The Plastics Conundrum Part 2: It's all downhill from here (to the ocean)

Plastic waste enters the environment through a wide range of routes. In the absence of effective municipal waste management services, waste packaging and other plastic inevitably has to end up somewhere. In Egypt, for instance, only 20% of domestic waste is collected by municipal authorities. The Nile is one of the 10 river systems in the world which account for 90% of ocean plastic; there is another in Africa and 8 in Asia. Even in the UK, though, the proportion of plastics collected has plateaued well below 50% and globally only 9% of plastics are recycled with a further 12% being incinerated. Even developed economies with more effective collection systems became used to recycling by proxy, exporting collected plastics to China and elsewhere for reprocessing. Relying on less-developed infrastructure is clearly risky and the possibility that waste from the West contributes to ocean plastic via such global disposal routes cannot be discounted. On the 1st of January 2018, China drastically cut back on importing waste for recycling and has since been followed by other nations. Not unreasonably, a significant factor in the Chinese action was the presence of widespread contamination in the material sent there.

According to one recent report there will be an estimated 12 billion tons of plastic in landfill or the environment by 2020, most of which will take centuries to degrade. Chinese researchers analysing samples from the deep ocean have found contamination all the way down. It is important not to lose sight of the fact that the problem of plastic waste is not limited to the oceans. Almost any road in the UK has highly visible plastic and other waste strewn along the verges, a significant component of which is packaging from 'on-the-go' food and drink. This has not necessarily been thoughtlessly discarded by motorists or pedestrians, some will be lost from refuse trucks in transit and some will be blown from overflowing roadside litter bins. One of the likely short-term outcomes of the increased awareness of plastic pollution is a reduction in the use of plastic packaging for food, with some high-profile retailer campaigns and plastic-free aisles already appearing in supermarkets. Much, although by no means all, of this material plays a significant role in protecting the foodstuffs which it contains (within the context of current consumption norms) and its removal is not without risk.



Waste collected during a 40metre roadside litter pick in the Peak District National Park, April 2018

The direct environmental impact of food production is typically far more significant than the impact of producing the wrapping, so protection of the food is important – provided that the protection results in the food being eaten. Plastic wrapping on cucumbers is often used to illustrate this. Dehydration of the fruit is significantly slowed by the plastic and shelf-life increased by several days. Does that necessarily result in the fruit being consumed? And if it does, is there any guarantee that the plastic will be disposed of correctly, collected and appropriately re-processed? The Life-Cycle Assessment (LCA) shows unequivocally that the combination of 'wrapped and eaten' is less carbon-intensive than 'unwrapped and uneaten' but doesn't address any downstream damage which may be caused by the wrapping.

The Plastics Conundrum Part 1: The road to hell is paved with good intentions

The Plastics Conundrum Part 3: What's going on?

The Plastics Conundrum Part 4: Where do we go from here?

Written by **Gavin Milligan** of **Green Knight Sustainability Consulting Ltd** e. contact@greenknight.consulting m. +44 7967 025215 t. @equesviridi Shared by **grasp business development.**