



ECO-CLUB

MODEL

EXHIBITION REPORT - 2023



CENTRE FOR ENVIRONMENTAL STUDIES (CES)

DEPARTMENT OF FOREST, ENVIRONMENT & CLIMATE CHANGE, GOVT. OF ODISHA





**BEAT
PLASTIC
POLLUTION**



**WORLD
ENVIRONMENT
DAY**



LiFE
Lifestyle for
Environment

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MODEL
EXHIBITION REPORT - 2023

CENTRE FOR ENVIRONMENTAL STUDIES (CES)
Department of Forest, Environment & Climate Change, Government of Odisha

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Shri Satyabrata Sahu, IAS

Additional Chief Secretary to Govt.,
Forest, Environment & Climate Change Department
Government of Odisha

MESSAGE

Every year, on June 5th, millions of people across the planet celebrate World Environment Day at community, national and regional level to promote positive action on the most-pressing environmental challenges of our day.

The theme of this year's World Environment Day-2023 is "Solutions to Plastic Pollution" under the campaign #BeatPlasticPollution. It is a clarion call for action by us to combat one of the burning environmental challenges of our time. The theme invited us all to consider how we can make changes in our everyday lives to reduce the burden of plastic pollution.

This book is a compilation of expression of Eco-club school children through models from different districts of Odisha, where they have depicted their thoughts on "Solutions to Plastic Pollution". The eco-club students have expressed their thoughts various aspects of "Beat Plastic Pollution".



The compilation of this book has been done based on students actually elaborated during model exhibition.

It is hoped that through these models, people will take note of the messages of the children, and be encouraged for curbing use of Single-use Plastics.

I wish the publication all success.

(Satyabrata Sahu)





Dr. K. Murugesan, IFS

Director, Centre for Environmental Studies
Forest, Environment & Climate Change Department
Government of Odisha



PREFACE

I am happy to know that Centre for Environmental Studies under Department of Forest, Environment & Climate Change, Government of Odisha is bringing out a publication on Models exhibited by the Eco-club Students on the theme of World Environment Day-2023.

World Environment Day (WED) is aimed to be the biggest, most widely celebrated, global day for positive, environmental action.

Through WED, we are able to give a human face to environmental issues and enable people to realize not only their responsibility, but also their power to become agents for change in support of sustainable and equitable development.

Each model representing the best model of concerned district is deeply thought through and expressed beautifully, making it possible for anyone and everyone to realise the need for urgent Beat Plastic Pollution.

I am sure these models and the accompanying messages of eco-club school children will leave a deep impact on each of the reader, and motivate them to create a better and healthy environment by curbing the use of single use plastics from today.

All eco-clubs & other schools, colleges and the general public have a special role to play in making our state a clean and healthy state.

This publication is a welcome step to realise this issue. I hope this publication would play a significant role in spreading the messages far and wide. Let us take a pledge not to use single use plastics & protect the environment and let us take initiative at all levels to control the plastic pollution.

I wish the efforts of Centre for Environmental Studies and the publication all success.

(Dr. K. Murugesan)





MODEL

01

DISTRICT ANGUL

IPSITA BEHERA

Class-X,
Brajamohan High School
Jarada, Angul, Odisha.



In this project, the waste is being utilized to produce something new that is beneficial for the society. Usage of plastic waste in construction works, building roads, preparing decorative and ornamental things out of plastic waste are a few innovative ways to reduce and reuse plastic waste.





MODEL 02

DISTRICT BALASORE

BISWA RANJAN BEHERA

Class - IX,
Govt. High School,
Hirapur, Balasore, Odisha.



It is high time we bade goodbye to single use plastics for the betterment of our environment. This project highlights reusing and recycling process and nudges us to take remedial measures to control plastic usage.





MODEL 03

DISTRICT BARGARH

ANISH KUMAR SAHU

Class - X,
Nabajyoti High School,
Chakarkend, Bargarh, Odisha.



Making roads using plastic waste is a significant way of reducing plastic waste. By collecting plastics and polythene and then heating them with bitumen, strong and durable roads can be made. It is the best way to utilize tons of plastic waste deposited in the ecosystem.





**DISTRICT
BHADRAK****MUKTAMANJARI SAMAL**

Class - VII
Sidheswar UP School,
Uchhadiha, Bhadrak, Odisha.



To address the concern of burgeoning plastic waste we have to look for natural alternatives and banana fiber is one such important alternative. Banana fiber is one of the strongest



natural fibers that can be utilized to make mats, pen stands, ropes, money purse, vanity bags, baskets and many other utility items. Hence, we should

promote usage of biodegradable banana fiber through small startups and SHGs which will help reduce plastic pollution in the long run.



MODEL 05

DISTRICT BOLANGIR

LOVELY ROUT

Class - X
Ramjee High School
Kurul, Bolangir, Odisha.



Traditional products are best replacement for their plastic counterparts. With some innovation we can prepare green buffet plates from banana leaves which can be a biodegradable



replacement of plastic and plastic coated plates. Similarly hand fans can be made out of seasoned palm leaves to comfort hot and humid summers.



MODEL 06

DISTRICT BOUDH

SUDAM KANTA

Class - X
UG High School,
Buragora, Boudh, Odisha.



Plastic poses Himalayan challenges for the contemporary world. To conserve natural resources, keep the environment free from the ill effects of plastic pollution, we must follow the



5R rule i.e.
REFUSE
REDUCE
REUSE
REPURPOSE &
RECYCLE.

This project emphasizes on the 5R principle and their impact on our lives to weed out plastics from the environment.



MODEL 07

DISTRICT CUTTACK

TARANA AZMI

Class - VII
Sai Saraswati Shishu Mandir
Gopinathpur, Cuttack, Odisha.



To beat plastic pollution, we can replace plastics with biodegradable plastic substitutes and utilize plastic wastes in building roads. We can also mobilize plastic eating enzymes to eliminate billions of tons of landfill waste.





**DISTRICT
DEOGARH****MILAN SAHU**

Class - X
Govt. High School
Tarang, Deogarh, Odisha.



Solution of Plastic Pollution through 3R : In the present scenario, plastic pollution has become the most pressing environmental issue due to rampant use of single use plastics by the exploding population. We can minimize plastic pollution by following the 3R principle i.e Reduce, Reuse and Recycle religiously. This exhibit displays a working model on this concept.





MODEL

09

DISTRICT DHENKANAL

AMIT SAHOO

Class - X

Panchyat Raj High School

Kanpura, Dhenkanal, Odisha.



Plastic roads are roads made either entirely of plastic or of composites of plastic with other materials. Considering the huge plastic garbage that keeps increasing day by day, the implementation of plastics in roads also opens a new option for efficient recycling of post-consumer plastics.





**DISTRICT
GAJAPATI****DEEPIKA PANDA**

Class - X
MR Girls High School
Paralakhemundi, Gajapati, Odisha.



Preparation of biodegradable plastics offers a sustainable solution to the environmental concerns posed by traditional plastics. Bioplastics are derived directly from biodegradable resources such as starch and cellulose. In this project it has been displayed how to make bioplastics using banana pseudo stem, ripened banana peels, corn husk and agar-agar as raw materials.





DISTRICT GANJAM

AMIT JENA

Class - X

National High School

Dura, Ganjam, Odisha



Reuse the past, Recycle the present, Save the Future :
Plastic and microplastics are threatening to invade food chains which is a matter of great concern. Apart from being the cause of various diseases, plastics also are the main culprit behind environmental deterioration. We must practice 5R principle i.e. Refuse, Reduce, Reuse, Repurpose & Recycle to fight plastic pollution.





DISTRICT JAGATSINGHPUR

SIDHESWARI BASTI

Class - X

GBL Govt. High School

Parahat, Jagatsinghpur, Odisha



Plastics are popular due to its light weight, toughness and strength. But as plastic can't be easily decomposed, it creates serious threat to our environment. We must create awareness to find substitutes of plastic items as Plastic can be more destructive than nuclear bomb in future. "*Plastic free world*" should not be a slogan but must be a commitment to life.

A 3D model project titled "PROJECT- PLASTIC- THE LETHAL WASTE" by student Sidheswari Basti, Class-X, teacher Yugajyoti Rath. The model features a globe, a cardboard box, and various plastic waste items.

PROJECT- PLASTIC- THE LETHAL WASTE
STUDENT- SIDHESWARI BASTI
CLASS- X
TEACHER- YUGAJYOTI RATH

GADIBRAHMA LAKSHMIAR GOVT HIG
PS- BALIKUDA, BALIKUDA



DISTRICT JAJPUR

SOUMYAJIT ROY

Class - IX

Binapani Govt. Bidyapitha

Nilamanideipur, Jajpur, Odisha.



Polythene Recycling Plants: Polythene waste is one of the most serious environmental concerns in the world today. Millions of tons of Polythene are generated every year which causes environmental pollution. Recycling is an effective method of converting waste plastic products to useful ones. This project is based on how to burn Polythene with purifying the poisonous gas and how can also derive some useful products from it without any harmful emissions and toxic end products.





DISTRICT JHARSUGUDA

KRISH KUMAR PATEL

Class - X

Govt. High School,
Ektali, Jharsuguda, Odisha.



Plastic waste is a hazardous and most dangerous problem in front of humanity today. In an effort to find an efficient way to solve this problem of plastic waste, this project adds these plastic wastes into the bricks and creates the bricks by using plastic wastes. It can be the most economical solution for the construction industry and also an environment friendly solution to deal with the plastic menace.



MODEL - 14

School, Ektali
JHARSUGUDA

MODEL - 15

Police High School, Bhawanipatna
DISTRICT JHARSUGUDA

MODEL - 16

Govt. High School
DISTRICT JHARSUGUDA



MODEL

15

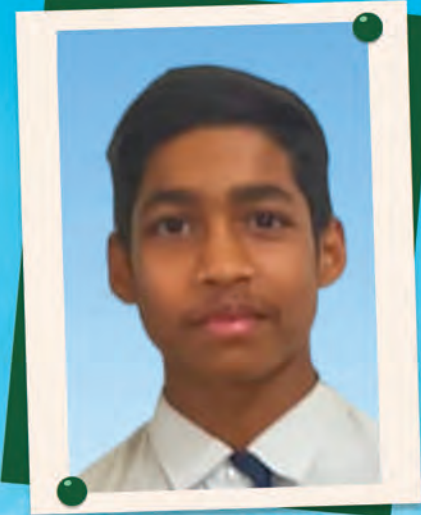
DISTRICT KALAHANDI

ADITYA RANJAN DASH

Class - X

Police High School

Bhawanipatna, Kalahandi, Odisha.



T-20 (Tips Twenty) to Beat Plastic Pollution : To beat plastic pollution we should choose the alternatives to plastics in our daily life. This model displays 20 alternatives to plastic products.

- | | | |
|------------------|---------------------------|-----------------------------|
| ✓ Planter | ✓ Sealing device | ✓ Phone charger |
| ✓ Bird Bath | ✓ Soap storage box | ✓ Earthen pot |
| ✓ Bird Feeder | ✓ Travel wash storage box | ✓ Flower bouquet |
| ✓ Handy Scrubber | ✓ Kitchen waste | ✓ Leaf bowls & plates |
| ✓ Foldable Cup | ✓ Multi-functional shovel | ✓ Cloth bags |
| ✓ Paper bag | ✓ Plastic bottle flower | ✓ Unique thread storage box |
| ✓ Eco bricks | ✓ Water cane | |

Usage of alternatives to plastics in conjunction with effective implementation of 5R (Reduce - Reuse - Recycle - Refuse - Recover) will lead us to a healthy plastic free world.



DISTRICT KANDHAMAL

DINABANDHU SETHI

Class - IX
Govt. Hih School
Balliguda, Kandhamal, Odisha.



Eco Friendly Plastic Brick : Plastic bricks are an ingenious solution to the pertinent problem of plastic wastes. As opposed to clay bricks, plastic bricks are stronger, lighter, reasonably priced and most importantly don't require water in the making, that makes them more sustainable than ever. If implemented in large scale plastic bricks and blocks can be the fantastic examples of the type of innovation needed to develop a circular economy.





**DISTRICT
KENDRAPARA****SAI GANGOTRI SINGH**

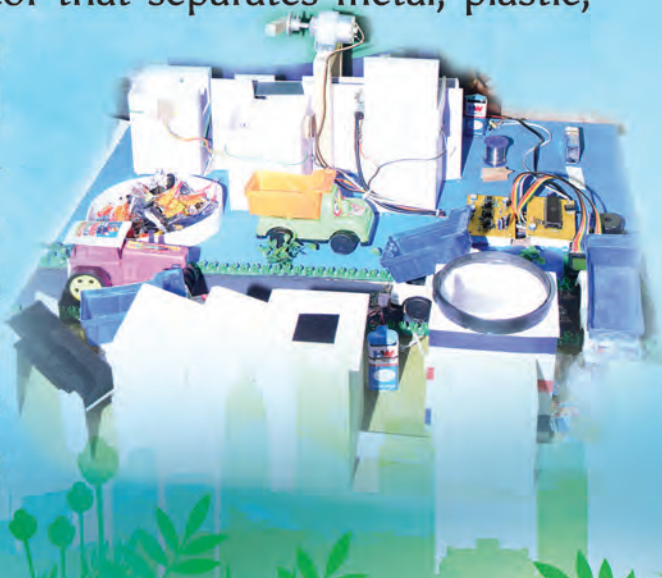
Class - X

Balunkeswar Bidyapitha

Balabhadrapur, Kendrapara, Odisha.



Automatic Waste Segregator: Plastic wastes are the main culprits behind the worsening environmental pollution. To address this threat, we should first segregate plastic wastes from the garbage and treat them differently and sustainably. This project is about automatic waste segregator that separates metal, plastic, wood etc and also has the potential to segregate dry and wet garbage through high-speed blowers. The automatic waste segregator can be a game changer in biodegradable and non-biodegradable waste management by isolating plastic wastes.





DISTRICT KEONJHAR

PREM BISWAKARMA

Class - X

Govt. High School

Mochibandh, Keonjhar, Odisha.



Plastics in construction : A brick, one of the building blocks of society, can be made from our waste and simultaneously be a sustainable solution of the snowballing issue of plastic pollution. This project focusses on this aspect and displays how we can construct walls using bricks made from discarded plastic bottles and sand. If effectively implemented and promoted, this affordable innovation will be game changer for circular economy.





DISTRICT KHORDHA

SUBHARANSU SEKHAR MAJHI

Class - IX

Govt. High School

IRC Village, Bhubaneswar, Khordha, Odisha.



Plastic Road: The implementation of plastics in roads has opened a new option for recycling post-consumer plastics. These roads are made from bitumen & recycled plastics. The plastics involved in building these roads consists mainly of common postconsumer products such as product packaging like polyethylene terephthalate (PET or PETE), polyvinyl chloride (PVC), polypropylene (PP), and high- and low-density polyethylene (HDPE and LDPE) etc. Plastic roads can pave the way for sustainable plastic waste management and simultaneously contribute towards connecting India through robust road network.





**DISTRICT
KORAPUT****ADITYA BISWAS**

Class - IX

Govt. High School

Kotpad, Koraput, Odisha.



Reusing and recycling Plastics are the best option to reduce the enormous plastic garbage that keeps increasing each day. This project is about a device that home-made, low cost and eco-friendly that converts plastic bottles into strands and then to plastic ropes. These strong plastic ropes can also be made using old tyres. From the plastic strands we can also make bags. It is high time we resorted to Plastic replacement products for a clean green planet.





DISTRICT MALKANGIRI

AKASH MANDAL

Class - VII

Govt. High School,
MPV – 6, Malkangiri, Odisha.



Waste Management and segregation is a much-needed process in metro cities and urban areas. This project is about Automatic Waste Segregator that separates dry from wet waste, metallic from non-metallic and bio-degradable from non-bio-degradable.





DISTRICT MAYURBHANJ

SOUMYA RANJAN MANDAL

Class - IX

Sripadganj Govt. High School
Baripada, Mayurbhanj, Odisha.



Biodegradable carry bags :
Plastics especially single use plastics are emerging as a serious threat to the mankind and nature. We must impress upon a zero-plastic approach in our daily life by using alternatives to plastics. This project is about one such alternative which is biodegradable carry bags which can be made at home using vinegar, corn starch, glycerine and water. It will be a small step towards keeping our environment plastic free.





DISTRICT NABARANGPUR

TULABATI JANI

Class - VIII

Govt. High School

Badokumuli, Nabarangpur, Odisha.



Generation of Electricity from waste:

As a sustainable management of wastes, we can utilise them innovatively to generate thermal electricity. This project delineates how we can procure heaps of garbage and generate electricity by burning them. It will not only mitigate the waste management issues but also be a boon in procuring cheap electricity.





**DISTRICT
NAYAGARH****SANTANU JENA**

Class - X

Solapata Govt. High School
Solapata, Nayagarh, Odisha.



Petrol from plastic garbage : To address the escalating problems of plastic garbage, we can utilise it to make petrol, diesel and kerosene through polymerisation process. It will decrease the plastic burden of earth considerably and lower the price of the fuels.





**DISTRICT
NUAPADA****KARAN MALLICK**

Class - X

Jitamitra Govt. High School
Komna, Nuapada, Odisha.



Marine Plastic Pollution Control : Plastics have invaded the marine ecosystem . Marine wildlife such as seabirds, whales, fish and turtles mistake plastic waste for prey; most then die of starvation as their stomachs become filled with plastic. Apart from affecting the marine food chain the microplastics are also posing a threat to our lives. The project focuses on surveying different places near Ocean and sea beach and installing the net to collect plastics and recycling them.





DISTRICT PURI

GYANA PRANGYA

Class - X
Puri Zilla School
Puri, Odisha.



Cleaning plastics from River through Bubble Barrier Method :
Plastics have invaded the aquatic ecosystem which needs immediate attention and solution. This project demonstrates an innovative method called Bubble Barrier Method using simple equipment like two mugs, one rectangular bottle, two switches, red and black wires, one water pump, one air pump, some 9v batteries, one pipe, one saline pipe and one ply/marble as base to clear floating plastics from water. Using this method, we can clean our rivers and protect the aquatic animals of the ecosystem.





MODEL

27

DISTRICT RAYAGADA

ASUTOSH SAHU

Class - IX

Govt. High School

Sikarpai, Rayagada, Odisha.



A clean green environment is a prerequisite for human development. The indiscriminate use of plastics is wreaking havoc in the environment. From killing terrestrial and marine animals to polluting the environment and blocking the increase of ground water level, plastic is a devil we must unitedly fight against. We must practice 4R (Reduce, Reuse, Recycle & Restore) to tackle plastic pollution.





DISTRICT SAMBALPUR

ANKITA SAHU

Class - X

Panchyat High School,
Jamankira, Sambalpur, Odisha.



Carbon Capture, Utilization & Storage (CCUS) : To reduce the carbon emissions , a Carbon Capture, Utilization & Storage (CCUS) is a innovative technology that converts atmospheric carbon dioxide to fuel or other valuable products by recycling and determine safe and permanent storage options. This technology can play major role in achieving carbon emission mitigation and reducing global warming.





DISTRICT SONEPUR

SANJAYA MENDILI

Class - X

Raghunath High School,
Mursundhi, Subarnapur, Odisha.



Plastic free environment : Uncontrolled usage of plastics has polluted the environment enormously and it needs our immediate attention and intervention. For a healthy life, it is imperative that we become aware and create awareness about the ill effects of plastics and try to reduce plastic footprints in our daily lives for a plastic free environment.



DISTRICT - SUNDARGARI

PLASTIC FOE TO FRIEND

[illegible]

DISTRICT SUNDARGARH

ABHISEK SARANGI

Class - VIII

RDD Govt. High School,
Bonaigarh, Sundargarh, Odisha.



Plastic free environment : The increasing plastic pollution is creating numerous concerns for the man and environment. To tackle this menace, we can use the plastic waste to make roads, bricks and in preparing wax. This project is based on such reuse of plastic waste.







**BEAT
PLASTIC
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