Learnings from multiple studies



EPPA
European Paper Packaging Alliance

Reusable v Single-use

What is better for the environment in Quick Service Restaurants?



The need for a science-based approach

EPPA's priority is to provide the best environmental and most hygienic renewable paper-based products for the European population.

Why did EPPA commission studies?

We want to provide a scientific basis for discussion with authorities on the policy developments within the European Union regarding the circular economy and waste prevention.

EPPA has commissioned five studies since 2020:

- **3 environmental Life-Cycle-Analyses**
- 1 economic impact assessment on SU vs Reuse
- 1 hygiene report on SU vs Reuse

These studies were conducted by independent experts who also work for the EC, such as Ramboll and RBB Economics

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The need to safeguard our climate goals

Looking for the best environmental solution is a legal requirement

When applying the waste hierarchy, **Member States shall take measures to encourage the options that deliver the best overall environmental outcome**. This may **require** specific waste streams **departing** from the hierarchy **where this is justified by life-cycle thinking** on the overall impacts of the generation and management of such waste. *(Waste Directive 2008/98/EC, article 4§2)*

Mere "waste reduction" shouldn't prevail over the "overall best environmental outcome"

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The need for robust & representative LCAs

QSR provides a standard EU study case

- A comparable system across EU
- A full set of representative packaging
- Primary data for the packaging, the washing process and the QSR system
- Best in-class dishwashers delivering the highest efficiency in HORECA
- ISO compliance and external review

Single-use
Paper packaging



Multiple-use
Plastic packaging

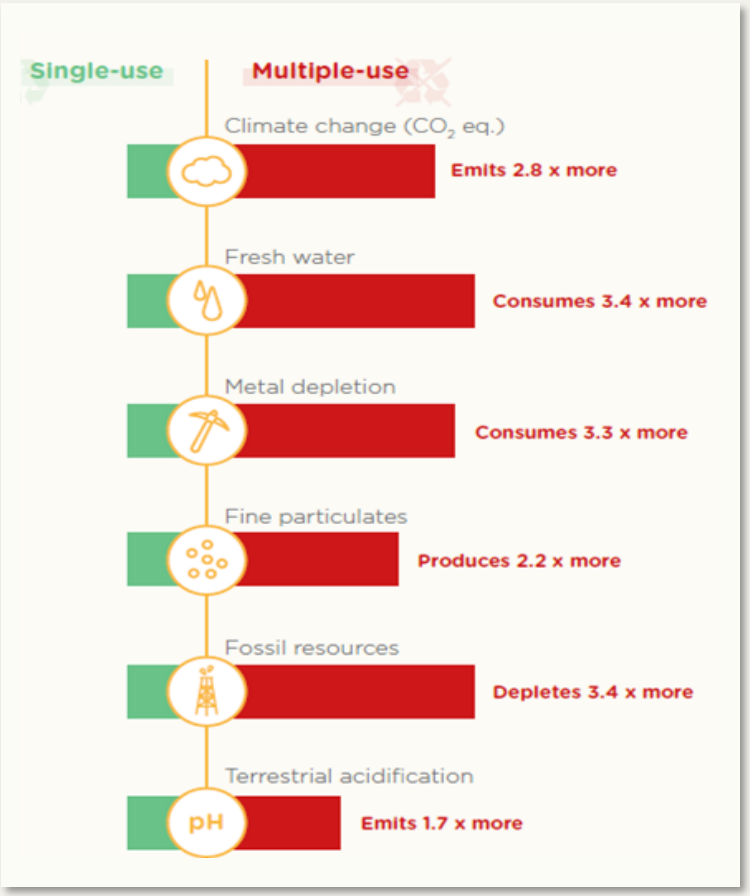


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In-store LCA

- An ISO 14040/44 third party **reviewed** study
- Seven types of packaging including **24 products** in **paper**, **plastic, ceramic, glass and metal compared** - covering all types of QSR servings
- **In-store and out-store washing** considered
- **Different number of reuse** considered:100 for plastic, 500 for ceramic and glass, 1000 for metal
- **Different recycling rates** considered: 0%, 30%, 70%
- Two major “hotspots”: the **production** of the paper for SU, and the **washing-drying phase** for MU



‘Very significant benefits’ for SU paper-based tableware



Take-away meta-analysis

- The meta-analysis compares 26 relevant studies on take-away
- Both Single-Use and Multiple-Use systems are affected, but to a different extent:
  - Impacts for Single-Use systems are "*limited to few aspects*"
  - **Multiple-Use systems are affected "*not only by the same impacts but also by another series of impacts related to exclusive phases*"**, mainly:
    - *Preliminary washing at home*
    - *Transport back to restaurant*
    - *Decrease in the number of reuse due to non-returned products*

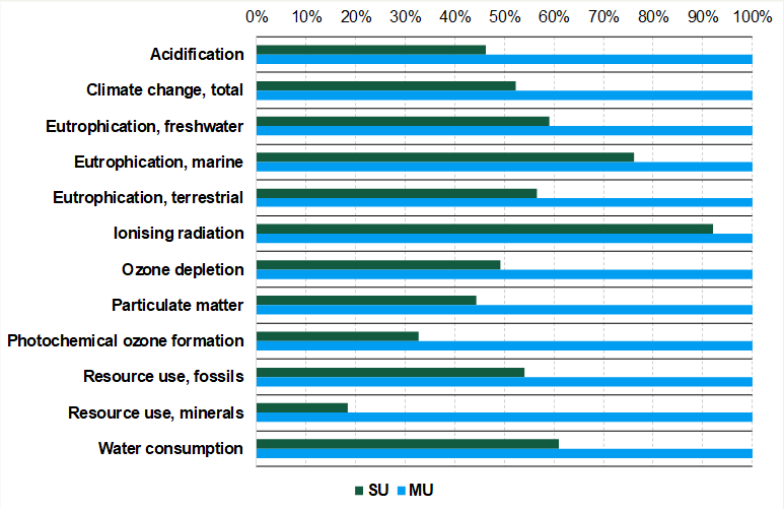
"It can be concluded that shifting from in-store consumption to take-away would be more burdensome for MU systems than SU systems"

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Take-away LCA

- An ISO 14040/44 **study reviewed by 3 senior experts**
- **All takeaway options considered**: Drive, Delivery, On-the-go, Click and collect
- Eight types of packaging including **17 products in paper or plastic**, covering all type of servings
- **In-store and out-store washing** considered
- **Different number of reuse** considered: 50 and 100
- **Different recycling rates** considered
- 4 major “hotspots”: **production and converting** for SU paper, **transport and washing** for plastic MU



Single-use tableware performs better in ALL impact categories

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Key take-aways

- Single-use and reusable paper-based packaging should not be opposed, but compared
- Mere “waste reduction” should not prevail over the “overall best environmental outcome”
- Studies show that paper-based packaging provides greater environmental benefits
- Reusable packaging comes with a washing and transportation burdensome system
- Reusable packaging will mainly be made of plastic
- Recycling improves the paper-based SU products’ environmental performance

Thank you

