



# Strengthening Environment Education through Project based-learning and Action in Junior Colleges of Panvel



## FINAL REPORT



पनवेल महानगरपालिका

**CEE**

Centre for Environment Education

**Submitted to**

Secretary,  
Mumbai Metropolitan Region Environment Improvement Society,  
6th floor, Planning Division, MMRDA new building,  
BandraKurla Complex, Bandra (East), Mumbai

**Prepared by**

Programme Director,  
Centre for Environment Education, Pune  
1, Pinewood Apartments No 233/1/2, Vidhate Colony, Baner, Pune 411045.  
Landmark: Near Aundh Telephone Exchange

**Team Members****Sanskriti Menon & Satish Awate**

Senior Programme Director, CEE, Pune.

**Avinash Madhale** Project Leader

Programme Coordinator, CEE, Pune

**Kunal Jaiswal**

Project Officer, CEE, Pune

**Support Team**

Amar Karan, Scientist SC & Programme Officer, CEE, Pune

Sanskriti Marathe, Programme Officer, CEE, Pune

Supriya Nishandar, Project Coordinator (ESS), CEE, Pune

Swapnil Newale, Project Officer, CEE, Pune

Rajendra Shivagan, Document Officer (ESS), CEE, Pune

Ashok Thorave, Designer, CEE, Pune

**Declaration**

We hereby declare that Final Report on Strengthening Environment Education through Project based-learning and Action in Junior Colleges of Panvel is a record of an original work carried out by CEE (Centre for Environment Education) which is based solely on the assessment of Primary data provided by various government and private environment teachers of various colleges in Panvel municipal corporation and observations recorded by CEE during field visits, consultations, interviews and discussion with concerned teachers. The references were taken from published material and acquired through reliable sources.

## CONTENT

1	Introduction .....	3
2	Objectives.....	3
2.1	Scope of Work.....	3
3	Background research and preparation of source materials for EE .....	4
4	Participatory assessment of EE status and Preparation of report on status of EE .....	4
5	Facilitator’s kit on environmental education .....	4
6	Teacher Training Workshop .....	5
6.1	Day I .....	5
6.1.1	Session -I .....	5
6.1.2	Session-II .....	5
6.2	Day II .....	5
6.3	Feedback .....	6
7	Green Campus Audits and Follow up with colleges.....	6
8	On call guidance to Junior colleges not selected for pilot .....	7
9	Annual Green Action Mela.....	7
9.1	Registration .....	7
9.1.1	Jury for Competition .....	8
9.1.2	Environment Educator of the year.....	8
9.1.3	List of Award Winning Teachers .....	8
9.1.4	Students Group Projects .....	9
10	List of Annexure .....	9
	Annexure –I Background Study Report	
	Annexure –II EE Status Report	
	Annexure –III Teacher Training Workshop Report	
	Annexure –IV Communication collateral	
	Annexure –V Field visit and Follow-up with Colleges	
	Annexure –VI Poster of Projects	
	Annexure –VII Kit for Award winning student	



## 1 Introduction

---

Environment Education is a compulsory subject from Standard 1st to 12th, as per the Supreme Court directive December 2010. In Maharashtra, the syllabus prepared by the NCERT for the subject, has been infused into various other subjects, up to 10<sup>th</sup> standard. However, after 10<sup>th</sup> standard, as there is no common subject between different streams viz; Arts, Commerce, Science, Environment Education started as a separate subject with a weightage of 50 marks at the Higher Secondary level i.e. standards XI and XII. The subject was introduced for Standard XI in the academic year 2012-13 and for Standard XII in the academic year 2013-14.

Textbooks based on Handbook for Environment Education by NCERT have been developed by the Maharashtra State Board of Secondary and Higher Secondary Education for Standards XI and XII. The textbooks have a number of classroom-based activities. In addition, Journals, Assignments and seminars are expected to be done to make learning and assessment more feasible in classes with large number of students. The student's score out of 50 marks in std. XI th is carried on to standard XII marksheet and added to the grand total to compute the percentage. The assessment of this subject for class XII has recently been changed from only Junior college level assessment to partial assessment through an external examiner.

## 2 Objectives

---

- Understand the status of EE in Panvel, with special attention to gaps in its implementation, challenges faced by teachers and students and to identify good practices in teaching and learning.
- Identify opportunities, topics and resource persons for various relevant projects and studies, in line with the requirements of the curriculum
- Develop a range of solutions and support mechanisms to enable effective implementation of EE
- Implement appropriate solutions with selected schools
- Document and evaluate the experience and reflect on the possibilities of scaling-up

### 2.1 Scope of Work

---

Sr No	Activities	Status	Remarks
1	Background research and preparation of source materials for EE	Submitted	
2	Participatory assessment of EE status and Preparation of report on status of EE	Submitted	
3	Facilitator's kit on environmental education for selected Junior colleges	Submitted	
4	Teacher training workshop	Submitted	
5	Communication collaterals for Teacher Fellowship announcement shortlisting and selection of projects	Attached	
6	Support to Fellows and project-based learning, Green Campus Audits and students' action Projects	Attached	
7	On call guidance to Junior colleges not selected for pilot	Attached	
8	Annual Green Action Mela: Assessment and evaluation process of implementation and outcomes and experience sharing workshop	Attached	
9	Preparation of Phase 2 proposal and scale-up plan preparation	To be Submitted	

### **3 Background research and preparation of source materials for EE**

---

In November 2017, a meeting was held with Mr. Gangadhar Mhamane, the chairman of the Maharashtra State Board of Secondary and Higher Secondary Education, Pune, to discuss the current scenario of Environment Education in and around MMR region along with a brief introduction to MMREIS. The role and responsibilities of CEE and its efforts in strengthening EE in junior colleges of Panvel was also highlighted. The chairman appreciated the project and issued the letter of support to Divisional Asst Director of Mumbai.

The Panvel Education Officer, Smt. Chaskar and Education Extension Officer, Shri. Sabale were briefed about the project and its intervention in strengthening EE education in junior colleges. A quick summary of the work carried out by CEE with the teachers was provided.

In order to identify local specific challenges faced by the city, consultation were done with local stakeholders like parents, teachers, students, citizens and citizen representatives as well as local non government organizations. Study of Environment Status Report (ESR report 2014-15) and City Sanitation Plan (CSP 2014) was done. In-depth literature review was done to find out references to local challenges. Students projects based on hypothesis(as pre textbooks),were studied. The HSC boards guidelines for assessing the projects were used as framework of overall analysis of the project based learning. Detailed report is available as part of annexure-I.

### **4 Participatory assessment of EE status and Preparation of report on status of EE**

---

In the process of participatory assessment of EE status, we interacted with more than 35 EE teachers of 26 different Junior colleges in Panvel Municipal Corporation. Several discussions and consultations with teachers took place regarding the challenges faced by EVS teachers, such as time and session management, approach towards EE teaching, understanding of local specific issues and need, confidence and experience of teaching EE, criticalities of implementation, HSC board monitoring, student response and approaches. Teachers also shared their views on how to strengthen and develop EE implementation techniques. (Annexure –II)

### **5 Facilitator's kit on environmental education**

---

Toolkit was specially designed to incorporate various learning so as to facilitate teachers in EE implementation. The kit was held in a specially designed cloth bag for the purpose. \*copies attached

- EVS Textbook of standard XI and XII
- Kase Karuya Paryavaran Hirve
- Pune parisaratil durmil vruksh
- MMRDA DP plan
- Panvel ESR plan
- Communication collateral
- Note pad, file, pen along with Bag

## 6 Teacher Training Workshop

---

Participating Teachers: 23

Participating Colleges: 22

### 6.1 Day I

---

The session began with a short introduction to CEE, Project Introduction and followed by an Icebreaking activity, wherein teachers had to introduce each other by giving brief about the projects carried out by the other person.

#### 6.1.1 Session -I

---

Mr. Satish Awate, Programme Director, CEE Central (Author and Adaptation committee member HSC Board) gave opening remarks. He explained the process of textbook development and writing. Appeal teachers to understand the spirit of project-based learning.

#### **The following points were discussed**

- Natural resources, as the foundation of human development
- Example and importance of studies at Local level
- Importance of observation, Inspection & records maintenance.
- Understanding of local issues and challenges.
- Understanding of social structure to face major changes in the environment.

#### 6.1.2 Session-II

---

Small groups of the participants were formed and each group was given one hypothesis to check. The methodology to be followed was discussed at length.

#### **Methodology:**

- Understanding the hypothesis and project
- Objective of hypothesis and appropriate methodology
- Material and tool development for analysis
- Conclusion of hypothesis

### 6.2 Day II

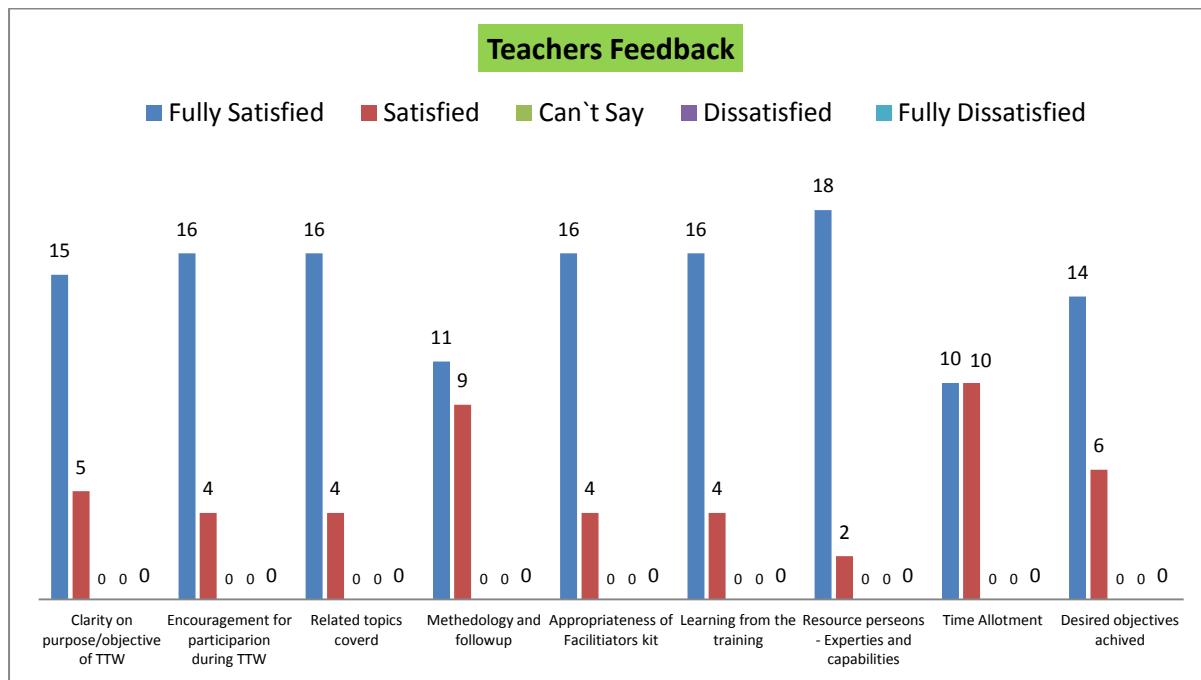
---

The session began with review of the previous day followed by presentation on Panvel Suvarnkshan 1852-2002, ESR Report and CSP Report. Station round method was used to finalize type of student projects to be facilitated by teachers. Teachers were exposed to methods of thematic hypothesis formation. This helped teachers detailed out a project or a hypothesis based project. The teachers were then requested to list out 5 possible projects they would like to conduct in their respective colleges.

The session concluded with the feedback.

### 6.3 Feedback

Teachers were asked to provide feedback on the sessions taken and the methodology adopted. Overall the teachers were satisfied with the content, though time allotted for tasks was stated to be less, as the workshop was shortened to 2 days instead of 3-days period.



(Annexure –III)

## 7 Green Campus Audits and Follow up with colleges

Green audit activity was done with 6 junior colleges.

Sr. No.	Junior College	Waste Audit	Water Audit	Energy Audit	Biodiversity Audit	Culture & Heritage	Ventilation Audit	Transport Audit
1	A. D Mhatre Junior College	Yes	Yes	Yes	Yes	Yes		
2	St Agarsen Junior College	Yes	Yes	Yes	Yes	Yes	Yes	
3	Sudhagad Junior College	Yes	Yes	Yes	Yes	Yes		
4	Sanjay Gandhi Junior College	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	Balaram Parashuram Junior College	Yes	Yes	Yes	Yes	Yes	Yes	
6	MSPM Junior College	Yes	Yes	Yes	Yes	Yes	Yes	Yes



## 8 On call guidance to Junior colleges not selected for pilot

---

As per the requirement and demand from teachers, field visits and telephonic assistance was given to Junior Colleges. 2 to 12 field visits have been made, followed by continuous follow-up via Whats app . (Annexure –IV & V)

## 9 Annual Green Action Mela

---

To promote, motivate and assess the efforts made by teachers and students, a competition was announced in Panvel Municipal Corporation. 10 teachers and 25 groups of (total how many 94) students participated in the competition and submitted project reports.

The annual green action mela was organized for teachers and students so they can showcase their work and interact and learn from each other. 13 different projects done by students were showcased in the exhibition through 15 posters.

The exhibition received good response with over 250 visitors. There were 13 teachers, 94 students from ten Junior Colleges. Primary school students from Sanjivani International school visited the exhibition. The students were excited to present their work. They were well prepared to answer the queries by the jury as well as other students.

Annual Green Action Mela Venue : Sanjivani International School & Junior College, Plot No.-71/72, Near Vastu Vihar, Sector 18, Kharghar, Navi Mumbai, Maharashtra 410210

### 9.1 Registration

---

Participating teachers: 13

Participating students: 94

Student Volunteers: 4

Project staff: 9 (CEE as well as those from MMREIS)

Sr. No.	Name of Junior College	Teachers	Students
1	Balaram Parashuram Junior College	1	7
2	St. Agarsen Junior College	2	10
3	Sanjivani Junior College	1	16
4	MSPM Junior College	1	11
5	A D Mhatre Junior College	1	10
6	Shankarrao Chavhan Juniro College	1	5
7	N N Palinwala Juniro College	2	12
8	Satyagrah Junior College	1	10
9	D G Tatkare Junior College	1	7
10	Convent Jesus & Merry Junior College	1	13
11	Shri Ch. Shivaji College	1	9
	<b>Total Participants for EE Mela</b>	<b>13</b>	<b>94</b>

**Volunteers, CEE staff and Delegates were engaged in process**

Sr. No.	Particular	No. of person
1	CEE staff and MMREIS Delegates	9
2	Volunteers from Sanjivani Junior College	4
		13

### 9.1.1 Jury for Competition

---

- Mr. Abhijeet Ekbote, Secretary of MMREIS
- Ms Sankriti Menon, Sr. Programme Director, CEE
- Mr Satish Awate, Programme Director, CEE
- Mr Avinash Madhale, Programme Coordinator, CEE

### 9.1.2 Environment Educator of the year

---

Teachers from all the participating college were asked to submit their entries for the Environment Educator of the year award. An poster announcement to this effect was circulated through whats app as well as print copies were placed on the college notice boards. The selection was based on overall facilitation of project based learning, innovative / uniqueness of student projects, student project evaluation, overall report by teachers.

### 9.1.3 List of Award Winning Teachers

---

Sr. No.	Environment Teacher	Name of Teacher	Name of Junior College
1	1 <sup>st</sup> Prize of Rs 5000/-	Ms Bornali Chakraborty	Sanjivani Junior College, Kharghar
2	2 <sup>nd</sup> Prize of Rs 3000/-	Ms Mrunal Wandhare	D G Tatkare Juniro College, Kalamboli
3	2 <sup>rd</sup> Prize of Rs 3000/-	Ms Lorina Fernandis	Convent Jesus & Mery Junior College, Kharghar
4	3 <sup>rd</sup> Prize of Rs 2000/-	Ms Sunita Bhillare	Shankarrao Chavhan Junior College, Kamothe
5	3 <sup>rd</sup> Prize of Rs 2000/-	Ms Sangita Jogdand	Satyagrah Junior College, Kharghar

### 9.1.4 Students Group Projects

---

The jury went through each exhibit and engaged with the participating students, asking questions about the project objectives, their experiences, challenges, etc. The Jury also provided suggestions for presented projects and recommendations for further research and study.

Sr. No.	Inter College Competition	Project Name	Name of Junior College
1	1 <sup>st</sup> Prize of Rs 5000/-	Correlation Study Between Mode of Transport and Impact on Environment	Sanjivani Junior College, Kharghar
2	1 <sup>st</sup> Prize of Rs 5000/-	Study of variation in food preferences across generations	Ch. Shivaji Junior College, Wawanje
3	2 <sup>nd</sup> Prize of Rs 3000/-	Study of Diversity in Food Across Three Generations	Sanjivani Junior College, Kharghar
4	2 <sup>nd</sup> Prize of Rs 3000/-	Documentation of Information on Kamothe Lake.	Shankarrao Junior College, Kamothe
5	3 <sup>rd</sup> Prize of Rs 2000/-	A Comparative Study of Expenditure on Travel, Smoking and Others	Satygrah Junior College, Kharghar
6	3 <sup>rd</sup> Prize of Rs 2000/-	A study on waste segregation in the area of Kalamboli	D. G Tatkare Junior College, Kalamboli

(Annexure –VI)

Option was given to the college students whether to get cash prize(only through bank transfer) or to have environment conservation books for college library. List of books is given in the annexure VII

## 10 List of Annexure

---

Annexure –I	Background Study Report
Annexure –II	EE Status Report
Annexure –III	Teacher Training Workshop Report
Annexure –IV	Communication collateral
Annexure –V	Field visit and Follow-up with Colleges
Annexure –VI	Poster of Projects
Annexure –VII	Kit for Award winning student

**CEE**

Centre for Environment Education

Centre for Environment Education, Pune  
1, Pinewood Apartments No 233/1/2, Vidhate Colony, Baner, Pune 411045.