

# Waste, Recycling & Re-Use

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## 4 Wasted Opportunities

We live in a wasteful world. There are rubbish bins and bulging black plastic bags in houses, schools, offices, factories and public places. Vast areas of land are covered with waste tips. Waste gases and chemicals pour out of vehicle exhausts and industrial chimneys, into the air. Liquid wastes from factories stream out of pipes into the waters of rivers, lakes and seas. In some places, the world seems to be filling up with waste.

This huge mound of waste took lots of energy, raw materials and time to create. Now it is useless.

## 5 What is Waste?

Different countries and governments have various definitions of waste. These are usually very lengthy and complicated. Since 1994 the common European definition of waste has been 'any substance or object... which the producer or the person in possession of it discards.' But then we must explain 'discard' - 'a substance or object that has been discarded is no longer part of the normal commercial cycle or chain of utility'.

In other words, there isn't a simple definition. For the purposes of this book, we'll define waste as 'something that has been thrown away because the person who owns it doesn't want it, can't use it or can't sell it.'

## 6 A Disposable World

Long ago, when there were no people on Earth, there was no waste either. Nature wastes nothing, and recycles everything. Dead trees are not waste - they gradually rot back into the soil, providing nutrients for new plants to grow. Likewise, animal droppings are not waste - they rot away too, or they are consumed by hordes of maggots, worms, beetles and other excrement-eaters. These, in turn, become food for other creatures, and so on.

## 7 A City's Ins and Outs

'A European city with one million inhabitants requires, on average, more than 10,000 tonnes of fossil fuels, more than 300,000 tonnes of water and 2,000 tonnes of food, and it converts these into 1,500 tonnes of harmful emissions, 300,000 tonnes of waste water and 1,600 tonnes of solid waste. And this happens every day.' Dr Klaus Topfer, former German environmental minister.

## The Waste Explosion

Today, there are twice as many people in the world as there were 100 years ago. Most want a comfortable lifestyle with the newest labour saving appliances, latest fashions, convenience foods, less work and worry, and more time, leisure, money and fun. The 'old' has become even more useless and boring, thrown away for the 'new'.

The throwaway attitude is encouraged by advertising on television, and in magazines and other media, which tells us we must have the latest and newest. Giant manufacturing businesses want to make big profits, by selling more and more goods. People in less developed countries see the high standard of living in rich nations, and naturally they want the same. Because there are more people, and each person buys far more goods than ever before, there is much more waste.

## 10 Burying Waste

In some countries, the bulk of municipal waste goes into landfill - it's tipped into big holes or hollows in the ground. There are more than 5,000 municipal landfill sites in the USA, and more than 60 per cent of US municipal waste goes straight into them.

In a landfill site, waste is dumped, bulldozed, squashed and covered with layers of soil and more waste. The site may be capped with clay and soil, and planted with trees and flowers. But the waste is not gone- just hidden.

### Landfill Problems

Landfill disposal creates many problems, They include smells, windblown rubbish and litter, and flies, rats and other pests which can spread disease. Chemicals, oils, solvents and toxic metals can dissolve and leak into the ground water in the soil and rocks, causing pollution. Nutrients and minerals in the wastes may also encourage unwanted blooms of algae and scum.

Organic materials like food scraps rot in the landfill, producing gases - such as methane - which burn well. They may seep thousands of metres through the ground, collect in buildings and cause explosions. Or they pass into the atmosphere, where they add greatly to the greenhouse effect and global warming.

## 11 Burning Waste

Some countries, especially those with small land areas, burn their waste in specialized furnaces called incinerators. The leftover ashes are put into landfill.

Incineration produces smoke, gases and fumes. Burning mixed wastes can produce harmful chemicals in the smoke. In some countries, laws demand that the fumes are filtered and 'scrubbed' to remove these substances. But some environmental campaigners say even the newest filters and scrubbers are not effective enough. No one knows what these hundreds of new chemicals, developed by industry and changed by incineration, may do in years to come.

## 12 Industrial Waste

In developed countries, household waste makes up only about one-twentieth of total waste. Most of the rest comes from industries and businesses such as manufacturing, mining, building, producing energy, agriculture and transport. So we could say that industries and businesses of all kinds are responsible for most of the waste mountain.

### Waste at Every Stage

However 'we', the consumers, cannot blame 'them', the industries. Every day we buy manufactured items and products - a notepad or a pencil; a can of fizzy drink or a bag of crisps; a new computer or a washing machine. Every step on the way from raw material to manufacturer to consumer involves waste. We must take some of the responsibility for the waste.

### Types of Industrial Waste

Two major industrial waste-makers are agriculture and mining. Farm wastes include fertilizers and pesticides, which get into soil and water, and upset the balance of nature. As farm animals are injected or fed with chemicals such as hormones, to make them grow faster and resist disease, these chemicals get into the environment too.

To make the goods and products we consume each year, an average of 10 tonnes of rocks, stones and minerals are mined or quarried from the ground, for each person on Earth. This leads to vast open-cast mines which scar the landscape; deep mines that bring problems of subsidence and seepage; huge heaps of waste that can pollute soil and water; and ever-diminishing resources.

## Chemical Wastes

Industry, manufacturing, agriculture and other businesses use more than 100,000 different chemicals. The list grows by 1,000 each year - almost three every day. Yet no one knows the long term effects of most of these new chemicals. Where will they be in 50 or 100 years?

## Business For Profit

Everyone knows that cars cause problems. Making cars produces immense amounts of wastes. They produce wastes and pollution during their useful lives. And they end up as complex 'coffins of waste' containing many different substances that are hard to separate. Around the world, millions of new cars drive on to the road every year. Yet motor manufacturers spend huge sums of money persuading to buy even more cars.

This shows a major problem in cutting industrial wastes. The main aim of big business is not to save waste and help the environment, it is to make money.

### 20 War on Waste

It's obvious that we cannot go on producing huge amounts of waste. We are using up our planet's precious materials and resources, which will run out sooner rather than later; we are filling landfill sites with mountains of rubbish; and we are polluting the soil, water and air with substances from waste, some of them very toxic. We must act quickly. Some people and countries have already begun, with increasingly effective campaigns and systems to tackle the waste problem.

Mixed solid waste is too difficult, costly and hazardous to sort and recycle. Sorting at source is a major step in the recycling effort.

### 21 A Change in Lifestyle

The war on waste involves changing our attitudes, expectations and our whole way of life. We should get used to the idea that minimizing waste is essential for our environment, our future and the whole world. This will certainly involve people in rich, industrial countries making some reductions and sacrifices in their luxurious, comfortable lifestyles.

### 22 Better Waste Disposal

Waste can go in one of three directions - up (into the atmosphere after incineration), down (into landfill sites, lakes and seas) or around, (that is, recycled).

### 24 Be a Waste-Watcher

Each week the average household in a developed country gets through 4 glass bottles or jars, 13 cans, 3 plastic bottles and 5 kilograms of paper. Surveys show that nine people out of ten think that waste-watching and recycling are important. Yet six people out of ten still dump these items as waste, straight into the bin.

### 25 At the Shops

We can make a great impact on reducing waste, by changing the way we shop. This makes less waste in our daily lives, and it also shows manufacturers that their low-waste products are more popular. For example:

- ✦ For any non-essential item - do you really need it? Think for a while. No purchase means no waste at all.
- ✦ Does it have to be new? Many items, like famous books or older-fashioned clothing and hats, can be bought second-hand from all kinds of sources.
- ✦ Avoid products with excessive packaging.
- ✦ Buy products for which you can get refills (for example, many washing liquids).

- ✦ Avoid disposable items, even if the non-disposable versions take a little time to clean or re-equip for re-use.
- ✦ Choose products made from recycled materials.
- ✦ Choose products made in environmentally friendly ways.
- ✦ Choose long-life products: they may cost more but in the long term usually represent better value and less waste.
- ✦ Take your old shopping bags back to the shop so that you do not need new ones, or take another bag to use.
- ✦ Buy in bulk if possible, which reduces wastes of all kinds, especially containers and packaging.
- ✦ Buy local products if possible, since they involve less waste from long-distance transport.
- ✦ Unlike canned, frozen or pre prepared foods, fresh fruit and vegetables are often sold with little or no packaging.

## 26 Paper, card and board

Put old newspapers, bits of card and card-based packaging in one pile (perhaps in an old cardboard box), and glossy magazines and other glossy paper in another. Fold or crush boxes flat, to save space. As with all recycling, check the list on the recycling bank or container, so you do not put in unsuitable items.

### Making Sacrifices

'The real answer to environmental problems is not just recycling but leading simpler lifestyles, generating less waste, treating things with care, not being slaves to fashion, and learning to shoulder responsibility and make sacrifices.' Ken Morishita, leading Japanese eco-management consultant.

## 44 The Future

Waste has been a problem for thousands of years. Because of its ever-increasing quantities, the problem is now becoming a crisis. But there is increasing hope, too. More people are becoming aware of the need to reduce drastically our creation of waste. Waste management and disposal are governed by ever stricter regulations. Re-use and recycling are becoming big business. Manufacturers and industries are taking notice of pressure from campaign groups and the general public.

## 45 Changes and Sacrifices

It is impossible for everyone in the world to have the comfortable, convenient lifestyle now enjoyed by people in rich countries. It is also impossible for people in rich countries to go on enjoying this lifestyle. It is far too extravagant in terms of wasting materials, resources and energy. We cannot go on buying endless new products while throwing away old ones. We must realize that new can be bad, while old can be good.

This will involve changes and sacrifices for millions of richer people in more prosperous countries. It will probably mean slightly less comfort, choice and convenience. But it will have to happen - some time and somehow.