Monitoring and Reduction of Food Waste by using the RMFood-App - Project A2UFood (Heraklion)

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Abstract

Within the framework of the research project A2UFood, a monitoring of food waste in the Greek hotel sector was carried out using the city of Heraklion as an example. The RESOURCEMANAGER FOOD was used as a digital tool for the semi-automatic recording of food waste with comprehensive analysis options. This tool was adapted to the conditions in Greece within the scope of the project (international version of the app) and is now also available in Greek. The originally PC-based tool was converted into an app for tablets and smartphones with wireless connection to digital scales and is now available for download free of charge. During the presentation, the monitoring concept will be introduced and the optimization potentials in food management and waste prevention will be presented. This also includes SDG-based assessment approaches integrated in the app, such as the CO_2 equivalents of food waste thrown away. Depending on the respective boundary conditions, a reduction of food waste by approx. 50% can be achieved - this could be demonstrated in one of the investigated hotels in Heraklion. During the first campaign, measurements were carried out in a total of five hotels. The most comparable data were those from the overproduction of Hotel 1 and 2. The results of the daily amount of food waste generated due to overproduction show that Hotel 1 generated three to nine times more food waste due to overproduction for lunch and dinner than Hotel 2. For breakfast Hotel 1 generated at maximum two times the food waste amount due to overproduction in comparison to Hotel 2. Therefore in Hotel 2 significantly less food waste is generated by overproduction than in Hotel 1. There are several reasons for the differences in the amount of overproduced food waste, but it is not possible to identify the most relevant reason. On the one hand, the interest and knowledge of the kitchen staff and in particular the chef about the importance of food waste has an impact on the amount of food waste. On the other hand, the variety of food on offer and the size of the buffet are also influencing factors. The combination that in Hotel 2 the interest in reducing the own food waste through overproduction was greater than in Hotel 1 and at the same time the variety of food on offer and the size of the buffet in Hotel 2 were smaller than in Hotel 1 leads to the large differences in the amount of overproduced food in both hotels. According to the results of measurements in Hotel 2 they were able to halve the amount of daily overproduction by 5.4 kg/day from 10.7

kg/day to 5.3 kg/day, while in Hotel 1 the food waste amount did not decrease. Instead it increased slight by 3.1 kg/day from 28.8 kg/day to 31.9 kg/day. When it comes to the composition of food waste, Hotel 1 and 2 have in common that a large amount of the total food waste is generated in the salad area, mainly mixed salad. Furthermore, the "main courses" and "supplements" are a large part of the food waste. But this categories need to be analysed more detailed to be able to say for which products there are saving potentials. A comparison of the plate leftovers per guest between the main kitchen (buffet style) in Hotel 1 and the a la carte restaurant kitchens in Hotels 4 and 5 showed that the amount of plate leftovers was significantly lower in the buffet kitchen. The results from the hotels in Heraklion are analyzed and compared with the results from other research projects (hotels in Germany). In addition they are placed in the overall context of the topic and the SDG goals. Finally, an outlook is given and the potential to be worked out in further research projects is presented. In this context, a special focus will be given to the following topics: automatic image recognition, automatic derivation of planning data for food production, EU-wide reporting of food waste and documentation of SDG-targets, including SDG target 12.3 (halving food waste by 2030).

Keywords: RMFood-App, Greek, Food Waste, Monitoring, System Optimization, FLW, Digital Tool, SDG

References
https://a2ufood.gr/, Stefan Hadlaczky (2019): Avoidance possibilities of food waste generation in commercial kitchens in the Greek hospitality sector - case study of hotels in Heraklion, Greece