Editorial corner – a personal view Plastics – the good, the bad and the ugly?

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News of plastics in the oceans, micro plastics in fishes and even plastics' role in climate change are daily occurrences in the media. I received a call from one of our major local newspapers. They had a reader's question: 'Since plastics are such bad waste, why were they invented?'

In my reply, I explained that plastics do have several advantages like economic manufacturing and processing, lightweight and durability. I also pointed out that they are widely used to prevent food spoilage. They thus promote health and food sustainability and longevity. In my reply, I finally underlined the importance of recycling and that the oceans should not be used for waste dumping.

First, when reading this printed in the newspaper I realized that the question was presented by a 6 year old girl. We are indeed responsible for the coming generations!

Ellen Mac Arthur Foundation's report New Plastics Economy (<https://www.ellenmacarthurfoundation.org/publications/the-new-plastics-economy-rethinking-the-future-of-plastics>) presents some good information regarding the plastics in oceans problem. The report estimates that 8mill. tn/a of the plastics finally ends up in the oceans, which is too much. Furthermore, roughly 82% of plastics in oceans are generated in some of the South East Asian countries. Therefore, the development of appropriate waste handling infrastructures and incentives for circular economy is necessary.

Often plastics are superior in performance. What would the world be without plastics? See, for example, a newly published comparative study by the Danish Ministry of Environment, where the life

cycle of alternative grocery shopping bags was assessed: <https://www2.mst.dk/Udgiv/publications/2018/02/978-87-93614-73-4.pdf>. One of the key results in this study was that a once-used plastic bag is 42 times better than the paper-based alternative, or up to 20 000 times better than the cotton-based one! I.e. one has to use the cotton bag 20 000 times to be equal in environmental effect as one plastic bag.

To find innovative solutions to plastics waste issues, bio economy and circular economy needs to be developed, in order to complement and in some cases to replace the petrochemical economy. There are some nice surveys on this topic, like the one prepared by a Finnish national think-tank organization SITRA: <https://media.sitra.fi/2018/06/12132041/the-circular-economy-a-powerful-force-for-climate-mitigation.pdf>

Instead of emotional, sometimes misleading or even fake news of plastics' environmental impacts we, as scientists are responsible to present science-based facts and innovative solutions for this important issue!

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