

SUSTAINABLE FOOD

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Introduction

This report has been created for Abingdon Carbon Cutters (ACC), which is a Community Action Group, working both in and around Abingdon, Oxfordshire, to help reduce the town's carbon footprint and promote sustainability and resilience as the climate warms and fossil fuel stocks decline[1]. They are a local response to the ongoing climate emergency and want to adapt the lifestyle of residents in Abingdon to be more environmentally friendly and resilient in the face of increased demand for non-renewable resources and climate change, not just reduce the amount of carbon they are emitting. ACC organise events, hold meetings and carry out research into various issues intertwined with climate change. The issues ACC focuses on relate to food, waste reduction, energy, education and transport. This particular report will centre on food, and how we can eat sustainably in order to reduce carbon emissions, and all the challenges that come with that.

We have utilised the results from a survey distributed by ACC, which asks questions about eating habits, food waste, and the reasons for eating (or not eating) sustainably. The aim of this report was to learn more about people's eating habits and what drives people to eat sustainably (or not). From this, we have suggested some responses and solutions ACC could make on a local scale to help climate-conscious people make sustainable food choices which will decrease their carbon footprint and alter certain food-related behaviours that have a negative impact on the environment.

What is sustainable food and why are we investigating it?

Firstly, sustainability is the ability to maintain or support a process over time and can be broken down into three major pillars: economic, social, and environmental (2). This report and ACC as a whole are concerned with climate change, and therefore we will focus on environmental sustainability. This means keeping the planet in a habitable state for many years to come, preserving biodiversity, and leaving enough resources for future generations to make use of and thrive on. In other words, not using more than we can renew.

Food is having a huge negative impact on the environment, contributing about a third of all global anthropogenic greenhouse gas emissions (3). When we talk about food, we do not simply mean the process of growing crops or raising livestock, we are talking about entire food systems comprised of numerous different processes, each with their own carbon footprint. The largest source of environmental impacts, including carbon dioxide emissions, is production, which is around 70%, rising as high as 95% (8). These processes are illustrated in figure 1 (19). The food system incorporates all the different processes that take food from the farm to our plates to landfill (18). Food systems are extremely complex and multi-dimensional, consisting of many different actors, their activities and interactions, the driving forces shaping these activities, and the outcomes produced at the individual system's level (4).



In 2019, global agri-food systems produced 16.5 billion metric tonnes of carbon dioxide, corresponding to 31% of total anthropogenic carbon dioxide emissions (5). Agriculture also contributes nearly 50% of global anthropogenic methane (which trapes 120 times as much heat as carbon dioxide (14)) and 75% of nitrous oxide (5). This highlights how food is a huge driver of climate change and proves just how vital it is for us to switch more sustainable diets that limit damage to the environment as much as possible. Our current diets and methods of growing, producing, transporting, and throwing away food are not sustainable at all, and it is imperil that they are altered if we are to slow down the rate of climate change and protect ourselves, future generations, and the rest of life on earth.

What is a sustainable diet?

There is no universal definition for what constitutes a sustainable diet, however, it is generally considered to be 'diets with low environmental impacts which contribute to food and nutrition security and to healthy lives for present and future generations (8). It must be protective and respectful of biodiversity and ecosystems, culturally accessible, affordable and nutritionally adequate, safe and healthy (8). In this report, we will focus on how diets can have the lowest possible impact on the environment and contribute to food security by supporting the preservation of biodiversity and planetary health. The sustainability of food can be measured through greenhouse gas emissions, water consumption, land use and biodiversity and species loss.

Although the UK has seen a decline in emissions from food imports, with emissions falling by 3.8 million tonnes of carbon dioxide from 2019 to 2021, global emissions continue to rise. Furthermore, the area of worldwide deforestation associated with UK consumption of food commodities was 19,702 hectares in 2019 and increased to 21,402 hectares in 2020. Deforestation associated with UK consumption has mainly been due to cattle-related products, as well as soy, palm oil, cassava, and maize (8). This shows that consumption is still increasing, leading to disastrous impacts on the environment. There has also been a trend of increasing water scarcity, driven by the growth of wheat, rice, maize, sugar cane, and olives. In addition to this, there has been a decline in regional species, with a loss of 63 species in 2019 associated with the UK consumption of food commodities, and a loss of 68 in 2021. Although there has been an overall decrease in the rate of species lost, it is still happening, and, therefore, our eating habits must change.

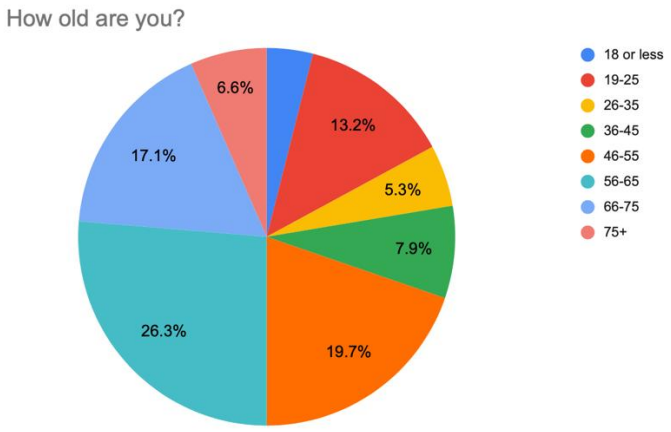
Examples of sustainable diets & ways to have a more sustainable diet: veganism, vegetarianism, buying local/regional produce, not wasting, and others. Reducing meat consumption results in vastly fewer greenhouse gas emissions. However, the exact impacts of food is still debated in the literature, due to variations in supply chain practices and the local ecological contexts, which can greatly influence the impact of sustainable food. For more information on this area, see the Oxford Martin Programme on the Future of Food's website: https://www.futureoffood.ox.ac.uk/?_gl=1*bh7sj8*_ga*MTU5MjAyNzc3Ny4xNzQzMTg0ODAx*_ga_KFV5D2NY9L*MTc0MzE4NDgwMC4xLjAuMTc0MzE4NDgwMC4wLjAuMA

What do people know and think about eating sustainably?

Here we will firstly review the responses to the survey on sustainable food carried out by One Planet Abingdon Climate Emergency Centre to understand attitudes relating to sustainable food, different diets and food waste. We will then compare and contextualise the results using findings from other surveys and studies that have also analysed these areas of interest.

Sustainable Food Survey- One Planet Abingdon Climate Emergency Centre:

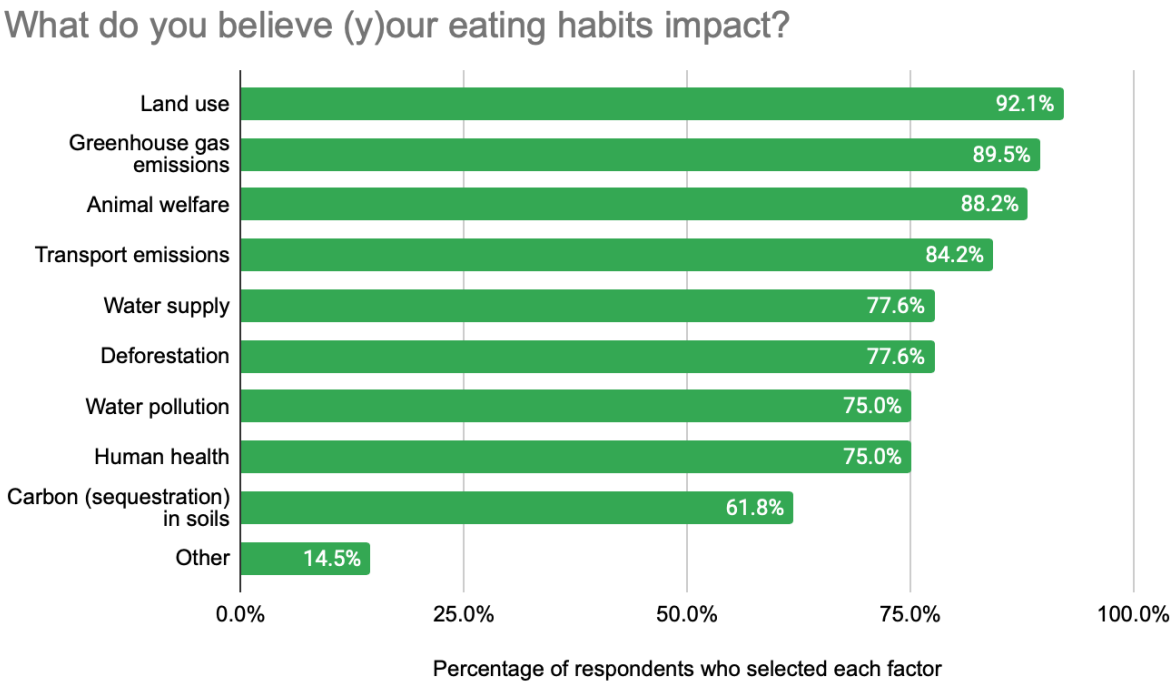
There were 76 respondents to the survey, the majority of which lived in Abingdon (72.4%). Most respondents were aged 46-75 (63.1%) although there were respondents from every age category. The smallest category was 18 or less, at only 3.9%.



Most of the respondents had visited the One Planet Abingdon Climate Emergency Centre at least once, which was unsurprising as this was the main way the survey was distributed. However, there were also 29 (38.2%) respondents who had never visited. 78.9% of respondents said they would like the Climate Emergency Centre to do more to increase knowledge about the environmental impacts of food systems and eating habits, including relating to meat consumption, although some people mentioned they weren't aware of how much the centre currently does. Later, in our conclusion and recommendations, we will suggest some responses the centre could make.

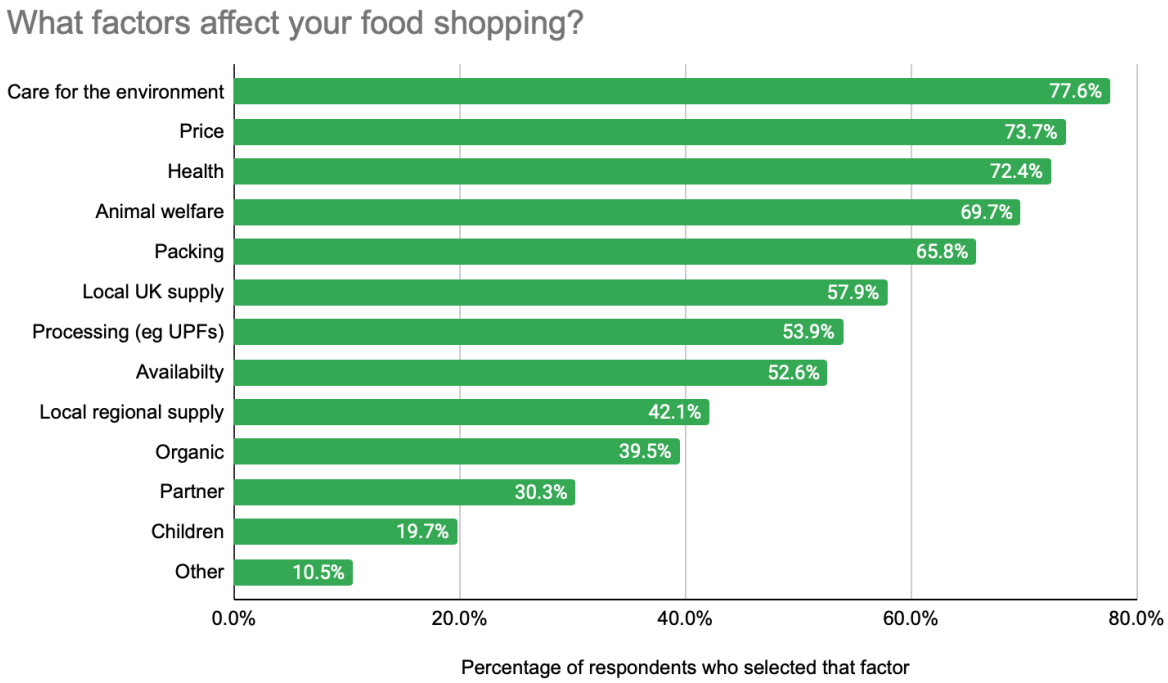
Impact of eating habits:

When respondents were asked which factors they believe their eating habits impact, the most common selection was land use (92.1%), then greenhouse gas emissions (89.52%), followed by animal welfare (88.2%) and transport emissions (84.2%), although many of the options provided were frequently selected. This suggests a high level of awareness of the potential impacts of different eating habits among the respondents. In the category 'Other', issues such as plastic packing, general pollution (opposed to water pollution), and human rights were also mentioned.



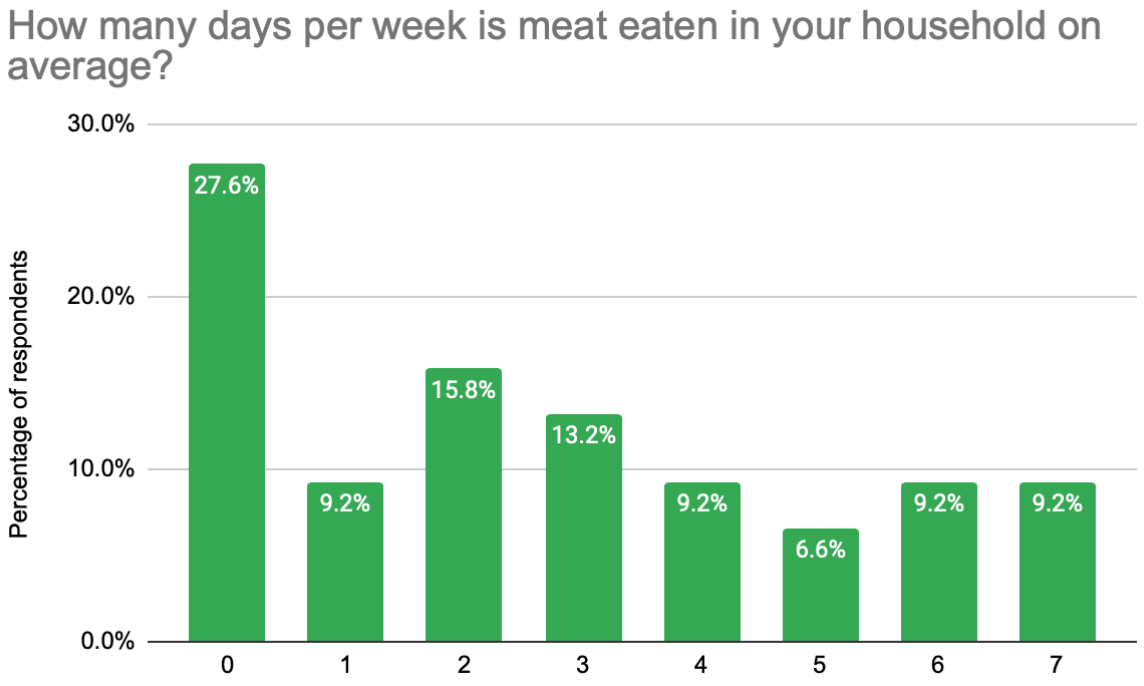
Which factors affect people's food shopping?

For most people, care for the environment was the factor most often selected as affecting their food shopping (77.6%), closely followed by price (73.7%) and health (72.4%), then animal welfare (69.7%) and packing (65.8%).

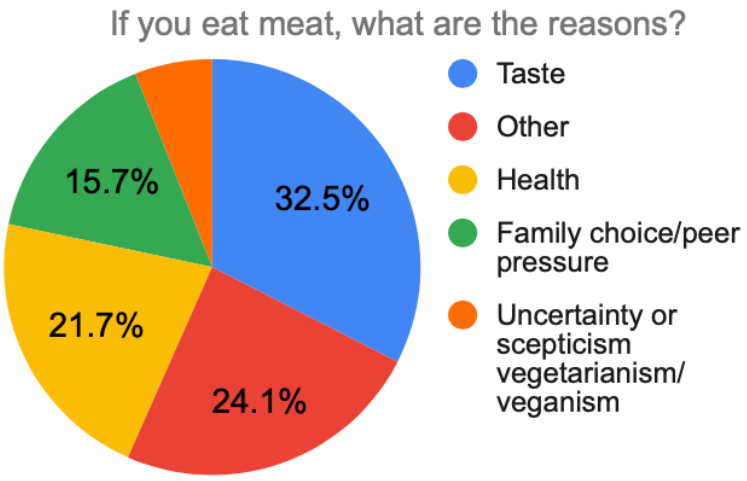


Eating meat, meat substitutions and moving towards a more plant-based diet:

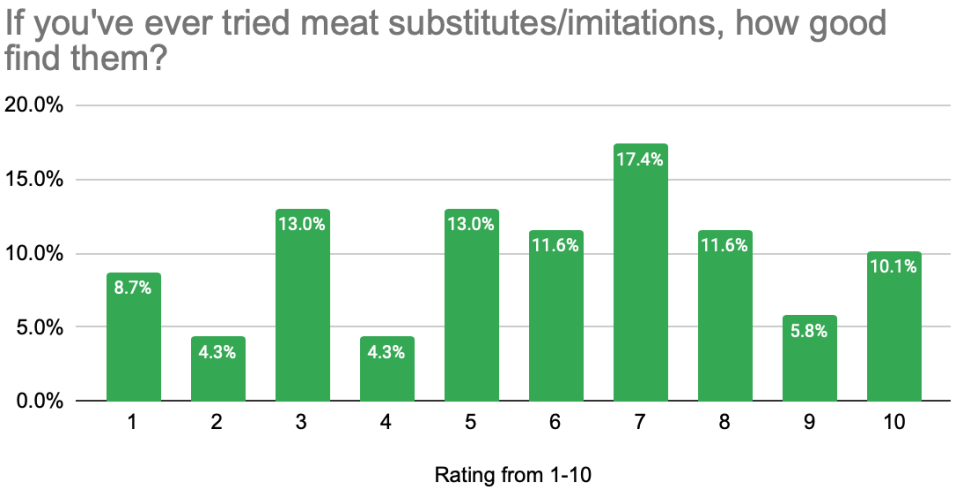
Just over a quarter of respondents (27.6%) said they do not eat meat in their household on average. Of the households that do eat meat, respondents estimated their households ate meat an average of 3.7 days per week.



The most commonly selected reason for eating meat was taste (50.9%), then health (34.0%) and family choice/ peer pressure (24.5%). A minority (9.4%) said they were uncertain or sceptical about vegetarianism or veganism. Many people provided other reasons why they eat meat including: sensory issues limiting diet, health issues or allergies that limited the consumption of meat alternatives, eating meat on special occasions, or to keep with tradition, or as part of a varied diet.

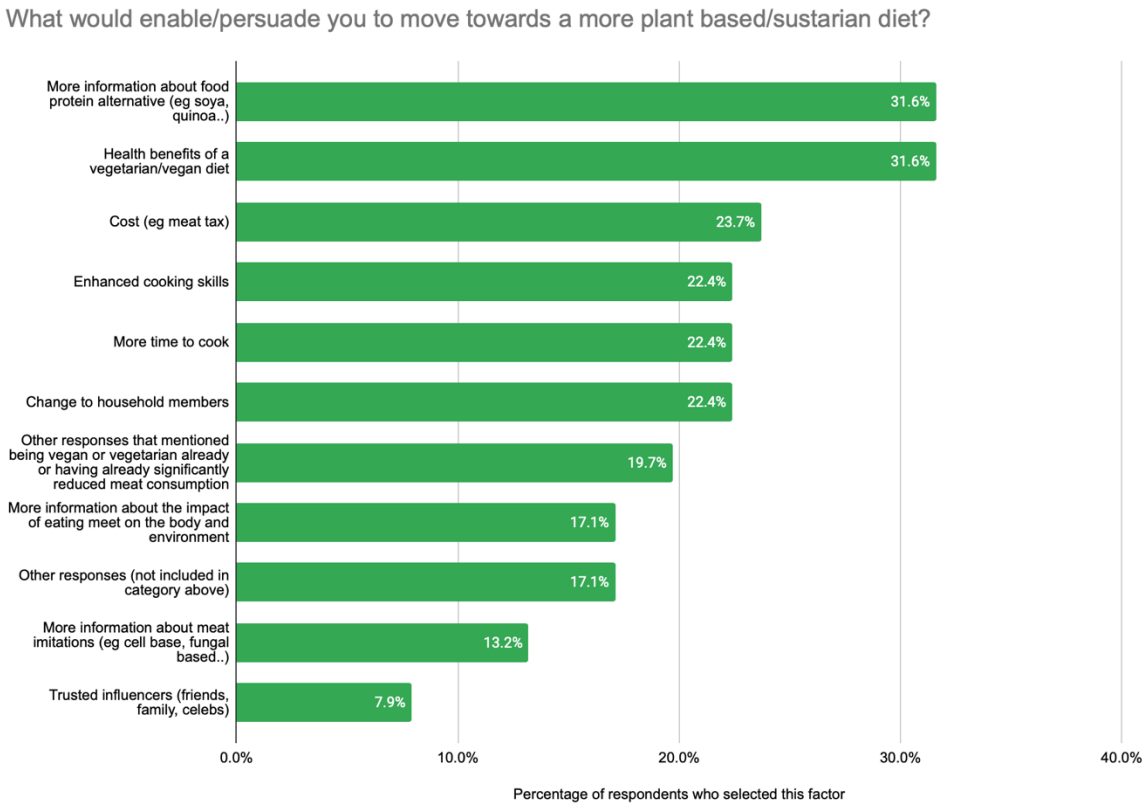


When asked how good they had found meat substitutes/ imitations, if they had ever tried them, there were a range of responses, and an average rating of 5.8.



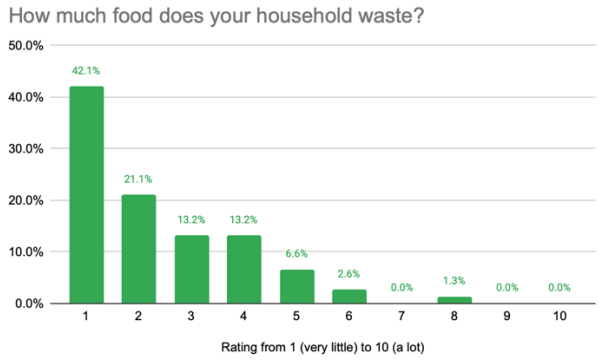
When asked what would enable or persuade you to move towards a more plant based or sustarian diet, the most selected factor was more information about food protein alternatives and the health benefits of a vegetarian/vegan diets (31.6% for both). This was followed by cost (23.7%), then enhanced cooking skills, more time to cook, and change to household members (22.4% for all three). For people that selected other (excluding those that said they have already significantly reduced or eliminated meat

consumption) respondents mentioned being happy with their existing diet, the lack of availability of vegan or vegetarian options in restaurants, takeaways, ready meals, and snacks, taste and textural preferences, wanting to support farmers, not believing plant-based or sustainrian diets are better for the environment, and discrimination and prejudice within vegan movements, to mention a few.

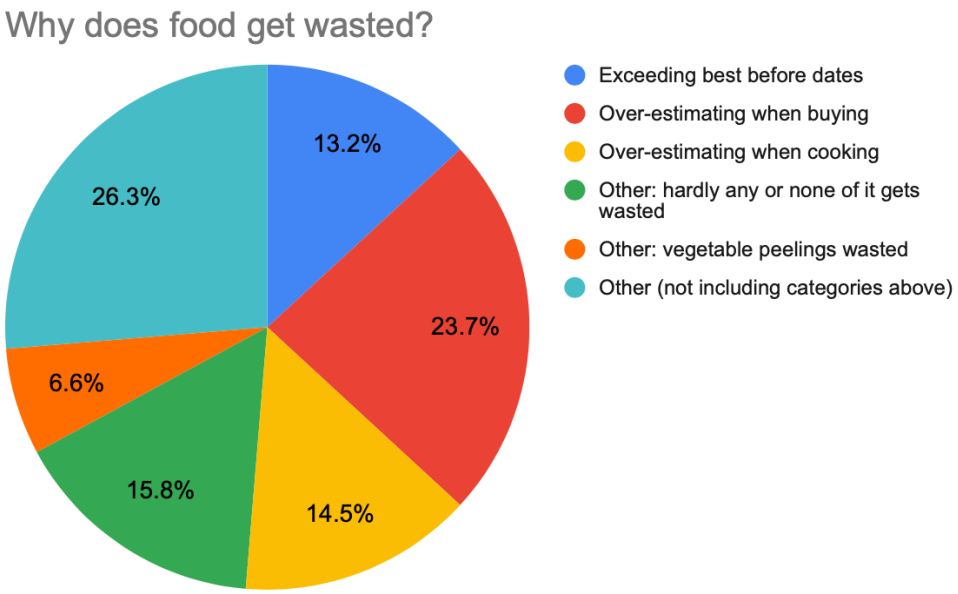


Food waste:

Almost all respondents said they were concerned about food waste (94.7%). When asked to rate how much food their household wastes on a scale of 1-10, respondents mostly selected low scores, with 42.1% selecting a rating of 1 and an average rating of 2.36.



In terms of why food gets wasted, the most frequently selected reason was over-estimating when buying (23.7%), although a large number of people provided other answers (26.3%). Some other answers included having plans change, food going off or going past use by date before it could be used (either eaten or frozen), and a combination of the provided options. A substantial proportion said hardly any or no food gets wasted (15.8%).



Summary of survey results:

There were 76 respondents, from a wide range of age groups, the majority of which had visited ACC at least once before. Over ¾ of people said they would like ACC to do more to increase knowledge of environmental impacts of food.

Most respondents suggested high awareness of the impact of eating habits, with 92.1% saying they believe their eating habits impact land use, and high proportions also selecting greenhouse gas emissions, animal welfare and transport emissions. The results demonstrate that the respondents are very climate-conscious, so they may be more motivated to protect the environment through making changes to their diet. However, although respondents appeared to be very aware that their eating habits impact the environment in many ways, 78.9% of respondents still agreed that the Climate Emergency Centre needs to do more to increase knowledge about the environmental impacts of food systems and eating habits, including meat consumption. This shows that respondents feel that they have more to learn about the impacts of food and eating habits on the environment and perhaps think more people need to be aware and educated. One reason for this is that people may understand their diet impacts the environment but may not understand the effects of different diets

(e.g. all meat or only red meat or sustainable fish) on different aspects of environmental damage (e.g. impact on greenhouse gases compared to biodiversity loss). Although not demonstrated specifically from this survey, this may be one aspect ACC focuses on when increasing awareness and knowledge about sustainable eating.

The most important factor in people's food shopping was care for the environment, closely followed by price and health.

Over a ¼ of respondents said they do not eat meat in their household, and of the households that do, they ate meat on an average of 3.7 days per week. The most common reason for eating meat was taste, followed by health and family choice or peer pressure, although a minority said they were sceptical about vegetarianism or veganism. Responses to how good did you find meat substitutions/ imitations (if you've ever tried them) were very varied, with an average rating 5.8 out of 10.

When asked about what would enable or persuade you to move towards a more plant based or sustarian diet, there were a large range of responses, but the most selected ones were more information about protein alternatives and the health benefits of a vegetarian or vegan diet.

Almost all respondents were very concerned about food waste and over half of respondents rated their households 1 or 2 out of 10, for how much food their household wastes. The most selected reasons for food being wasted were overestimating when buying and many different reasons falling under the category of other, including having plans change or going past use by dates before food could be eaten or frozen.

See appendix for summary of limitations of this data and recommendations for future surveys on this topic.

What do people know and think about sustainable eating in the UK?

This section will focus on what studies have found about people's knowledge and attitudes to sustainable eating and provide a wider context to the data from ACC's survey. It will examine the adoption of more sustainable diets and their associations with demographic characteristics, different beliefs and motivations, people's understanding of their diet's impact on environment and health, the influence of social networks and different resources.

The findings presented here are primarily based on evidence presented by Kenny et al. (2023) in their scoping review of consumer attitudes and behaviours toward more sustainable diets.[6] They conducted their review by searching for the terms 'Sustainable diets AND attitudes AND behaviour' in English language articles on four major platforms, and after a screening process this resulted in 54 empirical studies, 24 of which focused on meat consumption, and the rest more generally on attitudes to sustainable diets, consumer perceptions, knowledge, values and concerns.[6] The findings are also based on data collected by Iposos MORI, commissioned by the Food Standards Agency (FSA), which was conducted with 19,916 adults aged 16-75 living in England, Wales and Northern Ireland in August 2021.[15] This survey was then weighted to be representative of the population and has helpful insights about attitudes to sustainable eating, as well as healthy eating.[15.] The findings of both studies, and others, will be presented below and broken down into:

- Patterns in attitudes to sustainable diets and their adoption
- Knowledge and awareness of sustainable diets
- Current food behaviours
- Attitudes towards adopting more sustainable diets
- Barriers to adopting sustainable diets
- Responsibility for improving the sustainability of UK diets

Patterns in attitudes to sustainable diets and their adoption:

Studies have found that women are more engaged in sustainable dietary behaviours then their male counterparts, that they are more likely to associate meat with ecological and animal welfare concerns, more open to information about impacts and benefits of reducing meat consumption and therefore, are more likely to have sustainable diets.[6] However, this does not necessarily make them the best target group for interventions and campaigns, as there is evidence their interests in adopting meat-free meals can be impeded by less willing partners and children[6]. Although, there is also some evidence that men consume less meat when their partner is vegetarian.[6]

Another patterns is that studies have also found that the more educated someone is, the more likely they are to believe current levels of meat production and consumption are unsustainable and to purchase meat replacements.[6]

Other studies have also tied place of residence to sustainable dietary patterns. For example, a study in Portugal found those living in urban areas are more aware of the

environmental impact of meat production and are more familiar with meat alternatives than those in rural areas.[6] Other research in Scotland found an association between having a stronger links to the agricultural economy and having less familiarity with sustainable diets and reducing meat consumption.[6] However, regional variation is highly influenced by the specific socio-economic and cultural contexts of each place and may not be as simple as rural vs urban, or more agricultural vs less agricultural[6]. A different study based in Scotland instead found there were no location or sex-based differences in resistance to reducing meat consumption, although this may just be due to differences in study design.[6]

Other studies have noted the importance of cultural norms, and that in many countries, meat is perceived as a necessary part of a "proper dinner".[6] In addition, other studies have also found that national discourses, influenced by the agricultural sector and tied to economic interests, are not compatible with narratives around eating less meat and eating more sustainably.[6.] A study based in Scotland found that people are confused and sceptical about the amount of red and processed meat they should consume because of contradictory messages, which make it difficult to know what to believe and which information sources to trust[16,6].

Knowledge and awareness of sustainable diets:

Most people are not fully aware of what constitutes a sustainable diet and how to make sustainable food shopping choices.[8] In the poll carried out for the FSA, under half (48%) of the respondents agreed that they know what a sustainable/ environmentally friendly diet consists of, and only 51% said they understand the impact their diet has on the environment[15]. Kenny et al.'s scoping review also identified that sustainable diets mean a range of things to different people, and generally include ideas such as eating a healthy, balanced diet, local and seasonal food, more plant-based whole foods and less meat, but often don't include the carbon, water, social or cultural impacts of different diets, or if these are included they are secondary to health and price.[6] Their review also found that the link between specific diets and different environmental impacts was not well understood.[6] They found low awareness of the environmental impacts of meat production and consumption in multiple studies, and that in the UK, choosing organic food and 'prioritizing plant-based proteins' were perceived as having the least benefit for the environment, whereas supporting locally grown produce, reducing consumption of air-freighted foods and reducing food waste were seen as the most beneficial.[6] More generally, they found that the value of adopting a more sustainable diet was underestimated, with other behaviours like energy saving at home,

recycling, reducing plastic use and food waste being associated with having a greater positive impact on the environment.[6]

Despite these limitations to current knowledge and understanding, there is still evidence that people are more aware of sustainable diets than they were over 10 years ago. Cleland et al. (2024) carried out a qualitative study to understand how people's attitudes and awareness of sustainable diets have changed compared to a study carried out in 2013/2014.[10] Cleland et al. (2024) used the same areas to carry out the study, so the levels of deprivation and balance of urban/ rural areas included in the study stayed the same.[10] The earlier study had found people were unaware of the link between diet, and climate change and other environmental impacts, and were also reluctant to reduce meat eating.[10] By 2024, they found increased awareness of sustainable diets and more apparent willingness to reduce meat consumption.[10] However, the awareness hadn't increased evenly among socioeconomic groups, and for many there remained perceived and experienced barriers which prevented people from reducing meat consumption (e.g. the cost, processed nature, sensory qualities and taste of some meat alternatives, the perceived lack of meat-free options when eating out)[10]. This being said, the study also noted how there were many more plant-based meat alternatives on the market compared to in 2013-2014, and that there had been increased media coverage of the links between the environment and food (perhaps explaining the increase in awareness).[10]

Current food behaviours:

The FSA 2021 Consumer Poll on Healthy and Sustainable Diets found that 49% of participants said that usually the food they personally eat is fairly or very sustainable, that only 9% thought it was unsustainable.[15] A substantial proportion (32%) reported that the food they usually personally eat is neither sustainable nor unsustainable, whilst 8% said they don't know, supporting evidence mentioned previously (see knowledge and awareness of sustainable diets) that there are still gaps in people's awareness and knowledge about the effects of different diets on the environement.[15]

When participants were asked if they personally had made or attempted to make any changes to what they eat and drink to improve the sustainability or reduce the environmental impact of their diets since the beginning of the pandemic in the UK (March 2020, study carried out in August 2021), 40% said yes they had, but 48% said they hadn't (11% didn't know).[15] When these participants were then prompted to identify at least one change they had made to their diet, 73% were able to and the most common changes were reducing food waste (34%), eating more fruit and/or vegetables (27%) and eating less meat (23%).[15]

Focusing on the consumption of meat specifically, Hobbs- Grimmer et al. (2021) found that 57% of men and of 31% women in the UK eat more than the recommended maximum daily intake of red and processed meat.[11] In a survey of 2,000 adults in 2024, Finder commissioned Censuswide to carry out a nationally representative survey of adults in Great Britian and estimated that approximately 5.2% of the population is vegetarian, 4.7% is pescetarian and 2.1% is vegan.[17] They found that younger generations were more likely to have a meat- free diet, and that London has the greatest proportion of meat-free diets and the South West has the lowest number of vegans, vegetarians and pescatarians.[17]

Attitudes towards adopting more sustainable diets:

Generally, people seem to be open to adopting more sustainable diets with the FSA 2021 Consumer Poll on Healthy and Sustainable Diets finding that 73% of people said that buying food which has low environmental impact/ is sustainable is very/ fairly important to them[15]. Meat purchases, for instance, have declined since the 80s in the UK[8].

In the FSA 2021 Consumer Poll, when participants were asked if they personally had made or attempted to make any changes to what they eat and drink to improve the sustainability or reduce the environmental impact of their diets since the beginning of the pandemic in the UK (March 2020, study carried out in August 2021), 40% said yes they had, but 48% said they hadn't (11% didn't know).[15] When these participants were then prompted to identify at least one change they had made to their diet, 73% were able to, and the most common changes were reducing food waste (34%), eating more fruit and/or vegetables (27%) and eating less meat (23%).[15]

In the FSA 2021 Consumer Poll, when asked about their desire to change their personal diet, respondents were asked to what extent do you agree or disagree with the following statements about the food you usually eat.[15] 54% agreed that they would like to change their diet to make it more sustainable or environmentally friendly (13% disagreed).[15] In comparison, slightly fewer people agreed that they would like to eat less meat (41%), but many more people disagreed (34%), which could suggest that people may either not understand the link between eating lots of meat and sustainability or environmentally friendly eating, or they are less willing to take this step to reduce their impact on the environment or perceive it as too difficult (which could be for many reasons, eg. social norms around meat, cost, lack of knowledge of alternatives and cooking methods).[15] Only 33% of people agreed that they would like to eat less dairy, 34% disagreed, and

32% neither agreed nor disagreed which suggests that people are much more uncertain or ambiguous about the health and environmental impacts of dairy.[15]

The review carried out by Kenny et al. found that studies suggest that across multiple high-income countries people are reluctant to reduce meat consumption.[6] In comparison, Cullidord and Bradbury (2020) found results more similar to those mentioned above, with results that indicated high awareness of the impact of red and processed meat specifically, with three-quarters of participants reporting they'd started to limit their consumption of these foods but another quarter reported being in the 'pre-contemplation stage of change', so not considering limiting their consumption at the moment.[9] As Cullidord and Bradbury (2020) argued, this suggests there are still some individuals that are resistant to reducing meat consumption. [9]

Barriers to adopting sustainable diets:

In the FSA 2021 Consumer Poll, when asked 'What, if anything, stops you from eating a sustainable and environmentally friendly diet at the moment, 71% of respondents selected at least one barrier.[15] The most common selection was the cost of sustainable foods (29%), closely followed by not understanding what is sustainable and what is less sustainable (16%), as well as don't know (14%), choices for sustainable options are too limited (13%), and difficulty forming new, sustainable habits (13%).[15] However, unlike many other surveys, they did not ask about taste or knowledge of how to cook more sustainable meals, so it is difficult to say to what extent these factors are important from this data. Other surveys specifically focusing on meat have found taste and knowledge of how to cook with meat alternatives as barriers to eating less meat. [6,9] More broadly studies have found that for most consumers, price and cost are the greatest motivators of diets, regardless of whether they are influenced by sustainability concerns or otherwise.[6]

Many studies have also examined the barriers people name as preventing them consuming less meat. Survey data suggests a strong attachment to the taste and familiarity of meat, beliefs that reducing meat personally won't make a significant difference on a global scale, lack of familiarity with meat alternatives, lack of knowledge and skills to prepare meals with meat, perceived high cost of alternative foods, low awareness of the impact of meat, and the limited availability of meatless options in the workplace, are all reasons why people don't consume less meat.[6,9] In addition, some studies have found that eating with others can inhibit dietary change, despite encouraging social bonding, and this may be related to social norms around meat consumption.[6]

It is also important to recognise the structural barriers to adopting more sustainable diets. Although in the UK context, social-class differences were not found in willingness to reduce meat consumption, income is a key factor in ability to enact change and so should be considered a barrier to some people adopting a more sustainable diet.[6] Other financial concerns, particularly non-flexible costs like housing, can make it very difficult for low-income families and individuals to adopt sustainable diets.[6] This emphasises the importance of addressing economic and other inequalities to enable more people to adopt more sustainable diets. This also reinforces the idea that has come up repeatedly through survey data- that ensuring people can access and cook affordable, easy and tasty sustainable diets is an important factor for wider adoption of sustainable diets.

Responsibility for improving sustainability of UK diets:

In the FSA 2021 Consumer Poll, another area participants were asked about was who should be responsible for improving the sustainability of UK diets.[15] When asked about improving the sustainability/ environmental impact of UK diets, the most common responses were the government and those involved in food production/manufacturing (48%), followed by food retailers and individuals (personal responsibility) (45%), then food brands (41%), and lastly education systems e.g. schools (26%) and parents (24%).[15]

What are the best ways to enable people to eat more sustainably?

Having discussed in detail people's awareness and attitudes to adopting more sustainable diets, this section will focus on how we can use this understanding to enable people to eat more sustainably. We have broken this down into the following sections:

- Encouraging and enabling behaviour change: awareness, knowledge and skills
- The bigger picture: government, policy and research focuses

Overall, a mix of these methods will be needed to enable more people to eat a sustainable diet. A common theme throughout this report has been that there are many reasons why people haven't yet adopted a more sustainable diet, and therefore the adoption of more sustainable eating habits will only occur through a multitude of approaches to tackle this challenge. In the conclusion, we will highlight the aspects of this most relevant to ACC and propose some key recommendations for their programme going forward.

Encouraging and enabling behaviour change: awareness, knowledge and skills

Several studies recommend increasing the awareness of the ecological impact of diet, to enable greater adoption of sustainable diets.[6] As some of the survey data suggested, people are often more aware of the impact of other actions (like reducing energy at home, recycling, reducing waste…) than they are of the impact of dietary patterns, suggesting there is still work to be done in this area. Similarly, other studies recommend increasing people's familiarity with meat protein alternatives, particularly ones which are not ultra-processed, that are affordable and appealing.[6] Other changes related to include encouraging people to add meat-substitutes to regularly eaten foods and reduce meat portion sizes (e.g. a half meat, half lentil spaghetti bolognaise).

Another important area highlighted in multiple studies, is the importance of targeting specifical ethical, moral and social norms around sustainable eating, such as through early exposure to plant-based meals (eg. in nurseries or school settings).[6] This also involves targeting narratives such those that present meat as a necessary part of diet. From a more positive point of view, it can involve promoting the message that well planned and balanced vegetarian and vegan diets can be nutritionally adequate, and that people generally consume more protein than needed for a healthy diet today (20-60% more).[6] Emphasising the overlap between a healthy diet and sustainable diet may be helpful, given this is one of the main ways consumers say they prioritise their shopping (along with cost).[6]

The Bigger Picture: Government, Policy and Research focuses

Whilst increasing awareness and changing attitudes is an important part of ensuring more people adopt more sustainable diets, it is important to recognise the limitations of this, and that society and industry level interventions are also needed.

Firstly, there needs to be greater recognition of the importance of this issue among policy makers and industries.[13] This needs to be backed up by interventions which go beyond the individual and target the systemic barriers to eating more sustainable diets. For example, the government could create regulatory and fiscal frameworks that make it easier for consumers to afford and buy more sustainable food.[13] This may also include the introduction of interventions like school meal standards, which would expose young people to healthy, tasty and nutritious plant-based meals.[13]

Another angle that should be considered is that there is still much more research needed to fully understand sustainable eating.[13] Some of the research needed falls under the category of what is sustainable eating and how should we measure it? As discussed previously, different eating patterns have different impacts (eg. contributing to climate change, or biodiversity loss, animal welfare concerns, or other ethical issues like child labour). Although a growing number of people seem to be aware that their diet has an impact on the environment, there is less awareness of the impact of specific behaviours. More research on this is needed, including whole supply chain analyses, to create clearer guidance for consumers and charities like ACC.[13]

Conclusion and Recommendations

Switching to a more sustainable diet has never been more vital, as we face the biggest threat humanity has ever faced. With about a third of all anthropogenic greenhouse gas emissions linked to food, we must try to limit those emissions by adopting sustainable eating habits, such as cutting out meat (or limiting it as much as possible), buying local or regional produce with few air miles, buying organic foods without pesticide treatment, buying food with less packaging.

The results from the survey carried out by ACC, suggest that many people, particularly those associated with ACC, are aware that their diet has an effect on the environment. However, there is evidence that there is still progress to be made to increase awareness and make it easier for people to adopt more sustainable diets. The following recommendations are based all the evidence and findings discussed in this report.

Recommendations:

- Continue to raise awareness of the importance of a sustainable diet
    - Focus on what do sustainable diets look like and what should they include (or try to reduce)?
- Share information about how to have a nutritional, balanced plant-based diet
    - Particularly focusing on consuming sufficient protein and other nutrients normally found in meat as this is often barrier preventing people from reducing meat consumption
- Share easy, affordable, plant-based recipes that are nutritionally balanced and filling
    - This could build on the work on the website which already has some recipe suggestions.
    - Perhaps the ACC could have a mini library of plant-based cooking books for people to borrow
- Promote other diet substitutions or methods for reducing meat like using smaller portions of meat in combination with plant proteins
    - Let more people know what plant protein substitutions there are, and how they can cook them
- Continue creating a place for people to discuss sustainable diets
    - This can help change normative beliefs around meat eating being necessary, and another way people can learn about plant-based meals and more sustainable eating

- Encourage people to write to their local MP to advocate for more government focus on sustainable diet and fiscal and policy action in this area
- Similarly, start a petition or encourage people to sign already existing petitions to parliament, to draw attention to the issue of sustainable food and eating
- Encourage people who are interested to get involved in research trials studying sustainable food, behaviour change, policy efficacy and health benefits of different diets

Appendix

Evaluation of survey and recommendations for future surveys:

Meat eating:

There were a few important points that the survey ignored or only briefly touched on, particularly around meat eating and vegetarianism/veganism. The survey did not ask respondents how many times a day meat was eaten in the household a week, or how many portions of meat were eaten a week, only how many days meat was eaten on, so this might be an interesting question for future surveys. It might also be helpful to ask respondents what proportion of their meat consumption is red meat (e.g. beef and lamb) compared to white meat (e.g. chicken and fish) rather than just asking whether they eat meat or not. The average American's diet results in the emission of around 2.5 tonnes of carbon dioxide per person per year, compared to 1.9 tonnes for a diet without beef[7]. Certain meats have been proven to have a much larger carbon footprint than others, and therefore we cannot assume every person who eats meat will have the same impact on the environment. Figure **?**[7] illustrates the differences in carbon intensity between beef and lamb (red meats) and chicken, fish and pork (all white meats except pork). As well as this, it would also be helpful to ask non-meat eaters to distinguish between whether they are vegetarian or vegan. A vegan diet emits less carbon dioxide than a vegetarian diet. For example, the average vegetarian American emits 1.7 tonnes of carbon dioxide per year, compared to 1.5 tonnes per year for a vegan[7].

Eating habits at home vs at work vs at school:

Furthermore, it may also be interesting to ask respondents about their eating habits at home versus at work or school. Individuals may alter their eating habits depending on their location or situation due to many factors such as ease, price, or whatever is available. For example, some workplaces or schools may not offer adequate plant-based food options, meaning people will have to resort to eating meat. Alternatively, people may be more inclined to eat meat at home because other members of their household enjoy eating meat. For example, one respondent from our survey stated that they ate meat because their 'husband is a massive meat eater' and another respondent said they 'try to fit in with other family members and avoid shopping and cooking for three different diets'.

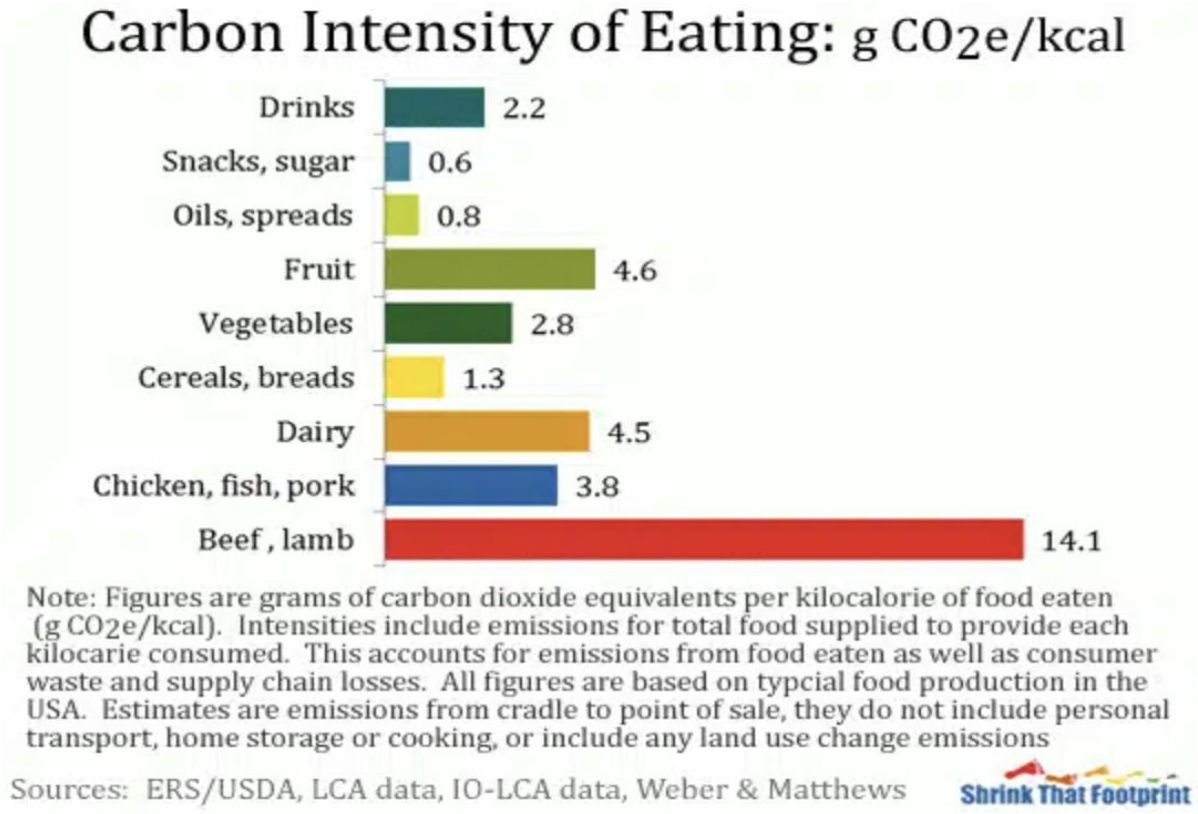


figure 3? The carbon intensity of different foods, in grams of CO2 per kilocalorie of food eaten (Wilson, date unknown)

Style of survey questions:

There are also some issues with the questions themselves. The survey asks respondents how many days per week meat is eaten in their households, but it could be that they eat meat once every two weeks or once every month. In that case, there would be no option for them to select and therefore, the results would not be representative of the respondents' true eating habits. However, for the most part, the survey gives respondents flexible options for their answers by providing an 'other' option on most questions. The survey also asks respondents to rank the amount of food their household wastes from 1 (very little) to 10 (a lot). This is extremely subjective and 'a lot' or 'a little' waste is very different for every person. Nevertheless, it would not be possible to ask respondents to accurately calculate how much food they waste, and the question still gives some level of helpful insight. The question also does not give a timescale- it is unclear whether the survey is asking respondents how much food they waste every day, week, or year, for example. The respondents may give very different answers depending on whether they are being asked how much food they waste every day versus every year.

One final issue with the survey is the demographic of the respondents. The survey was distributed mainly by ACC, to ACC employees or relatives and friends. Therefore, the

respondents are more likely to be climate conscious which means the results are quite biased. The average member of the public may not care as much about climate change and making sustainable food choices or educating themselves to do so. ACC should try to distribute their next survey to more people outside of Abingdon and ACC, this could be done through social media (e.g. by joining Facebook groups of external communities).

Bibliography:

1) Abingdon Carbon Cutters (date unknown), Available at: https://abingdoncarboncutters.org.uk/ (accessed 19/3/25)
2) Mollenkamp, D (2023) What is Sustainability? How Sustainabilities Work, Benefits, and Example. Available at: https://www.investopedia.com/terms/s/sustainability.asp (accessed 19/3/25)
3) Crippa, M et al. (2021) Food systems are responsible for a third of global anthropogenic GHG emissions. *Nat Food 2,* 198-209
4) Zurek, M et al. (2018) assessing sustainable food and nutrition security of the EU Food System- an integrated approach.
5) Tubiello, F. et al (2022) Pre- and post-production processes increasingly dominate greenhouse gas emissions from agri-food systems.
6) Kenny, T.A., Woodside, J.V., Perry, I.J. and Harrington, J.M. (2023). Consumer attitudes and behaviors toward more sustainable diets: a scoping review. Nutrition Reviews, 81(12). doi:https://doi.org/10.1093/nutrit/nuad033.
7) Wilson, L (date unknown) The Carbon Foodprint of 5 Diets Compared. READ, available at: https://shrinkthatfootprint.com/food-carbon-footprint-diet/ (accessed 27/3/25)
8) Department for Environment, Food & Rural Affairs (2024) United Kingdom Food Security Report 2024: Theme 4: Food Security at Household Level. GOV.UK, available at: https://www.gov.uk/government/statistics/united-kingdom-food-security-report-2024/united-kingdom-food-security-report-2024-theme-4-food-security-at-household-level#sustainable-diet (accessed 27/3/25)
9) Culliford, A. and Bradbury, J. (2020). A cross-sectional survey of the readiness of consumers to adopt an environmentally sustainable diet. Nutrition Journal, [online] 19(1). doi:https://doi.org/10.1186/s12937-020-00644-7.
10) Cleland, E., McBey, D., Darlene, V., McCormick, B.J.J. and Macdiarmid, J.I. (2024). Still eating like there's no tomorrow? A qualitative study to revisit attitudes and awareness around sustainable diets after 10 years. Appetite, [online] 206, p.107799. doi:https://doi.org/10.1016/j.appet.2024.107799.
11) Hobbs-Grimmer, D.A., Givens, D.I. & Lovegrove, J.A. Associations between red meat, processed red meat and total red and processed red meat consumption, nutritional adequacy and markers of health and cardio-metabolic diseases in British adults: a cross-sectional analysis using data from UK National Diet and Nutrition Survey. Eur J Nutr 60, 2979–2997 (2021). https://doi.org/10.1007/s00394-021-02486-3

12) Food and Agriculture Organization of the United Nations; Bioversity International; Burlingame, B.; Dernini, S.(eds.) (2012) Sustainable diets and biodiversity. 309 p.; ill. ISBN: 978-92-5-107288-2
13) Garnett T, Mathewson S, Angelides P and Borthwick F (2015) *Policies and actions to shift eating patterns: What works?* A review of the evidence of the effectiveness of interventions aimed at shifting diets in more sustainable and healthy directions. Food Climate Research Network, University of Oxford
14) Krol, A (2023) What makes methane a more potent greenhouse gas than carbon dioxide? Climate Portal, MIT. Available at: https://climate.mit.edu/ask-mit/what-makes-methane-more-potent-greenhouse-gas-carbon-dioxide (accessed 26/3/25)
15) Heard, H. and Bogdan, A. (October 2021) *Healthy and sustainable diets consumer poll*, *Healthy and Sustainable Diets: Consumer Poll*. Available at: https://www.food.gov.uk/sites/default/files/media/document/healthy-and-sustainable-diets-consumer-poll.pdf (Accessed: 28 March 2025).
16) David McBey, David Watts, Alexandra M. Johnstone, Nudging, formulating new products, and the lifecourse: A qualitative assessment of the viability of three methods for reducing Scottish meat consumption for health, ethical, and environmental reasons, Appetite, Volume 142, 2019, 104349, ISSN 0195-6663, https://doi.org/10.1016/j.appet.2019.104349.(https://www.sciencedirect.com/science/article/pii/S0195666319300364)
17) Barber, S. (2025) *How many vegetarians and vegans are in the UK in 2025?*, *Finder UK*. Available at: https://www.finder.com/uk/stats-facts/uk-diet-trends# (Accessed: 28 March 2025).
18) Ladyzhets, B (2022) How much does eating meat affect nations' greenhouse gas emissions? ScienceNews
19) EDGAR (date unknown) EDGAR-FOOD. Available at: https://edgar.jrc.ec.europa.eu/edgar_food (accessed 27/3/25)

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