S.K.E SOCIETY'S

R.P.D.COLLEGE OF ARTS AND COMMERCE, BELAGAVI

PROJECT REPORT ON

STATUS OF FOREST BASED INDUSTRIES: A SPECIAL REFERENCE TO WEST COAST PAPER MILL, DANDELI

PROJECT REPORT SUBMITTED TO THE ANNUAL PRACTICAL EXAMINATION IN GEOGRAPHY FOR B. A. VI SEMESTER STUDENTS, CONDUCTED BY THE RANI CHANNAMMA UNIVERSITY, BELAGAVI

UNDER THE GUIDANCE OF

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CERTIFICATE

This is to certify that Mr./Miss -- --------------------------------------- **(Exam Seat No: ----------------------)** has successfully completed the project work entitled **"STATUS OF FOREST BASED INDUSTRIES: A SPECIAL REFERENCE TO WEST COAST PAPER MILL, DANDELI"** under my supervision during the academic year 2017-18 as a partial fulfillment of B. A. VI Semester Practical Work in Geography. Prescribed by the Rani Channamma University, Belagavi.

Place :-Belagavi.

Date :

STAFF MEMBER INCHARGE

HEAD
DEPARTMENT OF GEOGRAPHY

EXAMINERS

1. ________________________

2. ________________________

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My special thanks to all the management of West Coast Paper Mill, Dandeli for permitting us to visit the factory.

I humbly submit this field report to Department of Geography as a partial fulfillment of B.A. VI semester practical syllabus prescribed by the Rani Channamma University, Belagavi.

Name :

Reg.No:

Date : Signature

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CHAPTER – I

FOREST BASED INDUSTRIES AT NATIONAL AND REGIONAL LEVEL

INTRODUCTION:

Forests provide us with different types of materials which are used as raw materials for certain industries. Those industries which use forest products as raw materials are called forest based industries. India is one of fast growing forest-based industries in the world. The growing knowledge base coupled with synergistic contribution from the flagship schemes of the government. Forest-based Industry includes- the paper industry, match industry, silk industry, lac industry, sports goods industry and handicraft.

Paper is one of the core industries and is linked to the basic human needs. Paper is the pre-requisite for education and literacy and its use is an index of advancement in these two fields as well as the overall well being of the society. This is the most important of all the forest based industries. Some people treat it as a chemical industry due to its manufacturing process and because of certain chemicals used for its manufacturing. Still some other people include it in the group of agro-based industries because some of the agricultural products and residuals are used as raw materials. As large proportion of the basic raw materials is derived from the forests, it seems logical to treat it as a forest based industry. The art of paper making was introduced in India by the Muslim rulers during the 10th century. The traditional craftsmen called kagzis making paper from gunny bags, rags and old records were regularly employed by the native rulers in Punjab, Kashmir, Rajasthan, Maharashtra and several other states. There is still a large number of small units producing handmade paper all over the country.

Paper Industry:

The word "paper" is etymologically derived from *papyrus*, Ancient Greek for the Cyerus papyrus plant. Papyrus is a thick, paper-like material produced from the pith of the *Cyperus papyrus* plant which was used in ancient Egypt and other Mediterranean societies for writing long before paper was used in China. Papyrus however are plants pressed and dried, while paper is made from fibers whose properties have been changed by maceration or disintegration.

Paper is used for writing and printing, for wrapping and packaging, and a variety of other applications ranging from kitchen towels to the manufacture of building materials. In modern times, its production in large quantities has been a significant factor in the increase in literacy and the raising of educational levels of people throughout the world. The most commonly used paper types are stationary paper (i.e. printing and writing), news print, wrapping and packaging, and paper card. We use paper for news prints, magazines, writing, printing, packaging, sanitary purpose and household uses. Books, exercise books, report cards, receipts, envelops greeting cards, colanders, diaries, wall papers, toilet tissue, towels are a few among the usages of paper.

Global production of paper and paper board was around 350 million tons which contributes to about 3.5 percent of world' s Industrial production and 2 percentage of world's trade. India was ranked 15th in the World in terms of paper and boards production capacity.

History of Paper Industry:

The first modern paper mill in the country was set up in 1812 at Serampore (West Bengal); the venture, however, failed and the industry made a beginning again in 1870 with the starting of the Royal Bengal Paper Mills at Ballygunj near Calcutta. Though the preferential treatment and the tariff protection granted to the industry in 1880 and 1925 respectively proved helpful in its expansion and World War II helped it still further, the growth was sluggish till Independence. There are about 759 units which manufacture pulp paper. Board and news print out of which nearly 651 are in operation. The total installed capacity is nearly 128 lakh tonnes. In terms of geographical spread of paper mills in the country. Gujarat leads the tally with the maximum numbers of mills (130) followed by Uttar Pradesh (115).

Location:

The main factors that favour the location of the paper industry are the fol1. Availability of raw materials. Pulp woods derived from soft-wooded trees are required for the manufacture of superior printing paper and newsprint. Since India has very little softwood, it depends largely on bamboo, sabai grass, bagasse, straw, waste paper and salal wood.

1.The chemicals required are caustic soda, soda ash, bleaching powder and Salk cake.

2. Power supply

3. Adequate supplies of soft and clean water
4. Nearness to centres of consumption.

Raw Materials:

This is a forest based industry and like sugar industry it is also a weigh-losing. The industry is therefore a raw material oriented. Paper is manufactured from a variety of raw materials including wood pulp, sabai and salai grasses, bamboo, rags, waste paper, and jute and bagasse- residue of sugar mills. Roughly about 8 tonnes of these raw materials are required to produce 1 tonne of paper. At present about 60.8 per cent of the total production is based on non- wood raw material and 39.2 per cent of wood. The principal raw material used for paper, paper board and newsprint manufacture is cellulosic pulp. The industry requires small quantities of other materials like fillers, sizing materials and dyes. Coniferous wood, bamboo and grass are considered as ideal raw materials for the manufacture of paper pulp. Long fibre pulp with a high degree of flexibility and density is most suitable for paper manufacture.

The industry depended mostly on the forest based materials like bamboo, wood and grass till the end of 1970s. Depletion of these resources forced many mills to switchover to other agro-residues/wastes like bagasse and straws of wheat and rice and linters of cotton in the 1980s and the sharp rise in the wood bamboo prices and strong opposition from the environmentalist lobby compelled them to use more of the agro-residues and wastes along with waste paper in the 1990s. The Indian Industry is now primarily a tree-free raw material industry with nearly a third of the production based on agri-residues (straw and bagasse) and 28% on waste paper. Only 28 mills with 37% of the installed capacity are now based on wood and bamboo and this may further decrease in the coming years with nearly the entire new capacity addition being in the non-conventional agro-residues and wastes. Bagasse has emerged as an important pulp making material in recent years. More than 450 sugar mills spread across the country produce over 50 lakh tonnes of bone-dried bagasse every year.

The Union Government recognising the importance of this material, has allowed 100% duty relief on paper produced with bagasse as raw material up to 75% atleast. Several mills have come up with bagasse as pulp material recently, for example, J K Corporation’s mill at Jaykaynagar, Tamil Nadu; Newsprint and Papers Ltd’s plant at Pugalur; and Mandya National Paper Mills Ltd’s mills at Belagola. The main constraint in large scale use of bagasse for paper manufacturing is its widespread use as in- house fuel in vacuum pan sugar mills and in the Khandsari decentralised sector. Perhaps coal can replace bagasse as boiler fuel in sugar mills for which the transport system will have to be improved. The paper mills in West Bengal are located in Titagargh, Kankinara, Naihati, Alambazar, Tribeni and Raniganj.

Paper industry is a weight-losing industry. About two and half tons raw materials are needed for making one ton paper. So, the localization of this industry is mainly in the areas of raw materials. The following raw materials are used in making paper in India

- **Soft wood**-In India, soft wood (of coniferous trees) is obtained from the Himalayan region. Seven per cent of the total raw materials used in the paper industry in India is obtained from soft wood.
- **Bamboo**-Bamboo is the mostly used raw material for making paper in India. 70% raw material for paper industry is obtained from bamboo. Karnataka is the largest producer of bamboo followed by Assam.
- **Sabai grass**-Sabai grass provides 15% raw material. The best quality paper is produced from its fibres. Madhya Pradesh is the largest producer of sabai grass. Maharashtra, Andhra Pradesh and Odisha are other major sabai grass producing states.
- **Bagasse**-It is a sugarcane residual part. 7% pulp for paper industry is obtained, from bagasse. Industrial paper, hard board paper, packing paper etc are made from it.
- **Rags-**Pulp is also made from wastepaper and rags. It is used to make handmade paper. India is foremost in production of handmade paper. India also exports it. This paper is used in making university certificates. Asia's largest handmade paper mill is in Puducherry.

THE MANUFACTURING PROCESS:

- The pulp is fed to a paper machine where it is formed as a paper web and the water is removed from it by pressing and drying. Pressing the sheet removes the water by force. Once the water is forced from the sheet, a special kind of felt, which is not to be confused with the traditional one, is used to collect the water. Whereas, when making paper by hand, a blotter sheet is used instead.

- Drying involves using air or heat to remove water from the paper sheets. In the earliest days of paper making, this was done by hanging the sheets like laundry. In more modern times, various forms of heated drying mechanisms are used. On the paper machine, the most common is the steam heated can dryer.

PAPER MANUFACTURING PROCESS

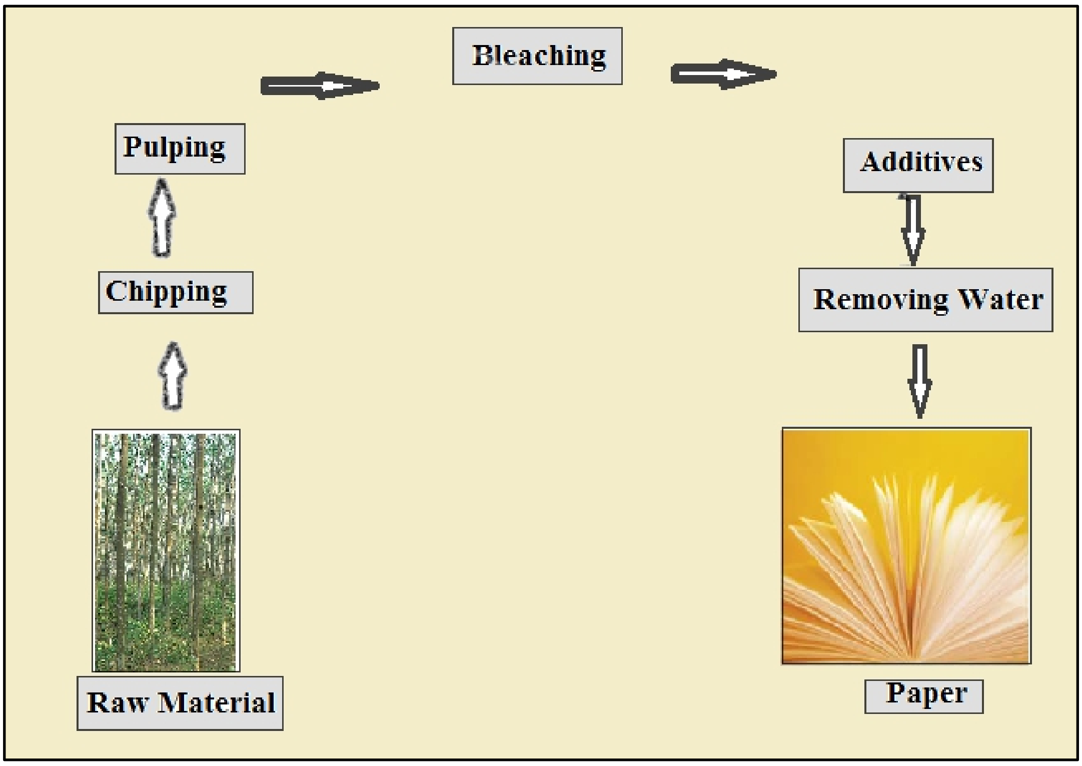

Fig No 1.1

Besides rags, straw of paddy, wheat and maize is also used in making paper.

The following forest based industries are also located in different parts of the Karnataka State. They are::

1. Paper and Pulp Industry
2. Plywood and Particle Boards:
3. Match Industry/ Safety Matches
4. Silk Industry
5. Saw Mills
6. Beedies
7. Sisal Fibre
8. Agarbathis
9. Bamboo and Cane Products
10. Wooden Furnitures and Fixtures

11. Bullock Carts and Agricultural Implements
12. Photo Frames Manufacturing Industry
13. Tamarind Seed Starch Industry
14. Bee Keeping
15. Wood Novelties Industry
16. Paper-based Products
17. The Sports Goods Industry
18. Sandal Wood and Eucalyptus Oil Distilleries.

With the passage of time and advancement of technology there has been a tremendous variety in the use of forest products. Being a naturally renewable resource, wood has provided a handy and valuable raw material and holds identical promise for all time to come. Use of wood and other forest resource as their raw materials of various forest industries carve out a place of their own in the economy of the state of Karnataka. These industries are divided into primary and secondary manufacturing industries. The select forest industries comes under primary forest industries are paper and pulp industry, plywood and particle boards and saw mills. On the other hand, the secondary forest industries are, beediea, agarbathis, furniture and fixtures, toys and other decorative articles, safety matches, bullock carts and agricultural implements, photo frames, sports goods, paper products, bamboo mats and screens, cane furniture, bee-keeping etc. Among these, majority industries come under the small scale industries except paper and pulp industry which is operated on large scale basis.

Distribution of paper Industries:

There are, at present 64 newsprint mills (four in the Central Public Sector, two in the State Public Sector and 58 in the Private Sector) with an installed capacity of about 1,204 mmt. The capacity utilisation of the news print industry is low at 55 per cent.

Maharashtra: It has 71 paper and paperboard mills accounting for 17% of the country's installed capacity and production. The paper mills are located at Ballarpur, Kalyan (Mumbai), Bhambhori, Duskheda (Jalgaon), Khopoli (Mumbai), Roha (Kolaba), Pande, Chinchwad (Pune), Kamptee, Malegaon (Nasik), Pravaranagar and Paithan (Aurangabad, 75,000 tonnes of news print and 60,00 tonnes of paper) and the paperbaord mills at Vikhroli, Goregaon and Kalyan all in Mumbai. The industry uses a variety of raw materials including bamboo/hardwood (Ballarpur), bagasse, rags and imported pulp for paper manufacture and rice straw and bagasse for paperboard production.

Gujarat: The State has 130 units contributing over 15% of India's total production; the second largest after Maharashtra, larger units are located at Barejadi, Khadki, Utran (Surat), Vapi (capacity 75,000 tonnes of news print and 60,000 tonnes of paper), Navagam (Rajkot), Bharuch, Songadh, Marai, Gondal, Udvada and Barla. The state has 5 straw board units situated at Bilimora, Digendranagar, Ramol, Dungsi and Gangadhra and one paper grade pulp unit at Songadh.

Uttar Pradesh: The state has 115 paper mills of which the larger ones are at Saharanpur, Basantnagar, Aghawanpur, Rampur, Raibareli, Lucknow, Nainital, Gajraula (Moradabad), Jagdishpur (Sultanpur) and Ujjani. Besides these, there are 6 paperboard units located at Meerut, Modinagar, Saharanpur, Naini, Budaun and Mainpuri, together contributing about 14% of the capacity in the industry. Whereas bamboo, rags, paper scrap, sabai grass and conifer wood are used for producing paper, bagasse and wheat bran are used for straw board manufacture.

Tamil Nadu: The state contributes about 10% of India's total installed capacity. There are 31 units, of which the larger ones are at Swaminathapuram, Pashpathur, Vilamapatti, Erode, Mettupalayam, Charanmahadevi and Kagithapuram. The Tamil Nadu Newsprint and Papers Ltd (TNPL) at Pugalur produces newsprint (one lakh tonnes/ year capacity). The state has large reserves of eta bamboo (Ochlandra brandissi), which is considered the best raw material for paper pulp.

Andhra Pradesh: Though a late entrant in the field, Andhra Pradesh has emerged as a leading producer of paper and paperboard accounting for about 7% of the country's total installed capacity and production. The large units in the state are located at Rajahmundry, Sirpur, Rangampeta, Maredubaka and Bhadrachalam. There are 19 smaller units scattered all over the state. Bamboo is the chief raw material used by the industry; the state's total annually recoverable bamboo reserves are placed at 1.5 lakh tonnes.

KARNATAKA:

Karnataka's share in the country's total installed capacity and production amount to 5 - 6%. The paper mills are located at Dandeli, Bhadravati, Belagula, and Nanjangud. The Mysore Paper Mills Ltd (Bhadravati) has an installed capacity of 1.12 lakh tonnes (75,000 tonnes of newsprint and 37.000 tonnes of paper).

All these, except Belagula, which uses bagasse, are bamboo based. The state has 2.34 lakh tonnes of bamboo recovery every year. The paper board units at Munirabad, Harihar, Kushalnagar and Ramanagaram use bagasse. The Mysore Paper Mills, Bhadravati and West Coast Paper Mills, Oandeli have captive plantations / forest.

One of the largest industries of the world and operated in India as a medium and large scale industry 56 utilises wood, bamboos and other fibrous raw materials produced in the forests and farm lands. During the scarcity of bamboos as raw material, the various timber species, sabai grass (Eulaliopsis binata) and the waste fibrous product which remains after crushing sugarcane etc,, are used, With the mechanical and chemical processes of pulping, pulp cleaning, pulp bleaching, stock preparation and sheet formation, the paper is manufactured. The first paper mill was started in the year 1936 in the State of Karnataka is the Mysore Paper Mills Limited. This is the largest paper mij.1 in the state which has expanded its production from time to time and reached to the status of 107,500 tonnes per annum as its production capacity with an investment of Rs.18,503,48 lakhs and 3,202 employees on its roll. The bamboos, the basic raw material was being supplied by the forest department of Karnataka state under long-term agreement gave the initiation to further more units in the state. By the end of 1981, nine paper and pulp industrial units were operated as medium and large scale units in the state with different capacities. The total installed capacity of these units is 273,300 tonnes per annum.

All the paper mills had entered into long-term agreements with the state forest department for supply of bamboo and eucalyptus at scheduled rates through the KSFIC which is entrusted with the logging work. Till 1975, these paper mills were using only bamboo pulp for manufacture of paper. The production of bamboo in the state was not enough to meet their requirement and the need for growing eucalyptus was imminent. Meanwhile paper technology made progress leading to the use of short fibre yielding mixed hardwoods also. Thus the mills started using hardwoods as raw materials along with bamboo. At present only two paper mills viz., Mysore Paper Mill Limited and the West Coast Paper Mill are supplied with eucalyptus and bamboo due to low extraction. There is one rayon grade pulp factory: Harihara Polyfibres Limited is now being run on eucalyptus being produced itself since 1991-92.

Karnataka State Industrial Investment and Development Corporation (KSIIDC) provides financial assistance to such type of medium and large scale sectors in order to promote industrial growth in the state. KSIIDC acts as a catalystic agent to ensure that investments of larger magnitude takes place in the state. Besides these, the efficacious efforts from the Government through and with formulation of various policies and provision of incentives from time to time made the Karnataka to be placed at the significant position.

The Main Objectives of the Study:

The objective of the present study is to analyse and understand the relative dependency of different forest-based industries on forests and their survival strategies in the context of diminishing forest cover and non-availability of timber in the Western Ghats of Karnataka, India. The study found that Government policy was mainly responsible for the fast growth of forest-based industries in the selected districts. Forests provide raw materials to large, medium, and small-scale industries. Hence, forests are a source of life for the forest-based industries. As the New Forest Policy (1988 and 1992) restricts the felling of green trees, the industries are now facing the problem of raw material shortages. Among the industries taken up for the study the medium and large-scale industries have better prospects than small industries. Many small wood-based enterprises, cart manufacture for example, experience problems. More afforestation and a commitment by the forest department to supply forest produce to industries is the only way for sustained survival of small-scale wood-based industries in the Western Ghats of Karnataka, India.

Data Base for the Study:

The present study based on the secondary sources. This published information was collected from Official Authorities of West Coast Paper Mill, Annual Reports of West Coast Paper Mills Limited for different years, Uttar Kannada District statistical office reports, periodicals, research articles and internet sources.

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CHAPTER - II

LOCATIONAL ASPECTS OF WEST COAST PAPER MILL

Dandeli is a town in Uttara Kannada district of Karnataka, India, lies on the 15° 15' 7" Northern latitude and 74° 37' 42" Eastern longitude in the Western Ghats region of Karnataka State. It has an average elevation of 473 metres (1,552 ft) and has received heavy rainfall during August to November (see chart below). Because of good forest cover and moderate elevation, the location has a tropical highland climate, averaging about 27 °C (81 °F) in summer and 18 °C (64 °F) in winter.

A significant part of Dandeli's population consists of economic migrants from all over India, especially the north/south Indian states like Rajasthan, Uttar Pradesh, Bihar, Gujarat, Andhra, Tamil Nadu, Kerala, and many districts of the Karnataka state. The official and predominant language of communication is Kannada. The diversity of its population is reflected in its culture and the Dasara, Ramleela, Ganesh Chaturthi, Deepavali, Ramdan and Bakried festivals are all celebrated.

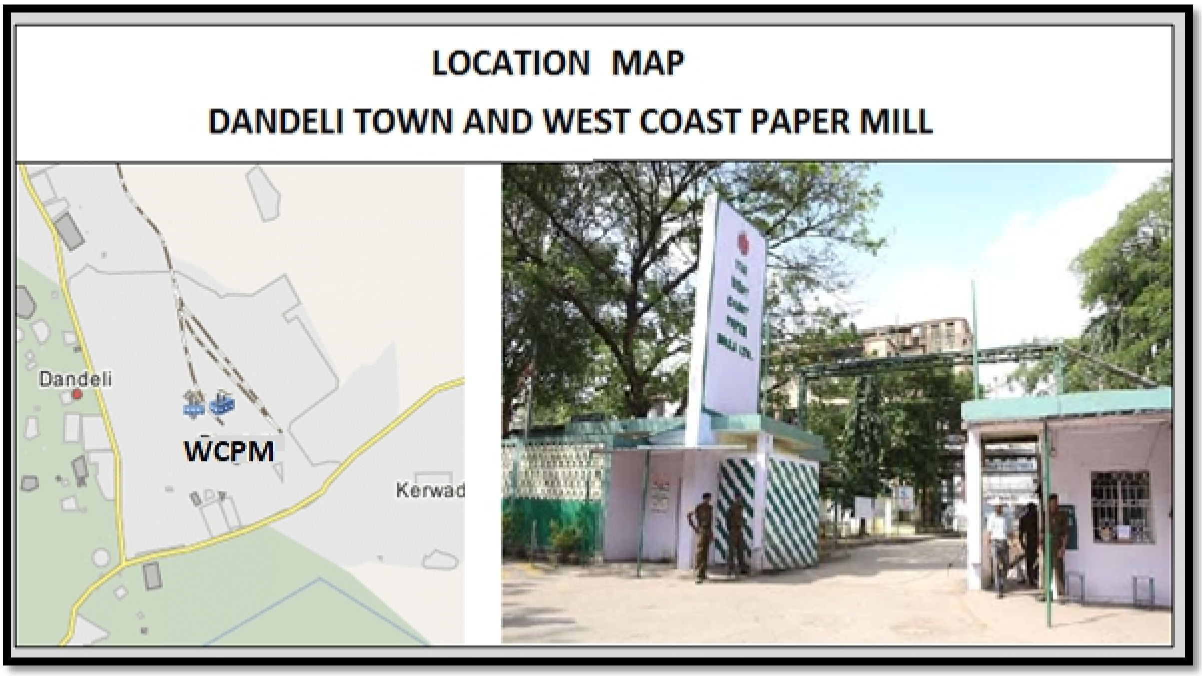

Fig. 2.1

As per the 1930 year, the population of Dandeli was only 515 and predominantly worked in the forestry department and government saw mill. Most residents belonged to the Konkanis, Devali, Marathas, Kuruba, Lambani, Negro, and Muslim communities. The settlement was located on the bank of the Kali river and developed into an industrial town with the establishment of a number of companies, including The Indian Plywood Manufacturing Company, Lalbhai Ferro-manganese Factory, West Coast Paper Mill, Indian Saw Mill, and a number of small industries around the Dandeli and Karnataka Power Corporation which were engaged in the construction of several power-generating dams at different places along the Kali river. The place was later called Old-Dandeli.

There was no school in the small town until in 1936, when Shivaji Narvekar, Pundalik Pai, Sadanand Gopal Nadkarni, Balappa Chavan and Bapshet together contributed to build a one-room school in a hut on the nearby hill where now the government Urdu school is situated. Ramachandra Ganapat Nayak migrated from Sanikatta near Gokarn to run the school. The school started with merely 18 students, three of whom were older than their teacher, R.G. Nayak. In 1939 the school was recognised by the British government.

A local legend states that the city is named after Dandelappa, a local deity, a servant of the Mirashi landlords, who lost his life because of his loyalty. An alternative legend states that a king named Dandakanayaka passed through the forests and named them after himself, and the city is believed to stand on the place where Dandakaranya stood when he named the area. Dandeli is a natural habitat for wildlife, including tigers, leopards, black panthers, elephants, gaur, deer, antelopes, and bears.[4][5] It is the second largest wildlife sanctuary in Karnataka[5] and was designated as a tiger reserve in 2007.[6] The jungle is also home to several varieties of reptiles and almost 300 varieties of birds. The rapid expansion of industry has raised fears of ecological damage to the area, and local volunteer groups have formed to address the issue.

Demographics:

As of the 2001 India census,[7] Dandeli had a population of 53,287. Males constitute 51% of the population and females 49%. Dandeli has an average literacy rate of 74%, higher than the national average of 65%: male literacy is 81% and female literacy is 68%. In Dandeli, 11% of the population is under six years of age. Konkani is largely spoken Language in the region. Dandeli's population was higher in the past, but lack of employment has forced people to migrate elsewhere. Jobs pay poorly, and traditional businesses have been disappearing for lack of customers. The West Coast Paper Mills is one of the largest employers in the town and the primary landowner; the mill has its own quarters, shopping complex, theatre, restaurant, playground and a clubhouse for the employees. The company was promoted[clarification needed] by Shree Digvijay Cement Company Limited, Sikka, Gujarat State in 1955. This company is also the main contributor of unpleasant odor affecting otherwise very pleasant city.

Landmarks:

Dandeli is surrounded by natural, historic, and religious landmarks: the River Kali, the caves of Kavla, the Syntheri Rocks, the Ulavi temple, Sykes point and the Supa hydroelectric dam. Karnataka's power corporation is situated in Ambikanagar (18 kilometres or 11 miles from Dandeli), where electricity is generated through hydro-power. Nagajhari power house is also there.

Other attractions:

The sanctuary provides rafting opportunities at the Virnoli Rapids connected to the Kali River. Other tourist activities include nature walks, boating, bird watching, crocodile spotting and angling. Nearby tourist spots include Ulavi, Syntheri Rocks, Anashi National Park, and Moulangi.

Status of Paper Mill:

Location: West Coast Paper Mill Ltd. is located at Dandeli town in Uttara Kannada District in Karnataka on a 240 acres of leasehold land. The mill is connected through a broad gauge railway line on Miraj-Bangalore section at Alnavar Junction, with railway lines that run up to the factory. We have additional 80 acres of leased land for projects like railway siding, effluent treatment plant, and so on.

The West Coast Paper Mills Ltd. is one of the oldest and largest producers of paper for printing, writing, and packaging in India, Established in 1955. The paper mill is located at Dandeli in Karnataka near the banks of River Kali. The variety of quality paper that we produce serve the needs of numerous industries that include food packaging, printing and publishing, garments, stationary, and notebooks to name just a few. WCPM enjoys a pedigree of standing over the past 50 years. The company's vision in constant upgradation of its process and technology to offer uniform quality of customized products, the "wood to paper" process mastery and product research have enabled the mill to produce a wide portfolio of woodfree papers and boards of highest quality. The product-line features well-established brands of commercial to premium grades of paper and boards ranging from 54 to 600 GSM catered to across six different product segment namely; Writing, Printing, Business stationery, specialty, industrial and packaging.

The company operates six versatile machines with an installed capacity of 3,20,000 TPA. With the latest addition of 500 TPD State of Art Voith Paper Machine, the quality standards have risen to international standards. With the installation of world's most renowned "Bielomatik" online cut-pack converting line ,the quality standards of copier papers have been elevated to international standards.The overwhelming success of is Copier grades namely B2B, Copy Gold and Copy Plus have created a revolution in the market for cut size papers in a record short time. As an ISO 9001:2008 company, WCPM has been consistently striving to improve its quality benchmarks. At the heart of WCPM's success is its strong customer focused research initiative backed by a sophisticated research center and a team of qualified professionals who have translated into a high degree of customer satisfaction, reflected in its loyal off take.

West Coast Paper Mills Limited enjoys a pedigree standing over the past 61 years as premium brand in Paper industry,widely acknowledged both in India and abroad.The Company's commitment to its vision of constant up-gradation of its processes and technology to offer uniform quality of customized products and its sustained emphasis on achieving mastery over 'wood to paper product research' have enabled it to produce a wide portfolio of wood-free papers and boards of highest quality.

The product-line features many well-established brands- ranging from 52 to 600 GSM- of commercial to premium grades of paper and boards, spread out across six different product segments : Writing, Printing, Business stationery, Specialty, Industrial and Packaging. The Company operates six versatile machines with an installed capacity of 3,20,000 TPA,latest addition being the 500 TPD state of the art Voith Paper Machine, with which the quality standards of the Company products have risen to international standards. Further,with the installation of the world's most renowned **Bielomatik** online cut-pack converting line, the quality standards of our copier papers have been elevated to the level of global benchmarks. The overwhelming success of our Copier grades viz. Documate, B2B, Copy Gold and Copy Plus have created an unprecedented upswing in the market for cut size papers, in a record short time.

An ISO 9001:2008 company, WCPM has been striving consistently hard to improve its quality benchmarks. At the heart of WCPMs success is its strong customer focused research initiative, backed by a sophisticated research center and a team of qualified professionals,in the process generating a high degree of customer satisfaction, reflected in its loyal off-take.

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CHAPTER – III

STATUS OF WEST COAST PAPER MILL LTD (WCPM)

West Coast Paper Mills Limited (WCPM) Dandeli is one of the India's oldest and the largest producers of paper for printing, writing, and packaging in India. The West Coast Paper Mill Limited came into existence on 22ndMarch; 1955.This Mill is located at Dandeli in the mildest of forest area of Uttar Kannada district of Karnataka. Dandeli is 56 kms from Dharwad and from Pune-Bangalore Pune highway No.4. 31kms from Alnavar railway station on Miraj-Bangalore Network. In 1956, the factory started with an authorized capital of Rs.5 crores and the trial production commenced with effect from 18thNovember 1958. Shri Morarji Desai, Hon. Finance Minister, Union Government had inaugurated the factory on 19th May, 1959.Thereafter, regular production continued. The availability of basic raw material like Bamboo and the wood in abundance and the availability of water in all seasons from the Kali River and the railway link to transport raw materials as well as finished products promoted the promoters to set up this huge plant in this remote forest area. It is one of the renounced and reputed companies in the paper industry. It is one of the large- scale companies in India. This project is done in West Coast Paper Mills Limited as a part of Master of Business Administration curriculum with an objective of knowing the working conditions and systems that are followed in practical world. The global quality paper produced by the Company serves the needs of innumerable industries in printing, writing, publishing, stationary, notebooks and packaging sectors in India, in the process contributing to the development of the nation.

The West Coast Paper Mills (WCPM) was promoted in 1955 and is currently owned by the S.K. Bangur Group of Companies. The mill location was opted as the most suitable, since Dandeli is situated in the heart of thick forests on the banks of the Kali River. The assurance by the then Karnataka Government to provide WCPM with a continued supply of forest wood and bamboo, the perennial availability of water in Kali, assured power supply, vicinity of rail and road linkages were the major factors to locate WCPM in Dandeli.

The West Coast paper mill provides direct employment to 3,000 persons. As of April 2002 WCPM had 2,068 workers and a staff of 784. Around 10,000 people are being indirectly provided employment by WCPM. The staff is largely non-local while the workers are mainly locals from surrounding areas of Dandeli.

WCPM believes in constant innovation as the key to keep abreast of the changing requirements of the market in India and abroad.The saga of our growth and achievements resulting in the satisfaction of our clients and investors is a testimony to our zealous commitment for creativity and innovation. The state of the art and environment friendly paper manufacturing technologies that have been adopted by us over the years have ensured a sustainable growth of the Company. WCPM is committed to stay alert and sensitive to the environmental consequences of its endeavors while persisting on the efforts to better its profits and business interests. We are an environmentally compliant Company that rigorously follows an Eco friendly policy that works towards increasing the green cover of our land and maintaining a sustainable environment for the health and well-being of the current and future generations, particularly of those living in the close vicinity of the Mills.

WCPM follows Total Quality Management System (TQMS) in order to provide best quality products at optimal price to our customers. The highly coveted awards conferred on us by the reputed agencies, including awards from the National Productivity Council, Government of India, etc., are the constant pursuit of industrial excellence.

The Research and Development wing at the Organization keeps striving tirelessly to bring in innovations in the manufacturing of paper from wood and to improve the production processes. Further, here at WCPM stringent measures are put in place for pollution control and industrial safety, thereby providing a safe working environment for all employees. WCPM is one of the leading integrated paper manufacturers and has the one of the largest plant located at a single location in the country at Dandeli in Karnataka. It is the flagship company of SK Bangur Group, which has a group turnover of USD 375 mn. Its manufacturing facilities are spread over 240 acres in close proximity to river Kali. WCPM started with an initial paper manufacturing capacity of 18,000MT in 1959 which has grown to 315,000 MT by May 2010. To ensure uninterrupted power supply for its pulp and paper facilities and to cut down on power costs, WCPM has installed a captive power plant with a total capacity of 83MW. It has also installed 1.75MW of wind power which is sold to the grid. WCPM manufactures paper catering to different industry segments. It produces uncoated paper largely used in commercial printing, note books and computer stationery; surface size copier papers, specialty paper such as MICR cheque paper and security paper; and industrial packaging paper such as coated duplex boards for food, garments and pharmaceuticals industries. For raw material, WCPM is primarily dependent on hard wood sourced from the states of Karnataka, Andhra Pradesh, Tamil Nadu and Mahrashtra. It has already made arrangements for the required additional quantity of wood with the increased capacity. Recently, WCPM got accredited with Forest Stewardship Council (FSC) to use FSC Pure, FSC Mixed, FSC Recycled and FSC Controlled Wood on its products. The certificate establishes that raw material sourcing is done from sources that are not damaging the environment. This accreditation is widely recognized and will help WCPM in tapping the developed market for branded copier products.

West Coast Paper Mills Limited enjoys a pedigree standing over the past 61 years as premium brand in Paper industry, widely acknowledged both in India and abroad. The Company's commitment to its vision of constant up-gradation of its processes and technology to offer uniform quality of customized products and its sustained emphasis on achieving mastery over 'wood to paper product research' have enabled it to produce a wide portfolio of wood-free papers and boards of highest quality. The product-line features many well-established brands- ranging from 52 to 600 GSM- of commercial to premium grades of paper and boards, spread out across six different product segments : Writing, Printing, Business stationery, Specialty, Industrial and Packaging.

The Company operates six versatile machines with an installed capacity of 3,20,000 TPA, latest addition being the 500 TPD state of the art Voith Paper Machine, with which the quality standards of the Company products have risen to international standards. Further, with the installation of the world's most renowned **Bielomatik** online cut-pack converting line, the quality standards of our copier papers have been elevated to the level of global benchmarks. The overwhelming success of our Copier grades viz. Documate, B2B, Copy Gold and

Copy Plus have created an unprecedented upswing in the market for cut size papers, in a record short time.

Expansion, Modernization and Diversification Programme for the Paper Division at Dandeli has been taken up with a cost of Rs.214.50 crores(of which 65% had been completed by the end of 2001-02).In 2000-2001 the company has ISO 9001 Certification from Det Norske Veritas, The Netherlands. The West Coast product-line features well-established brands of commercial to premium grades of paper and boards ranging from 54 to 600 GSM, catered to across six different product segment namely; Writing, Printing, Business stationery, specialty, industrial and packaging.

For all practical purposes, the Company's long term borrowings can be considered steady. The debt-equity ratio is extremely low, varying from 0.11 on the lower side to 0.19 on the higher side. It is just short of being called a zero-debt Company. In a surprising move, the WCPM had kept its current liabilities very much under check and fairly steady. This is in marked contrast to the general approach adopted by many members of the Paper Industry. Obviously, WCPM does not want to rob peter to pay paul-rather a rare and laudable phenomenon. The net turn-over had grown moderately at 11.43 per cent p.a, from Rs.73.84 crore for the year ended June 30, 1986 to Rs. 105.50 crore for the year ended March 31, 1990. The gross profit had followed the general trend of the Industry (ie, up, to start with; low in between and up, again). But the overall growth in the gross profit from Rs.l93 lakh to Rs.681 lakh, at 130.13 per cent per annum, is quite laudable. The gross margin increased from 2 . 6 1 per cent to 6.45 per cent.

Due to very low debt levels and consequent low gearing on equity, the Company was able to survive the storm of 1986-87 and 1987-88. True, profit at the net level has turned into a loss, but the magnitude was not severe. The Company had compensated this by posting an encouraging bottom-line of Rs.439 lakh for the year ended March 31st , 1990. The return on net worth was neither steady nor good enough for most of the years. Although this should not be surprising for 1986-87 and 1987-88 (being the general industry trend), it must be noted that, it was not up to the mark even during the earlier years of the decade. But the net return was a brilliant 3 5 . 4 1 per cent for the year ended March 31st ,1990. This had resulted in an exhilarating EPS of Rs. 107.04 for 1989-90 enabling the Company to declare dividend. After skipping the dividend distribution for three consecutive years (ie, 1986-87, 1987-88 and 19S8-

89), the Company announced 15% dividend for the year ended March 3 1 , 1990. The book-value of the share was sound at Rs.302.28 at the end of the decade. Since then, the Company has been consistently registering excellent results. The Company's net profit soared by 43% to Rs. 29.85 crore and 35 per cent increase in turnover to Rs. 227.23 crore for the year ending March 31st , 2016.

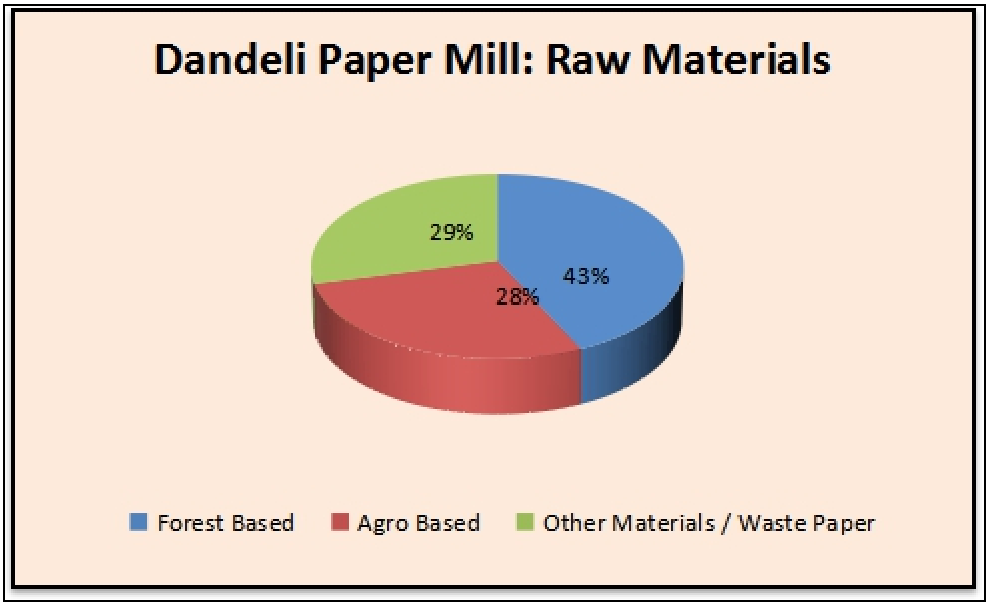


Fig No 3.1

RAW MATERIALS AND INFRASTRUCTURE FACILITIES:

Location: West Coast Paper Mill Ltd. is located at Dandeli town in Uttara Kannada District in Karnataka on a 240 acres of leasehold land. The mill is connected through a broad gauge railway line on Miraj-Bangalore section at Alnavar Junction, with railway lines that run up to the factory. We have additional 80 acres of leased land for projects like railway siding, effluent treatment plant, and so on.

Raw Material: Wood derived from Casuarina, Eucalyptus, Subabul ,Acacia and other hardwood is the 100 per cent ingredient for manufacturing paper in our units. In 1989, the use of bamboo for paper production was disallowed by the National Forest Policy. In order to manufacture some speciality papers, WCPM imports pine wood pulp in small quantities. Our paper mill consumes about 9,50,000 MT of raw material per year. For raw material we are dependent-to a great extent-upon the private cultivators in Karnataka, Tamil Nadu, Andhra Pradesh, and Pondicherry. We strictly adhere to the eco-friendly environmental norms.

Water: At WCPM, require about 68000 KL of water per day, which is drawn from the river Kali. It use pure and potable water having low iron content for manufacturing paper.

Power: Factory use both self-generated and purchased power for production purposes. Complete self-sufficiency has been achieved in power generation. It also have surplus power capacity up to 20 MW. Apart from self generation, it also have the provision for grid connectivity of 8250 KVA. Total captive power generating capacity is 74.80 MW.

Steam: Factory requirement of steam for manufacturing paper is met by four coal fired FBC boilers with a steam generating capacity of 330 Mt/Hr and two chemical recovery boilers with a capacity of 258 Mt/Hr.

Quality Control/Central Laboratory: For quality control and research on raw material and processes, it has a fully equipped research lab near the Paper mill. The Central laboratory carries out detailed analysis of water, process materials, effluent stack gases, and intermediate product. Our quality control laboratory focuses on complaints, customer service, product development, testing, inspection, and monitoring of products and processes.

Research and Development Center: WCPM has set up a separate center for research and development purposes in order to carry out research on various activities using modern facilities.

Industrial Safety: In order to ensure the safety and security of all the employees, it have set up a fully equipped Safety Department having trained and qualified professionals. Factory production standards meet the requirements set by the Pollution Control Board for the treatment of air and water based effluents. The Consents under Air and Water Acts granted by Karnataka State Pollution Control Board are valid.

Social Activities: Factory maintain a self-sufficient colony with temple, shopping complex, hospital, club, theatre, cable TV network, and gym. Dandeli Education Society is our education wing through its run schools, two colleges for Pre university and Degree courses, and Post-graduation courses in Paper and Pulp Technology, Chemistry and Commerce.

Labour: Total employed 2,379 individuals as on 31 March, 2016.

WCPM PRPDUCTS:

The West Coast product-line features well-established brands of commercial to premium grades of paper and boards ranging from 54 to 600 GSM, catered to across six different product segment namely; Writing, Printing, Business stationery, specialty, industrial and packaging.

Premium Printing Papers:

WCPM offers WESCO premium printing papers to suit high-end printing applications. Paper made on new generation former that features a combination of Fourdrinier wire section with a top former that facilitate uniform basis weight Profile. The shoe press and soft-nip calendaring facilitate achieve high bulk, good dimensional stability with low two-sidedness. The ECH bleached, alkaline sized Papers are made using 100% wood fiber with high grade fillers to ensure excellent optical and surface properties with lasting freshness and with least abrasion factor. The range comes in 58 to 90 gsm possess high strength with uniform profile ensuring excellent reel quality to cope with higher print, meeting the demands of a modern print shops.

WCPM presents the finest Range of premium office paper of international standards, tailor-made to suit all kinds of high-end office printers. The feature-rich branded range comes in a right blend of surface, optical and physical properties to give business document a face lift. Reel-cut and packaged, using state-of-the-art automated precision cut-pack system that ensures dimensional perfection and crisp packing it provides value addition to the customer. WESCO is a one-stop paper house for quality, variety and affordability.The range is made available in A4, A3 and folio size in 65, 70,75,80 & 100 gsm.

Printing and Writing:

WCPM presents a range of quality printing and writing papers from 52 to 120 gsm that suits to the entire needs of modern print-houses who demand high quality papers for commercial to premium printing of at reasonable price. High bright, strong, stiff and bulkier papers offer excellent surface, optical and physical properties to suit all kinds of commercial grade printing and writing applications. Good reel condition uniform profile makes it a better choice for web based printing.

High bright, strong, stiff and bulkier papers offer excellent surface, optical and physical properties to suit all kinds of commercial to premium grade printing & writing applications. uniform profile with good reel quality makes it an ideal choice for reel-printing.

Security and Hi-Value Grades Paper:

The Company enjoys the distinction of being a strong player in some of the value added, customised and niche product segments for high-end applications. WESCO Brand MICR Cheque Paper, Bond, Parchment, Azure Laid. Super Shine, Duraprint, Alkali-Resistant paper, etc. are very popular and most sought after grades in the industry.

MICR Cheque Paper: (95 gsm): Most of the Banks in the country (Private and PSU) are known to be using this factory customized water-marked security-paper in printing cheque leaves, security bonds etc. Besides, the company exports sizable quantity of security paper to the neighboring countries.

WESCO Bond: **(85 &100Gsm):**Best suited for Corporate and Business Stationery, Presentations, Manuscript writing, Brochure, Pamphlets, letter heads, Resume, etc.

WESCO Parchment Paper: **(105-120Gsm):**Used in the high-end applications as for making agreements, certificates etc.

WESCO Super Shine:**(90-140Gsm):**Best quality paper for high end Commercial Printing, Diaries, Annual Reports, Journals, Architectural Drawing and high end Envelops.

WESCO Duraprint: **(80-140Gsm):**Premium grade paper for high end shopping bags, gift bag/envelop, gift wrapping, Wall calendars etc.

Azure Laid: (70-110Gsm): WCPM Azure laid is one of the most preferred and traditionally used Ledger paper over the years. The unmatched shade is popular in the market for its quality and supply consistency.

Cartridge Paper (90-140 gsm): The Cartridge paper is widely used for making drawing books for children and in the Chart paper for draft plans etc.

Nova Print: (54 to 90 Gsm):High bulk paper offered in white and natural shades is well accepted in the book publication segment for the shade, stiffness and print quality.

Finances: The company has reported a net profit of 49.34 crores for the year 2001-2002 and has reserves and surplus of 101.88 crores. The company is cash rich, as is borne out by the fact that it recently announced to take over the loss making Mumbai based Rama News Print and Papers. The takeover will cost the Bangur Group 38 crores and will add 1.5 lakh TPA to its capacity.

WCPM AND FSC® CERTIFICATION: The Company is certified for FSC® Chain of Custody which indicates that the Company is using wood from responsible forests and well-managed plantations and ensures that only legally harvested wood is used for manufacture of paper/paperboard. The products come from forests that are managed responsibly to address the social, economic and ecological needs of the present and future generations. The Company has already received two certifications in this regard. The Society for Afforestation , Research and Allied (SARA) promoted and supported by WCPM has obtained the certificate for being a 'Well Managed Group Plantation' since 2011. At present, the Company is in a position to manufacture FSC® certified products viz;FSC® -100%, FSC® -MIX in its printing & writing papers and FSC® -Recycled logo on paperboards..

GROWTH AND PRODUCTION:

The company as early as 1994 has been producing more than the consented quantity allowed by the State Board. In its annual environmental audit statements to the Karnataka State Pollution Control Board (KSPCB) from 1998 to 2002, the company has claimed installed capacity as 1,19,500 TPA while the KSPCB records show consent for production of only 85,500 TPA. In spite of this violation, the KSPCB retroactively approved WCPM's production capacity to 1,19,500 TPA in 2002. In addition, the KSPCB has consented to further expansion (to establish, but not to operate) upto 1,63,750 TPA subject to specific conditions including the requirement that the pollution load not be increased.

Table No. 4.1 WCPM : Productions of Papers (2008-2017).

Paper/Paper Board and Multilayer Board	Production in Tones	Sales in Tones
2008	1,69,891	170193
2009	1,73,682	170686
2010	1,73,638	175194
2011	2,67,005	267992
2012	3,08,230	305818
2013	3,17,808	321018
2014	3,10,002	298682
2015	3,00,514	302978
2016	3,06,960	315146
2017	3,13,311	317951

Source: Annual Reports, West Coast Paper Mills Limited for different years.

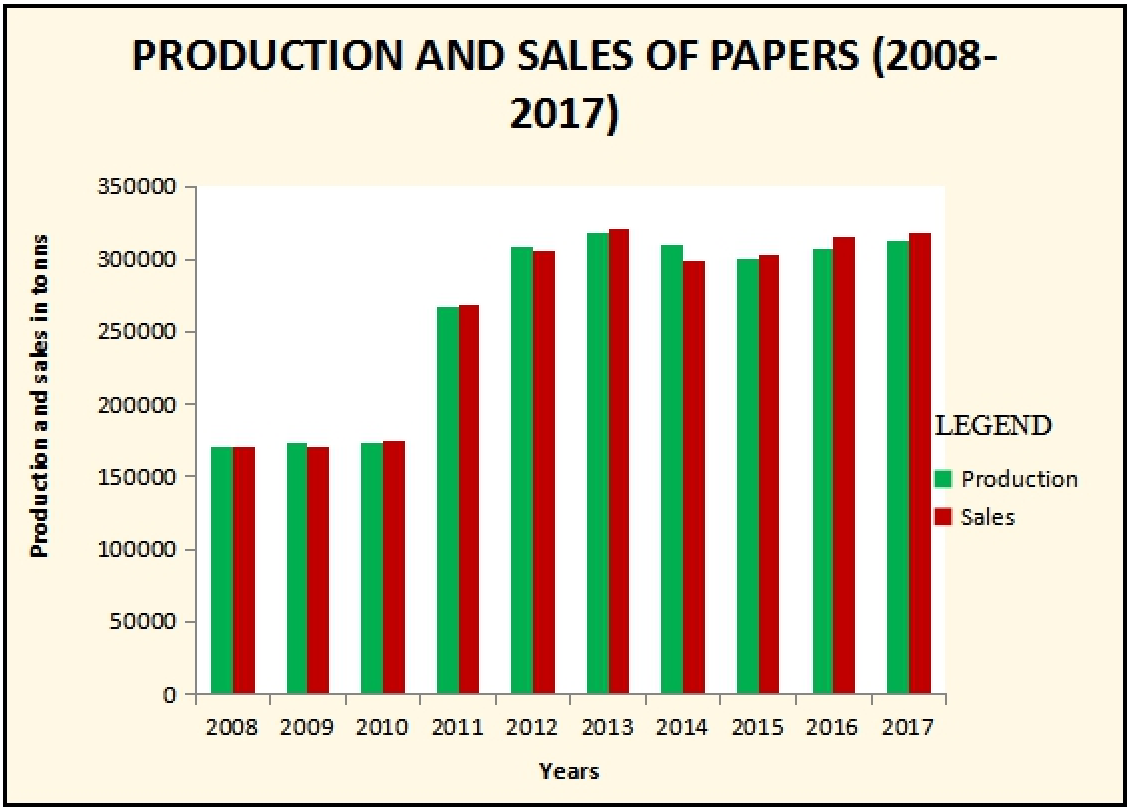


Fig No 4.1

Table No. 4.2 West Coast Paper Mill Trend Analysis.

Year	Total Income in Crores	Total Expenses in Crores
2008-09	639.13	511.03
2009-10	623.51	506.11
2010-11	1082.03	836.8
2011-12	1324.08	1156.13
2012-13	1446.88	1213.41

Source: Annual Reports, West Coast Paper Mills Limited for different years.

The Industry has a fluctuating flow of income over the 5 years. The industry has been able to improve its sell much but not able in 2009-10. After 2009-10 the income decrease in JK paper and Seshasayee paper at decreasing rate. But TN news print and West coast paper mill income continues increase. This is a good sign for the industry having such a reputed name in the market. Also it affects the earnings of shareholders.

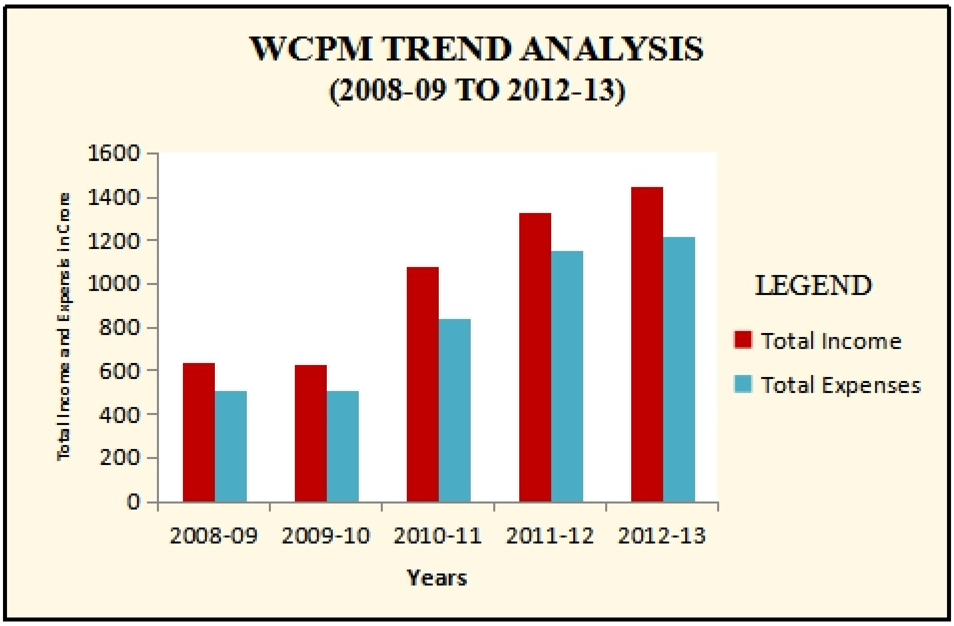


Fig No. 4.2

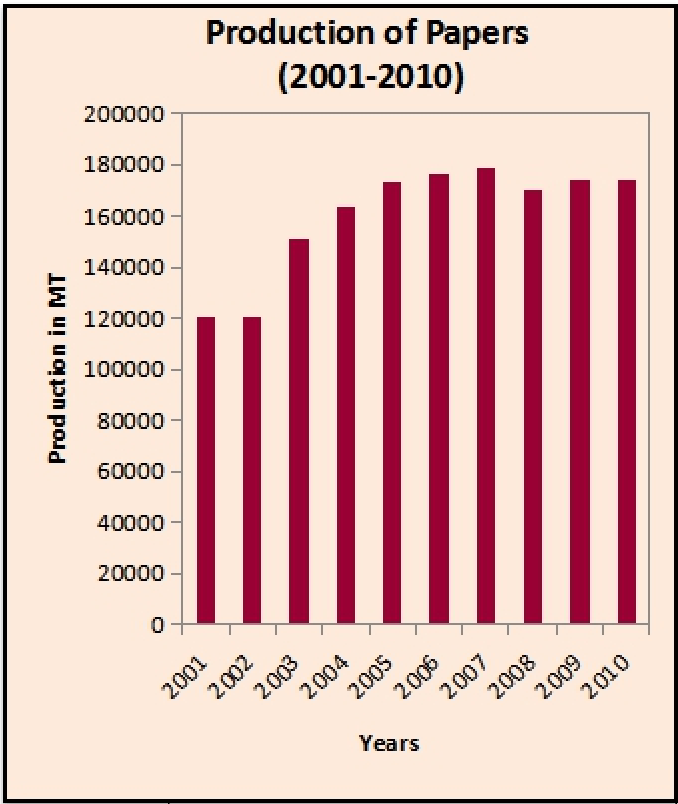
Above graph show the industry fluctuating of expenses over the 5 year. The industry has not able to decrease their expenses. The expenses of last 5 years is continually increase. In 2009-10 West Coast Paper Mills Ltd, JK paper and Seshasayee paper total expenses decrease and then after increase.

PRODUCTION AND SALES:

West coast paper mills limited has made marvelous progress in production and sales. Data noted in the following table depicts the production and sales of west coast paper mills limited during 2001-10. Below table shows a very interesting trend. Both Production and net sales continuously increase. In the year 2001 the production was 120210MT. In 2002 and 2003 production was 120293MT and 151477MT respectively. In 2002 and 2003 Growth rate increase from 0.07 per cent to 25.92 per cent respectively. At the end of the study period production went up to 173638 cr. In 2001 net sales was 362.35cr and thereafter it increases continuously except in the year 2005. It slightly decrease and was 480.33cr in the year 2005 and growth rate fall down to 6.72 per cent over previous year. In 2010 net sales went up to 623.90 crores.

Table No.4.3 Production and Sales of West Coast Paper Mills (2001-2010)

Year	Production		Net Sales	
	Production (in MT)	Increase/Decrease (Over Previous	Production (in Crore Rs)	Increase/Decrease (Over Previous
2001	120210	Nil	362.35	Nil
2002	120293	(+0.07)	422.68	(+16.65)
2003	151477	(+25.92)	461.30	(+9.14)
2004	163714	(+8.08)	514.92	(+11.62)
2005	173070	(+5.71)	480.33	(-6.72)
2006	176221	(+1.82)	518.12	(+7.87)
2007	178871	(+1.50)	549.25	(+6.01)
2008	169891	(-5.02)	583.22	(+6.18)
2009	173682	(+2.23)	619.75	(+6.26)
2010	173638	(-0.03)	623.90	(+0.67)



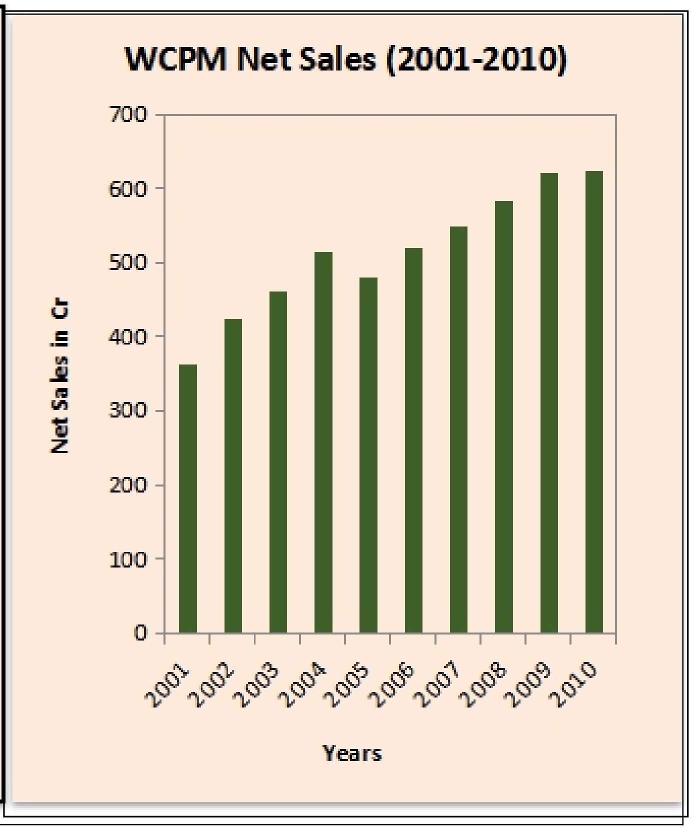


Fig No. 4.3 & 4

PROFIT OF WEST COAST PAPER MILL DANDELI:

Gross profit, operating profit and net profit of west coast paper mills limited showed a fluctuating trend. Data noted in the following Table No 4.4 depicts the gross profit, operating profit and net profit of west coast paper mills limited during 2001-10.

Table No 4.4 shows that the gross profit was 60.61cr in the year 2001 and came down to 56.77cr in 2002. In 2003 it was 62.92cr but again it fall down to 48.56cr. The gross profit was highest 101.08cr in the year 2009 and in 2010 it fall down to 87.53cr. In 2001 the operating profit was 48.26cr. It increases continuously except in the year 2004 and 2005. In 2010 operating profit went up to 105.24cr. Net profit shows an increasing trend. In 2001 it was 28.48cr and in 2002 it was 31.36cr. Growth rate increases to 11.86 per cent. In 2006 it shows a tremendous increase and went up to 66.46cr with the increase in growth rate of 107.49 per cent over previous year. Net profit in 2009 went up to 90.54cr but in 2010 it came down to 54.70cr with fall in growth rate of 39.58 per cent over previous year. profit was decrease the reason is West Coast Paper Mills Ltd, JK paper and Seshasayee paper operating profit is decrease.

Table No. 4.4 Total Profit of West Coast Paper Mill Dandeli (2001-2010)

Year	Gross Profit		Operating Profit		Net Profit	
	Absolute Figures (in Cr)	Increase/ Decrease (Over Previous Year in Per Cent)	Absolute Figures (in Cr)	Increase/ Decrease (Over Previous Year in Per Cent)	Absolute Figures (in Cr)	Increase/ Decrease (Over Previous Year in Per Cent)
2001	60.61	Nil	48.26	Nil	28.48	Nil
2002	56.77	(-6.34)	49.34	(+2.24)	31.86	(+11.86)
2003	62.92	(+10.83)	62.24	(+26.15)	36.04	(+13.12)
2004	48.56	(-22.82)	60.57	(-2.68)	28.44	(-21.09)
2005	52.16	(+7.41)	56.49	(-6.74)	30.66	(+7.81)
2006	35.91	(-31.15)	69.22	(+22.53)	32.03	(+4.47)
2007	79.64	(+121.77)	95.52	(+37.99)	66.46	(+107.49)
2008	88.36	(+10.95)	114.38	(+19.74)	81.90	(+23.23)
2009	101.08	(+14.40)	120.36	(+5.23)	90.54	(+10.54)
2010	87.53	(-13.41)	105.24	(-12.56)	54.70	(-39.58)

Source: Annual Reports, West Coast Paper Mills Limited for different years .

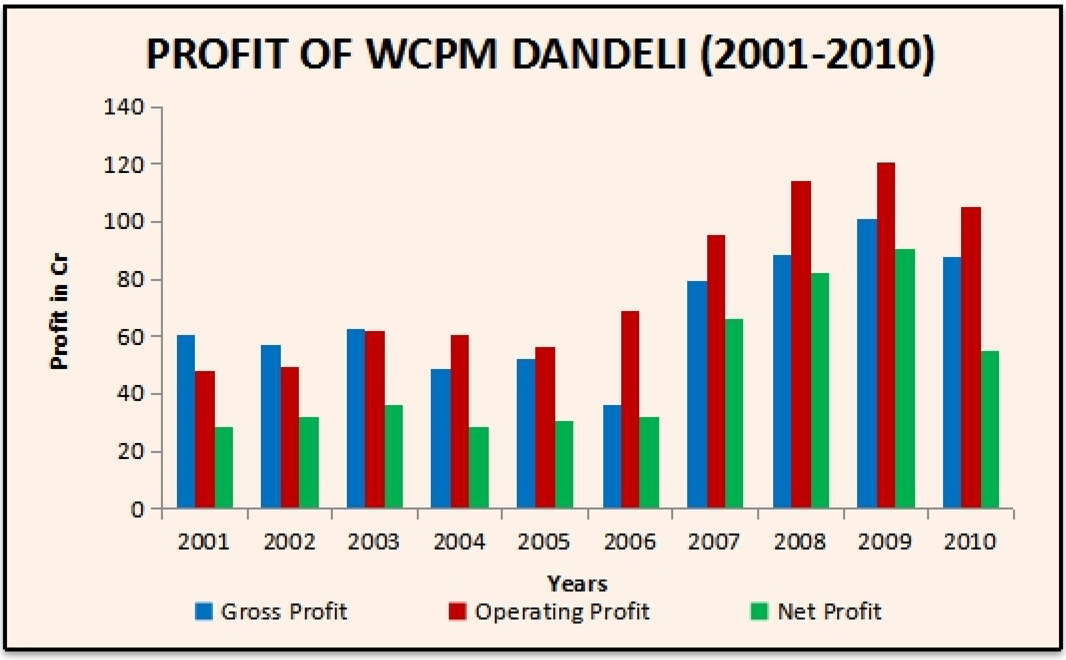


Fig No 4.5

SETTING STANDARDS IN THE GLOBAL MARKET:

WCPM is fast emerging as one of the leading exporter of wood-free Manila Board / Uncoated Paper/Paper Board from India. WCPM products are well received in the global market. The Company has stepped up its exports to more than 35 countries across Asia Pacific, Middle-East, the Mediterranean and the African sub continents which is a testimony to WCPM's global acceptance for its quality products meeting international standards. The company has consistently been bagging the CAPEXIL award for its export performance for the seventh consecutive year in a row.

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CHAPTER - IV

WCPM IMPACT ON ENVIRONMENT

WCPM is committed to harmonizing its business interests with the world's dire need for a clean environment. This conviction of the company of the need to operate in sync with environmental concerns is enshrined in a comprehensive environment management policy, which is practiced across the organization in all spheres of its activities. Guided by the principle tenet of environment responsibility, the company manufactures paper and boards using raw material and technology that protects the earth's natural resources and bio-diversity for generations to come. The Company is committed to green production, resource conservation, and responsible waste management. This commitment of WCPM has reflected in its '***minimum impact-best process'*** technology that involves green production, resource conservation, responsible waste management and a reduced pollution load, as its core dimensions. A highly transparent record in each of these areas makes the company an environmentally – compliant paper industry.

Wood Consumption:

WCPM uses the kraft paper production process, which involves cooking of wood chips by a sulphate process to delignify the wood. The pulp is then bleached with chlorine gas and is used to make paper. The wood chips come from hardwood trees such as Eucalyptus, Casurina, Acacia and Sababul. WCPM consumes about 1/3 of the Eucalyptus available in the Bangalore market. To make one ton of paper, about 2.6 tons of wood is required. In addition, WCPM is promoting the development of eucalyptus plantations in Uttara Kannada. In 2001-02, about 131-lakh seedlings were handed out to develop 19,000 acres of plantations.

Power Consumption:

In 2001-02, 1312 units of electrical power were consumed to produce one ton of paper, and the total annual consumption was 158 MU, which is much more electricity than is consumed in Dandeli or other Uttara Kannada cities. Most of the power demand of WCPM is met through internal generation in diesel gensets and coal based steam turbine generators located within the plant and only about 5-10 per cent of the power is bought from KPTCL. About 1 lakh ton of coal, 20,000 KL of furnace oil and 500 KL of diesel is used by WCPM every year to meet its energy needs. Most of the fly ash from the coal-based boilers is being dumped in abandoned mines within forest areas.

Water Consumption:

WCPM obtains its water from the Kali River. While the reported consumption of water is about 85,000 KL/day, the actual consumption could be much higher since the water meters are not properly calibrated. About 240 KL of water is required to make one ton of paper. In contrast, the average water consumption in US paper mills was around 75 KL per ton in 1995. Water comes dirt-cheap to WCPM and there is little attempt to regulate its use.

Water Pollution:

WCPM releases its effluents from the papermaking process into the Halamaddi Nalla, which flows through the WCPM and merges with the Kali River half a kilometer from the mill. A January 2003 report of the Central Pollution Control Board (CPCB) shows that the mill has been discharging insufficiently "treated" effluents in excess of allowed quantities (*almost twice as much*) into the Kali River. In addition, CPCB found that the flow meters installed by the WCPM to be faulty. In fact, KSPCB had already issued a show-cause notice to WPCM regarding these matters in August 2002.

A December 1999 ISRO study commissioned by the mill to assess the possibility of ground water contamination found that one one-kilometer stretch of the Kali River was affected and ground water was contaminated in villages situated along the river.

Health Impacts:

Analysis of effluent samples in 2001 to 2003 by the Central and State Pollution Control Boards show non-conformance of standards set by the regulatory agencies. They show that the output does not conform to stipulated standards for parameters like BOD, COD, pH, and suspended solids. The high levels of COD reflect the presence of excess chemicals in the effluents. The high levels of BOD reflect the presence of high quantities of organic matter. The presence of high quantities of organic matter in the effluent could have resulted in the recent outbreak of severe gastroenteritis in the village of Kariampaali. Death of cattle has also been reported previously. In addition, newspaper reports and video footage show that the irrigated fields are covered with layers of pulp, which prevents growth of crops and makes the land uncultivable.

Since WCPM uses chlorine for bleaching, organ chlorines are a significant component of the effluents. Even after ‘treatment’, the released effluents from the WCPM is very likely to contain organ chlorines, especially given the poor quality of the effluent treatment plant in WCPM. Many organ chlorines are linked to health problems, such as cancer, birth defects, endometriosis, low sperm counts, and impaired fetal development. Organ chlorines (known as AOX) can last a long time in the environment and could build up in soils and human tissues. Dioxins, one type of organ chlorides, are a “known human carcinogen”. Therefore, a province in Canada passed a legislation in 1992 that requires “zero AOX” emissions from paper mills.

Status of Effluent Treatment Plant:

Despite these violations, WCPM has been negligent in installing a proper effluent treatment plant (ETP). It has been dodging upgrading its ETP for the last three years, although as early as in August 2000 Tata Consultancy Services in its EIA report had recommended that the effluent treatment plant be upgraded. As of date, the ETP is yet to upgraded, although KSPCB has directed that the upgradation be completed by September 30th2003.

PROBLEMS AND PROSPECTS:

Paper industry in Dandeli faces many serious problems and prospects do not seem very bright. The biggest problem faced by this industry is the scarcity of raw materials. Most of the materials used for manufacturing paper are derived from the forests. With the increasing degradation of forest and fast depletion of forest based raw materials, like bamboo, the paper industry is facing a severe raw material crisis. With the exploitation of forests based raw materials reaching its saturation, any substantial capacity expansion in the near future is practically ruled out and the growth of industry has come to a standstill. In order to survive and expand, the industry will have to look for unconventional raw materials.

Another alternative is to increase the use as waste paper which will reduce dependence on the conventional raw materials. This will also reduce cost of energy used and other inputs. It may be mentioned here that only 15 per cent of the total output of paper and paper board is based on recycled material against the world average of 30-35 per cent. Thus there is a vast scope for using recycled material in paper industry. Even now, large quantities of bagasse are just used as fuel in the sugar industry and are not made available to paper industry. If the sugar mills are encouraged to use coal fired boilers instead of those based on bagasse, this precious raw material can solve the problem of paper industry to great extent.

The growing consciousness for preservation of forests and maintenance of ecological balance and biodiversity during the last few years is further reducing the availability of raw materials to this industry. Environmentalists are also up in the arms against this industry due to effluents thrown by the paper mills into open drains, rivulets and rivers thereby polluting the environment. Unless technology to solve the effluent problem is evolved and implemented with only marginal additional investment, many of the paper mills run the risk of economic losses and even closure.

Recently, the Department of Industrial Policy and Promotion had commissioned a study on 'Global Competitiveness' of Indian Paper Industry by an agency of international repute to understand various issues concerning the paper and newsprint industry. The study had indicated inadequate availability of good quality of cellulosic raw material and obsolete technology, among others as the constraints for the paper industry. High cost of basic inputs and environmental issues are the other two major problems required to be addressed by the paper industry to become globally competitive. However, one encouraging aspect is that Dandeli paper industry has trained manpower whose skill can be gainfully used to adopt modern technology for manufacturing paper and paper board of international standard at relatively lower manpower cost inputs. The factory has vast reservoir of unemployed rural labour which can be deployed for development of raw materials. Thus, it can overcome some of the weaknesses which have plagued the paper industry for a long time.

PROBLEMS AND ISSUES OF DANDELI PAPER MILL:

The Dandeli paper industry faces the following problems:

1. Non-availability of good quality of raw materials:

It is obvious that a right combination of pulp and paper markets and wood raw materials is a prerequisite for developing new industries and establishes a basis for selecting the type and size of the development. While domestic or regional markets in the tropical countries are often relatively limited and can support a type and size of plant which would not be internationally competitive, these markets are often protected and can in some cases accept products which are not of the best quality. To be competitive on international markets, pulp and paper development normally needs large quantities of wood at relatively low cost. The type and quality of wood which a pulp and paper mill can use from the technical point of view and the price the mill can afford to pay for the wood vary widely depending on the market. The three basic and most important questions regarding the feasibility of using wood for pulp and paper production are thus:

1. Markets for products,
2. Type and quality of wood,
3. Quantity and cost of wood.

Forecasting future markets is a well-established and relatively simple procedure which needs no further discussion within the scope of this paper. Classifying the wood to be either coniferous or broad-leaved type is sufficient to indicate the broad pulp and paper categories for which it can be used. Regarding quality, an extremely important factor is uniformity of wood in terms of uniform density and uniform fibre dimensions. Other factors affecting quality are hemi-cellulose, extractive and parenchymatic and vessel cell contents in the wood. It should be noted that, while the softwood species have a wider and more versatile use for pulp and paper products than hardwood species, long-fibred softwood cannot be said to be of better quality than short-fibred hardwood without specifying for what product the wood is used and without considering product quality requirements and economics of operation.

2. Lack of modernization and basic infrastructure:

This point explains the investments in modernization and innovation on productivity in a sample of firms in the Dandeli pulp and paper industry. This industry is important because it has traditionally accounted for significant amounts of employment and capital investment. In contrast to much of the existing literature which focuses on the impact of R&D and patents on firms' performance and productivity, actual investment transactions in four main areas of operations such as mechanicals, chemicals, monitoring devices and Information technology.

3. Increased emerging environmental issues:

(a) Deforestation: Worldwide consumption of paper has risen by 400 per cent in the past 40 years, with 35 per cent of harvested trees being used for paper manufacture. Logging of old growth forests accounts for less than 10 per cent of wood pulp, but is one of the most controversial issues. Plantation forest, from where the majority of wood for pulping is obtained, is generally a monoculture and this raises concerns over the ecological effects of the practice. Wood chipping to produce paper pulp is a contentious environmental issue in the world.

(b) Air pollution: Nitrogen dioxide (NO^2) sulfur dioxide (SO^2) and carbon dioxide (CO^2) are all emitted during paper manufacturing. Nitrogen dioxide and sulfur dioxide are major contributors of acid rain, where as CO^2 is a greenhouse gas responsible for climate change.

{c) Water pollution: Waste water discharges for a pulp and paper mill contains solids, nutrients and dissolved organic matter, and unless at low levels these are classed as pollutants. Organic matter dissolved in fresh water, measured by Biological Oxygen Demand (BOD), changes ecological characteristics, and in worse case scenarios leads to death of all higher living organisms.

MAJOR CHALLENGES AND SHORT COMINGS:

1. Poor infrastructure
2. Too many administrative hurdles, tedious bureaucratic methods
3. Poor to non-existent commitment to innovation
4. High cost of normal method of financing, recent setback from raising capital through equity for new companies/ developing projects
5. Rising cost of inputs: fibrous raw materials, chemical, labour, energy
6. Uneconomic size and obsolete technology in many mills
7. High cost of production
8. Poor productivity
9. Poor instrumentation

10. Low availability of forest raw materials and poor forest management
11. Poor recycling of waste paper
12. Recovery of chemicals from agro-based black liquor
13. Decolourisation and detoxification
14. Air pollution problem
15. High energy consumption.

The challenges are impact on hinderness growth of the region as well as industrial production capacity.

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CHAPTER-V

CONCLUSION

The paper industry has been providing noble mobility services to the public more than hundred years. It has a vast fleet strength catering the paper needs of our state with the aim of extending economical and efficient service facility. Though it adhered to strict rules and procedures formulated by the state government, in resolving the grievances of employees and in understanding their attitude. Streamlining the Human Resource practices would be very essential to implement the best practices and enable the detailed study of the occupational stress of the employees.

The Paper Industry in Karnataka Is not in a good shape today. The Mills have been continuously reporting poor performance and losses, the marginal recovery during 1989-90 in case of WCPM notwithstanding. This situation has arisen due to a host of both internal and external factors. Still, the Industry is expected to overcome these bottlenecks and regain its past glory, if suitable infrastructural and pricing support are extended.

Now a day"s paper industry is in high demand because paper is use in various purposes. Though there is increase in IT Company where all work are done in electronic form, but same time the use of paper in going on increasing day by day. Apart from this there are various competitors increasing but it has been seen that those company which has good quality paper has no problem in their sales company like JK Paper Company.

The foregoing discussion traced that the Dandeli paper industry is a booming industry and is expected to grow in the years to come. The usage of paper cannot be ignored and this awareness is bound to bring about changes in the paper industry for the better. It is a well known fact that the use of plastic is being objected to these days. The reason being, there are few plastics which do not possess the property of being degradable, as such, use of plastic is being discouraged. Excessive use of non degradable plastics upsets the ecological equilibrium (http://www.economywatch. com/). Dandeli paper and newsprint industry has a huge potentials and prospects in coming future. The wood and paper industry is probably the only large-scale industrial system which is genuinely capable of satisfying future requirements with respect to sustainable development.

To face future challenges, the Dandeli Paper Industry has been focusing on repositioning of product lines, improving internal efficiencies and making investments in expansion and building production capacities and to further penetrate in the global market. Obviously it is showing its preparedness to meet the challenges (http://reviewessays.com/). Reading a book will remain a great pleasure into the future and paper, as a ubiquitous material with its many uses, will continue to play an influential role. Many artists will continue to express themselves by using this most versatile material.

The WCPM paper industry has been providing noble mobility services to the public more than sixty years. It has a vast fleet strength catering the paper needs of our state with the aim of extending economical and efficient service facility. Though it adhered to strict rules and procedures formulated by the state government, in resolving the grievances of employees and in understanding their attitude. Streamlining the Human Resource practices would be very essential to implement the best practices and enable the detailed study of the occupational stress of the employees.

The pollution from the West Coast Paper Mills has been severely affecting the local ecology in the Dandeli area. Despite being aware of the resulting dangers, KSPCB has been lax in its regulatory enforcement. The continued violations will result in more tragedy similar to the deaths in Kariampaali. Therefore, it is critical that pressure on KSCPB and WCPM be sustained.

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BIBLIOGRAPHY

1. Ahuja, S. P. (1980), "*Paper industry in India-Retrospect's, Prospects and Directory*" New Delhi: The Institute of Economic and Market Research. p.21.
2. Arthur A. Thompson, A. J. Strickland, John E Gamble, Arun K. Jain (2009). Crafting And Executing Strategy. New Dehli: Prentice – Tata McGraw-Hill Publishing Company Limited.
3. Aswathapa 9th Edition.Business environment.New Dehli: Prentice- McGraw-Hill Publication.
4. Bora, Khagen (2008), "*Energy Management in Pulp and Paper industry: A Case Study of Cachar Paper Mills*" M.B.A Thesis, Faculty of Economics and International Centre for Promotion of Enterprises (ICPE), Ljubljana University, Ljubljana. Retrieved from: http://www.cek.ef.uni-lj.si/magister/ bora134-B.pdf
5. Datt, Ruddar; Sundharam K. P. M (2002), "*Indian Economy*" S.Chand & Company Ltd., New Delhi. pp.649-650
6. Eloranta, J., "Indian pulp & paper industry- challenges and opportunities", In paper International, January-March 2010,p.12
7. Kulshrestha N.K. (1988), "*Analysis of Financial Statements of Indian Paper Industry*" Navman Prakashan, Aligarh. pp. 1-2
8. Mathur, R. M; Thapliyal B. P; et.al; (2009) "*Challenges Confronting Indian paper Industry In Changing Scenario*" Indian Pulp and Paper Technical Association, Vol.21, No.3 Issue July-September' 2009. pp.95-98
9. Reddy, G. Sudarsana; Reddy, P.Mohan; et.al. (2003), "*Paper Industry in India-Problem and Prospects*" The Management Accountant, Vol.38, No.12, pp. 904-905, 910-911
10. Sivayya, K. V.; Das, V. B. M. (1985), "*Indian Industrial Economy*" S.Chand & Company Ltd., New Delhi. pp. 423-424.

Websites:

11. "*Indian Paper Industry*" January 2008, Retrieved from http://www.scribd.com/doc/53624816/indian-paper-industry-1223576792555903-8
12. "*Indian Paper Industry*" Retrieved From http://reviewessays.com/print/India-Paper-Industry/52085.html
13. www.capitaline.com
14. www.moneycontrol.com
15. www.inpaper.com

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