



Sustainability on a plate

Footprint Reduction through Meal Optimization in University Canteens



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Introduction

In Europe, food is available around the clock. The global food system enables us - regardless of season and distance - to be able to eat what we like. This carefree way of eating today is contrasted by an enormous consumption of resources: in Switzerland, around 25% of the environmental impact is due to "food". Also, our health is influenced to a considerable extent by our diet. Diet-related diseases and the costs they cause are steadily increasing.

With the Menu Sustainability Index (MSI), an instrument was developed based on scientific findings, with the help of which lunch meals in community catering can be assessed according to the aspects of environmental friendliness and health (nutritional-physiological balance). On the one hand, the MSI supports chefs in optimising recipes and, on the other hand, raises awareness among guests - thus promoting a more sustainable diet in Switzerland.

Goal and Scope

The university of Saint Gallen in Switzerland has committed to the goal of climate neutrality by 2030. This also includes the catering on campus. Using the MSI tool and a combination of supply change and targeted communication, greenhouse gas (GHG) savings were measured. To obtain a reference value, the impact of the meal offer was evaluated during 11 weeks. The global warming potential according to IPCC 2021 and the total environmental impact according to the Ecological Scarcity Method 2021 of each menu were determined. By replacing components, quantities or entire meals, the offer was optimized and served over a period of 3 weeks. In a further step, a guest survey was conducted to analyze the acceptance and impact of the MSI and its communication.

Results

- Within 3 weeks, a total of 9'800 meals were sold with total CO₂-eq emissions of 14.6 tons. Compared to the reference, this corresponds to savings of 3.1 tons CO₂-eq. Extrapolated to one year, this savings are equivalent to 54 tons CO₂-eq.
- Compared to the reference week, the average GHG emission per meal was reduced by 22%.
- 27% of GHG from all sold meals from the reference weeks were caused by 4 meals (=11% of all menus sold).
- The share of meat-based menus sold decreased from 78% to 53%.
- The average GHG of vegetarian menus was reduced by 14%, meat menus by 11%. The greatest leverage was achieved by changing meat-based menus to vegetarian/vegan menus
- Ecologically sustainable menus are important to 70% of the guests surveyed, and healthy menus to 90%.

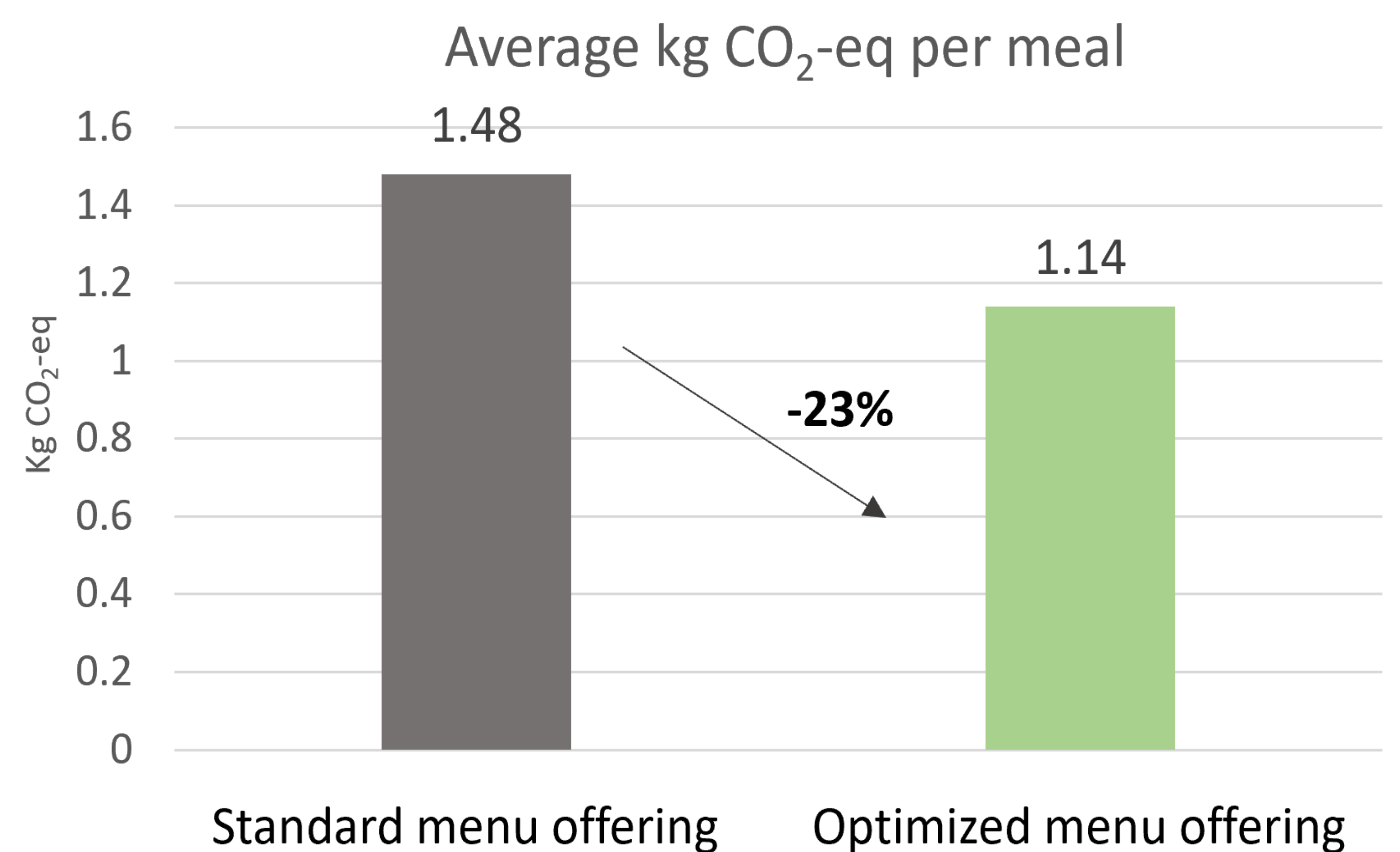


Figure 2. Average GHG emissions per meal for both, the reference weeks and the optimized meal offering.



Figure 1.: Meal distribution with information boards on the Menu sustainability index. Photo: Silvia Burgdorf

Discussion and Conclusion



10% of all meals caused 27% of the total environmental impact. If all meals were environmentally optimized, then yearly savings of 54 tons CO₂ are possible.



Meals containing meat and dairy products have the highest environmental impact. A reduction of these components reduces the environmental impact of meals substantially.



Link to the MSI website



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