



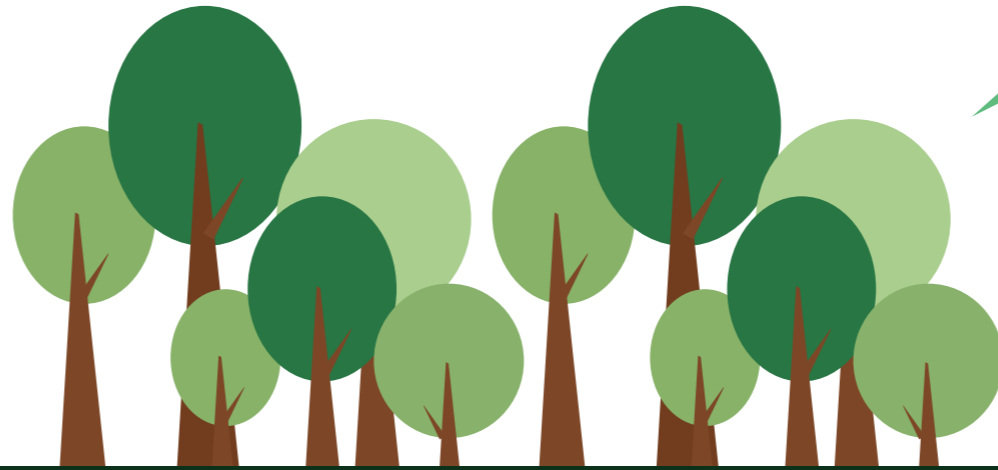
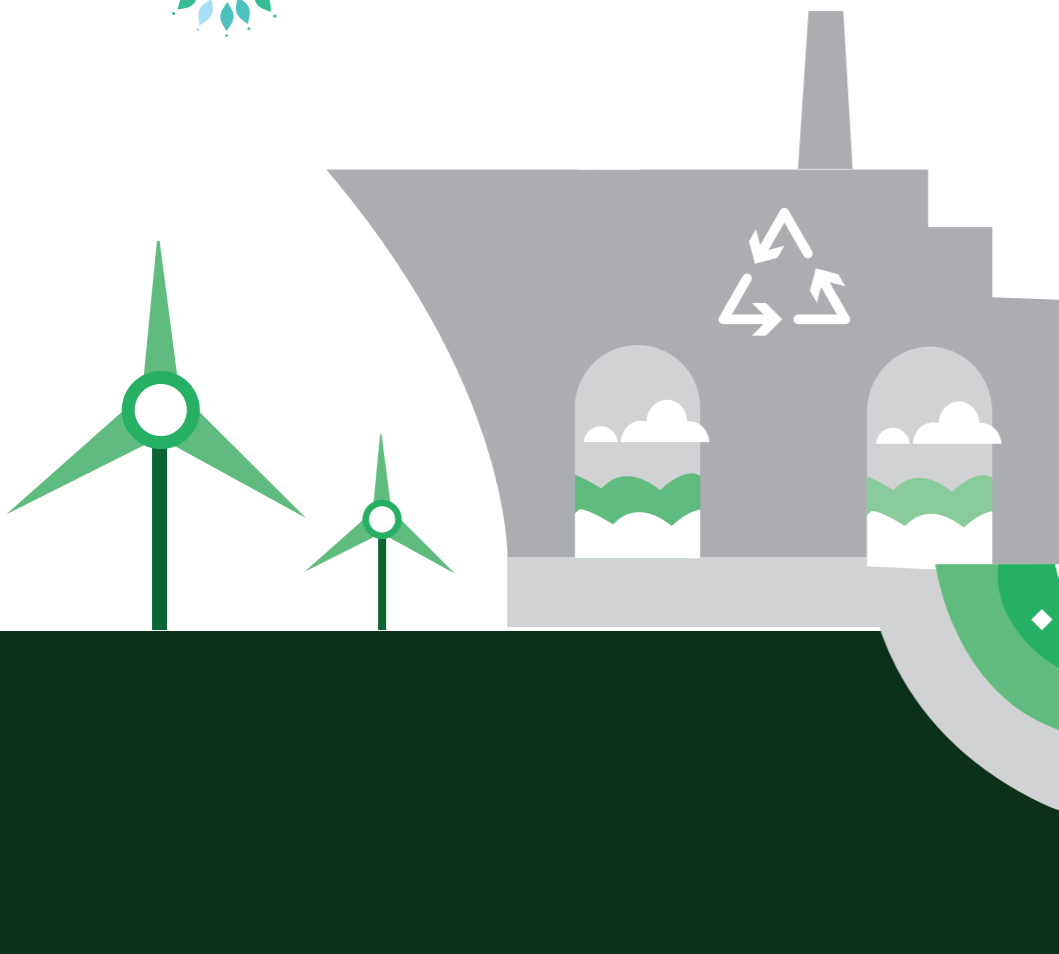
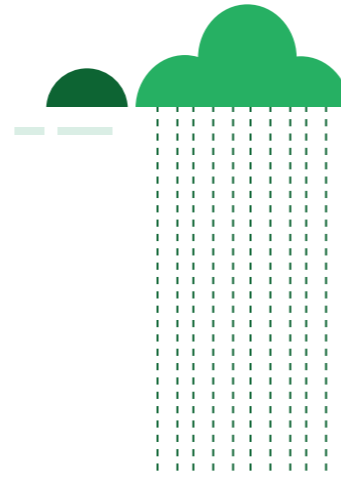
Tamil Nadu Newsprint and Papers Ltd.



CIRCULAR ECONOMY

THE ROOTS OF OUR BUSINESS





Tamil Nadu Newsprint and Papers Ltd. (TNPL) is here with its first sustainability report covering the sustainability performance for the period April 1st, 2018 to March 31st, 2019. Henceforth TNPL will report its performance on an annual basis.

The report is in accordance with the GRI Standards: Core Option. It presents the performance of our Paper Factory (Unit I), Paper Board Factory (Unit II) and Lime sludge and fly ash management (LSFM): Cement plant

TNPL boasts of strong internal control mechanisms. Therefore, the data in the report has not been assured by an independent third party.

The report covers the positive and negative economic, environmental and social impacts caused by TNPL's business activities. Further demonstrating the company values and commitment towards the goal of achieving sustainable growth.



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From The Chairman's Desk



Thiru N Muruganandam, IAS

“ **TNPL designs and manufactures best-in-class products by optimum consumption of resources. This is achieved by minimising the waste and reusing the waste as raw material or fuel, wherever possible. The company is committed to using resources efficiently and generating energy from renewable sources.**

TNPL recognizes that its responsibility extends to advancing the vibrancy and health of communities surrounding its operations. ”

I am pleased to present TNPL's Sustainability performance for the financial year ended 31 March, 2019. TNPL has a long history of prioritizing the sustainability of its business operations and viability of its products.

Starting with the products we make, the primary raw material in both our paper and paperboard products is bagasse and wood, which is a 100 percent renewable and commonly recycled resource. Our captive plantations, all of which are in Tamil Nadu, adhere to Forest Stewardship Council Chain of Custody and Forest Stewardship Council Forest Management® (FSC-FM) Certification. As a result, 100 percent of our products are made by using wood from responsibly managed forests.

The company is committed to using resources efficiently and generating energy from renewable sources by adopting circular economy principles. Received 4969 ESCerts against the energy savings.

The company is making investments in Research and Development of new technologies to improve the efficiency of operations and minimise its impact on external environment. The development will enable us to save significant cost in resource utilisation while improving the overall efficiency of our operations.

No company can achieve sustained success without engaged, empowered and inspired employees. In 2019, the company fostered collaboration with employees to improve their overall well being and satisfaction. TNPL rolled out several training opportunities for employees at various levels to set the employees up for success. This past year alone, the company provided 1545 mandays of internal and 255 mandays of external training. In turn, the company is also committed to creating a culture that prioritizes safety and wellness, collaboration and inclusion, and continual learning and personal development.

TNPL recognizes that its responsibility extends to advancing the vibrancy and health of communities surrounding its operations. The company invests in local communities, providing educational and training resources, improving the infrastructure and health facilities and encouraging better livelihood opportunities for youth. We know that giving back to our communities makes us stronger.

Thank you for your interest in and support for Tamil Nadu Newsprint and Papers Limited. We look forward to working to deliver superior sustainability performance, in the years ahead.



A Vision for A Greener Tomorrow

Production quantity has gone up
from 90,000 TPA in 1984 to

6,00,000 MT in 2018-19

2,00,000 MT of multi-layer packaging board

4,00,000 MT of writing and printing paper

Company Overview

Tamil Nadu Newsprint and Paper Limited (TNPL), a government of Tamil Nadu enterprise, is one of the largest agro-based Pulp & Paper Mills in the world. Since its inception in 1984 the company has grown both in scale and scope. Today, It has 2 units manufacturing pulp, paper and paper board along with a cement manufacturing facility that utilizes the waste generated from pulp and paper industry and produces commercial grades PPC & OPC cement. The process turns waste into wealth thereby minimizing companies negative environmental impact. Currently, TNPL enjoys the second position in the production of writing and printing paper in the country.

It has a power generation Capacity of 169.12 MW consisting of 133.62 MW of Turbo Generators (TG's) and 35.50 MW of Wind Farm. Generation of Power is primarily for self-consumption and surplus is sold. TNPL doesn't have any subsidiary.

In line with its vision to be the market leader in the manufacture of world-class eco-friendly paper adopting innovative technologies for sustainable development, The company has mastered the technology of manufacturing writing and printing paper from bagasse, an agricultural residue. Besides, It has also implemented various environment friendly measures such as using wind-power, agro fuels, by products from the process including black liquor, bagasse wash water etc. to fulfil the process requirements. TNPL works towards improving its efficiency and ensure that its systems and processes are environment friendly and sustainable. The product portfolio includes high quality surface sized and non-surface sized papers best suited paper for writing and printing industry. coated and uncoated boards for packaging industry and; Portland Pozzolana Cement (PPC) and Ordinary Portland Cement (OPC) for the construction industry.





TNPL's research & development department is constantly at the helm of developing newer technologies and products that fulfil the demands of the market while catering to the growing need to develop eco-friendly products. We have recently introduced Ace Marvel Natural Shade (CRN) and Cream-wove Eco Malphitho Natural Shade (CNS) to our range of products. These papers are developed without using any colouring dye and optically brightening agents. Hence, reducing the pollution load, making this a highly sought after product.

Moreover, in order to provide an alternate for plastic/poly products, we have been working towards incorporating Carry Bag base Paper which has been manufactured using our existing Paper and Machine infrastructure. This will be able to replace the one-time use plastics in our everyday life. We have been revolutionizing the paper board industry with products such as Aura fold premium, Aura fold Eco Blue and Aura Green

210 GSM. While Aura Fold premium is targeted at providing premium packaging for pharma and food segments. Aura Fold Eco Blue is a bagasse pulp and deinked pulp based product making it eco-friendly and highly sustainable. Aura Green 210 GSM is a first of its kind low GSM grey back recycled board; it is perfect for high end packaging and premium notebook segments. Further details of our product line are available in annual report FY 18-19.

TNPL products cater to markets in India and some major countries across the world. TNPL's 15% total paper produced is exported to countries including Europe, Africa, Asia, North America, South America and Australia such as Sri Lanka, Iran, Nigeria, Sudan, Qatar, Italy, Canada, Guatemala, South Africa, Malaysia, Ghana, etc. Economies of scale and quality production, driven by technology, provide us with a competitive edge in these markets.

Plants

TNPL Paper (Unit I)

(Kagithapuram, Tamil Nadu)

Self sufficient in terms of Power and Pulp requirement

TNPL Paper Board (Unit II)

(Mondipatti Village, Tamil Nadu)

TNPL Cement

(Kagithapuram, Tamil Nadu)



Writing and Printing Paper

4,32,572 MT

Produced

4,45,389 MT

Sales

(Domestic Market share 81% and 19% International Market share)



Packaging Paper Board

1,76,997 MT

Produced

1,77,047 MT

Sales

(Domestic Market share 99%)

Sustainable Business Model



TNPL is one of the largest producer of bagasse based eco-friendly paper sourced from FSC certified plantations and Forests. TNPL system is designed to maximize the use of raw material intake by reusing their by-products such as Black liquor solids in its steam generation processes. It is the first and only paper mill in India to establish a cement manufacturing factory to convert the mill wastes- lime sludge and fly ash into high grade cement as part of its Solid Waste Management.



Bagasse Based Pulp & Biogas

TNPL employs Bagasse—a sugar cane residue, as one of its major raw material. Its depithed form is used in making pulp while Biogas is produced from its wash effluents.

7, 37,978 MT of depithed bagasse used produce **1, 39, 844** MT of Bagasse pulp conserving **6.1L** MT of pulpwood.



Sustainable Forest Management

FSC-FM and FSC-COC certified captive plantation and farm forestry for pulpwood.

1, 46, 435 acres of land across Tamil Nadu is utilized to raise pulpwood.

The dust and wood pith collected during harvesting and processing is used as an agro fuel to ascertain minimum waste generation.



Carbon Control

Ensures that wood is used in a sustainable manner. Implement measures to reduce CO2 emissions in the atmosphere.

The trees are a major sequester of atmospheric carbon. The Plantations and Forests sustained by TNPL help sequester **42.80 L** MT of CO2 during 2018-19.



Recycling of Paper Products

Waste Paper is used as one of the raw materials for pulp production.

94166 MT of deinked pulp was produces in the reporting period from post and pre consumer reclaimed paper.

Wood conserved 4.1 lakh MT.



Solid Waste Management

TNPL has set up a Cement plant to produce industry-grade cement using wastes generated during pulp production. The cement factory uses lime sludge, deinked sludge, fly ash, lime grit, omya grit etc.

53403 MT of lime sludge was consumed and 61132 MT of limestone was conserved.



Absolute Use of Biofuel

TNPL ensures that the wood being used in process is utilized completely in an array of different processes. Even the waste generated during logging process, pith and wood dust, is used as an agro fuel in operations.

Utilized **185048** MT of Pith and **11764** MT of Wood dust/bark as fuel.

State-of-the-Art Technology

TNPL has been a pioneer in implementing contemporary technology in pulp, paper and paper board manufacturing. The company has been proactive in utilizing latest technologies to develop a product that has minimum negative impact on environment. TNPL is known as the most environmentally conscious and friendly mill in the country with the least water consumption.

Since its inception the company has been a frontrunner in adopting latest technologies including ECF bleaching, Oxygen delignification, integrated Chlorine dioxide production, Wash presses, Odour free recovery boiler, Collection and Incineration of NCG (Non Condensable Gases), production of bio-gas from bagasse wash effluent, manufacturing pulp from waste paper etc. Some of the other technological innovations includes installation of a satellite

Precipitated Calcium Carbonate plant to avoid GHG emissions, producing cement from pulp and paper mill waste etc.

The latest technologies are utilized in the plants to increase efficiency and product quality. Due to these initiatives the company has been able to recover some of the by products from its process and utilize them in the operations. This has various benefits such as reducing waste generation, reuse of by products, conservation of raw materials, cost savings etc. TNPL also treats the waste water generated in the mill in its advanced water treatment plant at Unit II and utilize it for irrigation purposes thereby conserving this natural resource.

In future expansions, the company is committed to use cleaner technologies to develop a produce that is sustainable.

TNPL employs state of the art technology in its processes

The most environmentally conscious and friendly mill in the country with least water consumption.

Corporate Governance

TNPL takes pride in its strong governance mechanism based on transparency, integrity and equity, and believes that good corporate governance facilitates effective and prudent management leading to maximizing value for stakeholders.

The company adheres to the highest standards of business ethics and compliance with statutory and legal requirements in its business dealings.

The board of directors plays a pivotal role in ensuring good governance. As of now,

TNPL has 9 directors i.e. a Chairman, Managing Director (Executive Director) nominated by the Government of Tamil Nadu and two non-executive Directors nominated by Government of Tamil Nadu, and five independent non-executive Directors including one woman director. A code of conduct has been framed which has to be duly followed by all board members and senior management.

The board met seven times during the reporting period.



Thiru N Muruganadam
Chairman



Thiru S. Sivashanmugaraja
Managing Director



Thiru S Krishnan
Director



Dr R Anandakumar, IAS
Director



Thiru V Chandrasekaran
Director



Tmt. Soundara Kumar
Director



Thiru N Narayanan IAS (Rtd)
Director



Dr. M Arumugam
Director



Thiru PB Santhana krishnan
Director

In order to maintain accountability of the non-independent board, the independent directors meet separately and assess the performance of the non-independent directors and the board of directors as a whole. This includes the evaluation of the performance of the chairman and other executive and non-executive members.

Management Committees

Management committees have been constituted by the board to enable a focused and quick decision making in the organization. Each committee is responsible for handling a specific area. These committees are under direct supervision of the board.



Vigil Mechanism

The culture of ethical behavior at TNPL emanates from the top and percolates down to the employees. It is deeply ingrained throughout the organization.

The company has implemented various policies and code of conduct to ensure transparency and integrity in all its actions. Presence of a Whistle Blower policy manifests the company's

commitment towards abating corrupt practices and encourages a culture of transparency while the anonymity of the whistle blower is duly respected; a vigilance administration has been instituted to enhance the managerial effectiveness and efficiency. Any such complaint is reviewed by the competent authority or Chairman of the audit committee.

Risk Management Framework

The Company's board of directors has overall responsibility for the establishment and oversight of the company's risk management framework. The Company's risk management policies are established to identify and analyze the risks faced by the company, to set appropriate risk limits and controls and to monitor risks and adherence to limits. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the company's activities.

The Company's audit committee oversees how management monitors compliance with the company's risk management policies and procedures, and reviews the adequacy of the risk management framework in relation to the risks faced by the company. The audit committee is assisted in its oversight role by internal audit. Internal audit undertakes both regular and ad hoc reviews of risk management controls and procedures, the results of which are reported to the audit committee.



Caring for Stakeholders

TNPL understands its responsibility and accountability towards its stakeholders. It focuses on fostering healthy and mutually beneficial relations with its key stakeholders as a means to create long term sustainable value. Their opinions and insights are incredibly valuable and facilitate in the development of business strategy in addition to identify and manage various risks and opportunities.

The presence of a board level Stakeholders Relationship committee further bolsters TNPL's commitment to strengthen relations. The committee prioritizes stakeholder grievances and responds to them in stipulated amount of

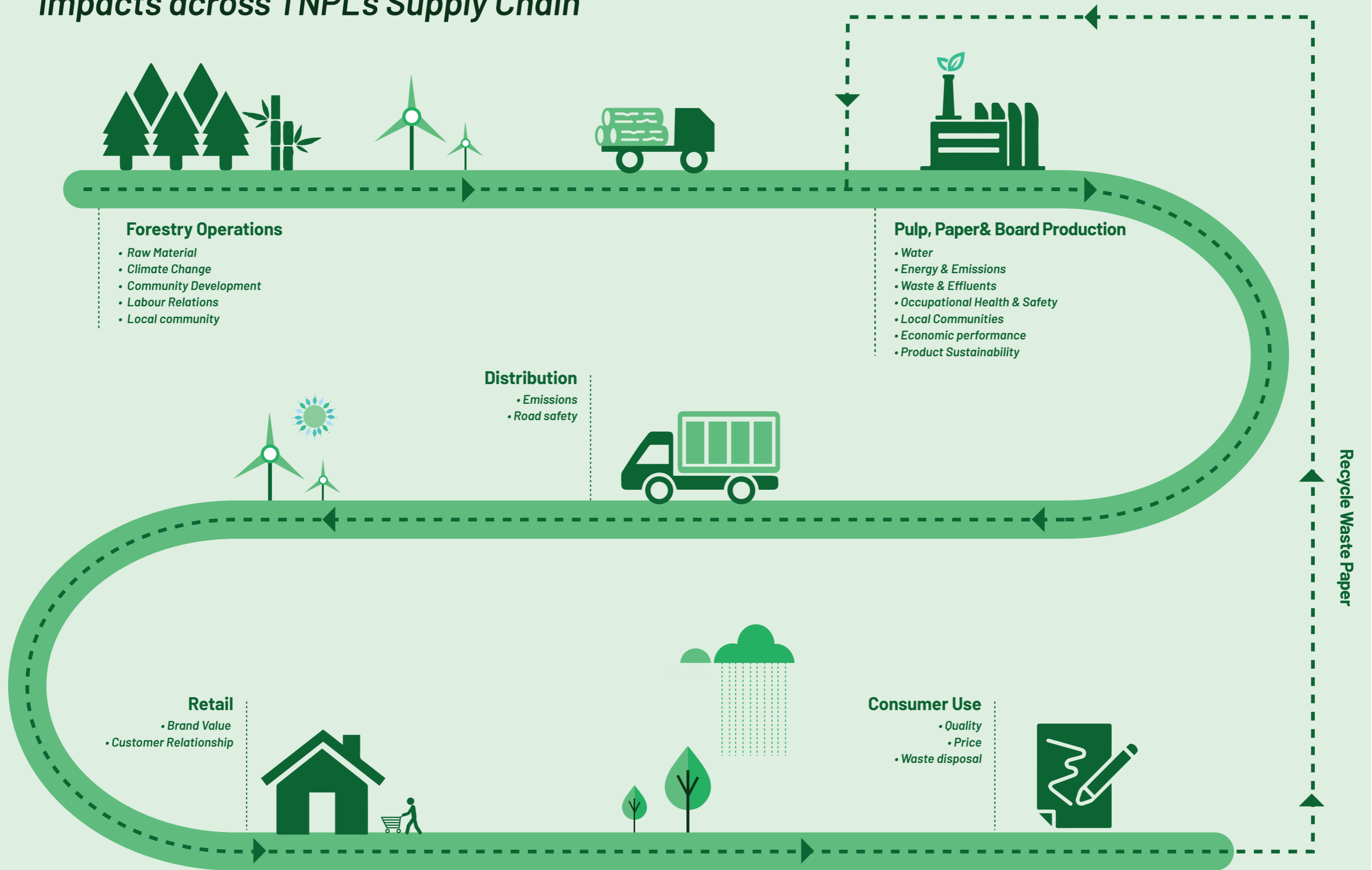
time thereby instilling trust and confidence amongst its stakeholders. In addition TNPL engages with its stakeholders on numerous platforms throughout the year. During the reporting period the company identified key stakeholders based on their impact on its business. Key stakeholders includes: employees, customers, suppliers, government and the community at large. During the reporting period TNPL utilized existing mechanisms to interact with them and as a result identified a list of material topics.



These topics were then discussed amongst the management team which prioritized issues based on their impacts across the supply chain. The outcome was a list of significant material topics that reflected TNPL's economic, environmental & social impacts.



Impacts across TNPL's Supply Chain



Economic Performance

The writing and printing paper demand and price were relatively better during 2018-19, compared to the previous fiscal year. During the reporting period, despite some limitation such as increase in input costs in procurement of bagasse and other raw materials, the Company has earned a Profit before tax of Rs 155.20 Crores and Profit after tax Rs. 94.39 crore with a turnover of Rs. 4040.87 crore.

Various factors contributed towards achieving a sound economic performance such as an increase in demand for Cut size paper

led to an increase in production to 16% from the normal level of 10 - 11% of the overall production. During the reporting period 4,32,572 MT. of paper was produced. TNPL achieved Paper sales of 4,45,389 MT. Domestic Sales accounted for 81% and Exports at 19%.

The packaging board industry also performed well. The demand growth for packaging board is estimated at 10-12% per annum. During the year, packaging paper board plant production was 1,76,997 MT with 1,77,047 MT of sales. Domestic Sales account for 99%.

Direct Economic Value Generated & distributed		(INR Lakhs)
Particulars	FY 2017-18	FY 2018-19
A Direct Economic Value Generated		
Revenues from Operations	312510.30	408271.46
Revenues from Other Sources	3360.25	3924.34
Total	315870.55	412195.8
B Economic Value Distributed		
Operating Expenses (Excluding Employee Wages and Benefits)	294,035.02	362,605.87
Employee wages and benefits	24634.26	26750.87
Payment to government:	1416.72	6081
Total	320084	395437.74
Economic Value Retained (A-B)	4215.45	9438.68

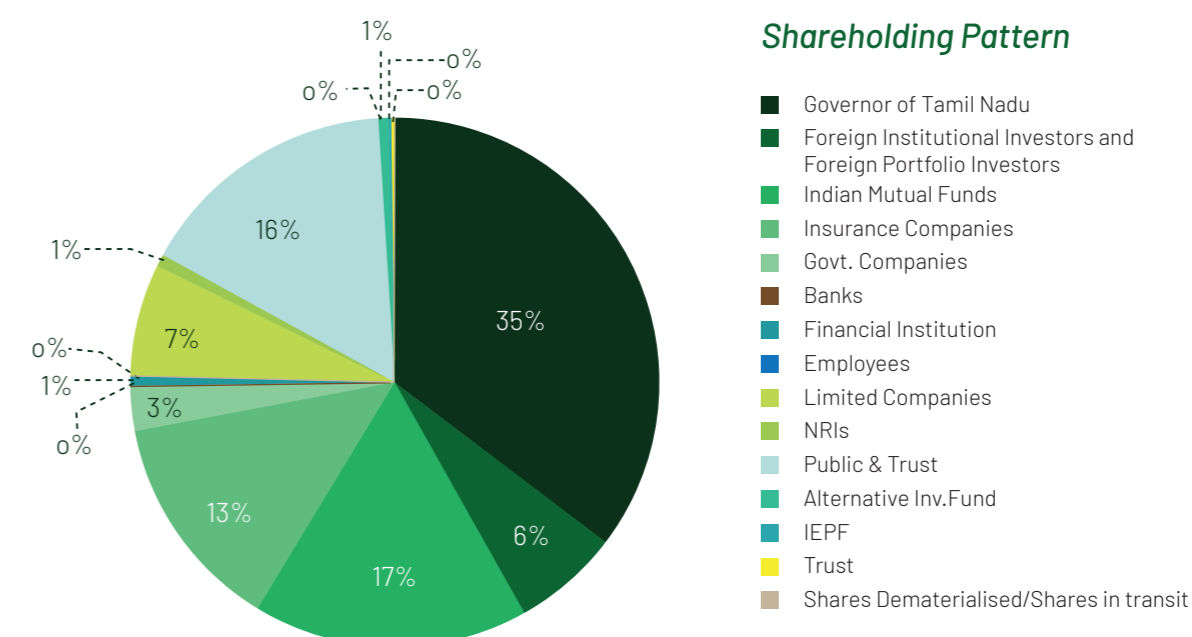
As a result, TNPL has been able to reduce overall debt (Term Loan and Working Capital) to an extent of Rs. 466.94Crore during the financial year2018-19.

Increasing awareness among consumers towards eco-friendly and sustainable packaging options along with increasing trend towards reducing the use of plastic has led to a sustained demand for paper and board packaging. This trend is encouraging for continued expansion of the paper packaging demand globally, especially in the high growth regions of the world among which India plays a primary position.

Market Capitalization (as on 31.03.2019)

₹ 1425.74 crores Debt

PAT
₹ 94.39 crores Equity





Standing Tall & Strong

4741 employees

best health care

facilities to employees

safety signages/PPEs

across the shop floors

1545 mandays of internal training

255 mandays of external training

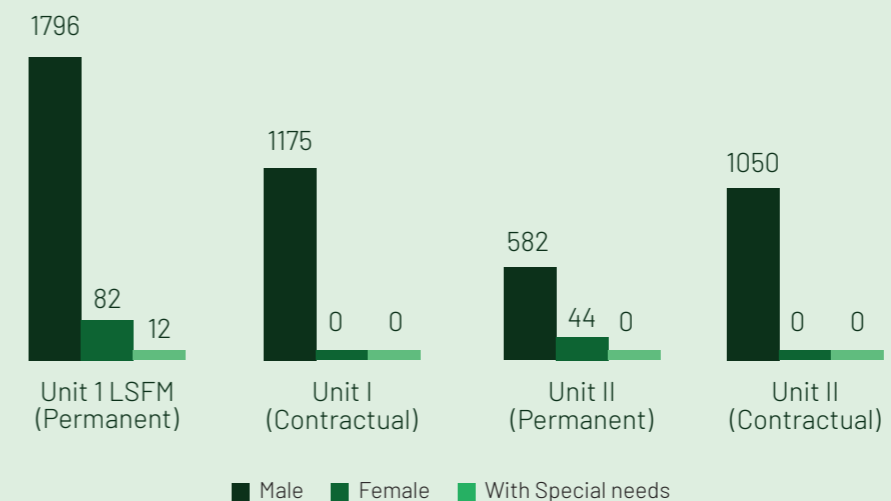
Our people

TNPL values its employees as it is their hard work and dedication that is driving the organization. In today's dynamic and continuously changing business world, it is the human assets that differentiate us from our competitors. The skills set and knowledge of our employees together contributes towards the growth of our organization.

We are proud of our diverse workforce. Today we are a family of 4741 employees including 12 with special needs. During the reporting period 69 new employees joined us and 129 left the organization to pursue their career aspirations. The employee turnover rate was 2.72%.

To facilitate holistic development of our employees, we have implemented a periodical performance appraisal system across the organization. Key Performance Indicators (KPI) is set for the organization, the departments and the senior executives at the beginning of each year. It serves as a medium to recognize and reward employees and to ensure they feel valued for the work that they do. This results in better relations between management and employees, increase job satisfaction and improve employees' sense of loyalty toward the company. During the reporting period, 100% of our permanent employees went through the process.

Employee Strength



Employee Turnover

	Unit I			Unit II			TNPL CO											
	<30	30<X<50	>50	<30	30<X<50	>50	<30	30<X<50			>50							
	M	F	M	F	M	F	M	F	M	F	M	F						
Joined	1	0	16	0	4	0	15	8	11	4	0	0	1	1	2	3	3	0
Left	3	0	6	0	96	0	2	0	5	1	3	0	0	0	2	0	11	0

We have 4 recognised trade unions representing the needs and concerns of our workers. 97.66% of permanent employees are members of these trade unions which we determine through secret ballot conducted once in 4 years.

We have put in place policies and procedures for employee welfare such as Prevention of sexual harassment at workplace, child labor, forced labor etc. During the reporting period there were no incidents of child labor, forced and involuntary labor, sexual harassment or any form of harassment.

Training & Development

TNPL believes in creating a culture that nurtures talent. Our various training programmes and workshops are designed with an objective to upgrade the skills and knowledge of our employees. The annual training calendar lists down various programmes that are scheduled for the year.

During the year 2018-19, a portal (Alfresco portal) for Training section was also created wherein the soft copy of the training details (in-house training programme circulars, external training materials received from organizers / participants on various topics) are available. As a result employees have the access to training material and can use it as per their convenience. Further, On the job training and industrial visits are also organized. The safety trainings are an integral part of our training portfolio.

In addition to organizing various programmes in house, we provide support to attend programmes and seminars organized by different agencies such as FICCI, CII, IIMs, and NITIE etc.

During the reporting period, an awareness programme on 5S was organized with an objective to achieve managerial excellence 169 executives from the level of Dy. Managers & AGMs of all departments have attended this programme.

As part of developing skill and improving the employability of the youth, TNPL has engaged 199 Graduate Apprentices, 71 Diploma Apprentices as per the guidance of the Board of Apprenticeship Training, Chennai and 167 ITI Apprentices as per the guidance of The Regional Joint Director of Training, Trichy / Asst. Director of Training, Related Instruction Centre, Trichy at our Factory Unit I, Unit II and Cement Plant under the Apprentices Act, 1961.

Employee Benefits

TNPL offers high quality employee benefits as a means to boost employee morale and productivity. These benefit plans are designed to support employees throughout their job tenure and post retirement.

Employee benefits include health insurance, pension plans, superannuation, and contribution towards provident fund, gratuity, and much more.

accident, the investigation is conducted and corrective action is implemented within stipulated amount of time.

As a proactive organization, we have identified various hazards associated with our processes and has implemented measures to mitigate the same. Employees including contractual are trained on various aspects such as handling of hazardous chemicals, Material handling, Usage of PPEs, Electrical safety, road safety, First aid, fire-fighting etc.

In order to inculcate a safety behavior, various initiatives are taken by the management such as display of safety signages across the shop floor, providing PPEs (Personal protective Equipment) etc. Further to deal with emergencies we have an on-site and off-site emergency plan; Periodic mock drills for hazardous chemical leakages and fire incident are conducted to ensure the effectiveness of emergency preparedness. In addition we have a fully equipped occupational health centers at both our units.

Occupational Health & Safety

Occupational Health & Safety is a top priority at TNPL. With our efficient systems, processes and state-of-the-art technology, we ensure that we provide our employees with a safe and healthy workplace. The culture of safety is promoted by top management and percolates down the organization.

The occupational health & safety policy acts as a guidance document towards establishing and implementing programs that will reduce workplace hazards, protect lives and promote employee health. A dedicated safety committee with representatives from both Management and Workmen has also been constituted with an objective to manage prospective hazards. In case of an incident or

Employee Healthcare

We provide our employees with best healthcare facilities. In case of serious illness such as Cancer, Kidney Transplantation, Paralysis, Leprosy etc. we offer financial support to the employee covering entire medical expense in addition to sanctioning a leave for a period of 180 days.

Further, under a Special Medical Assistance Scheme, 50% of the hospitalization expenses for the employee and their dependents are borne by the Company. A Comprehensive Master health Check-up is done for employees four times at the age of 40, 50, 56, and 59. Every year, Audiometry test is conducted to those employees, who are exposed to high noise areas. Once in 2 years, eye test is being carried out for employees, who are in driving job.

Unit – I & LSFM

Sl. No.	Description	Emp. Strength	Safety Training		Skill Up gradation	
			Man days	Percentage	Man days	Percentage
1	Permanent Employees (Men)	1796	444	25	1697	94.5
2	Permanent Employees (Women)	82	31	38	93	113.4
3	Contractual employees	1175	1252	106	0	0
4	Employees with Disability	12	0	0	10	83.3

Unit – II

Sl. No.	Description	Emp. Strength	Safety Training		Skill Up gradation	
			U II	Man days	Percentage	Man days
1	Permanent Employees (Men)	582	228	39	305.5	53
2	Permanent Employees (Women)	44	13.8	31	45.9	104-
3	Contractual employees	1050	153.3	15	23.6	0
4	Employees with Disability	0	0	0	10	0



Recreating the Canvas through sustainable materials

Total Pulp Generated
3.53 Lakh MT

Total Pulp Wood Conserved using above agro-based raw material and secondary fiber is
10.0 Lakh MT

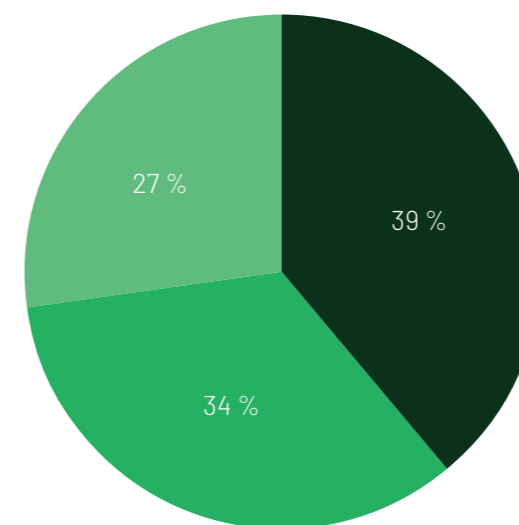
Bagasse Pulp:
1,39,844 MT

Deinked Pulp:
94,166 MT

Hardwood Pulp:
1,19,008 MT

The primary raw material for TNPL's product is Bagasse, a residue of the sugar cane industry which is used along with wood to manufacture paper and paper board. As an alternative raw material the company produces deinked pulp from waste paper collected from various sources. All the input raw material is sourced from sustainable sources.

Since it is an industry that is dependent on forest wood, therefore it becomes important to manage this resource responsibly. The wood used in process is not sourced from forests but is produced in-house through social forestry, captive and farm forestry model of plantations and some of it is sourced from Tamil Nadu Forest Plantation Corporation (TAFCON). During the reporting period TNPL has raised pulp wood in 22,356 acres totaling about 1,46,436 acres of land covering various parts of Tamil Nadu. Species of Eucalyptus, Casuarina etc. is used for most of our processes.



Pulp Production as per source (%) in FY 18-19

- Bagasse Pulp
- Hardwood Pulp
- Waste Paper Pulp

TNPL has carefully selected tree species which have a positive impact on environment. Plant species such as Eucalyptus are known to increase water retention capacity of the soil, control soil erosion, absorb large amount of carbon di oxide and recover unusable and degraded land. These trees can thrive in areas with limited water resources and poor soil conditions.

Bagasse is either purchased directly from the sugar mills or bartered in exchange of steam/fuel. In recent year, unavailability of bagasse due to disasters such as draughts has posed a serious threat to the production. As a result the research & development is in the process of developing an alternative to meet the target pulp production with reduced costs.

At TNPL, waste paper is utilized to manufacture deinked pulp. This paper comes from various universities, their examination papers, office papers, text books, packaging paper etc.

Pulpwood is certified by Forest Stewardship Council Forest Management (FSC-FM) Certification and Forest Stewardship Council Chain of Custody (FSC-COC) certification ensuring that paper manufacture from wood is managed socially and environmentally in a responsible way.

Forest Management certificate from the Forest Stewardship Council for our captive plantation from M/s NEPCON, Estonia and it is valid upto July 2023. TNPL have also received the Chain-Of-Custody (COC) certification from M/s NEPCON, Estonia with validity upto Jan 20, 2021.



TNPL procures pulpwood from three key sources - Government owned forests (TAFCON), Plantation schemes (Farm Forestry and Captive Plantation) and from the Open Market. In FY 19, the company acquired 33%, 33% and 34% of pulpwood from plantation schemes, Government and open market respectively. 1.74 Lakh MT of pulpwood was procured directly from farmers. Cumulatively 11.74 lakh MT of pulpwood were received from plantation sources. Over the years TNPL wants to focus on increasing its dependence on pulpwood grown under its plantation schemes.

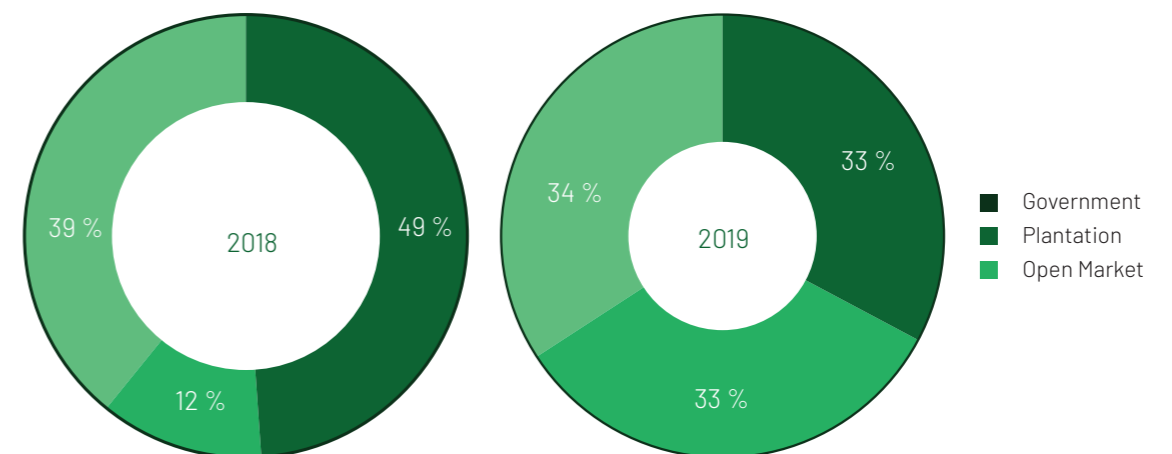
During the year the company focused on Casuarina plantations under irrigated conditions. State-of-the-art Research and Development have been constantly developing better clones which will prove to use water more judiciously and grow at a faster rate as compared to their counterparts. During the reporting period, developed three new eucalyptus clones namely TNPL 523, 526 and 529, which have been duly distributed to the farmers for nurturing and harvesting. Consecutively, TNPL produced 235 lakh plant species and supplied 167 lakh plant species during the year. So far, TNPL has developed 1225 lakh plant species and supplied 1125 lakh plant species until 2018-19.

Pulp Wood Plantation

Pulpwood is one of the critical raw material for production process. The company has an annual pulpwood requirement of 5 Lakh MT which is targeted to be around 12 lakh MT post mill expansion. Currently pulpwood plantations covers an area of 1, 24,080 acres but the company has planned on intensifying plantation development activities, fixing the annual target of 25000 acres from 2018-19.

During the reporting period, 22,356 acres of land was registered of which 68% (15092 acres) was under Casuarina and 32% (7264 acres) under Eucalyptus and other species. About 235 lakh plants were produced, out of which 167 lakh plants were supplied to farmers.

Pulp Wood Procurement FY 18 Vs FY 19





Reducing Dependency on Water

Fresh water consumption per ton of board production is reduced from

11.8 KL/T

to

10.04 KL/T

by process optimization

Total water consumption/ton of paper produced

32 KL

Water is one of the most important resources for pulp and paper manufacturing. It is a key element in the production of paper. The major areas of water consumption includes raw material cleaning, pulp mill, showers on washers, paper, boilers etc. At TNPL the source of water remains fresh water that we draw from Cauvery River. During the reporting period, total fresh water consumption was 16355598 m³.

In recent times factors like low ground water level, vulnerability to draughts coupled with issues of public resentment, regulatory pressure as well as awareness of the impact on environment have made water conservation a priority. In line with this, TNPL has implemented various water conservation programmes including rain water harvesting, waste water treatment and reuse.

With the implementation of state-of-the-art technologies, it has been successful in reusing the water in some of its processes. The waste water treatment plant in unit 2 utilizes the entire waste water generated for irrigation in TNPL's own land of about 575 acres under the Treated Effluent Water Lift Irrigation Society (TEWLIS) Scheme.

Today, TNPL is the the most environmentally conscious and friendly mill in the country using 32 KL/ ton and 10KL/Ton for paper production and paper board production respectively, making TNPL as one of the least water consumers in the pulp and paper industry and the lowest nationally. To further enhance the operation, the company is examining the ways and means to reduce dependency on the fresh water intake and also exploring the possibilities of moving towards Zero Liquid Discharge by adopting modern technologies.





Regenerating Energy from Renewables

Installed a **35.5 MW** wind farm

TNPL is energy intensive but an energy efficient organization. The company believes in investing in various projects improving the efficiency of the systems as it can yield considerable benefits from reduced water and associated chemical use, improving energy and water security for the plant.

100% of energy requirement is met from captive power plants with an installed capacity of 133.62 MW

100% of energy requirement is met from captive power plants with an installed capacity of 133.62 MW. In addition, TNPL has installed a 35.5 MW wind farm where a small amount is wheeled for self-consumption and the remaining is exported to the grid. During the reporting period total energy consumption was 2786497.2 GJ.

Energy Consumption

FY	Captive Power Unit	Generation (GJ)	Self-Consumption (GJ)	Export (GJ)	Import (GJ)
2017-18	Unit 1	1894638.4	1898670.9	29620.6	33653.2
	Unit 2	406987.41	384550.83	33258.56	10821.98
	Wind Energy	185544	16077.6	169466.4	0
	Total	2487135.6	2306710.8	224906.4	44481.6
2018-19	Unit 1	2297817.0	2302051.5	28329	32563.5
	Unit 2	499178.06	465030.04	35940.65	1792.63
	Wind Energy	161712	19015.2	146311.2	3614.4
	Total	2959135.2	2786497.2	210610.8	37972.8

To improve energy efficiency and limit our GHG emissions the company has invested in combined heat and power (CHP) generation.

Further it utilizes internally generated bio fuels to produce biogas which serves dual purpose of generating environment friendly energy and at the same time converts waste into a useful resource. Currently there are three

bio-methanation plants to treat high organic wastewater from bagasse handling and storage system and to generate biogas which is utilized in the lime kiln to replace furnace oil and in Power Boiler to replace Imported Coal. The Consumption of bio-fuel and bio-gas accounts for 42.25 % of the total Energy consumed during 2018-19.

Waste to Fuel

S. No	Fuel	Source	Quantity	Consumed	Imported Coal Replaced (MT)
1	Agro Fuel including pith, wood dust, Bark	Internally generated	196812 MT	Power Boiler	32598
2	Black Liquor solids	Internally Generated from Hard Wood and Bagasse plant	492115 MT	Chemical Recovery Boiler and steam thus generated is utilized to produce green power and process steam	237038
3	Bio Gas	Internally generated from bio-methanation plant using Bagasse effluents	6495910 Cu.M	Lime kiln (3848 KL FO) and power boiler	8195



Reusing Waste to Reshape

**65.23 lakh M³
of Biogas Produced**

Used as replacement of
105 MT of Imported Coal &
3848 KL of Furnace Oil

TNPL considers waste generated from its various processes as a valuable resource and is working constantly towards identifying innovative techniques to utilize this resource efficiently.

As an environmentally conscious organization, it has implemented a waste management plan with a focus on utilizing the waste generated back into the processes thereby eliminating waste and at the same time using it as an alternate fuel, saving fossil fuel and subsequently reducing carbon emissions.

The waste generated from various processes such as wood harvesting (wood, dust and bark), Bagasse processing (Bagasse pith) etc. is utilized as agro fuels in boilers. These materials are also used to develop wooden core plugs which replace plastic core plugs in paper reels.

The wash effluents released during the processing of bagasse is used in biomethanation plant to generate biogas. During the reporting period, TNPL produced 65.23 lakh M³ of Biogas as against 62.07 M³ of biogas in the previous year. This biogas is then used in lime kiln and power boilers and helps replace 105 MT of Imported Coal as well as 3848 KL of Furnace Oil.

Further, the company segregates biodegradable and non-biodegradable waste and ensure proper disposal. During the Reporting Period, produced 16800 Kg of vermicompost and 10000 Kg of Bio compost from wastes generated inside the housing colony and the units.

The waste water generated from the mill is treated in the respective waste water treatment and the entire water is used for irrigation in TNPL's own lands to an extent of 1650 acres supported by Unit 1 and 650 acres by Unit 2.

TNPL's R&D team is constantly working towards identifying techniques to effectively manage the waste. It has been able to use the waste plastics generated from the deinking plants in laying high quality CERAPLAST Road at TNPL Bagasse Yard.

The company is currently pursuing a detailed study with the Central Institute of Plastic Engineering and Technology (CEPIT), Chennai in order to develop specifications for shrink film, stretch film, core plugs and transparent tape, for possible source reduction to contain the impact to the environment.



Cement Plant: Generating value from Waste

TNPL is the first and only company in the Indian Paper Industry to have established a cement manufacturing factory to convert the inorganic solid waste including lime sludge and fly ash generated from the pulp, paper and paper board mill into high grade cement as part of its solid waste management system.

The company produces two categories of cement i.e. Portland Pozzolana Cement (PPC) and Ordinary Portland Cement (OPC). During the year, 2,33,876 MT of cement was produced. The cement production capacity was also recently increased from 600 TPD to 900 TPD.

During the reporting period, the plant utilized 53403 MT of lime sludge, 67010 MT of fly ash, 9147 MT of de-inking sludge and 11217 MT of waste material such as lime grit, bed ash rejects and coating color kitchen sludge. This resulted in conservation of 61132 MT of virgin lime stone.



Biodiversity Conservation

TNPL has always been at the helm of undertaking newer techniques in order to minimize their impact on the environment. It is constantly working to protect and preserve the biodiversity around its plant locations, increase the green cover and achieve environmental objectives through sustained R&D improvements in process and technology. With this in mind, TNPL is developing a biodiversity park around its Unit 1 in Kagithapuram with over 100 species of trees covering 6.07 hectares of land as well as a green belt around Unit 2 in Mandipatti in over 650 acres of land.

The Biodiversity Park is assessed periodically to ensure proper maintenance. Recently, TNPL has also included another 60 species of trees/shrubs of flowering, fruit bearing,

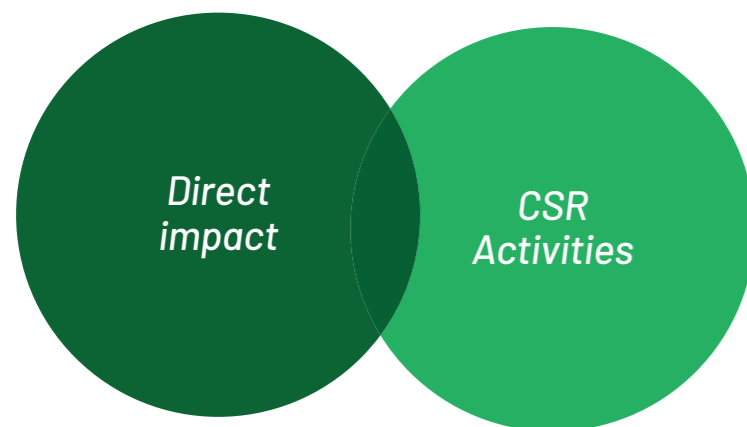
medicinal trees within the park. These flowering plants have attracted fauna such as butterfly, various birds, reptiles and animals which have helped in increasing the pollination rate and enhance the overall microclimate of the location.

Moreover, the green belt in unit 2 currently houses over 6 lakh plants belonging to 79 species such as ficus, eucalyptus, neem, ashok etc. These initiatives have helped make the ecosystem more balanced leading to stability and a conducive environment. Besides making surrounding more beautiful, these areas have helped restore water balance, capture fugitive emissions as well as attenuate the noise generated within the plant.





Building an Inclusive Community



TNPL is driven by a vision to improve the quality of life of the communities. The programmes are designed with an aim to empower community members thereby creating stronger and more connected communities. Apart from the CSR initiatives, TNPL creates positive social impacts through its innovative business model.

Direct Impacts

TNPL's Captive Plantation and Farm Forestry schemes have been instrumental for the local and marginalized farmers to gain livelihood and financial independence. These programmes are mutually beneficial for both the farmers and for TNPL. It facilitates in sustainable procurement of wood while allowing the farmers to gain

access to technological experts, hybrid quality of seeds at subsidized rate and an assured income.

These schemes are economically viable, socially compatible and people centric and has helped many local and small farmers safeguard regular income and improved their quality of living.

Schemes implemented over
1,46,436 acres

15,875 acres
under Captive
Plantation Scheme

1,30,561 acres
are under the Farm
Forestry scheme

Benefitting
27,000+ farmers

TNPL has obtained **1.1 million MT** of pulpwood directly from farmers

Farm Forestry Scheme

TNPL's farm forestry scheme targets local and marginalized farmers. Any land which is capable of growing pulpwood is eligible under this scheme. Farmers are encouraged to grow Eucalyptus, Casuarina, Melia and Subabul trees in blocks or agro forestry as wind breaks in bunds and field boundaries. This scheme is even applicable to the dry land farmers as these plant varieties can thrive in water scarce regions.

A team of experts visits the site regularly and provides technical support to the farmers from planting of the seedlings to nourishment of the trees.

TNPL ensures that the wood is being procured at the prevalent market price or minimum support price, whichever is higher. We also take care of the harvesting as well as transportation.

Captive Plantation Scheme

This scheme is applicable to any company, government, educational institute or large land holding personnel with a land equal to 50 acres. The land is used to cultivate pulpwood and the revenue is shared or dealt with on a lease rental basis. The land is taken up or either a long term lease of 10 to 30 years or a gross revenue sharing basis (70:30).

TNPL takes up the responsibility for implementation, maintenance and harvesting of trees. TNPL utilizes its team of subject area experts in arriving to ecologically compatible solutions for farmers to overcome varying climatic conditions, water availability etc.

CSR Activities

TNPL employs strategic CSR where programmes are designed in consultation with the respective communities thereby focusing on value creation. prior to initiating a project TNPL carry out a needs assessment survey. As a part of the survey it invites proposals from eight of the adjacent town panchayats and 5 village panchayats. The senior executives from the CSR team evaluate the needs of the panchayats. After due considerations, a final proposal is drawn for and placed before the CSR Committee comprising of independent Directors for consideration and approval. Additionally, the company has a review mechanism to ensure the benefits its initiatives are widespread and are recorded as per actuals. The key milestones, expected results and outcome have been mapped for each initiative. The strategic planning, implementation, evaluation and review will thus ensure wider outreach across each of the projects. TNPL covers a radius of 5-10 Km around its in Kagithapuram and Mayanur in Karur and Mondipatti in Tiruchirappalli. We undertake Community Development activities in association with various government bodies, Bankers, Agricultural Institutions, Government and Private Hospitals, Skill development Institutions etc.

The CSR committee is responsible for monitoring the implementation of CSR policy and plan. During the reporting period, TNPL spent Rs. 4.06 crores on CSR activities. All the finances are directed through TNPL Arakkodai Trust, Karur.



Education

TNPL's educational initiatives focuses on areas including providing free education to underprivileged, facilitating better learning through coaching classes, organizing cultural competitions, promoting sports etc. Some of TNPL's programmes in FY 18-19 includes events such as Coaching classes were conducted at 7 Government schools benefitting 590 students. Further 5 students received monetary support to study paper technology. Theme based talent expo for overall development of school children were also organised during the year.

Sports tournaments were organized with an objective to promote sports and healthy living amongst youth.

Health Care and Medical Services

In its endeavour to provide quality healthcare services to the members of the community, TNPL organised free medical camps, assist in child and health nutrition, work in the area of women health, assist differently abled etc.. During the reporting period approx. 1332 people benefitted from medical camps.

Infrastructure Development

TNPL is supporting public infrastructure such as parks, roads, culverts, cremation facilities, storm water drainage, bus shelters, solar street lights etc.

Social Development

Social development initiatives focuses on the social upliftment of the communities through increase participation of women, enhanced literacy, social audits and community participation etc. During the reporting period, TNPL supported flood affected people of Thavittupalayam village in Karur district, Tamil Nadu. In addition we also supplied drinking water to 8 nearby villages during water crisis.



Livelihood and Economic Development

TNPL has implemented various programmes imparting relevant skills to the local residents thereby giving them livelihood opportunities.

The company organized training programmes for selection of police constables. 24 participants were successful in securing employment. Vocational training programmes in areas such as tailoring, typewriting, jewellery making etc were also organized benefitting 270 people from the community development programme.



Environment and Sanitation

TNPL has implemented various programs with an objective to create a positive impact on the environment and improve the sanitation facilities. During the reporting year, 40 farmers were trained in association with Hans Roever Institute, Perambalur on production & utilization of natural fertilisers. 40 villagers actively participated.

Culture and Heritage

TNPL supports local communities in preserving the culture and heritage. TNPL organized Samuthaya Pongal Festival where 510 women from rural celebrated this traditional festival. In addition, the company provided financial support to 17 places of worship.

Soil and Water Conservation

Under the initiatives to conserve soil and water, the company works in the areas of desilting of bunds and supply of portable drinking water to the communities.

Further details on TNPL's CSR initiatives for FY 18-19 are available on its website www.tnpl.com.





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