



## Annual Report: 2024-25



**Vigyan Ashram Technologies Foundation  
At Post Pabal, Dist.Pune 412403.**

[www.vigyanashram.in](http://www.vigyanashram.in)

## Introduction

Vigyan Ashram Technologies Foundation (VATF) is working to promote Dr. Kalbag's vision of 'Rural Development through Education System' (RDES) since 2021. Scaling up of RDES programs in the areas of education, technology and rural development is the primary focus of VATF.

VATF's key highlight programs during 2024-25 are:

- Skills training
- Promoting STEM program in schools
- Entrepreneurship support for rural youth and college
- Faculty Development Program (FDP)
- Support to 45 rural youth in DBRT
- Incubated 64 new rural enterprises
- Trained 212 school instructors

There is also considerable progress on many new technology development projects. Details of the program can be found on [www.vigyanashram.in](http://www.vigyanashram.in)

As per Government directives, VATF got a National Securities Depository Limited (NSDL) registration with International Securities Identification Number (INE1F8501010). This will help in raising social funds through Social Stock Exchange (SSC). We have applied for Foreign Contribution (Regulation) Act (FCRA) certification and are waiting for approval.

We are thankful to a large group of volunteers who contributed with their expertise in conducting many workshops and on field support. VATF is able to grow due to their active participation in our programs. We are very grateful to our supporters, funding partners, donors and stakeholders for their encouragement and support.

Following are some of the important notable activities and projects implemented by VATF during 2024-25.

- A. Skill Training of Rural Youth & Technical Teachers
- B. Technology based Entrepreneurship Development Programme (EDP):
- C. Technology Development and Field Testing:
- D. Infrastructure development
- E. Awards and publications

## **A. Skill Training of Rural Youth & Technical Teachers**

### **1. Diploma in Basic Rural Technology (DBRT) program:**

DBRT is multi-skilled training residential programme to become an entrepreneur! It is based on “Learning by Doing “philosophy of Dr. Kalbag implemented at Pabal campus by Vigyan Ashram. The 1 year duration course is affiliated by National Institute of Open Schooling (NIOS). DBRT program is designed especially for energetic rural youth (age group 16 to 22) not interested in regular book-centric education system but wish to stay-back in their native village for technology-based entrepreneurship. From past 4 years, VATF supported 220+ rural youth enrolled for DBRT program for their hostel & food facility.



During 2024-25, VATF supported 61 students (49 Boys, 12 Girls) enrolled in DBRT program from Maharashtra, Madhya-Pradesh, Chhattisgarh and Assam. Apart from hostel & food facility, VATF also provided infrastructure support for farming activities, beauty & wellness skills and audio-visual classroom facility.

### **2. Training of instructors and technical teachers training:**

Training of vocational program teachers or instructors & technical teachers is one of the major focus areas of VATF. Hands-on training workshops for Atal Tinkering Lab (ATL) teachers and Introduction to Basic Technology (IBT) instructors were conducted at Pabal campus on regular basis. During 2024-25, total 215 IBT school teachers attended 3 to 5 days training workshops. Trainings were based on adoption of new



vocational skills & technologies in the area of agriculture, material & mechanics, energy & environment and food-processing sector. Instructors were also taught pedagogical linkages with hands-on activities & respective class-subject, adoption of design-thinking and New Education Policy (NEP-2020) methodology for better implementation of vocational training in schools.



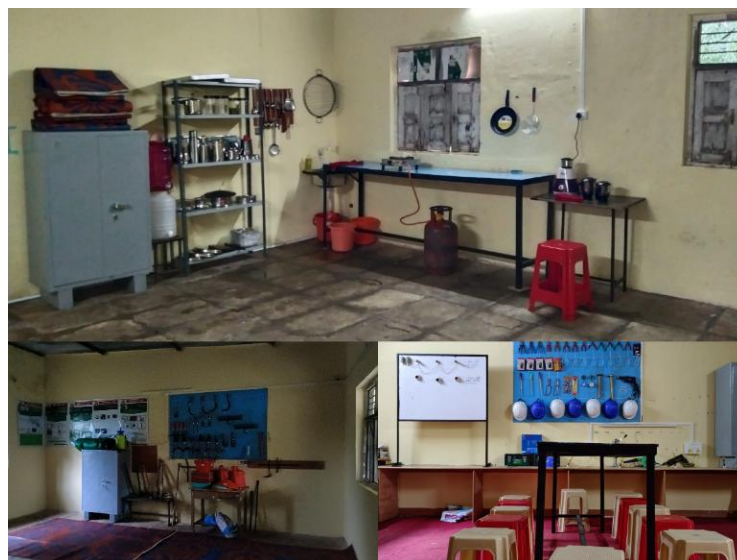
List of some of the important training programs conducted during 2024-25 are:

Date	Name of training	Participants	Supported by
5 <sup>th</sup> to 9 <sup>th</sup> June 2024	Instructor training program – IBT schools	34	STARS Forum
11 <sup>th</sup> to 14 <sup>th</sup> June 2024	Instructor training program – IBT schools	24	STARS Forum
11 <sup>th</sup> to 13 <sup>th</sup> June 2024	Instructor training program – IBT schools	43	Vigyan Ashram (IIE)
3 <sup>rs</sup> to 7 <sup>th</sup> July 2024	Instructor training program- Senior IBT schools' instructors	82	Vigyan Ashram (IIE)
5 <sup>th</sup> to 9 <sup>th</sup> Aug 2024	Make-a-thon Program for Science girls	25	Vigyan Ashram (IIE)
12 <sup>th</sup> to 14 <sup>th</sup> Aug 2024	Instructor training program- Senior & 3 D printing Coordinator one Day training Program	13	STARS Forum
12 <sup>th</sup> Aug 2024	3 D printing & designing for school instructors	17	STARS Forum
16 <sup>th</sup> Aug 2024	IBT Coordinator Training Program	30	Vigyan Ashram (IIE)

20 <sup>th</sup> to 24 <sup>th</sup> Aug 2024	Make-a-thon Program for ITI students	17	Vigyan Ashram (IIE)
11 <sup>th</sup> to 15 <sup>th</sup> Sep 2024	Make-a-thon Program for rural science girls	23	Vigyan Ashram (IIE)
23 <sup>rd</sup> Oct 2024	Instructor training program- Senior IBT schools' instructors	28	STARS Forum
25 <sup>th</sup> to 29 <sup>th</sup> Nov 2024	Make-a-thon Program for ITI students	23	Vigyan Ashram (IIE)
30 <sup>th</sup> Nov 2024	LBD teachers training program	36	STARS Forum
16 <sup>th</sup> & 17 <sup>th</sup> Dec 2024	STEM education teachers training (West-Bengal)	10	STARS Forum
17 <sup>th</sup> to 21 <sup>st</sup> Feb 2025	Make-a-thon for science girls	21	Vigyan Ashram (IIE)
29 <sup>th</sup> Mar to 2 <sup>nd</sup> Apr	Make-a-thon for ITI students	26	Vigyan Ashram (IIE)

### 3. IBT program at Gramin Prashala, Madaj (Dist- Dharashiv):

VATF has established an IBT lab for pre-vocational training (tools & equipment) at Gramin Prashala School, Madaj, Dist. Dharashiv. This is the school in aspirational district and implementing IBT program since 1999. Their infrastructure got depleted and was in need of urgent upgradation. VATF supporter



Mrs. Anita Dandekar has given donation for upgradation of this facility. We are thankful to Mrs. Anita Dandekar for her support.

#### 4. Faculty Development Program (FDP)

VATF, in collaboration with the Maharashtra State Faculty Development Agency (MSFDA), has been conducting Faculty Development Programs (FDPs) for professors from higher education institutions. During the academic year 2024–25, three FDPs were successfully organized, engaging a total of 68 professors from diverse disciplines such as Engineering, Science, Social Science, Psychology, Literature, and Commerce. These programs featured a combination of classroom sessions, field surveys, and hands-on activities, with a strong emphasis on integrating design thinking, real-life need-based student projects, and an entrepreneurship development approach into higher education at both undergraduate and postgraduate levels.

The details of FDP participants are:

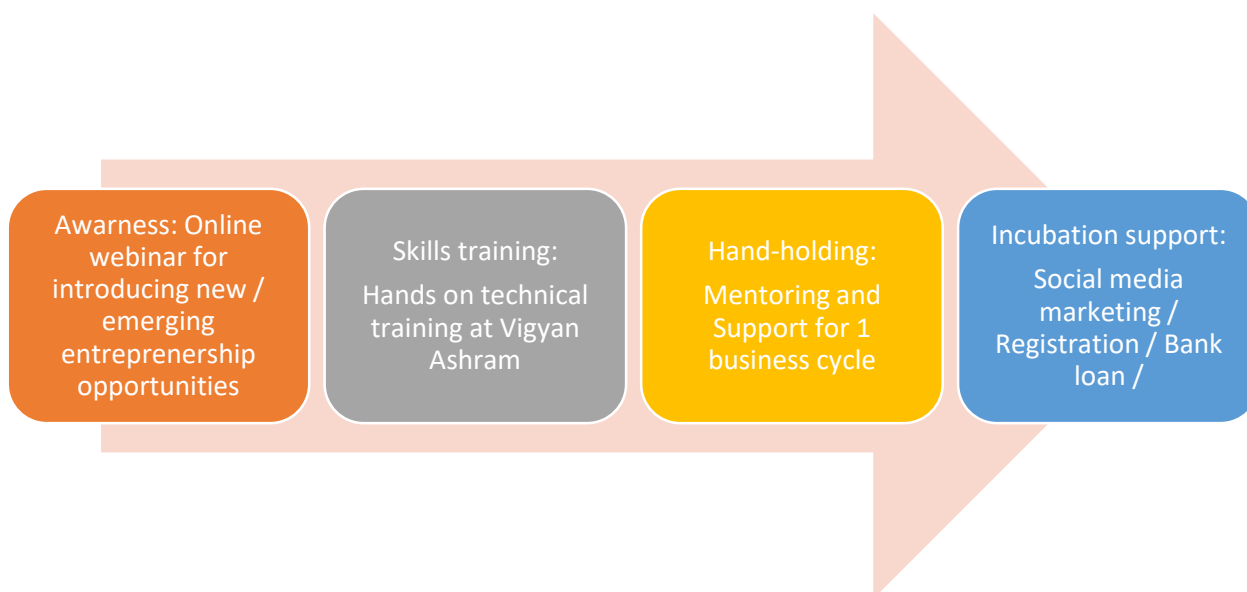
Training dates	Number of participants	Location
28 <sup>th</sup> Aug to 1 <sup>st</sup> Sep 2024	13	Vigyan Ashram, Pabal
4 <sup>th</sup> to 8 <sup>th</sup> Feb 2025	27	Patkar-Varde college, Goregaon, Mumbai
4 <sup>th</sup> to 8 <sup>th</sup> Mar 2025	28	K.B.T. College of Engineering, Nashik



#### B. Technology based Entrepreneurship Development Programme (EDP):

##### 1. StartUp-Sarathi for rural entrepreneurs:

VATF provides a complete incubation & hand-holding support to rural entrepreneurs through Entrepreneurship Development Program (EDP) under StartUp-Sarathi brand name. Following is the methodology of supporting EDP mentee.



Dedicated web-portal <https://startupsarathi.vigyanashram.in/> is designed for easy access of information and support.

During 2024-25, total 64 rural enterprises in the field of agriculture & animal husbandry, food processing, renewable energy, metal fabrication, photography & retail, fashion & garments were started throughout Maharashtra state. This year, we conducted 17 trainings and 14 on-field training workshops with 177 participants. Details of major trainings are:

Name of the training program & dates	Number of participates
Processing of Non-Timber Forest Produce (NTFP) for Van-Dhan Yojana beneficiaries (15 <sup>th</sup> May 2024).	12
Processing of Karonada, Mango & Moringa-leaves for WSHG (29 <sup>th</sup> & 30 <sup>th</sup> May 2024).	17
Opportunities in Apiculture (29 <sup>th</sup> & 30 <sup>th</sup> June 2024).	16
Jamun fruit processing (13 <sup>th</sup> & 14 <sup>th</sup> July 2024).	8
Door lamination & sliding window fabrication (21 <sup>st</sup> & 22 <sup>nd</sup> Sept 2024).	7
Milk Processing enterprise (28 <sup>th</sup> & 29 <sup>th</sup> Sept 2024).	8
Event management enterprise (5 <sup>th</sup> & 6 <sup>th</sup> Oct 2024).	11
Epoxy resin art work & furniture making (9 <sup>th</sup> & 10 <sup>th</sup> Nov 2024).	6
On-field Entrepreneurship Development Workshop for WSHG members in collaboration with AFARM NGO in month of Dec 24, Jan & Mar 25.	200



On-field Sliding window fabrication & motor rewinding enterprise in collaboration with Shashwat NGO (28 <sup>th</sup> Feb to 12 <sup>th</sup> Mar 2024).	60
Milk processing enterprise (1 <sup>st</sup> & 2 <sup>nd</sup> Mar 2024).	9

Apart from these training, EDP department conducted 14 online-webinars with 763 + participants. EDP team provided support to our alumni for enterprise registration, social media campaign & marketing linkages. Such support is provided to 41 enterprises during last 1 year.

During past 3 years, 155 new rural enterprises were incubated through EDP program. The entrepreneur success stories & testimonial can be found on - <https://startupsarathi.vigyanashram.in/success-stories/>.





## 2. Trainings in collaboration with grassroot organization:

- I. Backyard poultry farming: VATF provided skills training & backyard poultry farming technology adoption support to tribal farmers in Palghar, Raigad, Ahillyanagar and Pune district of Maharashtra. On-field skills training provided to 50 farmers. Poultry farming technologies like poultry egg incubator, improved poultry breeds, feed & rearing management and vaccination were disseminated through trainings. Hand-holding support provided to beneficiaries through



grassroot social organization partners like Raintree foundation, Maharashtra Arogya Mandal and Shashwat, TNS foundation, Aroehan, The Pride India Foundation.

### II. STEM education program & students' internship:

- A STEM activity based tinkering workshop was conducted for 120 high-school students from Pratham Education Society (Pune) during 24<sup>th</sup> Feb to 4<sup>th</sup> Mar 2025. Theme of the workshop was on 'Plastic Waste Management'. Students learned making of various projects from recycling plastic waste. They also explored digital fabrication techniques like laser cutting, 3D printing, soldering etc. for making their projects.
- During 2024-25, VATF provided technical, administration of training support to STARS Forum. Training was aimed to introduce new teaching methodology & STEM activities for class 6<sup>th</sup> to 8<sup>th</sup> std. students.
- Students' internship: VATF is collaborated with Indian Institute Technology (IIT Mumbai) under TUM-IITB-SEED Centre Living Lab project, for implementation of 2-months 'Summer Internship' program for engineering students. During 2024-25, four engineering students attended internship training to work on renewable energy & waste management projects.

## **C. Technology Development and Field Testing:**

Prototype development, collecting scientific data and field testing are the important activities undertaken by VATF to develop innovative technologies. Following are a few important programs for 2024-25:

### **1. Data collection on photosynthesis efficiency of plant & climate control systems under protected cultivation:**

VATF is collaborated with Sunseed APV Pvt. Ltd. (<https://www.sunseedapv.com/>) and GIZ- India (Deutsche Gesellschaft für Internationale Zusammenarbeit) for collecting data on 'photosynthesis efficiency' of selected vegetables, medicinal plants and climate control system of protected cultivation structures (polyhouse, shade-net etc.)

This data collection work is a part agro-voltaic (solar photovoltaic + farming) technology development work.

Plant photosynthesis efficiency data was collected with 'LICOR-6800 portable photosynthesis system' equipment at Pabal campus. This instrument is capable of measurement of photosynthetic gases and chlorophyll fluorescence of a plant. During 2024-25, data for 10 plants was collected. Data will be useful to detect effect of shade on plant photosynthesis under the solar PV.



Similarly, data collection work was also undertaken for 'fogger and fan-pad system' under polyhouse

farming. For this, a polyhouse structure of 390 ft<sup>2</sup> (30 ft long \*13 ft width) was constructed at Pabal campus with fan-pad and fogger system. Data on total heat-capture, cooling efficiency of 3 different types of foggers and evaporative pad was collected by using automated temperature & humidity sensors. This data will be useful for development of low-cost, energy-efficient climate control system for farmers.

### **2. Development of LPG based sanitary pad-Incinerator:**

A sanitary pad incinerator technology is developed by Vigyan Ashram. This incinerator uses Liquid Petroleum Gas (LPG) to incinerate sanitary pads with minimum black smoke production & cost of incineration. VATF worked on modifying it to increase its

safety features and input capacity. The modified version is fabricated and installed at 'Jnan-Prabhodhani Harali (Solapur)' campus for field testing.

### 3. Solar Dryer for vegetables:

A flat bed solar dryer is another technology adopted by Vigyan Ashram for larger scale dissemination. 4 flatbed dryers were fabricated and distributed to farmers or entrepreneurs for field trial in 2024-25.



### 4. Farming trials:

VATF is continuously conducting trials for adoption & modification of advanced farming technologies. In 2024-25, following important farming trials were conducted:

- Seaweed effect on plant growth: A Raft agro organisation manufactured seaweed. Effectiveness of seaweed was tested on hydroponics lettuce at Pabal.
- Automated water sprinkler: An automated irrigation system unit was fabricated and field tested on 10 guntha area at pabal. It was an overhead cable-based water-sprinkler system developed by Mr. Vasu (Roapway Irrigation Pvt. Ltd.).
- Solar cart for farmers: We helped Mr. Nikunj Jain & his team from Innovation Design Labs Pvt. Ltd. to fabricate a tractor trolley mounted solar PV based electrical generator. This generator will be tested for mobile rural applications like water pumping, pesticide spray, remote location power pack-up etc. The first prototype of generator was demonstrated to Pabal village farmers and feedbacks were collected for further modifications.





- Azolla cultivation & growth optimization study with amendment of cow-dunk slurry, pH scale and amount of soil was conducted by independent researcher Mr. Bapu Sonawane. A field trial was conducted for studying azolla production as per set Design of Experiments (DOE). Experiment showed that 200kg of soil & pH (6.5 to 6.7) were most critical factors for azolla growth.
- Fodder trials: Trials on different varieties of fodder Napier grass and azolla were conducted for its yield recovery in farming land.

#### **D. Infrastructure development**

##### Student's hostel 2<sup>nd</sup> floor construction:

Construction work of 2<sup>nd</sup> floor of students' hostel block has started at Pabal. The present hostel has accommodation facility for 16 to 20 students (4 rooms & a common hall). This facility is also used as office space. With increased demand of skills training, additional hostel facility is required. Construction of additional 4 rooms started on 2<sup>nd</sup> floor of existing facility. So far, the RCC slab construction of 2500 sq ft work was completed along with staircase and terrace parapet wall. Remaining work is expected to complete by the end of December.



Food processing laboratory: Considering scope of skills & rural enterprise development in food processing sector, VATF has invested in up gradation of food processing laboratory at Pabal campus. New equipment's like electrical dryer, gas stoves & LPG pipe line, students teaching facility etc. were installed in food processing lab with financial support from Texol Pvt Ltd (Pune).

## E. Awards and publications:

- Keshav Smruti Pratishthan & Janata Sahkari Bank, Jalgaon felicitated Vigyan Ashram with “**Dr. Acharya Avinashi Puraskar-2024**” on 13<sup>th</sup> April 2024. Award recognized our organisation’s work in ‘Skills & Entrepreneurship Development’ activities.
- क्हाणी पाबळच्या विज्ञान आश्रमाची book written by Dr. Yogesh Kulkarni won prestigious ‘Dr. Kumud Bansal best educational book-2024’ award presented by Yanshwantrao Chavan Centre (YCC, Pune). Award was conferred on 5<sup>th</sup> January by the hands of Honourable MLA Sou. Supriyatai Sule, Shri. Sunil kumar Lavate and Dr. Vasant Kalpande. This book is published by ‘Samkalin Prakashan’ & available both in Marathi & English language.
- ‘The story of Pabal's Vigyan Ashram’ (English translation of Marathi book) is completed. We are very thankful to Mrs. Rita Kalbag for the translation & editing of the book.



## Acknowledge:

VATF is progressing towards its mission with support of well-wishers and dedicated team members. We are thankful to our Company Secretary Mr. Prasad Jahagirdar and Chartered Accountant CA Meenal Kulkarni. We are also thankful to our donors and CSR partner especially M/S Praj foundation (Pune), Cummnis India Ltd. and other partner organisations, students for their continuous support.