2022
PRODUCTION AND RECYCLING SUMMARY REPORT

Full year 2022

PAPER
MANUFACTURERS ASSOCIATION OF SOUTH AFRICA (PAMSA)

BALANCING DISRUPTION AND RESILIENCE

If there is one sector that has had to deal with disruption, it is ours: the forest and forest products sector. Paper itself has caused and faced disruption for all 2,000 years of its history – from the days of parchment made from mulberry leaves or papyrus and the Gutenberg press to modern day biomaterials, paper is often overlooked as the mother of many inventions. Enter the digital era, and the disruption continues as ever more consumption of news and information happens online.

There is still a place for newspapers and magazines, albeit on a smaller scale. But paper is not only used as a printing material. Paper packages and protects countless goods - in transit, on the shelf and in our cupboards at home. As books, journals and even photo albums, paper preserves our thoughts and memories. As tissue it cleans and protects.

But there is even more to paper than meets the eye. Its precursor, cellulose, lignin and pulp, have found applications in several places as innovative, functional bio-products. Cellulose can be used to make textiles, smart phone screens, a filler in cosmetics and biomaterials that replace fossil fuel derivatives in countless applications.

It's exciting for our sector to be at the heart of the bioeconomy, exploring new ways to add sustainable value, contribute to the economy, protecting the environment on which we rely, and delivering products that we all use every day.

A REVIEW OF 2022

While newsprint volumes have continued to diminish year-on-year (10% down on 2021), there has been significant growth in other important areas. Printing and writing grades (office paper and glossy grades) are showing a fair recovery, recording a year-on-year growth performance of 15%.

Packaging grades are also regaining ground, showing a robust annualised growth in excess of 15%. This is heartening in the context of the stifled economic conditions. Tissue products have stabilised and recorded an increase of 1.4% over the previous 12 months.

The past few years' events affected numerous sectors from a pandemic to unrest and riots in July 2021 and heavy rainfall and floods in KwaZulu-Natal in April 2022. The latter has been labelled as the most catastrophic natural disaster yet recorded in KwaZulu-Natal, in terms of lives lost, homes and infrastructure damaged or destroyed, together with the associated economic impact. A number of our members who have mills in Durban were severely affected.

Coupled with interrupted electricity and water supply, these issues have resulted in some volatility in the pulp and paper market, and we are seeing the effects on paper consumption, collection and recycling.

Yet, we prove time and again that despite disruption, our sector remains resilient and tenacious.

Jane Molony
EXECUTIVE DIRECTOR
Paper Manufacturers Association of South Africa





Economic contribution

A positive pulp and paper trade inflow of R22.7 billion was somewhat offset by paper imports of R10.5 billion, giving an overall positive trade balance of R12.2 billion.

Credit: Sappi

R12.2 BILLION
CONTRIBUTION TO BALANCE OF TRADE

R22.7 BILLION
PULP EXPORTS

-R10.5 BILLION
PAPER AND BOARD IMPORTS

132 000
AVERAGE PEOPLE EMPLOYED IN THE PULP AND PAPER SECTOR
SOURCE: STATSSA

R45 BILLION
VALUE OF PAPER PRODUCTS MANUFACTURED

BALANCE OF TRADE EXPLAINED

Balance of trade is calculated by subtracting Rand value of products imported from Rand value of products exported. A negative amount, in the case of paper and board, indicates that more product was imported, thus more money exited South Africa while a positive amount indicates that more was exported than imported, representing earnings for the country.

Production Summary

3.7 million
PRODUCTION TONNES
TOTAL PAPER AND PULP

1.3 million
IMPORT TONNES
TOTAL PAPER AND PULP

1.8 million
EXPORT TONNES
TOTAL PAPER AND PULP

TONNES OF PRODUCT PRODUCED	2020	2021	2022
Pulp	1 721 000	1 591 000	1 682 000
Tissue	227 000	266 000	271 000
Printing and writing	322 000	387 000	339 000
Packaging papers	1 343 000	1 342 000	1 453 000

PRINTING AND WRITING SUB-CATEGORIES	2020	2021	2022
Uncoated Paper	265 000	307 000	264 000
Newsprint and Telephone Directory Paper	57 000	80 000	75 000

Coated paper and super-calendered mechanical and light-weight coated paper is no longer produced locally.

PACKAGING PAPERS SUB-CATEGORIES	2020	2021	2022
Linerboard	705 000	675 000	730 000
Fluting	494 000	476 000	533 000
Kraft wrapping and packaging	7 000	13 000	16 000
Folding boxboard	71 000	94 000	94 000
Other kraft paperboard and fibreboard	66 000	84 000	80 000

PULP

1.68 million
PRODUCTION TONNES

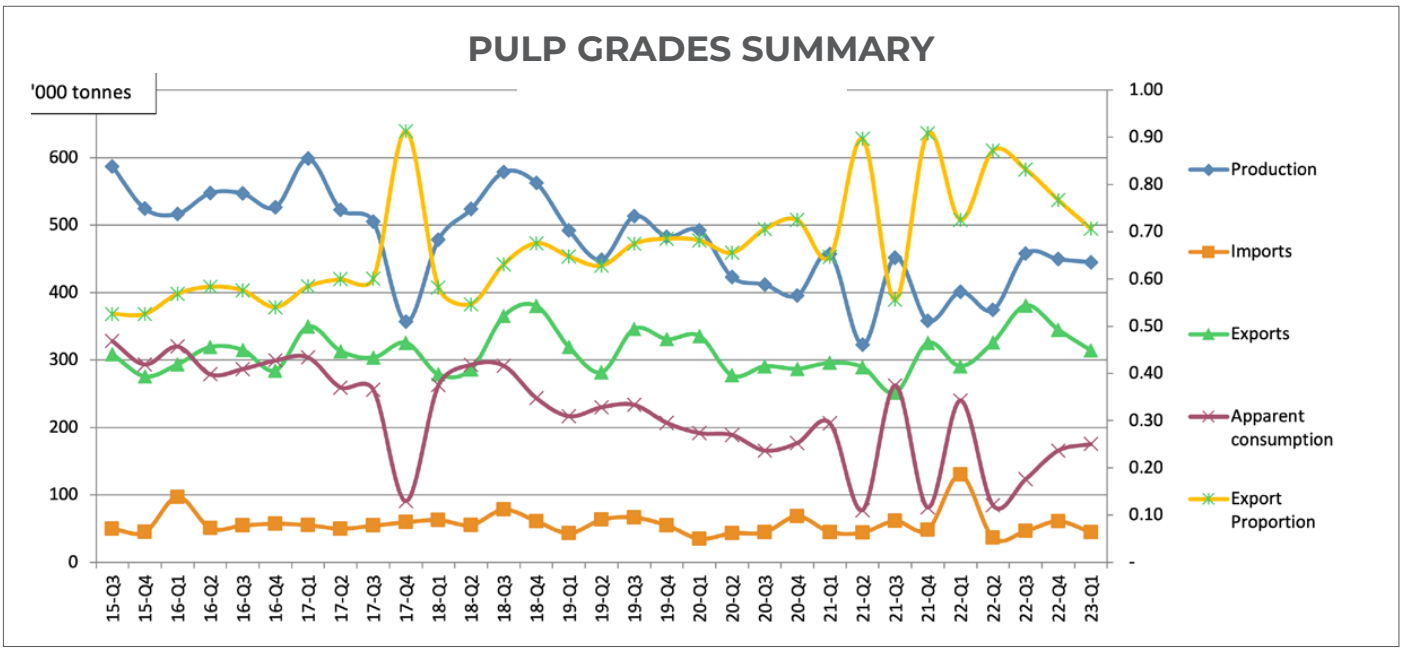
274 000
IMPORT TONNES

1.34 million
EXPORT TONNES

613 000
APPARENT CONSUMPTION

Pulp production, with the exception of dissolving pulp, continued on a gradual downward trajectory, while volumes of imported pulp have risen strongly along with the local production of most paper grades (except newsprint).

While imports showed a year-on-year increase of 4%, there remains a significant 23% reduction on the amount of pulp that entered the country in 2018. Dissolving pulp production showed substantial growth in 2022, rising 45% to R18 billion. Of note were the exports of dissolving and hardwood pulps of which sales rose by 15% and 14% respectively.



MECHANICAL PULP

2021	2022
72 000 TONNES	65 000 TONNES

Mechanical pulp is largely used in newsprint, tissue and paperboard, as there are no coated grades made locally.

CHEMICAL PULP

2021	2022
566 000 TONNES	653 000 TONNES

Chemical pulp is used in white paper grades such as A4 copy paper and whitetop liner (the white printable layer on paper packaging)

SEMI-CHEMICAL PULP

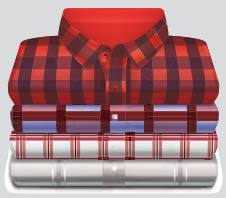
2021	2022
188 000 TONNES	70 000 TONNES

Semi-chemical pulp is used to make corrugated paperboard, cardboard roll cores, and containers

DISSOLVING WOOD PULP

2021	2022
765 000 TONNES	894 000 TONNES

Dissolving wood pulp is used to make man-made cellulosic textile fibres (viscose)



PRINTING AND WRITING GRADES

Newsprint, office papers and coated grades (used for magazines, brochures, and marketing materials)

339 000
PRODUCTION TONNES

599 000
IMPORT TONNES

115 000
EXPORT TONNES

823 000
APPARENT CONSUMPTION

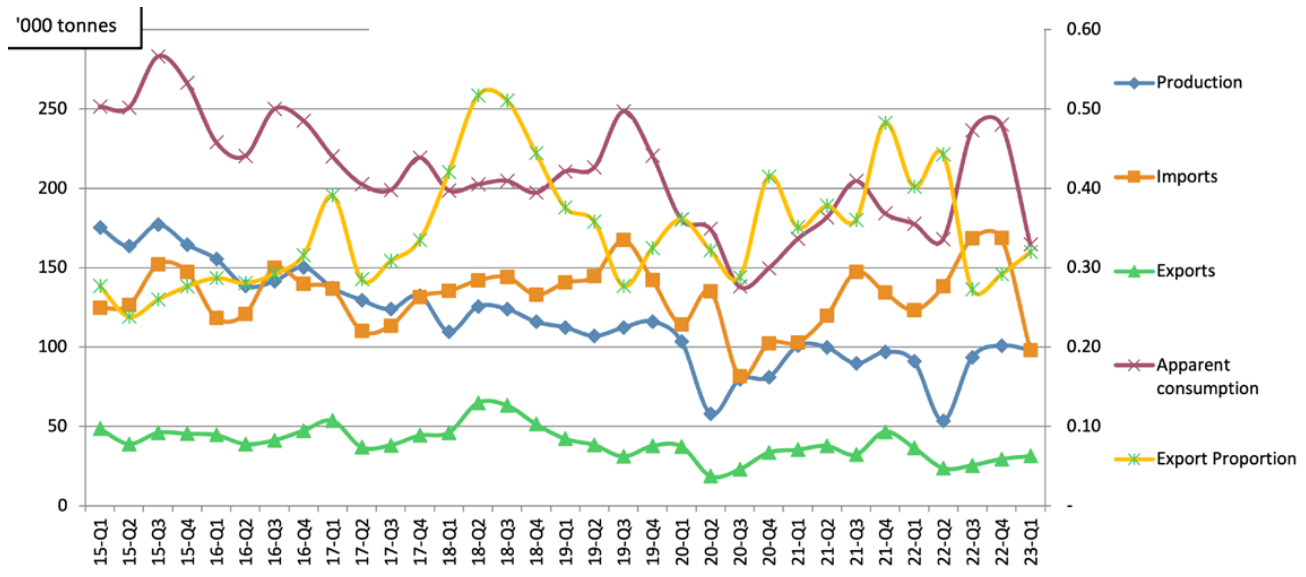
The apparent consumption of these product categories increased by 7% in 2022, however there are substantial variances in the offtake between the different product categories.

Year on year, the decline in newsprint continues (10%) while office and glossy papers showed some recovery by around 15%.

Imports of coated grades rose by 20% to 560,000 tonnes, substantially higher than 2021.

Overall however domestic production of office and newsprint grades remains under pressure, declining by around 12%. While the declining consumption trend appears to be abating, the long term trend of declining local production appears to be continuing.

PRINTING AND WRITING SUMMARY



TISSUE GRADES

271 000
PRODUCTION TONNES

22 000
IMPORT TONNES

45 000
EXPORT TONNES

248 000
APPARENT CONSUMPTION

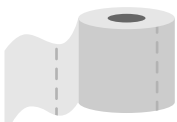
Production increased marginally during the year while local consumption increased by 4.3%, including imported speciality products. Encouragingly, exports remained relatively buoyant and actually grew slightly in 2022.

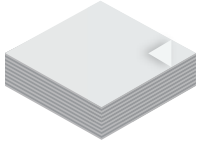
TISSUE GRADES SUMMARY

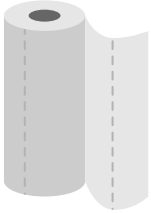
NOTE: These figures include estimates of independent (non-PAMSA member) tissue mills based on actual hardwood pulp consumption and estimated office paper recycling and utilisation figures.

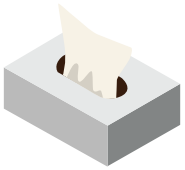
Types of tissue

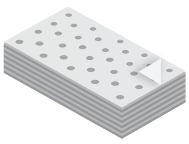
Tissue paper products, which include toilet paper, facial tissue, napkins, and paper towel for kitchen and industrial use play an important role in modern life. They contribute to improved hygiene, comfort, and convenience in our society.


Toilet paper


Napkins


Paper towels


Facial tissue


Decorative tissue

Credit: Adobe

PACKAGING PAPER GRADES

Corrugated case material, white top liner and smaller volume kraft grades

1.45 million
PRODUCTION TONNES

436 000
IMPORT TONNES

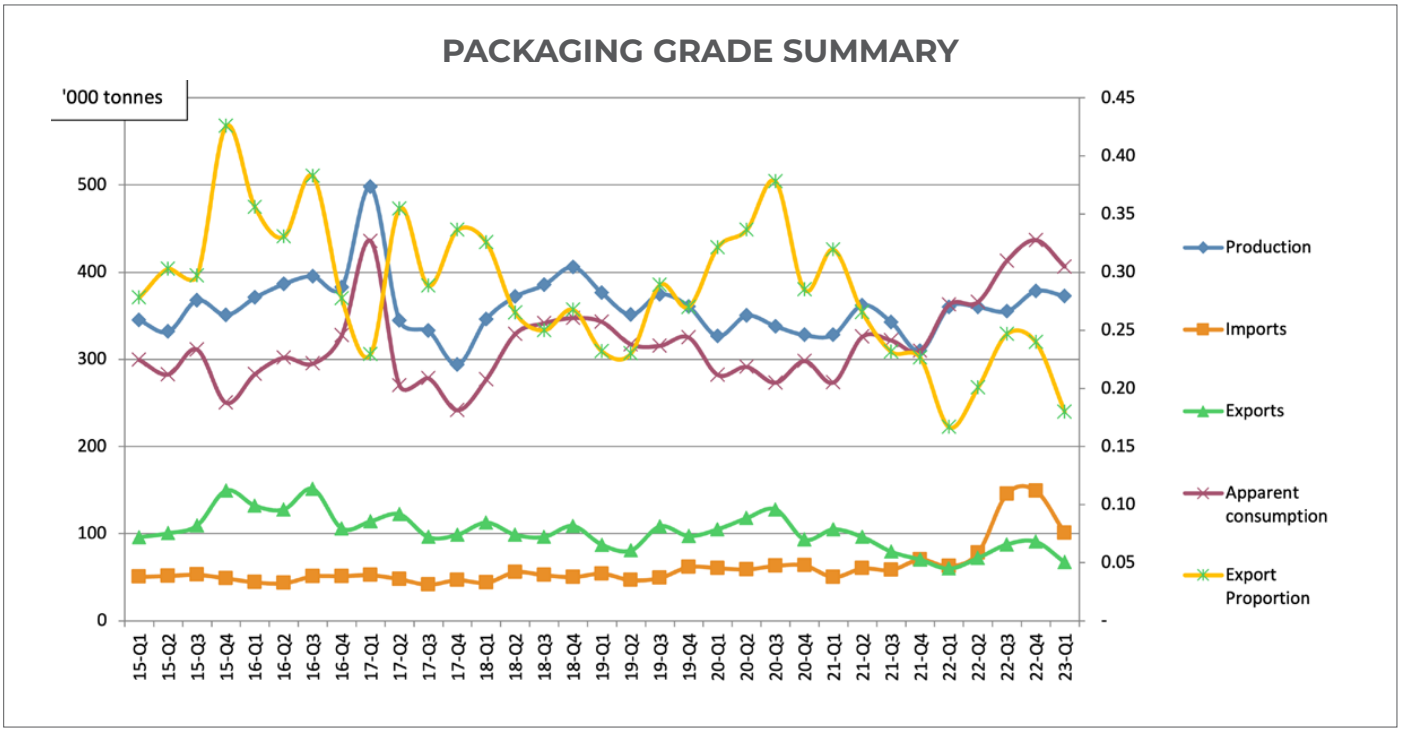
311 000
EXPORT TONNES

1.57 million
APPARENT CONSUMPTION

While the past year was an exceptionally difficult period for the local economy, the consumption of paper-based packaging increased by around 15% during this period.

Opinions vary as to whether this was a reaction to a Covid-19 constrained demand or part of a cyclical trend. Nonetheless, local production of board and fluting rose by 27% while imports of the same items rose by as much as 70%. The switch from plastic substrates to paper-based materials, especially in the retail sector, is also a factor.

Export numbers for paper-based packaging were down, but this may have been driven by the exceptionally strong domestic demand. Overall, the paper and packaging sector appears to be in good shape.



Primary packaging is the packaging that contains the product. It is usually in direct contact with the usable or consumable product.

Secondary paper packaging includes boxes encasing specific quantities of primary packages.

Tertiary (or transport) paper packaging includes large corrugated containers for handling, storing and warehousing.

PAPER COLLECTION AND RECYCLING

61%
Paper recycling rate for 2022

South Africa's paper recycling rate represents the volumes of waste paper collected and thus diverted from landfill. It is calculated as a percentage of the waste paper received by South African paper recycling mills out of the volumes available for collection and recycling.

2 062 551
TONNES OF WASTE PAPER AVAILABLE FOR COLLECTION AND RECYCLING*

1 251 319
TONNES OF WASTE PAPER COLLECTED AND DIVERTED FROM LANDFILL

1 146 949
TONNES USED TO MAKE NEW PAPER PACKAGING & TISSUE

52 163
TONNES OF IMPORTED WASTE PAPER

156 533
TONNES OF EXPORTED WASTE PAPER

More paper and paper packaging collected year on year

Over the last two or so years paper consumption has increased, largely driven by paper packaging demand and the recovery from the Covid pandemic, the 2021 riots and the 2022 floods. In some cases, the annual increase has been as much as 25% with the largest category being packaging papers. The more volume that enters the market, the more there is available for collection and recycling.

In 2022, we recorded a 60.7% recycling rate, based on 1 251 319 tonnes collected from an available 2 062 551 tonnes. This means the industry is collecting more paper and paper packaging than the volumes going to landfill. Through the recycling in excess of 1.2 million tonnes, the sector saved 3.8 million cubic metres of landfill space in 2022.

The 2022 tonnage is up from 1.2 million tonnes in 2021 and 1.1 million tonnes in 2020. The five year average for the amount diverted from landfill is R1.2 million tonnes. There is also a significant increase in recycled content used in local paper production.

Not all waste paper can be collected and recycled. For this reason, the volume of waste paper available for collection and recycling is calculated by excluding certain volumes from the pool available:

- Paper types unavailable for collection (toilet paper, cigarette papers)
- Exports (corrugated boxes that leave South African shores along with the fruit, wine and other exports)

While, secondary imports of corrugated boxes are accounted for, it is not possible to measure volumes of products that have been archived, stored in homes, and used in longer life paper products such as books.

Paper is also lost to the environment due to littering, illegal dumping, and poor waste management practices. Some sources show that about 16% of paper and paper packaging is consumed in rural areas where no waste services are available.

LOCAL PAPER PRODUCTION	2022	2021	2020	2019	2018
Apparent consumption of paper and paper packaging in SA	2 453 647	2 211 475	1 992 424	2 436 558	2 344 675
Available for collection	2 062 551	1 802 746	1 577 398	1 754 487	1 793 026
Diverted from landfill and recycled	1 251 319	1 149 346	1 101 356	1 201 909	1 285 250

RECYCLING RATES	2022	2021	2020
% of recycled paper fibre used to make packaging paper and tissue in SA	58.4%	53.0%	55.1%
Paper recycling rate (paper diverted from landfill as a % of available paper)	60.7%	63.8%	69.8%

Why is SA's paper recycling lower year on year?

It is important to note that recycling statistics should not be viewed in isolation year on year. Recycling is a flow-process, across a real economy, where there are many trends and volatilities all operating at the same time.

The volumes that are collected and recycled will be affected by how quickly the grades pass through the market, from consumption to collection, through to processing. Paper grades entering the economy take six to nine months to "move through" the supply chain - from manufacturing to consumer, and then into the recycling chain. This entails collection then repulping and finally recycling into new paper products.

In turn, this affects the recycling rate calculations, in that there can be a high volume placed on the market, and with the lag in products flowing through the market, there may be "lower" collections in a same period of relatively high consumption. This then appears as a lower recycling rate.

This is the case with the 2022 recycling rate. This does not mean that South Africa is recycling less paper. In volume terms, the tonnages for 2022 are higher than previous years.

Over the longer term however, collections will increase as more product is placed on the market. The reverse can also occur when less volumes are placed in the market, when collections are high from a high consumption period.

As a sector, and in a collaboration with extended producer responsibility organisations, awareness creation still forms part of our efforts to ensure that citizens separate their waste at source, ensuring a sustainable supply of recyclable fibre for our member's operations.

How we calculate consumption, paper available for recovery and recycling and the paper recycling rate:

Available paper = Apparent consumption less papers unavailable for collection (toilet paper, cigarette papers). We also exclude exports (corrugated boxes that leave our shores along with the fruit, wine and other exports) from paper available for collection and recycling. The paper recycling rate is calculated as a percentage by dividing the tonnes received at our mills divided by the tonnes available for collection.

$$\frac{\text{Tonnes of waste paper received by our mills}}{\text{Tonnes of waste paper available for collection and recycling}} = \frac{\textbf{1 251 319 tonnes}}{\textbf{2 062 551 tonnes}} = \textbf{60.7\% paper recycling rate}$$

The waste paper diverted from landfill in 2022 is roughly equivalent to:

38 MILLION
cubic metres of landfill space saved

28 553
mature adult African elephants

161
Rugby fields

228
Soccer fields

1502
Olympic sized swimming pools

21
times around the Earth's equator

PAPER PRODUCTION,COLLECTION AND RECYCLING STATISTICS

SOUTH AFRICA

2022

South Africa's paper recycling rate represents the volumes of waste paper collected and thus diverted from landfill. It is calculated as a percentage of the waste paper received by South African paper recycling mills out of the volumes available for collection and recycling.

However, not all waste paper can be collected and recycled. For this reason, the volume of waste paper available for collection and recycling is calculated as follows: Apparent consumption less paper types unavailable for collection (toilet paper, cigarette papers). We also exclude exports (corrugated boxes that leave our shores along with the fruit, wine and other exports) from the waste paper available for collection and recycling. Secondary imports and exports of corrugated boxes are accounted for in the volumes available for collection.

(All values in metric tonnes)

PRODUCTION AND CONSUMPTION

	Production	Imports	Exports	Consumption
Newsprint	75 197	33 380	20 626	87 951
Printing/writing	263 951	563 693	124 578	703 066
Corrugated materials/container board	1 256 725	381 802	314 987	1323 540
Other wrapping papers	16 021			16 021
Tissue	270 677	24 237	42 508	252 405
Other paper & board	80 402	27 770	37 509	70 663
Total	**1 962 973**	**1 030 881**	**540 208**	**2 453 647**

WASTE PAPER AVAILABLE FOR COLLECTION AND RECYCLING

Consumption of paper, packaging and tissue in SA	2 453 647
Adjusted for net trade of secondary corrugated packaging (imports minus exports)	-138 691
Less paper that cannot be collected [1]	-252 405
Waste paper available for collection and recycling	**2 062 551**

60.7%

Paper recycling rate for 2022

5 YEAR AVERAGE 67%

DIVERTED FROM LANDFILL

	Paper received by recycling mills	Waste paper imports	Waste paper exports	Used in new packaging paper & tissue
Newspapers	94 963	332	51 938	43 358
Magazines & coated papers	32 046	66	10 242	21 871
Corrugated, solid cases, kraft papers	952 717	44 304	62 707	934 314
Office papers	148 351	281	18 480	130 153
Mixed and other papers	23 241	7179	13 167	17 254
Total	**1 251 319**	**52 163**	**156 533**	**1 146 949**

RECYCLING RATES

	2022	2021	2020
% of recycled paper fibre used to make packaging paper and tissue in SA	**58.4%**	53.0%	55.1%
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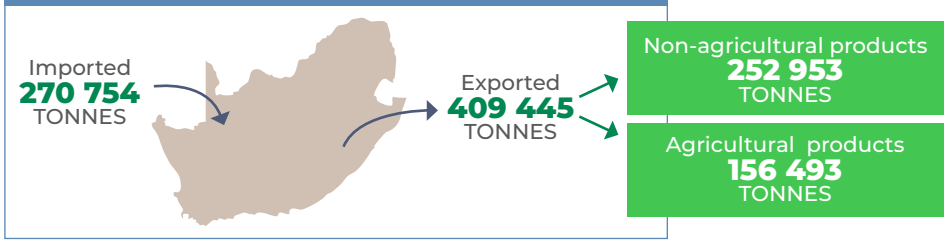
SECONDARY CORRUGATED CASE PACKAGING



EXPLANATORY NOTES

[1] Papers unsuitable for collection and recycling include tissue products (such as toilet paper) and cigarette papers due to their function. Tissue paper dissolves and degrades, and cigarette paper is incinerated on consumption making them unavailable for collection and recycling.

Why wood, pulp and paper are the perfect fit in a low-carbon, circular bioeconomy

The forest products sector is uniquely positioned to support climate change mitigation and a circular bioeconomy. Simply put, the use of harvested wood products (HWPs) in the form of timber, pulp, paper and paper packaging is a good thing for our planet, asserts the Paper Manufacturers Association of South Africa (PAMSA).

The forest sector involves the farming of trees, pulp and paper manufacturing, the collection and recycling of paper fibre, and the beneficiation of process waste.

However, knowledge gaps and misunderstanding of the role of forests and forest products still exist. While many people recognise that wood and paper are sustainable materials and that we should be doing more to use them, they also argue that all types of trees – regardless of their type and purpose – should be kept in the ground. This widely held belief perpetuates the myth that deforestation is caused by wood and paper production.

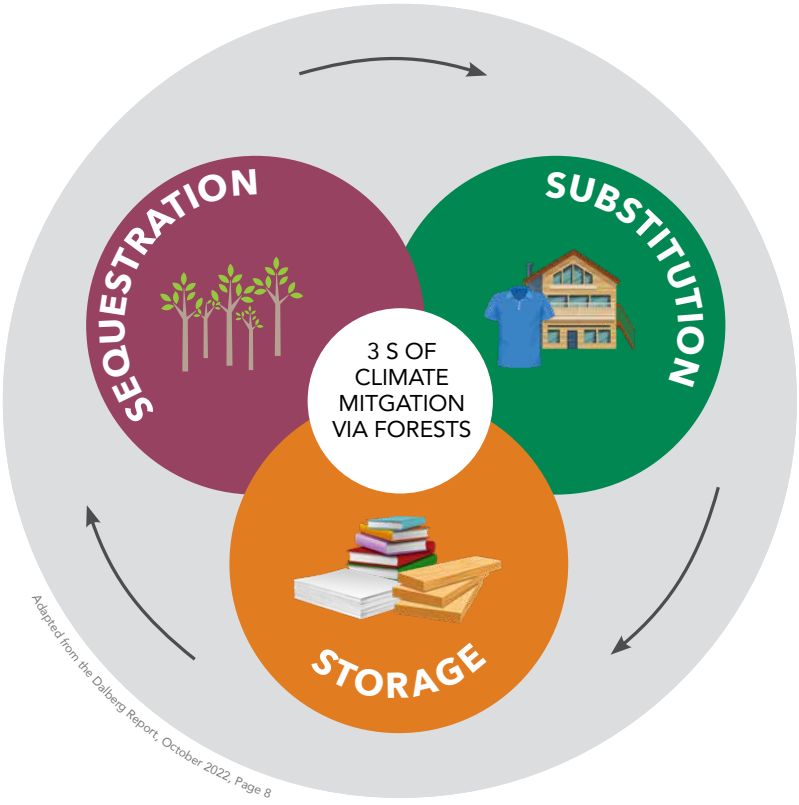
A report by Dalberg – *The growing role of forest products in climate change mitigation* – launched at COP27 in Egypt last year, highlights the 3S Framework of Forests and HWPs as a key driver for a climate-resilient planet and green economic growth: carbon sequestration by trees in managed forests, carbon storage in HWPs and substitution by timber and woodfibre-based products.

Sustainable forest management lies at the root of a climate positive future. Through photosynthesis, trees remove carbon dioxide from the atmosphere (sequestration) and convert it into food for growth. They keep the carbon stored in their fibres and give us back the oxygen.

Only a small percentage of mature Eucalyptus and pine trees are harvested annually with new trees planted in their place, ensuring a sustainable supply of wood and increased carbon uptake as younger trees take up carbon quicker than their older counterparts.

Modern forest management works in tandem with wetlands, adjacent indigenous landscapes, and high conservation value areas, with stringent monitoring of impacts on water, soil and biodiversity.

Harvesting residues are left in-situ as mulch. Bark, limbs, and leaves offer sustenance and refuge for creatures that aid in the decomposition of organic matter, which in turn attracts birds and other foragers.



SEQUESTRATION *takes place during photosynthesis. Trees absorb carbon dioxide (CO_2) for growth, storing the carbon and releasing the oxygen. Carbon then accumulates in the form of biomass, deadwood, organic litter and soils.*

SUBSTITUTION *occurs when wood-based products replace carbon-intensive materials. To keep the goal of limiting warming to 1.5°C in play, countries need to use more timber in construction, more wood-based fibre in packaging, and more sustainably sourced cellulose in a vast range of products, from biofuels to clothing to car parts and even pharmaceuticals.*

STORAGE *is maintained when trees are harvested, and wood products become a pool of stored carbon. With half of the dry weight of timber as carbon, the carbon storage potential in long-life wood products and reductions in emissions from the use of wood products is significant.*

RENEWABILITY THROUGH REPLANTING

South Africa has 850 million trees growing on more than 676 000 hectares reserved for pulp and papermaking. Less than 10% of this total area is harvested during any year, and the same area is replanted with new trees – saplings – often at a ratio of two trees for each one harvested. Indigenous trees are never used for industrial purposes.

The recycling of office paper, magazines, cereal boxes, cardboard boxes, newspapers and the like not only diverts useful fibre from landfill, it also keeps the carbon locked up for longer.

Wood – when broken down into its central components of cellulose, hemi-cellulose and lignin – can be used to produce a range of substances that go into the manufacture of common household products and innovative substitutes for fossil-fuel based products.

Disinfecting wipes, bath towels, bed linen and clothing are often made of viscose, produced from the wood component, cellulose, because of its softness and high absorbency. Your home's walls may be coated with paint containing hydroxyethyl cellulose (HEC), which helps to prevent splatter. HEC is also a common ingredient in cosmetics, adhesives, and detergents. Cellulose triacetate is used in the manufacture of laptop LCD screens as a polarising film that provides exceptional optical clarity.

Lignosulphonate, a by-product of the pulping process, can be used as a dust suppressant and in aiding the flow and water requirement of concrete.

When we acknowledge that forests and their products have a role to play in mitigating climate change, we can see the bigger picture.

PLAY YOUR PART

- ☑ Challenge the long-held belief that the use of paper 'kills' trees. Trees are farmed sustainably for paper production.
- ☑ Use wood, pulp and paper products that are certified and responsibly produced.
- ☑ Separate your paper and paper packaging from other recyclables, and non-recyclable and wet waste.

WOOD, PULP AND PAPER.

A perfect fit for the circular economy.

PAPER
MANUFACTURERS ASSOCIATION OF SOUTH AFRICA (PAMSA)

Choose products made from sustainably farmed wood.

“The paperless society is about as plausible as the paperless bathroom.”

JESSE SHERA, *Library Journal, 1982*

About PAMSA

The Paper Manufacturers Association of South Africa (PAMSA) lives and breathes all things paper. We look after the education, environment, research and recycling interests of the pulp and paper sector in South Africa.

Watch our video

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