

Project Report

1. TITLE OF THE PROJECT : Creating Environmental Awareness among College Students using Paper Recycling Technology in Kolkata

2. Introduction

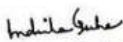
Paper recycling is a process by which waste paper are processed together with small amount of rosin & alum to produce handmade papers which can be used to make files , folders, Pen stands, Paper bags, book- marks, greetings cards, envelopes of different sizes etc. Waste paper recycling has a huge impact on environment and society. According to research studies, recycling of one ton waste paper saves 17 full grown trees, 7000 gallons of fresh water, 4000 kilowatt of power and reduce 580 pounds of air pollution. In India we produce approximately 14.6 million tonnes of waste paper every year, out of that we recycle only 26% where as Germany recycle 80%,Sweden recycle 69%, Japan recycle 60% and USA recycle 49% according to the Report of the Indian Agro and Recycled Paper Mills Association(IARPMA). Recycling of waste paper is beneficial not only from economic point of view but also for the protection of environment. It promotes conservation of one of our very important natural resources –TREES. More the number of trees in the country, the better are the environment.

In Kolkata empowering girl students using environmental friendly technology in paper recycling at college level is a completely new and innovative idea. Basanti Devi College in collaboration with two other Kolkata based colleges (Muralidhar Girls' College & Deshbandhu College for Girls) successfully complete an innovative project on waste paper recycling and started a small waste paper recycling Unit in the campus.

3. Objectives of the Project

The following objectives were framed:-

- i) To take care of the waste paper generated in the college in an eco- friendly and useful manner;
- ii) To make the Under Graduate and Post Graduate students aware of the concept 3R principles-- Reduce, Reuse and Recycle of waste papers and thus make the college campus sustainable, eco- friendly and zero waste zone;
- iii) To provide hands-on training to the students on paper recycling so that a mini paper recycling unit can be set up in the college campus and the end products can be used by the college for various programmes;
- iv) To train students and teachers of other colleges on paper recycling so that they can also set up paper recycling unit in their respective colleges & use the end products for various events.


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4. Methodology

Nine steps which are followed in paper recycling are given below:-

i) Collection of waste papers from the campus : Our Undergraduate & Post- graduate students(20) collected waste papers like used answer scripts (very old),Xerox pages, Card Board Boxes from the college office & store room for two weeks. Waxed Papers, Newspapers, Glossy Paper& Magazines were not collected for recycling.

ii) Tearing and shredding the waste papers- After collection of waste papers, the used papers were chopped into smaller bits so that the paper can be pulped easily. These small bits of papers were soaked in water for approx. 30 minutes.



iii) Pulping -Next step is to mix the small bits of waste paper with water, small amount of rosin & alum & dye colour in a Hydrapulper to create pulp.

iv) Putting pulp in Univat :-After creating pulp, the next step is to put the pulp in the uni-vat & spread the pulp smoothly. Uni-vat is a steel fabricated tank with fibre coating, phosphor bronze bushes, deckle & frames fabricated with teak wood & stainless steel wire mesh capable of lifting paper size 11”x16”.



Spreading the pulp smoothly

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Sheet of paper, size 11”x16”.

v) **Lifting & Couching**: After spreading the pulp smoothly in the uni-vat, the next step is to lift the paper sheet carefully from uni-vat & transfer the sheet of paper into the cotton felt (couching).



vi) **Draining of Excess water**- A stack of sheets of paper is kept in the screw press & then compressed to remove the excess amount of water.



Draining of Excess water

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vii) **Sun drying of recycled papers**-Once the excess water is drained off, individual sheet from the stack is sun-dried to obtain 100% dry sheet.



viii) **Cutting of papers into required dimension**- Papers are hand cut into required dimension by students for making different kind of usable stationeries like folders, pen stand, paper bags, bookmarks etc.

ix) **Crafting of products**



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5. Training :-

5 days Training (21.09.2021 – 25.09.2021) was conducted on Paper Recycling for students



6. Duration of the Project: Project started from 1st week of January, 2021 & completed in December,2021 (12months).

Twelve months includes awareness Programme, Procurement of Mini paper recycling unit and like, power Installation & arrangement of utility connections, water, Hands on Training to Under Graduate and Post Graduate Students of the College, Training to other college students along with production.

7. Significant Findings:

1. Students were made aware of the concept 3R principles-- Reduce, Reuse and Recycle of waste papers in order to make the college campus sustainable, eco- friendly and zero waste zones.
2. Hands on training helped the students to know about how waste papers can be recycled & reused.
3. The project helped the students to bring out their innovative ideas in crafting of products like folders, pen stand, paper bags, bookmarks, greetings cards, envelopes of different sizes etc
4. Students also learnt how waste can be converted into wealth & it may inspire some of the students to become future entrepreneur.
5. Involvement of students from different college in the project will inspire & motivate them to start a mini paper recycled unit in their college.

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6. Enhanced a wide range of skills among students such as teamwork, leadership, discipline, innovation, creativity and above all care for the environment.

Cost of the Project

Sl.No.	Items	Qty	Amount in Rs.
1	Hydrapulper for pulping waste paper of a capacity 1 kg per charge	1	2,53,700
2	Steel fabricated tank capable of lifting paper of size 11"x16"	1	
3	Screw press of size 12"x18"	1	
4	Tools & accessories consisting of couching table, couching boards, woollen felt, cotton felts		
5.	Installation & arrangement cost of utility connections like power, water etc		12,000
6.	Miscellaneous		50,000
	Total Amount		3,15,700

Amount In Words: Rupees Three Lakhs Fifteen Thousand Seven Hundred only

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