunachal Pradesh State Council for Science and Technology, to promote innovation, creativity and engagement in Science& Technology.



A total of ten participants took part in the competition ‘Robotics Track’ for school level from 100 schools of aspirational Namsai. The event was organized with an aim to create awareness in Robotics, Artificial Intelligence, concept of programming and to promote innovation, creativity and engagement in science and technology The activities included ‘Robotic Sumo Wrestling’ and ‘Follow the track’ (Robo Maze).

The winners of the competition participated in the Regional Level Robotic Competition held on 21st and 22nd January, 2020 (North East ZONAL LEVEL ROBOTIC OLYMPIAD) organised by Innovation Hub Regional Science Centre Khanapara, Guwahati under the supervision of Shri Manish Deka (Mentor),at Regional Science Centre Guwahati.

6. Participated in North-East Zonal level Robotic Olympiad at Guwahati, Assam

North East Zonal Level Robotic Olympiad was organized on 21st and 22nd January, 2020 by Regional Science Centre , Guwahati at Innovation Hub Guwahati Team Arunachal Pradesh was placed at 3rdPosition . Two Teams from each state participated in the competition.

Sl No.	Name	School	Class
1	Diganto Kaman	Guardian Angel School	9
2	GedamGamkak	Govt. SS P Sector	9
3	Nang LothineChowpoo	GHSS Namsai	9

4	Nang Anujanamchoom	GHSS Chogkham	9
---	--------------------	---------------	---



to identify Bio-degradable and non-Bio-degradable materials in the museum. The Bio-degradable materials would be depicted by certain colours and non-bio-degradable materials by a single colour. In the task four different colours were used. Yellow, Blue and Green colours represented Bio-degradable materials and Red represented Non-Bio-degradable materials.

7. Popular Science Lecture was organized w.e.f. 1st July 30th October 2019 on the following topics:

- a. Periodic Table on Chemical Elements and its Impact on Human Welfare.
- b. Lecture on Astronomy (Solar System) for class 6 -7 students)
- c. Lecture on Disaster Management (Earth Quake)
- d. Science Lecture on Modern Physics

8. Exhibition cum Hands- On activity for the school children at Itanagar.

Innovation Hub of Arunachal Pradesh science centre, Itanagar organized an exhibition cum Hands- on activity for the school children's at A.P.Science centre w.e.f 12th to 12 February 2019. The programme was held under the initiative of Shri C.D.Mungyak, Director cum Member Secretary, A.P. State Council for Science and Technology and Curator of A.P. Science centre, Shri Vivek Kumar. 30 participants took part in the programme under the various activities including,

- a. Electronics
 - i. Introduction to electrical components
 - ii. Making of LED lamp
 - iii. Making of security alarm using buzzer
 - iv. Introduction to Micro-controller(Arduino)
- b. Mechanical:
 - i. Introduction to mechanical tools
 - ii. Making of Hydraulic Arm
- c. Chemistry:
 - i. Exothermic and Endothermic reactions
 - ii. Elephant tooth reaction, kitchen reaction, Chemical volcano reaction
- d. Biology:
 - i. Introduction to microscope
 - ii. Making of slides
- e. Robotics:
- f. Introduction to Lego EV3

9. World Environment week on 7th June 2019:

World Environment week was celebrated on 7th June 2019 with students of Guardian Angel Residential School by planting saplings around the premises of Arunachal Pradesh science Centre and Innovation Hub. The main programme was held at Arunachal Pradesh Science centre. Dr. Vivek kumar, Curator and Dr. RM Altekar, chief mentor of Innovation Hub inaugurated the programme by planting the first sapling. All the students present also planted saplings respectively. The students and all the participants pledged to protect and plant more trees in the future as well.



10. Outreach Programme conducted at Different schools of capital Complex, Itanagar.

Arunachal Pradesh Science centre's Innovation Hub organized a month long Programme on Ideation, Robotics and Hands- on activities on assembling of solar lamp w.ef. 3rd – 16th September 2019. The programme was organized in Collaboration with IIT Bombay to mark the 150th Birth Anniversary of Mahatma Gandhi and to celebrate international day of Non Violence towards environment. Students from the following schools participated in the programme:

1. Govt. Middle School Puroik, Naharlagun.
2. Govt. Secondary School P-Sector, Itanagar.
3. Govt. Hr. Sec. School, Aruonodaya, Itanagar
4. JNK, Public School, Itanagar
5. Govt. UPS Mowb-II, Itanagar
6. Donyi Polo mission school Itanagar
7. Govt. Hr.Sec.School, Polo Colony, Naharlagun.
8. Calvary English School, Itanagar.
9. Govt. Middle School, Chimpu, Itanagar.
10. Govt. Middle School, NitiVihar, Itanagar.
11. Kendra Vidyalaya No-2, Itanagar.
12. VivekanandaKendraVidyalaya, vivekviharItanagar.
13. VivekanandaKendraVidyalaya, ChimpuItanagar.
14. VivekanandaKendraVidyalaya, Banderdewa
15. Vivekananda Kendra Vidyalaya, Nirjuli

16. Govt upper primary school I.G Park, Itanagar
17. Govt. Higher Secondary school ESS Sector, Itanagar

11. Organised EV3 Robotic competition by Innovation Hub of Arunachal Pradesh Science Centre

Innovation Hub of Arunachal Pradesh Science Centre (APSCS&T) organized LEGO EV3 Robotic competition on 7th January 2020. The programme was organized under the supervision of Director cum Member Secretary of Arunachal Pradesh State Council for Science and Technology Shri C D Mungyak with an aim to create awareness in robotics, artificial intelligence, concept of programming and to promote innovation, creativity and engagement in science and technology.



.A total of ten participants took part in the competition from different school of the Capital Complex beside two students - Nang Lothine Choupoo and Nang Anuja Namchoom from Namsai district who were selected during awareness program on robotics Track for school level among 100 schools of apparitional Namsai .The activities included Robotic Sumo Wrestling and Follow the track (Robot Maze).

The winners of the competition would participate in Regional Level Robotic Competition to be held at Regional Science Centre Guwahati on 21st January 2020.

12. STATE LEVEL INNOVATION FESTIVAL 2020

Arunachal Pradesh State Council for Science & Technology, Department of Science & Technology organized Innovation Festival 2020 w.e.f 25th – 26thJanury 2020. The two-day long Innovation Festival 2020 was organized by A.P. State Council for Science & Technology, Department of Science & Technology in connection with National Innovation Foundation, India, North East Zone .The programme was inaugurated at science centre, IG Park by Science & Technology Secretary Shri Ameya A Abhayankar and Director cum Member Secretary Shri C D Mungyak.

A total number of 55 participants from NERIST, NIT Yupia, and students from Vivekananda Kendra Vidyalaya, Chimpu, Govt. Secondary School, P Sector, Itanagar, Govt. Secondary School Police colony Itanagar, VKV Ziro, Holy Cross School Itanagar, JNV Goju, Vivekananda Kendra Vidyalaya Tfragam, Vivekananda Kendra Vidyalaya Tezu, Vivekananda Kendra Vidyalaya NEEPCO-Yazali, GIS Dari, and schools from different parts of the state, grassroot innovators, Artisans and Entrepreneurs from Arunachal Pradesh and Assam participated in the festival.

Manak State Level Event was also organized where in students were encouraged to come forward with new ideas and creativity in order to enhance their scientific knowledge and hone their skills .Such programmes would definitely motivate students to become more open and confident to find answers for their curiosity. . Arunachal Pradesh Science and Technology Council plans to take such events to different parts of the state and invites all innovators, craftsmen and

artisans to come forward and share their work with the council, which would make an effort to provide a common platform for grassroots innovators, and students. The best five innovators participated in the Zonal Level Innovation Festival held at Regional Science Centre Guwahati w.e.f 8th - 9th February 2020. Shri Ha Tade an innovator from Innovation Hub and student of NERIST got the best Innovator award “Pandit Dinanath Award” for his innovation “Google Spy” Vehicle Data Recording Device.

List of best five Innovators from Arunachal Pradesh selected during the festival are :

Mr. RinchinNorbuGranchidar	Shergaon, West Kemeng	(Traditional artifacts and handicrafts)
Mr. Ha Tade	NERIST	(Vehicle Data Recording)
Mr. AvangWangsu	NIT, Yupia	(Water to Electricity)
Mr. KatitModi	NIT, Yupia	(Multi detector device)
Mr. PorbinRonya	Aalo	(Handicrafts & Artifacts)



13. Training attended by field Assistant of RTDC cell, APSCS&T:

Field officials of Rural Appropriate Technology Demonstrations Centre (RTDC), cell of APSCS&T successfully attended the two day training programme held at NEIST, Naharlagun w.e.f 30th – 31st October 2019.

14 Training Programme on ROBOTICS at NAMSAI:

Innovation hub of Arunachal Pradesh Science Centre organized teachers training programme on Robotics on 17th and 18th February, 2020 at Namsai. The programme was held at DDSE office, Namsai. Two hundred teachers from 100 different schools of the district attended the training programme.



15. Workshop on “Idea-generation,” Creative thinking and Intellectual Property Rights (IPR):

Patent Information Centre cell under Arunachal Pradesh ,Govt of .Arunachal Pradesh in collaboration with NIT, Arunachal Pradesh organized a one day **workshop on ”Idea generation, Creative thinking and Intellectual Property Rights (IPR)** on 30th September 2019. The programme was organised at NIT Arunachal Pradesh.



Three eminent speakers were invited from different parts of India and they gave a fruitful talk about startup and IPR. The whole of IIC's of NIT,A.P), Dr. Saikat Kumar Jana ,IPR coordinator, NIT, A.P. and Mr. Terpo Ronya Scientist -B from PIC APSCS&T. The programme was inaugurated by Prof. P. Mahanta Director NIT, Arunachal Pradesh in the presence of Shri C.D.

Mungyak,
Director
cum

Member Secretary A.P.S.C.S&T

While inaugurating the programme, Prof. P. Mahanta Director NIT, Arunachal Pradesh and Shri C.D. Mungyak ,Director cum Member Secretary A.P.S.C.S&T encouraged the new generation implement start-up and IPR .He stressed upon the fact of job scarcity and highlighted that ‘startup’ could help in creating platforms for job opportunities..Prof. P.Mahanta also encouraged the students to find solutions and ideas to do away with plastic and keep our environment clean. Director Shri .C.D. Mungyak also advised the young engineers to create new ideas according to needs of Arunachal Pradesh .



PhotoGallery



Participants of Sanitary napkin training at Tawang



PIC workshop at NIIT



Trainers of Sanitary Napkin with Resource persons at Tawang, 2019



Trainers interact with Resource persons during the training session at Tawang



World Environment Day celebration -2019



Participants seen during workshop under the programme Sci-con on 24th June , 2019



Dignitaries releasing the Quest -2018 at NCSC – 2019 Itanagar



Paprticipants at NCSC-2019 Sate level



Child scientist sharing her experience with participants



Team Arunachal at NCSC-2019,at NCSC-2019 Thiruvananthapuram, Kerala



Slot of project presentation at District Level, CSC-2019 ,Anjaw District , A.P



Slot of project presentation by child scientist at state level NCSC-1019

APSCS&T in News

Sanitary Napkin production could be a good earning source for rural women: MLA

NAMSAL, Oct 5: An awareness workshop on 'Menstruation and Menstrual Hygiene Management' along with inauguration of a 10-day training programme on 'Sanitary Napkin production' was organized here yesterday by Arunachal Pradesh State Council for Science & Technology, Itanagar in collaboration with Priyanshi Educational Cultural and Social Society, Bhopal (Madhya Pradesh) and Khun Ta Nau Welfare Society, (KTNWS)



Namsal. of maintaining menstrual hygiene. Speaking on the occasion, MLA Zingnu Namchoom emphasized on the importance of maintaining menstrual hygiene. Contd. on P-4

Sanitary Napkin production...

Appreciating the efforts of the Council in promoting rural empowerment, he said that Sanitary Napkin production could be a very good source for income generation for our rural women.

KTNWS vice president Timita Mungyak said that the females have long been a victim to societal stigmas only due to ignorance on the subjects upon which they need to be sensitized.

Scientific Officer and PI of the project, Yumbi Bijum Yongam said that menstrual myths and stigmas often limits girls and women from accessing relevant and important scientific information about their own body resulting in unhygienic practices and increasing the risk factor for reproductive tract infection.

So, she urged the participants to spread the menstrual positivity to break the vicious circle of menstrual myths and misconception.

She stated that the Dept of Science & Technology is also providing training on Sanitary Napkin production using low-cost Machines with the help of the training partner PECSS free of cost to encourage our rural women to get into business. Such trainings will help in making them financially independent, she added.

PECSS president Dr Shalini Saxena stating that healthy women lead to healthy family illuminated the importance of the use of Sanitary Pads. She also added that menstrual hygiene is an important aspect of a health which needs to be addressed to both the genders. She also highlighted the role of sanitary pads in the life of girls and women and its role in income generations.

Master resource person from PECSS, Dr Rakesh Srivastav briefed the participants on marketing strategies for the low cost sanitary pads and added that women are the pillars of the society but their problems are often ignored and for a healthy society women should be healthy.

Project Co PI, Gem peri stated that to change the negative perception of the society on menstruation, we, the women need to change first and so, asked the participants to break the silence on menstruation.

National Mathematics Day celebrated

ITANAGAR, Dec 22: National Mathematics Day was organised in the state on Sunday to mark the 132nd birth anniversary of renowned mathematician Srinivasa Ramanujan.

In the state capital, the day was observed at the Arunachal Pradesh Science Centre, where Arunachal Pradesh State Council for Science & Technology (APSCST) Director CD Mungyak elaborated the importance of mathematics in day-to-day life.

He urged teachers and students to study mathematics "in a fun way," adding that "mathematics is a subject which increases the analytical power of the mind and lays the foundation of future success."

Dera Natung Government College Mathematics HoD Dr KK Rai, and Rajiv Gandhi Government Polytechnic College Mathematics HoD Arun Joram were the resource persons of the programme.

They highlighted the life of Ramanujan and his contributions to mathematics. The uses of mathematics were also discussed during an interactive session.

Over 200 students, along with teachers from various schools of the capital complex, officers of the APSCST, among others, were present on the occasion.

Prizes were distributed to the winners of the quiz and poster-making competitions that had been organised on 15 December.

National Mathematics Day was also observed at the VKV in Kurung Kumey HQ Koloriang.

VKV students grab first two positions in state level NCSC

ITANAGAR, Nov 20: Joram Nanu from VKV Joram (Lower Subansiri) and Bisen Bellai from VKV, Amliaang (Anjaw) bagged the first and second positions, respectively in the state level 27th National Children's Science Congress (NCSC) held at Arunachal Pradesh Science Centre here on 19 and 20 November.

Modi Eru of VPS Daporijo in Upper Subansiri district secured the third position. (Contd. on P-5)



State level national Children's Science Congress concludes

By Our Reporter
ITANAGAR, Nov 20: Two days state level 27th Children's Science Congress (a programme of NCSTC, DST, and Delhi) concluded at Arunachal Pradesh Science Centre, I.G. Park, Itanagar, here today.

The programme was organized by Arunachal Pradesh State Council for Science & Technology.

Out of 73 registered projects 68 projects based on focal theme "Science, Technology and Innovation for a Clean, Green & Healthy Nation" from different schools drawn from various districts of Arunachal Pradesh were presented by the children in the age group of 10-17 focusing on solution to the local problems easily applicable by the society.



The valedictory function was presided over by C.D. Mungyak, Director cum Member Secretary, A. P. State Council for Science & Technology.

While appreciating the effort of the council in organizing such a wonderful event for the child scientists, Mungyak emphasized that there is huge need for organizing such kind of programme on a regular basis as such type of programmes is very essential for the carrier and personality development of the budding scientists. He appreciated the dedication and hard work of both the teachers and the students all these months and making to the state level science congress with their unique ideas, knowledge and creativity with meaningful inferences.

Earlier, Dr. P.Lombi, Director (Tech)

The projects were evaluated by a team of evaluators; Dr. A. Dhinamani Singh, Associate Professor, Department of CEC, Dr. Kunal Borah, Assistant Professor, Dept. of Physics, and Dr. Tage Tapang, Assistant Professor, Agricultural Engineering, NERIST, Nirjuli.

Out of the 68 projects presented, 10 best projects are going to be presented at national level being organized at Thriuvannathapuram (Kerala) from December 27 to December 31 and the two best projects will also participate at Indian Science Congress being held during the month of January 2020.

The best of the 10 projects are: Joram Nanu VKV Joram Lower Subansiri 1st, Bisen Bellai VKV Amliang Anjaw 2nd, Modi Eru VPS Daporijo Upper Subansiri 3rd, Binu Soki VKV Ziro Lower Subansiri 4th, Gusam Tamai VKV Amliang Anjaw 5th, Bengia Aru VKV Koloriang Kurung Kumey 6th, Dakto Basar VKV Basar Lepa Bada 7th, Tai Atup GHSS

M
SEPP
Righ
Kam
(EK)
part
fairs
org
sem
me
Rig
CP
Gr
Hig
Baz
T
con

an
CP
fo
tiv
at
su
bl
ti

From Front Page...

No proposal to merge Assam...

count both by the Assam Rifles and the Army brass.

There have been certain reports in the past with regard to a proposed merger of the two forces.

Ketok, 32, s/o It Chato Ke- eration to administration nab region.

National Science Day celebration focuses on 'Women in Science'

ITANAGAR, Mar 3: Along with rest of the country, the National Science Day was celebrated today at the Rajiv Gandhi Govt Polytechnic, Itanagar on the theme 'Women in Science' with a day long programme, which was organized by the Arunachal Pradesh State Council for Science.

Dr A K Tripathy, Princi-

pal RGGP and Dr Debajit Mahanta, Scientist & Project Director, DBT (AP-SCST) attended the programme as chief guest and guest of honour.

Dr Swapna Acharjee, Scientists, State Remote Sensing Application Centre and Dr Chandan Tamuly, Principal Scientist and Scientist in-charge, CSIR, NEIST branch

Itanagar att

source persons and gave presentation on the theme of NSD-2020.

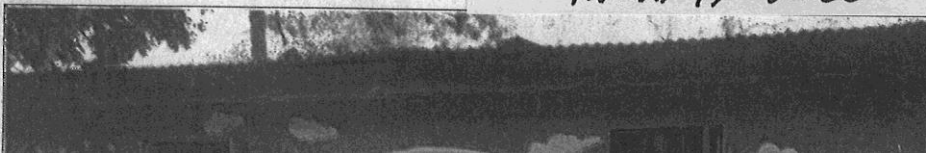
Dr Acharjee dwelt at length on the participation and contribution of women folks in science.

Dr Tamuly laid emphasis on the value of celebration of such scientific occasion for the cause and importance of the students.

Source:

Echo of Arunachal
March 4, 2020.

R, RGU provides school



As part of the 150th birth anniversary of Mahatma Gandhi, a public programme was organised during the launch of Hamara Arunachal Abhiyan at IG Park here by the Arunachal Pradesh State Council for Science & Technology, Department of Science & Technology, GoAP. More than 4500 students from across the state assembled their own solar lamp kit on the day and lit the lamps in presence of Chief Minister Pema Khandu and other dignitaries.

More than 3000 students from 22 different schools took part in the workshop at Arunachal Pradesh Science Centre and more than 1500 at different Vivekananda Kendra Vidyalayas in different parts of Arunachal making the event pan-Arunachal. The event was organised with an aim of to create awareness about the climate change, to promote solar energy and skill development.

(Contd. on P-4)

Student Solar Ambassador workshop held



ITANAGAR, Oct 2: Student Solar Ambassador workshop, the seed concept of Mahatma Gandhi was to day organised during the launch of Hamara Arunachal Abhiyan at IG Park here by the Arunachal Pradesh State Council for Science & Technology, Department of Science & Technology, GoAP. More than 4500 students from across the state assembled their own solar lamp kit on the day and lit the lamps in presence of Chief Minister Pema Khandu and other dignitaries.

More than 3000 students from 22 different schools took part in the workshop at Arunachal Pradesh Science Centre and more than 1500 at different Vivekananda Kendra Vidyalayas in different parts of Arunachal making the event pan-Arunachal. The event was organised with an aim of to create awareness about the climate change, to promote solar energy and skill development.

(Contd. on P-4)

Act is repeated. Meanwhile, a public festival was organised in the gardens of upper Assam, while a huge programme was organised in the state.


(Cont. P.3)

Ramanujan's birth anniversary observed



ITANAGAR, Dec 22: National Mathematics Day 2019 was organised at Arunachal Pradesh Science Centre, Itanagar to mark the birth anniversary of S. Ramanujan. It was observed in a befitting manner with a day-long programme. Addressing the inaugural session, C.D. Mungyak, Director cum Member Secretary, A.P. State Council for Science & Technology elaborated the importance of mathematics in day to day life and urged the teachers and students to study mathematics as fun. He also announced about the organising of State Level Innovation Festival 2020 during 25 to 26 January 2020. The main aim behind it is to provide a platform to all innovators, Grass Roots innovators and entrepreneurs to show case their innovation and exchange their ideas from the state. The festival will be open to all age group.


Dr. K.K. Rai, HoD (Mathematics) DN Govt. College, Arun Joram, HOD, (Mathematics), Rajiv Gandhi Govt. Polytechnic College, Itanagar, were the resource persons. Both highlighted the life history of S. Ramanujan and his contribution. More than 200 students along with teachers from various schools of capital complex, officers of APSCS&T among others were present on the occasion.




ARUNACHAL PRADESH
STATE COUNCIL FOR SCIENCE & TECHNOLOGY
(DEPARTMENT OF SCIENCE & TECHNOLOGY)
GOVERNMENT OF ARUNACHAL PRADESH
ESS, SECTOR - ITANAGAR - 791 113

ACTIVITIES TAKEN UP IN 2019-2020 BY APSCS&T



1. NATIONAL CHILDREN SCIENCE CONGRESS
2. NATIONAL MATHEMATICS DAY
3. NATIONAL SCIENCE DAY
4. INTELLECTUAL PROPERTY RIGHTS (IPR) WORKSHOPS
5. SCIENCE DRAMA COMPETITION
6. TEACHERS TRAINING PROGRAMME
7. GANDHIAN GLOBAL SOLAR YATRA DURING 1ST MAY - 2ND OCTOBER 2019
8. PARTICIPATION IN ALL INDIA INTERNATIONAL SCIENCE FESTIVAL 2019 AT KOLKATA
9. ROBOTICS & ARTIFICIAL AWARENESS PROGRAMME IN 100 SCHOOLS IN NAMSAI DISTRICT.
UPCOMING IN 50 SCHOOLS IN CAPITAL COMPLEX (ITANAGAR)
10. ORGANISED INNOVATION FESTIVAL DURING 25TH - 26TH JANUARY 2020




Ameeya Abhyankar, IAS, Secretary, Science Technology, Govt. of Arunachal Pradesh during the innovation festival at Arunachal Pradesh Science Centre, Itanagar





Participants interaction with the dignitaries

Source: Netro Yatra, 6th Nov 2019, Kolkata



Participants of child scientists at State Level NCS&T at Itanagar and at 27th National Children Science Congress held at Thiruvananthapuram (Kerala) during 27th - 31st December 2019 from Arunachal Pradesh.

Source: Arunachal Times, 20/02/2020

ANNUAL REPORT- 2019-2020 (April 2019-March 2020)

**ARUNACHAL PRADESH STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY, GOVT. OF ARUNACHAL PRADESH**

Contents

A. Introduction

B. Regular programme under Science and Technology Development activities during the financial year 2019-2020 in Arunachal Pradesh

C. Research and Development projects / programmes taken up during the year 2019-2020

D. Organised Workshop / Seminar and participated in scientific programme by the council during 2019-2020

E. Photo gallery

F. APSCS&T in News

G. Audit Report

ANNUAL REPORT- 2018-2019 (April 2018-March 2019)

**ARUNACHAL PRADESH STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY, GOVT. OF ARUNACHAL PRADESH**

Contents

A. Introduction

B. Regular programme under Science and Technology Development activities during the financial year 2018-2019 in Arunachal Pradesh

C. Research and Development projects / programmes taken up during the year 2018-2019

D. Organised Workshop / Seminar and participated in scientific programme by the council during 2018-2019

E. Photo gallery

F. APSCS&T in News

G. Audit Report