

Plastic – challenges and opportunities



A few facts

Since plastic was first invented 8.3 billion tons of plastic have been manufactured.

Throughout the world, 1 million plastic bottles of water are bought every minute. Less than 50% are collected for recycling and only 7% are turned into new bottles.

It takes about 450 years for plastic bottles to rot down and disappear.

The problem

Everyone in Africa is aware of the problems associated with plastic:

- The streets of towns and villages, and even the fields, are full of rubbish and the rubbish looks horrible.
- Drains are blocked with plastic rubbish, which leads to flooding.
- Plastic bags in the fields cause cows to die if they eat them
- Plastic bags in the earth prevent plant roots developing.
- When plastic waste is burned, bad-smelling, toxic smoke fills the atmosphere.
- A vast amount of plastic waste is covering the oceans. Sea animals and sea birds die from eating plastic or from getting stuck in plastic.
- Plastic wrapped food in supermarkets is a health danger. It is not known how many chemicals in the plastic migrate into the food.
- Now the World Health Organisation is alerting us to yet another danger – that is when we drink water from plastic bottles, we drink tiny particles of plastic. It is not known yet whether this is a danger to health.

What can be done?

Countries can ban plastic bags. For example, in 2006 Rwanda banned the use and sale of plastic bags followed by Kenya in 2017.

What can we do?

When shopping

- Buy food that is not wrapped in plastic.
- Use a shopping bag that has been locally made from local materials.

For drinking

- Use metal or glass cups.
- Do not buy bottled water (or in Ghana do not buy water in plastic bags). Rather use a water filter. This may be bought, or you can construct your own slow sand filter using locally available materials. See <http://discover-src.net/en/information/information-sheets/> on the Discover website and, under “Simple Technologies” click on slow sand filter.



A lady in Kenya making traditional bags out of locally grown materials. Using such bags keeps traditional skills alive and protects the environment.

Campaign

- for a deposit system on every plastic bottle sold – such that when the bottle is returned to the shop the customer receives the deposit back.
- for a ban on plastic bags and plastic packaging.
- for a national collection system for plastic waste, and the development of one of the projects under “C” below.

Uses for waste plastic

A. Simple, useful devices that one can make oneself:

1. Make tippy taps, see <http://discover-src.net/en/wp-content/uploads/2017/10/Discover-Infos-Tippy-Taps-en-A5-Flyer.pdf>.
2. Make fly traps, see <http://reap-eastafrica.org/reap/wp-content/uploads/2015/12/FlyTrap.pdf>.
3. Make a device to use little water to water your plants, see <https://www.wikihow.com/Make-a-Drip-Irrigator-from-a-Plastic-Bottle>.
4. Make a broom, see <https://www.wikihow.com/Make-a-Recycled-Bottle-Broom>.
5. Make clothes.

B. Rather more difficult, useful devices

Houses that are dark even on sunny days can benefit from a “solar plastic bottle light”, see <https://www.youtube.com/watch?v=bLg-K97sWxA> and <https://www.plasticmakeitpossible.com/whats-new-cool/technology-science/a-liter-of-light-plastics-shed-light-on-needy-families/>

C. More sophisticated ideas that are rather inspiring:

1. Boats made from plastic bottles: <https://www.youtube.com/watch?v=2NUSnrrp2H2w>

The following ideas, and others, are summarized here:

<https://sustainingourworld.com/2015/05/28/6-ways-to-turn-waste-plastic-from-a-problem-to-a-resource/>

2. Buildings made from plastic bottles. Bottles are filled either with mud or sand or with compacted plastic bags:
3. Making road surfaces harder and more durable:
4. Sewage treatment, as in Kibera, Nairobi, Kenya:



A Ghanaian tailor made this rainproof coat from empty water bags