

Environmental Planning and Coordination Organization (EPCO)
Paryavaran Parisar, E-5, Arera Colony, Bhopal- 462016
Phone- (0755) 2464318, 266970



Notice inviting Expression of Interest (2nd Call)

Environmental Planning and Coordination Organization, a Government of M.P. registered society under Housing and Environment Department is setting up a Waste Paper Recycling Unit at paryavaran Parisar, E-5, Arera Colony Bhopal. The purpose of this endeavour is to demonstrate efficient use of waste paper through economically viable recycling and promote use of recycled paper. The details of the unit can be obtained from our website www.epco.in.

EPCO invites Expressions of interest from promising and potential operational partners who have related or comparable experience and inclination to run this plant. Preference will be given to those who have experience of running an enterprise based on recycling of resources and having their base center at Bhopal or in Madhya Pradesh

Interested agencies/entrepreneurs/voluntary organization may send in their response along with their business plan to run the unit efficiently, in writing on or before 15th Feb, 2010 to the Executive Director, EPCO at the address mentioned above. Executive Director reserves all the rights to reject any offer or cancel the EOIs without assigning any reasons.

Executive Director

PROJECT REPORT

SETTING UP OF HANDMADE PAPER UNIT BASED ON COTTON HOSIERY WASTE AND WASTE PAPER RECYCLING



**Environmental Planning & Coordination Organization
'Kachnar', Paryavaran Parisar
E-5/Arera Colony, Bhopal-462016**

Project Summary

Environmental Planning and Coordination Organization, a Government of MP registered society under Housing and Environment Department is setting up a Waste Paper Recycling Unit at Paryavaran Parisar E-5 Arera Colony Bhopal. The purpose of this endeavor is to demonstrate efficient use of waste paper through economically viable and environmentally sustainable recycling methods and promote use of recycled paper.

Project Strengths

1. Capital investment in terms of land, machines.
2. Resource availability (water, electricity, Raw Material etc)
3. Eco friendly finished product (The recycled paper will be chlorine free, no De-inking, no color, efficient to be reused)
4. Plant to be run as per government norms(minimum wages will be paid, eight hrs as working hours etc)
5. Inculcate the culture of resource minimization, recycling and reuse.
- 6 Replacement Cost - 'Had recycled paper not been used, how much virgin paper that would have been used by the concerning offices causing environmental pressure.

Project Opportunities

1. Recycled handmade paper is in huge demand in export market.
2. Minimize the waste thereby reducing its environmental effects.
3. Plant can be a source of revenue for EPCO and its partners.
4. As a profit making unit, this plant can inspire society (NGOs/ Entrepreneurs) to still make profits while working in the direction of conservation of environment.
5. The opportunity cost of the recycled paper in terms of preserving the environment will be quite higher.

Project Cost Analysis Summary

Cost of Production (RS/KG)		61.02
Value addition cost per KG @ Rs1.50 per file cover		12.00
Average Sale Price (RS/KG) Selling Price Rs 10 per file cover and 8 file covers per KG		80.00
Annual Cost of File Cover	Rs	845335.008
Annual Sales	Rs	1080000
Annual Gross Profit	Rs	234665
Provision for Taxes (30% of Profit)	Rs	70399
Net Profit	Rs	1,64,265

Assumption

- The plant utilization capacity will be 90%.
- There will be 4 sheets or 8 file covers per KG of raw material used.
- The selling price of the file cover will be Rs 10 per file cover.
- The total working days and working hours are 300 per year and 8 hours respectively.

PROJECT REPORT

Setting Up Of Handmade Paper Unit Based On Cotton Hosiery Waste And Waste Paper Recycling

Status Of Indian Handmade Paper Industry

Handmade paper sector is totally eco-friendly utilizing non woody raw materials and waste raw materials and the durability of the paper is high with exclusive look and texture. The paper is available in a saga of rich varieties, designs, shapes and colors. Most of the handmade paper units in India have been traditionally using cotton hosiery waste as the main source of raw material, which produce paper with excellent strength characteristics. However, increased efficiency of textile mills have resulted in reduced generation and also increased the cost of this raw material. For sustainability of the handmade paper industry in the long run, the use of locally available ligno-cellulosic raw materials may be essential. Further some of these raw materials have been found to impart special characteristics to the paper like strength smoothness etc which is essential requirement of some of the varieties of handmade paper.

The use of these raw material may also result in increased production at a lower cost. With a small investment, a number of handmade paper making clusters could be developed based on locally available ligno-cellulosic raw materials namely Jute, Sunn Hemp, Ankara, Bhimal, Banana stem etc thus solving problem of unemployment, poverty and meeting future demand of paper without effecting the environment. Kumarappa National Handmade Paper Institute since its inception has been engaged in the Research & Development activities for the benefit of Indian handmade paper Industry. After exhaustive Research & Development work at the Institute KNHPI has identified number of locally available raw materials and evaluated their potential for handmade paper by developing suitable process technologies for producing varieties of specialty grades of handmade paper.

Some of the important ligno cellulosic raw materials studies are banana fibre, jute fibre, Sisal fibre, Silk Mulberry, Bhimal fibre, Pine apple & shredded currency waste of RBI. Suitability of handmade paper from these fibres has been evaluated on bench as well as pilot scale. Now it is time that these technologies developed by KNHPI are transferred to the handmade paper industry to create confidence among the entrepreneurs and to take full advantage of the technologies developed at KNHPI.

Market Scenario Of Handmade Paper

The Indian handmade paper produces a vast varieties of paper made out of cotton hosiery waste, office waste and alternative ligno-cellulosic raw materials. Due to increased literacy rate, industrialization and development, the per capita consumption of paper in India is likely to increase from the existing level of 5 kg to 6 kg. Before 1991 the industry was heavily dependent on captive market, i.e. supply to State government & Central Govt. against reservations. The shift started taking place in this scenario after 1991. Since 1991 the handmade paper industry in the country increased more than 100 percent and in the export sector an impressive 1000 percent increase has been noticed. The situation has entirely changed and the industry has found many other end-users including penetration in the international market in a big way. This situation has resulted

enhancement in capacity utilization, product diversification, culture of competitiveness, better management and market approach.

Handmade paper production meets only 0.5% of India's total requirement of paper. It has been observed that there is much scope of bridging the gap by exploring more potential of handmade paper in domestic market by decreasing its cost and adopting intermediate technology. The handmade paper and its allied products offers a vast marketing scope in both domestic and export market.

Domestic Market

The present domestic market presents divergent scenario with persistent and sustained demand for quality products on one hand and scarcity of such quality items on the other. Central Govt. & State Govt. are main purchasers of file covers, flaps, file boards etc. Govt. of India reserved 50% to purchase file cover and office stationery from KVIC/KVIB units which is to be implemented in an organized way. If only 10% of this supply is reserved for handmade paper industries, it will be about 7 times the present quantum of production. Besides, there is the non-captive market which can be classified into institutional and non-institutional. Institutional market demands bigger quantities while non-institutional smaller.

There are the eco-conscious buyers who purchase environment friendly produces to enhance its image. There are the quality conscious buyers who purchase handmade paper for its exclusiveness in texture, long lasting quality and beauty. There are the price conscious buyers who purchase handmade paper because it is cheaper than mill made products for some varieties.

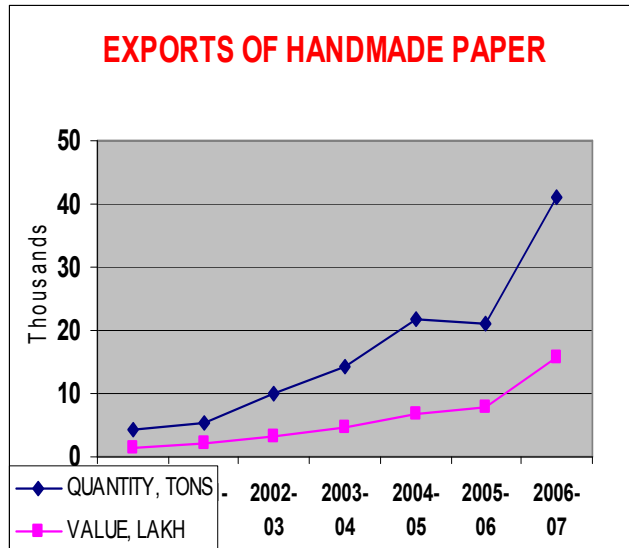
Export Market

The demand for handmade paper and its allied products is gradually increasing not only in the domestic market but also in the export market. For the last two decades the handmade paper industry has been exporting certain exclusive varieties like deckle edge stationery drawing paper, marble paper, mottle paper made from jute, wool, algae, straw, grass etc and recorded significant growth in the export sector. Foreign buyers like US, Germany, UK, Canada, Italy, Sweden, Australia, Singapore and Hong Kong are purchasing handmade paper from India because handmade paper production in India by all means is low as compared to the production areas abroad. Now foreign buyers are purchasing handmade paper due to increasing environment awareness. As per one estimate, nearly 75% Handmade Paper Produced in India is exported to various countries.

Export of handmade Paper has increased about 10 times in the last five years which has increased from 2000 tons (1999-2000) to 20900 tons (2005-06). The volume of imports has been low, However, there has been an upsurge in the last fiscal, the major import coming from USA and UAE, which is a change in trend from Nepal and Netherlands/Malaysia. The major countries of exports of handmade paper are Nigeria, Sri Lanka, Egypt Malaysia, Kenya, Bangladesh and European Union. However, there is quantum jump in export as shown in data given below which clearly indicated that export of handmade paper & paper board in six months ie. up to June 2006 is almost equivalent to the quantity exported in whole year ie. 2005-06.

Export of handmade paper from India

Year	Quantity of export, Tons	Value of export of handmade paper, Rs Lakhs	Quantity of export of total paper & paper board(Tons)	Value of exports of total paper and paper board(Rs.Lac)	% share in value handmade paper in total export	% share in quantity of handmade paper in total export
2000-01	4194	1568	1,98,000	73215	2.14	2.11
2001-02	5197	2096	224000	76218	2.75	2.32
2002-03	10,170	3332	272000	101357	3.28	3.73
2003-04	14,369	4684	233000	81327	5.75	6.16
2004-05	21,800	6890	281000	103594	6.65	7.75
2005-06	20,906	7723	323000	124639	6.19	6.47
2006-07	41,086	15704	350000	147500	11.0	12.00



At present the handmade paper from our country has been exported through three different channels:

- ❖ Directly by the manufacturing units
- ❖ Through Govt. organizations like KVIC, Bombay, Export Promotion Council for Handicrafts, Chemical and allied products export promotion council
- ❖ Through private traders like export houses, trading houses, export agents etc.

What to export in handmade paper

The type of handmade paper which are in general demand in foreign markets are given below:

- ❖ Water color drawing paper
- ❖ Bond paper
- ❖ Decorative and Fancy paper

- ❖ Perfume boxes and carry bags
- ❖ Unsized mottled paper
- ❖ Gift wrapping paper
- ❖ Marble paper and blended fibre paper
- ❖ Invitation cards, greeting cards, hotel menu cards etc.
- ❖ Stationery items like pads, envelopes, price tags, diary, note books, table covers, wall posters etc.

PROCESS DESCRIPTION:

FOR HOSIERY WASTE & WASTE PAPER LINE

RAG CHOPPING:

The hosiery waste is chopped in to small pieces with the help of a Rags Cutter.

BEATING:

The chopped raw material is loaded into the beater for beating of raw material so as to make it into pulp form for sheet making.

HYDRA-PULPER:

The waste paper is loaded in the Hydra-pulper and mixed with water. The waste paper is converted into pulp-slurry.

SHEET MAKING:

Both the pulps of hosiery waste and waste paper are mixed in desired proportions and sheets are formed on Auto-Vat manually and couched on Couching table using felt between every sheet.

PRESSING:

The pile of sheets from the couching table is taken to the screw press for squeezing out excessive water.

DRYING:

The pressed sheet are dried in the Dryer Room by hanging the sheets or under the Sun in open area.

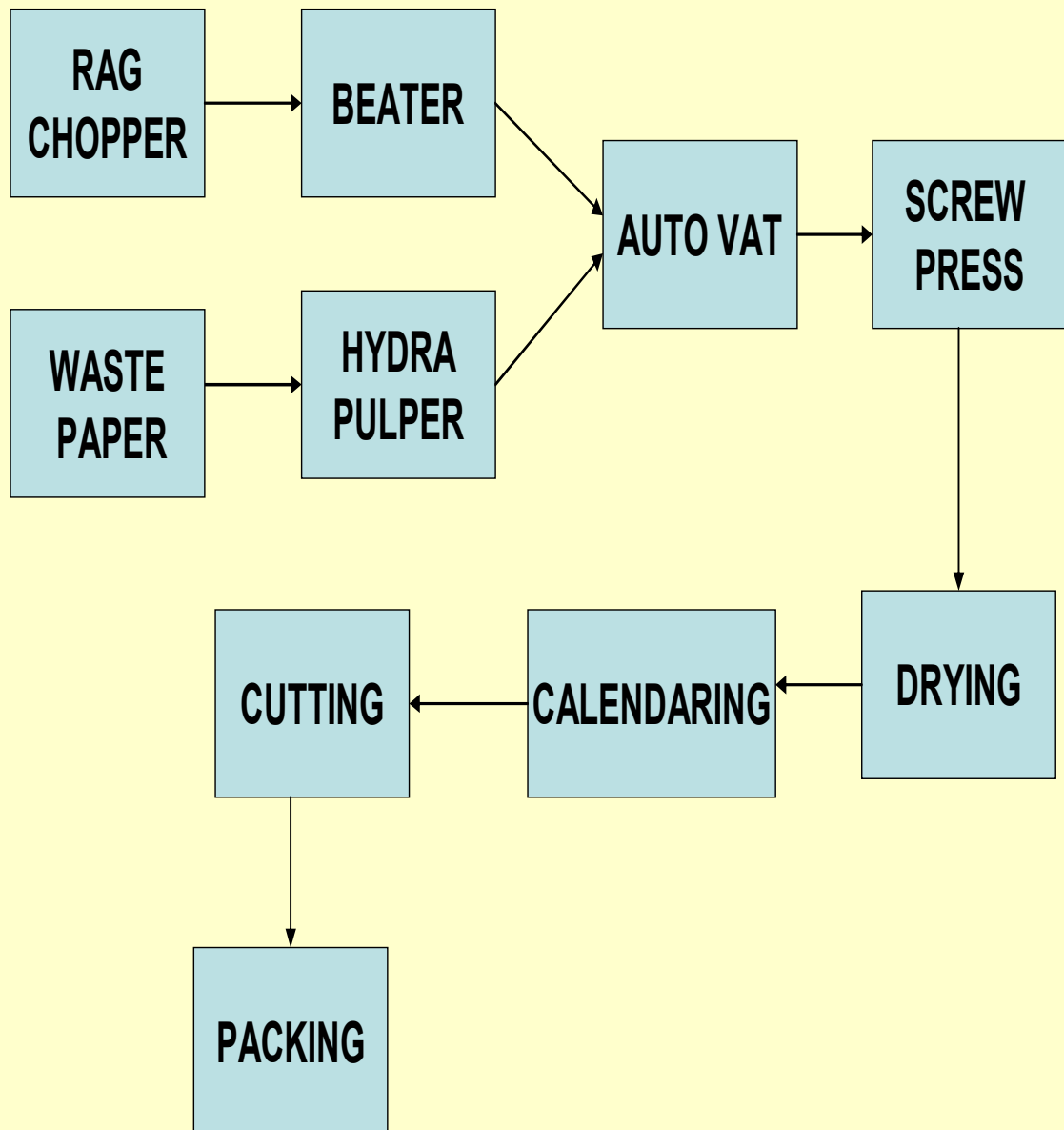
CALENDERING:

The dried sheets are having very uneven surface, therefore passed through calendar rolls for smoothening the surface.

CUTTING/FINISHING:

The calendered sheets are cut in to the required sizes and packed in a proper way so as to be transported to the customer safely.

SCHEMATIC FLOW DIAGRAM OF THE PROCESS



**HANDMADE PAPER UNIT BASED ON
WASTE PAPER & HOSIERY WASTE**

DETAILS OF CAPITAL INVESTMENT MADE BY EPCO

Type of unit	Handmade paper unit
Nature of the implementing agency	Entrepreneur/ Registered society/ Micro Enterprise Firms/ NGO/ etc
Products	Office file covers/note pads/ envelops/carry bags etc
Installed capacity hosiery waste	12 kgs/day
Installed capacity recycled paper	38 kgs/day
Estimated production hosiery	10.8 kg/day
Estimated production recycled paper	34.2 kg/day
Skilled workers	2
Unskilled workers	3
Manager	1
Technician	1
Watchman	0
Total	7

Land (1/4 acre)	EPCO's own land
Maximum power load	30 KVA, from EPCO's HT Connection
Water Supply	24 hour water supply available
Nit advertisement charges	185000
Machinery & equipment	1375000
Institute's consultancy fee	108150
Professional manager	50000
Grand total	1718150

1. SPECIFICATIONS OF MACHINERY

S.NO.	MACHINERY	SPECIFICATIONS
1	RAG CUTTER	BLADE SIZE 10-12" NO.OF BLADES 4/6 5 HP x 960RPM MOTOR
2	SCREW PRESS MOTORIZED	PLATEN SIZE 40x42" MOTOR 5 HP x 960 RPM,
3	CALENDARING MACHINE	SIZE 12X36" MOTOR 7.5 HP x 960 RPM
4	AUTO-VAT	Stainless steel Fabricated tank of size Length 42"X Width 60"X Depth 13" complete with stands. STAINLESS STEEL STRIP CRADLE - 1.5"&3/8" ❖ The side ends are suspended by adjustable screws 1/4' rod 6" long to a common 1" rod. <u>DECKLE (WOODEN)</u> Thickness-1/2" and Height 5" FRAME-Wooden MOULD (4 nos.) ❖ Size of mould-25"X33"(suitable for cut size paper 22"X30") Two moulds with stainless steel wire of 40 mesh (on Top) and 5to 6 mesh stainless steel wire for supporting and Two moulds with stainless steel wire of 30 mesh (on Top) and 5to 6 mesh stainless steel wire for supporting. FRAME(Teak Wood) Breadth -1.5",Thickness-0.5"
5	SMALL BEATER	SIZE 15*18, SS BODY CAP 8-10KG, 5HP MOTOR
6	CUTTING MACHINE	42"SIZE 3 HP*960 RPM
7	HYDRA-PULPER 0.5 CUM	D= 0.8M, H= 1.2M, 10 HP*960RPM, MS BODY WITH ELECTRICAL SWITCH STARTER PANEL AND MOTOR

Submission of Offer for Waste Paper Recycling Unit

Offer for Establishment of Waste Paper Recycle Unit	
Section 1: Organizational Details	
1.1	Name and Address of the Firm/Organization
1.2	Contact Details of Head of the organization
1.3	Objectives of the Organization
Kindly enclose copy of the organizational Memorandum of Association	
Section 2: Firm Registration & Financial Details:	
2.1	Registration no. and date:
2.2	Annual Turnover in the last 3 years:
	2006-2007
	2007-2008
	2008-2009
Kindly enclose Attested copies of the Audited Reports of last three years.	
Section 3: Organizational Experience & Profile:	
3.1	Summary of projects executed successfully in the past three years (2006 to 2009).
	i. Project title
	ii. Source of funding
	iii. Implementing partners (if any)
	iv. Project duration
	v. Project budget
Section 4: Details of Present Activity/ Projects	
Section 5: Details of Employees/Experts working in the organization:	
5.1	Details and Bio data of the Staff
5.2	Availability of appropriate skills among staff
Section 6: Previous Experience with similar Project (If any)	

Section 7: Your understanding of the project:
Technical
Managerial
Financial
Marketing
Section 8: Details of your proposal to run the plant
Technical
Managerial
Financial
Marketing
Section 9: What do you Expect from EPCO

Please use additional space / pages if required to submit your offer.