Preliminary assessment of a methodology for determining food waste in primary school canteens

Boschini, M., Falasconi, L., Meybeck, A., Segrè, A.

Department of Agricultural and Food Sciences, University of Bologna, Department of Agriculture and Consumer Protection, Food and Agriculture Organization (FAO).

**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).

**AIMS OF THE PROJECT**

1. Collect quasi-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). Products, of pasta or rice, chicken bones, etc.)

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**
  - The quantification is performed by the involved actors.
  - Where — KITCHEN
  - Who — KITCHEN EMPLOYEES
  - Served food

- **B. Non-served food**
  - Where — SCHOOL CANTEEN
  - Who — TEACHERS/STUDENTS
  - Intact portions of bread and fruit

- **C. Plate waste**
  - Where — SCHOOL CANTEEN
  - Who — TEACHERS/STUDENTS
  - After the separation phase, the non-consumed portions of bread and fruit are counted by the pupils of each class.
  - 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.

**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).