VIETNAM PULP AND PAPER ASSOCIATION

VIETNAM'S PAPER INDUSTRY

OPPORTUNITIES AND CHALLENGES

TABLE CONTENT

1. *General Context;*
2. *Overview of Vietnam's Paper Industry;*
3. *Dual Transformation in the Paper Sector;*
4. *Forecast: Opportunities and Challenges for Vietnam's Paper Industry.*

GENERAL CONTEXT

FROM THE VUCA TO THE BANI

VUCA

(Cold War Era)

- **V**olatility
- **U**ncertainty
- **C**omplexity
- **A**mbiguity

VUCA: can predict and control any part

BANI

(proposed by American futurist Jamais Cascio)

- **B**rittle
- **A**nxious
- **N**onlinear
- **I**ncomprehensible

BANI: not only unpredictable, but also fragile and hard to understand

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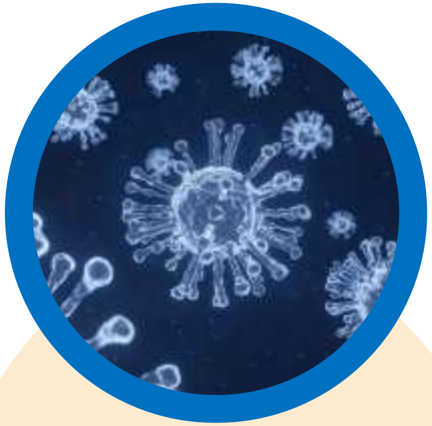
THE PORTRAIT OF THE BANI-WORLD

Defining Shifts in Today's Unstable Global Landscape



POST-PANDEMIC COVID-19

Supply chain disruption and rising global costs

REGIONAL TENSIONS

- Russia – Ukraine
- Israel – Iran
- Thailand- Campuchia

"AMERICA FIRST" POLICY

Increasing protectionism, withdrawing from global commitments.

CHINA RISING STRONGLY

Competition in Geopolitics – Technology - Energy

The BANI world is not only brittle, but also non-linear and cannot be predicted by old rules.

THE PORTRAIT OF THE BANI-WORLD

Newly Emerging Uncertain Factors:

THE GLOBAL AI WAVE

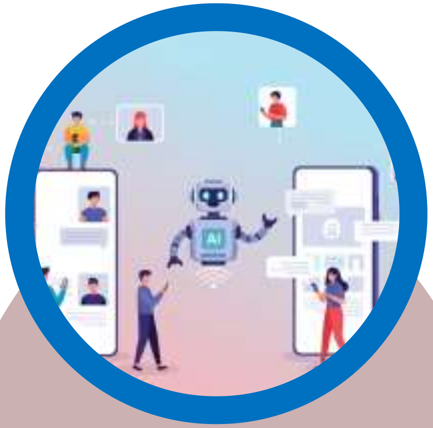
Extreme natural disasters, pandemics, and rising sea levels

CLIMATE CHANGE

Extreme natural disasters, pandemics, and rising sea levels (Vietnam's Recent Experience)

RISING INEQUALITY

Between large enterprises and SMEs, between developed and developing countries



AI-DRIVEN MISINFORMATION

Misinformation, Social Polarization, and Trust Crisis

Businesses must invest in innovation amidst a turbulent landscape and continuous pressures.

FRAGILE LONG-TERM STRATEGY IN A BANI WORLD

- BANI = nonlinear, unpredictable, and incomprehensible shocks;
- ***The 5 year plan*** (very common in Vietnam) can easily become a '**dangerous legacy**,' requiring leaders to act as 'Strategic Architects;
- Enterprises need to transition to the **Agile model :**

→ **Break Down Goals - Rapid Experimentation - Continuous Measurement - Flexible Pivoting;**

- However, enterprises must ***maintain their vision*** and ***core values***.

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Indicator	2022	2023	2024	2025	
				1-3	4-6
Real GDP (Percentage Change)	8,02%	5,05%	**7,09%**	6,93%	7,96%
Industrial Production Index (IIP)	7,8%	14,8%	**8,4%**	7,8%	9,2%
Wholesale Price Index (WPI)	10,2%	9,6%	**8,8%**	8,8%	7,03
Consumer Price Index (CPI)	3,15%	3,25%	**3,66%**	3,22%	3,31%
Balance of Trade (BOT)					
Imports	7,8%	(9,2%)	**16,7%**	17,0%	18,8%
Exports	8,4%	(4,6%)	**14,3%**	10,6%	18,0%
Unemployment Rate (%)	2,23%	2,28	**2,24**	2,20%	2,24%
Population (Million)	99,46	100,3	**101,12**	101,38	101,6

- **Vietnam's GDP is forecast to reach over US$510 billion in 2025, ranking 32nd globally and 4th in the ASEAN region..**
- **HSBC has raised its Vietnam GDP growth forecast for 2025 to 7.9% (from the previous forecast of 6.6%).**
- **Experts forecast Vietnam’s GDP growth for 2025 to be between 8.2% and 8.5%.**

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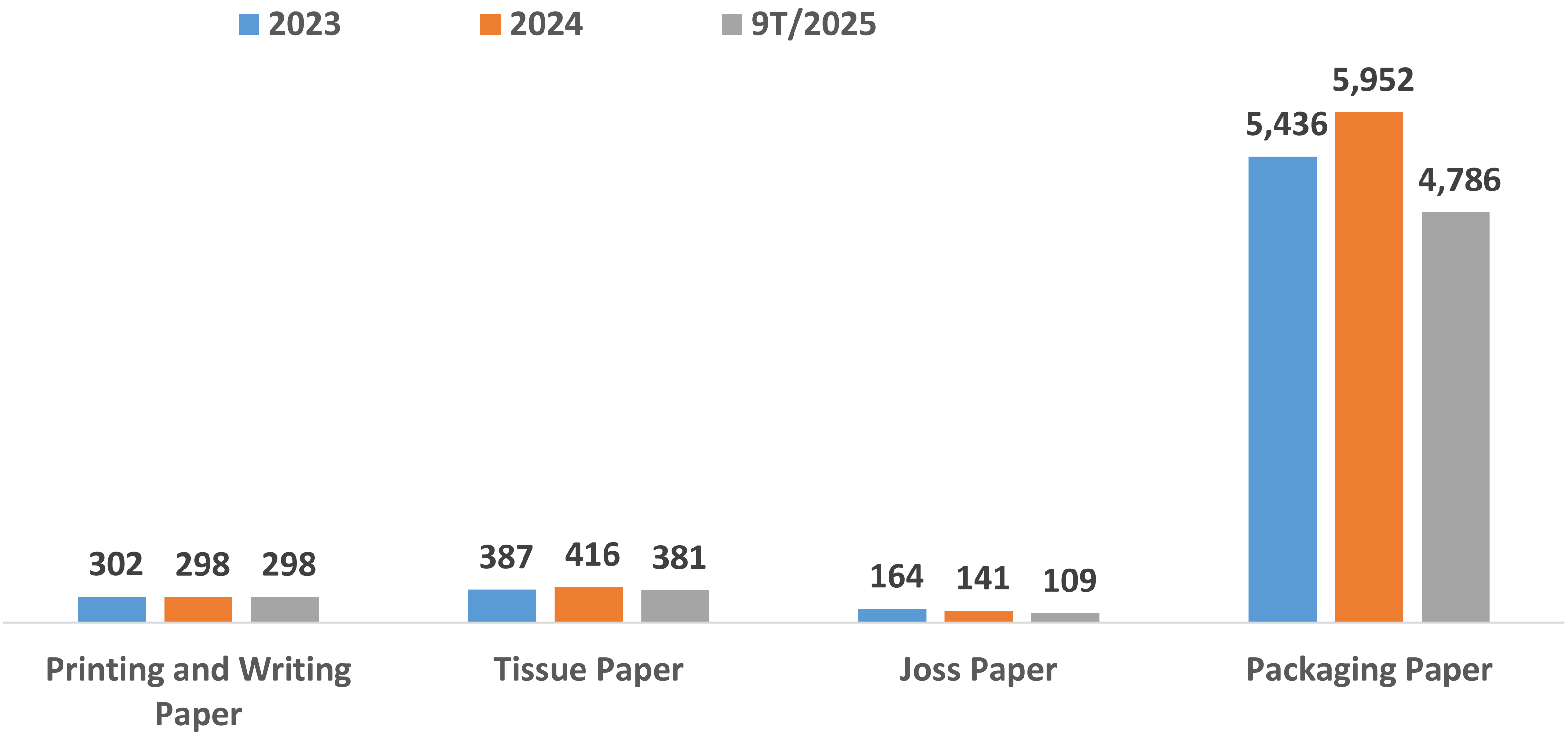
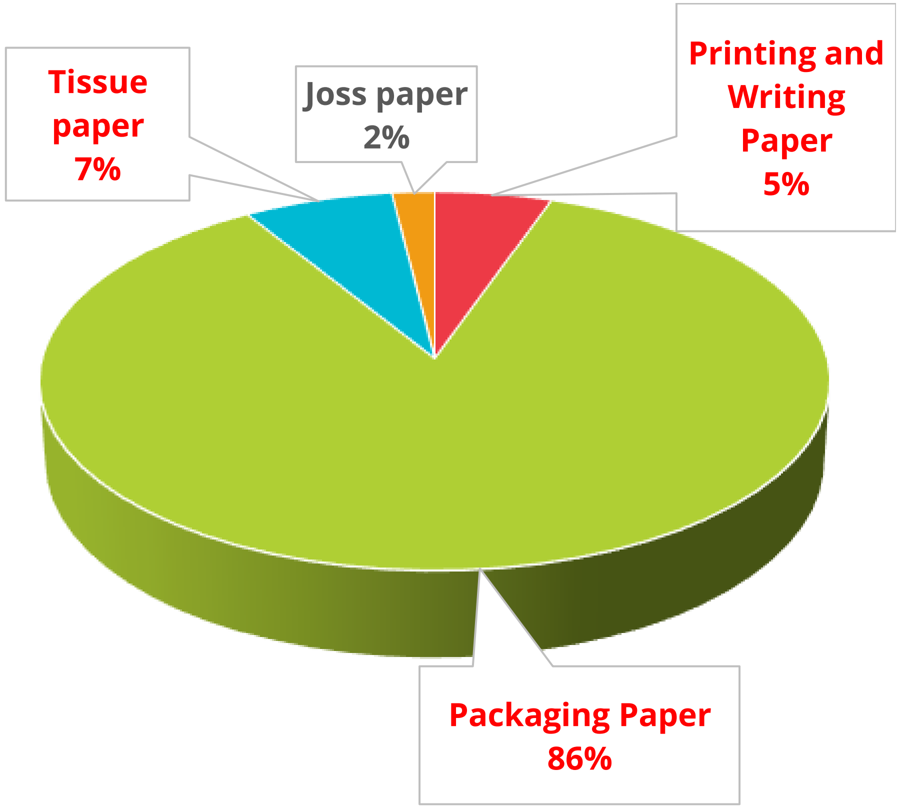
OVERVIEW

OF THE VIETNAM PAPER INDUSTRY

Paper Production by 2025 (Unit: 1,000 tons)



Production Structure 9M/2025



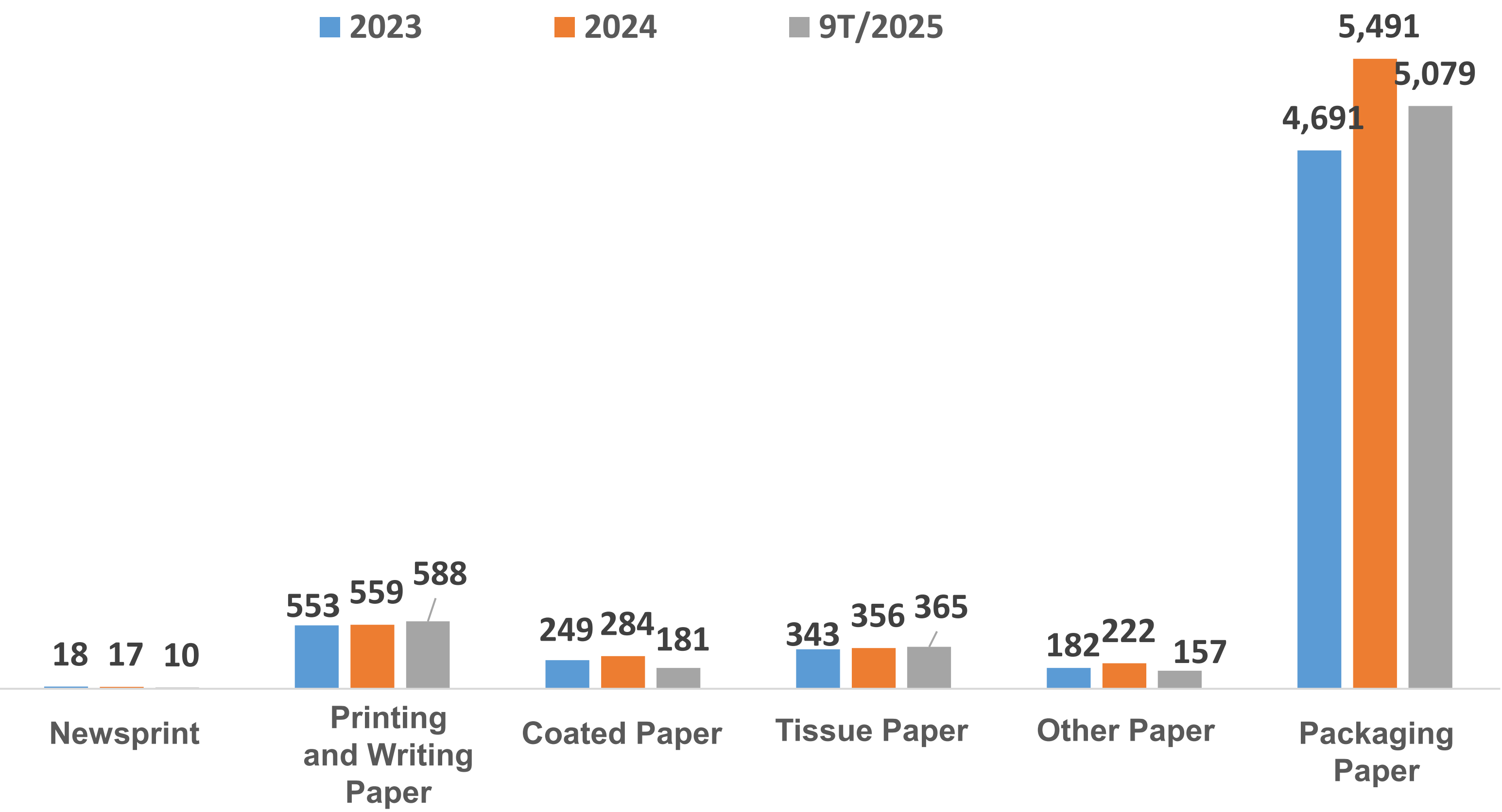
<u>Production</u>:

+ In the first 9 months of 2025: Total production reached 5.67 million tonnes, decrease by 2.8% year-on-year. Of this, packaging paper reached 4.786 million tonnes and decreasing by 2.7%, printing and writing paper reached 298 thousand tonnes and decreasing by 5.1%, tissue paper reached 381 thousand tonnes, showing an increase of 5.6%.

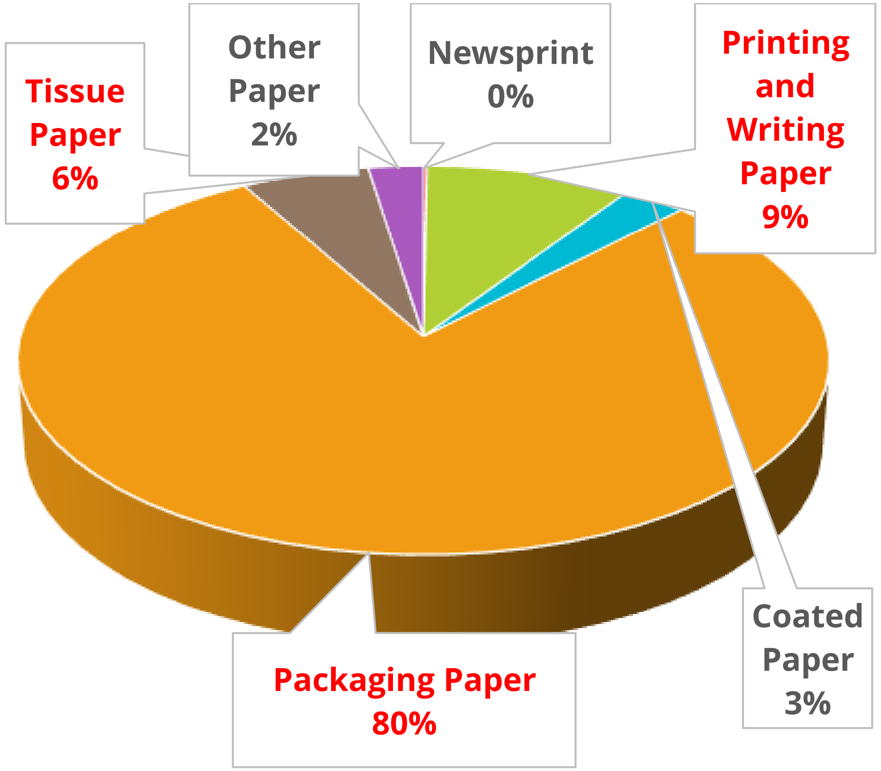
Period 2023–2024: Total production increased by 8.2% per year. Of this, packaging paper grew by 9.5% per year, tissue paper by 7.5% per year, while printing and writing paper declined by 1.3% per year.

➡ **Production in 2025 declined as more than 200 enterprises (with a combined production capacity of 2 million tons of paper per year) in the former Bac Ninh province were suspended due to environmental and fire safety violations**

Vietnam's Paper Consumption by 2025 (Unit: 1,000 tonnes)



Consumption Structure 9M/2025

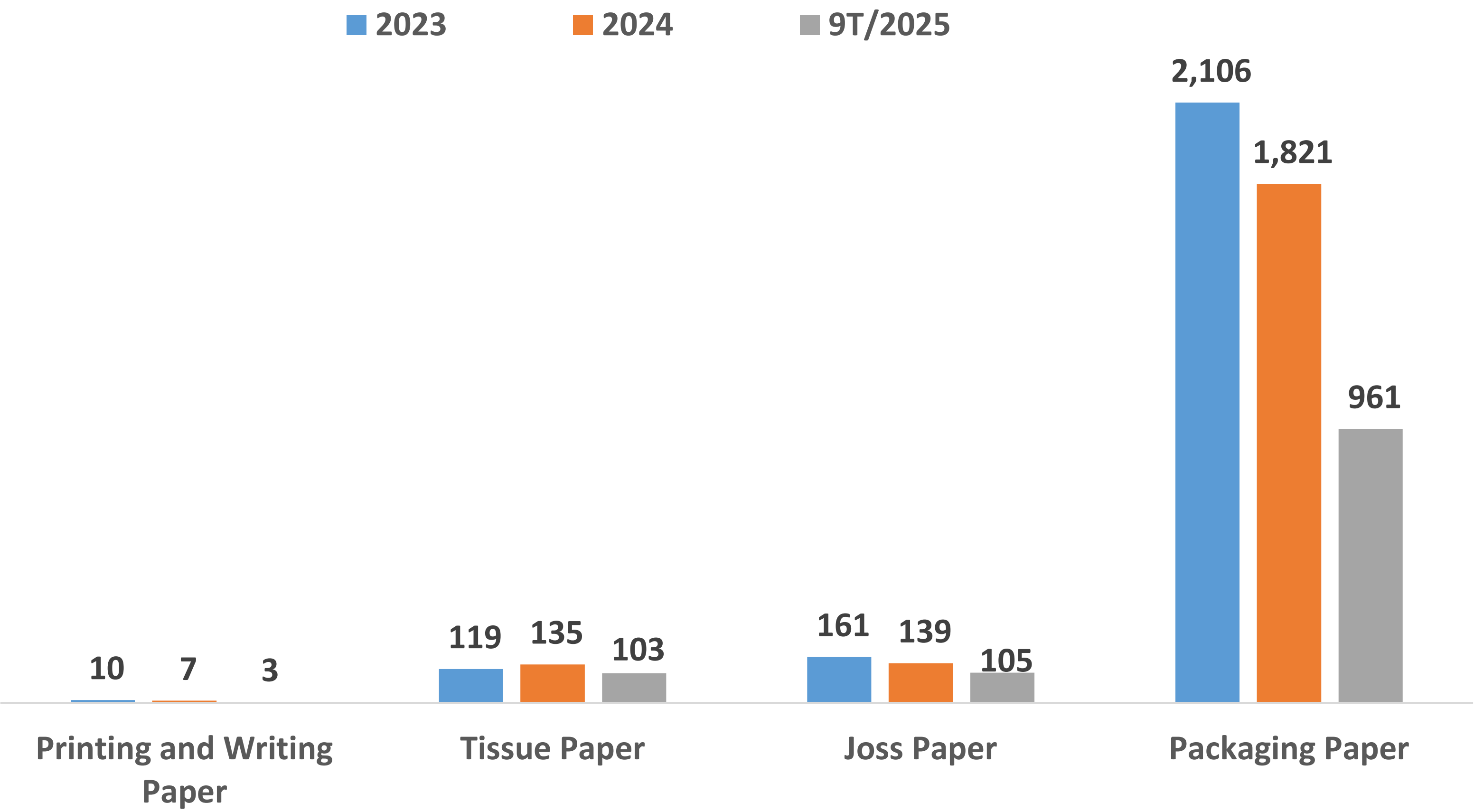


+ In the first 9 months of 2025, total consumption reached 6.38 million tons, increasing by 12.9% year-on-year; packaging paper reached 5.07 million tonnes and increasing by 13.8%, tissue paper reached 365 thousand tonnes and increasing by 17.6%., printing and writing paper reached 588 thousand tonnes and increasing by 23.6%, coated printing paper reached 181 thousand tonnes and decreasing by 24.8%, newsprint decreased by 36.1%.

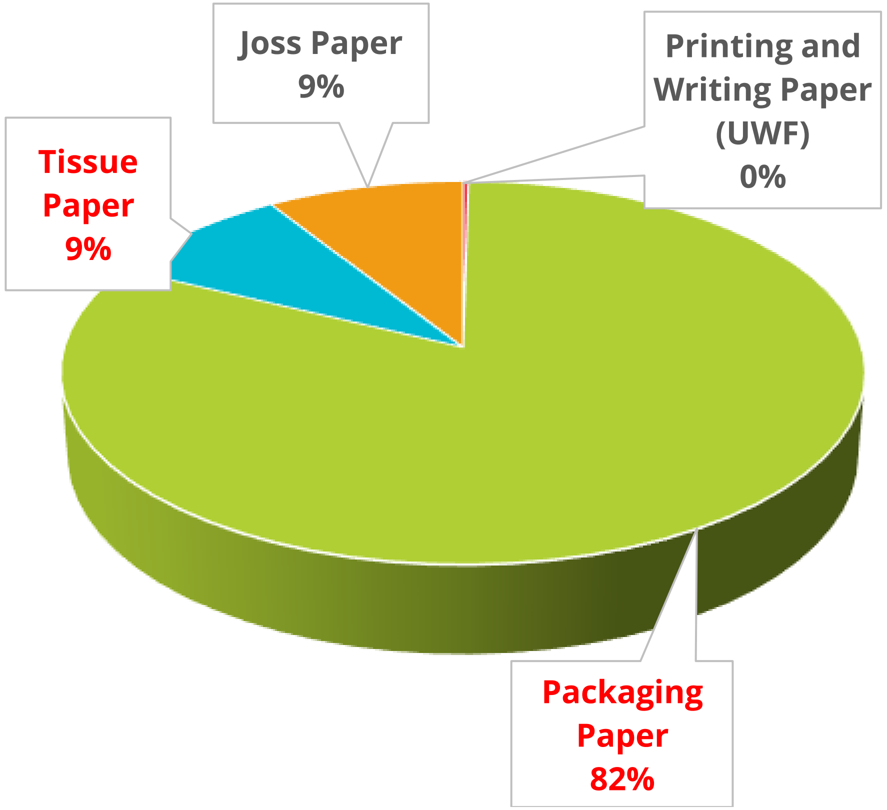
+ Period 2023–2024: Total consumption grew by 14.8% per year. Of this, packaging paper increased by 17.1% per year, tissue paper by 3.8% per year, and printing and writing paper by 1.1% per year

Packaging paper products increased strongly due to demand for exported goods and domestic consumption. the trend of replacing single-use plastic packaging with paper packaging, and the growth of e-commerce.

Paper Exports by 2025 (Unit: 1,000 tonnes)



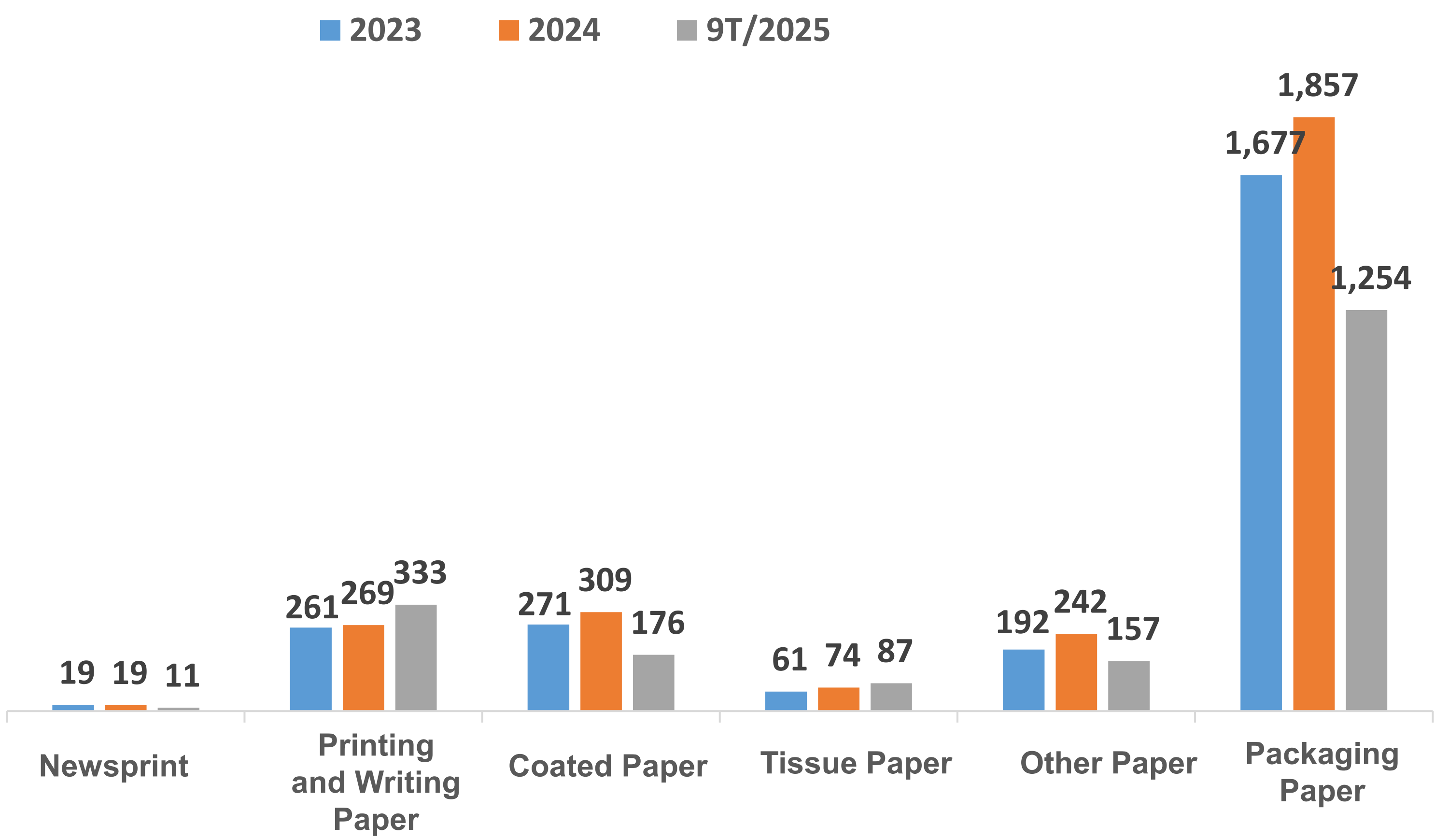
Paper Export Structure 9M/2025



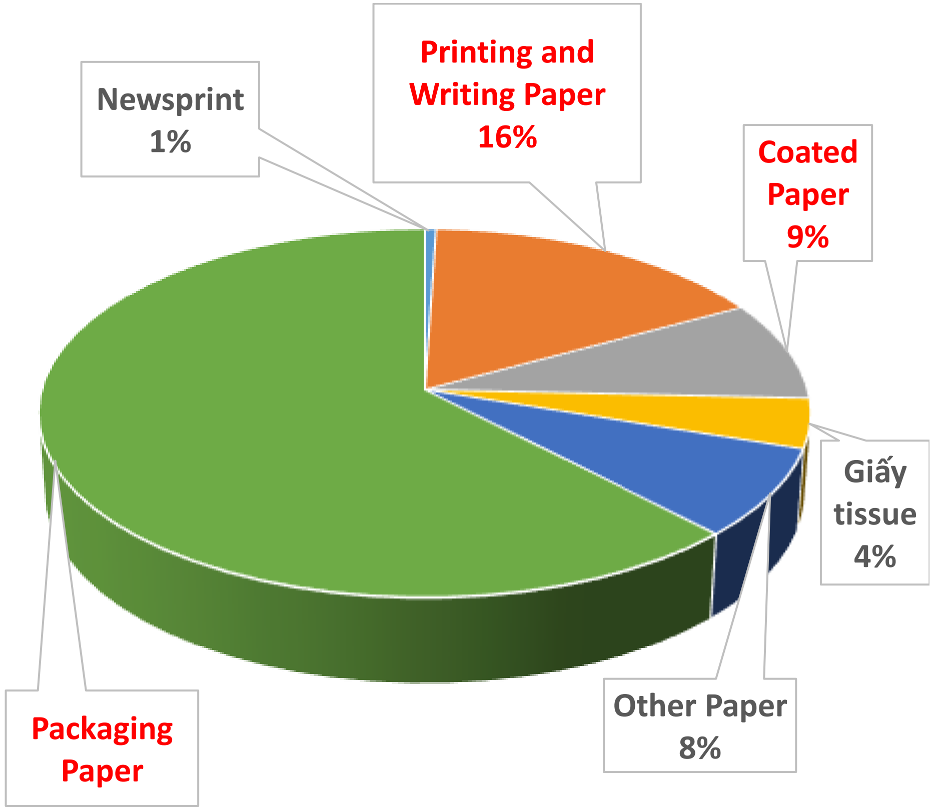
+ **In the first 9 months of 2025**, total exports reached 1.17 million tons, descreased by 35.7% year-on-year, packaging paper reached 961 thousand tons and decreased 38.6%, tissue paper reached 103 thousand tons and decreased 5.6%..

➡ **Exports mainly consisted of packaging paper, accounting for 82%, and tissue paper, accounting for 9%. The decline in exports was due to the need to meet domestic supply shortages.**

Paper Imports by 2025 (Unit: 1,000 tonnes)



Paper Import Structure 9M/2025



+ 9 months/2025: Total imports reached 2.01 million tons, down 7.8% year-on-year. Of this, packaging paper accounted for 1.54 million tons, printing and writing paper 333 thousand tons, coated paper 176 thousand tons, and tissue paper 87 thousand tons.

Imports exceeding 1.5 million tonnes per year are mainly driven by packaging paper and high-grade coated printing paper (Ivory, Duplex, etc.) due to insufficient domestic supply.

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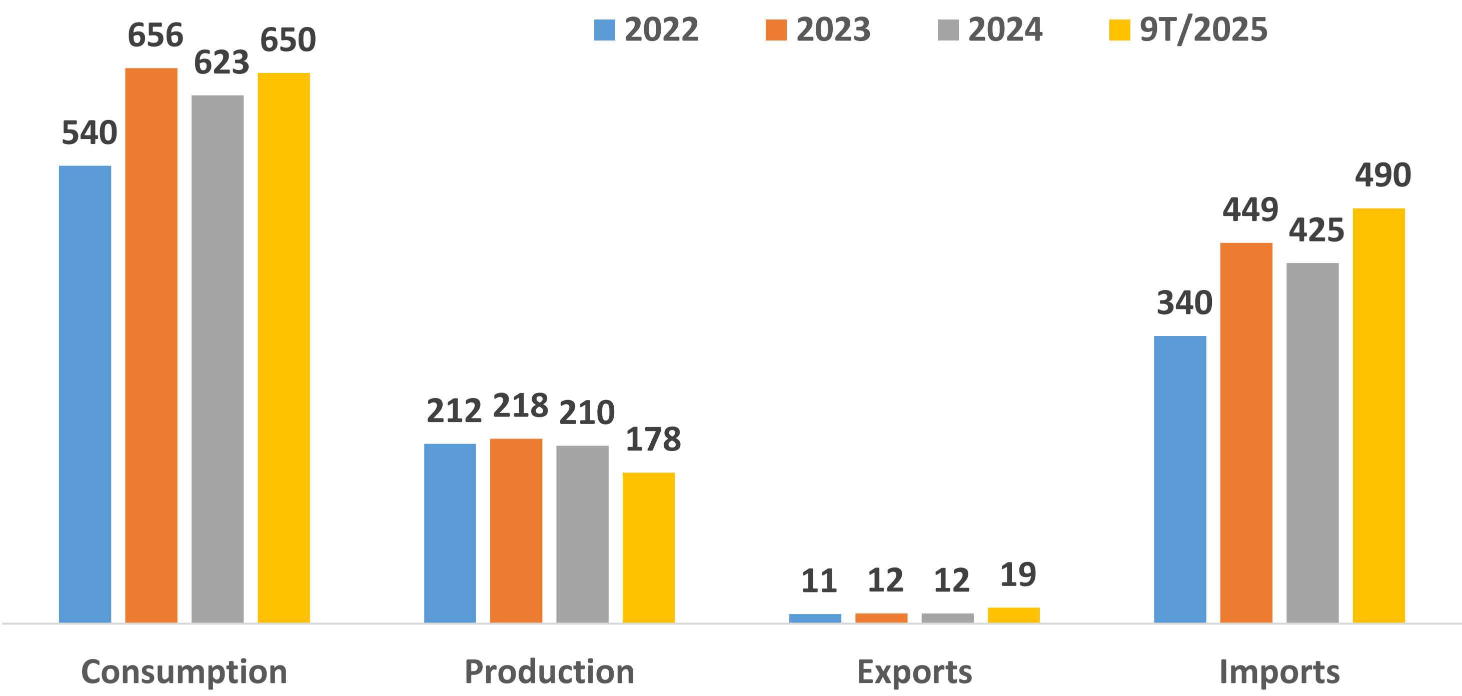
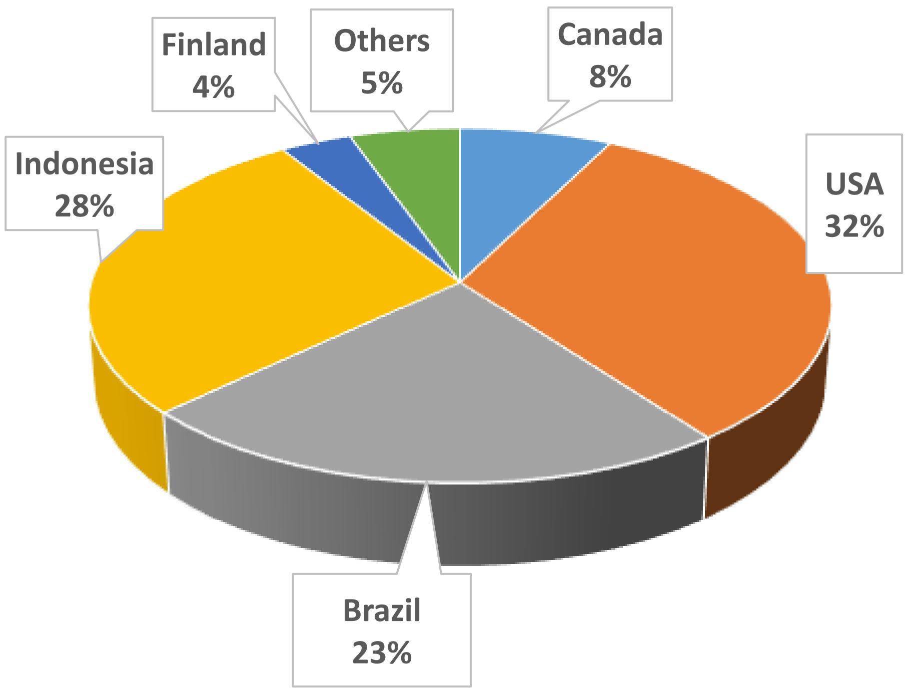
RAW MATERIALS FOR PRODUCTION (1)

Consumption – Production – Import & Export of Pulp (Unit: 1,000 tons)



Pulp Supply in 2025



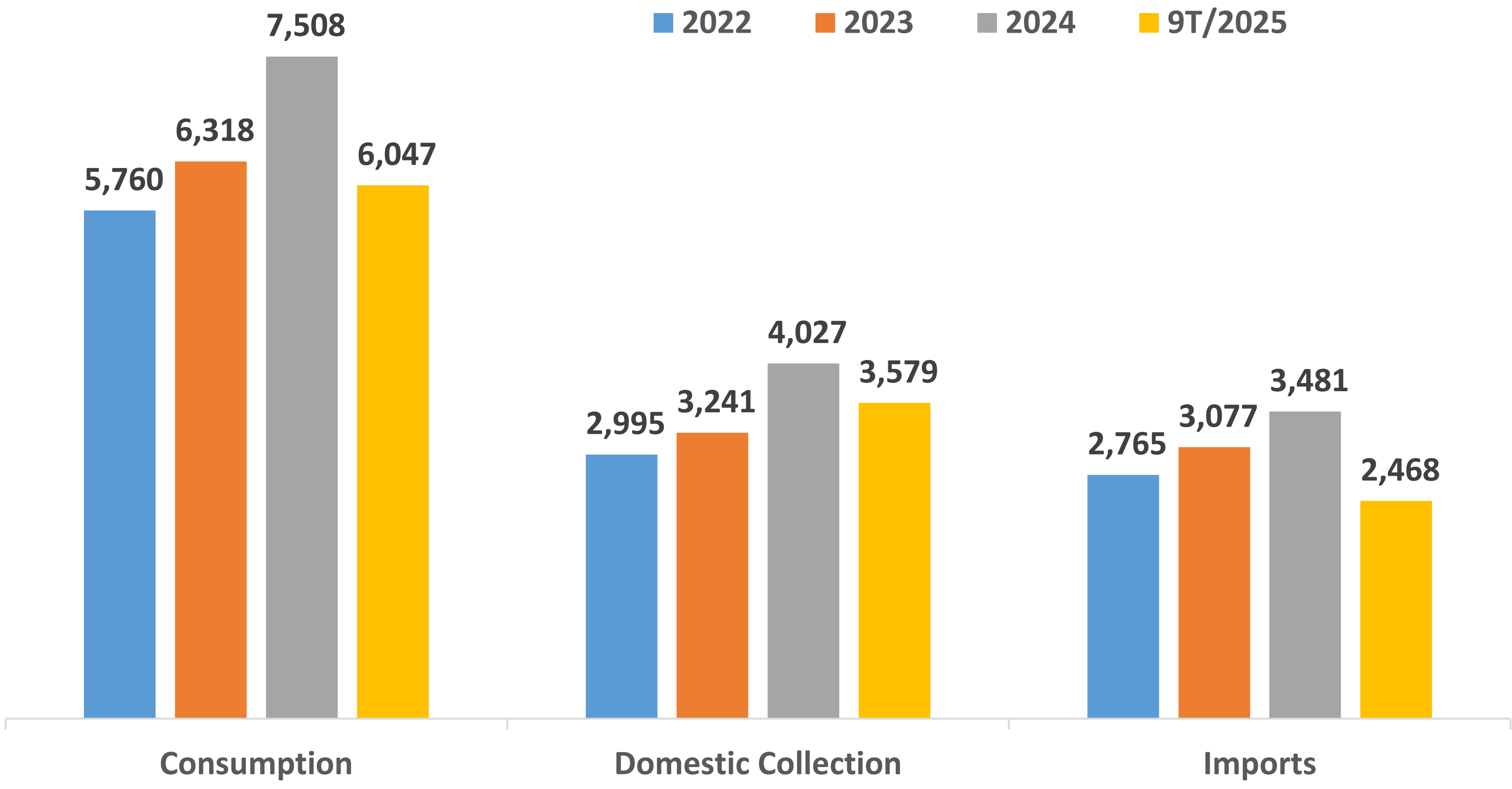
Consumption: nearly 650 thousand tonnes (9M 2025), **increasing nearly 20%** compared to the same period in 2022.

Domestic production:only **178 thousand tonnes,** meeting **27% of the demand**, with the remaining **68% reliant** on imports.

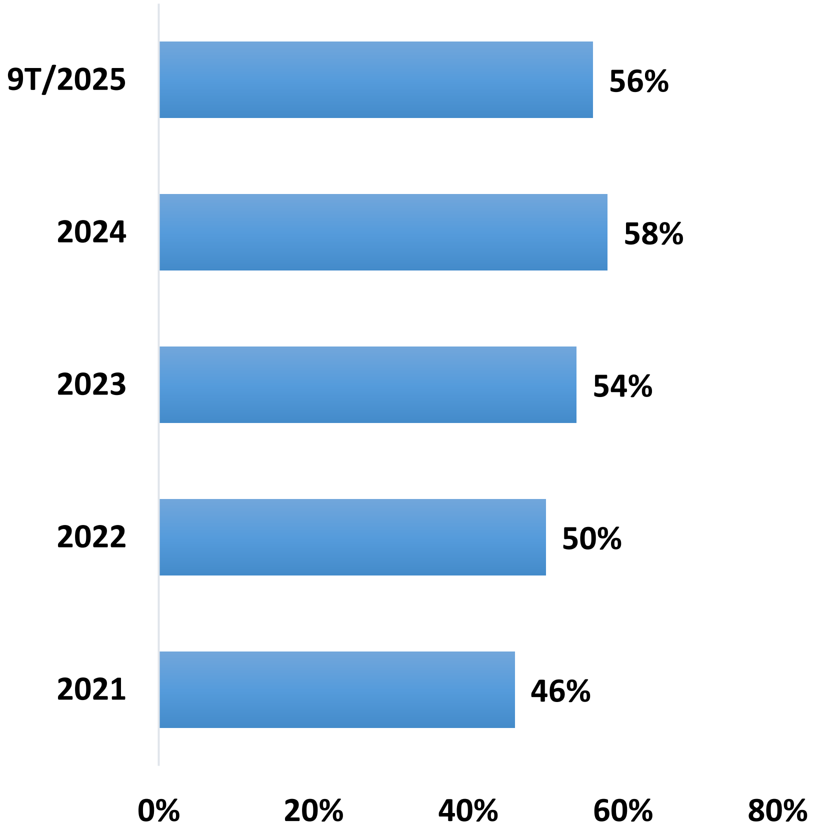
Imports: mainly from **the US (32%), Indonesia (28%), and Brazil (23%),** collectively accounting for **83% of the total supply.**

The growth drivers for Vietnam's pulp consumption come from the tissue paper segment and, moving forward, high-quality packaging paper.

Utilization – Collection – Import of Recovered Paper by 2025 (Unit: 1,000 tonnes)



Paper Recovery Rate by 2025



+ **Demand:** reached over 7.5 million tons in 2024, with an average **annual growth of 10.7%**.

+ **Domestic collection:** reached nearly 3.6 million tonnes, meeting **nearly 56% of the total demand. The recovery rate:** improved **from 46% (2021) to 58% (2024)**, but remains significantly lower than expected.

➡ **Vietnam currently has to import over 3 million tons of recovered paper annually, and this volume continues to increase.**

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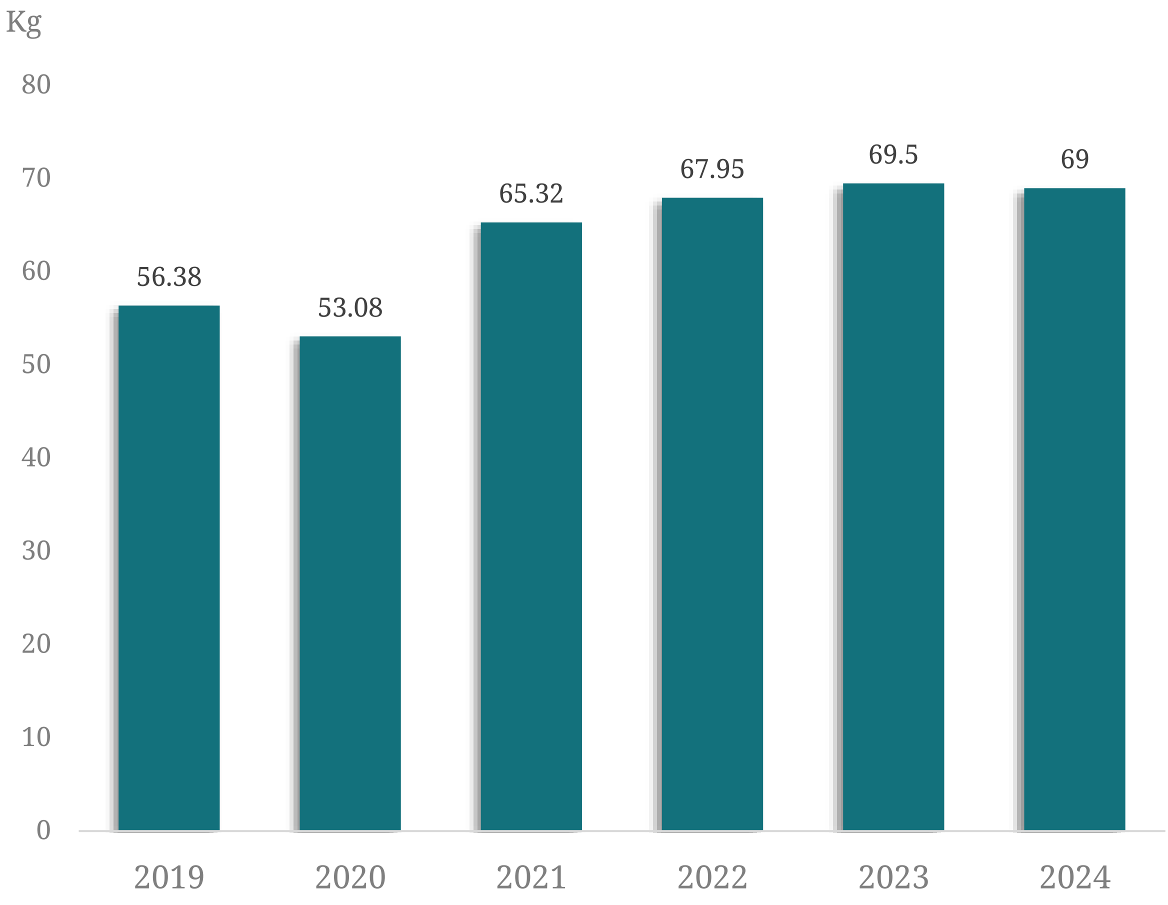
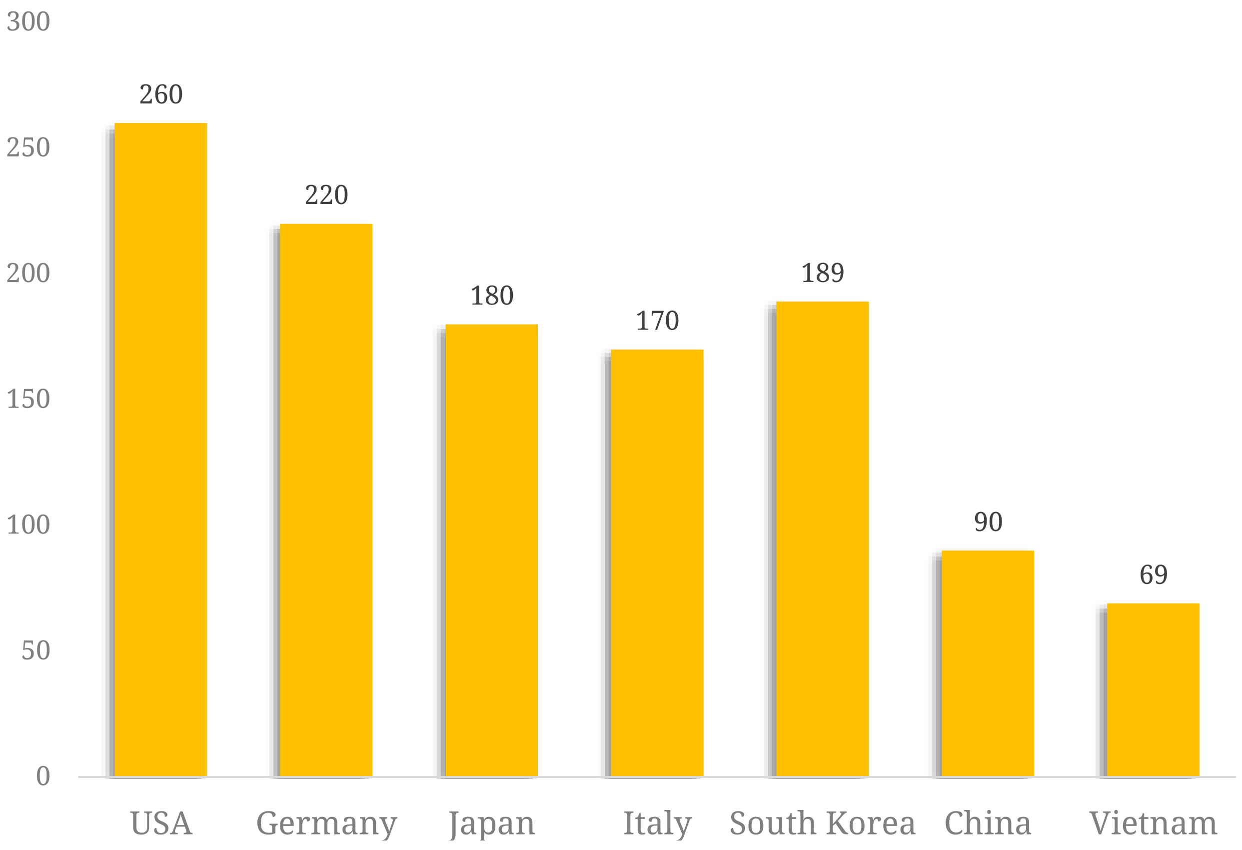
PER CAPITA PAPER CONSUMPTION (kg/person)



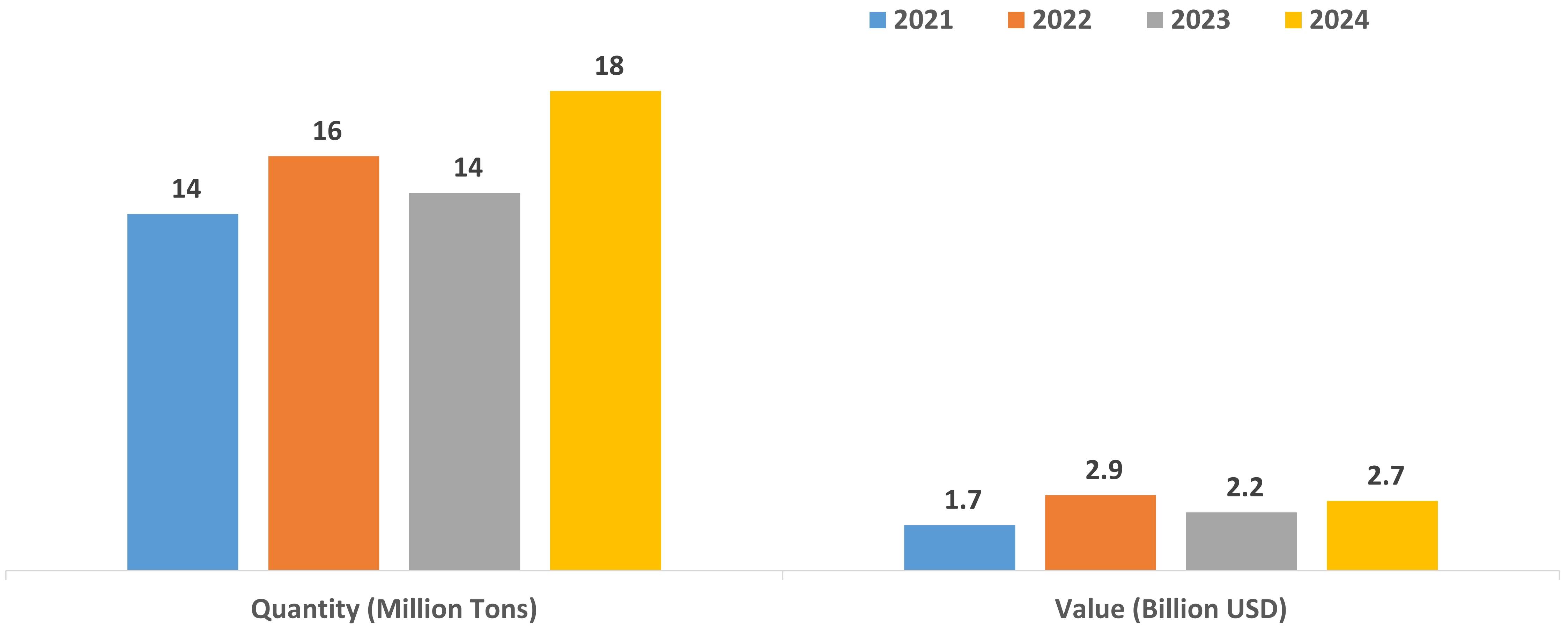
Per capita paper consumption in Vietnam 2019–2024 (kg)



Average paper consumption in Vietnam and other countries, 2024 (kg)

Compared to developed countries, Vietnam's per capita paper consumption is still relatively low, indicating growth and development potential.

Wood Chips 2020 – 2024



Wood chip exports reached 18.3 million tons, with a value of USD 2.7 billion in 2024

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DIGITAL TRANSFORMATION, GREEN TRANSFORMATION IMPACTS ON THE VIETNAMESE PAPER INDUSTRY

NATIONAL OBJECTIVES FOR DIGITAL AND GREEN TRANSFORMATION

1/ Digital Transformation

1.1. 2030 Objectives

- Total Factor Productivity (TFP) contributes over 55% to GDP growth;
- The digital economy accounts for a minimum of 30% of GDP; Over 40% of enterprises have innovation activities;
- International standing: Ranked among the top 3 in Southeast Asia and within the top 50 globally in digital competitiveness.
- Investment in Science and Technology: R&D spending reaches 2% of GDP; more than 60% is mobilized from society; annual state budget allocation for Science, Technology, and Digital Transformation is ≥ 3%.

1.2. 2045 Objectives

- Digital economy ≥ 50% of GDP
- Top 30 globally in innovation and digital transformation.

2/ Green Transformation

Implemented in parallel with digital transformation;

Currently, **there are 2,166 enterprises** under Decision 13/2024/QĐ-TTg issued by the Prime Minister required to conduct greenhouse gas inventories, of which **80 enterprises belong to the Paper and Pulp industry.**

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CURRENT STATUS OF VIETNAM'S PAPER INDUSTRY IN TERMS OF DUAL TRANSITION

- High energy consumption, but with significant potential for savings;
- Large amounts of waste generated (water, air emissions, paper sludge);
- Automation is not yet fully integrated;
- Pressure to reduce emissions and production costs

Over the past 5 years, the Vietnam Pulp and Paper Association has implemented numerous programs and initiatives aimed at sustainable development and emission reduction, such as promoting the circular economy, guiding sustainable investment, providing training to enhance technological innovation capabilities, and inventorying and reducing greenhouse gas emissions.

To help members of the Association achieve sustainable development and prosperity in the country's new era, it is essential for all members and stakeholders to join forces to make significant progress in Green and Digital Transformation.

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Digital Transformation in Paper Mills

1 – Monitoring Energy, Performance, Maintenance, Quality, and Environment using IoT (Internet of Things)

2 – Digitalization of Production and Operations

3 – Optimization using AI & Data Analytics

4 – Proactive Maintenance & Equipment Management

5 – Supply Chain Management & Green Logistics

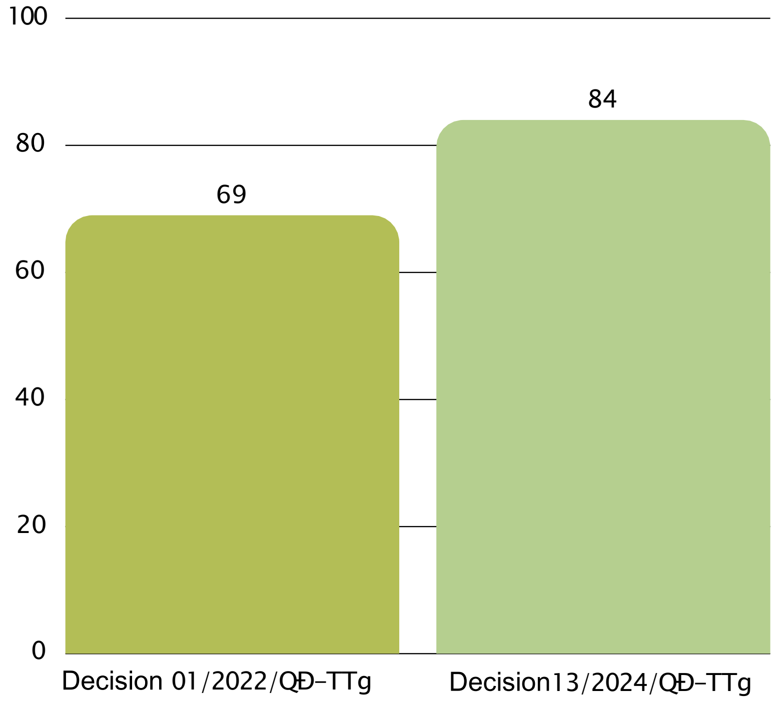
6 – Water Circulation & Smart Treatment

7 – Steam & Heat Energy Optimization

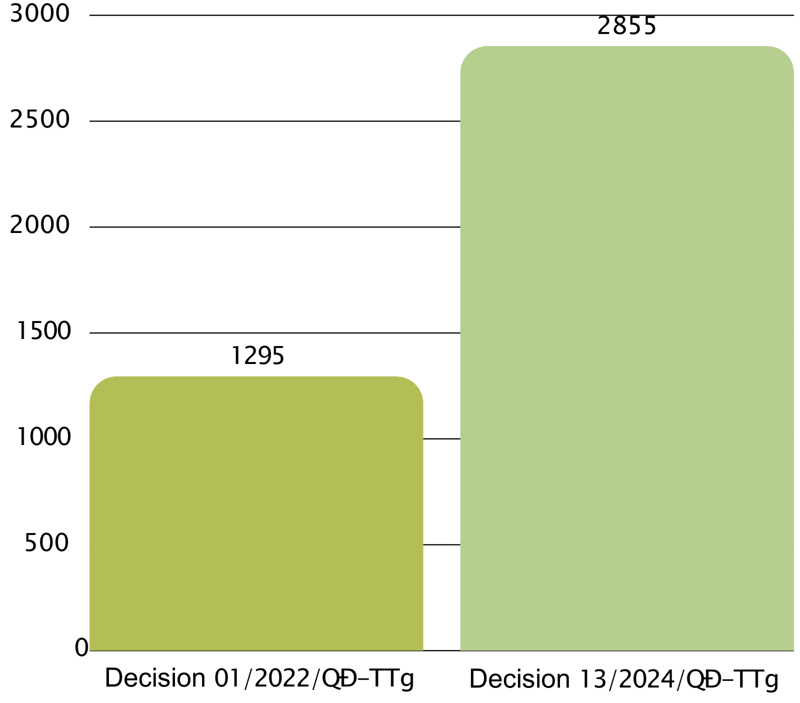
- **Integrated Management System (Digital Twin):**
  - Digital Line Simulation
  - Connect ERP – MES – SCADA – IoT
  → Holistic Optimization

CURRENT STATUS OF GHG EMISSIONS IN THE VIETNAMESE PAPER INDUSTRY

Number of Enterprises Required to Inventory and Reduce Emissions in the Paper Industry



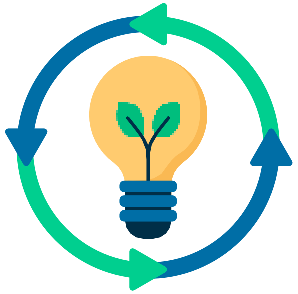
Total GHG Emissions from Enterprises in the Paper Industry (1,000 tons)



Emission Reduction Solutions for Vietnam's Paper Industry

Solar Photovoltaics (PV)

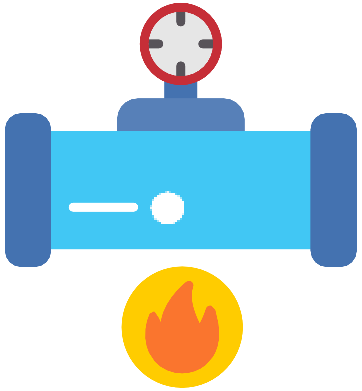
Energy Efficiency



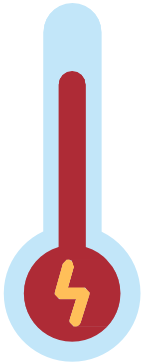
Biomass

Nhiên liệu từ chất thải rắn (RDF)

Waste Heat Recovery



Thermal Energy Storage



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OPPORTUNITIES AND CHALLENGES OF THE VIETNAMESE PAPER INDUSTRY

OPPORTUNITIES IMPACTING THE VIETNAMESE PAPER INDUSTRY

1. The strong determination of the Polotical Party and the Government to reform institutions, ***remove barriers for businesses, and emphasize the role of the private sector*** is expected to drive average GDP growth of over 10% in the next decade; accordingly, ***the demand for packaging paper and tissue paper is also projected to grow at a double-digit rate***.;
2. ***The green/circular economy*** and ***digital transformation, along with AI,*** are considered inevitable trends for businesses to survive and grow. In this context, the paper industry is naturally well-suited and is making strong efforts toward ***transformation***;
3. ***FDI investment*** is expected to increase sharply in the coming years, including in the paper industry and related sectors;
4. ***The labor force*** is relatively young, with increasingly higher knowledge and skills, while labor costs remain low**.**;
5. ***Infrastructure*** (especially transportation and energy) is receiving strong and synchronized investment, meeting the country's development needs and helping to ***reduce currently high logistics costs.***
6. ***The real need for investment in pulp production*** to address the raw material deficit in the paper industry (with imports reaching **563,000 tonnes** in 2024) and to reduce the export of raw materials (Vietnam exported approximately **1.8 million tonnes** of wood chips in 2024).

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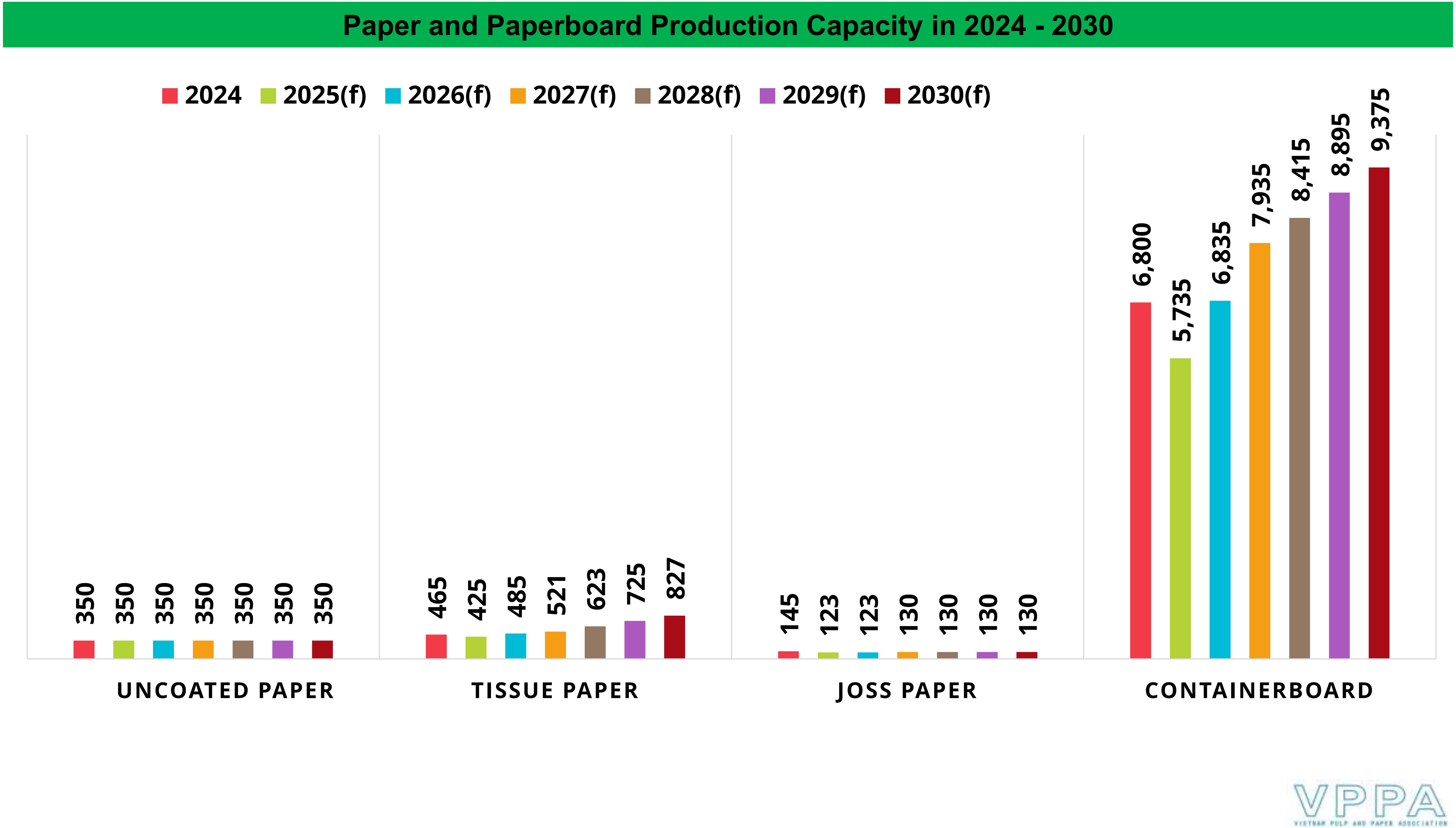
CHALLENGES FACING THE VIETNAMESE PAPER INDUSTRY

1. ***The global economy is entering the BANI phase, characterized by numerous difficulties and unpredictable fluctuations (non-linearity),*** especially concerning the new policies of the US administration and geopolitical competition;
2. ***Being challenged*** by the development of the ***Indian paper industry*** and the ***decline in import demand from the Chinese market***;
3. The demand for recovered paper raw materials is increasing sharply, while sources of recovered paper are becoming scarcer due to the trend of ***developing at-source recycling*** *and* ***control by major corporations;***
4. Requirements regarding ***CBAM, ESG, carbon emission reduction, and supply chain transparency*** for market access in the EU, US, Japan, …;
5. ***Domestic transportation and logistics costs are currently much higher*** than those in other countries in the region;
6. ***Capital mobilization for investment remains difficult***, as most Vietnamese paper enterprises have not yet launched an IPO, while banks still require collateral and remain concerned about industry risks;


Paper and Paperboard Production Capacity in 2024 - 2030
2024
2025(f)
2026(f)
2027(f)
2028(f)
2029(f)
2030(f)
350
350
350
350
350
350
350
465
425
485
521
623
725
827
145
123
123
130
130
130
130
6,800
5,735
6,835
7,935
8,415
8,895
9,375
UNCOATED PAPER
TISSUE PAPER
JOSS PAPER
CONTAINERBOARD
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THANK YOU VERY MUCH!