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How renewable is fibre sourcing for paper packaging in Europe?

The single-use paper packaging industry claims that “European paper packaging is made from renewable wood fibre, which originates from sustainably managed forests.”¹ To reinforce this assumption, the impact assessment that EPPA commissioned from Ramboll assumes that “products are made solely from virgin paper sourced from European renewable, certified, sustainable forest.”² Two questions are necessary to assess the accuracy of this statement:

- *Is paper packaging produced or consumed in Europe solely made from wood grown in Europe?*
- *Will the growing demand for pulp, fuelled by increases in single-use packaging consumption, lead to a further rise in pulp imports from areas at risk in the southern hemisphere?*

Key findings

Paper and board production has increased by 33% between 1991 and 2021, largely driven by the explosion in paper packaging.

This has contributed to the **intensification of logging of European forests**: over the same time period, European pulp production increased by 9.8%, with disastrous consequences for European forests.

Yet European forests cannot supply all the fibres required to sustain this growing production. As a consequence, **Europe is already importing large and growing amounts of fibre from the Southern hemisphere**, fuelling deforestation.

Recycled fibres cannot, and will not, be able to meet rising demands. As it stands, recycling is at maximum capacity and pulp mills are already being *reconverted* from recycled fibres back to virgin fibres.

¹ EPPA, Statement from EPPA on the report published by the Rethink Plastic Alliance, Zero Waste Europe, the European Environmental Bureau, Fern, and the Environmental Paper Network on 12 September 2023, <https://eppa-eu.org/eppa-response-to-ngo-report/>

² EPPA, Single-use vs multiple-use using science to challenge the misconceptions, January 2021, https://fr.twosides.info/wp-content/uploads/sites/9/2021/01/RAMBOLL_RAPPORT_FINALE_VERSION.pdf

The significant increase in the consumption of paper products is not supported by equal increase in forest production

Between 1991 to 2021, paper products consumption in Europe increased by 22% (from 60,102,000 tonnes to 75,219,000 tonnes³). Paper-based packaging is already the largest source of packaging waste in the European Union (41.1%). This represents a serious problem in terms of waste management, but the impacts are also very troubling on the sourcing side. Part of the increased demand for pulp has been met through intensified logging of European forests. Yet this intensification has been insufficient and the remainder has been met through increased import from the Southern hemisphere.

Part of the pulp has come from the intensified logging of vulnerable European forests

Between 1991 and 2021, European pulp production increased by 9.8% (from 33,807,000 tonnes to 37,297,000 tonnes). During this time, logging of European forests intensified: in 2021, the EU produced an estimated 507 million m³ of wood, 25.6 % more than at the beginning of the millennium.⁴ This amount includes wood supplies to the paper industry, but also to growing demands from other industries. For example, a large amount of fibres have been diverted to energy production, including by pulp & paper mills.

The health and quality of European forests has been deteriorating. As a result of overlogging, northern European forests are losing their capacity to sequester CO₂, as highlighted for Sweden,⁵ Finland⁶ and Estonia.⁷ At the same time, natural forests are being replaced with planted ones. As well as being incapable of hosting the original biodiversity, these require decades to reach maturity, during which they produce no wood. This creates a wood sourcing gap.

Southern European forests enjoy milder climates and quicker tree growth. The pulp & paper industry are resultantly promoting the expansion of fast-growing eucalyptus plantations, particularly in Spain and Portugal. Because of their shorter rotation cycles, these provide higher wood outputs. However, this output comes at a high social and environmental price. Alongside the environmental impacts, primarily on water table and with soil erosion, these extensive plantations cause intense fires, such as those affecting Portugal since 2017.⁸ These have prompted the prohibition of further expansion of eucalyptus

³ CEPI, Key statistics 2021 <https://www.cepi.org/wp-content/uploads/2022/07/Key-Statistics-2021-Final.pdf>

⁴ Eurostat, Wood products - production and trade, December 2022, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Wood_products_-_production_and_trade

⁵ Natur Vards Verket, Nettoinlagringen av koldioxid i växande träd minskar kraftigt, September 2022, <https://www.naturvardsverket.se/om-oss/aktuellt/nyheter-och-pressmeddelanden/nettoinlagringen-av-koldioxid-i-vaxande-trad-minskar-kraftigt/>

⁶ Yle News, Confirmed data: Finnish land use now emits more carbon than it traps, December 2022, <https://yle.fi/a/74-20008918>

⁷ Estonian Union for Nature, Logging and carbon storage in Estonia, May 2022, [https://media.voog.com/0000/0037/1265/files/LULUCF%20background%20paper_Estonian%20Fund%20For%20Nature%20\(May%202022\).pdf](https://media.voog.com/0000/0037/1265/files/LULUCF%20background%20paper_Estonian%20Fund%20For%20Nature%20(May%202022).pdf)

⁸ Climate Home News, It may replace plastic but eucalyptus paper packaging helped burn down my home, August 2023, <https://www.climatechangenews.com/2023/08/31/portugal-fire-eucalyptus-packaging/>

plantations in Portugal.⁹ We cannot, therefore, expect an indefinite growth yield increase from Southern European forests.

The remainder has come from increased pulp imports

In the nineties, Europe was self-sufficient in pulpwood fibre, and even exported pulp (5.5 Mt/a equal to 8% of its production)¹⁰. This is no longer the case: since 2002 the EU has had an ongoing trade deficit for pulp.¹¹

Indeed, whilst European pulp production increased by 9.8% between 1991 and 2021, paper & board production increases were three times superior (33%).¹² Given the productivity saturation of European forests, this increase, and future increases, can only be met through increased imports of pulp from fast-growing plantations in South America and South-east Asia.



*European Union Imports of paper and paperboard, articles of pulp, paper and board.
Trading Economics, elaboration of Comtrade data*

The countries from which the European paper industry is increasingly importing pulp are mostly located in the Southern hemisphere, where forestry operations cause severe impacts. Countries of sourcing

⁹ AlgarveNews, Ban on further eucalypts forests enrages Portugal’s pulp industry, April 2017,

<https://algarvedailynews.com/news/11532-ban-on-further-eucalyptus-forests-enrages-portugal-s-pulp-industry>

¹⁰ “EU(15) is virtually self- sufficient and a net exporter for some 8% (5.5 Mt/a) of its total production (70 Mt/a).” See: European Investment Bank, Financing the European pulp, paper and board industry, June 1997,

https://www.eib.org/attachments/pj/financing_european_pulp_paper_board_industry_en.pdf

¹¹ Eurostat, Extra-EU trade in raw materials, March 2023, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Extra-EU_trade_in_raw_materials&oldid=562723

¹² CEPI, Key statistics 2021 <https://www.cepi.org/wp-content/uploads/2022/07/Key-Statistics-2021-Final.pdf>

include Brazil,¹³ Chile,¹⁴ Uruguay,¹⁵ and Indonesia, where the industry expansion is pushing as far as the furthest corners of Borneo, causing extensive tropical deforestation.¹⁶ Increases in the global demand for virgin pulp have resulted in a new generation of pulp mills,¹⁷ reaching new countries such as Paraguay¹⁸ or Mozambique¹⁹.

Recycling is not the solution

Recycling is often indicated as the solution to this problem. Unfortunately, it is not. Currently, paper fibres in Europe are only used 3.5 times on average (this observed number is much lower than the theoretical number of 8 uses²⁰) and around 90% of paper pulp is still made from virgin fibre.²¹ Globally, paper production is responsible for about 35% of all clear-felled trees²² leading to 3 billion trees cut down every year for paper-based packaging.²³

Recycling rates have plateaued and may decline

Worse, the recycling rate is not growing in Europe. It has plateaued after peaking in the past decade. Because packaging waste is less recyclable than graphic paper, the availability of recycled fibre may even decrease as packaging use continues to grow and graphic paper use continues to decline.

¹³ EPN, Scorching the earth. The impacts of pulp and paper expansion in the Três Lagoas region - Brazil, December 2022, https://environmentalpaper.org/wp-content/uploads/2022/12/20221215-scorching_the_earth_eng.pdf

¹⁴ EPN, Colectivo Viento Sur, GFC, Stolen land and fading forests, June 2022, <https://environmentalpaper.org/2022/06/stolen-land-and-fading-forests-in-chile/>

¹⁵ [Preliminary study of prairies forested with Eucalyptus sp. at the northwestern Uruguayan soils | Request PDF](#)

¹⁶ EPN, Greenpeace, Auriga, RAN, WWI, Pulping Borneo, May 2023, <https://environmentalpaper.org/2023/05/pulping-borneo/>

¹⁷ EPN, Mapping the Expansion of the Paper Industry, <https://environmentalpaper.org/mapping-the-expansion-of-the-paper-industry/>

¹⁸ EPN, Grupo Suni, Axial, BIC, Accountability Project, Grupo Maira, Paracel pulp mill in Paraguay: A risky project, October 2022, <https://environmentalpaper.org/wp-content/uploads/2022/10/2022-09-23-Paracel-Concerns-Joint-0Briefing.pdf>

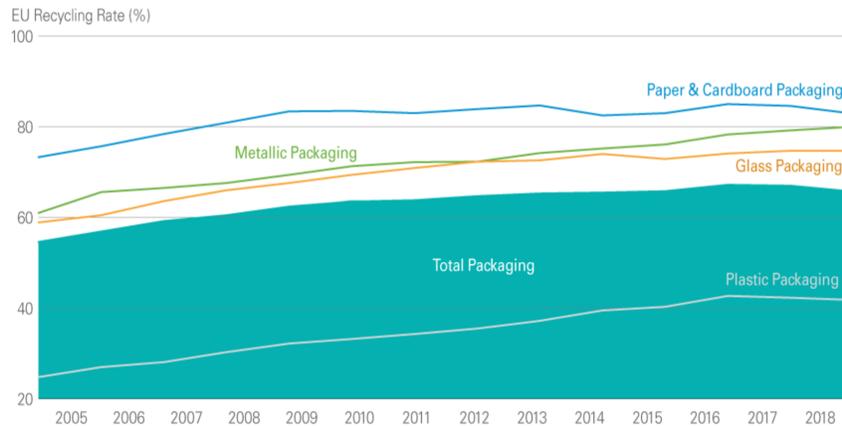
¹⁹ EPN, Quercus, KKM, ARA, Adecru, A land grab for pulp, October 2017, <https://environmentalpaper.org/wp-content/uploads/2017/11/171117-Discussion-Documents-Portucel-Report-2017-English.pdf>

²⁰ European Paper Recycling Council, Monitoring Report 2021, European Declaration on Paper European Paper Recycling 2021-2030, September 2022, p. 2.

²¹ Bandara, R., G.M. Indunil (2022, July 1), "Food packaging from recycled papers: chemical, physical, optical properties and heavy metal migration", Heliyon 8 (2022), <https://www.sciencedirect.com/science/article/pii/S2405844022022472>

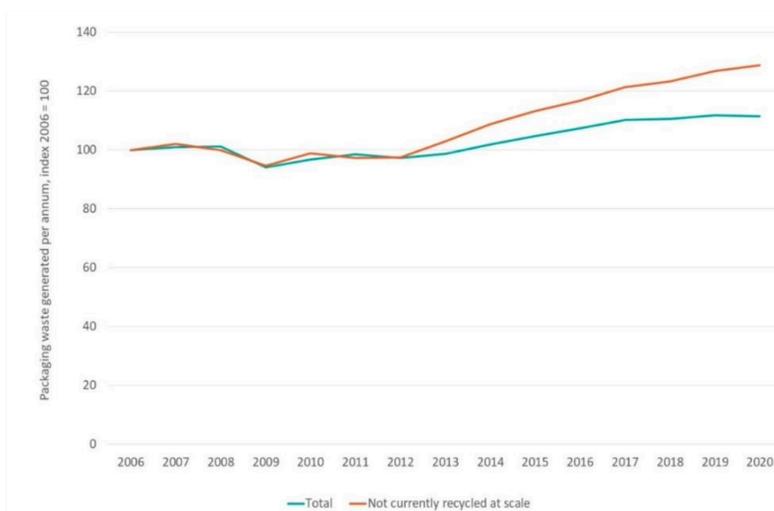
²² Bandara, R., G.M. Indunil (2022, July 1), "Food packaging from recycled papers: chemical, physical, optical properties and heavy metal migration", Heliyon 8 (2022), <https://www.sciencedirect.com/science/article/pii/S2405844022022472>

²³ The Grocer (2023, July 3), "Is paper really better for the Earth than plastic?", <https://www.thegrocer.co.uk/sustainability-and-environment/is-paper-packaging-really-more-sustainable-than-plastic/680773.article>



Recycling rates in the EU. *Lazard*, based on Eurostat data

Packaging waste increasingly consists of multilayer composites, and/or is often contaminated by food or other residues. This poses challenges to the majority of sorting systems.²⁴ For around the last decade, the amount of packaging that inhibits recycling has been increasing at a greater rate than total packaging waste generated. Currently, 17% of packaging is non-recyclable,²⁵ and without proper measures in place, a further decline of recycling cannot be ruled out²⁶.



Change in total and packaging that inhibits recycling, index 2006 = 100
Source: Eunomia baseline model, from *PPWR Impact Assessment Part II*

²⁴ PPWR Impact Assessment Part II, <https://environment.ec.europa.eu/system/files/2022-11/Impact%20assessment%20accompanying%20the%20proposal%20-%20part%202.pdf>

²⁵ PPWR Impact Assessment Part II, <https://environment.ec.europa.eu/system/files/2022-11/Impact%20assessment%20accompanying%20the%20proposal%20-%20part%202.pdf>

²⁶ European Paper Recycling Council, Monitoring Report 2021, European Declaration on Paper Recycling 2021-2030, September 2022, https://www.eurosac.org/fileadmin/pdf/eurosac_in_the_media/EPRC-Monitoring-Report-2021_20220909.pdf

Companies are actually reconverting pulp mills from recycled pulp to virgin pulp

A telling example of current trends comes from the recent decision by the Norwegian paper company Norske Skog to *reconvert a pulp mill from recycled to virgin pulp*. According to the Managing Director, “the availability of recycled fibres has declined in recent years while procurement and transportation costs have increased. This is due to a reduced consumption of printing paper and an increased demand for recycled fibre in the growing packaging market”.²⁷

Recycling cannot mitigate the rapidly growing demand of paper for single-use packaging. This will be exacerbated if, in the absence of proper measures to curb the expansion of single-use packaging use, paper packaging is aimed to substitute plastic packaging.

²⁷ Norske Skog, New TMP Line at Norske Skog Skogn, September 2023, <https://www.norskeskog.com/about-norske-skog/press-room/articles/new-tmp-line-at-norske-skog-skogn?PID=4791&M=NewsV2&Action=1>