

Food Module

The Green Christian LOAF principles (Locally produced, Organically grown, Animal friendly, Fairly traded) are a helpful starting point for thinking about food. In this module you will probably focus in the 'suggested activities' on the local and organic. But in all our efforts to reduce our carbon footprint we need to keep in mind our responsibilities to seek justice for the growers and producers of our food, and our responsibilities, under God, for our fellow non-human creatures.

To set the context for sourcing our food – we live in a world where the climate is changing, the supply of oil is peaking, people are changing from traditional diets, human populations are growing, and the amount of food wasted is mounting.

Two sides to the food and climate change coin:

1. Food growing is already affected by climate change as farmers and growers have to adapt to changes in weather patterns they have historically depended on.

'Climate change's most savage impact is likely to be the increase in hunger. The countries with existing problems in feeding their people are those most at risk from climate change. Millions of farmers will have to give up traditional crops as they experience changes in the seasons that they and their ancestors have depended on. Climate-related hunger may become the defining human tragedy of this century' (Oxfam, *Suffering the Science*).

2. Agriculture accounts for somewhere between 17% and 32% of human induced greenhouse gases. Livestock rearing in particular has been singled out for its high carbon footprint. David Pimentel of Cornell University says 'Farming was almost exclusively a solar industry until the 1950s, when the green revolution applied manufacturing methods to food production and turned farming into a fossil fuel dependent industry. Energy use in agriculture increased four-fold from the 1950s to the 1990s. Rob Hopkins of the transition town movement says, Conventional farming since 1945, has evolved into a system for turning oil into food, a process it does with considerable inefficiency.' Transporting food accounts for 25% of all HGV vehicle kilometres in the UK. Air freight for transporting food accounts for 11% of food transport CO₂ equivalent emissions (DEFRA 2005)



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'Eating Oil: 'Even the oil companies now acknowledge that the days of "easy oil" are gone for ever, removing the foundation stone on which the whole of modern food production has been built. Without cheap oil and cheap gas, there is no more cheap food. Few people understand our near-total dependency on fossil fuels in terms of fertilisers, pesticides, herbicides, farm machinery, storage, supply chains, retail systems, and so on. We are basically "eating oil", and on an almost inconceivably inefficient basis.' Green Christian patron, Jonathon Porritt.

Agriculture is also part of the solution: According to the Intergovernmental Panel on Climate Change (IPCC) agriculture can help to mitigate climate change, largely by carbon sequestration in the soil. The world's soils are a reservoir of carbon. Farming methods determine whether soils take up carbon or emit it. The Royal Society estimate that carbon capture by the world's farmlands could total 10 billion tons of CO₂ a year given better management of the soil. Permanent grassland (e.g. clover rich, mixed species with deep-rooting herbs) takes up and stores carbon. Soils cultivated each year with annual crops emit it. 80% of the world's agricultural land is cultivated with annual crops such as rice, wheat and maize.

Some problem areas we need to address

First, please read Green Christian's 'Use your LOAF' leaflet for some introductory thoughts on the benefits of locally produced and organically grown food. www.greenchristian.org.uk/resources/loaf

How important are food miles for low carbon eating?

Is it better to buy vegetables grown in heated glasshouses close to home in Kent or Holland, or sun blessed crops from Africa and Southern Spain? What about the Thanet Earth style food growing – the 'UK's largest, high-tech greenhouse complex' – see www.thanetearth.com They generate electricity on site with a gas fuelled turbine, and pump the byproducts of heat and CO₂ into the glasshouses where it is absorbed by the plants. But what is the effect on the fertile soil structure and wider biodiversity of covering 80 football pitches of fertile soil with glasshouses?

The carbon impact of eating meat and dairy: should we eat less meat and dairy food, or go vegetarian or vegan?

There are many good reasons to go meat-free. Eating plant foods instead of animal foods uses less fossil fuel and less water. Less rainforest will be cut down to grow soya for animal food. Plants and high in fibre, contain all the nutrients we need, are lower in fat, provide carbohydrates and vitamins. Plant foods last longer without refrigeration and tend to cost less than meat.

But note the differences between grass-fed and grain-fed animals. Meat and dairy products from animals largely raised on grassland emit much less carbon than meat from grain-fed animals. No grain is being imported from former rainforest land far away to feed them; no oil-based fertilizers are needed to fertilise grass – manure does that; a number of plants found in species-rich, natural grasslands reduce methane emissions from livestock grazing on them; and the grassland itself is storing carbon in the soil and plant roots.



Is organically grown food more climate friendly?

Organic farming typically uses 26% less energy to produce the same amount of food as non-organic farming. On average organic farming produces 28% higher levels of soil carbon compared to non-organic farming in Northern Europe, and 20% higher for all countries studied (in Europe, North America and Australia).

<http://www.soilassociation.org/innovativefarming/policyresearch/soilcarbon>



Globally the production of and use of artificial fertilizers for non-organic agriculture are the largest single source of nitrous oxide, a greenhouse gas 310 times more damaging than CO₂. It's important to note that many growers are not registered with the Soil Association but are farming using low-carbon methods. Using farmers' markets and local shops means we can ask how the food was produced.

What do we know about the hidden ingredients in our food?

Palm oil in particular is in a remarkably large range of processed food products and has led to much rainforest destruction. www.palmoilaction.org.au/

'In just half a century, our diets have completely changed. Now a handful of ingredients, some of them barely used as food before the war, crop up in everything from baby food to cat food to processed meals. What happened? How did corn, soya, sugar, palm oil and factory meat come to invade our diets?
(Felicity Lawrence, *Eat Your Heart Out*)

How do we reduce food waste?

In the UK the total mass of food waste generated from farms down to people's homes comes to about 18-20 million tonnes (figures from WRAP quoted in Tristram Stuart, *Waste*, p. 184). How does that square with John 6.12: 'When they had all had enough to eat, he said to his disciples, 'Gather the pieces that are left over. Let nothing be wasted.'

A strategy for action: Here we suggest a set of activities for members to consider. Discuss them in your *ecocell* group, and use the group as a pool of expertise and support.

Action 1: People in the group will be starting from different base points. Where are you? Do you grow most of your vegetables and fruit in your garden or allotment? Or do you buy mainly from supermarkets and cook already prepared and processed food? Or are you somewhere 'in-between'? The first task is to find out in more detail by filling in a food chart for two or three weeks. **See Food Chart 1 – Note of what you eat.** (page 7 of this document or on the *ecocell* [Footprint Measurement Spreadsheet](#) (2015 version) available on <http://www.greenchristian.org.uk/ecocell/>)

Action 2: Use the information gathered on the food you usually eat to measure your current food footprint using the food carbon calculator based on George Marshall's *Carbon Detox*. **See Food Chart 2 – Counting the carbos for what you eat.** (page 8 of this document or on the *ecocell* [Footprint Measurement Spreadsheet](#) (2015 version) available on <http://www.greenchristian.org.uk/ecocell/>)

Action 3: Increase the amount of food you obtain from your local region. See Suggested Group Activities one and two. Reduce and use your waste more creatively – see Activity three. Switch to lower carbon food where possible. The simpler the food the easier this is to judge. Processed food is more difficult and in general much more energy intensive. If continuing to eat meat, fish and dairy products eat much less than the UK average of around 2.25kg per week, and choose organic, or local grass fed (this figure is taken from food consumption figures for 2008 from DEFRA, but it is an average of everyone, including those who eat no meat at all). Also see *A Learning Strategy for Living Sustainably*, Appendix One for a vision of where we are heading.

Suggested Group Activities

1. Grow your own and cook from fresh ingredients

- If you have a garden, fine, get sowing and planting. There are many good books to get you started. But be warned, food growing is not instant. Even fruit trees on dwarf rooting stocks can take a couple of years to fruit. Food growing can be hard work, and everyone has some crop failures, but the rewards and satisfaction of eating your home-grown, fresh, wholesome food are fantastic. www.gardenorganic.org.uk
- If some in your group have less garden space and others have too much to cope with, explore the possibility of a garden share. Useful arrangements can be made for welcoming someone else into your garden to grow food and share some of the produce. <http://www.transitiontowntotnes.org/groups/food-group/gardenshare/>
- If you have growing space in public view so much the better: in your front garden, or the school or church grounds or disused public space. This way you can influence other people – and contribute to creating a more friendly neighbourhood, as people passing by stop to talk to you.
- Create a map of potential food growing pieces of land in your local area: allotments; grounds; church grounds!; existing orchards; fields currently underused; public spaces suitable for food trees. How long is the waiting list for allotment plots? Is it possible for your group to share a plot and learn together about food growing?
- Share ideas on how to reduce meat in your diet. e.g. substitute beans for some the meat, have one meat free day a week, have something filling first like a Yorkshire pudding with onion gravy.



- Have a 'myth busting' debating session – e.g. 'Cooking from scratch takes you all day' and 'There's no alternative to the supermarkets'.

2. Source your food regionally

- Try the 'Fife Diet': a group of people in Fife pledged to source at least 80% of their food from Fife. They accepted that some food would need to come from outside the county. Could you do the same within your own county? Try it for a month and report back to the group on how you got on. www.fifediet.co.uk
- Purchase from local shops and farmers markets where you can ask where and how the food on offer was grown and produced. If you shop in supermarkets read labels carefully. Country of origin is often where the food was packaged, not where it was grown.
- Share information within the group on good sources for purchasing food within your area. Are local greengrocers buying from local producers? Is there an independent butcher buying from local farms and markets. Has someone already produced a resource booklet? the local wholefood or health shops, or your local library. If no such booklet exists then could you create your own? Check out the Big Barn website to get you started on what's available in your area. www.bigbarn.co.uk



3. Waste not, want not

- Swop recipes on using up left-overs.
- Plan – decide what you want to eat and buy accordingly.
- Preserve gluts – bottling, jams, pickles, chutneys all preserve food to enjoy in winter. Freezing also preserves the produce but uses electricity. Arrange a practical group workshop on bottling fruit, making jams, chutneys and pickles, drying beans etc.



- What about freezing? Freezers do a great job of preserving food, and keeping it fresh, but they do use energy. In the Energy in the Home Module you might like to research just how much energy your home freezer is using. Work out what you really need and have a freezer to meet that need. This is a good argument for eating a vegan diet as you might not need a freezer at all.
- Not everyone has room for a compost heap, or a 'Green Joanna' or green cone to take cooked food. Is it possible for those in the group with larger gardens to welcome some extra ingredients for their own composters? Or could the group approach the local allotment holders to see if they would welcome extra? Green waste and food waste emit methane when they rot in oxygen-starved landfill sites.

When composted they just emit CO₂ – which is still a greenhouse gas but less powerful and climate-damaging than methane (see Appendix Two for Tony Hodgson's story).

4. Suggestions for Community Action on the food issue.

- Explore the possibility of creating a new allotment site, or planting fruit and nut trees in parks, on verges, roundabouts!
- Many schools now have vegetable plots for the children to plant and sow. Encourage those who don't to get started. For advice visit <http://www.gardenorganic.org.uk/education>
- Investigate the quality of school lunches in your area. Is someone in your group connected to one of the local schools and able to encourage a more low-carbon diet?

- Is collective animal husbandry possible? e.g. sheep or goats grazing in the churchyard!
- Can you let people outside your group know what you are doing? e.g. a web forum on the church website, articles in the church magazine.
- Throw a celebratory party for the parish and local community based on the LOAF principles.

Useful books:

Graham Harvey, *The Carbon Fields, How our Countryside can Save Britain* (Grassroots, 2008).

Tony Hodgson, *Good Food Stories, Our choices make the world of difference* (available from Farm Crisis Network for a small donation. Email secretary@greenchristian.org.uk)

Felicity Lawrence, *Eat Your Heart Out: Why the Food Business is Bad for the Planet and your Health* (Penguin, 2008).

George Marshall, *Carbon Detox, Your step-by-step Guide to Getting Real about Climate Change* (Gaia, 2007)

Tamzin Pinkerton and Rob Hopkins, *Local Food, How to make it Happen in your Community* (Transition Books, 2009) A practical hands-on guide for creating local food initiatives from the Transition Town movement. Tristram Stuart, *Waste: Uncovering the Global Food Scandal* (Penguin, 2009).

More about Green Christian's LOAF principles

Visit the Green Christian website – www.greenchristian.org.uk/resources/loaf for:

Use Your LOAF leaflet

Two services of worship based on the LOAF principles – one is a Eucharist the other an informal service

Placemat to print out and use for LOAF meals

An article explaining LOAF in more depth

A selection of graces.

Appendix One: A Learning Strategy for Living Sustainably - using our LOAF in more ways than one, by Tony Emerson (August 2010).

In writing a paper for business leaders in 1995 Duncan McLaren¹ of Friends of the Earth suggested a very interesting principle: **that increasing physical resource scarcity will require the optimum development of human knowledge and skill.**

This principle applies equally to us as individuals just as much as it does to business. And it may be particularly relevant to our quest for food sustainability.

Take the person for whom 'food' means going to the supermarket, buying a big slab of steak, frozen veg packets and tins of fruit. She or he then comes home, puts the frozen veg in the microwave, the slab of steak on the frying pan and then opens the fruit tins for 'afters'. Then eats in a hurry while watching the TV.



Resource use: very high;
Skill use: negligible.

Hopefully those of us starting the *ecocell Food Module* will have gone beyond the big slab of steak etc. But many of us probably have a long way to go. Our task can be seen as developing our knowledge and skills so that we can

- Grow as much as of our food we can, as our space and our time allow, and grow it to a good standard
- And (when we can produce in abundance) preserving the fruit or veg efficiently so that we can use it out of season

- Produce nutritious and tasty food, optimally using LOAF ingredients (local, organic, animal-friendly and fairly-traded) , available as local as possible, and in season (if possible).
- Know where to go to find these ingredients
- If not vegetarian, minimise the meat proportion and maximise the non-meat and non-dairy components
- Appreciate what we eat and make the most of what is on the plate – thereby needing to eat less (Grace before meals, for instance)
- Have a good repertoire of menus – including menus that make good use of left-overs
- Compost effectively everything else that is left over and that cannot be re-used.



Quite a steep learning curve is required, as you can see. And ‘unlearning’ the idea that food is a consumer product, and that you have market choice to buy and cook what you like, when you like.



Appendix Two: Tony's Story: *The Hungry Compost Bin*, by Tony Hodgson (reprinted from *Living Green* the newsletter of the Life Style Movement).

I have never been very good at making compost. When I compared the beautifully smooth, light to the touch productions that are supposed to emerge at the end of the process with my lumpy efforts I have sometimes wondered why I kept trying. One thing I have finally learnt is the importance of alternating what are known as green elements, which in my case largely consisted of uncooked kitchen waste, and brown layers which can be scrunpled paper or stick-like plants or, so I am told, grass cuttings, although they do seem rather green to me. The result of not doing this is that the whole heap becomes distinctly slimy.

Until recently I have nearly always had a compost bin to feed and it has been a relief to know that most of the peelings and tops and tails of vegetables and fruit would not find their way to landfill. But having moved to a warden-controlled flat with no private garden, having one's own compost bin is not an option.

However I have a good friend who is a professional gardener and who kept an excellent vegetable garden, with a compost heap only three-quarters of a mile away. This meant that once a week or so it gave me a good reason to go on a half-hour excursion which could often be combined with making other visits. If there was only a small amount to carry I could take it in one or two carrier bags. When it was heavier I had the choice of putting it in my rucksack or wheeling it in my shopping trolley (suitable encompassed in old plastic bags!).

This arrangement lasted for several months but then my gardener friend moved ten miles away which was a little beyond my reach. I then had to cast around for another willing receiver of compost and soon found two, one living a mile away and the other just half a mile down the road. So if I want an excuse for a longer walk which can lead on to a pleasant riverside stroll I choose the first, and if I don't want to venture so far I can choose the second. I have been surprised by how glad people have been to have my throw-outs to add to theirs.

¹ Duncan McLaren *Environmental space – Measuring the Dimensions of Sustainability*, Environment Council (UK) Business & Environment Ecofacts Series (1995).

Food Chart 1 – note of what you eat

If eating meat or dairy produce weigh the portions

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Breakfast							
Source: e.g. home-grown; bought at farmer's market; local shop; supermarket, imported							
Preparation: Eaten raw, cooked from fresh, heated processed food							
Lunch							
Source: e.g. home-grown; bought at farmer's market; local shop; supermarket, imported							
Preparation: Eaten raw, cooked from fresh, heated processed food							
Tea/Supper							
Source: e.g. home-grown; bought at farmer's market; local shop; supermarket, imported							
Preparation: Eaten raw, cooked from fresh, heated processed food							

Food Chart 2 – Counting the Carbos for what you eat.

This chart is based on the carbo chart in George Marshall's *Carbon Detox*.

The figures in this carbo-counter account for the energy used in agriculture, fertilizers, food transport, processing, storage, shops and catering.

They also include the methane and nitrous oxide from animals, animal wastes and agricultural soil.

Food	Carbo allowances	Amount of Carbos
A typical British diet with 38% of nutrition animal based.	Start with 2,000	
A serious meat and dairy diet (50% animal based)	Start with 2,250	
A light meat diet (a little meat once a day or less)	Start with 1,750	
A vegetarian diet (replacing the meat in a typical diet with dairy)	Start with 1,500	
A vegan diet (no animal products at all)	Start with 1,000	
If you eat only organically produced food If you eat some organically produced food work out roughly the proportion e.g. if you estimate a third of your food is organic, reduce your score by one third of one half – i.e. by one sixth or 17%	Halve your score or a relevant proportion	
If you eat meat that is not organic but IS free range If a certain proportion of your meat is free range non-organic reduce by that proportion of 100.	Deduct 100 or a relevant proportion	
If you eat meat but never eat beef or lamb If you only rarely eat beef or lamb, eg when eating out, reduce by that proportion of 200.	Deduct 200 or a relevant proportion	
If nearly all your food is processed and/or imported By 'processed' we mean something that has been changed from its original state e.g. ready meals, prepared salads, marinated or pre-flavoured meat, easy cook rice, pre-flavoured cous cous etc. If some of your food is processed work out a relevant proportion.	Add 200 or a relevant proportion	
If you buy air-freight fish or vegetables once a month	Add 40	
If very little of your food is processed, and/or imported	Deduct 400	
If you grow almost all of your own fruit and vegetables If you grow some of your own fruit and vegetables work out roughly the proportion e.g. if you estimate you grow a third of your own fruit and vegetables, reduce your score by one third	Deduct 200 or a relevant proportion	
If you eat all leftovers and never throw away edible food	Deduct 10 %	
If you compost all of your food waste	Deduct 200	
Eating Out – about 25 per cent of meals in the UK are eaten away from home.		
If you hardly ever eat in restaurants or canteens	Deduct 100	
If you eat half your main meals in restaurants or canteens	Add 100	
If you eat out about once a week in restaurants or canteens	Add 30	
If half your meals are takeaways that you take home	Add 50	
Your total food impacts		