



## **Transition Town High Wycombe**

### **Food Security & Fossil Fuel Factsheet**

#### **What is Soil?**

A spoonful of healthy soil contains a billion organisms from over 10,000 species. A single earthworm can shift 30 tonnes of earth in its lifetime. Herbicides and Pesticides are made of oil. They kill humus, micro-organisms, insects (including bees) and natural predators. This destroys top soil and fertility. Hence farmers use more Fertiliser, Herbicides and Pesticides. More and more each year to maintain "fertility" that they are destroying. If you kill the soil there is nothing to hold it together. It turns to dust and blows, or is washed, away.

Currently our soil is degrading 30 times faster than it would naturally. It takes 500 years to put back an inch of top soil and 3000 years for topsoil to become deep enough to grow food in. Since 1945 the total land area degraded by soil depletion is 5 billion hectares or 43% of the Earth's vegetated surface. Every year another 10 million hectares is added to this total. 5 million hectares has to be added every year to feed the increase in human population (84 million annually).

#### **Organic Farm Performance**

No organic farm has ever reported a case of Bee Colony Collapse Disorder. Studies have shown that fully restored organic farms can yield 94% to 100% of the yields of non-organic corn, wheat, soybeans and tomatoes. However, size matters. The smaller the farm the higher the yield. A small organic farm with mixed crops, intercropping and animals can have a considerably higher yield per hectare than large conventional mono-crop farms. Polycultural (mixed) farms can yield up to 20lb of food per square foot: many times that obtained by industrial agriculture.

#### **Oil & Food**

Mankind started farming 10,000 years ago.

The "Green Revolution" started in 1909 when Haber-Bosch process was first used to convert natural gas into Nitrogen Fertiliser. No Gas = no Fertiliser = no food.... Unless it is organic.

At present mankind uses 40% of all land-based photosynthesising plants. It took Mother Nature 400 years to create the Oil, Coal and Gas we consume in one year. The 'green revolution' increased energy inputs to farming by 50 times – it all came from fossil fuels – a one-off gift of trapped solar energy in chemical form. In the United States 400 gallons of oil is needed every year to feed one person. That is a 1000 litres of oil for each hectare of land.

In Canada the fossil fuel in agriculture breakdown is as follows:

- 31% on inorganic fertiliser
- 19% on farm machinery
- 16% on transport
- 13% on irrigation
- 8% on animal feed
- 5% on crop drying
- 5% on pesticide production
- 3% miscellaneous

The US food system requires 10 calories of fossil fuel energy to produce one calories of food energy. This includes packaging and delivery but excludes cooking in the home. If you remove fossil fuels from our food system then our daily diet would need three weeks of one person's labour to produce. With Fossil Fuels it only takes 20 minutes.

#### **Those Food Miles**

Produce destined for consumers in Toronto has travelled on average 3,333 miles. In the UK the distance travelled by food increased by 50% between 1978 and 1999. A Swedish study showed that an average breakfast included food miles equal to the circumference of the Earth. Non-locally produced food travels 81 times more than that obtained via local farmers markets.



### Undervalued?

A third of all people work in the UK Food supply chain yet it contributes only 2% to the National Economy. Agriculture consumes 17% of all energy used.

### The Great Food Merry-go-round 2001

Food Item	Direction	Quantity	Unit of Measure
Pork	Exports	195,000	tonnes
	Imports	240,000	tonnes
Lamb	Exports	102,000	tonnes
	Imports	125,000	tonnes
Butter	Exports	49,000	tonnes
	Imports	47,000	tonnes
Fresh Milk	Exports	119,000	tonnes
	Imports	114,000	tonnes
Poultry	Exports	170,000	tonnes
	Imports	363,000	tonnes
Live Pigs	Exports	110,000	pigs
	Imports	200,000	pigs

This kind of Food swapping has been connected to the spread of diseases such as MRSA, BSE, swine fever and H5N1 (Bird Flu). It also contributes to Climate Change and Peak Oil through the use of transport fuels.

### Food Security

For food security a community should produce 30% of all food itself with the rest made up by farms in the surrounding area. Currently less than 5% of food comes from the surrounding area. In 1996 80% of the poultry and 25% of all vegetables consumed in Singapore were produced on urban farms. 65% of all families in Moscow grow some of their own food.

### Two Weeks without Oil – A True Story

Due to a strike in Ulster in 1974 the local Oil Refinery was closed. All Frozen Food had to be disposed of as being unsafe to eat. Sale of Milk was banned by law because it couldn't be pasteurised. Cows were milked by hand and the milk dumped in rivers where it killed the fish. Gas supplies were shut off due to insufficient power leading to the death of 50,000 battery hens due to Hypothermia. Sewage leaked into drinking water because pumps were not working. Emergency water could not be distributed because there was no fuel for the Lorries carrying it. By the second week battery backups for the telephone system were depleted. No one could call for help. People started stealing cattle from farmer's fields. The cattle were cooked on open fires made up of people's furniture.....

### Fast Forward to Britain 2000

The Federation of Bakers, commenting upon the fuel blockades in 2000, said that "We came within hours of the country not having a loaf to eat."

### The 1990's –A Warning

In 1990 the collapse of the Soviet Union meant that Oil and Gas Exports to North Korea fell by 90%. In the following five years 3 million North Koreans died due to starvation. The same thing happened to Cuba but there was no starvation. Cubans switched quickly to organic farming in a time known as the "special period". People ate less food but it was fresher and produced locally. The health of Cubans actually improved during the special period. Cuba was better prepared but also luckier in that it has more arable land and a better climate than North Korea. Regardless – even the World Bank has declared the Cuban agricultural system as a model that it recommends other developing nations can learn from.