Saffron Wellbeing Portal
Methodology for Calculating Carbon Emissions
February 2023

Executive Summary

This paper sets out the methodology used to calculate carbon emissions (CO_2e) for menu items produced and sold by Accommodation, Catering and Events (ACE) and displayed on the Saffron Wellbeing Portal for each catering outlet.

Queries were raised around the accuracy of the carbon factor dataset utilised due to: lack of granularity; lack of completeness; and lack of updated datasets; it is acknowledged that providing this information is important to support staff, students and visitors to the University to allow them to make more informed choices. It is also imperative that additional information is provided to highlight the limitations of the dataset in order to be transparent.

Background

The University's Good Food Policy sets out our approach to supporting food systems that are environmentally, socially and economically sustainable across five key themes: Sourcing; Provision; Practice; Learning, Teaching and Research; and Leadership and Culture. The actions set out within these themes overlap across the three pillars of sustainability:

Within the "Practice" theme, we look to support staff, students and visitors to the University to make informed choices when purchasing from our catering outlets and bars, and through Delivered Hospitality and Conferencing & Events.

As part of this, the University has examined how to provide details of the Carbon Emissions for each menu item by utilising new functionality within the ACE Wellbeing Portals for each part of our business. It does this by providing a carbon emission factor to each menu ingredient, which is then multiplied for the weight of that ingredient within a plate/portion.

In order to confirm the accuracy of these carbon emission factors, the University's Department of Social Responsibility and Sustainability (SRS) was asked to examine the data set prior to the publication of carbon emissions on the Wellbeing Portals. This report highlights the strengths and weaknesses of the current methodology in order to provide staff, students and visitors transparency when making decisions on their food.

Methodology & Findings

As noted above, the Wellbeing Portal uses a carbon emission factor for each ingredient/item (per 100g). According to the Civica, (the Wellbeing Portal providers), these factors have been developed through consultation with industry experts, using two main datasets:

- Clune et al. (2017) Systematic review of greenhouse gas emissions for different fresh food categories. Journal of Cleaner Production. Vol 140, part 2. *(available here)*
- Poore & Nemecek (2018) Reducing food's environmental impacts through producers and consumers. Science. Vol 360 Issue 6392 *(available here)*

Further details of the methodology employed by Civica to develop the carbon emission factors utilised within the Wellbeing Portal are available in this document.

In order to verify the carbon factors used, SRS examined the carbon factors provided within the Wellbeing Portal against the two data sets above, as well as against the additional dataset developed by Heller et al (2018). In addition, consultations took place with academic experts within the University to gain consensus as to the validity of the carbon factors provided in the allergen portal.

Having undertaken this evaluation, SRS concluded that the methodology employed in generating the carbon factors provided within the Wellbeing Portal was suitable. However, a number of concerns were raised in this process which are outlined below.

Concerns with methodology

The primary concern with the carbon factors provided within the Wellbeing Portal is the accuracy of the dataset for individual items (that make up a recipe). This is because, at present:

1. **There can be significant discrepancies in the carbon factors of a product which are not accounted for in broader datasets.** Carbon factors for the majority of food and drink products are developed using broader estimates for those items – often at a global level. In some instances, additional dataset may be available at regional (e.g. UK or Europe) level. However very few – if any – at a more local level (e.g. Scotland) datasets exist. As such this does not allow for specific procurement practices which may increase or restrict products from certain supply chains.
2. **Broad datasets do not account for dynamic procurement.** The University may change its sourcing of ingredients - for example due to seasonality of products or short-term supply chain issues such as those raised due to the Covid-19 pandemic or the conflict in Ukraine. These cannot be accounted for within broad databases of carbon factors as the databases are static (at the time they are developed). While some databases are updated, it is likely that these are, at best, updated annually.
3. **Not all products have suitable carbon factors**. For some processed foods, there are no "like-for-like" carbon factors available at this time. In these instances, estimates have been provided based on similar products, which decreases the accuracy of carbon emissions for these items.
4. **No carbon factor dataset covers all food and drink items**. There is no one dataset that includes all menu ingredients used by the University. The methodologies across these different datasets vary and is a "snapshot" of the carbon emission factors at that time. As such, it is challenging to compare carbon factors across different datasets.

Conclusion

The carbon factor dataset displayed within the Wellbeing Portal is accepted as suitable within the context of menu design at the University. However, it is not without its challenges which centre on the accuracy of the carbon factor dataset that underpins the calculated emissions. Having said this, it is important to provide this detail in order for staff, students and visitors to the University to begin to understand the impact that their food choices have on the environment. As such, the carbon factor database developed within the Wellbeing Portal should be utilised to support informed choices, whilst also being transparent in acknowledging that there are concerns with the dataset used (as there would be with any dataset).

Next steps / future work

It is essential that the carbon factors provided are monitored to ensure they remain accurate. For example new datasets could become available, either at a global, regional, or local level. In addition it is recommended that research is undertaken in collaboration with academic colleagues to further examine and improve sustainability within our food provision