

Appendix S1

In addition to the Global Warming Potential (GWP100) index, we assessed other environmental impacts with an aggregated impact metric specific to Switzerland called UBP, which is the abbreviation of the German word “Umweltbelastungspunkte”. The UBP method aggregates all individual impacts from a standard LCA assessment into a single parameter. It is based on legally defined targets for pollutant emissions and resource consumption, and measures the differences between current emission values and these specific target values. The further the current status is from the target, the greater the number of points assigned to an emission. For more details, see Frischknecht et al. (Frischknecht and Büsser Knöpfel 2013).

The UBP impacts of the different scenarios of mask use are presented in Figure S1. Similarly to the CO₂-equivalent impacts (see Figure 1), the use of disposable masks brought by plane (scenario PP_2) results in the highest impact in terms of UBP. The largest discrepancies between the global warming potential and UBP results occur in scenarios PP_3 and COT_1. In scenario PP_3, the UBP impact of the use phase is very large with an unfavourable contribution of the electricity consumption to run the oven, while the production phase of the cotton fabric increases the relative impact of cotton masks manufactured abroad (scenario COT_1) with respect to other scenarios when compared with the global warming potential results. Nonetheless, the least impactful scenarios remain the home-made cotton masks (COT_2) and the extended use of medical masks through a wait and reuse strategy (PP_4), which provides a coherent picture when it comes to the best practices for community protection with a mask in times of pandemic.

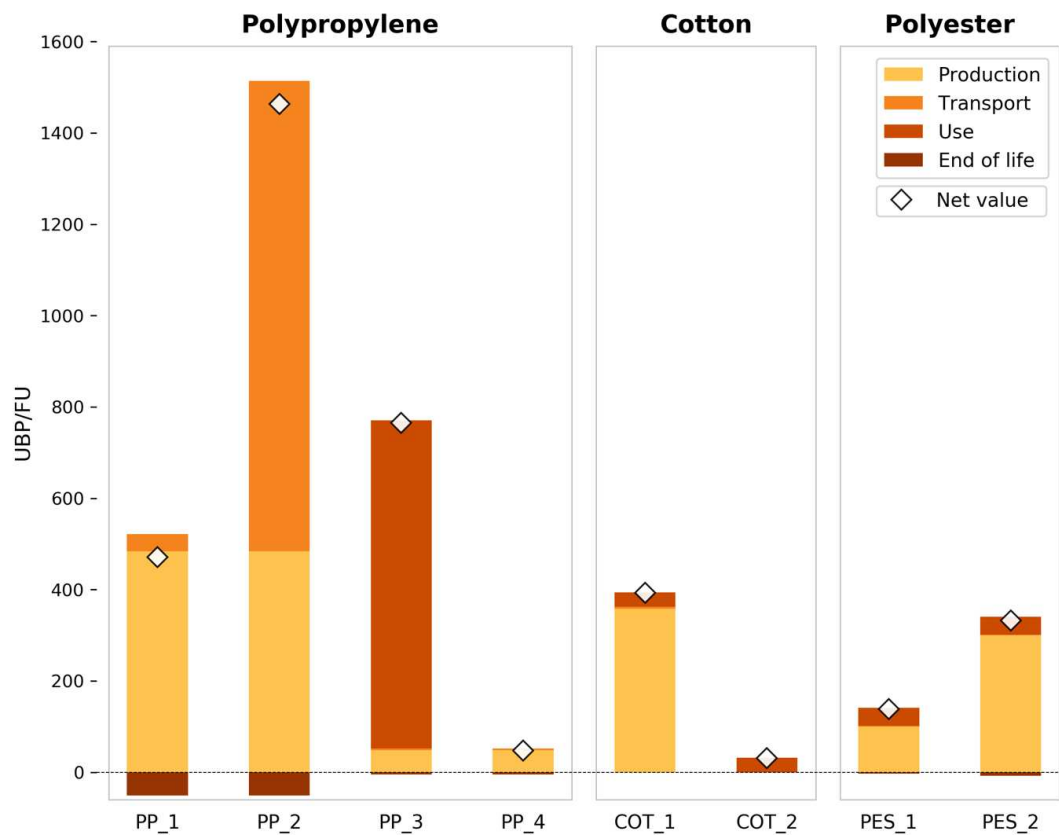


Figure S1. Footprint expressed in UBP /FU for different scenario of mask uses.

Frischknecht, Rolf, and Sybille Büsser Knöpfel. 2013. "Swiss Eco-Factors 2013 according to the Ecological Scarcity Method. Methodological fundamentals and their application in Switzerland." In *Environmental studies* no. 1330, 254. Bern: Federal Office for the Environment.