

# Vigyan Ashram Status Report

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## # Vigyan Ashram in Action # Under Lockdown

- Solar energy Installations on campus and in the community
- Composting of Agriculture residue with farmers
- STAR's Forum annual conference
- Campus in actions with DBRT and DIC Students: Polyhouse, Hydroponics, Dome Dryer, food products....

### A] Installation of solar energy innovations:

We have launched a promotion campaign for solar equipment's useful for promoting livelihood. A feasibility gap discount of 50-80% was provided with the support of 'SELCO foundation'. VA team identified 28 beneficiaries for livelihood supporting solar innovations like milking machine, blacksmith blower, sewing machine, fridge, computer center. DBRT students are involved in carrying out installation. In this December, one unit of blacksmith solar blower, solar sewing machine & milking machine was installed.



Solar milking machine with farmer

### B] Fab Pad system on solar Energy :

Fans are installed in the polyhouse to maintain temperature in the polyhouse. Due to unrealistic power supply farmers are reluctant to invest in closed polyhouse system with climate control. We have designed and fabricated solar operated fan systems for polyhouse. It runs directly on solar energy during the day time. We are working on controlling speed of the fan based on the temp- humidity inside the polyhouse.



We have also installed 'aquaponics fish tank air bubbling' system on the same system. Sanket has also completed documentation of Solar powered air bubbling system for grey water and Khowa making machine. It is available on his blog : <http://vadic.vigyanashram.blog/author/sanket-valse/>

### C] Solar Dome Dryer :

We are in the process of making dome dryer commercially manufactured and available for sale. We have got one unit of solar dome dryer fabricated from 'Autogram Industries' (Chakan,Pune). To test efficacy of dome dryer, we have given to it to BAIF, Urali Kanchan for trial. We will be testing it in comparison with other dryers.



### D] STARs forum annual conference:

Vigyan Ashram is founding member and Dr.Yogesh Kulkarni is the Chairman of 'Skills Training for advancement of Rural Societies (STAR) forum. Every year we are organizing a conference on skills training in the month of December. Due to pandemic, this years conference was organized online from 7<sup>th</sup> – 11<sup>th</sup> Dec. Theme of the conference was 'Livelihoods and skills Development – In the post pandemic period'. We had many eminent speakers from India and abroad. We had 193 registered organizations for conference and 100+ average attendance for each session. It is always beneficial for VA team to learn from outside experts and also network with other organizations.

**E] DBRT program update:** In the month of December, 10 more DBRT students joined Pabal campus. Now we have total 25 students (50% capacity as per the COVID advisory) on the campus from Rajasthan, Gujarat, Telangana and Maharashtra. We hope to bring remaining students on campus next month. Following are important highlights of student's activities are –

- Workshop: Students fabricated & installed a roof ladder on Workshop. Students also worked on fabrication of compost stacking rack. Students earned community service of Rs.2980.00 as labour charge for their work.
- Food Lab: Student prepared 3 Kg of Tamarind. They had supplied 25 Kg bread to kitchen and earned community service of Rs.1810/-.



Fabrication of compost rack



Installing LED TV in the classroom

- Energy & Environment section: Students did electrical wiring while installing a 'smart television set' in auditorium hall. They are also learning repair-maintenance of electrical connections, earthing pits, batteries etc through hands-on activities.

- Agricultural & animal husbandry section: Students have taken charge of various fodder & vegetable cultivations plots. They learnt soil analysis and land preparation skills for cultivation of tomato's apart from daily feeding & maintains work of cow, goat & poultry farming units.

Students of Narmadalaya (Madhya Pradesh) and Yusuf Meharali Centre (YMC, Panvel, Maharashtra) are attending online classes & doing practicals locally. Following are some of the activities of these centres for month-

- DBRT students at YMC, Panvel prepared Azolla bed and started cow feeding trial @ 200 gm/day. Students also conducted soil analysis, prepared vermicompost in their agriculture section. They also learnt basics carpentry work as workshop activity and started basic food processing activities in home & health section.



DBRT Students learning from YMC doing Azolla



DBRT Students learning from YMC doing carpentry

## F] Technology Development & Design Innovation Centre (DIC) update:

### i) Fab Lab :

- 'Residential Digital fabrication camp' was organized from 1<sup>st</sup> to 5<sup>th</sup> December. The camp was attended by 8 engineering students to learn basics of digital fabrication like CAD designing, CNC operation, basics of electronics & sensor application.
- Internship: Three students joined Fab lab for one month internship. Students worked on small projects during their internship at Fab lab.



Fab Camp

**ii) Agro waste composting :** Sonal & Ganesh conducted on-field training of agro-waste composting at Mhatarbachi wadi (Bhimashankar). Training was attended by 15 farmers from nearby villages.

**iii) New Fellows & projects :** We have following fellows joined DIC program. Akash Dhupal (M.Sc. Post-harvest Management), Shubham Barmukhe (M.Sc. Bioinformatics) and Archana Waghole (M.Sc. Botany) , Mukesh Basvekar (BE Mech). They will be working on hydroponics farming, tissue culture, azolla feed formulation, projects using image recognition respectively. Mr.Prathmesh Darwade also joined DIC as DIC Engineer. He will work on developing exoskeleton to reduce human effort.

**iv) DIC fellow Kalyani** is working on her Startup 'Sahridaya'. She is getting nutritious product made through women in Pabal village. This month, she prepared & sold 23 Kg of Bajra floor fortified laddoo (brand name-

Nutri7) and 13 Kg of moringa fortified 'chikki'. She is getting very good response for products & working on establishing marketing linkage in Pune & Mumbai region.

v) Prasad did, Hazard and Operability Study (HAZOP) analysis of plastic waste pyrolysis unit. Based on HAZOP analysis, now he will add necessary operational safety features to the plastic pyrolysis unit.

vi) Yogesh was invited as a jury member in the idea competition on 'Building self-reliant SMART Villages for Inclusive Growth' at 'Indian International Science festival(IISF)' held online on 23<sup>rd</sup> Dec.

## G] Technology based Entrepreneurship Development programs (TEDP):

i) Vigyan ashram received sanction order for conducting 'Technology based entrepreneurship development (TEDP)' and 'Faculty Development Program (FDP)' from Department of Science & Technology (DST). The aim of program is to train rural youth and college faculties in 'technology-based entrepreneurship' opportunities.

ii) Bakery training: 3 students from Dantewada (CG) had successfully completed 'bakery training' program on 20<sup>th</sup> December. They learnt various bakery products like bread, kharee, toast, cakes, puffs along with soft-skills like book keeping, marketing etc.

iii) A batch of 10 participants completed 'goat farming technology' program @ 30<sup>th</sup> December.



**Bakery Training at Ashram**

Training comprises of 9 online sessions (18 Hr)

followed by assignments & field visits. A business plan presentation & certificate issuing session was held on 30<sup>th</sup> December in presence of Shri.Vinayak Kelkar (CSR Head-Praj Foundation).

### iii) **EDP Incubation support & field visits :**

- Sachin & Mahendra visited Mr.Shubham Yede's 'cold press oil extraction' (लाकडी घाना ) enterprise on 31st December to guide him in marketing networking.
- Yogesh & Ganesh visited Mr. Sachin Gorade and Mr.Mahadev Padwal, poultry farming site to guide them on-site operations & business proposal.
- Sachin conducted field survey of Velhe block on 24<sup>th</sup> Dec. He had conducted the survey along with Jankidevi Bajaj Gram Vikas Sanstha (JBGVS) team. Survey was made to explore present developmental challenges & need of technology intervention. We are submitting proposal to JBGVS based on our survey.



**Kunal Angane with his poultry birds**

### **'Heroes of the month' enterprise success story**

- **Mr. Sujit Londhe:** Sujit had started his Dehydration unit at Valti, Tal- Ambegaon, Pune as Eeva Agro Industries. He has adopted our 'Instant Puran Mix' technology (product). We are supporting him in standardizing product & marketing.
- **Mr. Kunal Angane :** Kunal has started his poultry unit at Angane wadi, Tal- Malvan, Sindhudurg with 100 bird of RIR breed. He is our online training beneficiary (November batch) & getting necessary hand-holding support under EDP program.

## H] IBT schools update:

- VA team has conducted 3 online sessions for IBT instructors & students in December. Average attendance per session is 85 participants from 12-19 schools.
- Students of 9<sup>th</sup> standard @ Amboli schools constructed a 'Vanrai Bandhara' of 14 ft length \*2.5 ft depth. It took 8 Hrs for group of 20 students & instructors to built this bandhara. Students learnt 'water level marking', cement bag recycling, water storage calculation, team work etc skills while doing this activity.
- Students of 9<sup>th</sup> & 10<sup>th</sup> class @ Padsare IBT school, fabricated 6 units of pedal operated sanitizer dispenser stand.
- IBT students of Chikhali school cultivated fenugreek, spinach and onion crop on approximately 300 SQFT land. Schools agricultural land was full of weeds due to lockdown during past 9 months. Students worked hard to remove weeds and prepare land.
- Katraj school IBT school students prepared a 'sliding gate' for their school entrance. Students tried to use scraped material for this activity.
- Yogesh conducted online session on Education for forth industrial revolution and role of teachers for teachers training program organised by Maharashtra knowledge foundation on 3<sup>rd</sup> and 10<sup>th</sup> Dec.



Vanarai bandhara @ Amboli



Padasare school – Hand sanitiser station

## I] DIY Design and Fab School project update:

- Prasad & DBRT student Omprakash fabricated hydroponics vegetable cultivation system. It's a Nutrient Film Technique (NFT) based 100 Ft<sup>3</sup> capacity structure for 60 plants. The system will be installed at Mukhai school. Design files & construction details of system available as open source DIY instructions - <http://vadic.vigyanashram.blog/2020/12/29/hydroponics-structure-2/>
- A 1000 lit capacity solar water heater is installed at Mukhai schools campus from la-fondation support.
- Pooja conducted 4 online training sessions for 9<sup>th</sup> class students of Mukhai school from 5<sup>th</sup> to 26<sup>th</sup> December on application Tinkercad, 2D-3D designing, Inkscape application.



Hydroponic design



Hydroponic fabrication as per design

## J] Do-It-Yourself Lab:

After conclusion of 'Become Young Engineer Program' last month, we have started 'Make your toys' online sessions. We had conducted 5 online sessions in this month. Details are as -

Date	Online session	Participants
2 <sup>nd</sup> Dec	To make pop-up boat and understand the science and technology behind it.	74
9 <sup>th</sup> Dec	To make music instruments and understand the science and technology behind it.	65
16 <sup>th</sup> Dec	To make air pressure based toys and understand the science behind it.	100
23 <sup>rd</sup> Dec	To Build a shot putter (गोळाफेक यंत्र) machine.	75
30 <sup>th</sup> Dec	To make different type of vortex using scrap material and understand the science behind it.	80
	<b>Total</b>	<b>394</b>

The educational content for above sessions are available on [www.learningwhiledoing.in](http://www.learningwhiledoing.in)

## K] Wikipedia publication:

- Akash Swant & Komal scanned 26 Books of Tarun Bharat Sangh comprising 3528 pages.
- OCR conversion work completed for seven books written by Dr.Bhaskar Girodhari.
- [https://commons.wikimedia.org/wiki/Category:Books\\_by\\_Bhaskar\\_Girdhari](https://commons.wikimedia.org/wiki/Category:Books_by_Bhaskar_Girdhari)
- New articles added to Wikipedia: [रेणू](#), [ईथरनेट](#), [मसाला](#)

## L] Other tit-bit –

i) Visit of Dr.G.G Parikh (GG) : GG is founder of Yusuf Meher Ali Center (YMC). He is freedom fighter and was present during 1942 Quit India movement. Dr.Kalbag and GG was friend. GG wanted to see progress of Vigyan Ashram started by his friend. Although he is 96 years of age, GG visited Vigyan Ashram on 2<sup>nd</sup> Dec. GGs visit and discussion with him was inspiring for us. GG visited along with Dr/Haresh Shah (Vice chairman of YMC), Chandramohan Nair, Nirmala Nair & others. YMC has started DBRT program with our support. At present T students around Panvel are doing their practical's at YMC.



With Dr.G.G Parikh

ii) Prof.Anand Rao, CITARA, IIT-Pawai, visited Pabal campus & IBT -Mukhai school @ 4<sup>th</sup> December.

Team studied scope of renewable energy based on field installation and research activity. We are planning to do collaborative work under 'Living Lab' project of IIT.

iii) We have received Smart TV of set donation (60") for classroom from Mr.Kudale.

iv) Yogesh attended Expert committee meeting SP-TITE (Tribal Sub Plan-Technological Intervention for Tribal Empowerment) of 17<sup>th</sup> and 18<sup>th</sup> Dec, it was organised by DST.

iv) Weather record –Rainfall of the month -1.5 mm (Total – 668.14 mm) ,Max temp-38.00 °C, Min Temp –11.00 °C , Humidity – 82 % , Water height in well – 5.20 Mtr.

v) Energy consumption record- Electricity unit – III Phase -2069 units , I Phase Export- 443 units, Import- 309 units. DG used – 09.45 Hrs. Quality of power : Number of interruptions : 61 , Normal voltage : 81.92%, No supply : 5.46 % , low voltage :14.61 % , High Voltage- 3.92% No data: 0%

vi) Animal Husbandry section update – Milk production – 461 Kg , Goat farm- 1 male buck sold (38 Kg @ Rs.238 /kg), Poultry Egg production – 44.25 dozens (FCR – 5.25 higher than expected due to leaver infection)

vii) Biogas consumption – Dung used- 722 Kg , Gas produced- 28.88 M<sup>3</sup>, Two wheeler record– NA

**KJ Data Report:**

<https://drive.google.com/file/d/1h346JEcdDoSOtdwG8FaA8IKGXOjevaLJ/view?usp=sharing>

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**Photo Gallery:**



Visit of IITB team



Nursery training



New DBRT students : Leisure trip on Thitewadi dam



Solar panel cleaning system.



Survey meeting with villagers in Velhe

Latitude: 18.25239  
Longitude: 73.793342  
Elevation: 710.67 m  
Accuracy: 3.5 m  
Time: 24-12-2020 16:25  
Name: Village meeting Sor...



Solar water heater @ Mukhai school