



Annual Report
2019-2020

Vigyan Ashram

(A centre of Indian Institute of Education)

At.Post.Pabal Dist.Pune 412403

www.vigyanashram.com

Introduction:

It's our pleasure to present annual progress report for FY 2019-20. "Development through Education & Education through Education" is a mission of Vigyan ashram.

We have upgraded our infrastructural facilities, introduction of tissue culture lab, modern polyhouse, Solar lab, renovation of DIY lab in Pune are some of the highlights of this years work. We have received Guruvarya Achutrao Patwardhan Sewamruti Award.

We are thankful for all our funding agencies, donors, field partners, students and volunteers for their valuable inputs and encouragement.

A] New tissue culture lab and upgraded agriculture section facility : Agricultural & animal

husbandry training & research facility is upgraded with a new tissues culture & soil analysis laboratory, renovated dairy farm & fodder storage, water pipe line and grey water recycling system. New tissue culture & soil analysis (analytical chemistry) lab will help us developing new technology applications & skill training facility for farmers. While irrigation water from Thitewadi dam, recycling of grey water and fodder storage facility will help in ensuring green fodder availability for cow & goat farm. A vermicomposting unit, fodder cutter, 2 new cows & 5 new goats are also purchased to strengthen animal husbandry section as part of renovation work. Facility will benefit 500 + farmers, students per year. We are thankful to BAJAJ Auto CSR for providing financial support for this project.



B] Renovation work of DIY Lab, JPNC, Pune:

Do-It-yourself (DIY) lab facility is renovated with new furniture & interior painting, beautification work. DIY lab comprises of 3 geodesic domes of around 350 Ft² each are renovated with new flooring, work benches, computer tables, lightning



fixture and office desks. Renovation work was completed in January 2020. We are thankful to SPA Education foundation for their financial assistance for this work.

C] Initiative on Agro Waste Composting to improve Soil organic carbon :

Dept of Science & Technology (Govt of India) sanctioned 'Recycling of agricultural waste using microbial consortium for organic farming' submitted by Ms.Sonal Shinde under 'Women Scientist Scheme-B' project. This project was submitted based on the work done under DIC project for last 2 years. Through this project, we will develop microbial consortium for high lignin based agro-waste composting, We will also conduct field trials with farmers in Rajgurunagar & Shirur block of Pune district.

D] Powering Vigyan Ashram using Solar Energy :

In our effort to increasing use of solar energy on campus. We have installed 5KW on-grid net metering system. This was sponsored by Eaton Foundation.

In collaboration with SELCO foundation, we have started 'Solar energy based rural entrepreneurship promotion program'. As a part of the project, we have installed innovative solar energy-based equipment on Pabal campus. These solar equipment's includes - Solar milking machine, Solar sewing machine, 10 KVA solar inverter for workshop, solar refrigerator & solar water pump developed by SELCO. We will use this equipment and test its financial feasibility and train rural youth in adaptation through 'renewable energy-based entrepreneurship' program in collaboration with SELCO foundation.



Solar milking machine

F] Short Film on Wiki project @ Vigyan Ashram

Center for Internet and Society – Access to Knowledge (CIS-A2K) has made a short film on Wikipedia work done at Vigyan Ashram. We hope this film will help in motivating others to create knowledge in Marathi language. Film is made by Ms Shilpa Ballal. You can watch the film on youtube link

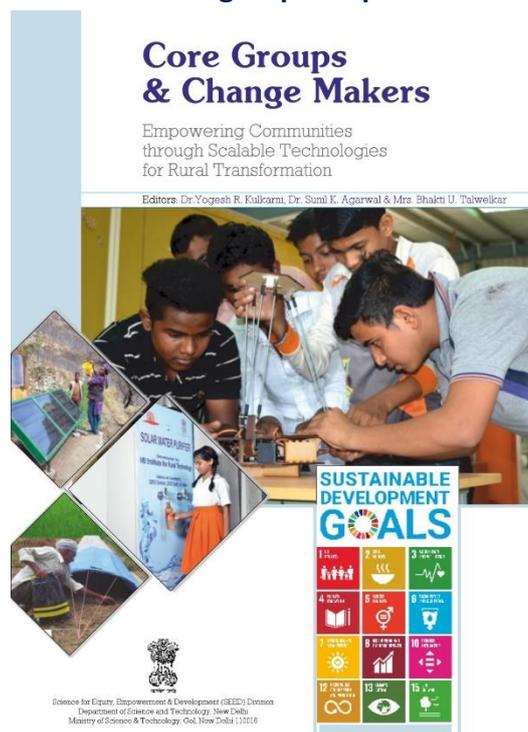


<https://www.youtube.com/watch?v=ce2EjIHX4g>

E] Release of ‘Technology for masses & social transformation’ CORE group compendium:

Team Vigyan Ashram worked on publishing a technology compendium of scalable rural technologies developed by CORE support organisations supported by Science for Equity, Empowerment & Development (SEED) division of Department of Science & Technology (DST).

Dr.Yogesh Kulkarni and Mrs Bhakti Talwelkar of Vigyan Ashram are Editor of the compendium along with Dr.Sunil Agarwal of Dept of S&T. The title of the book is ‘Core groups & change makers- Empowering community through scalable technology for rural transformation’. The book was released by Hon Minister of Science & Technology (GoI), Dr.Harsh Vardhan at Indian International Science Festival (IISF) – 2019 at science city, Kolkata on 7th December 2019. The book is available online on website www.dsttara.in



F] List of important programs & highlights training programs:

Following are some of important programme along with their funding partners & objectives undertaken by Vigyan ashram during 2019-20:

S.N	Program name & supported funding partner	Objective
1.	CORE support program Supported by DST (SEED Division)	Development & dissemination of Appropriate rural technologies.
2.	Design Innovation Centre (DIC) in collaboration with Savitribai Phule Pune University & Research fellowship for young graduates Supported by Eaton Foundation	To conduct Design innovation courses with focus on Soil microbiology, Product design, Sensor technology and water & Waste management. Eaton foundation are supporting DIC with research fellowship grant to DIC students.
3.	DBRT Program and other short-term vocational training Programs supported by Asha For Education , Eaton Foundation, SPA Education foundation, Megger India (P) Ltd. and many other individual supporters	Implementing various technologies-based enterprise & skills development training program for rural youth.
4.	Introduction to Basic Technology (IBT) program in secondary school. With the support from Praj Foundation , Suzlon Foundation , Govt of Chattisgarh, L&T Infotech foundation, Shapoorji and Pallonji and Company Pvt Ltd.	Increasing impact & sustainability of IBT program in selected schools in Maharashtra State.

5.	On field research & testing of composter for wet garbage supported by La foundation, Pune.	To test household level (50 families) & housing society (10 societies) wet garbage composting solutions.
6.	To conduct 'energy entrepreneurship training & pilot testing of solar innovation for improving livelihood of rural areas supported by SELCO INDIA Foundation.	To adopt & demonstrate solar technologies. To develop solar innovations and conduct EDP training based on renewable energy livelihood sources.
7.	Fab Lab @ Pabal (Fab foundation), Fabrik Academy (Fab-textile), D-I-Y Lab @ Pune (Eaton foundation), Innovation Lab @ Dantewada	To train students in digital fabrication
8.	Infrastructure Development: supported by Asha for Education, SPA Education Foundation, BAJAJ Auto CSR, Megger India Pvt Ltd, INDUSIA Endowment and Many individual well-wishers of VA	Tissue culture lab, Water pipe line, Gray water recycling systems, Greenhouse with climatic controls Renovation of DIY Lab.

The above project benefited rural youth, farmers, WSHG members and high school students through various skill training & technology transfer (EDP) training program. During Yr 2019-20, following are some of the training program with number of beneficiaries as-

Details of these training programs are as follow:

Name of Course trade	Diploma in basic rural technology	Fab academy and Design innovation centre courses	Rural Technology Based skill Trainings courses	Introduction to Basic Technology
Brief training content	Rural Technologies in the areas of Engineering, Energy, Agri, AH,	Digital fabrication, 3D printing Electronics & sensors etc.	Technical & enterprise establishment content as per trade.	Engineering Energy-Environ Agri-AH Home and health
Target beneficiary	Rural youth	Graduates, Makers, Innovators	Rural youth, Farmers, SHG's	High School students
Duration	1 year	6 months	Short duration (2 days to 90 Days)	3 year (96 days)
Number of trainees completing the training	<ul style="list-style-type: none"> • 52 students graduated during 2019-20 • All placed for apprenticeship in respected trades. 	<ul style="list-style-type: none"> • Design Innovation Centre (DIC) – 54 • Fab Academy – 5 • Atal Tinkering Lab (ATL) instructors- 33 • DIY lab Pune- 206 	<ul style="list-style-type: none"> • Technology based skill trainings – 116 • Farmers / SHG training workshop – 344 • EDP program – 38 • Wiki-publication- 52 	<ul style="list-style-type: none"> • 123 rural Schools including 12000+ students • 347 schools instructors attended training program
Affiliation / Certificate	National Institute of Open Schooling (NIOS)	Fab Foundation and Savitribai Phule Pune University		Affiliated as Muti-skill Foundation Course (MSFC) under NSQF

i] Diploma in Basic Rural Technology (DBRT):

DBRT is one-year full time residential program based on philosophy of 'learning while doing'. This program is accredited by National Institute of Open Schooling (NIOS). Program aims to train rural youth in 'multiple skills' & motivate them to start their enterprise in their own area. DBRT 2018-19 batch graduated on 25th July 2019 with 52 students successfully completing the course. These students were placed for one year apprenticeship based on their career preferences.



Total 50 students including 10 girl students from Maharashtra, Madhya-

Pradesh, Gujarat etc enrolled for 2019-20 education year started from 10th July 2019. DBRT is supported by Asha for Education and Eaton India Foundation.

ii] Design Innovation center (DIC) & FAB Academy program:

Vigyan ashram is DIC – Spoke Center of Savitribai Phule Pune University (SPPU) under, Ministry of Human Resource Development (MHRD) supported scheme of "National Initiative for setting up of Design Innovation Centres, Open Design School & National Design Innovation Network".

DIC-Vigyan ashram offers 'designing solution' program for college interns, graduate students from science & engineering background. Course aim at training students in application of science & engineering through 'design thinking' philosophy. During 2019-20, 54 students enrolled for above 4 sectors to work on various technology challenges & build prototypes. Details of their project are available on www.vadic.vigyanashram.blog



Fab academy 2019 course was conducted between Jan-July 2019. This is 6 months program to learn 'How to make almost anything'! through skill of rapid prototyping & digital fabrication. Six out of eight enrolled students from batch 2019 successfully completed their course while delivering their project prototypes. A graduation ceremony was held during FAB15 conference at El-Guona & Cario Fab Lab, Egypt. Suhas Labade & Tushar Kukreja attended conference on behalf of Vigyan Ashram and received certificates for successful students.

Fab Academy course 2020 started in Jan 2020. We have five students enrolled for the course.

iii] Rural Technology-based skill trainings courses:

Disseminating technologies through skill training & field demonstrations is important aspect of our educational program. These programs aim at dissemination of various technologies and provide livelihood opportunity through enterprise development to rural community. Following are some of the important skill courses conducted during **2019-20** :

Type of Programme and Topic	Duration	Number of trainees
Technology based short term course	1 Week to 12 Weeks	Advanced training for electrician – 68 Printed circuit board (design/ fabrication)- 40 Cloud computing -8 (Total – 116)
Farmers Groups/SHG awareness workshops on rural technologies	1 to 7 days	Advanced fodder management (classroom+ field demos)– 238 farmers Agro-waste composting – 44 farmers Soil analysis, goat & poultry farming- 29 Food processing, advanced sewing (SHG) - 33 (Total-344)
Technology base Entrepreneurship Development Programs	1 to 4 days	EDP Renewable energy based rural enterprise – 37

- Success stories of training, technology adoption & enterprise development are available [www. http://ruralstartup.vigyanashram.blog/](http://ruralstartup.vigyanashram.blog/)
- Selected stories of entrepreneur alumni’s area also published by Agrowon news daily (www.agrowon.com). During 2019-20, 12 success stories were published by agrowon newspaper. These stories can be broved on <http://ruralstartup.vigyanashram.blog/category/success-story/>

देशी वाणाचा चवदार हातसडी तांदूळ

ग्रामीण उद्योजक

रणजित शानभाग, चिकी चौधरी

दुन्या शुभ्र तांदूळपोषा हाससडीचा लालसर तांदूळ आरोग्याच्या दृष्टीने अधिक फायद्याचा असल्याचे मानले जाते. या लालसर तांदूळासाठी बाजारत एक विशिष्ट ग्राहक वर्ग असतो. त्यासाठी भाताच्या देती जातीच्या तांदूळला जास्त मागणी असते. सातपुड्याचा परिसर भाताच्या त्रिकोण, वीळ, रावभोग, कोळणी इत्यादी देशी वाणांसाठी प्रसिद्ध आहे. पण कमी उत्पादन आणि बाजारभाव यामुळे या जातीची लागवड खूप कमी प्रमाणात होते. परंतु देशी वाणांपासून हाससडीचा तांदूळ बनवून त्याचे नाविन्यपूर्ण पध्दतीने मार्केटिंग केल्यास चांगली बाजारपेठ उपलब्ध होऊ शकते हे नाशिकच्या मनीज



मनीज जगताप

विश्व सोशल-मिडिया साधनांचा उपयोग केल्यास थेट ग्राहकांशी नात विकू शकते, हे मनोजे हेले. त्याने फेसबुक आणि व्हॉट्सअॅपचा उपयोग करून मळाच्या हाससडीच्या तांदूळाचा ग्रेड बनवण्यात सस मिळवले.

उत्पादन, चिकी आणि वर

सातपुड आणि भंडारदार येथील आदिवासी

सामाजिक बांधिलकी जपणारा उद्योजक

ग्रामीण उद्योजक

विशाल जगताप / रणजीत शानभाग

महाराष्ट्रातील पालघर हा तसा सर्वांत तरुण जिल्हा. पालघर जिल्ह्याचा बहुतांश भाग दुर्गम आणि आदिवासी पाड्यांचा. येथील आदिवासी संस्कृतीतील वारसी चित्रकला, पारंपरिक गाणी-नृत्य संस्थेचा खाद्य पदार्थ म्हणजे संपूर्ण देशाची शान ! अशा या जिल्ह्यातील माळकरी-पाडा या छोट्याशा वस्तीवरील मधुकर त्याच्या बहुविध कौशल्य आणि सामाजिक भान राखणाऱ्या व्यवसायाने ग्रामीण सर्वांना आकर्षित करते असे काम करत आहे. मधुकर चिंतू माळकरी (पु. संगमनगर, माळकरी पाडा, पो. वा. विक्रमगड) लहानपणाचामुनूच धडपड्या. त्याने शालेय शिक्षण पूर्ण झाल्यास कौशल्य शिक्षणाचा वेगळा रस्ता धरला तो त्याचे शिक्षक गजानन टिळक यांच्या मार्गदर्शनामुळे.

पावडच्या विज्ञान आश्रमातील 'खताने काम करत शिक्षकांची' पद्दत मधुकरला खूप



[DBRT, DIC & Short term vocational training programs in Vigyan ashram are supported by - Asha for Education, Eaton Foundation, SPA Education foundation, INDUSIA, Megger (I) Pvt Ltd and many individual donors. We are thankful for their support & continuous encouragement]

iv] Introduction to Basic Technology (IBT):

IBT program is implemented from class VIII-X std. Student learns various technologies useful to their communities. IBT is recognized as pre-vocational training program Level1 and Level2 under National Skills Qualification Framework (NSQF) as 'Multi skill Foundation Course (MFSC)'. VA is implementing IBT program in 123 Schools benefiting over 13000 students in Maharashtra, Chhattisgarh state. An online monitoring www.myibtschool.com keep real time track of the program & showcase various students activities in these schools.

Following are some of the highlights of IBT program during 2019-20:

- Make-something-week was celebrated PRAJ foundation supported seven 'Model IBT school' during 7th to 18th August 2019. Aim of initiative was to create excitement among IBT students to think 'Out-of-Box' & fabricate something useful for community / Schools. Students enjoyed it while collecting scrap material, making rakhi's, fabricating hand washing basins etc. They also earned community service of Rs.39464.00.
- Bhandhari Highschool, Malvan (Sindhudurga) IBT students started processing bio-waste collected from weekly market. They are processing around 1000 Kg waste per month. Village Grampanchayat is very happy with this initiative by school and they are helping in segregation & transportation of waste. Schools is producing very good quality vermicompost.
- IBT students in SDSD high School, Vadachapat (Sindhudurg) build plant nursery on 1500 Ft² using shed-net & fabrication structure. Nursery will be used for preparing forest & vegetable sampling. The school has also started 'apiculture' farming in their IBT agriculture section. Presently they have 4 honey bee boxes as training cum production facility.
- Students of New English School, Marunji, Hinjwadi (Pune) established as terrace farming in their schools by using waste plastic bag based vertical bag technique. Their terrace farm has become famous in the vicinity attracting many parents & visitors.
- 3D designing & printing workshop were conducted for 16 L & T Infotech supported IBT schools. IBT school at Gawadewadi (Pune) hosted 10 3 D printing workshops for near by IBT schools.
- During Yr 2019-20, instructors training camps were conducted in the month of July, November & December. Total of 347 instructor benefited with these training from Schools of Maharashtra & Chhattisgarh state.

'Technovation' a IBT students innovative project exhibition platform event was organized on 25th January 2020 @ JPNCE, Pune. Students of 15 IBT schools supported by L & T infotech with 30 innovative exhibits participated in the event. Only those project which were implemented for community benefits were selected for exhibition. 'Brick making machine' & 'Smart water flow controller' from Amboli IBT school own 1st & 3rd price, while students of Chikhali school won 2nd price for their 'Smart walking stick for grand-parents' project.

IBT schools in Maharashtra state are documenting their monthly activities on independent blogs. While collective details of schools are available om www.myibtschool.com

Chhattisgarh update:

- Students in Naimed & Bijapur portacabin school, organized IBT products Diwali exhibition at district headquarter during 23rd to 25th September. Products like candle lights, decorative items, processed food products worth Rs.11960/- were sold by these students to 400+ visitors.
- Girls students of Jangala porta cabin school, fabricated a LED signage board for their school entrance. These girls have also developed a vegetable garden in their village with technology adoption like mulching paper, seedling nursery, vermicomposting etc. They harvested more than 200 kg vegetables through this garden.
- IBT portacabin schools in Bijapur district conducted blood testing camps through their schools. Students from 6 schools tested 722 samples for blood group & 45 sample for hemoglobin level through this camp @ January 2020.
- IBT Schools in Bijapur district also participated in annual science day exhibition @ 28th February at district headquarter. They exhibited various IBT activities & product in science fair. IBT stall was visited by many officials including district collector Shr.K.D.Kunjan Ji.

[IBT programme is supported by Praj Foundation, Suzlon Foundation, Nalanda Foundation, L&T Info Tech Ltd, Dantewada District Administration, Wild-life Conservation Trust, INDUSA]

G] Appropriate technologies development and dissemination:

Vigyan ashram is working on development and dissemination of appropriate rural technology. VA is core support organisation of Dept of Science & Technology (Govt of India). Following are important highlights of technology development work during 2019-20 :

S. N	Source of Technology	Name of Agency/Institution/Individual Expert
1.	Generated in-house by core staff	<ul style="list-style-type: none">• Dome dryer – A drying technology based on dehumidification & natural air convection.• Rice de-husking machine- for cottage scaled brown rice production.• Urban waste composter - Akshay home composter or individual family & automated composter for housing society• Bamboo engraver a CNC based bamboo engraving machine for rural artisans.
2.	Generated in-house by employing outside experts	<ul style="list-style-type: none">• Development & maintenance of www.dsttara.in
3.	Borrowed from an outside institution	<ul style="list-style-type: none">• Micro-biological culture for urban bio-waste composting from Marathi Vigyan Parishad (Bhabha Atomic Research centre technologies)
4.	Modification of technology/know-how being used by the beneficiaries	<ul style="list-style-type: none">• Agricultural tools / technologies as hydroponics , silage making , Azolla farming, Aquaponics farming.• Modified reed bed based grey water recycling system.• High density fish farming (aquaponics) for single cropping based marginal farmers.

Some of above technology prototype & field implantations details during 2019-20 are as below-

- An expert committee Department of Science & Technology (DST), SEED division to evaluate technology development & dissemination work under CORE support program visited Pabal on 24th & 25th April 2019. Expert Team rated Vigyan ashram progress as 'Excellent' for CORE support program.
- A technology package developed for processing bio-waste in urban, semi urban area. Technology package includes innovative composters, effective microbial consortium and operating SOP. 'Akshay home composter' a composter for individual household has been successfully field tested at 50+ location in Pune district. Similarly, 'housing society based' self-rotating mixing drum along with curing sacks are developed & field tested at 10 location in Pune district. Both composters are easy to operate & capable of producing faster, odour free compost by using BARC developed microbial consortium.
- Aquaponics farming trials are started at 3 different location along with Pabal campus site. These trials are under progress at IBT Chikhali (Pune) school, Club Oasis (Chandani Chauk, Pune) and Mr. Anil Kelkar farm (Rasayani, Panwel). Vigyan ashram has also incubated Nisargayan Kheti Solution Pvt Ltd, company for dissemination of technology on commercial level.
- Yogesh Kulkarni attended 'Fab Asia Network' conference @ Seoul, South Korea during 6th to 11th May. He delivered talk on 'Alleging Fab Lab operations with Sustainable Development Goals (SDG)'.
- Plastic waste pyrolysis-based recycling experimental trials are under progress at Pabal campus. The unit is developed in collaboration with Marathi Vigyan Parishad and Manipal University (Jaipur). Presently unit is operated with electrically operated furnace with 118 capacity (total volume) rotatory pyrolytic reactor with feeding capacity of 5 Kg waste plastic. Presently we are conducting trials on various plastic waste compositions to analyse capacity improvement, performance (yield) output & energy balance under guidance of Dr.J.B.Joshi.



We are thankful to Department of Science and Technology (DST- SEED division CORE support program), Eaton foundation, La Foundation, Savitribai Phule Pune University for supporting our initiative in development of technologies.

For technology development trials please visit www.vadic.vigyanashram.blog

H] Infrastructure Update :

Following are important infrastructure development work completed during 2019-20.

- Tissue culture and analytical chemistry (soil, water, food analysis) laboratory – 400 Ft²
- Agriculture irrigation water lifting pipe line (20 Hp pump + 4 Km pipe line) with 40 Lac lit water storage.
- Grey water recycling facility – 5000 lit / day recycling capacity.
- Dairy farming, fodder storage, silage making facility – 1000 Ft²
- Renovation 'Do-It-Yourself' lab with digital fabrication facility – 1500 Ft²

We are thankful to BAJAJ Auto CSR, Eaton foundation, ASHA for Education, SPA foundation for supporting our initiative in development of technologies.

I] Award: Vigyan ashram is felicitated by 'Guruvarya Achutrao Patwardhan Sewasmruti Award 2019. Award is given by 'Bharat Shikshan Mandal Patwardhan Highschool, Ratnagiri' one of the oldest school in state. The award is given to social institutes for their outstanding contribution in education field. Award comprises of memento & award money of Rs.25000 was given in a function held at Ratnagiri on 22nd September 2019. We are very thankful for award & appreciation of work.

J] Staff trainings workshop / Conferences:

Following are the important training, conferences attended by VA staff.

S.N	Name of training organization/experts	Number of Staff trained	Topic of training
1	Dr.Yogesh Kulkarni got Makers Residency – Two months fellowship program to visit Veneto, Italy from 1 st August 2019 to 30 th September 2019.	1	Use of digital fabrication in sustainable development. Operations of innovation center. Maker movement in Italy.
2	Wiki Source advanced publication by CIS-A2K @ Gokhale Institute of Politics & Economics during 11 th -13 th October.	3	Advanced tools & methodology in open source digital publication.
3	Capacity augmentation workshop for CORE support group @ CTARA, IIT Pawai during 20 th to 22 nd January 2020.	2	New technology in data collection & processing (GIS tools).
4	e-Yantra training @ IIT Pawai during 31 st Jan – 2 nd February 2020.	2	Basics of Robotics , Embedded system .

Apart from above trainings, a capacity & team building training sessions for all project staff was also conducted by Vigyan ashram during past year. These training were conducted by Swasti institute for learning & development (Pune). Two training sessions were conducted in month of July, September. Training helped staff team in better managing interpersonal relation, project goal etc.

K] Donors and supporters:

We are able to continue our work due to financial support of many individuals and foundations. Following individuals have supported VA in 2019-20.

Dr.Kishan Bhatia,Mrs.Vidya Arvind Kasargod, Mr.Arun Gangaram Khedekar, Mr. Shrirang Deshingkar, Dr.Alka Hingorani. Mr.Jayesh Raguveer Kulkarni, Soham Ganesh Kusum Parivar, V.K.Magapu, Uttakarsh Talwelkar, Mr. Sachin Bhalerao, Mr.Jaywant Kulkarni, Mr. Kiran Joshi, Meera Karnik , Vasant Shanta Patwardhan, Vasanti Vinayak Masurekar, Mr.Brittany Mckinney, Mr.Isabella Horn and Sai Engineering.

We are thankful for their kind support and appreciation of our work.

L] Management committee meetings:

Vigyan ashram's management committee comprises on of Mr.Ashok Kalbag, Mr.Vijay Kumar, Mr.Sunil Kulkarni, Mr.Mahendra Rajgude, Mrs.Anjali Chipalkatti, Dr.N.S.Nikam, Dr.Suhas Altekar and Dr.Yogesh Kulkarni. The management committee meetings were held on 2nd June 2019, 19 October 2019 and 11th January 2020 to discuss strategic, administrative and financial matters.

Vigyan Ashram's management committee member Mr.Sunil Kulkarni passed away on 18th December 2019. He was first employee of Vigyan ashram joined on 1st January 1983. He was associated with us as management committee member & technical advisor till end. We have lost committed volunteer, mentor and friend. May his soul past in Pace !

Vigyan ashram is thankful to management committee members, and Board of Trustees of Indian Institute of Education for their support and guidance. We are also thankful to Dr.Arun Adsool (Chairman, BOT,IIE) and Dr.Prakash Salvi (DG,IIE). We are also thankful to villagers of Pabal, IBT School management, funding partners our students and our team members!

