

Kicking the 'Single Use Fix' - The WASUP Model

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The LORD God took the man and put him in the Garden of Eden to work it and take care of it." ... Genesis 2:15.

Introduction

As custodians of our planet, we have been bludgeoning it, driven by greed and thirst for power. Our false sense of righteousness is ill founded and has no moral compass. The stark fact is that the misery of global environmental damage is caused by the world's wealthy nations [1]. As a paediatrician, my job is to practice the science and art of preventing disease, treating it and promoting life. I am therefore acutely aware that this includes tackling the danger to humans that 'plastic tide' poses.

Background to issues with plastic

In 1907 a Belgian American scientist introduced plastic, taking the world by storm. Some of this plastic has become essential to modern living, delivering a low carbon economy from products such as building insulation, windmill turbines and windows, to lightweight components for cars and aircraft. However, it is the single use plastic packaging that is creating a huge environmental challenge by having no end-of-life plan and posing threat to our planet.

After the Industrial Revolution the production of plastic increased exponentially and is still on the rise [2]. Single use plastic constitutes 50% of all plastic produced [3], most of which is found in waterways and oceans [4]. The problem with plastic is that it takes hundreds of years to disintegrate and therefore a good proportion of what has been produced so far, still exists. Plastic pollution contaminates the air we breathe, the water we drink, the food we eat [6,7]. It is in our homes, it is everywhere. Every day 8 million pieces of plastic find their way into the oceans [8] as less than 10% of plastic is globally recycled [5]. Therefore, undoubtedly a change in behavior is urgently needed and more and more bioplastic made available.

Production of plastic

In the production of various types of plastic, such as polyethylene and polystyrene, crude oil from seabed and natural gas from rock formations are pumped to refineries to be converted to ethane and propane. They are then converted to ethylene and propylene. Thereafter, combined with other chemicals, they are made into polymers which are cemented into resins of different types. The 'Green dot' on packaging does not denote that the item made from that resin will necessarily be recycled - it simply means that the company in question has financially contributed to the recycling of this products.

Plastic resins are categorised by various recycling symbols on packaging and are numbered from 1-7 (Table 1).








 <p>PETE</p>	<p>Polyethylene Terephthalate</p>	<p>Soft drink bottles and food trays, textiles (poly-ester)</p>
 <p>HDPE</p>	<p>High density polyethylene</p>	<p>Milk and shampoo bottles</p>
 <p>PVC</p>	<p>Poly vinyl chloride</p>	<p>Sewage pipes, synthetic window frames. Medical tubing</p>
 <p>LDPE</p>	<p>Low Density Polyethylene</p>	<p>Soft plastics such as cling film, plastic drycleaner covers, carrier bags.</p>
 <p>PP</p>	<p>Polypropylene</p>	<p>Plastic furniture, jerry cans, car parts, bottle tops, margarine tubs.</p>
 <p>PS</p>	<p>Polystyrene</p>	<p>Burger boxes, disposable cups, meat trays, packaging for electronics.</p>
 <p>OTHER</p>	<p>miscellaneous category</p>	<p>CD discs, spectacles baby bottles that have polycarbonates</p>

Table 1

Unfortunately, the hierarchy of symbols shown above does not denote how easily plastic can be recycled, while many manufacturers do not even display the symbols on their packaging.

Resin type 01 and 02, i.e. polyethelene and HDPE respectively, are the most popular types and are commonly recycled. These are followed by PP (05) and then PVC (03), the latter has chlorinated substances and is therefore most toxic to humans. Both PP and PVC are more difficult to recycle. Items such as these can be sent free of charge to Terracycle, an American company that accepts products from companies such as Walkers Crisps, who financially support their recycling activities.

The most common single-use plastics found in the oceans are drinking bottles, a staggering 1m bottles are purchased per minute globally [9]. Then the other items found are their caps, milk bottles, plastic bags, food wrappers, plastic sachets, plastic wrappers for food, multiplastic layering in food packing (e.g. crisp packets, tetrapacks), straws and stirrers.

Plastic harms our planet on multiple fronts

- Extraction of fossil fuels is a carbon-intensive activity creating 4% of all green-house gases [10]. Degradation of plastic in the ocean releases methane [11] - a greenhouse gas X23 more potent than CO₂.
- Thousands of miles of oil pipelines result in the clearing of woodlands which adversely affects biodiversity [12].
- Over many years plastic leaches from landfills as a toxin, affecting worms, a keystone species, critical for the production of healthy, aerated soil. In oceans the leached plastic kills Prochlorococcus, a bacterium that produces more oxygen than the sum of all global rain forests. Phyto-planktons that absorb CO₂ from the atmosphere are also killed [13].
- Plastic ingested by terrestrial and marine animals can trick them into believing that their stomach is full, resulting in their death from starvation. The decaying process of these marine species takes up oxygen - decreasing the total amount available to marine animals.
- Incineration of plastic releases toxic fumes which are irritant to our lungs and can cause cancers [14]. Extrapolation from animal studies and laboratory research suggests that there are emerging health issues of microplastic impacting on human health. Potentially they can cause breast cancer, toxicity to the brain and vital organs, affect our fertility and depress immune systems [15].

WASUP is born with trials and tribulations

In 2017, finding myself with enforced time on my hands whilst recovering from sepsis, I watched 'Blue Planet' on TV for the first time. This footage troubled me. During my subsequent 5 months of recovery, I learnt much about climate change, plastics, pollution and the various other threats to our planet. Determined to play my part, I set about founding World Against Single Use Plastic, in spite of many suggesting that I would have no support and would be a lone voice.

My first job was to wake up my friends, relatives, patients and my hospital management to the realization that microplastic was already in our food chain, with a potential for serious harm. If left unchecked, by 2050 there would be more plastic in the ocean than fish [16].

I set up a website, www.wasupme.com, and had WASUP leaflets printed. I created the WASUP sign with our slogan 'Let us get WASUP done.' We were on our way.

I formulated 4 simple WASUP Aims:

1. To raise awareness in all sectors of the community (schools, businesses, places of worship etc.) through talks, events and social media.
2. To educate children in schools about the dangers of plastic and teach them about recycling.
3. To litter pick in streets and waterways encouraging all sectors of the community to take part.
4. To put pressure on supply chains to decrease delivery of plastic packaging.

Having started to raise awareness I began inviting myself to schools to deliver talks on WASUP.

Talks in schools



Figure 1

Education is most crucial in helping decrease the scourge of plastic. My aim therefore was to encourage children to notice their environment and show them how they can take care of it. This was made easier for me by the fact that the environmental agenda was already in the curriculum of schools. Many schools pledged to adopt nearby streets for litter picking. I also formed a teachers' steering group to share good practice. We had a number of meetings and many schools were eager to follow the general suggestions described below (Table 2).

Form Eco committees. Each child to have a reusable water bottle. Recycle bins in classes. No contamination of packaging that is to be recycled. School registration with Terracycle for Crisp packet. Water fountains in school foyers. Adopting streets for regular litterpicking. In house cooking to decrease plastic packaging of food. Changing all cutlery to non- plastic. School ties made from recycled plastic. No sachets (e.g. ketchup). Discourage sweets and chocolates (wrappers difficult to recycle).

Table 2: Information sent to schools to share good practice.

Today, hundreds of schools are aware of WASUP. Three local schools collaborated to produce the WASUP Song which many in the UK and beyond use to engage children.

The delivery of the 3rd WASUP tenet, litter picking, proved challenging as schools did not have litter grabbers. This is where my charity Midland International Aid Trust (MIAT), stepped in. We purchased hundreds of litter grabbers and delivered them with litter hoop bag holders to schools and also faith groups.

In 2018, I formed an alliance with the Canal and Rivers Trust (CRT). WASUP has since carried out over-30 'canal cleans' in the West Midlands and beyond saving councils and CRT tens of thousands of pounds.



Figure 2

Although initially it was difficult to engage faith groups, various presentations in places of worship, relating relevant religious scriptures to the care of the planet, eventually led to a slow but sure success. Now almost every community in Walsall has worked with WASUP, including asylum seekers and refugees.

However, my biggest challenge remained; engaging the local council. Being Freeman of the Borough of Walsall and also Deputy Lieutenant to Her Majesty's Lord Lieutenant, I was fairly well known locally but I was to be repeatedly disappointed at the lack of engagement from council members. I needed official support for over 20 litter-picking groups which had sprung up in the borough of Walsall and were regularly litter picking. After all, the hundreds of volunteers in the borough were doing what the paid council workers would be doing.

Finally, after 2 years of determined effort, there was some recognition for WASUP and two people were appointed to form the Walsall Litter Watch. Now we have a very slick system which is run centrally with a supply of litter picking equipment and, most importantly, a service for regularly picking up rubbish collected by volunteers. These transparent bags, when full, are placed next to the Council bins in the borough. It is my hope that in time this model will be replicated in other boroughs. We now have WASUP logos on bins in York and a number of universities and hospitals.

Having failed to engage corporates through letters and telephone calls to various managers of local supermarkets and their head offices, I invited staff from companies such as McDonalds, Aggreco, Midcounties Coop and Homeserve to join in canal cleans. This helped to get the WASUP message back to management. Some organisations have now removed bins from their offices, instead creating a central bin area for waste and recycling. Importantly I convinced the Manor Hospital in Walsall to appoint a sustainability manager. One of her remits was to look into procurement of items whereby less plastic packaging is delivered to the hospital, for example to the pharmacy and the catering department.

By 2019 once I was confident that enough ground work had been done, I arranged a WASUP launch with the Lord Lieutenant of the West Midlands, John Crabtree, as chief guest. We had a full house with attendees from all over the region. I followed this up by inviting all schools to a 'plastic art' competition hosted by Walsall College with Andy Street, the West Midlands Mayor, as the chief guest.



Figure 3: Winner of competition - Blackwood Primary School Streetly.

A planned day's event turned into three days with schools clamoring to visit the exhibition with scores of children from all over Walsall and beyond attending.

Then a game changer. I was contacted by the Director of the Miss England Pageant, Angie Beasley, who was keen to get involved with WASUP. We now have over twenty Miss England finalists working up and down the country expounding the principles of WASUP.



Figure 4: Miss Bhasha Mukerjee (Miss England) with the Mayor of Walsall Cllr. Bott exhibiting the WASUP sign.

One notable activity by the Miss England finalists has been the 'let us make a spectacle' campaign. Here, girls collect discarded, yet reusable, glasses from opticians to be sent via Lions Club International to poor resourced countries.

Our next major collaboration was with the Commonwealth Games through its community brand - United by Birmingham 2022. WASUP was chosen because it was already achieving the 5 tenets of the games:

- **Bringing people together:** This is achieved through local events where people from different communities come together fighting a common enemy - plastic.
- **Improving health and well-being:** The litter picking events which WASUP organises encourages hundreds of people to be outdoors, helping them with both their mental and physical health - a form of social prescribing.
- **Helping regions to grow and succeed:** WASUP started as Walsall Against Single Use Plastic and within a year had changed to World Against Single Use Plastic, due to the huge interest regionally, nationally and now internationally.
- **Being a catalyst for change:** The interaction between communities improves better understanding and also community cohesion.
- **Putting the region on the map:** WASUP is collaborating with many corporates such as McDonalds and Universities such as Wolverhampton and has become a force nationally and internationally.

Our association with the Commonwealth Games created a platform for the 2022 challenge. A WASUP Trophy was presented to two individuals who collected over 2022 bags of litter in 2 years by July 2022 when the games were held in Birmingham. This collaboration with the Games raised WASUP's profile in 53 other Commonwealth countries.

At WASUP no one gets paid, and now there are thousands of volunteers in the UK and abroad. Notable among them are Balbir Seimar and Jennifer Carless. Balbir is our Chief Community Engagement Officer in charge of litter picking and Jennifer Carless, a passionate 19- year- old Miss North Yorkshire, who heads up social media and is the Miss England WASUP Queen and Chief International WASUP Ambassador, coordinating 15 countries.

Five years on, our campaign started taking root and growing in strength, to the extent that many parts of the UK and over 50 countries are involved. Unsurprisingly, WASUP activities diminished during the Covid Pandemic, resulting in my adopting a slightly different direction - providing schools with WASUP Gardens. We now have five gardens in the UK and several in Pakistan and India. The schools are given E200 for the children to use their imagination and design and build a garden and connect with nature.

WASUP Garden at Millfield School Walsall



Figure 5

In 2021 I completed a qualification in Planetary health. Since then, WASUP has transformed into an organization that raises awareness of not only the scourge of plastic pollution but also the impacts of Climate change and measures to mitigate it. To this end WASUP has recruited some very powerful young ambassadors. Eshal Shaukat (13 years old) is our Chief Pakistan and International Youth ambassador with Aneesha her sister - only 9 years old her deputy. In Kashmir we have Lubaina Majid (13 years old) holding a similar role for that country. Theron Mahony has just been appointed as our Chief UK WASUP youth Ambassador. He is 10 years old. Many others such as Dr Zahra Yasin, Dr Ijaz Bashir and Rabia Ijaz have played a crucial role in making WASUP a success story. A famous Bollywood singer Shankar Mahadevan has produced a WASUP song in Hindi which has gone viral in India and which many schools use in their dance lessons.

I can honestly say that it has been a privilege, a huge privilege, and an honour to lead hundreds of committed Wasupians from different walks of life and different countries who are passionate about the environment. They have made people sit up, rethink and I hope made a small but significant difference.

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