

PRELIMINARY ASSESSMENT OF A METHODOLOGY FOR DETERMINING FOOD WASTE IN PRIMARY SCHOOL CANTEENS

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INTRODUCTION

Reducing food losses and waste is increasingly seen as a main way to improve sustainability of food systems, both in itself and as a way to question and improve the efficiency of resource use. A first key step is to improve data collection and analysis of causes of food losses and waste (HLPE, 2014). This poster presents the first results of a study developed to devise an innovative methodology to assess food waste in school canteens where the concerned actors are directly involved in the monitoring phases. The involvement of pupils, which partially comes from the Waste Wise Schools Program (Ralph, 2015), facilitates awareness raising, with monitoring as an instrument of active learning (Dewey, 1961).



MINISTERO DELL'AMBIENTE
E DELLA TUTELA DEL TERRITORIO E DEL MARE



REDUCE (Research, Education, Communication)

REDUCE is a national project financed by the Italian Ministry of Environment which aims to improve data collection on food waste at the last stages of food chains and to identify innovative solutions to reduce it. One of the main research activities is focused on food waste in school canteens, with the objective of bridging the data gap identified at international level (FUSIONS, 2015) and educate pupils on more sustainable food consumption habits.

AIMS OF THE PROJECT

- 1 Collect **quali-quantitative data on food waste** in school canteens
- 2 Estimate **children food intake**
- 3 Improve **pupils' awareness** about food waste (monitoring as active learning)

Data collection

The data collection of food waste is done through dish types, according to the typical structure of the Italian meal: **primo** (first course), generally composed of pasta or rice, **secondo** (second course), consisting mainly of animal products, **contorno** (side dish) of vegetables, **bread** and **fruit**, as already used in previous studies on food waste in Italy (Falasconi et al., 2015).



Data are adjusted to account for non-avoidable food waste (fruit peels, fruit cores, chicken bones, etc.)

MATERIALS AND METHODS

Quantification phases

Monitored food can be divided in 3 categories:

- A** Prepared food **B** Non-served food **C** Plate waste

The quantification is performed by the involved actors.

Prepared food

Where — **KITCHEN**
Who — **KITCHEN EMPLOYEES**



Kitchen employees weigh the cooked dishes (first course, second course and side dish), and count the portions of bread and fruit.

Non-served food

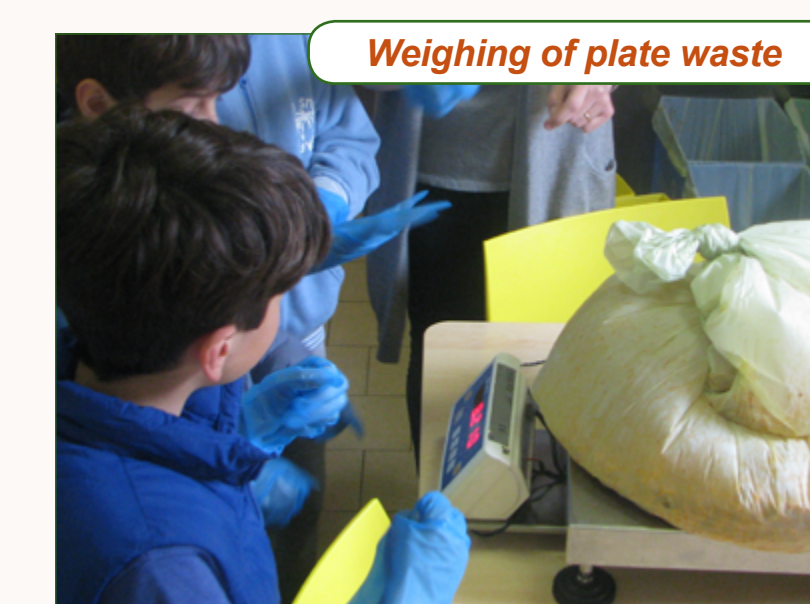
Where — **SCHOOL CANTEEN**
Who — **TEACHERS/STUDENTS**



The quantification of remaining non-served food is performed by pupils under the supervision of teachers.

Plate waste

Where — **SCHOOL CANTEEN**
Who — **TEACHERS/STUDENTS**



The quantification of remaining plate waste (first course, second course and side dish) collected in the five bins is performed by pupils under the supervision of teachers.

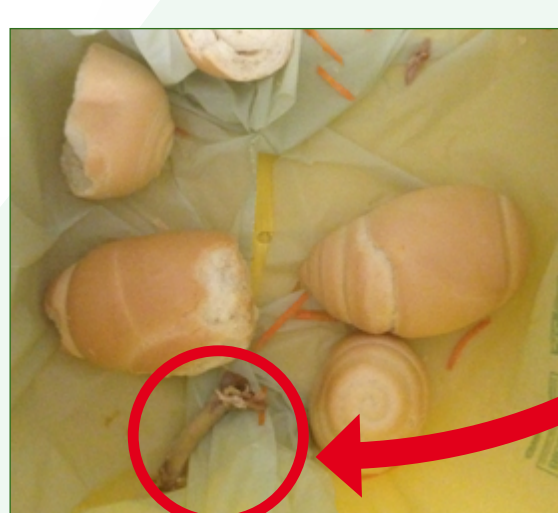
RESULTS

Evidence from field observation

Kitchen employees were committed.

Teachers were motivated, but their monitoring phases partially overlapped with other duties.

Pupils were able to separate the plate waste, but children less than 8 years of age need to be assisted by teachers.



Chicken bone erroneously mixed with bread waste.

Critical points



Certain dishes can stick to the plate.



A substitute teacher arriving at school unaware of the on-going experiment.



Sometimes the number of bread and fruit portions are different from the number of pupils having lunch.

CONCLUSIONS

The **involved actors** were able to do what was required by them. They can take an **active role** in food waste quantification.

The **methodology** needs to be:

- 1 **Adapted to the capabilities of children** as well as to the **duties of teachers** during and after the meal.
- 2 **Flexible** in order to take account of national specificities (meal structure for the collection of food waste, distinction of edible/non edible parts).