Small And Medium Paper Mills-Technological Challenges And Options

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Presently the Paper Industry is facing an unprecedented world wide recession. With the recent government policies for globulisation, the small and medium paper mills have to complete, not only with the Indian manufacturers, but also with the International market in terms of cost and quality.

The Indian Paper Industry has grown very well. In 1950-51 there were only seventeen (17) paper mills in operation and as on 1994-95, three hundred eighty (380) Paper Mills in operation. In 1970s and 1980s the government had extended a lot of fiscal support and easy import of Second hand Machinery. Further, the Government had given prefrential treatment to Small and Medium sector by allowing special rate of Excise Duties in comparison to Integrated Paper Mills. If, you observe at table I and table II you will notice that the installed capacity has grown from 0.23 to 3.95 millions tonns by the end of 1994-1995 and the import duty structure has slashed down from 140% to 20%. The excise duty which was being charged only 5% (use of more than 75% unconventional raw material) has been increased to 10% in the recent budget 1996-97. This clearly indicates that Small and medium size Paper Mills can not be further protected by the Govt. policies. This sector has to grow on its own Strength.

Table-I

Production and Capacity Utilisation

Year	No. of Units	Installed Capacity (Million Tonnes)	Production (Million Tonnes)	Capacity Utilisation (%)
1950-51	17	0.13	0.11	85
1960-61	25	0.40	0.34	86
1970-71	57	0.77	0.75	99
1980-81	135	1.65	1.11	67
1989-90	317	3.23	1.87	58
1990-91	325	3.30	2.06	62
1991-92	326	3.36	2.11	63
1992-93	340	3.55	2.12	60
1993-94	380	3.79	2.32	61
1994-95	380	3.95	2.51	64

Table-II

Import Duty Structure:Paper and Paper Board

Year	Import Duty for Paper & Paper Boards (%)	Countervailing Duty (CVD)
1986-87 TO 1990-91	140	10% + Rs. 1900/TONNE
1991-92	110	10% + Rs. 2425/TONNE
1992-93	85	10% + Rs. 2425/TONNE
1993-94	65	20%
MARCH 1995	40	20%
MAY 1995	20	20%

The total production of Paper and Paper Board is 2.5 Million tonns being produced by Wood based, Waste Paper based and Agro based units. Approximately 1.07 millions tons are contributed by Wood base Paper units, 0.70 and 0.74 Millions Tonns by Waste paper and Agro based units respectively. It can be stated that Small and Medium size Paper Mills based on Agro and Waste Paper are contributing more than 57% of the total Paper and Paper Board production. With the growth in the GDP it is estimated, that the requirement of Paper by the end of the century will be approximately 5 Million tons.

The large Integrated Paper Mills are being operated in the organised sector and have world class equipments and technologies to make them competitive in the international market in the terms of cost and quality.

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The Small and Medium size Paper Mills which are based on Agro residue and Waste paper does not have adequate technology and required machinery to maintain the products quality, cost of production and environmental management as per prescribed norms. With the present threat from the domestic and International market this sector has to adopt policies to become competitive in its cost and quality.

In my opinion the major areas to be looked into, can be summarised as under:-

RAW MATERIAL AND ITS QUALITY

Baggase, Sarcanda and Wheatstraw are being used by Agro based units for the manufacturing of Kraft and Writing and Printing paper. Quality produced by these units is not comparable with the quality of Integrated Paper Mills, due to inherent short comings of Agro based raw material.

Therefore, the blending of suitable fibre and adoption of required technology should be followed to maintain the quality which can be sold in competition at a good margin of profit. Presently, most of Mills in this sector have not followed the concept of manufacturing acceptable quality as compared to Integrated Paper Mills. Due to the change in Government Policy on financial package, protection by way of duties and taxes will not be made available to them any more.

Waste Paper based mills are using Imported Waste Paper and Wood Pulp, thereby they are able to produce acceptable quality. However, proper process controls are to be followed to upgrade the finish paper quality.

MACHINERY AND TECHNOLOGY IN USE:-

The Machinery and Technology used by this sector is not comparable with Internationally adopted technologies.Most of the Machines are manually operated and have no Process Control System.

The pulping of Agro based raw material is still being done in rotary digesters which are consuming higher chemicals, steam and energy .Such process are not only resulting in higher cost but the quality of the finished product from such systems is not acceptable in the market in comparison to the produce of Integrated Paper Mills.It is due to such process the effluent norms can not be maintained.The Government has also taken a very serious view on the effluent Standards and the mills operating on Agro residues will not be allowed to drain the polluted effluents into the environmental system.However,the waste paper has very little threat from the pollution angle,but the de-inking and hot-dispersing technology is to be followed to upgrade the present Pulp quality.

SKILLED MAN POWER EMPLOYED

The Integrated Paper mills have an advantage of their modern machines required technology and well conceived projects. Since the Paper Industry is capital intensive and the Mills are near to raw material source,energy and water source. These units can have a well laid out township and can employ professionals to operate these mills in the desired manner. In comparison to Integrated Pulp and Paper Mills the Small and Medium sector mills are not able to employ highly skilled professionals due to which these small poor operating results.

COMPETITION FROM DOMESTIC AND INTERNATIONAL MARKET

The Integrated Paper Mills are operating on a big scale and based on forestry raw material. These Mills are able to produce better quality paper at an economical cost. The same is competitive even with the International market in terms of cost and quality.

Moreover, now multi-nationals have entered into the domestic market creating new capacities with most modern machines having on line Micro Processor Control. Due to the availability of better quality Paper within the country produced by these mills, Small and Medium size sector will not be able to compete with them in terms of quality and cost, and ultimately it will result in failure or closer of these units.

ADOPTION OF SUITABLE TECHNOLOGY WHICH CAN TREAT AGRO BASED EFFLUENTS TO THE PRESCRIBED LAID DOWN STANDARDS

Presently, the effluent from Agro based Paper units are not as per the prescribed laid down standards. It is mainly due to, not having the Chemical recovery units with the mills. Without having the Chemical recovery unit Agro based units can not achieve the laid down standard norms. Therefore, a commercial and environmental friendly technology should be developed for Small and Medium size Paper Mills.

CAPTIVE POWER GENERATION

Most of the Small and Medium Paper units do not have their own power generation systems either by Diesel or by Steam Turbines. Erratic power supply from the electricity boards results in sub-standard quality, fiber loss, chemical loss, unwanted machinery breakdown and undesired production down times.

The frequent tripling low voltage results in poor economics. To maintain an acceptable quality, a smooth power supply is the basic requirement. Therefore, due attention should be given for captive power generations.

REQUIREMENT OF END-USER. KEEPING IN VIEW OF NEW TRENDS IN PRINTING AND PACKAGING INDUSTRY

Due to globulisation and advancement in Printing and Packaging technology the expectations of good quality Printing and Packaging paper have demand in the market. The high speed Printing machinery requires strong writing and printing paper, a good finish and an uniform caliper. Similarly, the Packaging Industry wants coated Board having better tensile strength and good printability. The Packaging of consumer goods and Electronic articles also need strong Kraft Paper.

The creamwove quality being produced by small and medium sector is not comparable with the quality of Integrated Paper Mills or International Standards. Similarly, Kraft Paper Board produced by the sector do not meet the desired standards. Keeping in view, lower rates of customs duty and soft price trend in the International Market, the consumer will prefer to import Paper and Paper Board. Therefore, Small and Medium sector has to up-grade the final products to meet the challenges.

The following recommendations and suggestions are given which should help this sector to compete with the domestic market, in terms of quality and cost:-

1. The unit size should be Minimum 50 TPD and it should be Environmentaly, Technically and Commercially viable.
2. Agro based units should install a Chemical Recovery Unit.
3. Captive Power Generation should be installed.
4. An effluent treatment system which can treat the Industrial effluent to the prescribed laid down standards.
5. Micro Processor, Process Control System should be installed to achieve uniform Basis Wt., Moisture, Caliper & Brightness etc.
6. Experienced Techno, Commercial Persons to be employed.
7. A well conceived project with expert advice to be implemented.
8. Plant and Machinery should be up-graded, available technology be adopted to manufacture the Paper and Paper Board at a profitable cost by optimising the use of power, coal, Chemicals and Man Power.
9. Small Mills specially based on Waste Paper and Wood Pulp should produce Quality products.
10. The Small Mills should produce products meeting the requirement of specialised sectors.

In Japan, Taiwan and Korea most of the Paper Mills are operating on Waste Paper/Wood Pulp. They are producing Paper and Paper Board of International Standards and competing in terms of price and quality.

I am sure if the above steps are taken, we may be able to achieve the desired results and hence be able to face the challenges before this sector successfully.