

Zero Carbon Food

Sat 24 April 2021



The third in a series of Zoom events designed to celebrate and prepare for the 26th UN Climate Change Conference of the Parties (COP26) in Glasgow. These events cover different climate themes, bringing together experts and examples of best practice to identify the actions needed to achieve a zero carbon society. At this event the speakers talked about the different elements of the food system and how they can all work together to reduce carbon emissions and feed people in a more sustainable way; the benefits of a plant-based diet; organic growing and growing food in public spaces. [Click here](#) for a recording of the session.

The speakers

Gareth Roberts, [ShefFood](#): 'System change not climate change'

Gareth is a founder member and co-director of [Regather](#), a cooperative that runs an organic fruit and veg box scheme and coordinator of ShefFood, Sheffield's Food Partnership, which is a member of [Sustainable Food Places](#), the starting point for the partnership. Being part of a national network provides support, advocacy and grants as well as an [awards framework](#) which allows a town/county to recognise and celebrate good work around food. ShefFood covers all aspects of the food system from grassroots organisations to local authorities and the university and Sheffield Climate Alliance.

He showed a few slides which illustrated the complexities and connectedness of the food system (in an ideal world the system would be circular rather than linear) and how each element has prerequisites and outcomes. Eg see this [Nourish Food System Map](#). It is important to understand the linkages and have a greater awareness (eg the nutrient content of food waste which should be composted rather than landfilled).

He noted the elements of food systems thinking – food provision (eg field to fork), foodsheds (like a watershed ie land, productive capacity), dimensions (eg social, environmental) and flows (eg power, water, nutrients).

Value based food chains – think about food as values of object and process of exchange – look to customers to make decisions based on values (eg fairness, standards). These chains within the wider food system that drive change, and we can reconfigure these chains. He used the Regather Box as a case study – serving 800 households with local seasonal coop organic produce. Not all grown locally, but cannot meet demand and are part of a bigger regional supply chain, and part of global food chain. He showed a figure illustrating the food chain for South Sheffield and all the many partners. Key challenges – land, work (skilled labour supply) and inputs (water, soil, chemicals, light & heat etc). Working towards a fully integrated urban agriculture eg sources of urban heat and water, composting to create soil. Data plays an important role.

Dawn Ward, plant-based/vegan

Dawn noted that our current food system produces 13.7 billion tonnes of CO₂e, uses 43% of worlds ice and desert-free land is used for agriculture and a further 2.8 billion tonnes greenhouse gases produced for leather and wool. The food industry creates CO₂ through:

- Land use change – biomass and deforestation. If we can reduce the amount of land for agriculture we can have more space for wildlife.
- Farm – methane, farm machinery, fertilisers – the way we farm is not sustainable
- Animal feeds – massive use of agricultural land – 80% of soy used for animal feeds
- Processing – emissions
- Transport
- Retail – refrigeration and storage
- Packaging – and end of life disposal.

Dawn showed a slide of the [greenhouse gas emissions of different foods](#) based on a study of nearly 40,000 farms in 119 countries. This shows the biggest impact comes from landuse, farm and animal feed. Plant based foods produce much lower carbon emissions (10-50%) than animal -based products. This is based on weight but even based on protein the trends are similar. A plant-based diet can reduce the carbon footprint by 61-73%. Based on land the trends are similar, though cheese is higher than dairy, but still higher than plant-based food. If switch to plant-based foods, can use 75% less land (3.1 billion hectares of farmland) which can be given back to nature through rewilding that will also reduce the carbon lost from soils. Dawn has a couple of acres of land near Owlars Bar that she has been rewilding for last 4 years with benefits for insects, birds etc.

What can we do?

- Individuals – stop eating meat, fish, dairy, eggs (though better to grow your own plants than get from supermarkets)
- Local councils – provide healthy meals in schools and hospitals, educate young people about food and where it comes from. Last year [Mayor of Lyon banned meat](#) from the menus for 29,000 elementary school children
- National government - disclose environmental costs in adverts (colour coding), stop subsidies for animal agriculture, update the food pyramid.

Dawn noted the benefits of a plant-based diet are numerous: eg animal welfare, better health, increased biodiversity, reduced water use, etc. Any questions contact Dawnward68@yahoo.co.uk

Jane Woodward. [Incredible Edible Chesterfield](#)

[Incredible Edible Chesterfield](#) is a community movement encouraging people to grow fruit, vegetables, herbs and pollinators in public spaces for anyone to pick for free. It's a project of [Chesterfield Timebank](#) that operates throughout Derbyshire – they have individual and group members and businesses/organisations can join. Jane works for North East Derbyshire Citizens Advice so advises people on food poverty and project manages the foodbank aspect of citizens advice. Jane liked the idea of Incredible Edible as it's using growing as a visible sign of a kinder community and it promotes the power of small actions. They have a few sites around Chesterfield where (pre covid) they do group gardening sessions. This allows people without space to garden, it helps encourage people to grow food, it shows people where food comes from and people can help themselves. Although Timebank is organised as a membership organisation, they are happy for anyone to get involved. They want to expand Incredible Edible into further areas, working with councils and trying to encourage business and individuals to grown edible food in any space – in parks, containers, gardens. Please get in touch if you are a Derbyshire business or organisation that wants to get involved: chesterfieldtimebank@gmail.com Timebank also has a separate foodshare project where they collect food from local supermarkets and share amongst members to reduce food waste which links into the aims of Timebank to improve people's lives.

Chris Brooks, Chair, [Inspire Community Garden](#)

Chris is Chair of Inspire Community Garden, an organic demonstration garden following permaculture principles set up by Transition Chesterfield. In 2016 it became a separate charity which grows food, teaches people how to grow food organically and provides therapeutic horticulture. The garden was formed from an old allotment which is part of the charity Fairplay. To prepare the site they cleared brambles, brought in an old caravan and fitted it with a log burning stove, LED lighting and solar panels (done as a workshop) and made wheelchair accessible. They also built an outdoor kitchen and pizza oven, and had sheds and greenhouses donated. As no water on site they built a composting toilet, harvest water from polytunnels and sheds, and have a solar pump watering system for the polytunnels. They have a lot of groups (eg cubs). There are lots of organic beds on a standard crop rotation. They also have polytunnels, a pond, a wildflower areas, and last year grew 23 varieties of tomato plant and 30 varieties of potato. Problem with frosts so using miniature hotbox (trays of manure or grass cuttings) to keep frost off the plants. They run lots of workshops – apple pressing, how to build pond, bumblebees, food foraging, etc. They don't use any chemicals. They have come a long way in just over 4 years thanks to the volunteers and all are welcome.

Questions and answers

Q. Collectively what should we be doing to reduce carbon and make food more sustainable? How has Sheffood helped bring growing partners together?

A [Gareth] if going to focus on scale at community or neighbourhood level promote any coop or collective purchasing of food which allows households to change buying, eating, cooking, waste disposal habits. Food is most accessible ways of tackling climate change and while at an individual level the impact of those actions can be magnified, there is the challenge of logistics/cost/convenience – Inspire is a great example of people coming together as a group and acting collectively which makes managing garden easier. We are all consumers, we spend money on food every day ut what we do with our money and how we spend it is

possibly the most powerful expression of intent to change how the food system works eg box schemes, bag schemes, food coops etc are straightforward to set up but needs some organisation (see step by step guide on [Sustain website](#)). These provide value for money, allows us to take control of where food comes from and creates market for local producers and employment.

Q what is the role of the council in the food partnership– what support are they giving?

A [Gareth]. Our councils have a range of statutory responsibilities for food/diet but limited resources to deliver on those. Councils have a role in facilitating food partnerships but would caution against looking at directly to council as source of change/resource – they are under huge pressure. Strongly advocate collective action at community/grassroots level. Equally advocate specific discrete role for councils where they have statutory responsibility or resources. Should be more of a citizen led approach to change – why I set up a coop – community led response. Needs to be bottom up, proven to be ineffective when top down. A [Dawn] government should have more of a responsibility eg councils have been given money for renewable energy – shouldn't funding also be given to reduce carbon from food systems, and councils should learn from people like Gareth. Agree to start with yourself – we have power as individuals and community to change things, but needs to be some pressure on local government, especially around education.

Q. Within Incredible Edible do you utilise people's gardens? There are schemes where elderly people give garden space to someone who has energy/time and get equal share?

A [Jane] interesting idea and can look at that. Incredible Edible only started just before lockdown. We want as many people to grow food in as many places as they can. Can work with Inspire on education as many people think they need a lot of space/skill to grow food.

Q. On some websites, especially unis they talk about food engineering – find distasteful as implies need to process food a lot. The less we process the better. Podcast where comment need to get from farmer to consumer with as little involved in between. Do we need to change the terminology?

A [Dawn] often refers to genetically modified food – worry with Brexit as US is GM friendly. Allowed to grow GM food for animal food but not for human food. Plant breeding/selection has always been done, now going further and don't know how that will affect biodiversity. A [Gareth] wouldn't equate food engineering with GM but more a supermarket related issue. Supermarkets are the elephant in the room in any conversation about food system. Agree on premise of question – we need to shorten supply chains and minimise processing and not introduce fat, salt sugar into diet. Supermarket system is heavily dependent on processed food. Fresh food and perishable goods difficult for supermarkets to deal with and where most of the waste comes from. Processed/engineered foods have longer shelf life, but impact on health. Food supply is another elephant – large numbers of people in need of food and we import significant quantity of food through incredible complex supply chains, global, no amount of community food growing is going to match level of supply required to meet demand. Moderating global food system which creates desirable outcomes locally, regionally and nationally. How can we do that at collective level? The households here could change how they eat within 2-3 months – not growing own food which is bonkers given seasonality. How do we cooperate and plug into the economic factors which determine our food choices? We have to act as food citizens and change habits which involve visits to multinational corporate owned profit supermarkets – that's where the majority of responsibility lies for how food impacts the environment. We have to get to grips with that –

get real – and based on reality of supply and demand and economy. There are opportunities which are immediately available eg community owned food business

Comment. Moved away from Chesterfield, now live in retirement flat – constrained what can grow and growing fruit trees and managed to get small allotment space, 2 builder bags

Q. Daughter getting overwhelmed by problems of world and what people buying in supermarkets. What can we do, it all feels too little – and we need to force the government to do something. Worried that young people struggling.

A [Jane] At Citizens advice I'm talking to people with multiple issues, and agree it is difficult as there are lot of problems but starting point is to take small steps and changing individual ways of looking at things. Big believer in small actions that can help individuals.

Comment: Polly and Alison run [Abundance](#) a project which is part of Transition Chesterfield. Started picking unwanted fruit and now collect unwanted veg – people pleased to get rid of gluts and do something useful. Work with allotment groups and take to foodbank and Gussies (food parcels). Just started Grow2Give – to grow veg for people from foodbanks – sew seeds and giving away plants for people to grow to give away.

Links and Further Reading

[Sustainable Food Places](#)

[Sustain – the alliance for better food and farming](#)

Documentaries for more information

[Cowspiracy](#)

[Meat the Truth](#)

[Before the Flood](#)

[More than Honey](#)

[HOPE What you Eat Matters](#)

[Racing Extinction](#)

Poore J and Nemecek T (2018) Reducing foods environmental impacts through producers and consumers. *Science* 360 (6392) pp 987-992

Yang Y, Tilman D, Furey G and Lehman C (2019) Soil carbon sequestration accelerated by restoration of grassland biodiversity. *Nature communications* 10 (1) pp1-7

Clark M A, Springmann M, Hill J and Tilman D (2019) Multiple health and environmental impacts of foods. *Proceedings of the National Academy of Sciences* 116 (46) pp23357-23362

Reisch L A, Sunstein CR, Andor MA, Doebbe FCE, Meier J and Haddaway NR (2020) Mitigating climate change via food consumption and food waste. A systematic map of behavioural interventions. *J of Cleaner Production* p123717

Save the date for future events

Education (Sat 22 May); Circular Economy (Sat 26 June), Tree planting & flood prevention (Sat 31 July), Rewilding (Sat 25 Sep)