PAPER

MANUFACTURERS ASSOCIATION OF SOUTH AFRICA (PAMSA)

840 million trees

Planted over 693,000 hectares for the purpose of pulp and paper production

R24.13 billion

Contribution of the pulp and paper sector to SA GDP in 2019

46%

Locally made paper products contain sustainably sourced virgin fibre

54% of locally made paper products contain recycled fibre

R6.63 billion

Contribution of pulp production to SA balance of trade

2.16 million tonnes

Paper, tissue and packaging produced in 2019

88%

Around 88.2% of the paper recovered is used in new paper products, in particular packaging and tissue.

1.20 million tonnes

Paper recovered for recycling

149 271

People who are employed because South Africa grows trees, makes paper products and recycles them.

68.5%

Paper recovery rate for 2019

ANNUAL SUMMARY 2019 Statistics

SOUTH AFRICAN PAPER AND PULP INDUSTRY

Looking back with our sights on the future

A message from the executive director

Reviewing statistics is always a tricky business, especially if the reader is doing it to make decisions on the future. Looking back to go forward is simply not going to work in this troubled time.

Late 2019 and early 2020 has seen our industry go from over-capacity of pulp, paper and waste paper, with soft pricing all round, to 'locked down' markets, courtesy of the COVID-19 pandemic. For pulp exports this means limited demand, however demand for waste paper has soared and both world and local market volatility has increased.

This report is a summary of the key production, consumption and trade statistics relating to the pulp and paper sector using the aggregated data collected from our members as well as estimates of independent mills and information from Statistics SA and Forestry South Africa.

As we look back on 2019, it is good to know that although the future is uncertain, our sector was at least considered part of essential services during this first part of the COVID-19 lockdown, so it is still operating. Never before has toilet paper enjoyed such publicity with memes-galore around the value and scarcity of this ordinarily mundane item.

Our industry is tenacious. Its players continue to adapt and invest in research to ensure that it not only survives but also thrives. The industry will continue to be driven by its ability to operate within a globally competitive environment.

Jane Molony
Executive director

Contribution to SA's economy

The forest products value chain starts with commercial timber plantations. These farmed trees are used to make a number of products, including sawn timber, wood chips, round wood, poles and board as well as pulp, cellulose and paper products. For the purpose of this report, we concentrate on the forestry-paper part of the value chain.

The pulp and paper sector contributed an estimated **R24.13 billion (0.53%)** to the country's gross domestic product (GDP) in 2019.

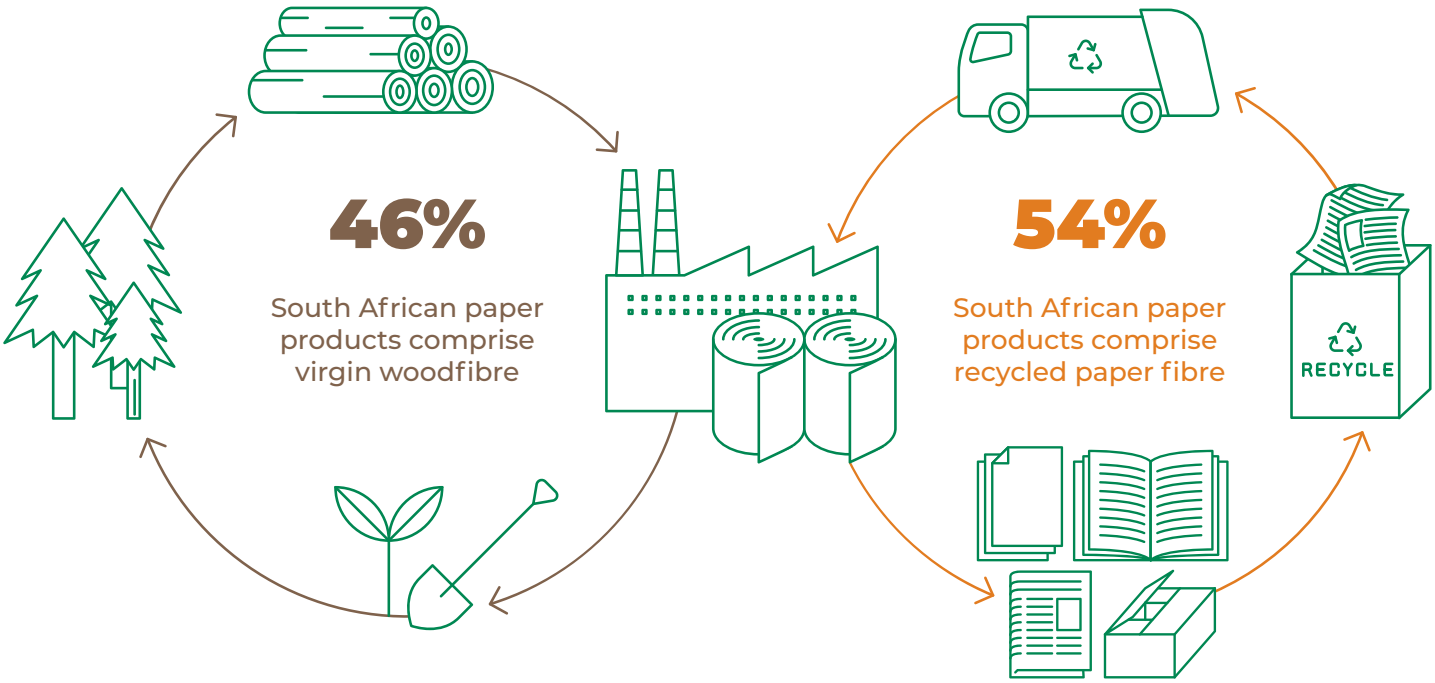
The contribution of pulp logs and finished pulp products was **R13.8 billion** with paper's contribution being R10.3 billion.

Some **25.22%** of the country's agricultural GDP is attributable to pulp and paper products, while it added **4.03%** to the manufacturing GDP.

GDP CONTRIBUTION PER YEAR

	2016	2017	2018	2019
Forestry to paper contribution to SA GDP	0.44%	0.48%	0.53%	0.53%
Forestry to paper contribution to manufacturing GDP	3.64%	4.06%	4.52%	4.03%
Forestry to paper contribution to agricultural GDP	20.10%	21.02%	24.41%	25.22%

Our sector explained



Paper goes beyond common A4 copy paper. It encompasses items that we use in our homes and businesses every day such as tissue products, newspaper, magazines, books and packaging paper. In South Africa, we make our products largely from the wood fibre of sustainably grown trees and recycled paper fibre. For our locally made paper products, 46% comprise virgin wood fibre and 54% are made from recycled paper fibre.

The South African pulp and paper sector involves producers and manufacturers of other products as well as pulp. Most of the pulp produced in South Africa will go into the above-mentioned products. A special kind of pulp – dissolving wood pulp (DWP) or chemical cellulose – is used in a number of everyday products as well as innovative applications.

Our sector's products are part of every moment of every day, and in every room in the house – often hidden in plain sight. We are grateful to our members and the thousands of people they employ who make it happen.

About PAMSA

The Paper Manufacturers Association of South Africa (PAMSA) represents over 90% of South African pulp and paper manufacturers. It also manages **RecyclePaperZA**, the paper recycling association of South Africa, which represents processors of recycled paper fibre. PAMSA provides a platform to the sector on pre-competitive issues such as research, energy, water and environmental matters as well as education, training and development. Both associations also promote the renewability and recyclability of paper products that we use every day.

Know the difference: Forestry vs deforestation

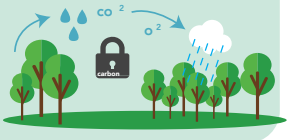
Deforestation is the clearing of trees without replanting. *Sustainable forestry* is different: trees are grown in rotation with only a small percentage of the total area harvested each year. Felled areas are then replanted, making the process sustainable with thousands of hectares of trees of different ages growing all the time.

6% Plantation area harvested annually in SA

New trees are planted on the same land in the same year to replace them. This is sustainable forestry.

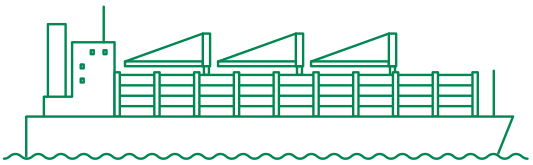
Fantastic filters and remarkable recyclers

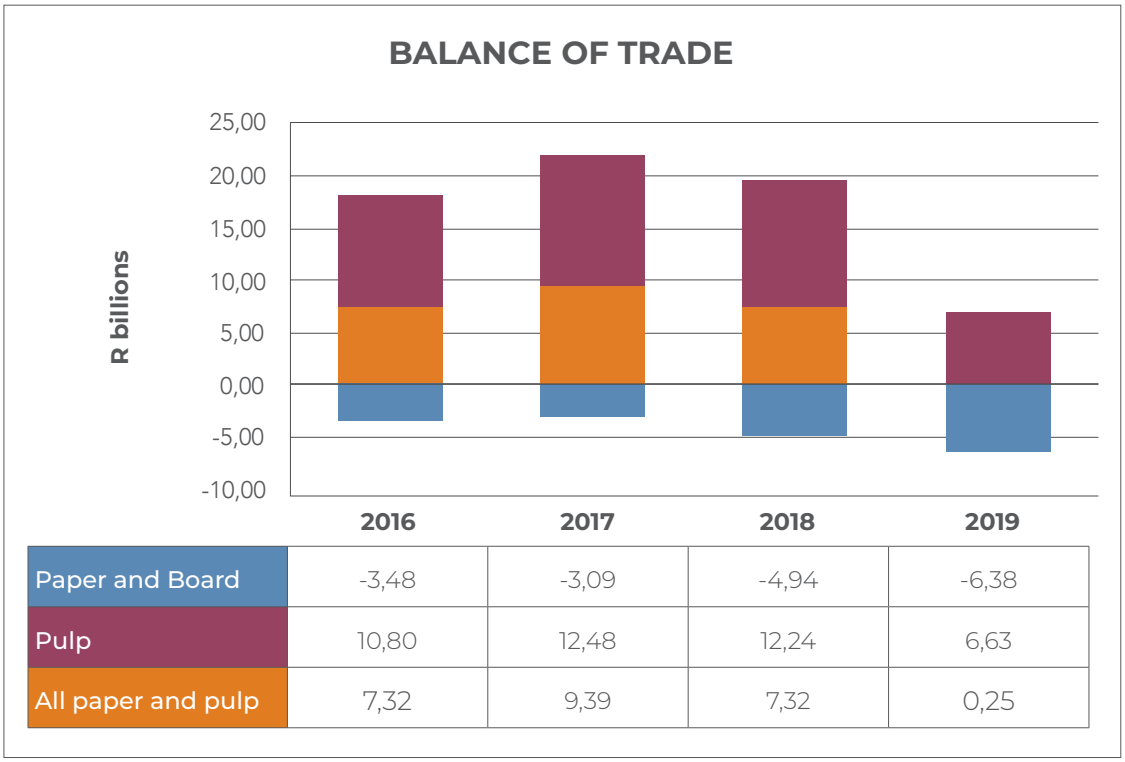
Trees are nature's recyclers capturing carbon dioxide, storing the carbon and giving us oxygen in return. They also take up ground and rain water, filter it and use what they need to grow. Water is then transpired as vapour through their leaves back into the atmosphere.



BALANCE OF TRADE

Pulp production added **R6.63 billion** to effect a positive **South African balance of trade*** for the greater sector of R0.25 billion. This figure dropped some R5.03 billion on 2018's numbers due to pulp prices falling to their lowest levels on record. Added to this were the higher prices on imported products due to Rand weakness.

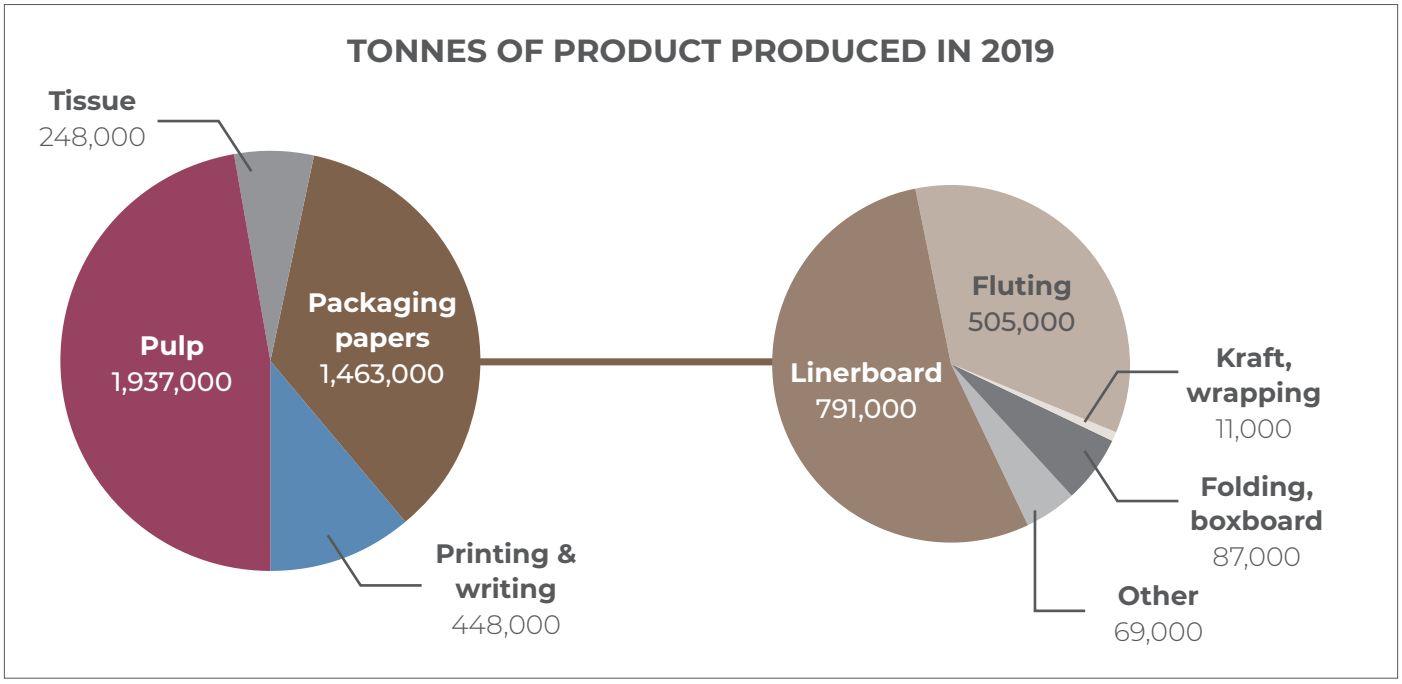




	2016	2017	2018	2019
Paper and Board	-3,48	-3,09	-4,94	-6,38
Pulp	10,80	12,48	12,24	6,63
All paper and pulp	7,32	9,39	7,32	0,25

** The balance of trade is calculated by subtracting the imported product value from exported product value, with a positive balance being a net inflow of finance to South Africa.*

Production



PACKAGING PAPERS

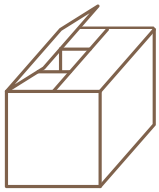
As a broad generalisation, packaging papers performed in step with the weaker local economy. Domestic production was 2.3% lower than in 2018, with imports also dropping to follow suit.

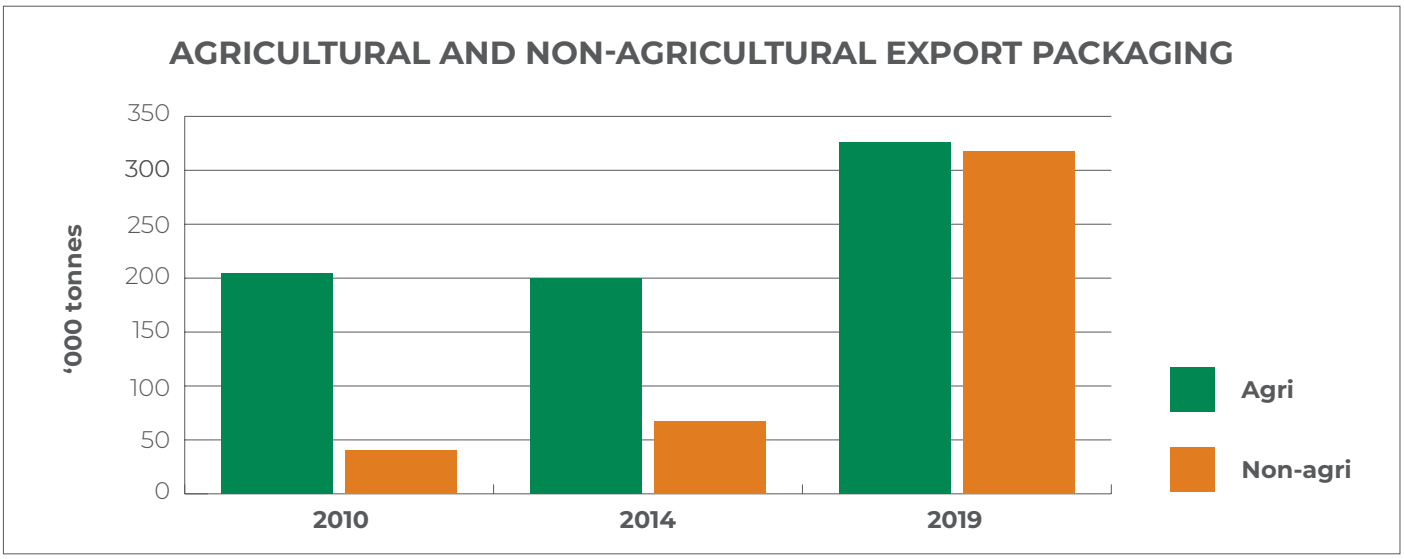
Exports of unconverted packaging paper reels showed a 10% decline on the previous year. However, a positive development is the improvement in the amount of South African exports of primary products packed in cardboard boxes (secondary packaging).

Historically, non-agricultural products were estimated to have accounted for 20% (by volume) of South Africa's exported secondary paper packaging tonnages.

In 2019 however, this volume had grown to the extent that this market sector was almost equivalent to paperboard packaging of agricultural exports. This is all the more remarkable as agricultural exports have increased by 60% over the past 10 years.

This also means that about 280,000 tonnes of recyclable cardboard leaves South Africa each year as secondary packaging. While this is a good thing for the South African economy overall, it reduces the pool of boxes available for local recovery and recycling into new packaging. In the short term, this could lead to a shortage of good quality paper for recycling.





PULP

South African manufacturers make a variety of pulps, using softwood (pine) and hardwood (eucalyptus and wattle). Local pulp production showed a 10% drop (from 2.14 million tonnes in 2018 to 1.94 million tonnes in 2019) and pulp imports were slightly lower, matching declining paper production. Local pulp beneficiation in paper and tissue manufacture was down from 1.17 million tonnes to 1.11 million tonnes. Exported pulp showed a marginal decline of 2.4%.

The use of locally produced hardwood bleached pulp has increased by local tissue manufacturers although overall pulp production declined in 2019.

Unfortunately prices of all pulp grades dropped dramatically and by year end were at their lowest ever for dissolving wood pulp (DWP).

DWP, also known as chemical cellulose and the only grade to show increased production, was accompanied by a rise in export sales as the pulp sub-sector has continued its drive to market its more competitive grades given the demand for more renewable and sustainable material for textiles (rayon and viscose), films or sponges.

DWP is one of our industry's largest exports at more than 950 000 tonnes per annum. A remarkably versatile product, it can be converted into yarn which is used in rayon and viscose fabric and it is also used for a myriad of household, industrial and pharmaceutical applications.

Due to its wide-ranging attributes as an emulsifying, stabilising, anti-caking and binding agent, DWP is added to medicinal or vitamin tablets, washing sponges, low-fat yoghurt and cheese and cosmetics. DWP is also used in the making of acetates, cellphone or laptop screens and bioplastics.

PULP EXPLAINED

Mechanical pulp is manufactured wholly or in part by separating wood fibres by means of mechanical action such as grinding the logs against a rotating grindstone. Paper made by this process is opaque and possess good printing properties, however it is weaker and discolours easily when exposed to light due to residual lignin in the pulp. Mechanical virgin pulp is largely used in newsprint, tissue and paperboard, as there are no coated grades made locally.

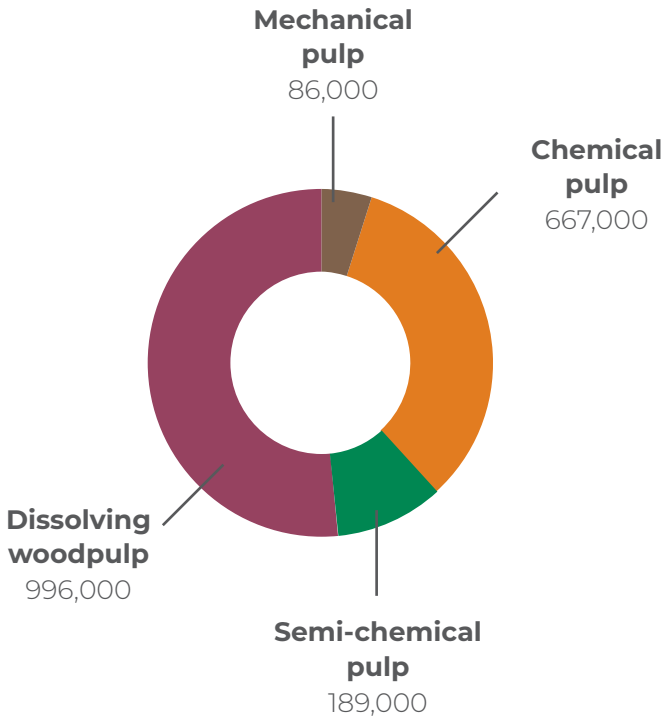
Chemical pulp is obtained by digestion of wood with solutions of various chemicals. The paper produced is strong and less prone to discoloration as most of the lignin has been removed. The principal chemical processes are the kraft, sulfite, and soda processes. Chemical pulps are used to make shipping containers, paper bags, printing and writing papers, and other products requiring strength. It is used in white paper grades such as A4 copy paper and whitetop liner (the white printable layer on paper packaging) while semi-chemical pulp goes into the manufacture of fluting, (corrugated medium) which is the middle liner of corrugated board used to make boxes and giving them their crush strength.

Thermo-mechanical pulping entails the separation of wood fibres by pre-treating the wood chips with steam at elevated pressure and passing the softened chips between two rotating disks of a disk refiner, The higher temperature and pressure softens the lignin and produces a lighter stronger fibre. South Africa no longer produces this type of pulp.

WHAT IS PULP?

It is the fibrous material prepared from wood, cotton, grasses, etc., by chemical or mechanical processes for use in making paper or cellulose products.

TYPES OF VIRGIN PULP LOCALLY PRODUCED IN 2019



From logs to lipstick

Eucalyptus, pine and wattle trees offer an array of products. More common are logs and planks; tissue, books, copy paper and packaging; timber homes, furniture and firewood. Did you know that wood-based products can be found in low-fat yogurt, cell phones, clothes, medicines, washing powder, cellophane and lipstick? And that's a short list.

PRINTING AND WRITING PAPERS

Domestic production trends of printing and writing grades continued their decline, from 475 000 tonnes in 2018 to 448 000 tonnes in 2019. However with rising imports, we saw an uptick in apparent consumption of 9.1% on 2018's numbers. It is not certain whether this is due to a stock build (off demand or forward buying) or actual demand.

Reduce your carbon footprint by feeding your printers and copiers with locally-produced, virgin paper rather than imported recycled paper. ***Recycled paper for printing or writing is not made in South Africa.***

Printing and writing grades are broadly categorised as newsprint, coated paper and uncoated paper.

Locally, our mills produce newsprint (for newspapers and inserts) as well as uncoated woodfree paper (commonly known as A4 and A3 copy paper for home and office printing.) Some mills produce bond paper (70-80gsm) for longer print runs (text books and educational workbooks) and scholastic grades for exercise books.

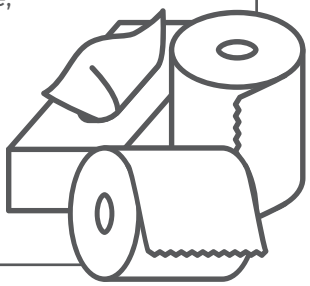
We don't make coated grades – such as for brochure and magazine printing – in South Africa, nor does the country produce printing paper from recycled fibre. Virgin paper – for home and office printing – is still an environmentally friendly option as it is locally made from sustainably grown trees which are certified by schemes such as the Forest Stewardship Council®.

TISSUE

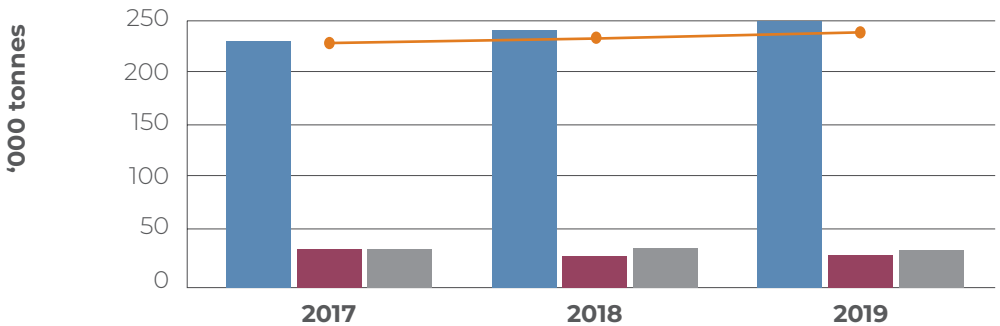
Domestic production was up by 3.7% to 248,000 tonnes while imports rose by 1.8% to just more than 30,000 tonnes. However, because exports declined by 5.7% to 35,000 tonnes, this led to growth in apparent consumption of 5%.

Stagnant consumer spending combined with lower exports leading to increased competition in the tissue sector in 2019. The current market is balanced, with consumer demand being matched by the production of tissue manufacturers that still have spare capacity.

Locally made tissue products include toilet tissue, facial tissue, industrial towelling and kitchen towelling as well as paper napkins.



TISSUE PRODUCTION, IMPORTS, EXPORTS AND APPARENT CONSUMPTION

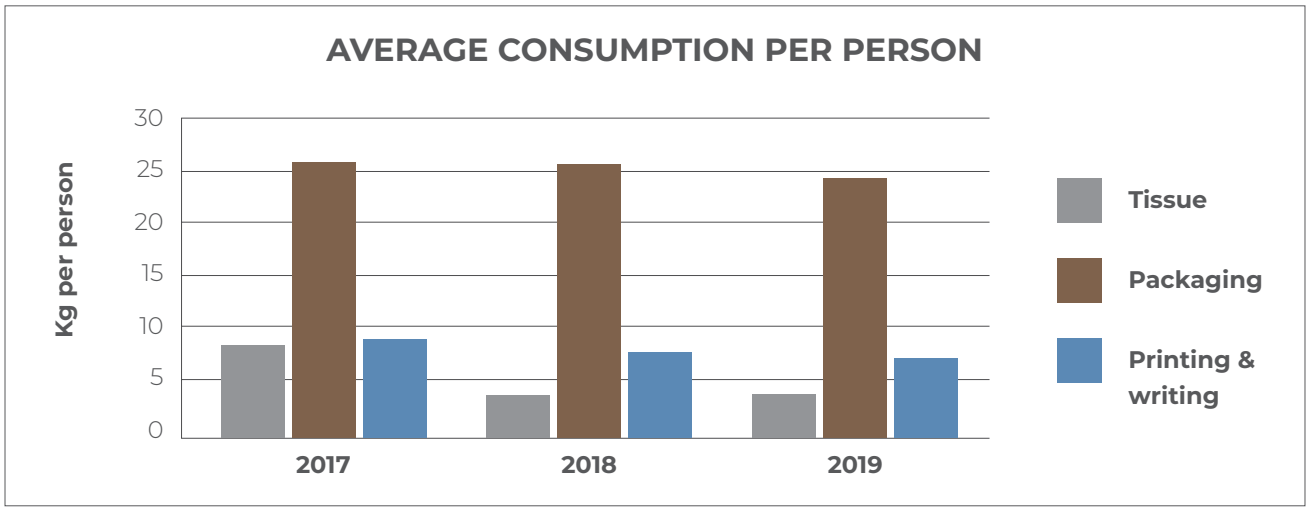


	2017	2018	2019
Production	229	239	248
Imports	35,8	29,6	30,1
Exports	36	37	35
Apparent consumption	228	232	243

Apparent consumption

When measuring South Africa's consumption of pulp and paper sector, we subtract export tonnages from total production tonnages. This figure is added to imported tonnages giving us 'apparent consumption'. This number doesn't consider how stock levels might have changed in warehouses. The means that smaller changes in apparent consumption might just be related to stock changes, rather than actual consumption.

Printing and writing grades may be showing signs of recovery from a long-term decline by virtue of an increase in apparent consumption. However, it is unlikely that this indicates a genuine increase in demand, but rather indicates an upward adjustment in stock levels. Tissue and packaging grades continue to reflect the current weak state of the economy.



People

Our industry produces everyday essentials and the products of the future. It takes a small army of people to make printing paper, tissue, packaging, pencils, poles and furniture. It's an exciting, evolving industry that produces far more than paper!

Forest products are brought to our homes and offices by a host of people: Botanists, foresters, harvesting operators, environmentalists. Pulp operators, paper machine operators. Chemical, mechanical and process engineers. Accountants, sales people, marketers and human resource personnel.

For this reason, career opportunities in the pulp and paper industry are limitless. It is an area in which PAMSA and its members have invested significantly, ensuring the students have access to relevant materials.

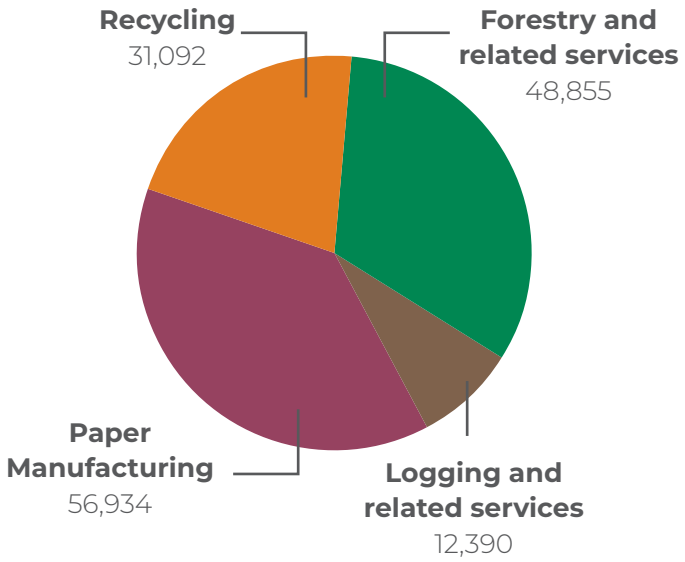
PAMSA has partnered with a number of tertiary institutions, namely Durban University of Technology and UNISA, as well as Ekurhuleni East and Umfolozi TVET colleges. These institutions offer pulp, paper and tissue related qualifications.

Through collaboration with the Fibre Processing and Manufacturing SETA, PAMSA has been able to invest resources into improving the quality of the courses offered these institutions.

Continuous professional development is vital in our sector. By working closely with our members, PAMSA develops curriculum and training material for full-time employees who want to expand their knowledge base of pulp and paper operations.

We pay tribute to the people of our sector, the people make products that make our lives better, our jobs easier and our world more sustainable.

EMPLOYMENT NUMBERS



Jobs within the manufacturing and forestry sectors are showing a decline while the recycling industry continues to show an increasing trend. This is reflected by consistent growth in recovery and recycling rates over the past few years.

MASTERS OF ENGINEERING BURSARY AND RESEARCH PROGRAMME

Through PAMSA's Process Research Unit, BSc chemical engineering students in their final year of study are able to take their studies further through PAMSA's bursary and research programme.

Awarded to a limited number of students annually, each bursary is valued at R130,000 per year for two years of full-time study towards a M.Eng. degree at participating universities, namely Pretoria, Stellenbosch, Wits and North West.

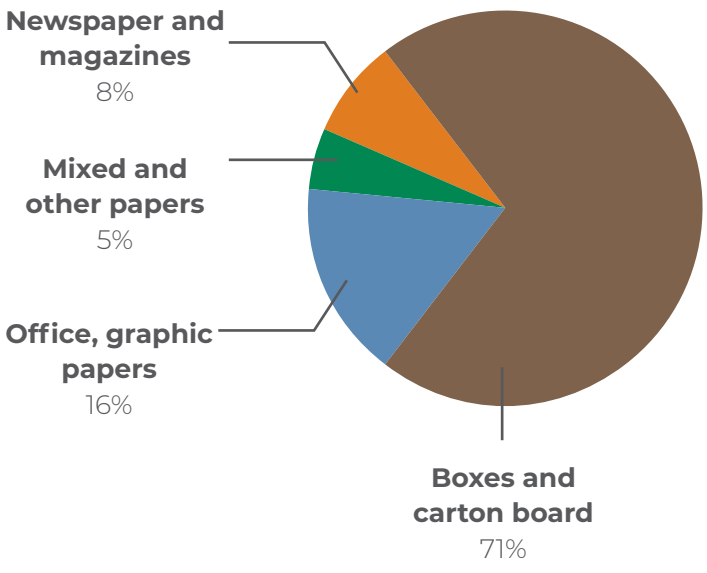
Successful candidates gain advanced skills during their post-graduate training in specialist fields such as wood science, chemical analysis, material and energy balances, process modelling, material flow analysis and separation techniques.

Paper recovery and recycling

In 2019, South Africa collected 68.5% of recoverable paper, amounting to 1,201 million tonnes. This was down from the 71.7% paper recovery rate in 2018. Contributing factors to a lower annual recovery rate:

- The lower 68.5% does not necessarily mean that consumers and industry are recovering less paper for recycling. There is often a lag between consumer or industrial use, recovery and recycling (manufacturing into new product). It means that companies may be holding stock of paper products and recovered paper for recycling. Furthermore, some traders may hold stock until better export opportunities arise.
- There was an increase in export sales of packaged agricultural and non-agricultural products which has, over the past few years, risen to 280,000 tonnes. This would suggest that less material has become available for domestic recycling hence the reduction in volumes.

RECOVERY BY PAPER TYPE



LIQUID BOARD PACKAGING IS RECYCLABLE

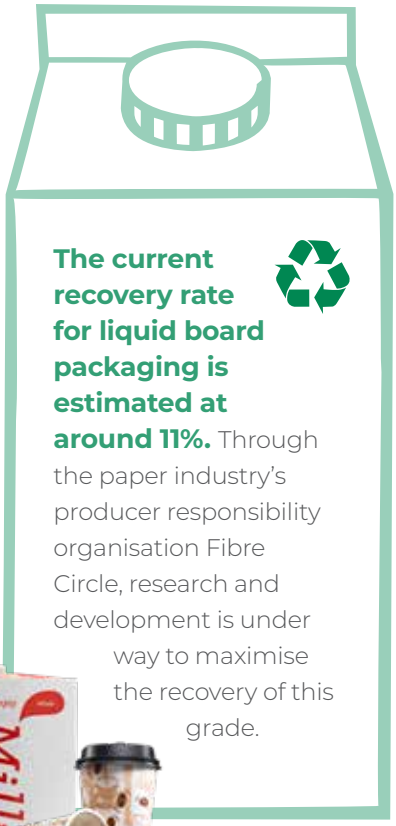
Beverage cartons and paper cups - classed as liquid board packaging - are made with virgin paperboard sourced from sustainably managed forests.

While cartons and cups are 100% recyclable, they require more specialised technology to repulp and separate the good quality, long paper fibres from the plastic and foil layers.

There are two paper mills in South Africa that have the technology to recycle liquid board packaging (LBP), and they both have the capacity to recycle all liquid cartons distributed in the local market.

For almost a decade, some LBP manufacturers have taken the lead to increase the collection and recycling of used beverage cartons. A lot has been achieved including the investment in recycling capacity, awareness and collection programmes. Collaborative efforts to recover and recycle more LBP products (milk and juice cartons, and paper cups and containers) are underway. PAMSA fully supports these initiatives and will be tracking in future.

Significant investment in awareness and collections infrastructure is required from both producers and brand owners to ensure that these products are collected efficiently and diverted from landfill.



The current recovery rate for liquid board packaging is estimated at around 11%. Through the paper industry's producer responsibility organisation Fibre Circle, research and development is under way to maximise the recovery of this grade.

IN 2019, 1.201 MILLION TONNES OF PAPER AND PAPER PACKAGING WERE RECOVERED FOR RECYCLING INTO NEW PRODUCTS.

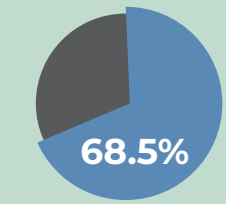
1442 Olympic sized swimming pools

219 Soccer fields

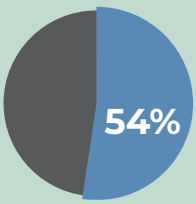
155 Rugby fields

1419km Paper bales, laid end to end, would mark the distance from Kempton Park to Cape Town.

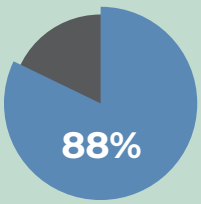
OR TAMBO



Paper recovery rate for 2019



Locally made paper products contain recycled fibre



Recovered paper is used in new paper products, in particular packaging and tissue.