



Recipe Carbon Labelling

METHODOLOGY



Mindful Chef



Low

Context

The climate and our food are inextricably linked. The current food system is a major contributor to climate change, making up a quarter of global greenhouse gas (GHG) emissions (Poore & Nemecek, 2018). The emissions in the food chain aren't limited to the impact of farming, but also include emissions linked to deforestation, land conversion, livestock, to production, processing, distribution, refrigeration, cooking & consumption and the food we throw away.

Reducing the impact of the food chain is a massive challenge and will be one of the hardest industries to decarbonise. Unlike with cars, where we have viable solutions such as electric vehicles, the route to Net Zero agriculture and reducing on-farm emissions is less clear.



A 20% reduction in our daily diet related footprint just by changing the plate to include a wider variety of plants & wholefoods, less meat & fish, and eliminating food waste.

However, considering what we eat to ensure it is both good for our health and for the planet is something we can do today. The WWF [Livewell Diet](#) identified a 20% reduction in our daily diet related footprint just by changing the plate to include a wider variety of plants & wholefoods, less meat & fish, and eliminating food waste.

Food security is intrinsically linked to climate change. Food production is dependent on the environment, and a stable climate means a secure food system. Addressing how we produce, consume (and waste) food will play a critical role in addressing climate change. Through small changes to the way we eat, we can make a big difference to the environment, reduce our carbon footprint, and restore nature.

Approach



We worked with ClimatePartner to better understand the impact of our recipes and assess the full life cycle of a recipe from cradle to grave. Cradle refers to inputs at the farm stage, while grave refers to the impact of food and packaging waste at its end-of-life, i.e. going to landfill, being incinerated or being recycled.

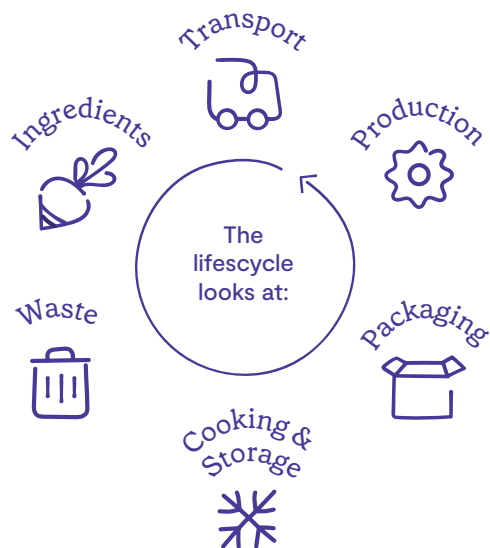


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The product carbon footprint methodology we have used adheres to all of the major carbon accounting standards including the Greenhouse Gas House Protocol methodology (GHG Protocol Product Standard), ISO 14067: Greenhouse gases – Carbon footprint of products – Requirements and guidelines for quantification and PAS 2050: Specification for the assessment of the life cycle greenhouse gas emissions of goods and services.



You can find out more about ClimatePartner's methodology and ethos in the [ClimatePartner Protocol](#). We think it's important to use a standardised methodology and be as holistic as possible in our calculations. Because, depending on how you do the sums and the system boundaries you decide on (in other words which life cycle phases are included), answers can differ drastically.



Emissions are then reported as CO₂ equivalents (CO₂e). This just means that while the assessment looks at the effects of all greenhouse gases (GHG), the end figure is converted into the equivalent amount of carbon dioxide, making it easier to compare.

Recipe ratings



We used the findings from the WWF's [Food in a Warming World \(2018\)](#) report to rate our recipes*. According to the WWF, the average UK food related emissions per person per day is 5.17kg CO₂e. This needs to reduce by 20% to 4.09kg CO₂e per person per day by 2030 to align with the Paris Agreement.

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We surveyed over 500 of our customers to find out about their eating habits. The results indicated that dinner makes up 40% of an average customer's diet. That means, a dinner should be no more than 1.6kg CO₂e to be in line with the WWF recommendation. All our low carbon meals are either in line or lower than where we need to reduce our diet related footprint to by 2030.

**The system boundaries for the reference meals in the WWF report are cradle-to-grave, matching the system boundaries of our recipe footprints.*



CARBON

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IMPACT

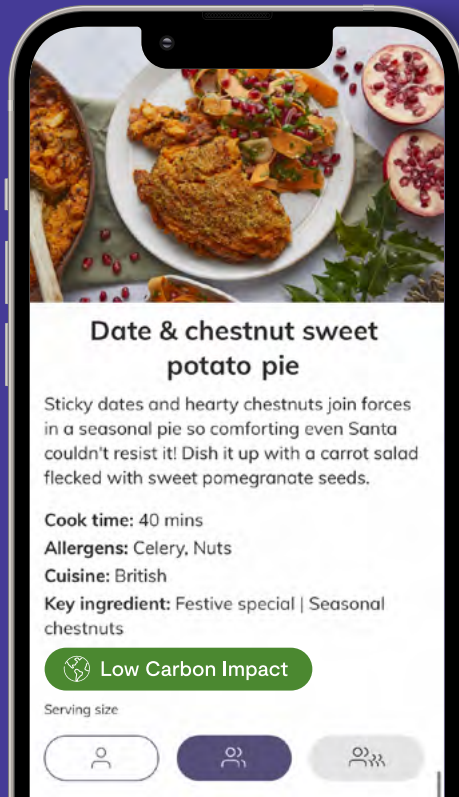
Just look out for the Low Carbon Impact rating every week





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When each stage of the life cycle of our meals is broken down, the ingredients drive the greatest impact.

For each raw ingredient, the figures (emission factors) we have used as part of the assessments consider all emissions related to on-farm activity. Including inputs of seedlings, fertilisers, pesticides, water for irrigation, and land use change. The data also includes all emissions related to machine operations and corresponding infrastructure on farms; such as planting, distribution, and harvesting by tractor. Direct field emissions (e.g. from manure or fertilizer application) and upstream activities are incorporated into the emission factors too.

These originate from life cycle inventory (LCI) databases such as EcoInvent, who aggregate and normalise quality peer-reviewed research on the emissions of raw materials. Where available, we have also included primary data from our suppliers who have measured a more precise carbon footprint for their produce.

Our aim is to increase the proportion of primary data rapidly and to encourage more of our suppliers to measure and reduce their environmental impact



further. As emission factors are typically based on global or regional averages they are inherently more conservative than the footprint of the actual produce we source. This means that as we gather more primary data from our suppliers, we are likely to see more meals qualify for the low carbon rating, just by virtue of being more accurate with our assessment – especially as many of our suppliers practice low carbon or regenerative farming techniques already.

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Packaging

This covers everything from the box, coolbox, gel packs, magazines and recipe bags, to the individual sachets for pastes and pots of herbs.

The emission figures for packaging look at how different materials are sourced, manufactured and transported across their life cycle. This includes any inputs and upstream activities necessary to manufacture the packaging material.

Deliveries

Recipe boxes cut emissions by eliminating steps in the supply chain; our suppliers deliver to us, and we deliver to you. We've cut this even further by consolidating some of our supplier deliveries, meaning less vehicles and fewer road miles.

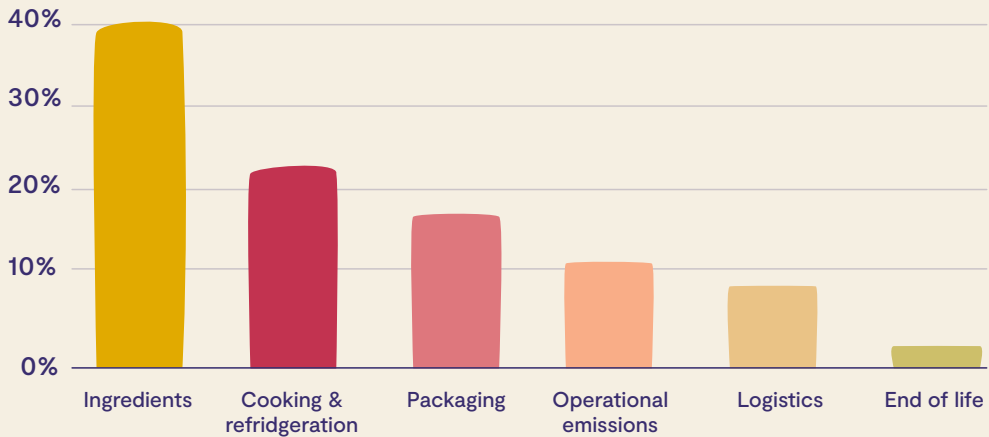
Emissions here consider factors such as transportation method, fuel type and distance travelled, from farm to us, to you. The emissions data for the journey from our warehouse to you was provided by our courier partner DPD.

Cooking

This stage in the life cycle looks at how you prepare, cook and store our recipes. We have a lot of ingredients, and how they are cooked varies per recipe. We built up a catalogue of cooking methods and applied an average energy consumption per recipe.

The emissions include the electricity and gas used in refrigerating the ingredients and cooking the recipe.

Distribution of emissions per category



End of life

Through precisely measured and portioned controlled meals, our recipes purposefully design out waste. Fighting food waste is one of the key solutions to tackling the climate crisis.



When 8% of global greenhouse gas emissions are caused by food going in the bin, we make sure nothing goes to waste, including any of the surplus at our warehouse which is either sent to The Felix Project or an anaerobic digestion plant if it can't be consumed.

The waste we are still working on is our packaging. So, from the recyclable boxes to the individual sachets, we have used emission factors to capture all emissions related to their disposal or reprocessing.

General / operational emissions

This looks at the impact of our day-to-day operations, such as the energy and water we use to run our warehouse and office, as well as the emissions generated from our team commuting to work.

Including these emissions is optional, as per the GHG Protocol, but we wanted to ensure we were being truly holistic and hold ourselves to a higher standard as our recipe boxes wouldn't exist if it weren't for our employees in our warehouses and head office – this is the approach established by ClimatePartner and we agree!



Next Steps

NET ZERO

Measuring is the first step. It enables you to highlight hotspots and identify opportunities to reduce emissions. As we work to Net Zero, we're committed to minimising the impact across our entire menu.



Assumptions & limitations

- As the number of recipes in a box varies per customer, we have taken average sales data for the number of recipes per box; this prevents us overstating things like the delivery and outer box packaging.
- Food waste is assumed to be zero since our recipes are perfectly portioned and designed to eliminate food waste.
- For our family recipes we have assumed that four people are eating the meal, for our regular recipes we have assumed two people are eating.
- For inbound logistics we used an average of all ingredients and packaging delivered in 2020.
- For packaging that is only recycled at a storefront, we have assumed 30% is actually taken to a supermarket, based on data from our returns service.
- For the cooking phase, an average energy consumption has been applied per recipe based on information we collected on cooking methods for each of our ingredients. We have done the same for the refrigeration of each of the recipe ingredients.
- Due to the complex nature of measuring on-farm emissions, ingredient emissions were primarily calculated either with secondary data using emission factors from LCI databases (such as Ecoinvent) or with emission factors from ClimatePartner's own internal database.



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- Where emission factors for certain ingredients, such as our pastes and spice mixes are not available, we have used emission factors of similar foods.
- When no primary data was available, conservative assumptions were made.
- All our recipes are designed to be nutritionally balanced, all within calorie and macronutrient ranges and in line with our specific criteria of what makes a healthy meal. Therefore, all recipes are weighted equally in terms of nutritional value.
- All calculations are based on the original recipe design, if a recipe is altered due to availability of produce, this will not be reflected in the calculations. However, when this does happen, ingredients are substituted for something similar, therefore the calculation difference is unlikely to be material.

Sources

WWF Food in a Warming World (2018)

Livewell Diet

ClimatePartner Protocol

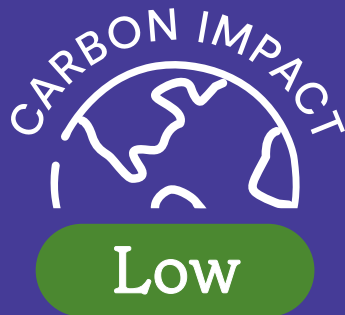
Poore & Nemecek, 2018

Food related-emissions, Ritchie (2019)

Food security, IPCC

How do diets need to change to meet climate targets?





Small changes can make a
world of difference

Mindful Chef

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