Green Gurukul
Education Program Report
2017 - 2019

A Waste Warriors initiative supported by
Thapar Public Charitable Trust
WASTE WARRIORS
REDUCE RE-USE RECYCLE

Education Program Report
2017 - 2019

supported by

Thapar Public Charitable Trust
India now generates over 1.75 lakh tonnes (that is 175 million kgs) of municipal solid waste every day. That is a huge amount and, unfortunately due to a lack of proper municipal services and awareness, a lot of that waste does not get segregated or collected. Instead it gets littered, illegally dumped and, even worse, burned to ashes. All this waste produces huge amounts of potentially toxic microplastics, leachate, and fumes which are unhealthy for humans, animals, and our sensitive environment.

All of us have been and continue to be witness to and unassuming victims of this mismanagement on a daily basis, whether it is in urban streets, in rural areas, or now unfortunately even in otherwise beautiful places: on mountain trails, in dense forests, by the banks of rivers, and over large fields. The urgent need to act against this human-made disaster is the driving force behind our organization. It is why we need to raise levels of public awareness towards better waste management practices in both urban and rural landscapes across India.
India’s Waste Crisis

At current dumping rates, India will need a 66,000-hectare landfill, 10m high, that could hold 20 years’ worth of waste. That is ~ 90% of Bengaluru’s area!

438 million urban people generate:

EVERY DAY: 175,000 tonnes
YEAR: 63 million tonnes

PLASTIC WASTE 5.6 million tonnes
HAZARDOUS WASTE 7.90 million tonnes
ELECTRONIC WASTE 2 million tonnes
BIO-MEDICAL WASTE 0.17 million tonnes

Mixed Waste Cannot Be Fixed!
Our Vision

- A clean and healthy India, which has systems in place to ensure that every citizen disposes their waste correctly and feels a sense of civic responsibility and national pride regarding cleanliness.
- A healthier India with improved living standards and a better quality of life where waste workers are valued and respected for their contribution.

Our Mission

- Be a catalyst for community-based decentralized Solid Waste Management (SWM) initiatives in rural, urban, and protected areas and to pioneer replicable models of resource management, innovative practices, research and education in the field of solid waste management.
- Improve working conditions for waste workers and take positive steps towards integrating the unorganized waste sector into the formal Solid Waste Management (SWM) industry whilst reducing the stigma attached to waste.
Founded in 2012, Waste Warriors is a solid waste management NGO that works through a combination of direct action initiatives, awareness raising and community engagement programs, local advocacy, and long-term collaborative partnership with various government bodies. Our vision of a clean India is broad but for good reason: India’s population of 1.3 billion people is in a time where sustainable solid waste management has been struggling to catch up to exponential consumption rates from all socioeconomic backgrounds.

Our vision drives us to implement sustainable waste management systems and drastically improve public awareness towards waste segregation and composting. We also work towards expanding waste collection services either by training local communities to be self-reliant by organizing their own collection and segregation systems, or by formally employing ragpickers to join our projects to lift their lives out of poverty and stigma.
Our Education Program

From the start, our teams have been well aware of the limits to cleaning up litter thrown by our fellow urban residents, from unaware adults to uninformed youth. Educating students as early as possible is vital because changing their behaviour now and sensitizing them to the dangers of mismanaged waste allows them to become responsible citizens for the future. Teaching each student the basics of waste – different categories and their different ways of segregating and disposing – carries the greater potential to reverse a dangerous trend of such things like single-use plastic consumption or microplastic pollution in water supplies. These are issues that are directly affecting us now, and will continue to impact our youth in the future if little is done.

Our program’s goal, in line with the Swachh Bharat mission, is to ensure that schools are kept clean and free of rampant and harmful solid waste dumping in the open, littering, and burning, and to ensure that waste is managed as per the laws of India for the sake of each child’s health and our environment.

This is why Waste Warriors started by hosting educational children’s events in colonies and public spaces and then started going to schools. We put in a lot of effort to ensure that students get an opportunity to learn through doing, not just hearing or reading, and are proud of the fact that children enjoy learning through our methods. We encourage questions and interactions with students and work towards long-lasting relationships with the schools, and enable them to carry forward the goal of spreading awareness and responsibly managing their own waste on campus.

It was in the light of these efforts that Mr. Gautam Thapar’s support from the Thapar Public Charitable Trust was invaluable and enabled our dedicated team to keep up the momentum.
Our Education Team

ANKITA KUNWAR
(Education Assistant)

My role at Waste Warriors has been to approach and work directly with each school. The students we connect with are at an age where they are the best absorbers of new information and can spread it amongst each other just as fast. My experience working with children has been wonderful for our team and the program, and after working with a variety of schools on waste management, with some receptive and some hesitant, I think the children’s own inclination to work towards the betterment of their own environment has been a great inspiration for me. Our target to reach 290 schools in three years in our Green Gurukul program gives me the momentum I need to engage government authorities and make waste management an essential component of all schools.

ANAMika Pal
(Education Assistant)

Four years ago, I joined the social sector with the thought of giving back to society. What inspired me to work for Waste Warriors was that their ideas strongly aligned with my values and my belief in cleaning up the country. The very idea of engaging children and youth who are the future and have the potential to transform the image of our nation is something that attracted me to work here. I see this as an opportunity to motivate children and youth towards chasing the vision of making India a litter-free country. I feel that the most inspirational and stimulating thing we do is to bring about a sense of civic responsibility and civic-driven change by uniting common people towards this cause. I believe education is the strongest tool which can bring change in society and create changemakers, and by being a change agent, I very much want to continue doing that.
Our Approach in 2017-18

CREATIVE WORKSHOPS

Our team conducts creative workshops where students participate in fun-filled activities like making pro-environment banners, drawing and colouring awareness-raising posters, and upcycling recyclable materials to make arts and crafts including colorful collages, grocery bags out of newspapers, and plant holders from plastic bottles, and so much more.

369 STUDENTS PARTICIPATED IN 9 CREATIVE SESSIONS!

MURALS FOR AWARENESS

Larger pieces of art are a great medium to spread awareness and make an impact. Rather than painting generic messages we use the murals to dig deeper into issues. We encourage students from these schools to participate in painting these colorful murals and writing messages that we believe will help passers-by to connect with the bigger issues in our city and in the world.

47 STUDENTS PARTICIPATED IN PAINTING 3 MURALS!
Our Approach in 2017-18

INTERACTIVE PRESENTATIONS

Our simplified solid waste management presentations help students understand the basics, whether it is learning the different types of waste or the importance of not littering or burning it. Our sessions are interactive and engaging and the primary motive is to encourage students to adopt what they learn into their own lives, so that they become aware of how to deal with the small amounts of waste they generate either in school or at home.

PRESENTATIONS IN 22 SCHOOLS WITH 1793 STUDENTS PARTICIPATING!

CLEAN-UP DRIVES

The areas around schools are unfortunately inundated with litter. We engage students of each school in clean-up drives to help ensure such areas are kept clean. We provide them with necessary equipment, including waste sacks, litter grabbers, reusable gloves, and masks. Before each clean-up, our team conducts an orientation to brief students to ensure their safety and to teach them the importance of segregating waste into recyclables and non-recyclables as they collect it.

IN 16 CLEAN-UPS, 731 STUDENTS COLLECTED 402 KG OF RECYCLABLES, 457 KG OF NON-RECYCLABLES, AND 114 KG OF GARDEN WASTE!
Our Approach in 2017-18

COMPOSTING WORKSHOPS

Around 60% of municipal solid waste is organic and can be used to make compost. We teach students that by just segregating this waste from what we generate everyday and not mixing it with the rest, we can greatly reduce the volume of garbage being sent to trenching grounds. We hold interactive composting workshops for students to get involved in learning the simple steps of taking food and garden waste and composting it.

SCHOOL WASTE MANAGEMENT

Our objective is to encourage schools to manage their own waste. Students then become accustomed to segregating their waste. This learning can then transition into their own homes and hopefully into their future. This is how we worked with them:

- We conducted surveys in the school with the students, teachers, workers and staff to understand their current system of waste disposal. We found that the majority of government schools were burning their waste, which is extremely harmful to health and the environment.
- We set up separate dustbins for recyclable, non-recyclable, and food waste, within their campuses, and included easy-to-understand signs. Students and staff were taught to correctly segregate their waste into the appropriate bins.
- If any school did not have the means to discard recyclable and non-recyclable waste, then our Operations Team collected waste from the school using our pick-up truck, sponsored by Thapar Public Charitable Trust.

8 SCHOOLS SETUP SEGREGATED BINS & WE COLLECTED FROM 4 OF THEM!
Our team conducted five plastic recycling drives to inspire and encourage students to segregate waste at source and recycle as much as possible. We focus on creating an atmosphere where one can reflect on how much waste we generate and how reducing, segregating and recycling can improve the waste situation in our cities and on our planet.

On many instances, we were surprised to see the students who came through with their enthusiasm and dedication, and in spite of their examinations coming up, the schools were super excited and co-operative in making these drives a success. We are grateful for the support from all the teachers and representatives from the various schools for their cooperation and their continued efforts towards building an atmosphere of environmental learning for the next generation.
India generates about 2 million tonnes of e-waste annually and ranks fifth among e-waste producing countries, after the US, China, Japan and Germany. Waste Warriors conducted an e-waste drive at Doon International School on Children’s Day at their school carnival.

The drive was lead by Ankita Kunwar and Vijayshwari Rawat, along with our Green Worker Amit Kumar. About 100 people participated with great enthusiasm! Children brought chargers, phones, monitors, CPU, and even televisions. We gave prizes to six children who brought in the most e-waste.

Once the e-waste is further segregated, it will be sent to authorised e-waste recyclers for further dismantling. We would like to appreciate the efforts of Doon International School students for participating in this drive.

Computer equipment accounts for around 70% of e-waste material followed by telecommunication equipment (12%), electrical equipment (8%) and medical equipment (7%). Others including household e-waste is the remaining 3%.
Conducting teacher training sessions for our toolkits.

Supervising waste awareness toolkit activities.

Conducting clean-ups around the school with students.

Organizing composting workshops in the school.

Running creative sessions (art, upcycling, and murals).

Setting up waste management systems in the school.

Providing segregated waste collection services.
Our “Green Gurukul” program includes nine toolkits that help school students – starting from Grade 3 till Grade 12 – raise their levels of environmental awareness and learn the basics of waste and how to manage it, on a personal and community level. These toolkits were developed by WasteLess India (an Auroville-based NGO) and, after minor modifications, our team implemented them in phases in schools across Dehradun from April to December 2018. The enlisted schools were divided into three-month slots.

We translated the English toolkits into Hindi and both are made available to the schools so that we can accommodate the language needs of all teachers and their participating students. All toolkits are provided free of cost, including relevant materials and handouts.

1. Introduction to Solid Waste
2. Journey of Waste
3. How Long Does Trash Last?
4. Be A Garbage Detective!
5. Conflict Resolution
6. Be A Petitioner
7. Waste Relay Race
8. Art for Awareness
9. Creative Communication

We translated the English toolkits into Hindi and both are made available to the schools so that we can accommodate the language needs of all teachers and their participating students. All toolkits are provided free of cost, including relevant materials and handouts.
Our partnership with WasteLess began from the start of our education efforts in our project locations. Their interactive “Garbology” materials are a fresh way for children to learn about SWM. The toolkits we use in the current form are a result of collaborative efforts between our teams in terms of both design and content. They focus on helping teachers engage students in active learning that inspires them inside and outside school. Students see litter everywhere, so connecting them to a new way of thinking about waste can re-sensitize them towards a cleaner future. The toolkit structures aren’t prescriptive; teachers have the flexibility to conduct activities using methods that suit their students.

These toolkits extend the work done by our team before 2018, including our sessions on different types of waste, how bad it can be if dumped or burned, how to start segregating, using the right bins, and even how to create art from recyclable materials. The new toolkits are designed to be only 35-45 minutes long and there are a variety of interactive exercises for the students. There are, however, some new approaches that take our waste education program to a new level:

Before the students, it is the teachers whom we have to convert and inspire first! This is an important step; it determines how effective the toolkits can be. Our teacher training sessions are conducted by Neha Sachdeva, a professional teacher trainer, who walks teachers through every aspect of the toolkits, from their content to their delivery, and ultimately to why we are doing this. It’s important for teachers to understand the waste problems faced due to the systemic lack of waste management, enough to raise that level of awareness and concern amongst their students, too. Teachers usually come away from this session feeling inspired and ready to start!
Toolkits With A New Approach

**BE A GARBAGE DETECTIVE!**

Students, especially those in eco-clubs, learn where the dry waste from their classrooms and the food waste from their lunch goes. Since their waste disposal is usually done by school staff, students rarely know what really happens to it, unless it is unfortunately burned nearby. Students get a certain degree of responsibility, by being “detectives”, to understand their school waste and question what can be done to improve it. They report their findings to their principal and to our team.

**CONFLICT RESOLUTION**

Students learn how to approach those who are littering or burning waste. This exercise helps students realize they can make a difference. Students practice their creative thinking skills to respond to various situations that they encounter outside school. They learn how to be polite and confident, and informative and constructive. It’s important for them to learn how to say the right thing to help those who may not know the environmental harm they are causing.

**BE A PETITIONER**

Students learn how to write petitions to raise their voice about an issue and engage the public about it. Whether it is about waste not being collected or being burned near their school, or highlighting pollution in a river, or preventing felling of forest trees, students learn about the power of collective action to raise awareness on such issues, and how to get the attention of authorities who can change the situation.

**WASTE RELAY RACE**

Waste segregation at source is an important step to good waste management. Mixed waste makes it hard to separate and clean recyclables that become dirty. For students to understand how to segregate outside school, they need to practice it. Students are divided into teams, who race to put waste categories into their respectively colored bins, which helps them visualize what to segregate: recyclables, non-recyclables, and food waste. There’s energy in the air when this game begins!
OUR IMPACT in 2018-2019
PHASE 1 & 2

- Teachers trained: 91
- Events done by schools themselves: 39
- Events done by Waste Warriors: 42
- Schools participated: 57
- Collected at school e-waste drives: 186 kg
- Bottles collected at school plastic drives: 17,407
After the completion of two phases of our Geren Gurukul program in 2018, our team conducted an impact study to assess the effectiveness of their immense efforts to persuade, train, support, and coordinate with schools across Dehradun. Schools were surveyed on their ability to implement a SWM system on campus through segregated bins, food waste composting, waste disposal, and overall cleanliness and participation.

We’d like to thank Thapar Public Charitable Trust for the extended support towards our team’s efforts to conduct this impact study.

- **32** Schools surveyed out of 36 who completed our Green Gurukul program in 2018.
  - out of the **57** schools who participated.

- **14,908** School strength in the 32 schools surveyed.
  - out of **30,430** children from **57** schools.

- **7,597** School children who participated in the Green Gurukul program toolkits.
  - That’s almost **51%** of all the school children.

### Waste Bins

- **22** Schools where the level of segregation is above **40%**.
  - 7 schools above **80%**.

- **10** Schools with bins provided by Waste Warriors
  - The rest bought their own.

- **23** Schools with segregated waste bins placed on campus premises
  - Using a **2 or 3-bin** system!

### Food Waste

- **8** Schools that compost their food waste on campus
  - Either through compost pots or enclosures.

- **7** Schools that give food waste to piggeries and cattle
  - From peels and simple leftovers from lunch.

### Waste Disposal

- **2** Schools that dispose their waste in a communal or municipal waste bin.
  - This is only for days with no waste collection.

- **28** Schools that use govt., army cantt., or private waste collection services.
  - This includes food waste collection as well.

- **7** Schools where waste is collected by Waste Warriors (supported by Thapar Public Charitable Trust)
  - Our team insists on and only collects dry waste.
The programme of Waste Warriors has reached out in our school. Through this programme, the students were trained and guided about waste management, and they learned about landfills, open dumping, harmful effects of plastics and precautions that they can take. Our school would like to express gratitude to Waste Warriors for not only keeping our school clean and green but to many areas in the Doon valley. I am proud to be part of Waste Warriors’ programme.

Waste Warriors are really doing a good job the knowledge that we received from them are truly incredible, they showed us the ways through which we can deal with our waste. It is an experience that is unforgettable activities that we did were truly effective and motivating. In future if I ever get a chance to re do all those activities or tasks again I would definitely do with them.

I found that the Waste Warriors activity was helpful as a lot of new information was delivered. I got to know more about new methods to segregate the waste and the dangerous impact of open dumping. It made me and everyone else realise that our environment is degrading and that we need to come up with conservative efforts for a healthy environment. Along with my friends, I found the session inspiring and motivating.

Waste Warriors is doing a commendable job, and it has been a privilege for me to be a part of this programme. Through the activities conducted, our children have been given knowledge and trained about keeping their environment clean and green. We will always try that our children follow and instill in themselves the good habits of cleanliness.
Success Stories

Drona’s International School

In Dehradun, lots of empty plots of land unfortunately turn into dumping sites for mixed waste, especially all kinds of plastics, from both households and businesses. The ever-growing waste pile eventually becomes an enormous challenge for the neighborhood. Drona’s International School came face-to-face with such a situation when their own main gate had become a small dumping site. The school administration had become tired of complaining about this issue to the municipal corporation, who offered no solutions. Through our program, we motivated them to clean it up themselves and transform the area into a small garden, and that is exactly what their students did! Now, the garden is green and no more waste is dumped there.

Bajaj Institute Of Learning

The wonderful staff at the Bajaj Institute Of Learning have shown their support for Waste Warriors by not only encouraging their students to participate in all the activities of our program but also implementing the program’s waste management recommendations in their campus. The students thoroughly enjoyed the Art for Awareness toolkit, where they learnt how to make art and items from recyclable material. They also transformed an area where their construction and dry waste used to be dumped, and turned it into a beautiful playground.

Jaswant Modern School

Jaswant Modern School is a great example of developing its students into change agents. They believed in keeping their premises neat and clean, but found it difficult to implement proper waste management, including waste segregation at source, making compost from food waste, and proper waste disposal. The school and students enthusiastically participated in all the activities in the program and followed it up by segregating their waste. The school emphasised on the three R’s – Reduce, Reuse, Recycle – for their “Panni”-themed annual day, asking students to bring their own reusable cutlery. With our support, they have become a very waste-conscious school, and their students make sure they are setting a good example for the rest of Doon.
Despite the best intentions of our program, it can at times be hard for our dedicated team to convince some principals and teachers to try our toolkits, complete the program, or effectively encourage waste segregation in their schools. These are some of the challenges we faced so far:

- **Schools Don’t Have The Time**
  A few schools were reluctant to conduct the program in a timely manner despite initially agreeing to it. Although the toolkits take no more than 45 minutes each, teachers claimed that conducting them would conflict with their own school calendar dates and planned events, tests, and board exams which they have to prepare students for.

- **Schools Aren’t Serious About It**
  Even though our program received permission from the Chief Education Officer of the Dept. of School Education, the content itself is not certified or directed by any government body. As a result, there were some schools who would not take the toolkits nor their own waste management seriously.

- **Schools Are Doing Another Program**
  We faced difficulty in convincing some government schools because most were already trying to complete a cleanliness program called ‘Swachhta Pakhwada’ organized by the Ministry of Human Resource Development. Schools took part in our teacher training session but left our program midway because they had to conduct the mandated programs in their schools.

- **Schools Don’t Know Where To Dispose**
  After segregation at source, proper waste disposal is one of the important aspects of waste management. The biggest challenge we faced was that most schools were not able to connect with municipal authorities who are supposed to organize regular waste collections from schools. In other circumstances, schools found that even if their students and staff were segregating their waste on their premises, the waste being collected was being mixed again and sent straight to municipal trenching grounds, which defeated the purpose of the program.
Our SWM education program, “Green Gurukul”, is aimed towards sensitizing students to their environment through hands-on and thought-provoking activities. We believe that this will ensure the next generation is aware of the impact that our individual actions have on the environment, ensuring that our activities and interactions empower them and equip them with the knowledge to make better choices for a cleaner future.

Our Program’s Objectives (2019 - 2022)

- To create and implement a viable waste-related education program that runs parallely in the educational ecosystem and raises awareness in educators and students for behavioral change.
- To ensure schools have an effective, sustainable and affordable waste management system that complies with SWM Rules 2016, and encourages segregation at source and proper waste disposal.
Teacher Training:

➔ Organize and conduct effective teacher training programs to ensure schools have free access to bilingual educational materials and solid waste management toolkits.
➔ Review the performance of trained teachers and provide assistance to resolve obstacles that arise.

Raising Awareness:

➔ Educate children on the health and environmental issues related improper waste disposal.
➔ Conduct activities and programs to teach them the importance of sustainable SWM, and to encourage students to reduce their plastic consumption, segregate their waste correctly, and recycle their waste effectively.

Waste Management Setup:

➔ Assist schools with necessary training and solutions for setting up sustainable solid waste management systems on their premises, for school administration and students to inculcate effective habits and plans to responsibly manage the waste generated in their schools.
➔ Provide subsidized dry waste collection services to schools in need.

Engaging Stakeholders:

➔ Bring a diverse range of educational and SWM stakeholders on board to support the program’s growth and success, including principals, teachers, students and their parents, as well as government agencies including the Nagar Nigam, Education Dept., Pollution Control Board, etc, for the increased credibility of the program.
➔ Create a platform to recognize and appreciate the performance of outstanding stakeholders and use that as a tool to encourage additional schools to be a part of our program.

Impact Assessment:

➔ Conduct a strong baseline study of all potential schools at the start of the education program, and assess the impact of our training and activities in all participating schools.
➔ Take feedback from all stakeholders to improve our strategies before starting the next phase.

Engage 290 schools under “Green Gurukul”

Teacher training SWM workshops for 480 teachers from 240 schools reaching ~60,000 children.

Conduct and facilitate direct action initiatives:

- 216 Clean-up Drives
- 78 Creative Sessions
- 15 Nukkad Nataks
- 15 Beautifications/Transformations.

Effective waste management and collection systems in 35 underprivileged schools.
Waste Warriors Society, on behalf of all our current and past education team members and head office staff, extend our gratitude and appreciation to Thapar Public Charitable Trust and to Mr. Gautam Thapar for his tremendous generosity and faith in our work.

This comprehensive program that allowed our team to engage hundreds of children and cover schools across Dehradun, through our awareness-raising and waste collection operations, would not be possible without such kind support.

Our gratitude comes not only from us, but also from the thousands of school children, teachers, and staff who’ve positively benefited from this learning about their waste and how to manage it. We hope to continue our mission to raise awareness on the harms of waste pollution and the importance of waste management, and will strive to do our best to see that every school we engage with comes out of the program with a waste management system in place. Thank you for helping to make a difference in the lives of these children, and in countless ways, towards a better future for India.
Waste Warriors encourages your school to make a difference by teaching your students to be the change our world needs. Our education program can have an immense positive environmental impact on your school, your students, and your surrounding areas. Please contact us to get started!