

Written evidence submitted by Climate Friendly Bradford on Avon (CFBoA) (AB62)

Climate Friendly Bradford on Avon is a very active community group founded in 2006, with monthly main meetings and 6 Action Groups: Sustainable Food and Drink (SFADG); Biodiversity; Zero Waste; Energy; Active Travel and Community Involvement. Our Carbon Neutral 2050 declaration has 1,081 signatures, which includes the Town Council, other organisations, businesses and individuals.

Our document 'Sustainable Food and Drink – Looking after the Earth' (2017), can be downloaded as a PDF from www.climatefriendlybradfordonavon.co.uk. We have explored extensively the literature on Greenhouse Gas (GHG) emissions and other environmental impacts in the UK food chain. We consider joined up thinking is crucial and raise questions concerning the prevailing discourse on many fronts.

We welcome the Government's aim that "any changes made to agricultural funding would reflect the Government's aim of securing a better future for UK agriculture and for the environment" and the opportunity to submit evidence to the Committee stage of the Bill.

Summary:

- **The mitigation of climate change, as well as reduction in GHG emissions, need to be absolutely at the centre of all government policies and legislation, including the Agriculture Bill.**
 - **Healthy, living soils are vital for enabling our farmed soils to: act as a huge, natural carbon sink; produce healthy food sustainably; deliver the "public goods" identified as desirable in the Bill. We therefore urge that there is clear provision for future farming subsidies to incentivise a rapid transition to agroecological approaches to food production; give farmers and producers security to manage the land sustainably and improve animal welfare standards, with protection from competitive disadvantage from imports of lower standards in trade deals (12-14).**
 - **We urge government to fund R&D focussed on accelerating the extension and development of sustainable and regenerative agriculture practices, which support agroecological food production and the concomitant delivery of "public goods".**
 - **We recommend a strong precautionary approach is taken to implementation of innovative technologies in food and farming (15-16).**
 - **We urge measures in the Agriculture Bill which could promote reduction of long-haul transport, with its wide-ranging impacts (19).**
 - **We consider that serious shortcomings in the way that the carbon footprint of food is measured are liable to misguide both people's dietary choices and food and farming policies (21).**
- 1) **Extreme weather events attributed to climate change are increasing in frequency and severity** globally leading to deaths, destruction of homes and livelihoods, displacement of people sometimes contributing to migration, and other adverse effects. Seasons and harvests have become less reliable. Water scarcity, as well as catastrophic flooding, is becoming an increasingly urgent and very serious issue in

many parts of the world. Marine environments are also implicated with acidification, migration of species and many other effects. Habitats in many parts of the world are becoming less hospitable for habitation by people and wildlife, adding to the effects of physical habitat damage and destruction through human exploitation.

- 2) **The absolute urgency of reducing emissions, mitigating and adapting to climate change** has been highlighted by the Special Report recently presented to the IPCC. Whilst previously many of the impacts were not being experienced first-hand to a great degree within the UK, we have over the last 10 years been experiencing more extreme weather events. Experts are telling us that climate change is now progressing rapidly and the next 10 years are likely to become seriously challenging.
- 3) **“Decisive Action Needed Now”: The UN Food and Agriculture Organisation (FAO) Climate Change, Agriculture and Food Security document 2016 states that it “cannot rule out the possibility that climate change at some more, or less, distant point in the future may make it impossible to feed humanity... Key messages:** 1. Until about 2030 global warming is expected to lead to both gains and losses in the productivity of crops, livestock, fisheries and forestry, depending on places and conditions. 2. Beyond 2030, the negative impacts of climate change on agricultural yields will become increasingly severe in all regions. 3. In tropical developing regions, adverse impacts are already affecting livelihoods and food security of vulnerable households and communities. 4. Because agriculture, land-use and forestry make a considerable contribution to Greenhouse Gas Emissions (GHG) emissions, they have a significant mitigation potential.” (Ref 1, p. 237)
- 4) **The state of global soils is of central importance in mitigating climate change.** In 2015, the UN international Year of Soils flagged up that up to a third of global agricultural soils has been damaged by modern industrial farming methods and topsoils are rapidly being eroded, threatening future food production. This also applies to UK agricultural soils.
- 5) **Nitrogen, pesticides and other agrichemicals, inadequate returns of organic matter to soils and compaction by heavy machinery cause damage to the microbial and other small life in and on farm soils,** which would normally be both at the base of the food chain for wildlife and, crucially, enable soils to perform their natural function as a worldwide, carbon sink for greenhouse gases, sequestering methane as well as carbon dioxide.
- 6) **It is therefore absolutely vital that ALL soils are “living soils”** capable of performing these roles, which are central to mitigating climate change as well as protecting biodiversity. In 2014, according to the FAO, almost 19 million square miles of land was used to produce food globally with almost 5.4 million square miles under arable cultivation. It is not therefore sufficient that this Bill mainly incentivises the restoration of soils and wildlife just around the margins of food production areas or on marginal land or that the timescale for restoring all soils to a healthy state is 2050. The restoration of all our soils need to be progressed with the greatest urgency, with adequate organic returns to the soil and an urgent move away from agrichemicals.
- 7) **Healthy, living soils are also capable of creating and retaining more nutrients.** In 2015 the UN stated concern about the emergence of “hidden hunger”: malnutrition

due to the decreasing levels of micro-nutrients (vitamins and minerals) in foods. In the UK, the nutrient status of fruit, vegetables and even meat decreased dramatically in studies of everyday foods between 1940 and 1991. (Ref 2)

- 8) **Healthy living soils, have better structure and are more resilient to weather extremes**, such as drought, flooding and run-off, and they help filter water. During the unusually hot, dry conditions in the UK this summer, Helen Browning, CEO of the Soil Association, noted that her organic farm was producing much more grass than the grassland of farmers around her that farm conventionally. Locally to Bradford on Avon, a wildflower meadow, (which has never been treated with agrichemicals) was becoming difficult to manage as an isolated field: it was let for sheep grazing to a local farmer and in October he said that he now considers the field to be his best: the sheep did far better than anywhere else, especially considering the hot, dry weather.
- 9) **“The key option for action that came from the IAASTD report is that agriculture, on a global scale, needs to transition to agroecology as the way ahead to deal with the challenges of sustainable and equitable development.”** (2016 interview with Prof Hans Rudolf Herren who co-chaired the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) – on behalf of the UN and the World Bank, involving more than 400 scientists over a 4 year process, published in 2008. (Ref 4, pp. 48-52)
Herren indicates that **embracing agroecological/regenerative practices can by 2050 produce enough food in the quantity and quality needed to nourish well nine to ten billion people, while using less land and water.** (Hans Herren is the author of the chapter on agriculture in UNEP’s Green Economy Report.)
- 10) **There are currently sufficient calories produced globally to feed 9 - 12 billion people**, according to different sources. Current world population is 7+ billion. **So, is the drive to intensify food production systems to feed the world appropriate at the present time, especially as the rate of world population growth is now slowing and a third of present worldwide food production is wasted?** Further intensification on many of the current models of production will inevitably lead to further increases in environmental damage. Surely now is a time when there is a very positive opportunity to adopt less intensive, more environmentally- and health- friendly methods of food production? Less but better food production, with less waste, would be better for the environment. **We therefore question the provisions in the Bill for financial incentives for improving productivity.**
- 11) **The World Hunger Education Service (2015) concludes that poverty, harmful economic systems, conflict and climate change are the main causes of world hunger** and that there is more than enough food currently produced globally to feed the world population. (Ref 5). Governments need to be responsible for ensuring that all individuals can afford a healthy, balanced diet.
- 12) **Imported food standards after Brexit are a matter of great concern to CFBoA.** We respect the overall aim of improving environmental standards in the UK. However, environmental standards are not necessarily the same as food standards. Almost half of our food and drink is imported. Imported products that are not produced to present (or, the desired improved) UK environmental and food standards, could put UK

farmers and food producers at a competitive disadvantage, lead to erosion of our food standards in order to secure trading agreements, and contribute to UK food consumption outsourcing increased greenhouse gases, inferior standards of animal welfare and environmental damage.

- 13) The economic brunt of the Government's wish for the population to have cheap food available should not be borne by farmers and producers,** as this has driven many UK farmers out of business and driven industrial scale farming and mono-cultures.
- 14) CFBoA therefore recommend that the Agriculture Bill includes a commitment to retaining and improving both environmental and food standards post-Brexit, along with a commitment that UK farmers and producers are not put at a competitive disadvantage through the negotiation of future trade agreements.** Enabling UK farmers and producers to be competitive in the home market also would enable the health benefits of food produced to high standards to benefit our own population. It would facilitate the financial feasibility of increased Public Procurement of sustainably produced UK and local food, in accordance with the Government Buying Standards for Public Sector Catering and the excellent Food for Life catering framework, which can help drive the home economy and reduce reliance on imports.
- 15) Many technological and scientific innovations create a treadmill for farmers.** With the next innovation always around the corner, it becomes necessary to stay one step ahead to stay in business. This is not necessarily in the interests of future sustainability. Very serious, unforeseen downsides sometimes emerge years later; for example: although some were warning in the earlier and middle years of the twentieth century that agrichemicals, mono-cultures and specialisation in farming, separating livestock and arable farming, were harming soils, this was not heeded. The damage done to soils and effects on climate change mitigation are now recognised.
- 16) CFBoA considers that genetic modification and editing, and nanotechnology, pose imponderable risks** which cannot be assessed adequately. Additionally, as with agrichemicals, a cocktail of altered foodstuffs may have serious impacts, not evident in testing an individual product. (See also below, excerpt from the IAASTD Synthesis Report - Ref 7). We are concerned about cross-contamination by genetically altered crops affecting the right-to-choice of the consumer, farmers and producers (including those with organic status) and those nations who have chosen to ban GM crops. We are not in favour of fast-tracking of these technologies and recommend a highly precautionary approach. Anti-microbial use in food production is clearly a huge problem now for human health and in the environment.
It is disappointing that the majority of research funding is now orientated towards highly technological "fixes". We hear from scientists that research into natural systems are very under-represented, due to lack of funding.
- 17) Although some international trading is essential for food security, almost half of our food and drink is now imported, sometimes from countries that are more vulnerable to climate change impacts than we are presently.**
- 18) Land use abroad for producing our imported food and drink production contributes globally to displacement of people and wildlife, and often, water use in areas of water scarcity. Some of our farmland is now underused, or no longer used, for food**

production. It is clear locally that significant areas of farmland are now used for horsiculture, development (soil sealing), leisure, biofuels and some fields previously used for food production are in a neglected state, not even well managed for supporting more wildlife. Could removing farming subsidies from landowners have the perverse effect of driving more land out of food production to other more lucrative land uses? The UN International Year of Soils 2015 highlighted that farmland needs to be protected for future food security.

- 19) **The global food and drink trade, and local food which is processed sometimes at a distance, contribute significantly to GHG emissions from transport fuels. Much of our food and drink is transported to multiple countries *en route* to our plate.** The immense infrastructure needed for this trade (not reflected in government statistics on transport) also clearly has a vast GHG emissions footprint. Post-Brexit, “turbo-charging trade” to more distant countries is likely to increase demand for transport fuel, when there is not a sufficiency of “green” alternatives to fossil fuels. Biofuel production competes for land with food production, animal feedstuffs, organic returns to the soil and other land uses and is often associated with increases in arable land cultivation (which tends to release soil carbon back into the atmosphere) and agrichemicals. We note that "UK biofuel use in the first year of monitoring [in 2009] required around 1.4 million hectares of farmland, most of it overseas. That's the size of Northern Ireland, just to provide 3% of our transport fuel." (Ref 6). (There is an urgent need for more non-farmland based sources of clean energy. Reducing demand for energy, including for commercial transport and travel should be at the centre of government priorities.)
- 20) **Our literature search highlighted that trees, grassland, including grazed pasture, and perennial plants are generally much better at sequestering and storing carbon from the atmosphere than annual crop production, which has a much greater tendency to release stored soil carbon back into the atmosphere.** We conclude that increasing tree cover, through increased woodland, on-farm tree planting and agroforestry, and producing as much as our food as possible from well-managed grasslands, whilst minimising the need for arable production (here and abroad), is likely to contribute to the mitigation of climate change impacts. This means less (but better) meat and dairy consumption, based on primarily pasture grazed animals. We have 3 small-scale fruit and vegetable producers on the outskirts of Bradford on Avon, who produce significant and excellent, well-flavoured crops using agro-ecological principles, as well as varied habitat for biodiversity. They consider 1-5 acres of land ideal for this sort of enterprise. **These businesses could multiply and grow if subsidy support enabled their produce to become more financially competitive - making local, fresh, seasonal produce available to all.**
- 21) **The way that the carbon footprint of food is measured apparently always shows intensively produced food as having a lower carbon footprint.** We understand that the measurement tools, which measure (using a range of functional units) product output efficiency in relationship to GHG emissions, were originally used to analyse industrial processes and have been adapted to assess the environmental impacts of food production, which, by contrast, involves complex and variable biological and

social systems. We suggest that these tools are not able to capture this complexity and therefore may have some uses but are **not a valid measure of sustainability**. Whereas Life Cycle Analysis and whole diet tools are used, **whole farming cycles and farming practice that keeps the soil healthy and fit to sequester GHGs and fertile to feed future generations (such as mixed farming) do not seem to be included**. The hugely important, but complex, gains and losses of GHGs from soils during food production are not included. The way that allocations are made is also problematic: for example, indicating that dairy products have a lower carbon footprint than meat, has led many people to imagine that dairy products can be produced in isolation, without realising that meat production is an integral co-product and inevitable part of the dairy industry: a reality check is needed. The frequent use of global, rather than national statistics, for methane emissions and water use in agriculture and livestock production also distort public perceptions. Water use in areas of water scarcity for producing our imported fruit, vegetables, nuts, rice and other grains, in addition to animal feedstuffs, is also not well appreciated by the public.

References:

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4. Agriculture at a crossroads IAASTD findings and recommendations for future farming (Interview with Prof Hans Herren “We need a radical transformation of agriculture” pp.48-52) Global Agriculture www.globalagriculture.org/fileadmin/files/weltagrarbericht/EnglishBrochure/BrochureIAASTD_e_n_web_small.pdf
5. 2015 World Hunger and Poverty Facts and Statistics - WHES (World Hunger Education Service) <http://www.worldhunger.org/articles/Learn/world%20hunger%20facts%202002.htm>
6. Phalan B Biofuel crops: food security must come first 29 Aug 2013 The Guardian GNM <https://www.theguardian.com/environment/2013/aug/29/biofuel-crops-food-security-prices-europe>
7. IAASTD Synthesis report
Excerpt from p.40 - “Much more controversial is the application of modern biotechnology outside containment, such as the use of GM crops. The controversy over modern biotechnology outside of containment includes technical, social, legal, cultural and economic arguments. The three most discussed issues on biotechnology in the IAASTD concern:
 - Lingering doubts about the adequacy of efficacy and safety testing, or regulatory frameworks for testing GMOs [e.g., CWANA Chapter 5; ESAP Chapter 5; Global Chapter 3, 6; SSA 3]”[http://www.agassessment-watch.org/report/Synthesis%20Report%20\(English\).pdf](http://www.agassessment-watch.org/report/Synthesis%20Report%20(English).pdf)

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