



WWF PLASTIC FILE

MAKE THE CIRCLE BIGGER

Nature's incredible ecosystems do not produce waste. Rather, they are the ideal example of how nature reuses and recycles its embedded chemicals and nutrients, generating and regenerating the raw materials of life. For a sustainable planet, we need to start replicating these natural systems. This closing of the loop is what is called a 'circular economy'.

1. What's the problem with our current economic system?

Much of our modern economy is based on what we call a linear system of consumption ('take, make, waste'). This assumes an unlimited supply of natural resources and limitless places to dispose of waste. This is unsustainable. We are using the planet's natural resources 50% faster than they can be regenerated. With our disposable lifestyles we are also seeing the impacts of litter and pollution in the natural environment and an increasing amount of unwanted carbon accumulating in our atmosphere. It's time for a radical rethink of how we go about our business and how we better design products to be reused or easily recycled. We need to take our cue from nature.

2. What does this mean when it comes to plastics?

Practices and policies that prompt more efficient and circular use of materials could enhance economic growth and environmental sustainability. Improving our waste collection and recycling systems is a critical first step. Unless economically viable, sustainable markets for recycled material can be created, recycling rates are unlikely to increase beyond the current level. Government and business have to find ways to create an after-use economy for plastics. We need to be designing plastics to ensure that they can be reused, shared and repurposed and then recycled. Circular principles are about closing the loop and slowing and minimising the sales cycle, energy demands and emissions so that economic growth is not dependent on ever-increasing resource use.

3. What's the difference between recyclable and recycled plastics?

If the first step in closing the loop is reusing what you have then it's important to understand what can be reused and in what form. Technically, almost all plastics can be recycled, however the processes become increasingly expensive and more complicated if the plastics are contaminated or of mixed materials (in which case they generally cannot be used to produce products of the same quality as the original product). With fluctuations in the oil price, it is sometimes cheaper to make plastics from virgin polymers (from fossil fuels) rather than from recycled plastics. This means there is low demand for many recycled plastics. The likelihood of a product being recycled can even differ depending on its colour and chemical additives. For example, there is little demand for recycled plastic made from colourful plastic bottles as this can only be used to make darker plastics. By contrast recycled plastic from clear plastic bottles has a much higher value and is therefore far more likely to be recycled.

4. How do I know if something is recyclable?

Most plastic items are imprinted with a label containing a digit from 1 to 7 inside a triangle. These are called resin identification codes or polymer numbers, which identify plastics by the type of resin used to make them. Each polymer type is very different from the other and it's important for recycling businesses to know what polymer type a plastic is made from if they are going to recycle it.

5. Does that mean if there's a number imprinted on a product it can be recycled?

No! In South Africa we currently don't have recycling systems in place for all polymer types. In order to help consumers make informed decisions about plastics, many global retailers – and one local retailer – have recognised the need to provide more detailed recycling information on their products. An on-pack recycling labelling system tells consumers whether that type of plastic is currently being recycled in their area.

6. Which are the most problematic plastics when it comes to recycling?

Estimates are that close to a third of plastic packaging will never be reused or recycled. This includes small-format packaging (lids, sweet wrappers, sachets), multi-material packaging made with inseparable layers of different materials (soup packets, toothpaste tubes), some food-contaminated packaging and materials where only small quantities can be found in the waste stream. We need a combination of innovation redesign and/or delivery systems. Sometimes the solutions can be really simple, such as restaurants serving sugar in a dispenser rather than in wax-coated (plastic) paper sachets.

7. What does upcycling and downcycling mean when it comes to plastic?

While upcycling and downcycling are both examples of recycling, not all recycling is considered equal. Upcycling is when something is recycled into another product of equal or greater value than the original product (think of ornamental lighting and art made from plastic bottles). Most plastic recycling is downcycling as the recycled plastic products are of lower value than the original product and can only be used in limited applications (for example, plastic “timber”). The exception is recycled PET bottles (rPET) which can be used in clothing, carpets and other products using polyester fibre, whilst some PET bottles now contain a portion of recycled PET. This is a positive step towards retaining the value of the material even in reuse which is why there is a high recycling rate of PET bottles in South Africa (65%).

8. What are biodegradable, compostable and bioplastics?

Biodegradable and compostable plastics break down in a relatively short period of time, with the main distinction being how long it takes them to break down via biological processes. However, they should not be confused with fragmentable plastics. The latter (also called “oxo-degradable” plastics) break into tiny microplastics rather than biodegrade, and potentially cause greater harm than conventional plastics. You also get bioplastics, or bio-based plastics, which have been made out of renewable, plant-based sources such as corn starch and woodchips as well as from vegetable oils and fats among others. It is often wrongly assumed that all bioplastics are also biodegradable.

9. So, why don't we just make all plastics biodegradable?

Biodegradable plastics are important, pioneering materials but they are not a problem-free solution primarily because they require specific conditions in order to biodegrade effectively (micro-organisms, temperature and humidity). Biodegradable plastics that enter the ocean, for instance, will break down at rates not much higher than conventional plastics as they will not reach the right temperatures in cold ocean waters. If they enter conventional recycling systems their properties for biodegradation could also compromise conventional plastic products (which are typically not made to biodegrade but for durability). It is important to ensure that biodegradable plastics are used in appropriate applications and have adequate labelling so that consumers understand what to do with them afterwards. Similar to the problems facing recycling, biodegradable plastics will only offer a solution if there is enough industrial composting infrastructure (currently lacking in South Africa) along with effective collection systems so that they are actually composted. The alternative is that they will offer no discernable benefits relative to conventional plastics and will end up in landfills – or as litter.

10. How can I do my bit for the circular economy?

You can make informed choices as to how and where you use, and reuse, plastic in your life. Most importantly, as a consumer your opinions counts. Use your voice to ask your retailer and favourite brands to relook at the design of their plastic packaging to ensure that it is all either reusable or easily recyclable and that there are effective systems in place to ensure they are actually being recycled. To help maximise the lifespan of the plastics, we should be incorporating as much recycled plastic content into new plastic products as possible.

WHAT CAN YOU DO?

#UseLessPlastic

- Ensure that all of your recyclable plastics are going to a recycling centre (visit www.mywaste.co.za to find out where that is)
- Support products which use recycled content as much as possible as this helps to create markets for recycled plastic
- Avoid buying plastic items that are particularly difficult to recycle (such as multi-material sachets) and products packaged in non-recyclable plastic

Useful Links

- [New Plastics Economy](#)
- [My Waste](#)
- [How 2 Recycle](#)
- [Wrap: The UK Plastic Pact](#)
- [The On-Pack Recycling Label](#)