

# Vigyan Ashram Status Report

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August 2023

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## **A] Digital fabrication 'Makeathon' for girls from rural colleges:**

Thanks to Dassault system's la-foundation, we have launched project to train 100 rural science girls through Makethon. It will be 5 days residential program at Pabal. They will be trained on advanced digital fabrication skills.

First 'Makeathon' was conducted during 22<sup>nd</sup> to 26<sup>th</sup> August. It was attended by 13 girls students. All of them are studying 2<sup>nd</sup> year BSc (Physics) at C.T.Bora College (Shirur). They learnt application of digital fabrication tools like 3D printing, laser cutting, basics of sensor application & programing etc through 'design thinking' methodology. Girls worked in small teams and made following projects: Optical fiber communication (Education toys), woman safety device (Textile), water pump safety indicator (Agriculture) and Solar powered street lights (Renewable energy). We are contacting rural science colleges and planning more Makeathon in coming months.



## **B] Modernization of Engineering workshop & Electrical lab:**

Modernization & infrastructure up gradation work has started for engineering workshop & electrical section with the support of M/S Mahle Engineering Services (I) Pvt Ltd. Both these departments are used extensively for skills training & prototype development work. Upgradation involves purchasing of new advanced equipment's like CNC machine, powered-coating paint booth, solar PV testing equipment etc. Industrial grade work safety measures like welding curtains, exhaust fans etc will be installed in engineering section.

We have installed six new turbo-ventilators on workshop building. Similarly wall-painting is done, storage cupboards were repaired, and fabrication of new soldering tables is done. We have started purchase of new tools & equipment.

### C] Recognition for four courses by MSBVEE

We have applied for recognition for following courses to Maharashtra State Board of Vocational Education Examination (MSBVEE). We have got permission to conduct following courses through GR : VOC/2023/प्र. क्र /

उद्योजकता dt. 25<sup>th</sup> Aug 2023.

- 1) Certificate course in Electric wiring
- 2) Certificate course in Welding (Gas and electric)
- 2) Certificate course in Solar technician
- 3) Certificate course in basic food production.

### D] Design Innovation Center [DIC] : Technology Development updates :

#### i) Black Soldier Fly (BSF) based waste-processing:

We have processed 1.01 ton of kitchen waste at 4 locations during August. We have added 4 new baskets at Rajgurunagar Nagar Parishad dumping ground. These baskets were fabricated at VA workshop and necessary stitching was done in our sewing facility. Each basket has 20 kg of processing capacity per day. Total installed capacity about 180 kg of waste processing per month. The approximate cost per basket is INR 450 excluding labor charges.



BSF bags @ Rajgurunagar

A new field trial setup is installed at poultry farm of Mr.Ganesh Ghayதாக (Karde, Ranjangaon). Mr.Ganesh has a 2500 desi-poultry birds & wish to improve feeding efficiency by adopting BSF larvae feeding to birds. On 11<sup>th</sup> Aug, Arun & Mahesh visited his farm for guiding him in setting up BSF farming with necessary inputs like hanging baskets, baby-larvae, training etc. (VATF)



Bio Char production kiln

ii) **Pyrolysis bio-char production:** PhD student Rahul Parmane from Institute of Chemical Technology (ICT), Mumbai & Dr.Dhanaji Kale are working on Biochar pyrolysis setup at VA. They have fabricated experimental setup with 6 kg loading capacity. The firewood was used as fuel to heat reactor and pyrolytic gas were re-used for better energy efficiency. In the initial trials **yield of biochar is around 20-25% more than MIT D pyrolyser and Kerala Pyrolyser.** Since volatile gases are used as a heating medium, it results in less pollution. (VATF)

iii) **Solar dome dryer:** Dryer fabrication work is completed for customer from Nasik with drying trays & exhaust arrangements. Dryer was tested with loading of 25 kg fresh coriander in the last week of August. Trial was failed due to scattered rains & higher humidity accumulation. Further trials are planned with required modifications in design. (VATF)

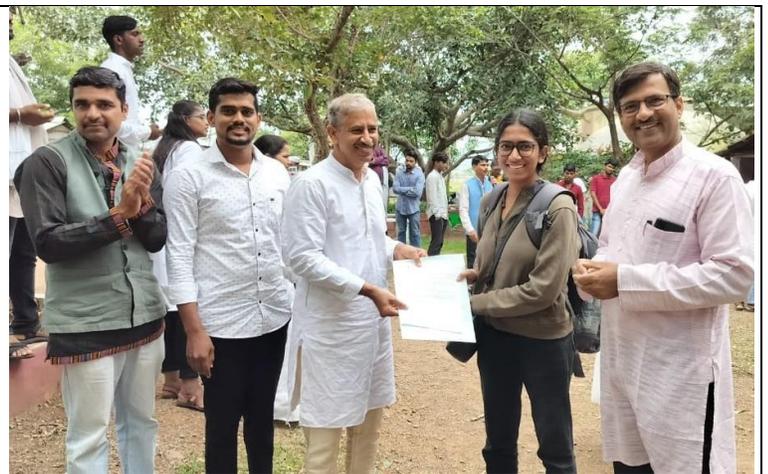


iv) Akshada conducted base-line survey with 16 progressive farmers in the Pabal region. Surveyed aimed at documenting farmers expenses on 'chelated micro-nutrients'. It was found that farmers spend around 25 % of their fertilizer budget on expensive chelated micro-nutrients (mainly Magnesium, Boron, Iron etc.). She is working on finding low-cost chelation methodology for these nutrients.

v) Tissue culture lab : Farmers from Khairnagar wanted to have tissue-cultured plants of moringa from their mother plant. We are working on this assignment. Initial trials failed due to infection. Now we have started new trials under guidance of subject-matter expert Mrs.Avanti Kulkarni (Nasik).



Kartik Shingade, Parth Hanvate, Pritesh Pawar, Prathamesh completed their internship



Vanshita completed her internship

### E] FAB-Bhutan challenge award

Vigyan Ashram team had participated in the Fab-Bhutan challenge 2023 and submitted lesson plans on STEM education. This Technology innovation challenge was launched by SCOPE-Df. Sumit Thakare won 1<sup>st</sup> prize (award of \$500) for 'Smart Scarecrow' project under the theme of Human Wildlife Conflict. While Komal Raut won 2<sup>nd</sup> prize (award of \$500) for her 'Level contour by using A-Frame' under climate-adaptive agriculture theme. Details can be found - <https://www.scopesdf.org/>.



## F] Entrepreneurship Development Program (EDP) :

**i) Training on Milk processing enterprise:** A two days training on opportunities in 'Milk-processing enterprises' was conducted on 19<sup>th</sup> & 20<sup>th</sup> August at Kunjir Dairy Processing plant, Urali-Kanchan (Pune). Participants learnt manufacturing of Khowa, Panner, Ghee, Dahi etc in the processing plant for 2 days. Total 10 trainees participated in the training. Mr.Dada Kunjir (owner of processing plant) & their expert Karagir's were resource person.

**ii) Poultry farming training:** On-field training on 'feed & disease management' of desi-poultry birds was conducted on 24<sup>th</sup> August at Sakhar village (Velha, Pune). Training was conducted as a part of on-field mentoring support to 20 backyard poultry farmers' organised by Raintree-Foundation.

**iii) Webinar:** Opportunities in millet processing webinar was conducted on 6<sup>th</sup> August. A very overwhelming response was received for the webinar with 600+ participation (Zoom 100 live, YouTube video view 500+). Millet processing entrepreneur Mr.Mahesh Londhe (Director-Agro Zee Organics Pvt.Ltd, Pune) introduced participants on various aspects of millets like identification of millets, its dietary importance, millets processing technology, innovative recipes, government support scheme etc.

## iv) Field visits:

- Ranajeet & Ganesh visited 'Amruteshwar Arts, Commerce & Science College, Vinzar (Velha) on 24<sup>th</sup> August. They conducted session on importance 'Design Thinking & Entrepreneurship aptitude for commerce & science faculty students.
- Ganesh visited Harsul & Jawhar (Nasik) to meet DBRT and EDP alumni on 31<sup>st</sup> August. He conducted awareness camps for tribal students on different skill training & rural enterprise opportunities. At Jahwar he met DBRT alumni girls' students & administration of Pragati Pratishthan to start their bakery enterprise.
- On 22<sup>nd</sup> August, Ganesh visited EDP beneficiaries Mrs.Shradha Dhavad and Mrs. Ashwini Pawar at Nighoj area to guide them in their respected dairy enterprises.
- Yogesh Onkar & Kiran Inamdar visited 'Desi Ghana Rajgurunagar' on 8th August for providing on-field mentoring support.
- An enterprise registration support provided to 4 new rural enterprise (Udyam Certificate-2, FSSAI-1, Shop Act-1) (VATF)



उद्योजकता विकास विभाग  
विज्ञान आश्रम, पावळ आयोजित

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# भरड धान्यातील व्यावसायिक संधी

## मोफत वेबिनार

दिनांक :- 06 ऑगस्ट 2023  
वेळ :- सकाळी -10 वाजता

zoom Meeting ID : 857 6693 1788  
Password : 12345

- मार्गदर्शक -



श्री. महेश लोंढे  
Founder- AgroZee Organics PVT.LTD

Millet Adda

अधिक माहितीसाठी संपर्क:  
योगेश :- 7774073920

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### लॅंडीखत लिक्वीड

फायदे:-

- सर्व प्रकारच्या धान्य, भाजीपाला, फळे, फुलशेती साठी उपयुक्त.
- पिकांना NPK चा अर्थात नत्र, स्फुरद, पालाश यांचा मुबलक पुरवठा होतो.
- पिके हिरोवी गार होतात.
- पिकांची जोमदार वाढ होते.

उपयोग:-

- पिकांच्या वाढीच्या अवस्थेनुसार फवारणीद्वारे किंवा सिंचनाद्वारे पिकांना उपलब्ध करून देता येते.

संपर्क :- योगेश मनसुख 7821089291 मनीषा मनसुख 8600432411

सावरगाव शिवहरीनगर ता: जुन्नर जि: पुणे

### **GJ DBRT learning updates:**

We have decided to upgrade DBRT curriculum. We have engaged Mr. Anil Gadhe (DBRT alumni – Entrepreneur) as a ‘consultant’. With his expertise in fabrication industry, he will help us to upgrade our engineering and electrical section. Following are some of the highlights of August:

#### **i) Engineering section:**

Engineering section students learnt engineering tools like milling machine, lathe machine, power hacksaw, CO<sub>2</sub> welding etc. While practising CO<sub>2</sub> welding, students repaired old hostel-beds and fabricated new welding table. Students also fabricated mosquito-net frames for boy’s hostel. Student’s also learnt basic masonry skills while constructing porch wall for new hostel building. Team of 8 students completed wall-painting work of electrical section. Total community services in August was Rs.37458/- including students earning share of Rs.7477.00

ii) **Energy & Environment section:** In this section, students repaired emergency alarm of ladies’ hostel, installed new control panels in the polyhouse and repaired switches in the hostel. Students had completed electrical wiring work of ‘IBT school at Khadaki-Pimpalgaon’. Total work order of schools was Rs.15000.00 including students earning of Rs.1000.00. Students also repaired ‘refrigerator’ of food

processing section and installed solar-panels for grey water recycling system.

iii) **Home & Health section:** Students prepared a health chart with body weight, BMI, blood group & haemoglobin measurement for all 72 students on the campus. Students processed 60 kg bread-flour for making bread for kitchen breakfast. They also ‘Gulab-Jamun’ from 6 lit milk for Independence Day treat. Total value for various food-products sold was Rs.11615/-.

#### **iv) Agriculture & Animal husbandry section:**

Farming activities are badly affected this year due to lower rainfall (131.27 mm till Aug end). Due to this farm activities are limited to small plots & polyhouse. During



**Freeze repairing**



**Biogas plant repair**



**Preparing agri plot**

August, students sowed 600 gm of onion seeds, they also planted 480 sticks of Napier grass & 150 sticks of mulberry as a fodder crop. Students harvested 10 bundles of Amaranths (Rajgira), 3 Kg Methi & 4.5 Kg Spinach.

Animal husbandry students used 'poultry egg incubator' machine while hatching 17 chicks from 70 eggs (low hatching rate was due to electricity failure & older eggs).

#### H] IBT Program updates:

**i) IBT teachers training :** A 4-Days instructor's training program for school teachers from K.R.Shroff Foundation (Ahmadabad, Gujarat) was conducted from 17<sup>th</sup> to 20<sup>th</sup> August 2023. 13 teacher-instructors attended training.

**ii) Seed the Future Entrepreneurs competition:** 6 IBT schools are participating in the 'Made-in-3D: Seed the Future Entrepreneurs' competition. It's a national level competition organized by 'La-foundation' (Dassault systems). Objective of the competition is to introduce 'school going children' (class 7th to 10th) to the world of start-ups. This year IBT students from Gawadewdi, Hiware, Mukhai, Chikhali, Nirgudsar and Tulapur schools will be participating in the competition.

**iii) 3D designing & printing training:** Komal & Archana conducted 3D designing & printing training at Shri. Ram Vidyalaya Navalakumbre School, Talegaon on 9<sup>th</sup> Aug and 23<sup>th</sup> Aug 2023.

**iv) Visit to Directorate of Vocational Education & Training (DVET):** Mahendra Bhor & Mr. Vinod Bombale (Head Master Gavadewadi School) visited DVET office (Mumbai) on 7<sup>th</sup> August. The visit was to follow-up on new IBT schools' approval.

**iv) Online training session:** VA team conducted 4 online sessions for IBT instructors on engineering drawing, Welding technology, vertical bag farming and seed treatment. Session was attended by total 118 instructors.

#### Students learning activities:

- Sau Lakshmibai Baburao Bangar Vidyalaya (Khadki -Pimpalgaon, Tal-Ambegaon, Dist-Pune) has joined IBT network. They are supported by TATA Technologies CSR initiative. IBT students participated in the setting up of the lab. They were engaged in doing basic electrification & metal fabrication while installing tools & other equipment in their labs.



3D printing training



LDR installation as IBT project

- IBT students from 9 different schools in Pune district earned a community service of Rs.7846.00 while preparing & selling of various food products in IBT-home & health section. Students prepared food products like chikki, healthy ladoo's, cookies etc as learning activities. They arranged food stalls in their schools on Independence Day & Raksha Bandhan festivals to sell these products while learning marketing skills.
- Energy & environment section students in Vahangaon & Kohinde IBT schools repaired 36 units of CFL & LED lamps. Students collected these lamps from villagers to learn repairing skills like fault-finding, soldering, IC & LED replacement etc. Students sold repaired lamps @ Rs.20/lamp with approximate repair investment of Rs.5 per lamp.
- 9<sup>th</sup> class students of Kohinde IBT school, fabricated a wheel-borrow (trolley) for their kitchen. It was required by school from long-time to reduce mid-day meal food transport efforts. Students fabricated wheel-borrow while using MS 'L' Angle (13ft), MS Square Tube (20ft), MS Strip (9ft) and 4 wheels.
- Students of Salumbre, Shivali & Kohinde IBT schools made 2000 handcrafted Rakhi's'. Students sold these rakhi's @ Rs.5 to 15 per head while earning community service of Rs.11,500/- (Stars)



**HM Training @ Lucknow**

### **IBT Uttar-Pradesh:**

- A one day training workshop was conducted for all IBT school 'head-masters' on 10<sup>th</sup> August. The training was held at Institute of Entrepreneurship Development (IED, Lucknow). Objective of this training was to prepare activity time-table and discuss program implementation strategies. Total 46 headmasters have participated in the training program. Mr.Ranajeet Shanbag, Mr.Ranjit Singh (State Education Consultant, Samgra Shiksha Abhiyaan, U.P) interacted with head-masters & answered their administrative issues.
- As a part of the learning activities students learnt different science concepts through hands-on activities like seed sowing, making of kitchen garden, solar powered toy car. Students of 59 IBT schools made various kind of 'Rakhis' and sold them in an exhibition stall. Students learnt sewing-knitting, decorating, accounting etc skill through these activities. (Stars)

### **I] Atal Tinkering-Lab (ATL) & DIY lab update:**

#### **ATL Updates:**

- Four schools each from Andra-Pradesh, Telangana & Karnataka are selected to participate in national level 'Made-in-3D: Seed the Future Entrepreneurs' competition.



**Visit by TSAC officials to Karmanghat ATL**

- ii) Official from Telangana State Aid Control Department had visited ZPHS Karmanghat on 8<sup>th</sup> Aug to explore the ATL lab, they have discussed with us and students about possible usage of the lab facility to engage the orphans from their society especially to support their future livelihood options.

**Following are highlighted activities of these labs-**

ATL Andhra-Pradesh: Weekly online training sessions were conducted for ATL instructors on DISHA YouTube channel. During August following 3 sessions were conducted with cumulative attendance of 1413 viewers.

Topic	Link
How to make simple air-boat using plastic bottles and DC motor	<a href="https://www.youtube.com/live/GOPHyEX9PBo?si=RLBhRdSg2UR024WI">https://www.youtube.com/live/GOPHyEX9PBo?si=RLBhRdSg2UR024WI</a>
Automatic toy using waste material	<a href="https://youtu.be/S1DXOLBDjxY?si=xCdge86sTEAMmb">https://youtu.be/S1DXOLBDjxY?si=xCdge86sTEAMmb</a>
RC crane machine using Arduino	<a href="https://www.youtube.com/live/rKZ_3MwLJZo?si=Mpn39NGsu_VbASFN">https://www.youtube.com/live/rKZ_3MwLJZo?si=Mpn39NGsu_VbASFN</a>

Apart from these sessions Penumarthi Venkatesh, conducted different hands on-training for students at state training lab viz. crafts making, application of DC motors, remote control car, 3D printed rakhi etc.

ATL Telangana: An annual activity calendar & weekly time-table is prepared for ATL schools. It will help schools administration to allocate fixed timeslot for ATL activities for 6<sup>th</sup> to 9<sup>th</sup> class students.

Purushotham trained students to design & fabricate stand for magnifying lens of physics laboratory in the school. He also trained students on use of Arduino & sensors, 3D modelling etc at state-training centre lab.

**Do-It-Yourself (DIY):**

- i) Rakhi making workshop was held on 19<sup>th</sup> August. Two types of Rakhis were designed & made by students 1) 3D printed Lithophane with LED lamp 2) Acrylic rakhi with Light Dependent Resistance (LDR) rakhi. Students enjoyed workshop with learning of soldering, sensor application, 3D printing etc skills. Students learning can be viewed in video link -<https://youtu.be/SIYaCDeReds>



- ii) Cardboard robotic gripper : On 11<sup>th</sup> August, students (from both Wednesday and Friday batches) made robotic gripper using cardboard to learn basics of mechanism and how robotic arm gripper works. video link - <https://youtu.be/qdSbBqxFsmE>
- iii) Akash & Tejaswini conducted DIY-Farming sessions for membership students. Students learnt seed germination, soil preparation, composting, making of Jivamrut etc skills through hands on activities.

## JJ Distance Learning Library (DLL) & Marathi Wikipedia updates:

### Distance learning library updates:

- TIG-MIG welding module: Final video-modules received from Tech-wisdom. The video modules were tested with VA-alumni and finalized. Work of adding interactivity, quiz etc. is started.
- Water pump installation: Draft video shoot & editing work was completed for all modules. Final video making work is handed-over to Jnan Prabodhini technical team.
- Bio-floc farming: Viewer feedback & edited audio/video clips submitted for final editing.
- Soft-skill: 3 videos are finalized. Work on interactivity & uploading started.

### Wikipedia update:

- VA Wiki-team poster (Inspiring rural women to create free knowledge on Wikipedia) was displayed at Wikimani-2023 exhibition (<https://wikimania.wikimedia.org/wiki/2023:Wikimania>) organised at Singapore during 16<sup>th</sup> to 19<sup>th</sup> August.
- On 26<sup>th</sup> August, Mr. Pawan Santosh (Program manager CIS-A2K, India) and Mr.Subhodh Kulkarni (Senior Program officer, CIS-A2K, India) visited Pabal campus to meet wiki team. They interacted with wiki-team to understand work-flow and discussed future opportunities. Pawan Subhodh appreciated wiki-team contribution and dedication in creating open-source knowledge.



Wiki team with CIS-A2K officials

- Priyanka & komal completed 'proof-reading' work for 2 books (613 pages), Made OCR for 2 books (564 pages) and indexing of one book.

## KJ Other tit-bits :

i) 15<sup>th</sup> August Independence Day celebration: The 77<sup>th</sup> Independence Day was celebrated at Pabal campus with full of enthusiasm & enjoyment. After flag hosting students & staff participated in the cultural programs & competitive game activities. *Tarpa*-the tribal dance, Bhajan, drama and street-play was performed by students & staff teams. Home & Health section students gave a treat of *gulam-jam* to all participants. On 14<sup>th</sup> August, students participated in the *shramdaan*. They planted 50 new



VA team on 15<sup>th</sup> Aug

trees, made barbed-wire fence to new hostel and cleaned the campus.

ii) Management Committee meeting was held on 27<sup>th</sup> August at Vigyan Ashram. Meeting was attended by 11 committee members including 5 newly nominated members by Indian Institute of Education (IIE). Important issues like approval of annual report, new project sanctions, purchase of Roti maker, administrative matter etc were discussed and appropriate decisions were made.

iii) Ranajeet visited Goat Trust India, Lucknow campus on 11<sup>th</sup> August to learn advanced goat farming techniques, activities of organization & scope for collaboration.

iv) Work of installation of new bio-toilet septic tank & plumbing line repairing completed at DIY Lab Pune on 10<sup>th</sup> August. Total cost accrued for repair was Rs.10000.00.



**Soak pit work @ DIY Lab**

iv) Unicef has conducted third party micro assessment and on the spot assessment of accounting and management practices from 17<sup>th</sup> – 19<sup>th</sup> Aug. we have got low risk rating and also we got NO SEA risk (Sexual Exploitation at Work place) entity with total score of-8. This assessment is necessary for sanction of new projects.

v) Weather record – Rainfall of the month –14.59 mm (Total: 137.21 mm), Max temp-31.00°C, Min Temp – 20.00°C, Humidity –87 %, Water height in well– 3.15 M.

vi) Energy consumption record- Electricity unit – III Phase-140 unit, I Phase import-57, Solar generation-1968. DG used – 8:00 Hrs.

vii) Animal Husbandry section update – Milk production –628 Kg (Gross profit- Rs.16012.00), Poultry farm- Average weight per bird- 2.02 kg (FCR – 2.15)

viii) Biogas produced-Biogas unit was under maintenance.

ix) Online visitors: www.dsttara.org – 732 (New visitor- 651, Repeated-81), www.vigyanashram.com – 898 (New visitor-717 Repeated-181). Campus tour visitors –261.

#### **LJ Data Report:**

<https://docs.google.com/spreadsheets/d/1bWMCi7Re8iO6ogMVWgGs1woSQgiVEbeT/edit?usp=sharing&ouid=101141840668207826730&rtpof=true&sd=true>

(Work of VA is supported by Asha for Education, Praj foundation, EATON Foundation, LTI-Mindtree, SPA Education Foundation, UNICEF, TATA Technologies Pvt Ltd, Mahle Engineering Services Pvt Ltd, Schaeffler India, INDUSIA Endowment, Savitribai Phule Pune University, Dept of Science & Technology, La-foundation, Prabhu trust and many individuals and foundations)

**Photo Gallery:**



Electrical wiring work



DBRT students doing maintenance of solar grey water



15<sup>th</sup> Aug Cultural program



IBT Training @ KR Shroff foundation



Installation of turbo ventilators



Management committee members of VA

For Regular update: [www.facebook.com/vigyan.ashram.pabal](http://www.facebook.com/vigyan.ashram.pabal) ; [www.vigyanashram.blog](http://www.vigyanashram.blog)  
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