



THE RECOMMENDATIONS FOR THE REDUCTION AND PREVENTION OF FOOD WASTE IN RESTAURANTS IN NOVI SAD

B. Tot¹, S. Vujović¹, B. Zoraja¹, T. Marinković¹

¹University of Novi Sad, Faculty of Technical Sciences, Department of Environmental Engineering and Occupational Safety, 21000 Novi Sad, Republic of Serbia

(E-mail: bojanatot@uns.ac.rs, svjetlanavujovic@uns.ac.rs, bojanazoraja@uns.ac.rs, tijanamarinkovic@uns.ac.rs)

Introduction

In modern and sustainable waste management systems, food waste has been marked as one of the most important waste streams, since its inappropriate management can have high potential negative impact on the environment and human health. The situation is compounded even further if it is taking into account the natural resources used to produce food that is never actually consumed, and the greenhouse gases emitted across the food lifecycle. In Serbia, as transition country, with a relatively undeveloped waste management system, the majority of generated food waste ends up at non-compliant landfills, causing high environmental problems. Apart from food waste in households, the significant amounts of this waste flow are generated from the commercial and hospitality sector sources, including restaurants. The main objective of the paper was to define recommendations for the reduction and prevention of food waste in restaurants.

Results & Discussion

Canteens of administrations, faculty or businesses are one of the main place of food consumption. Unfortunately very often the staff as consumers and clients of the canteen, are not tempted to sustainable consumption. Often the problem is that the meals come in fixed portions or that the consumers are making their choices only based on the pricing of the food.

In line with the waste prevention hierarchy and circular economy principles, the focus in this research was on the prevention of food waste, i.e. limiting the generation of surplus food at the source. In such strategies, prevention of food waste need to have advantage over to its management and better valorisation.

The canteens against food waste action aims at reducing food waste in canteens and at increasing customer awareness about their food choices: choices that directly affect their lunch but that may become a useful tool for the prevention also in the consumption of food at home. For this reason, part of the tool refers to the planning of their food consumptions choices and awareness of reduction of food waste and the consumption of leftovers.

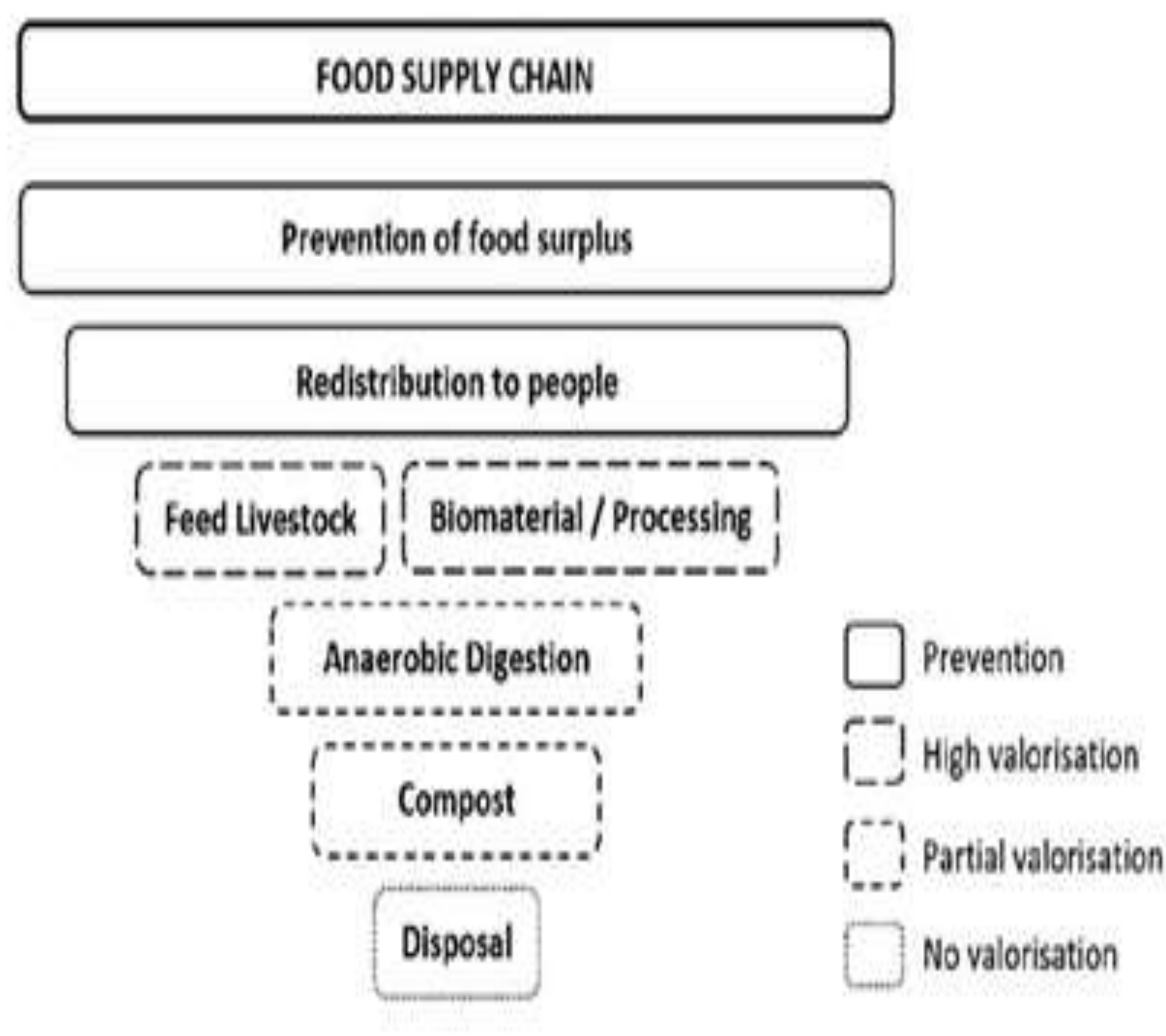
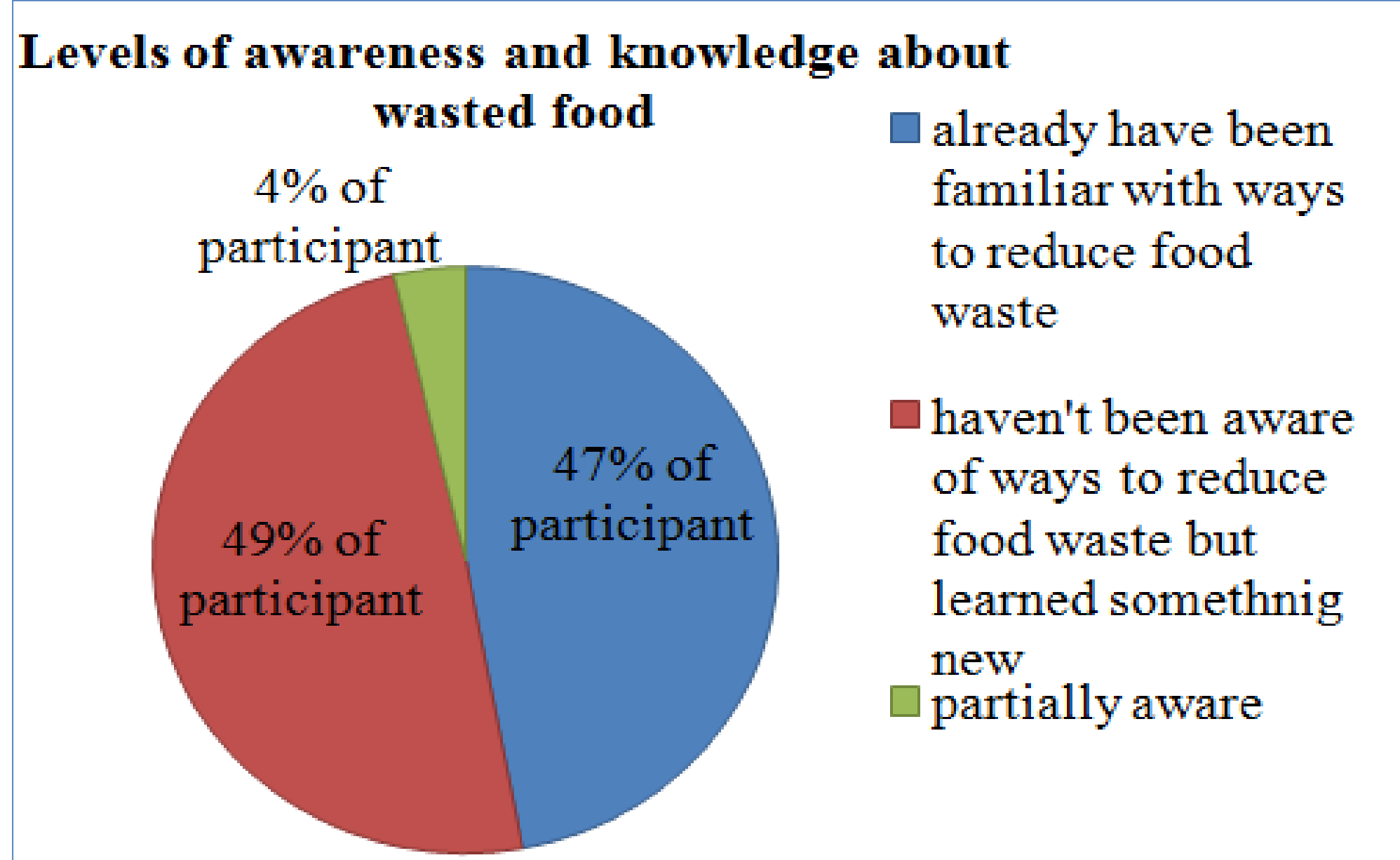


Figure : The food waste hierarchy in context of circular economy (Treutwein et al., 2021)

This is particularly evident considering that about 75% of generated food waste within the foodservice sector represent the part of food flow which was edible at the point of its disposal (e.g surplus dishes and leftovers from guest's plates) (Filimonau et al., 2021). Kasavan et al., 2021 further emphasized that minimizing and prevention of food waste allows economic, social and environmental benefits, by reducing costs and GHG emissions and improving food security and better efficiency of natural resource use, on the other hand.

The first objective was to prevent overproduction, to optimise recipes using precise weights to ensure that the quantities produced correspond fully to the number of meals to be made and to portions tailor made for the pupils and to follow recipes to the letter.

The second objective was to adapt portions to each consumers take an appropriate portion with the option of second helpings, and to raise the awareness of the canteen staff of the importance of encouraging consumers to choose/ask for appropriate portions and to instill good instincts in the staff to achieve this.



In the first phase of the implementation of food waste measurement activities a very simple handmade poster was placed above the static tray slide, at eye level. The action with the purpose of reducing food waste started to raise curiosity among the canteen users. One point in favor was that the canteen users are mostly students and they recognized their colleagues as the ones driving the campaign. Also, due to noticed overproduction and big portions in most restaurants, optimizing the mass of the main meal components and adaption of portions contributed to prevention of food wastage.

Furthermore, food waste from the kitchen could be used in value-added processing, i.e. to extend the usable life of wasted food components through processing methods such as: making soups, sauces, and other recipes that include fruit or vegetables (e.g. to use fruits to make fruit salads and/or cakes; to use old bread to make cookies or bread crumbs, etc).

Redistributing surplus of edible food to different organizations such as: Red Cross, food banks, vulnerable organizations and others, could also be part of food prevention strategy. A significant barrier to food redistribution is the issue of the donor's liability in the event of food poisoning.

Conclusion

This research aimed to develop and implement a recommendations for the reduction and prevention of food waste in restaurants in Novi Sad. This research aimed to develop and implement a recommendations for the reduction and prevention of food waste in restaurants in Novi Sad. The research will be useful to the decision-makers, by providing all concerned with reliable recommendations for food waste reduction in the municipalities and regions. Furthermore, it supports leveraging the substantial environmental benefits of managing food resources efficiently and respectfully. Observing this at the local level, where city or municipal departments taking complete responsibility for generated waste and its management, one of the most important tasks for city of Novi Sad in the future will be reduction of direct landfilling of biodegradable waste.