Worksheet 3

Food in the future

The Future of Food

Population matters

Key terms

Unsustainable

Oil Reserves

Alternative Energy

Carbon Sequestering

Compost

Vermicompost

Contamination

In 10,000 BC, there were approximately 1 million people living in the world. In the following ten thousand years, the world population increased to 200 million people. To re-state this simply, this is an increase of 200 million people over a period of ten thousand years. To make a comparison; from 1995 to 2000 (a period of five years), the world population increased by 500 million people. It is believed that humans first appeared on Earth about 200,000 years ago in Africa. By about 70,000 years ago, humans had migrated out of Africa and begun to colonise the rest of the planet. It took from then until 1804 (68,196 years) for the world population to reach 1 billion people and the count by the end of 2004 was approximately 6.4 billion people (200 years later).

The reason for this huge growth in population is while previously people may have lived until they were 40 or 50; we are now living until 80, 90 and 100 years old. While previously, mothers may have had 6 children but only 2 of them survived into adulthood; we now have a much, much higher rate of survival. Part of this change is due to modern medicine and living in hygienic conditions, and the other part is due to the industrial revolution. Using fossil fuels for energy allowed for a great deal of food to be produced very easily and cheaply, and this is the major limiting factor in population growth. A population can only grow if there is food enough to sustain the growth. And the over-abundance of food over the past 100 years has allowed for an unsustainable amount of growth in human population.

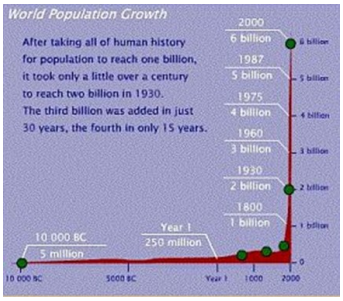

Figure 3.1: World population over time
Source: http://yannklimentidis.blogspot.com

Did you know:

- The total number of humans that have ever lived has been estimated at 110 billion.
- Approximately 6% of all these people are alive today.

Oil and countries in conflict

Oil is not a sustainable resource. It will run out, and as the world population is increasing exponentially, the demand for oil is too. Of all the countries in the world with oil reserves, just a few Middle East countries account for $^{2}/_{3}$ of the world's reserves. Unfortunately, the countries with the most oil are in conflict and have been for many years. As western countries begin to run out of their own oil reserves, the conflict will only increase, and the price of oil will become exponentially larger. This will in turn impact the price of many other commodities, including fertiliser and hence, food. At present, oil reserves represent about 40 years' worth of consumption before it will run out. There has never been a time more urgent than now to quickly find alternative energy.

Politics and policies

Politicians at the federal and state levels as well as local councillors have the ability to effect change in order to help solve all of the problems discussed so far. A change of policies is required to ensure less dependence on energy intensive, imported synthetic fertiliser.

As well as investing in alternative energy production, there are several ways in which we can alleviate our dependence on fossil fuels in food production. We need to encourage new green industries that will allow us to create our own fertiliser to produce our food.

We require policies that encourage the use of carbon sequestering fertiliser such as mulch, compost and vermicompost. We need to include a new waste bin which is used for food scraps, which currently makes up 40% of the general waste bin. And we need to police recycling bins (green waste, kitchen organics or recyclables) to ensure a reduction in the amount of contamination that occurs in recycle bins, which can be as high as 10%.

Not enforcing clean waste bins allows a valuable resource to be sent to landfill, which is unsustainable.

It's up to all of us

"Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it is the only thing that ever has"

- Margaret Mead

Here is a list of things you can do to help:

Save water, grow your own food.

Eat more vegetables.

Eat less processed food.

Waste less food.

Support politicians who are prepared to put more effort into changing policies regarding fossil fuel dependence.

Write to politicians to express your support of policy change.

Recycle cans, bottles, paper and cardboard and make sure you do it properly.

Separate your green waste.

Compost your food waste.

Use compost instead of fertiliser in your garden.

Insist your government invest more in sustainable agriculture research and development.

Spread the word that a change needs to happen.

Over to you

1. Make a list of resources that we can use for energy production. Include four non-renewable resources, eg. Coal, and four renewable resources, eg. Solar.
2. Write a definition of 'sustainable' and 'unsustainable' in terms of energy resources.
3. Use the internet to find out what percentage of Australia's energy consumption is produced from renewable resources.
4. List the problems associated with the Earth's population. For each one, suggest a solution to the problem.
5. Write a persuasive paragraph explaining why it is essential for us to develop new sustainable technologies to produce our energy and dispose of our waste, bringing in each of the points discussed so far. Send the persuasive argument to a politician.