

Increasing paper recycling in Europe Through recycling of paper from mixed waste streams

Paper and Beyond Conference

@ Brussels, 11/29/2022



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Gefördert durch:



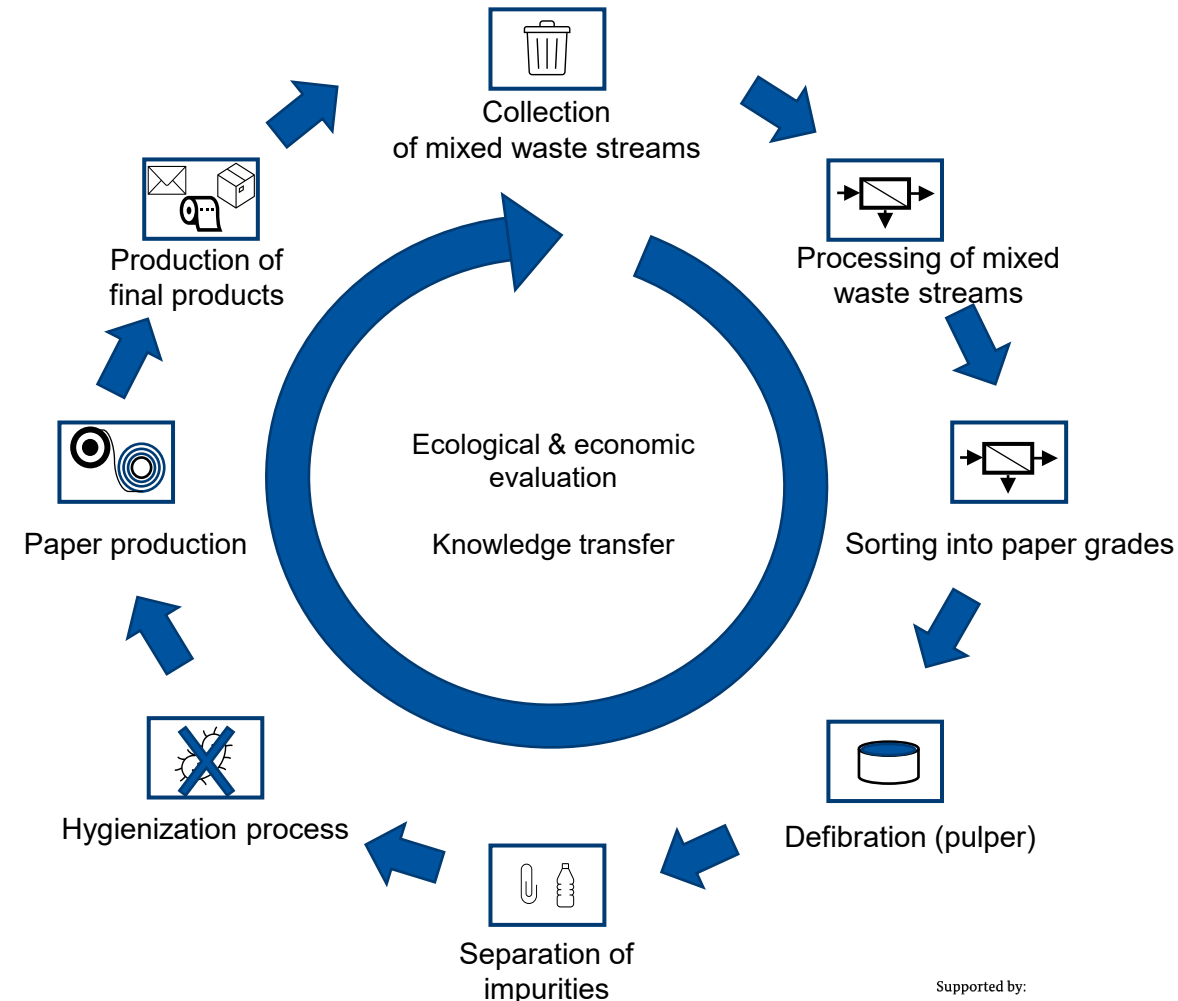
» Energy savings in paper production by opening the value chains of recovered paper from lightweight packaging, residual and commercial waste

Approach

- Utilization of paper and board from mixed waste streams (lightweight packaging, residual and commercial waste)
- Development of a sorting system for paper and board from mixed waste streams, a disintegration process for difficult-to-disintegrate composites, and a hygienization process.

Objectives

1. Definition of marketable fractions from the three waste streams investigated
2. Further development of the XXXVI. recommendation of the BfR
3. Achieve statutory recycling rate of 90 %
4. Saving of approx. 270,000 Tons CO₂ per year

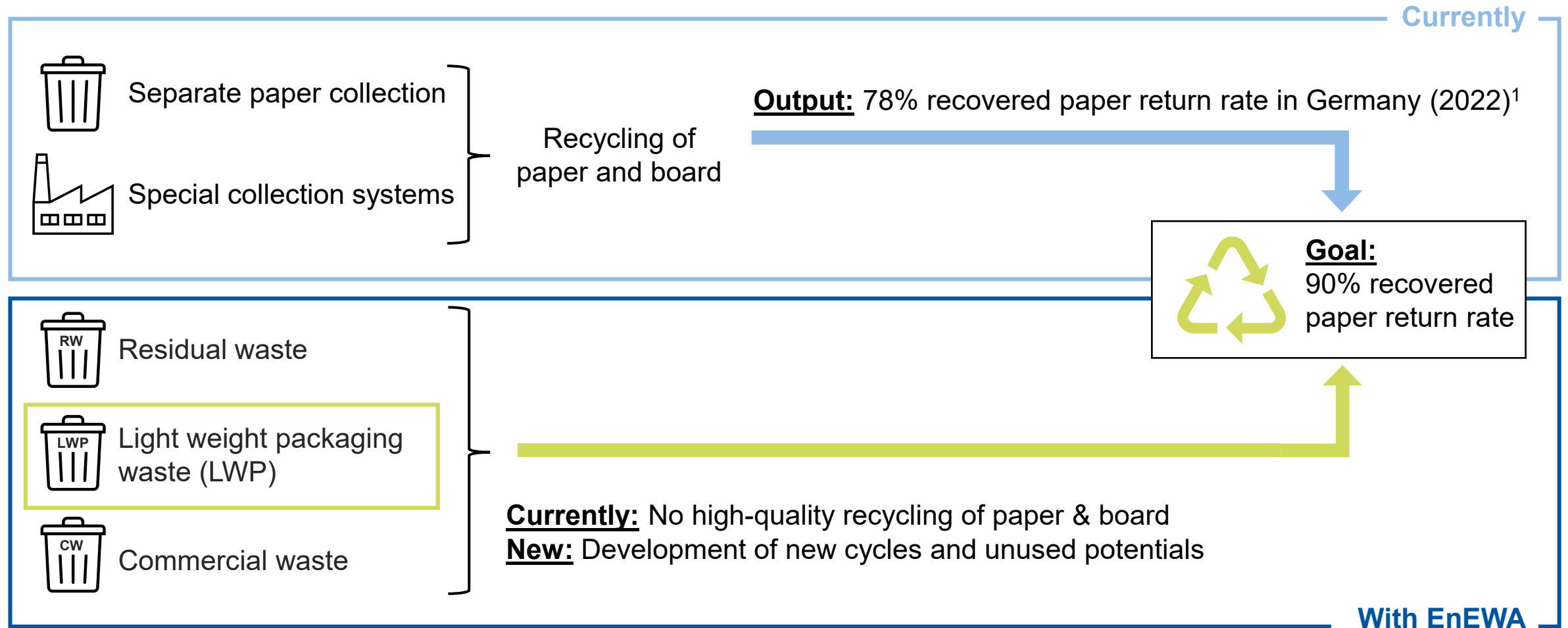


Source:

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Supported by:

» How can the recovered paper return rate be increased?

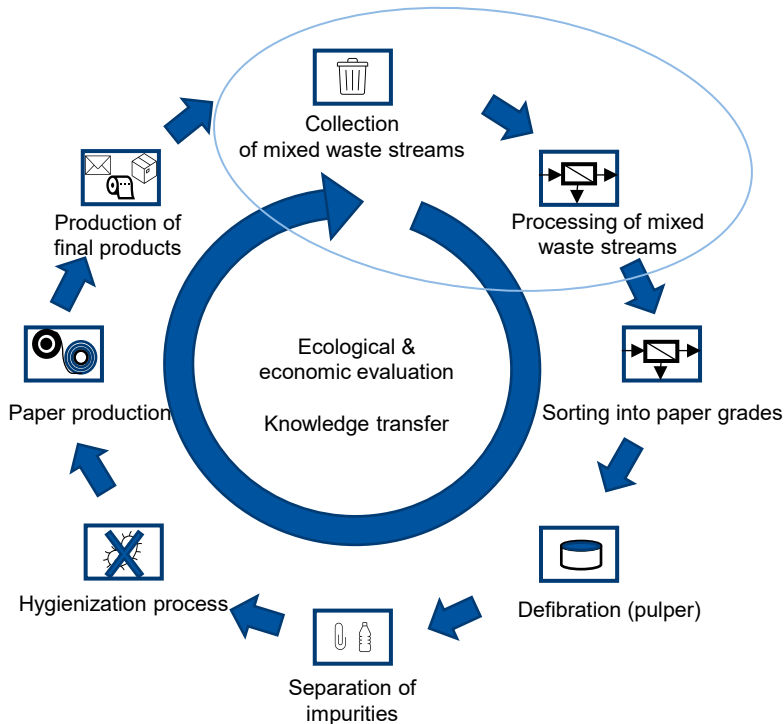


1: German Federal Environmental Agency (2022): Altpapier, Available: <https://www.umweltbundesamt.de/daten/ressourcen-abfall/verwertung-entsorgung-ausgewaehelter-abfallarten/altpapier#vom-papier-zum-altpapier>

Definition of the input qualities

» Analysis of paper and board from mixed waste streams

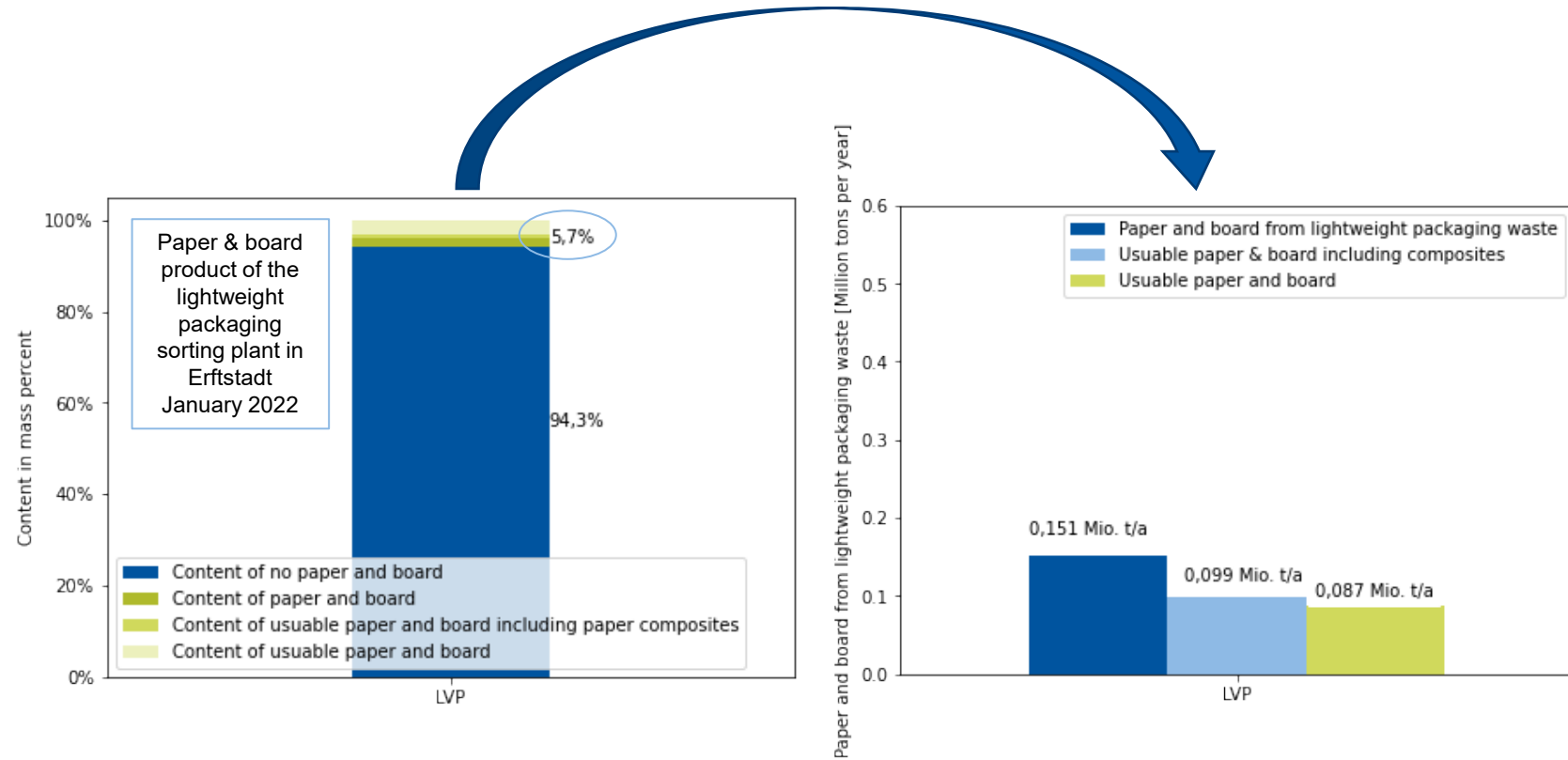
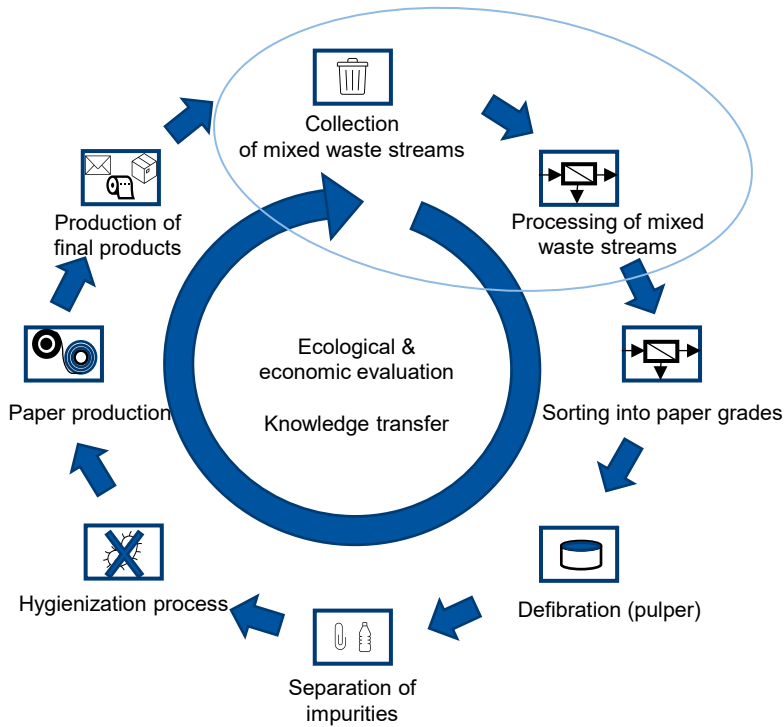
- Sampling of paper from lightweight packaging, residual and commercial waste
- Definition of sampling catalogue together with the PROPAKMA GmbH
 - Paper and board from LWP has a consumer miss rate of around 50 %



- ▶ What paper and how much of it is disposed of in the mixed waste streams in Germany?
- ▶ How does the paper composition affect the sorting and paper production process?

Definition of the input qualities

» First extrapolation of paper & board from LWP

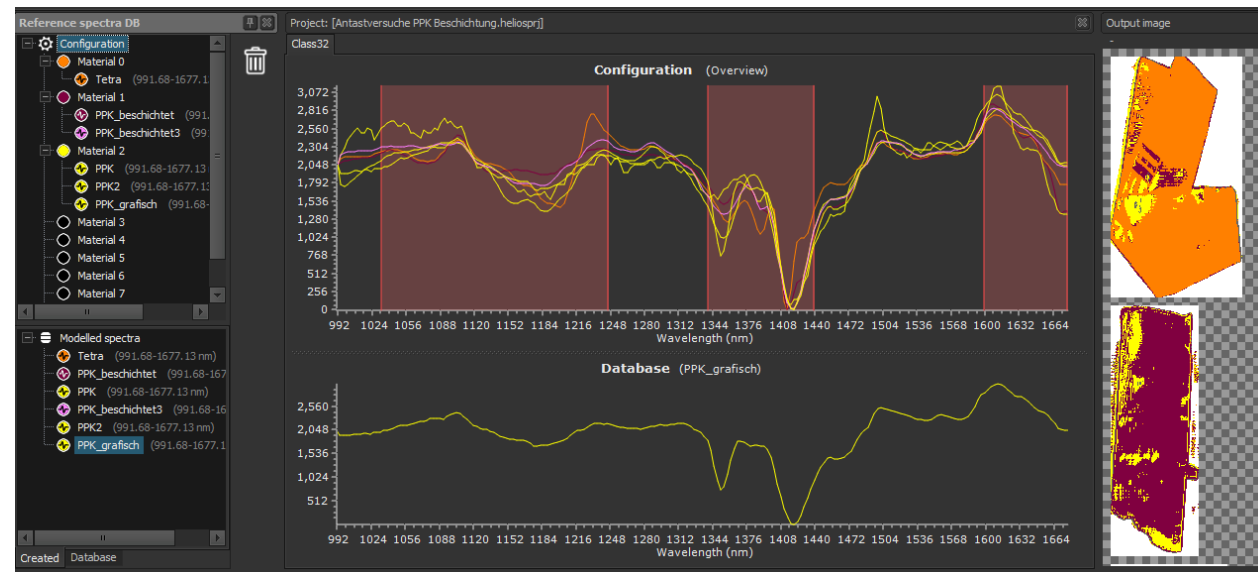
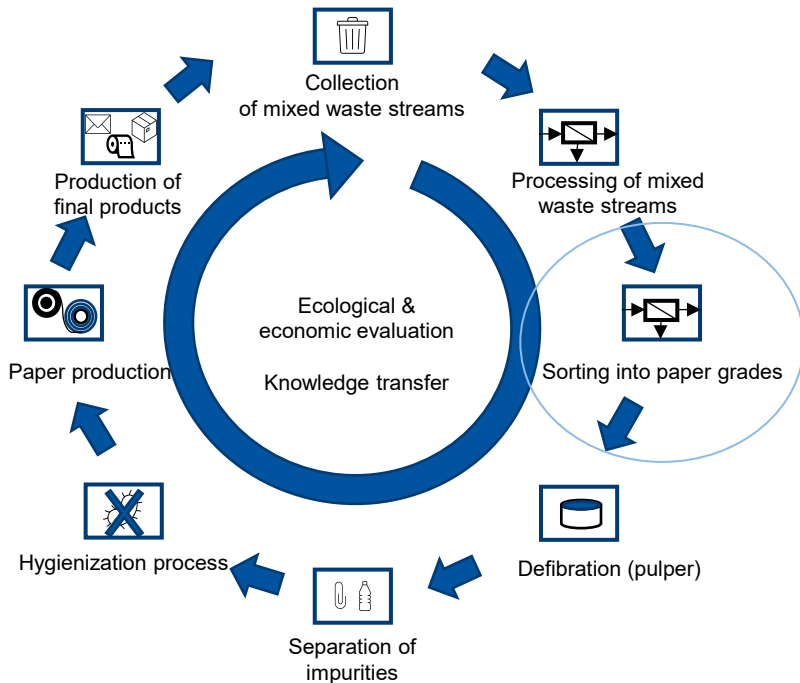


With 32 kg/c*y lightweight packaging waste (Source: Destatis Press release No. 108 of 14 March 2022, Available: https://www.destatis.de/EN/Press/2022/03/PE22_108_321.html)

Development of a sorting process

» For paper & board from mixed waste streams

- Removal of impurities and definition of a deinking fraction
- High moisture content of the material makes sorting difficult analogous to paper processing from separate collection
- High content of composites and high moisture complicates sensor detection

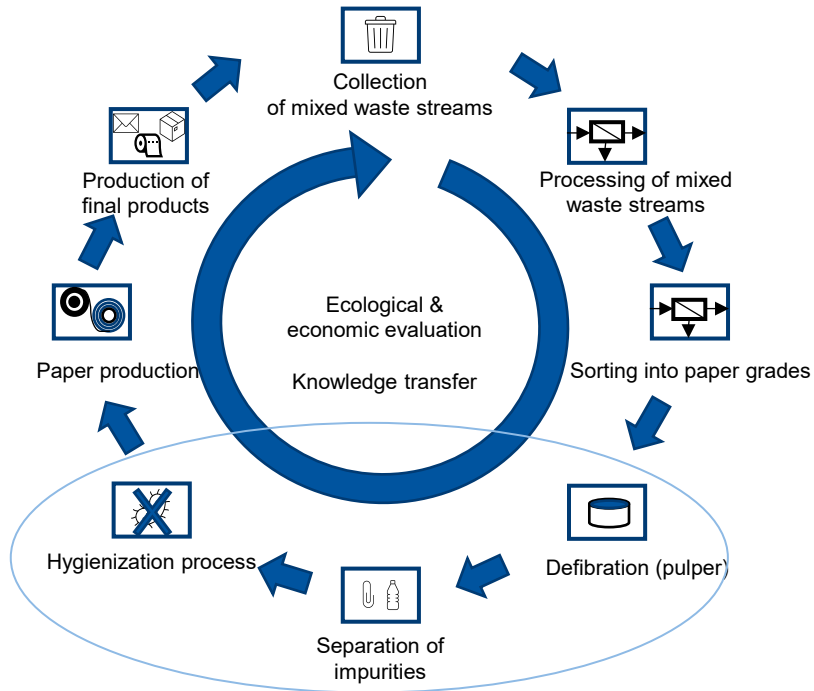


- ▶ How good is the sortability of paper composites and how do moisture, gloss and whiteness influence sensor detection?
- ▶ How does paper from mixed waste collections behave in recovered paper sorting processes (focus ballistic separator)?

Paper treatment process

» For paper & board from LWP

- Dissolvability of composites and influence of biological contamination on the paper dissolution process.
- Possibility of the paper reject recycling



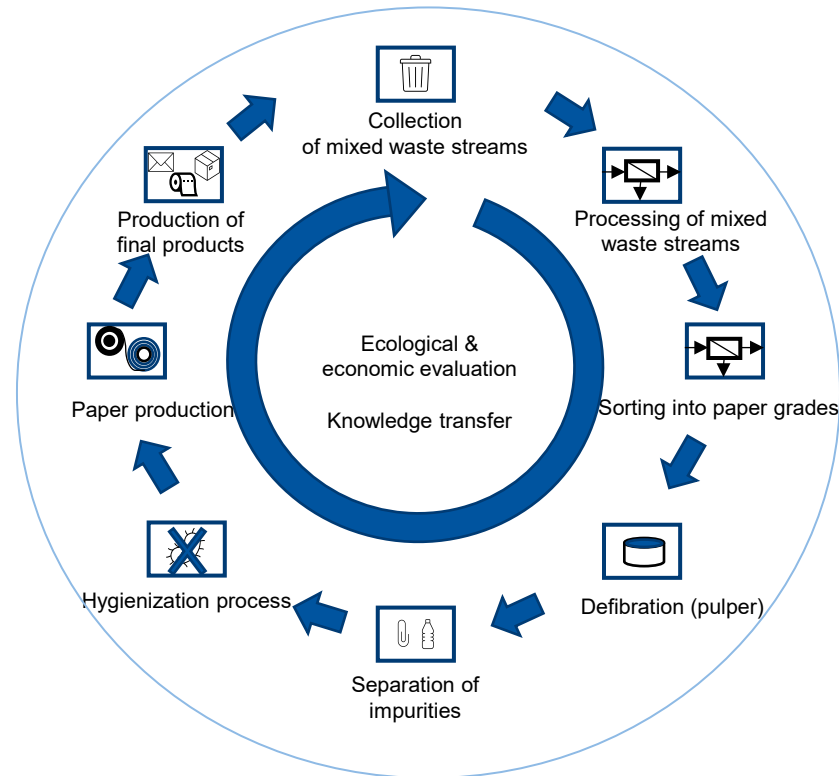
- ▶ How do we deal with barrier compounds from composites?
- ▶ How does paper from mixed waste streams affect the paper production process?

EnEWA - Increasing the recycling paper return rate

» You're welcome to contribute!

■ Next stakeholder's workshops:

- 7th of Dec. 2022, Main focus: Public relations - Ways to reduce the consumer miss rate
- In 2023: Dissolution of paper and board from mixed waste streams
- In 2023/2024: Design of paper and board packaging



- ▶ Is the process to be developed efficient on an economic and ecological level?
- ▶ What steps are necessary to establish the intended recycling process in the industry?

» Let's stay in contact!



Contact persons



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