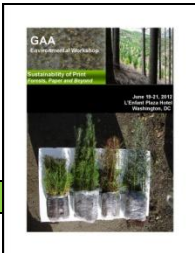


# FIBER



**June 20, 2012**  
**KATHY KNEER, PRINCIPAL**  
**New York, NY**

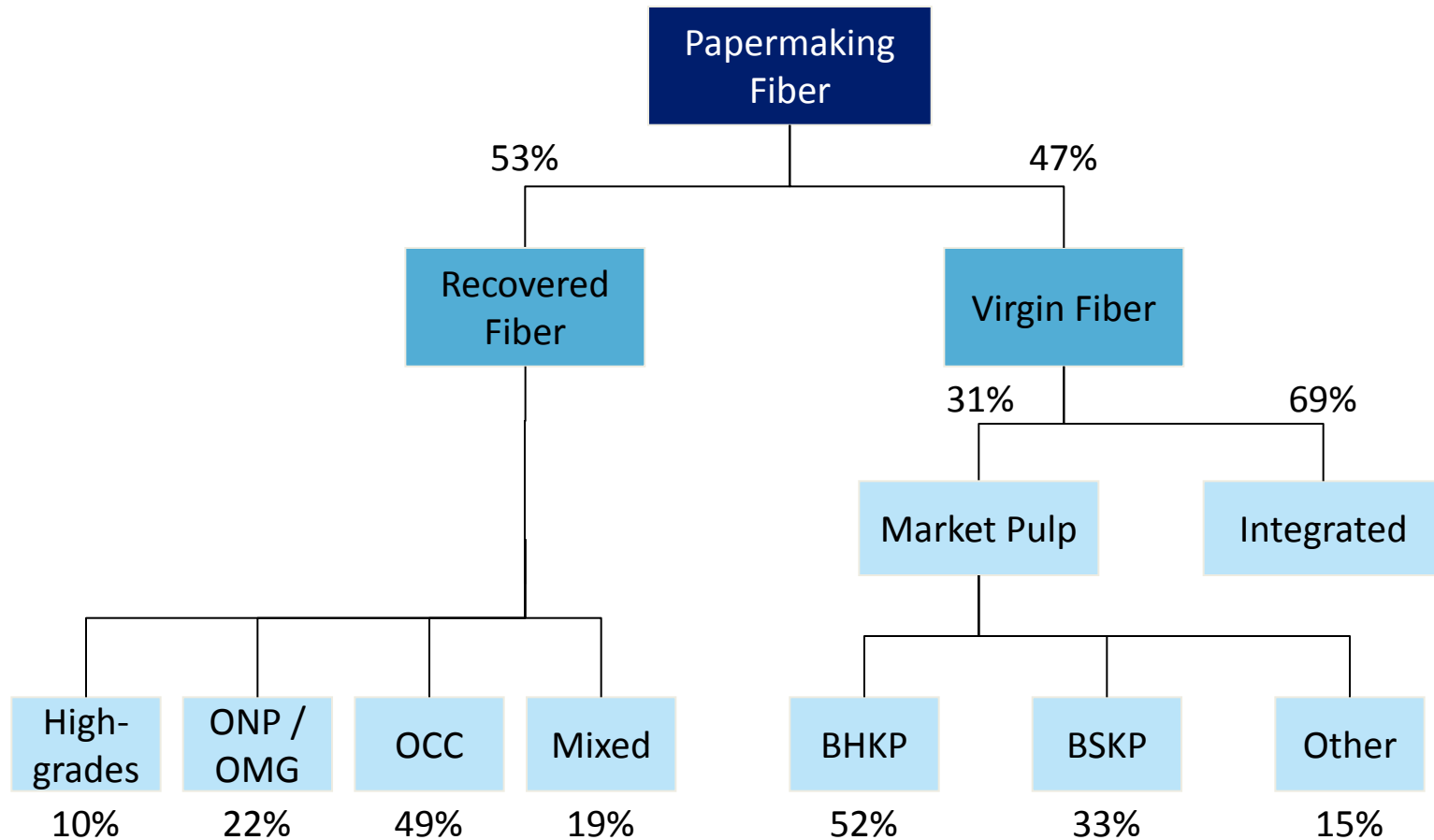


**GAA Environmental Workshop**  
**Washington, D.C. June 19-21, 2012**

# **OVERVIEW OF FIBER DEMAND**

# THE WORLD OF FIBER

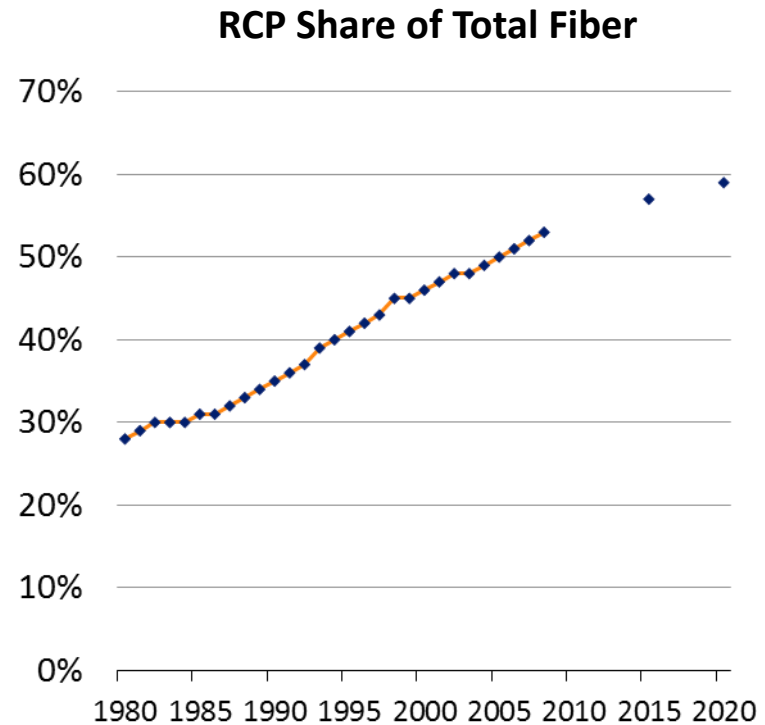
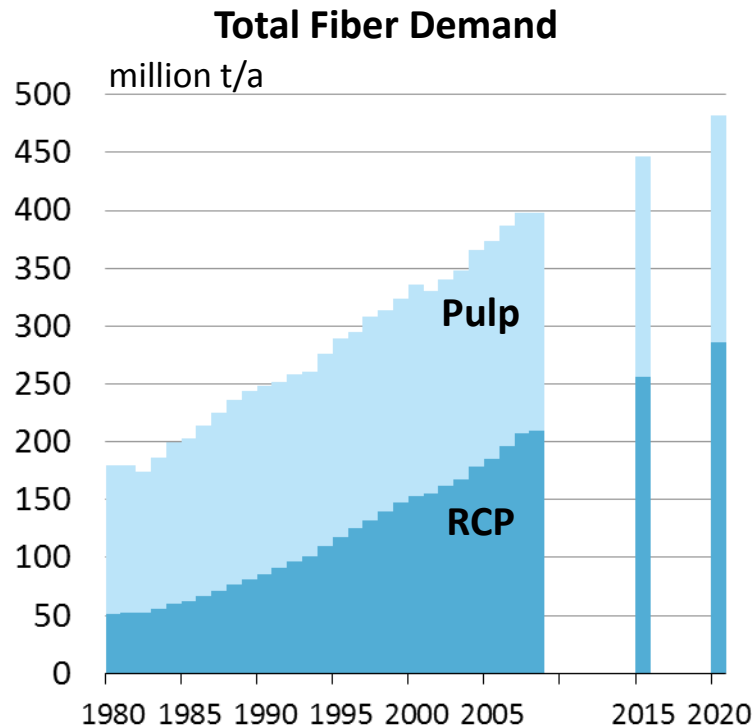
The global fiber market totalled some 375 million tons in 2010. Recovered fiber accounts for slightly over half the consumption.



# 2020 DEMAND OUTLOOK

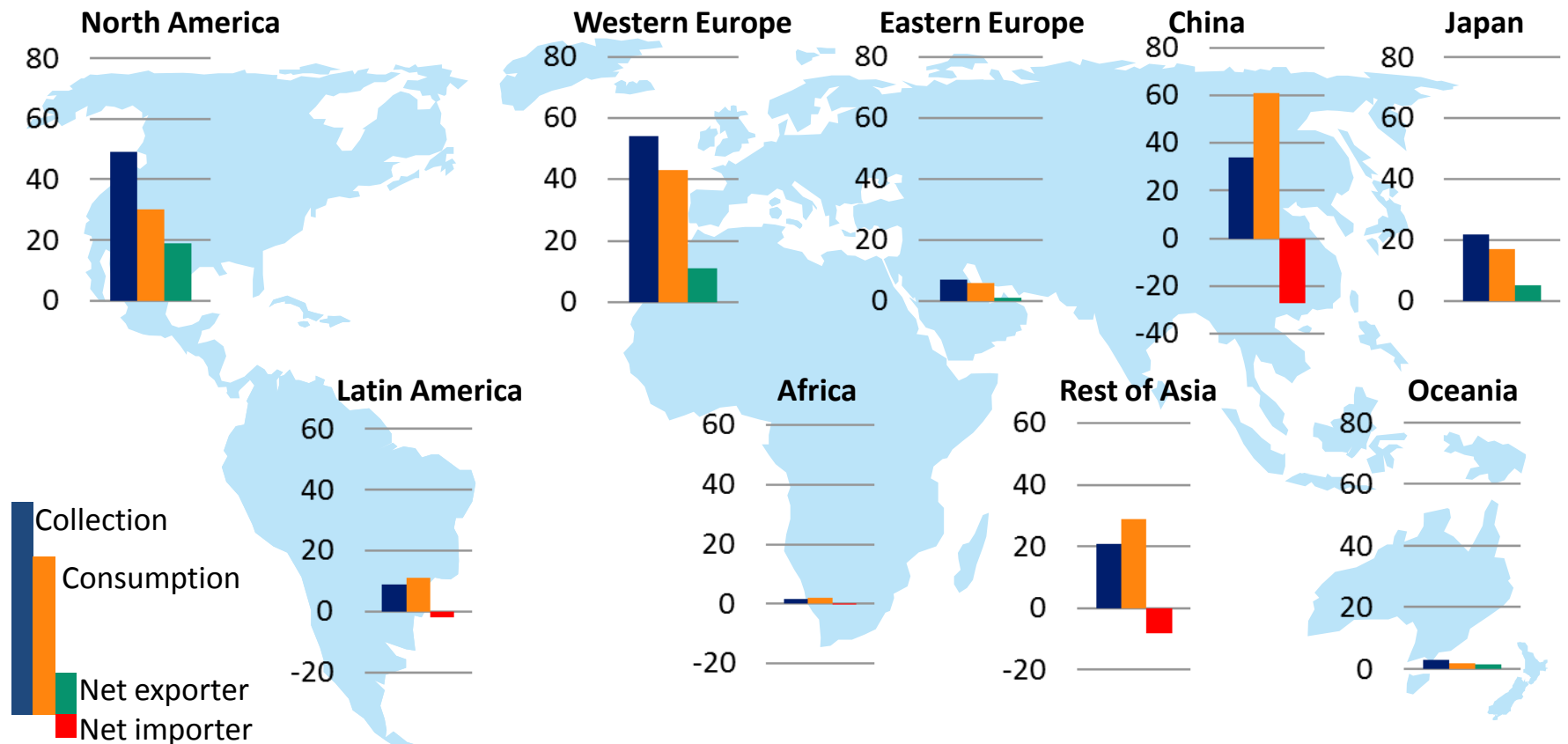
Demand for RCP will increase going forward:

- Most paper/board production increase is in emerging markets
- Many emerging markets, Asia, especially, have less available virgin fiber
- RCP share of total fiber will get close to 60%



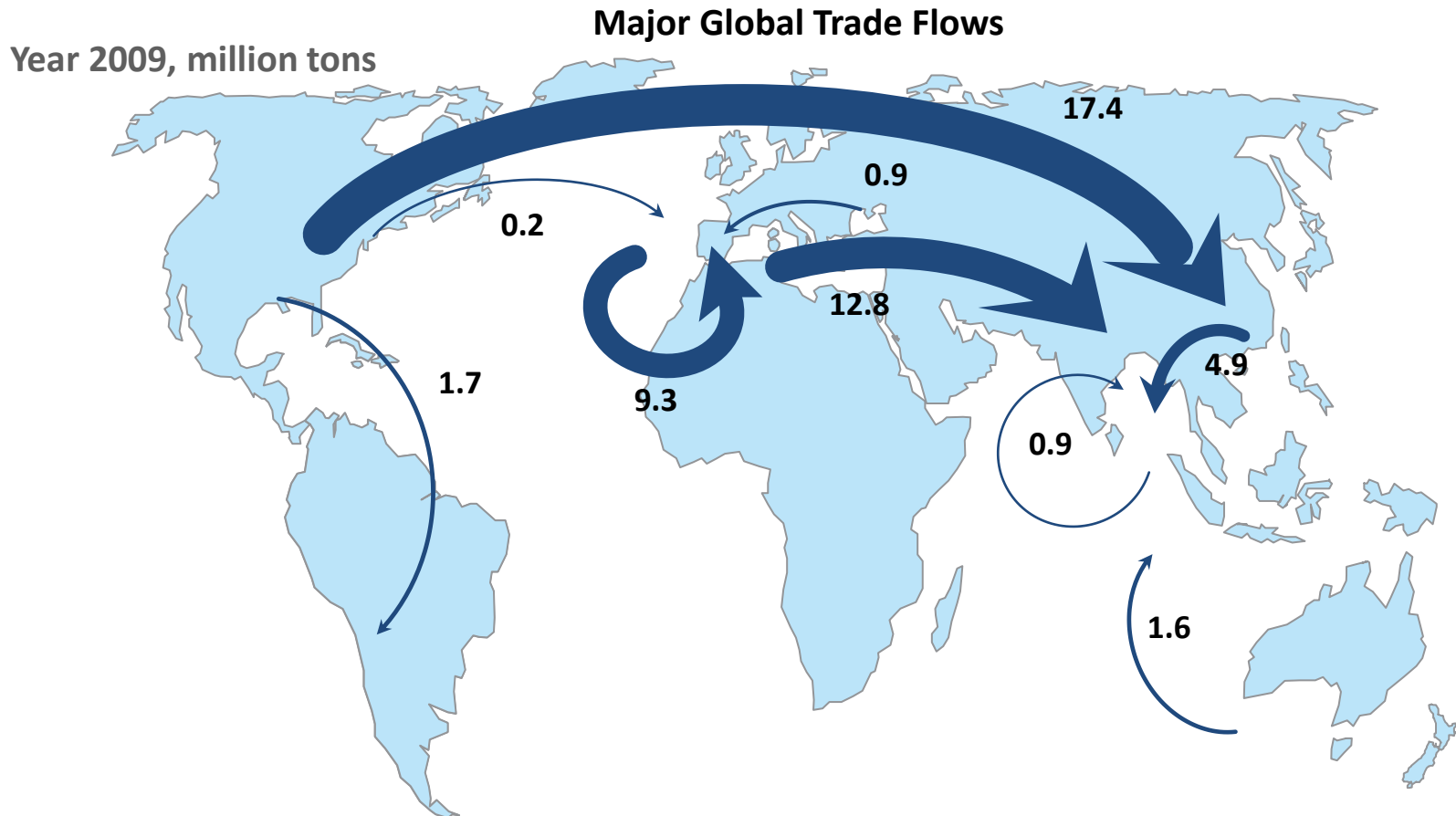
# RECOVERED PAPER – GLOBAL OVERVIEW

North America and Western Europe are the main surplus areas, while China can currently source only about half of its needs from domestic collection.



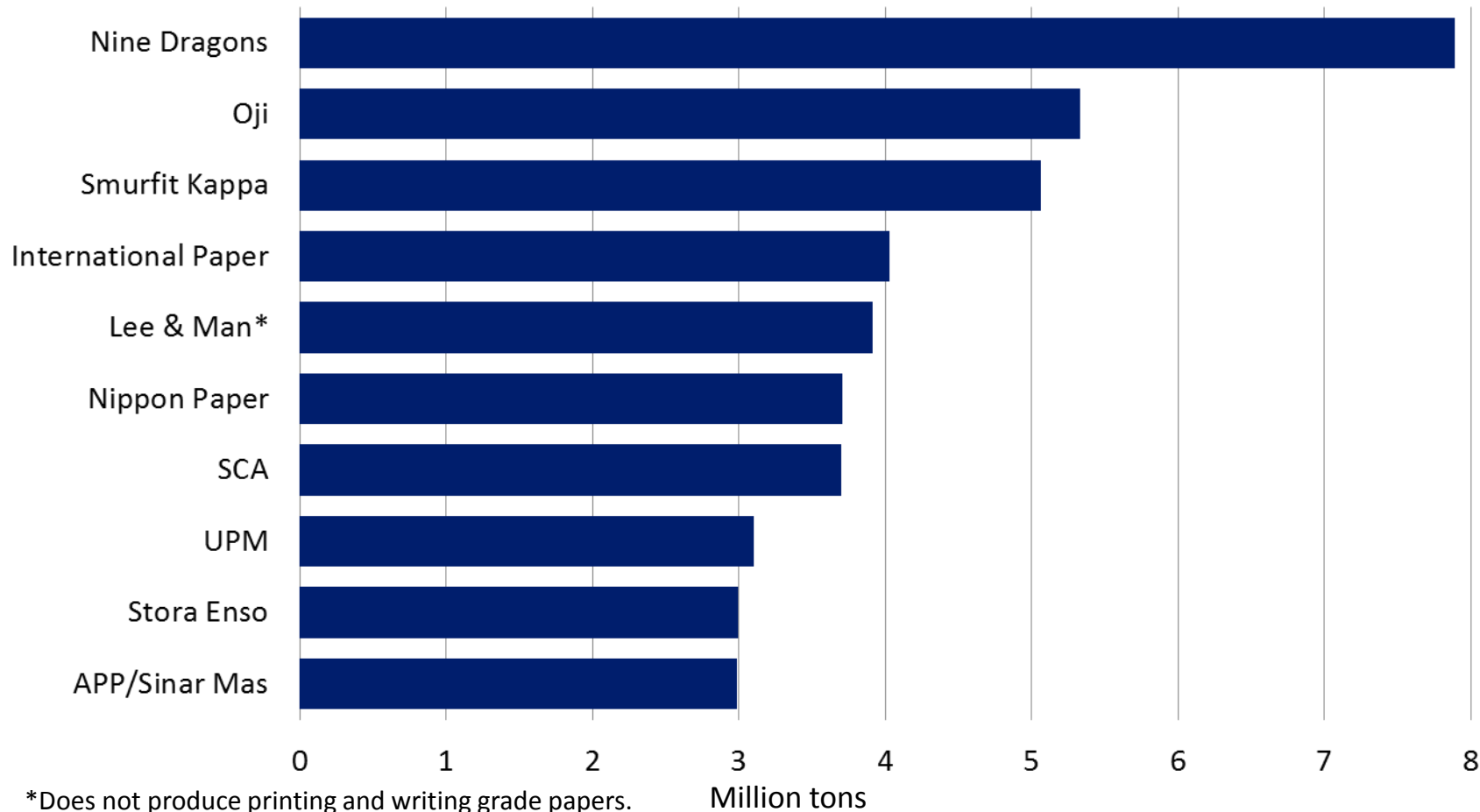
# MAJOR TRADE FLOWS OF RECOVERED PAPER

China is increasing imports of RCP from all regions, including US. Volumes from US to China have grown from 5 to 14 million tons between 2003-2011.



# LARGEST PAPER INDUSTRY RCP USERS GLOBALLY

RCP Usage of Selected Paper Companies 2010E



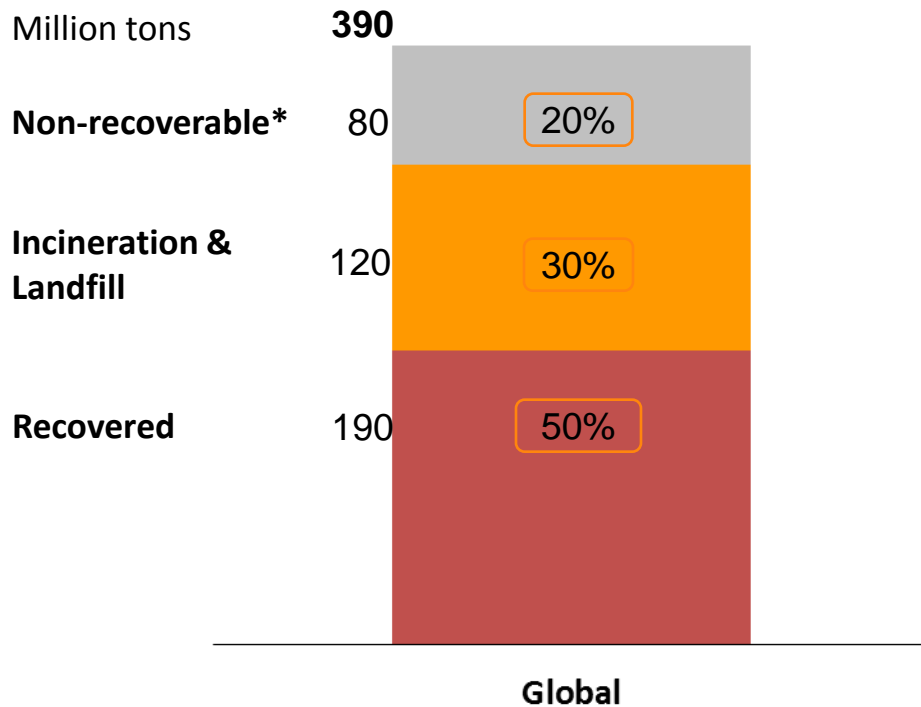
\*Does not produce printing and writing grade papers.

Million tons

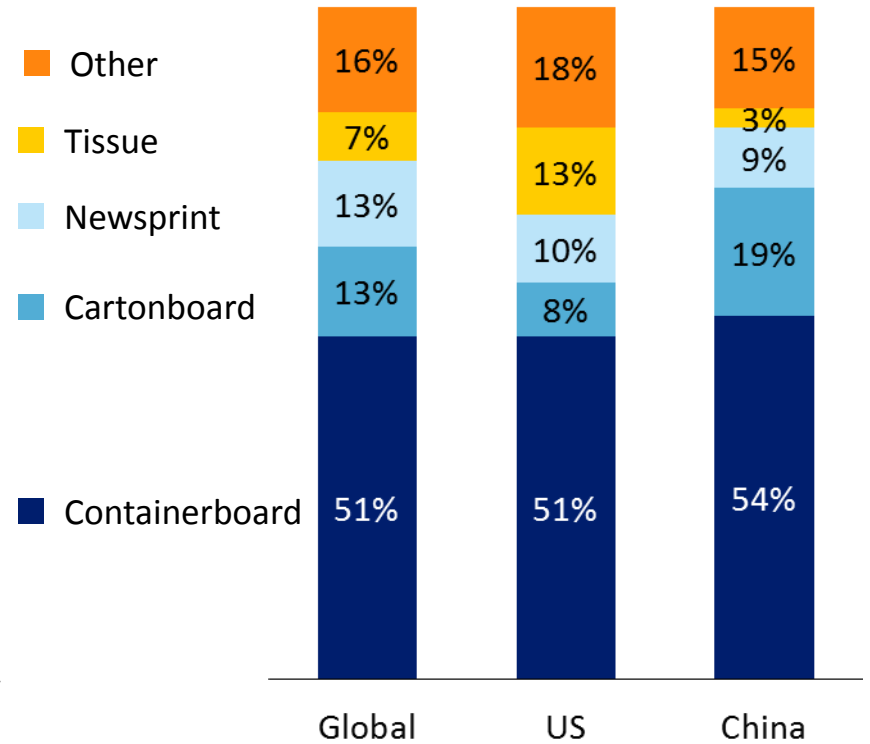
# USE IN PAPERMAKING

Today, approximately 200 million tons of paper are recovered for reuse in papermaking, corresponding to approximately 50% of global paper and board consumption. The recovery rate varies by region and by grade. Consumption also varies by region, and by grade.

**Paper and Board Consumption**



**RCP Consumption by Paper Grades**



\*Tissue, cigarette, labels etc.



# **FIBER DEMAND AND SUPPLY: CHALLENGES AHEAD**

# CHALLENGES

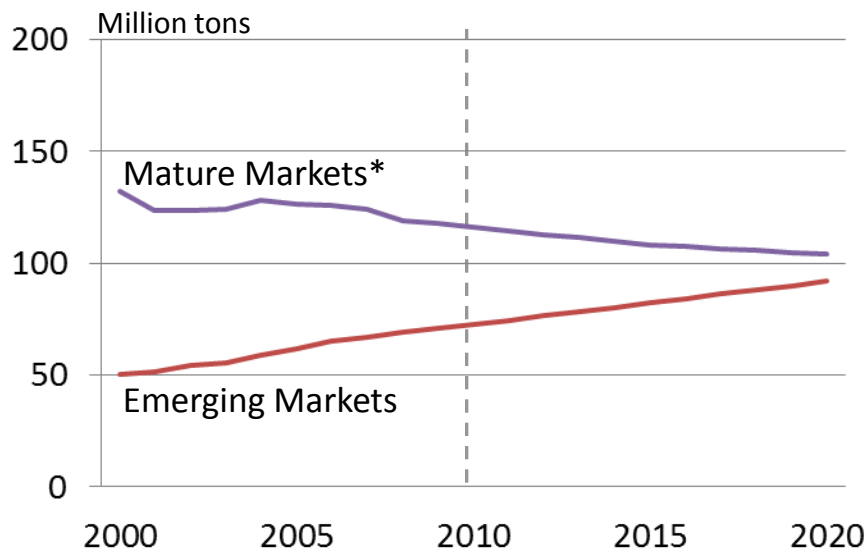
<b>RCP supply</b>	Will there be enough? How will demand and recovery/consumption balance?
<b>Collection rates</b>	How much can they increase and where?
<b>Furnish substitution</b>	What will be the impact on demand for RCP?
<b>RCP prices and paying capability</b>	How much can prices increase? Who can afford to pay?
<b>Graphic paper demand</b>	How much can it decline? How does the decline impact availability of RCP and production of tissue and cartonboard?

# ALTERNATIVE PATHWAYS FOR FIBER MARKET

## World Fiber Demand

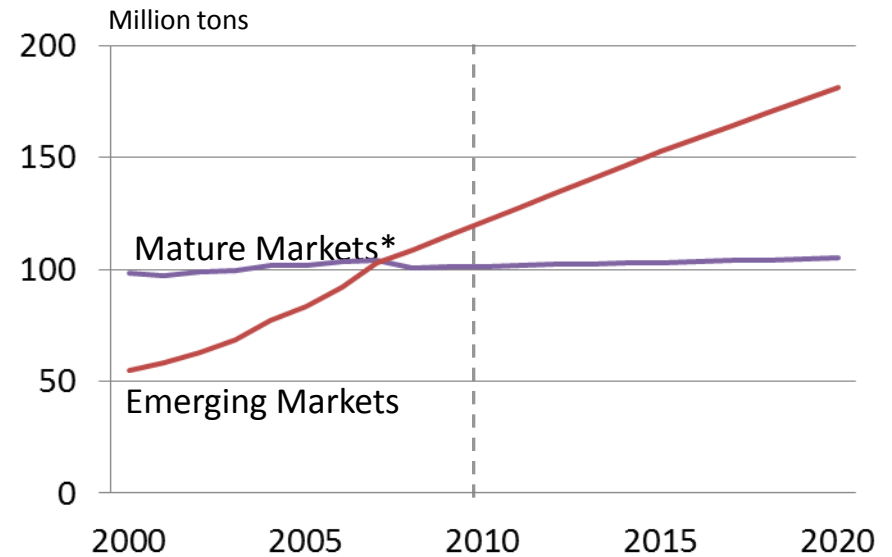
### VIRGIN FIBER

- Recovered paper supply constraints and price
- Sources of virgin fiber?
- New fiber platforms



### RECOVERED FIBER

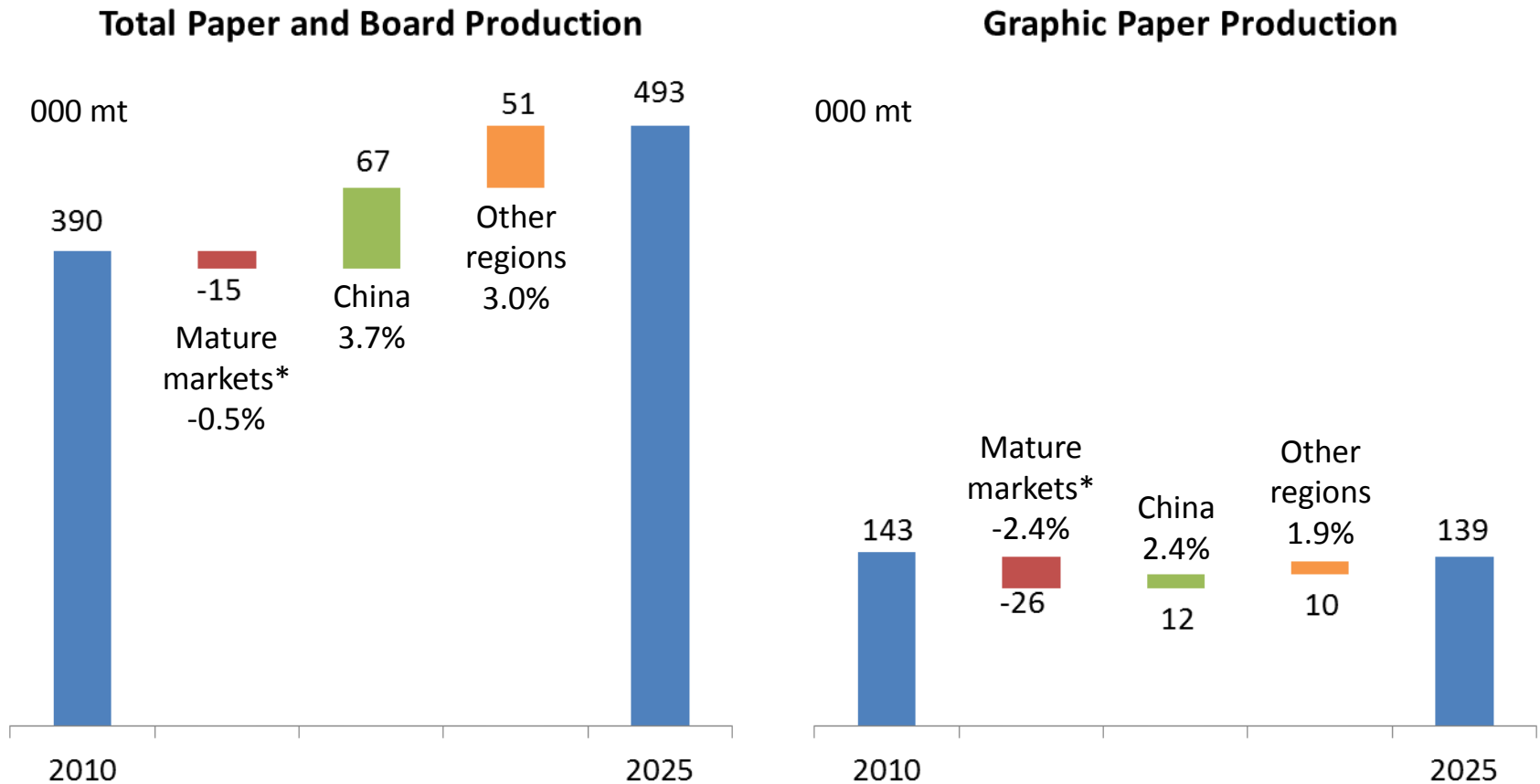
- Supply constraints - Shortage?
- Competition for recovered paper
- Implications for market balances?



\*) North America, W.Europe & Japan

# SO WHERE IS FIBER NEEDED?

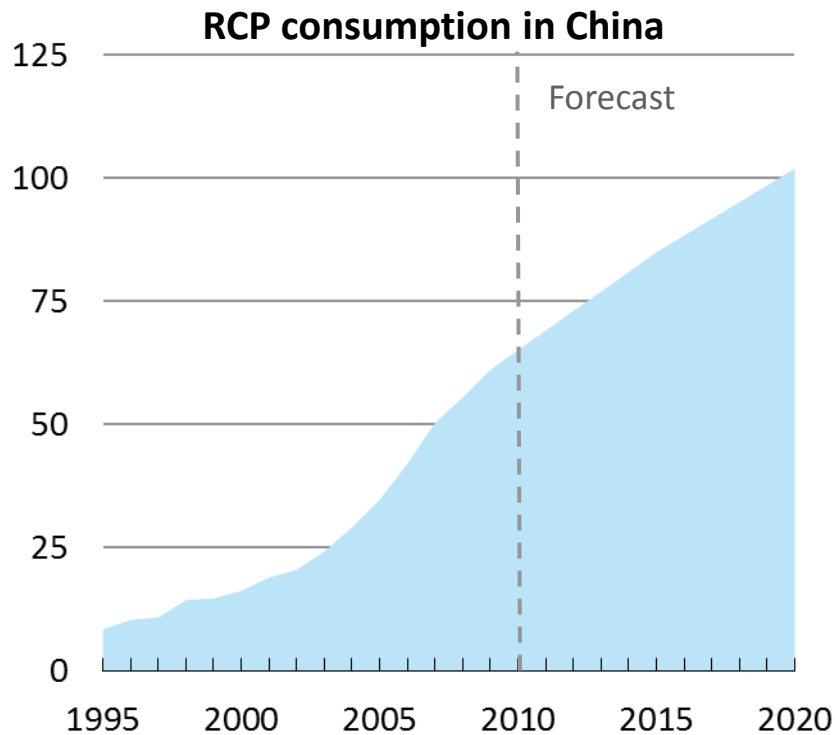
The growth of paper and paperboard production is expected to be highest in China and other Southeast Asia. Graphic paper production will decrease on a global basis.



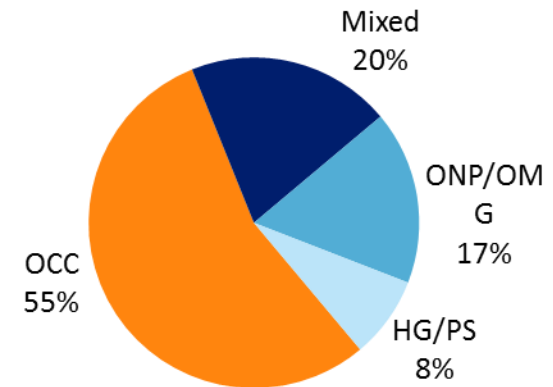
\*Mature markets: North America, Western Europe and Japan

# IMPACT OF CHINA ON GLOBAL RCP MARKET

RCP demand growth has been very rapid in China from 8 million tons in 1995 to over 65 million tons in 2010. This development is estimated to continue and the demand is projected to exceed 100 mt by 2020.



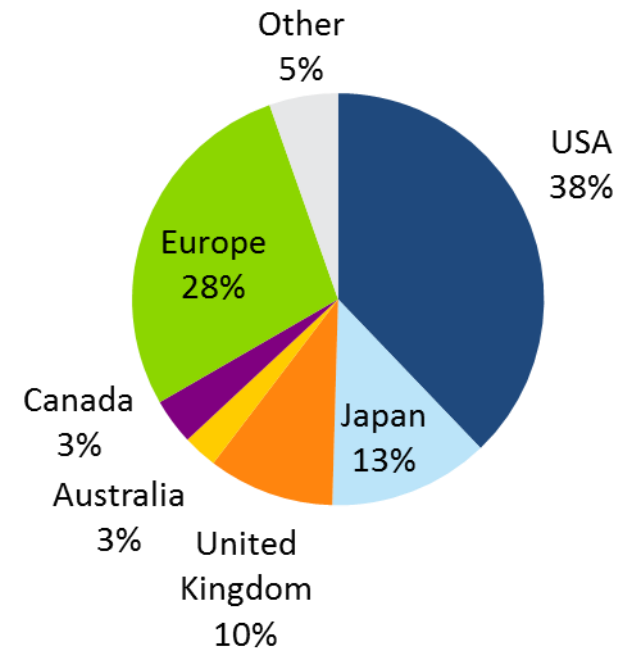
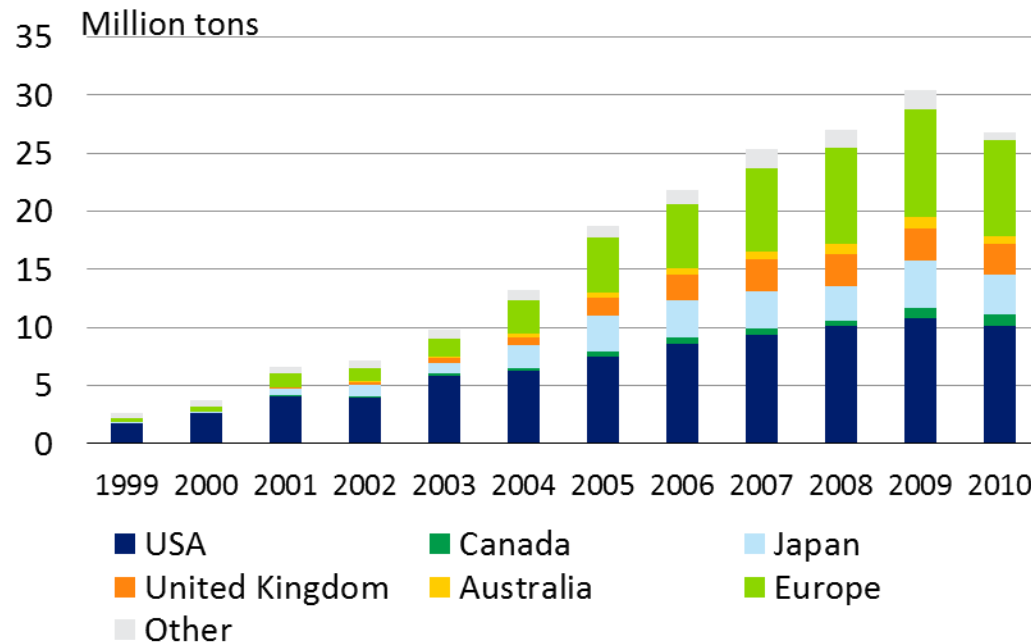
### RCP utilization in China in 2010



**65 million tons**

# CHINA – IMPORT SUPPLY OF RCP

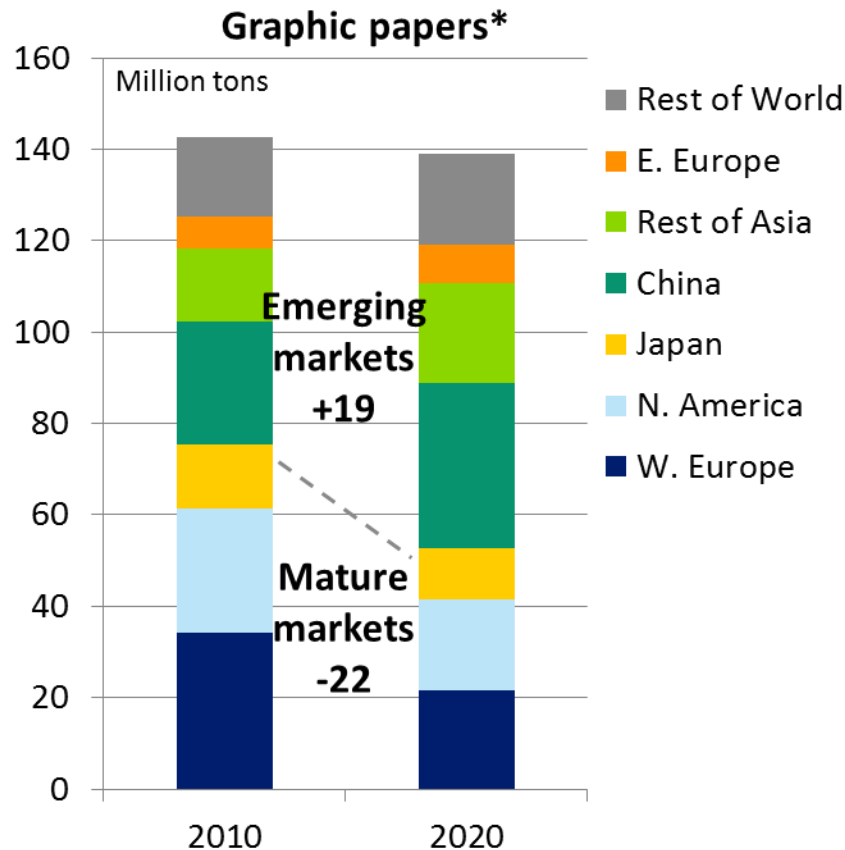
Imports of recovered paper have increased substantially driven by availability in specific countries and Chinese demand. This growth will slow over the next decade.



- Imports of recovered paper to China have grown rapidly over the last decade, coinciding with investment in collection systems and availability across Europe and North America.
- The key exporting countries remain the US, the UK and Japan.

# GRAPHIC PAPER DEMAND

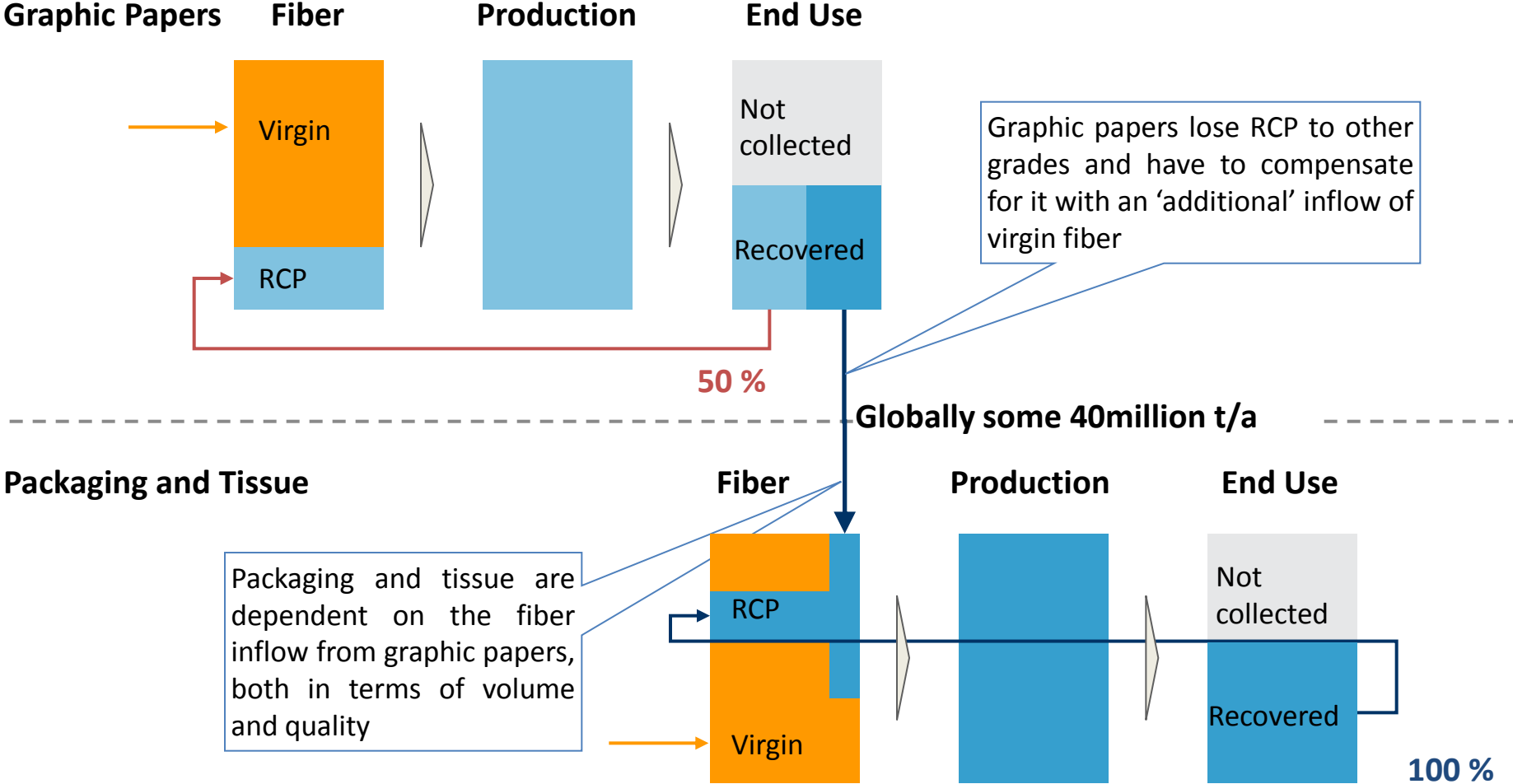
Graphic papers demand will behave very differently in mature vs. emerging markets, with slight overall decline forecast.



- Graphic paper is the only major paper/board category with forecast decline
  - Driven by rapid decline in mature markets, especially in newsprint, but also in other grades
- Lower demand drives lower production: less available for collection
- Leads to need for fiber substitution in tissue and cartonboard grades, especially

\*) Newsprint and Printing/Writing papers

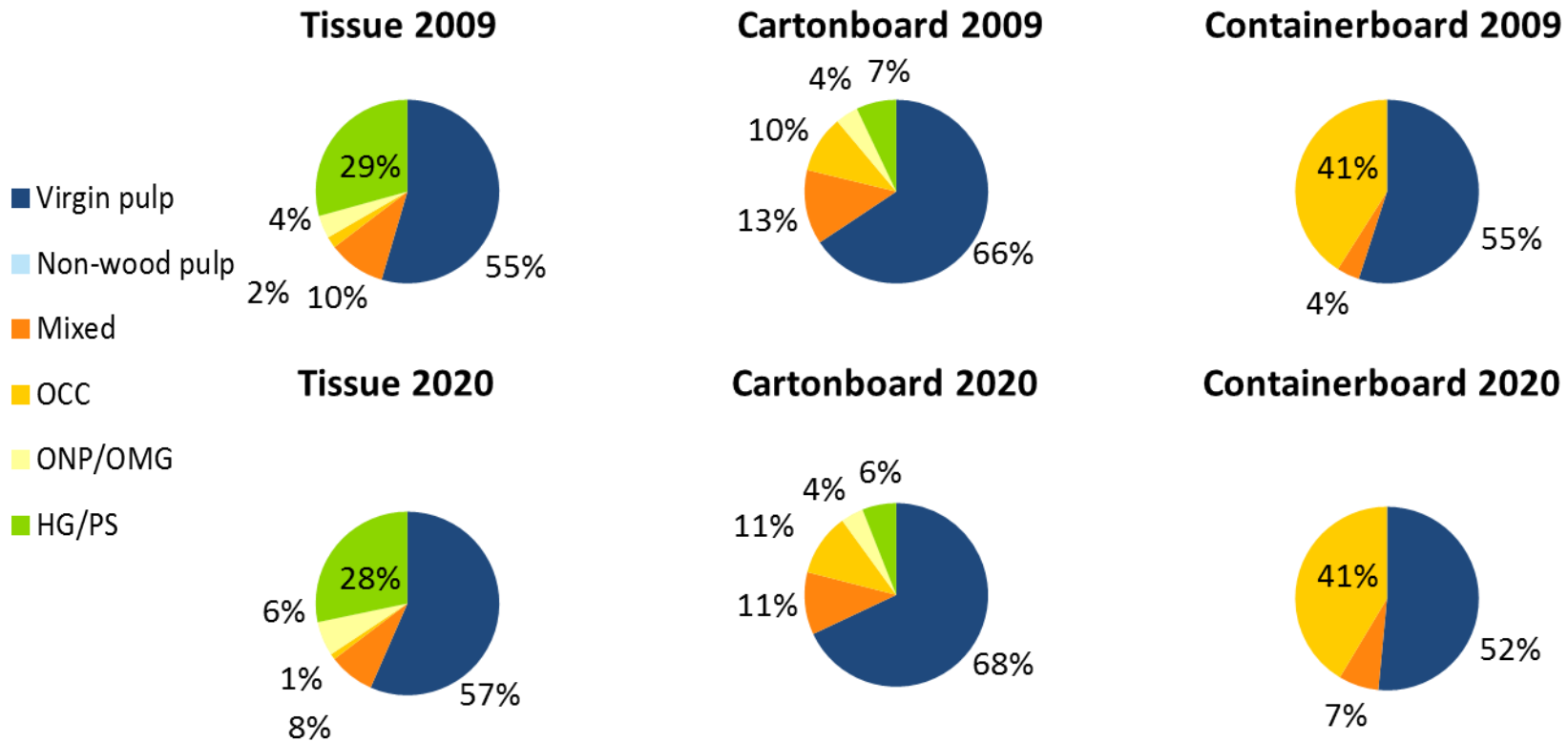
# GRAPHIC PAPERS PROVIDE FIBER TO PACKAGING AND TISSUE





# FURNISH DEVELOPMENT IN NORTH AMERICA

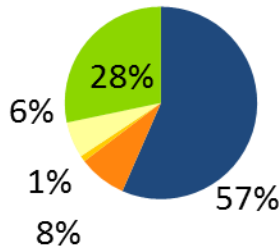
Furnishes of the selected grades are not expected to change much through 2020.



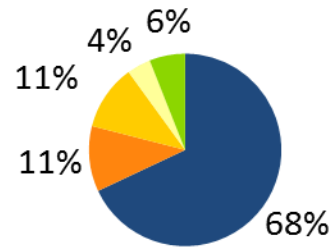
# FURNISH DEVELOPMENT COMPARISON

North America's furnish development is much different from China's.

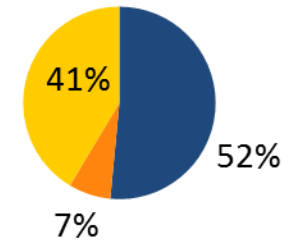
**Tissue 2020**



**Cartonboard 2020**



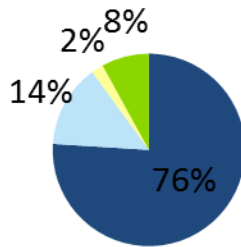
**Containerboard 2020**



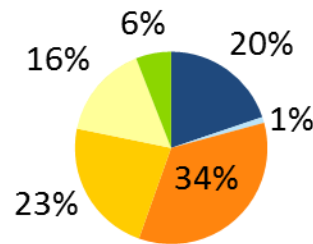
**North America**

**China**

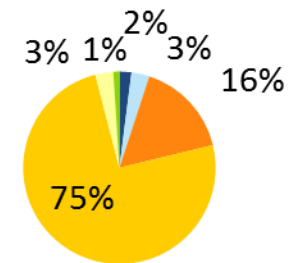
**Tissue 2020**



**Cartonboard 2020**

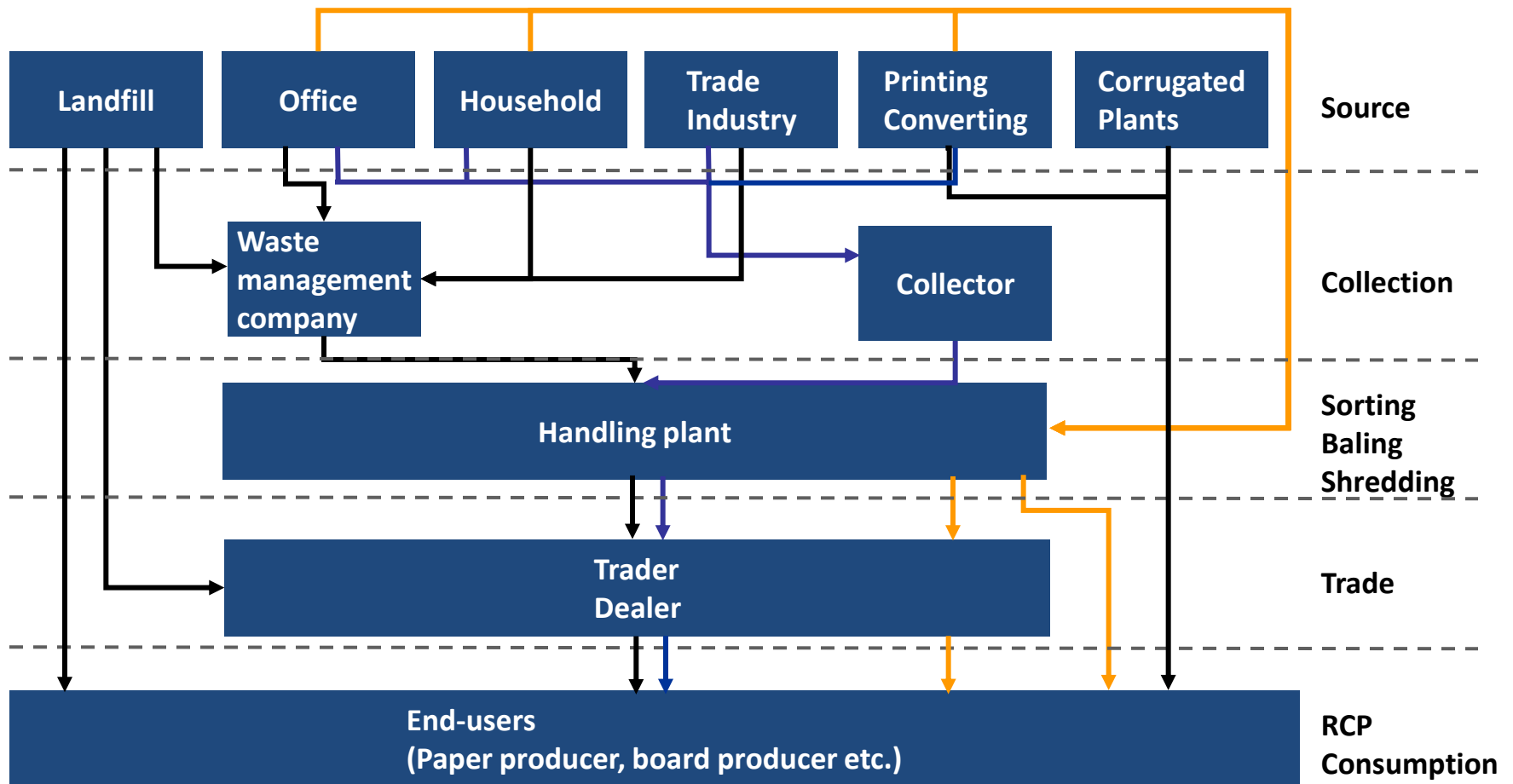


**Containerboard 2020**



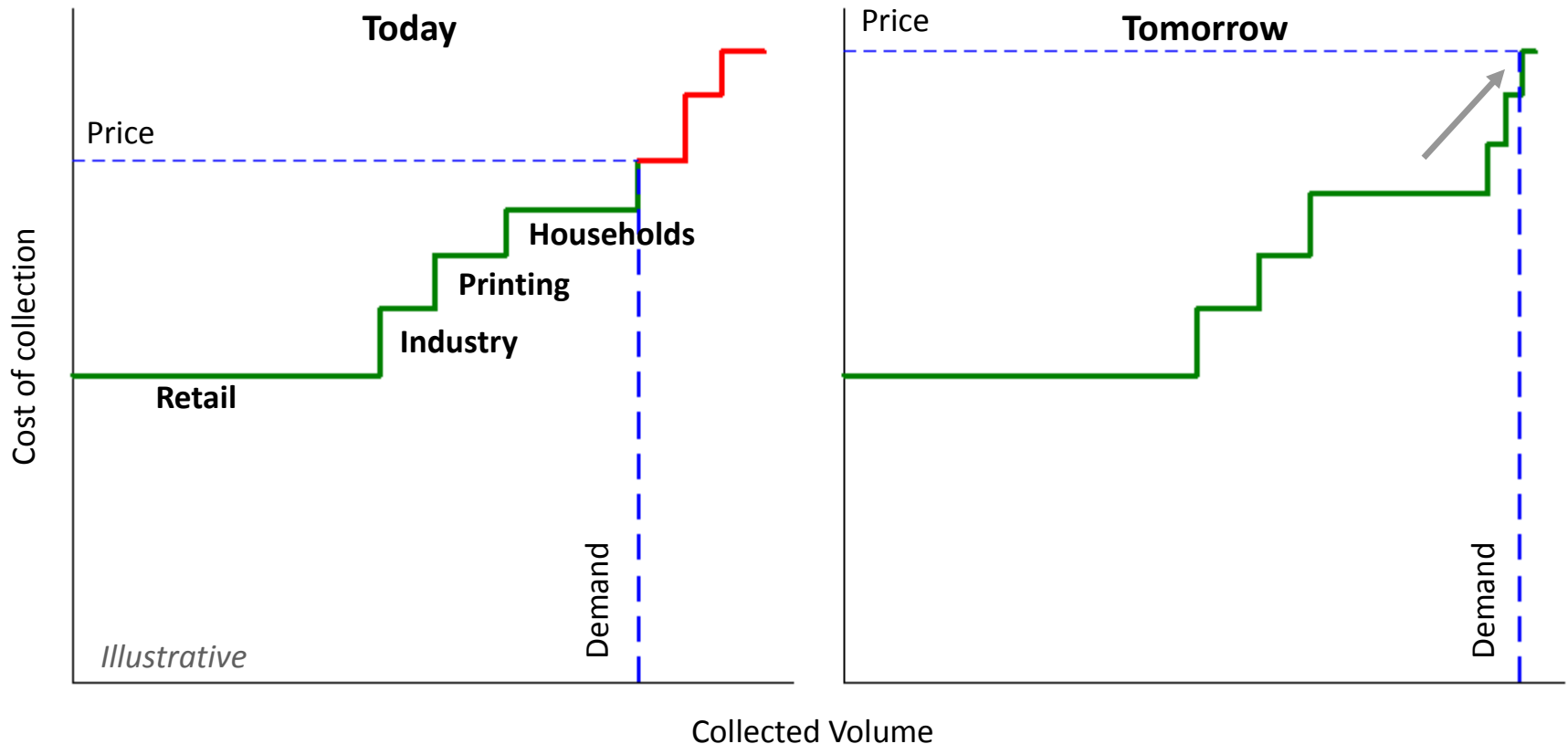
# RECOVERED PAPER FLOW

There are several paths from collection to consumption, some which include several “handlers” and intermediate steps. This can increase costs significantly.



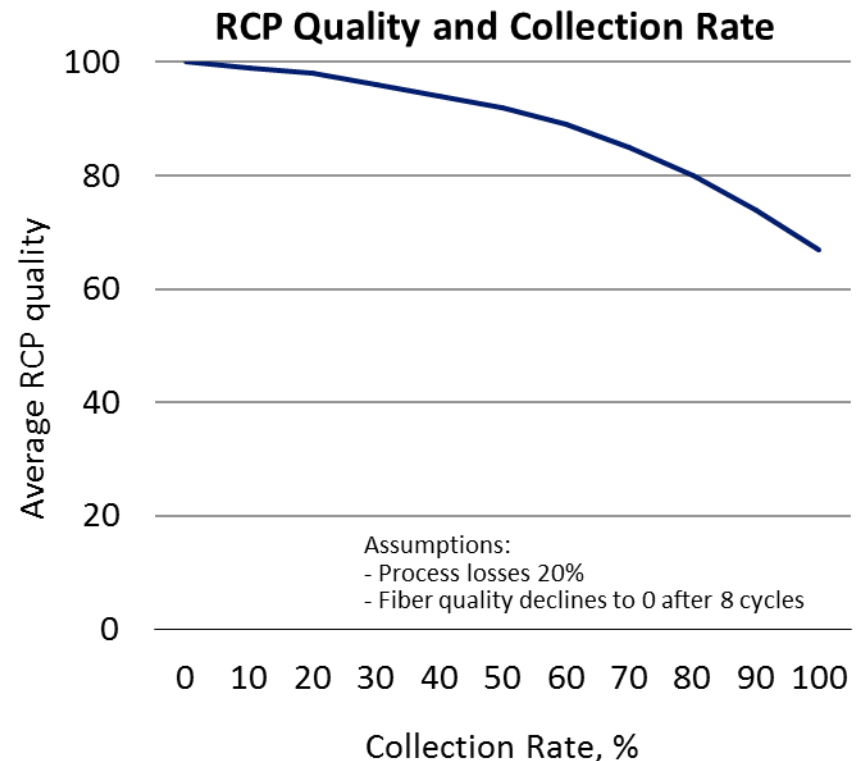
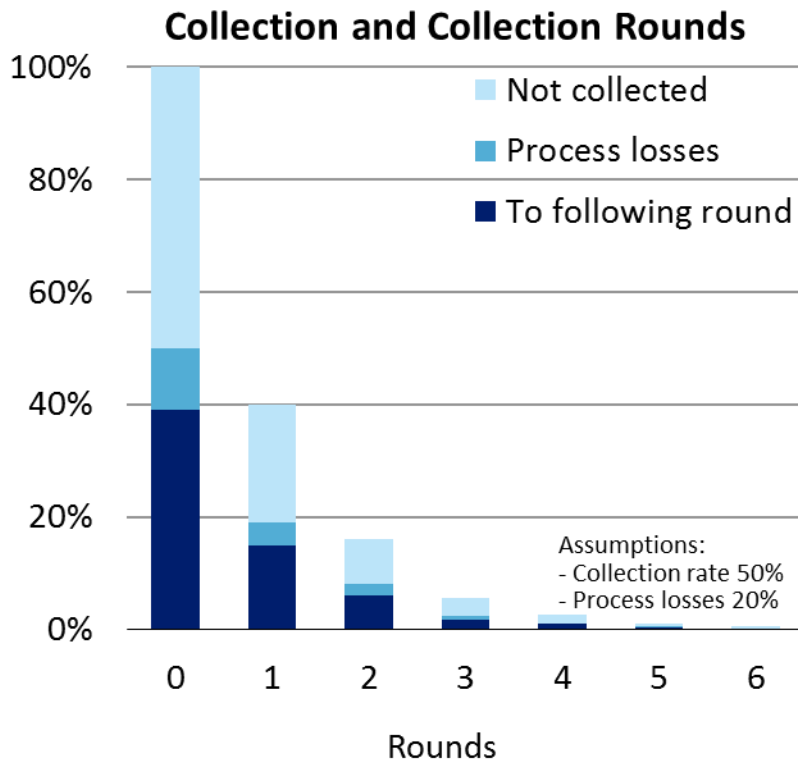
# INCREASING COLLECTION RATES → HIGHER COLLECTION COSTS AND PRICES

Since low-cost sources are already largely utilised, it is likely that the marginal cost of collection will go up in the future. This will drive prices higher.



# RCP COLLECTION ROUNDS AND QUALITY

It is possible to recycle fiber numerous times, but in reality, due to collection rates and process losses, over 80% of the fiber is lost after two collection rounds. Furthermore, the quality of the fiber weakens significantly with each collection round.



# DECLINING RCP FIBER AVAILABILITY

Changes in paper and board consumption structures could generate a vicious circle in RCP availability and consequently influence global fiber dynamics.

	DECLINE IN GRAPHIC DEMAND	PACKAGING GROWTH BUT IN DEVELOPING REGIONS
Driver for Change	<ul style="list-style-type: none"> <li>● Electronic substitution coupled with cost reduction initiatives.</li> </ul>	<ul style="list-style-type: none"> <li>● Shift of industrial production and packaging from mature markets to Asia accelerates.</li> </ul>
Main Challenges	<ul style="list-style-type: none"> <li>● Availability of ONP/OMG and HG RCP</li> <li>➤ Price pressures</li> <li>➤ Fiber inflow to tissue and packaging</li> </ul>	<ul style="list-style-type: none"> <li>● Availability of OCC</li> <li>➤ Limitations regarding collection rates</li> <li>● Quality limitations</li> </ul>

# SUMMARY: KEY ISSUES IN RCP

**Growing demand...**

**...and stagnating collection rates...**

**...coupled with deteriorating quality and yields...**

**... result in tighter supply/demand balance...**

**...impacting prices.**

**Threat from energy use?**

**Supply chain control?**



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**646-651-1548**