GROWTH OPPORTUNITIES IN PULP

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Pulp is used in products we all use daily

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Megatrends accelerate the demand of wood fibres

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		IMPACT ON PULP DEMAND
	**High population growth** areas in Asia, Africa and Middle East enter the world of “disposable products” (tissue & hygiene products, food packaging)	+++
	**Aging population** is driving especially the hygiene segments (elderly products)	++
	**People moving from rural to urban** continues. The modern supply chains of food and other consumables increase the need for packaging products (carton board, container board, tissue, specialty)	+++
	**Fast growing e-commerce** requires increasing amounts of cost efficient and sustainable packaging solutions (carton board, container board, specialty)	++
	Continued penetration of **digital solutions** drives decline of graphic papers demand and decreases availability of white recycled fibres	+

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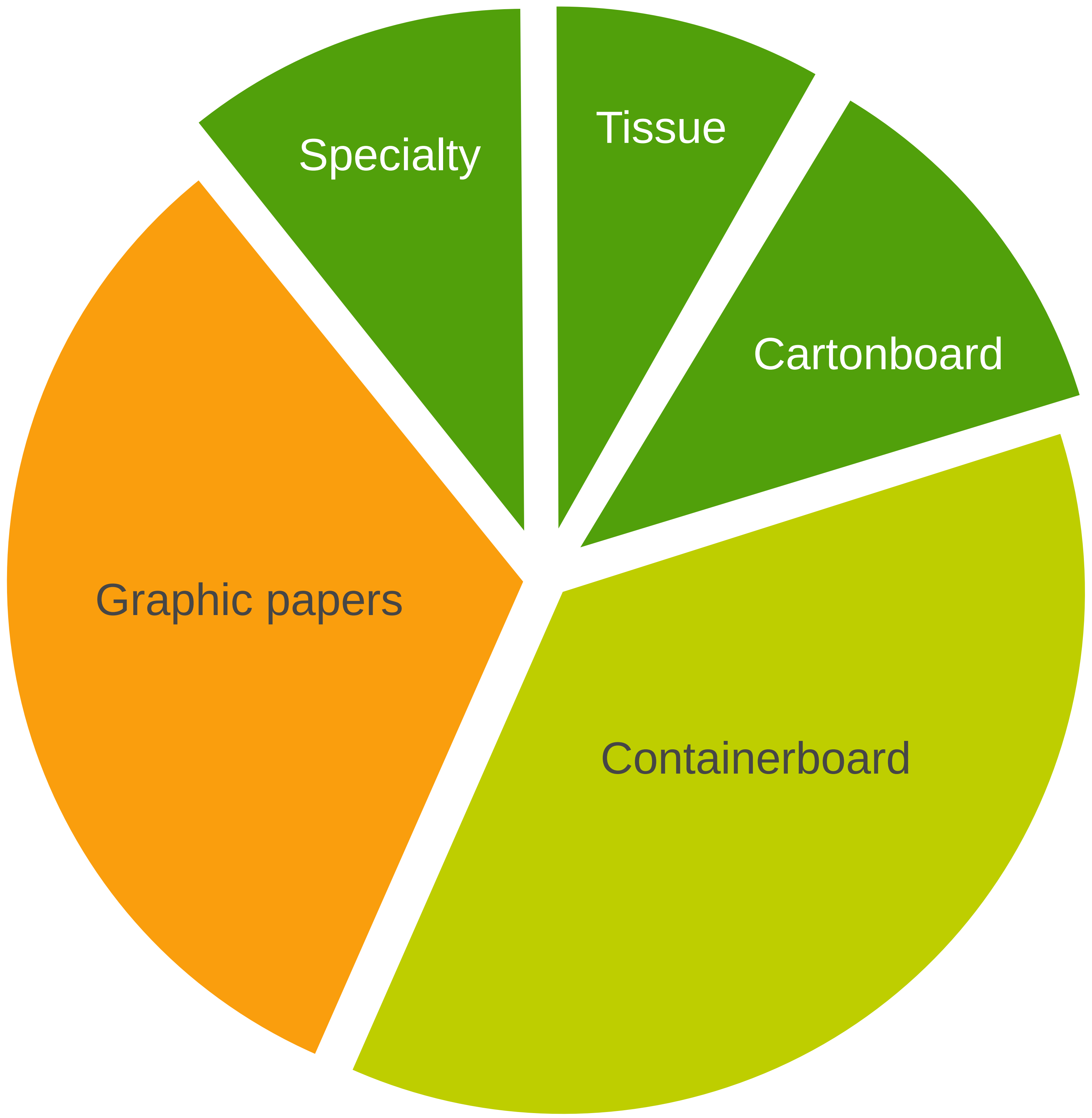
Market pulp consumed in growing end-uses – supply of alternative white fibres declines

Global paper and board production

Stressed supply of white recycled fibre



Market pulp consumption in growing end-uses

Mixed collection crowding out white recycled fibre

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Case: Market pulp consumption in growing end-uses

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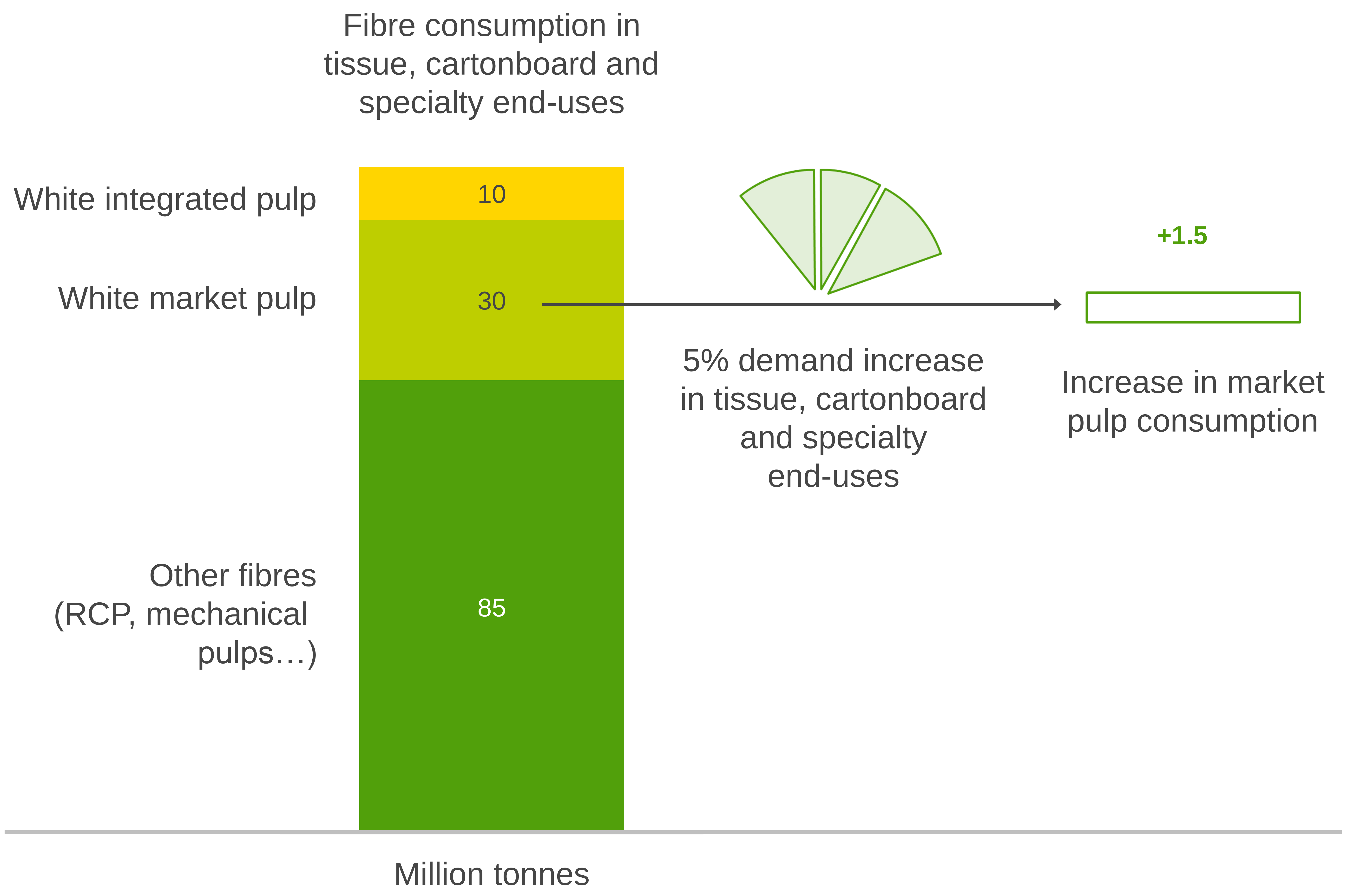

Source: Pöyry, Hawkins Wright, UPM

Case: Stressed supply of white recycled paper

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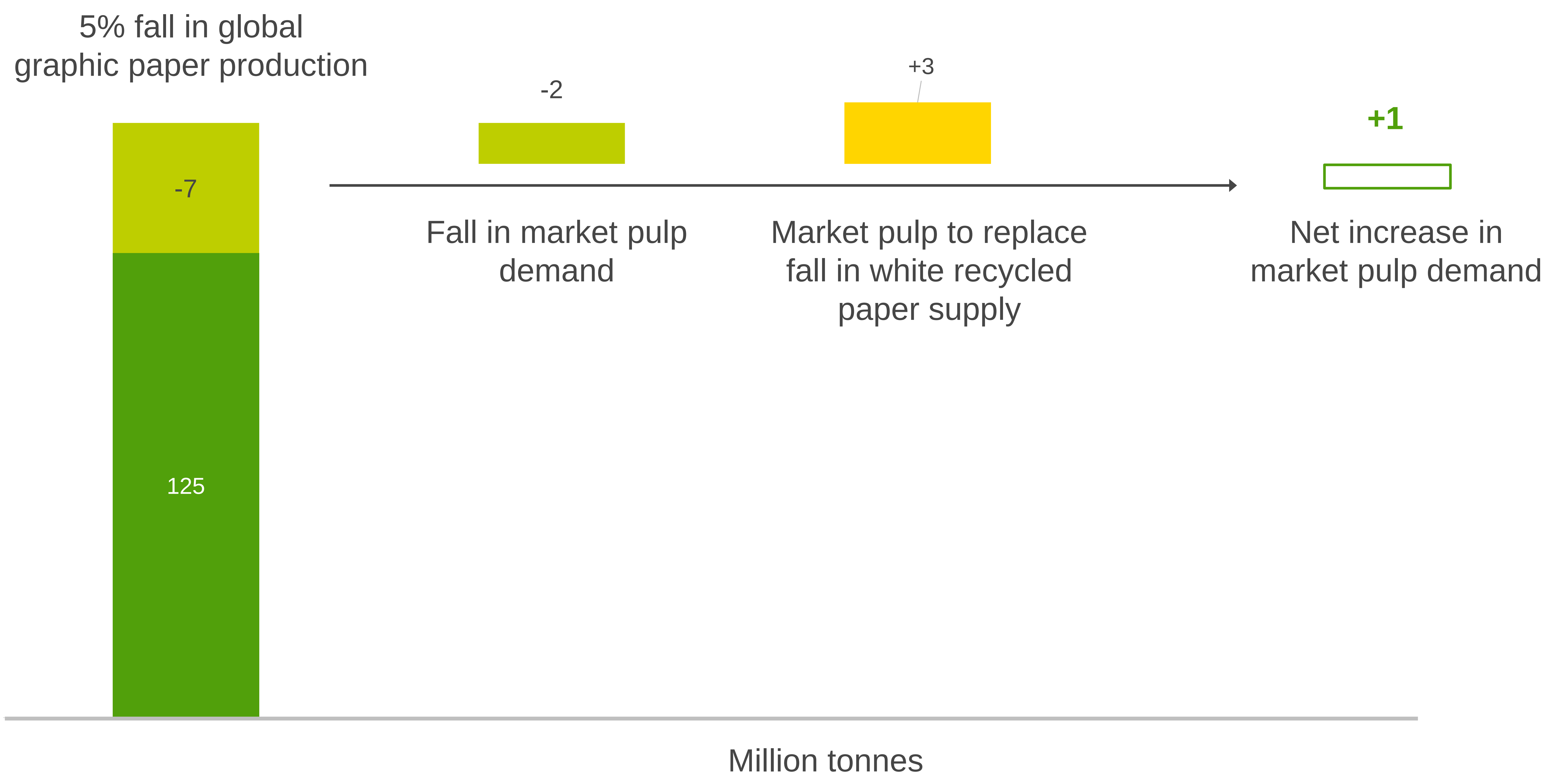

Source: Pöyry, UPM

Case: Mixed collection crowding out white recycled fibre

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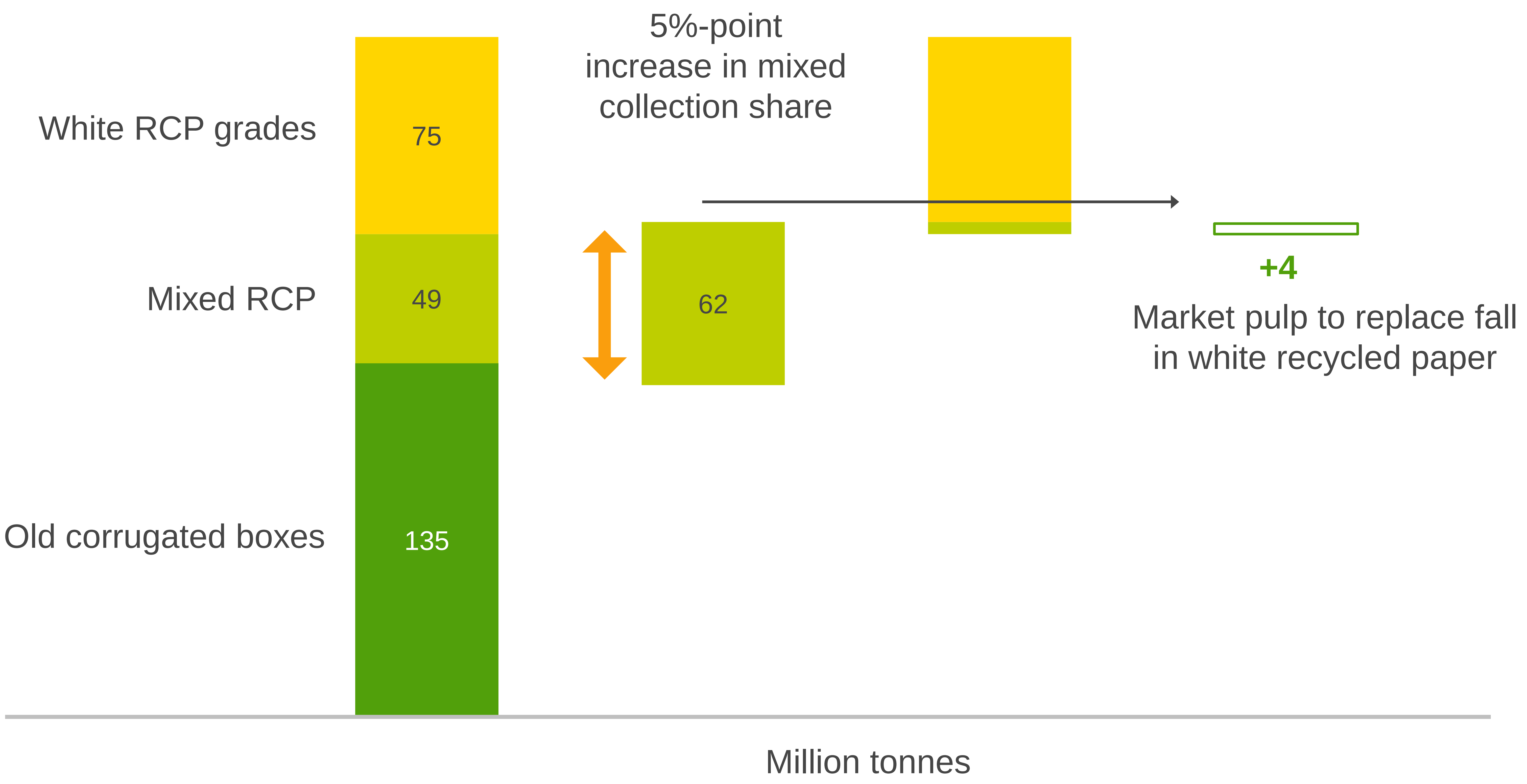

Source: Pöyry, UPM

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White fibres in different stages of life-cycle; 64 Mt capacity closed within 2000–2015

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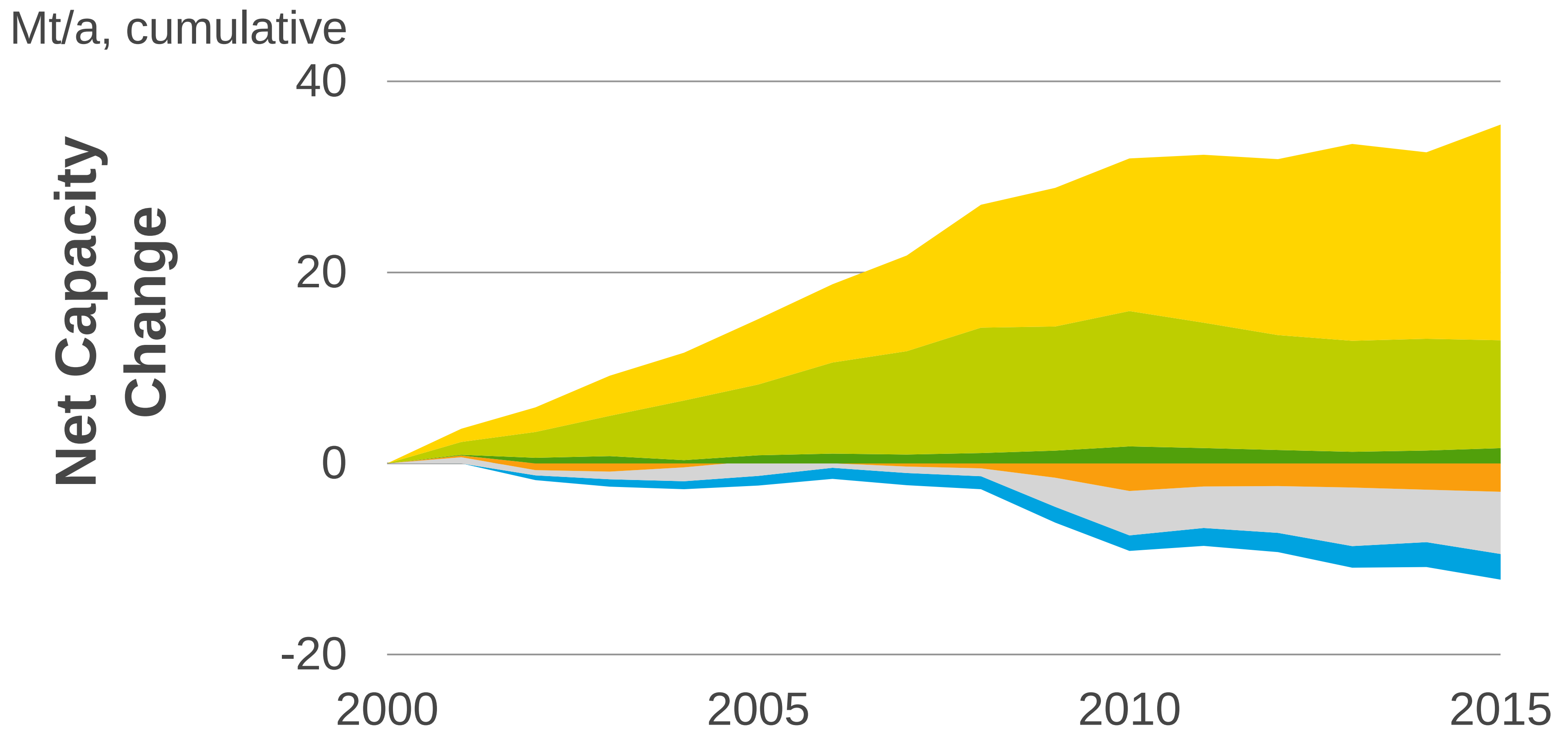

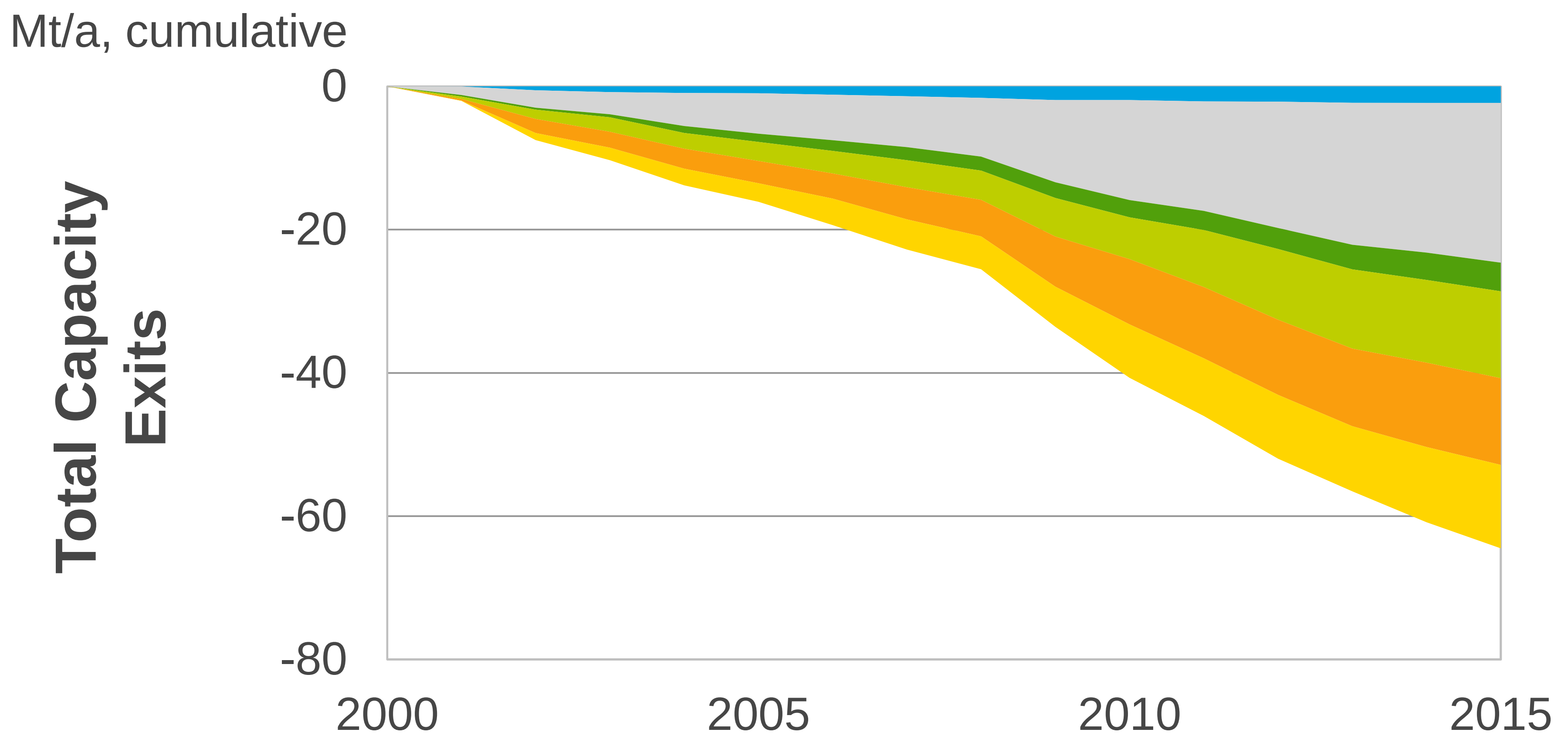

- **Hardwood pulp** capacity has experienced strong net growth after 2000 and is expected to continue growing.
- **Softwood** has faced closures as much as hardwood. New demand in China is turning decline into a slow growth.
- **White RCP** was the fastest-growing fibre in Europe and NA in early 1990's. After recession capacity has been in decline due to very high collection rates and diminishing supply of graphic paper.
- **Mechanical** pulp continues to decline along with graphic papers.
- **Non-wood** pulps consumed mostly in China are under pressure due to environmental reasons.
- **Sulphite** has been in decline for decades.

Note: Including both market and integrated pulp

Source: Pöyry

Summary of pulp demand outlook

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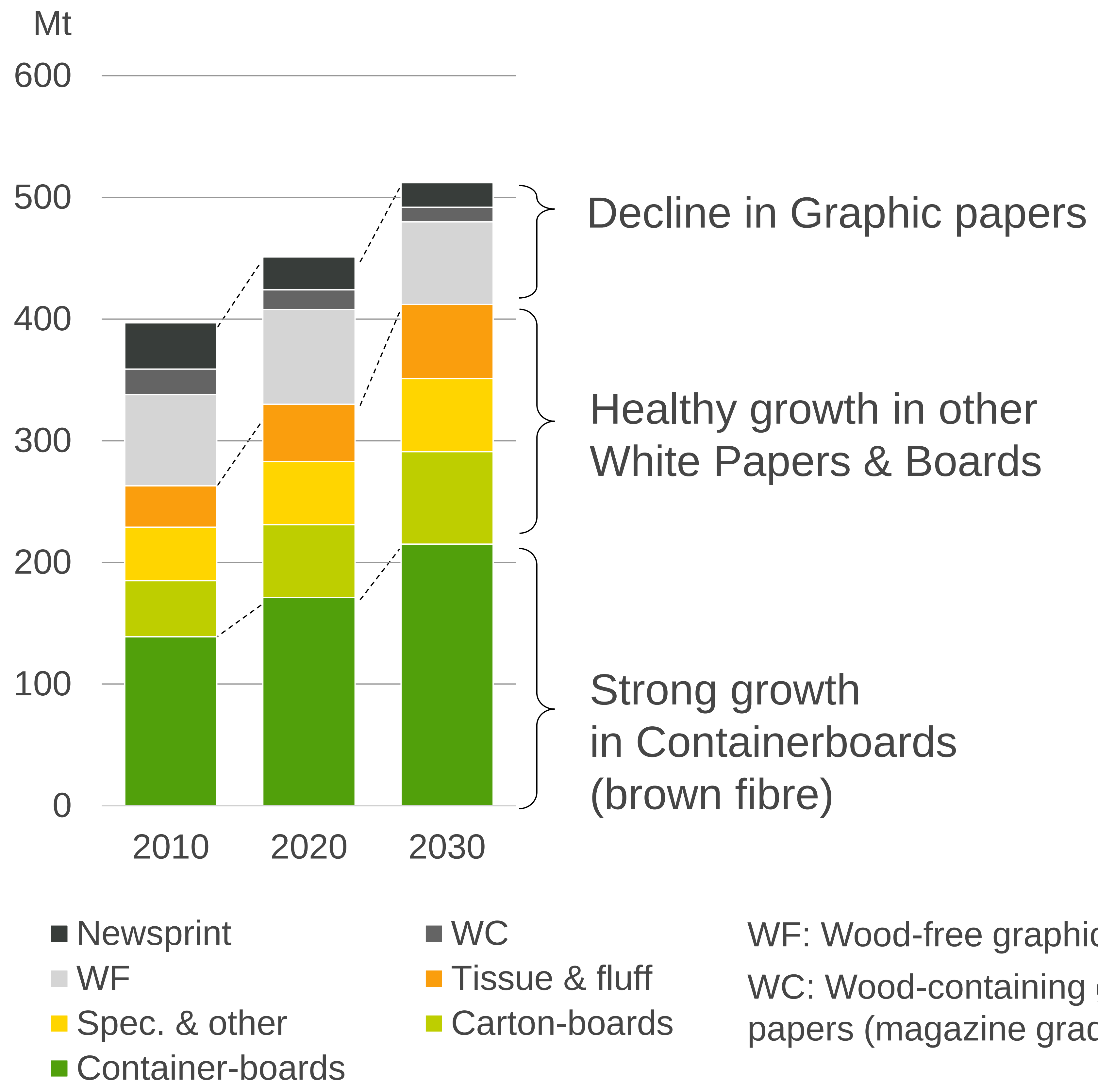
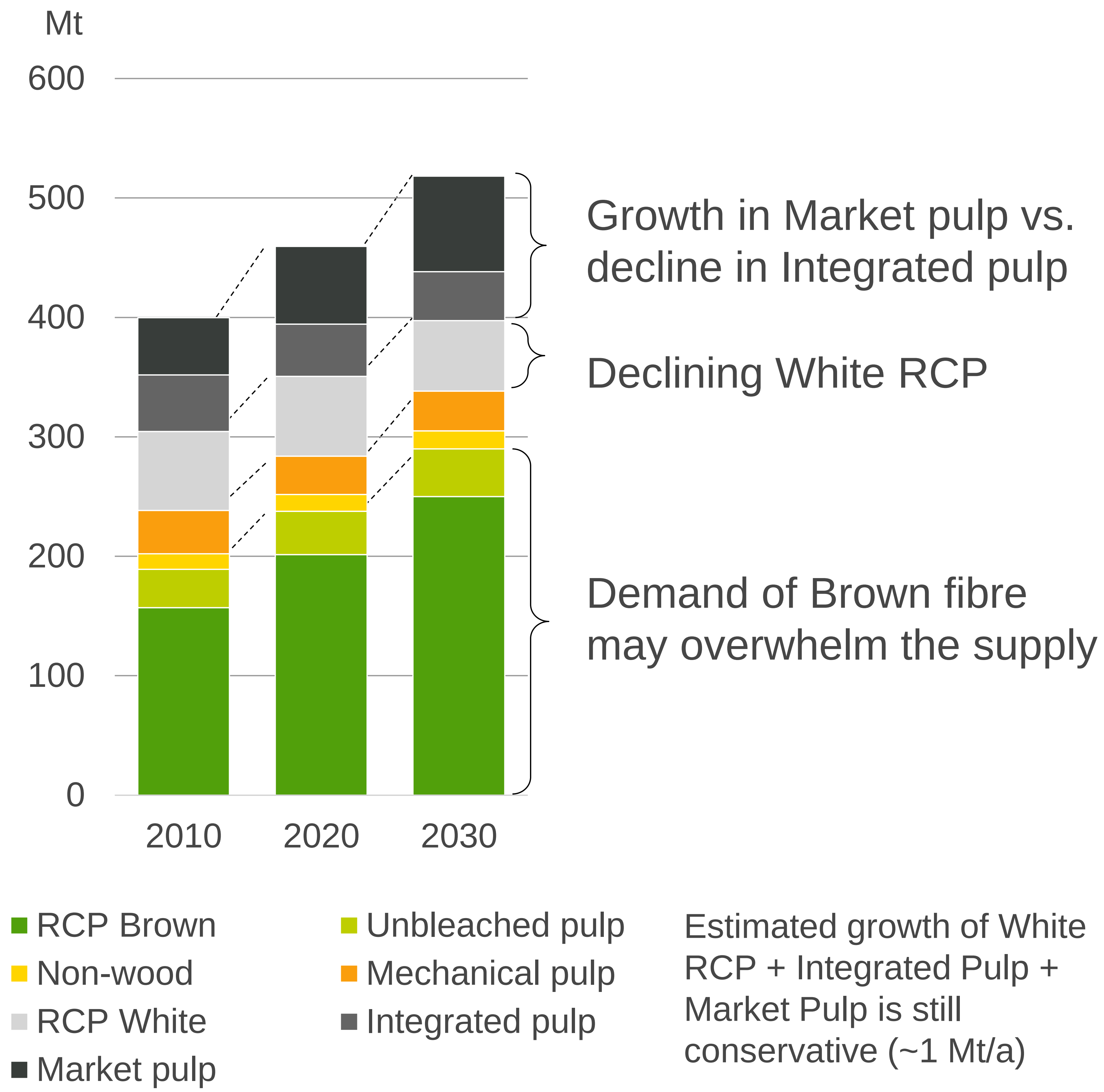
Increase in end use …



WF: Wood-free graphical papers

WC: Wood-containing graphical papers (magazine grades)

… will drive fibre demand in coming decades



Estimated growth of White RCP + Integrated Pulp + Market Pulp is still conservative (~1 Mt/a)

Source: UPM, Pöyry, RISI

UPM Pulp’s commercial strategy is based on multi-fibre product strategy and technical support

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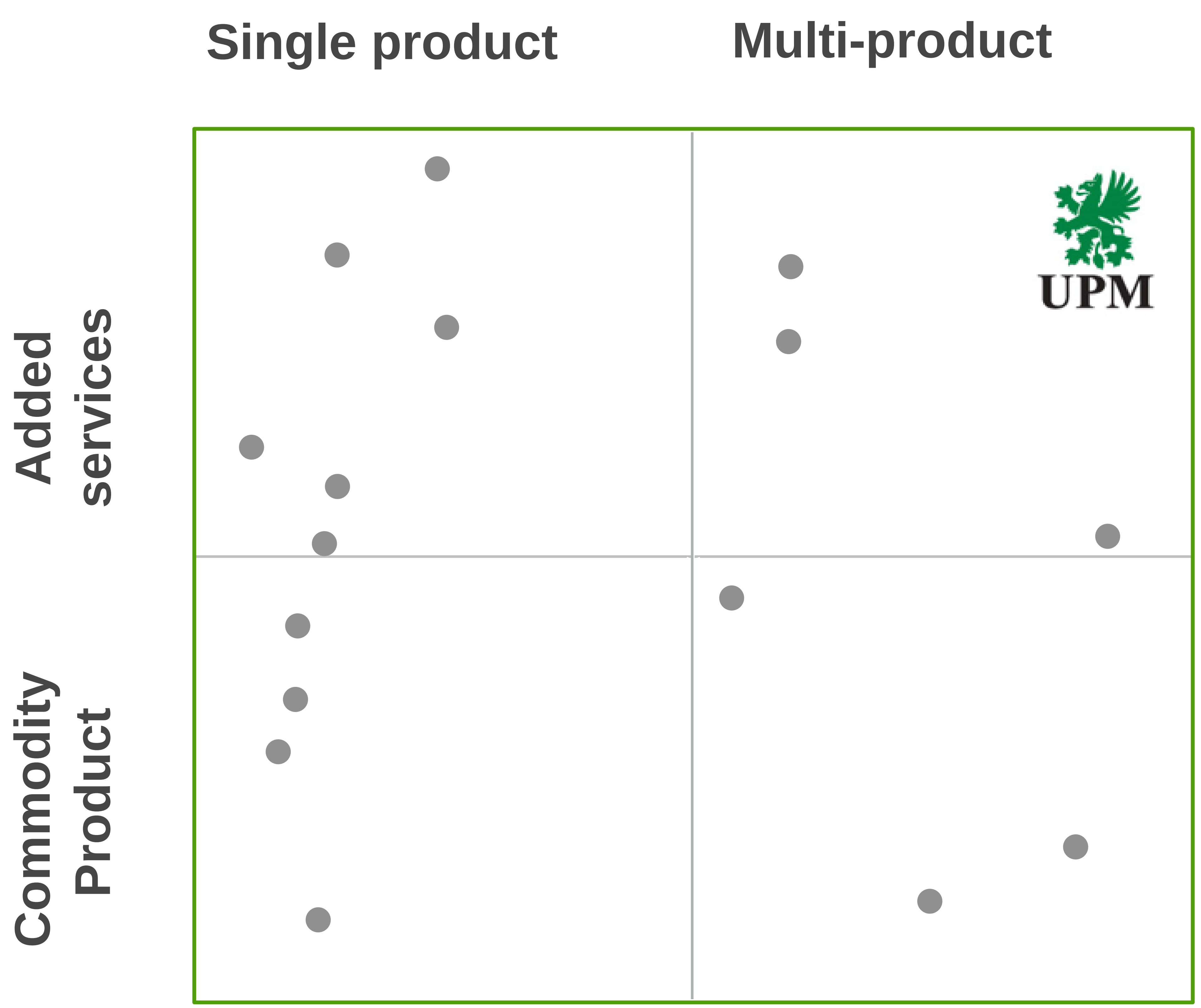

Source: UPM

- Broad pulp grade offering combined with technical service strengthens UPM’s customer relations and enhances regular business
- UPM is large in specialty end-use segments where quality, product range and technical support matters the most
- Trusted business partner with own sales and marketing network, advanced technical service offering and outstanding environmental performance as well as stable quality pulp
- Modern and cost efficient assets, committed to grow with the customers

Sustainability and environmental performance are increasingly important differentiators

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Performance of wood supply & mill operations

* Including certificates, eco-labels, footprint analyses etc.

Source: UPM

Sustainability principles for UPM pulp

Wood supply

- Legal and certified
- Biodiversity integrated in operations
- Net positive environmental gain

Mill operations

- BAT and continuous improvement
- Eco-label criteria fulfilled

Stakeholders

- Active dialogue and engagement of local, national and international stakeholders

Proof

- Verified for internationally recognized eco-label
- Footprint analysis; carbon, water
- Recognized in Dow Jones sustainability index

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Large modern assets allow growth through debottlenecking with high pay-off at low risk

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Pietarsaari
pulp mill expansion
70,000t

Kymi
pulp mill expansion
170,000t

Kaukas
pulp mill efficiency improvement, paper and pulp decoupling completed

Q2 2014 | Q3 2014 | Q4 2014 | Q1 2015 | Q2 2015 | Q3 2015 | Q4 2015 | Q1 2016 | **Q2 2016** | Q3 2016 | Q4 2016 | Q1 2017 | Q2 2017 | Q3 2017 | Q4 2017

Fray Bentos
pulp mill expansion
100,000t

Capacity increase since 2013 more than 500,000 tonnes
with investments of ~ EUR 350m

Kymi
pulp mill expansion
170,000t

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Uruguay could be a competitive alternative – logistics infrastructure

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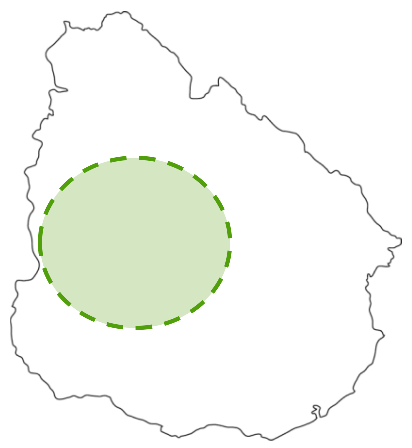
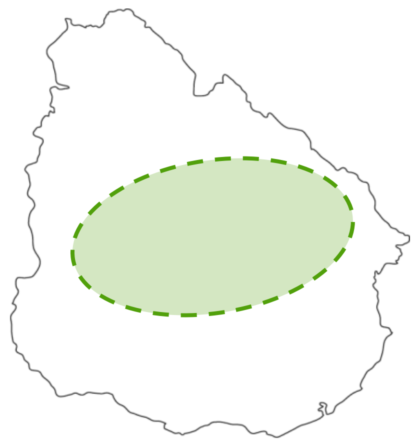
Current Operations			Uruguay prospect
Plantation base at the littoral			Plantation base at Rio Negro basin
Fray Bentos pulp mill			New pulp mill
~ 100 km of river barging for outbound logistics			Railway with high technical standards
Sea port in Nueva Palmira loading half vessels			Deep sea port in Montevideo loading full vessels
Ocean vessels to pulp markets			Ocean vessels to pulp markets

Uruguay could be a competitive alternative – time schedule is several years

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Conversation with Government of Uruguay

Development of Infrastructure Pre-engineering Tendering and Permitting
est. 1.5–2 years

UPM Investment Decision

Investment Project Development of Infrastructure
est. 2.5 years

Phase I

Phase II

Phase III

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The way forward

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- UPM has built a competitive asset base and strong position with customers
- Global pulp market growth offers UPM opportunities to grow with our customers, both short term and long term
- Short term, UPM grows profitably with debottlenecking and developing the asset base
- Longer term, UPM has several options – Uruguay could be a competitive alternative

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