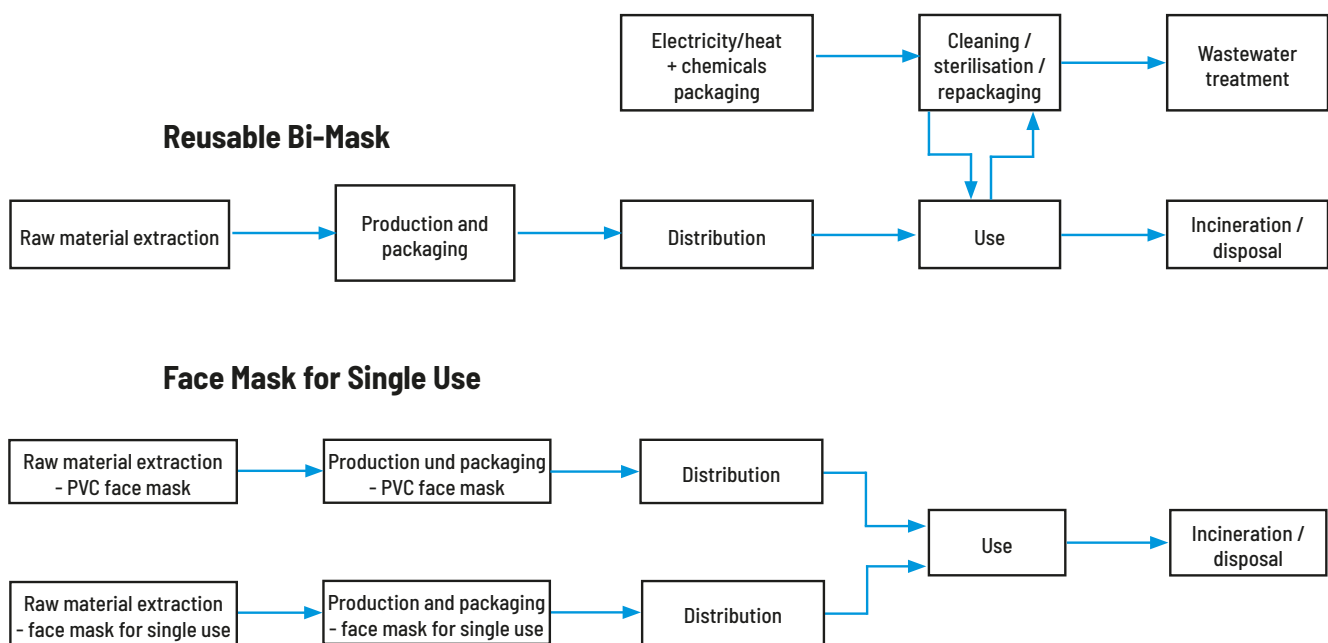


Environmental Impact of the Reusable Bi-Mask Compared to Face Masks for Single Use

VBM in Collaboration with the Centre for Sustainable Healthcare, Amsterdam UMC

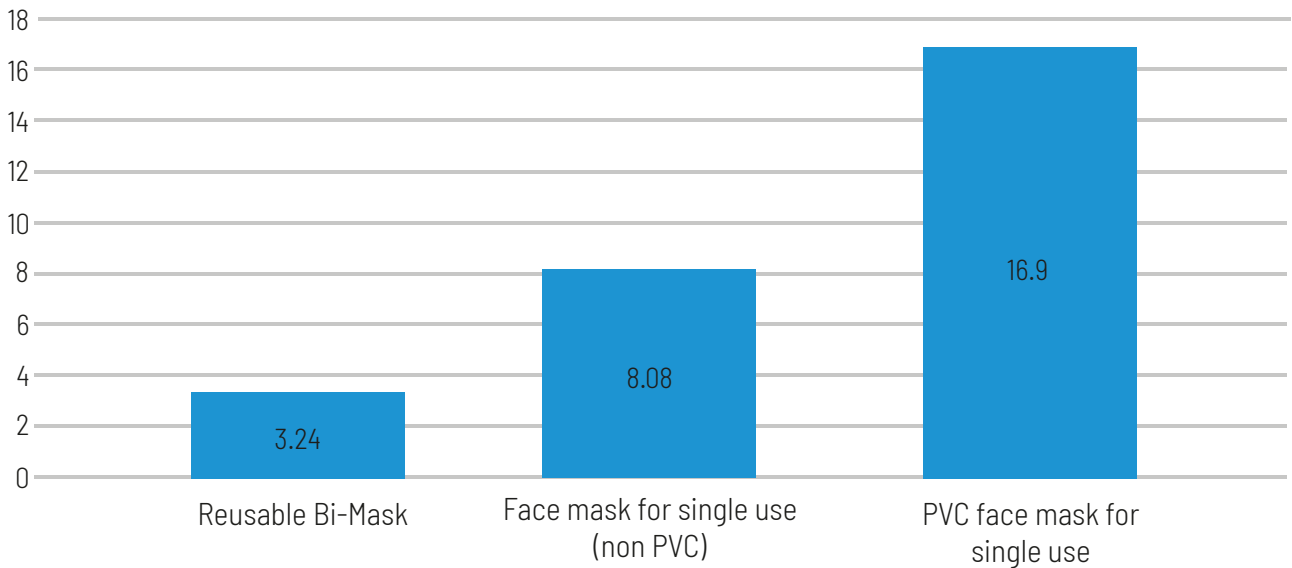
The healthcare sector is a major contributor to climate change, with single-use medical devices representing a key source of resource consumption and waste. Although single-use devices are often presumed to lower infection risks, current evidence does not support this assumption. In contrast, reusable devices as the Bi-Mask demonstrate clear advantages – including lower costs, reduced resource utilisation, and a significantly smaller environmental footprint.

The study was conducted by VBM in collaboration with the Centre of Sustainable Healthcare, Amsterdam UMC. It employs a Life Cycle Assessment (LCA) in accordance with ISO 14040/14044 standards, evaluating the environmental impacts of each mask from raw material extraction to end-of-life disposal. The following figure illustrates the defined system boundaries of the Life Cycle Assessment.



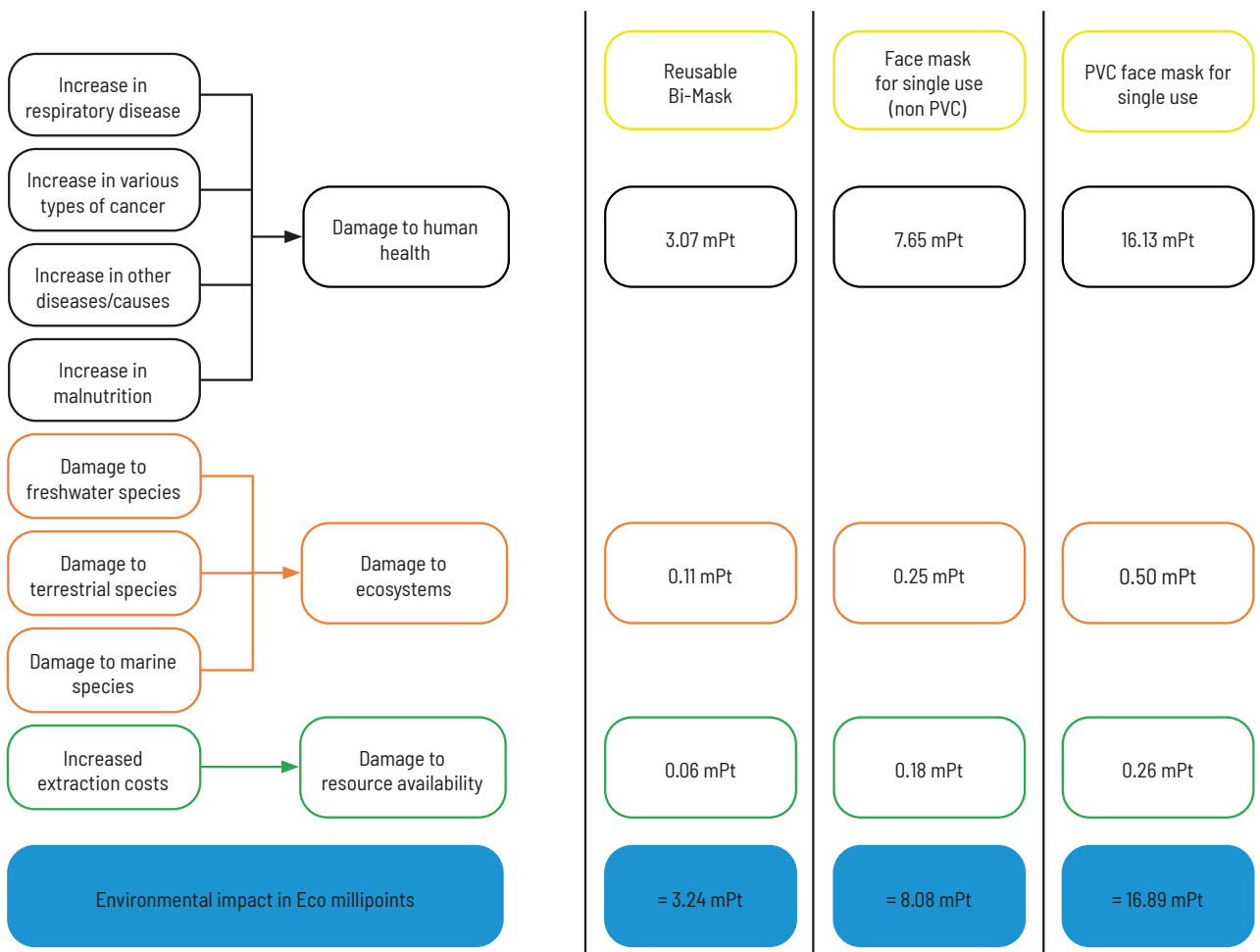
Source: Life Cycle Assessment conducted in collaboration with Amsterdam UMC

Environmental Impact in Eco Millipoints



Source: Life Cycle Assessment conducted in collaboration with Amsterdam UMC

Damage Pathways - The Background of Eco Millipoints and the Benefits to VBM Bi-Mask



The goal of this study was to compare the environmental impacts of reusable face masks and face masks for single use by assessing their life cycle from raw material extraction to end-of-life disposal. The study examined a Bi-Mask made of silicone, a face mask for single use made of thermoplastic elastomers and polypropylene, and face mask for single use composed entirely of PVC.

The results indicate that use of PVC face masks for single use has the highest environmental impact. Face masks for single use, in general, show significant impacts, while the reusable Bi-Mask performs best. These findings suggest that, from an environmental perspective, the Bi-Mask represents the most sustainable option.

The results of this study demonstrate that the reusable Bi-Mask has the lowest environmental impact across the categories human health, ecosystems, and resource use. Even under a scenario of premature disposal after 50 uses instead of the possible 100, the Bi-Mask still outperforms face masks for single use (non PVC) and PVC face masks, highlighting the resilience of its environmental advantages.



Bi-Mask / Reusable

Size	Patient	Connection	Colour	REF	QTY / Box
2	Child, small	22 mm I.D.	■	35-65-222	1
3	Child, large	22 mm I.D.	■	35-65-223	1
4	Adult, small	22 mm I.D.	■	35-65-224	1
5	Adult, medium	22 mm I.D.	■	35-65-225	1
6	Adult, large	22 mm I.D.	■	35-65-226	1



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