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# Harmonization of Data Aggregation Procedures for Food Composition Databases within EuroFIR

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## Introduction

The challenge of any Food Composition Database (FCDB) is to publish the best estimate of a nutrient value since several nutrient data points can be compiled for one value of a nutrient of a food item. There are different approaches to determine the best estimate. However, no standardized data aggregation procedure is defined. The final aim of the complete process is to develop a harmonized data aggregation procedure for FCDBs within European Food Information Resource (EuroFIR) to standardize the determination of the best estimate.

## Methodology

MRI and ANSES defined common steps for the procedure of data aggregation (**figure 1**). Selection criteria were determined with regard to their impact on the quality of nutrient data points. Based on these steps, a questionnaire was designed which was sent to 27 EuroFIR FCDBs. This questionnaire was developed to get an overview of the currently applied data aggregation practices of different countries. To proceed on this topic, the EuroFIR working group Data Aggregation was established. During the EuroFIR Food Forum 2019 a workshop was conducted to specify the further work.

## Main findings

Information was collected from 13 FCDBs. Different selection criteria are applied to choose nutrient data points (**figure 2**). Similarities were identified such as ranking data source types (n=12) with generally analytical data as the first choice. The preference of the statistical methods are shown in **figure 3**. The choice of a statistical method depends on various conditions such as homogeneity of nutrient values or availability of market shares. After aggregation of best estimates based on data points from different data sources, inconsistencies can occur in the generated nutrient values of one food item. Therefore, consistency checks are necessary such as proximates should sum up within an acceptable range (100g +/- 3g) [1]. In case inconsistencies occur most FCDBs apply another data point selection or recalculate the best estimates of nutrient values.
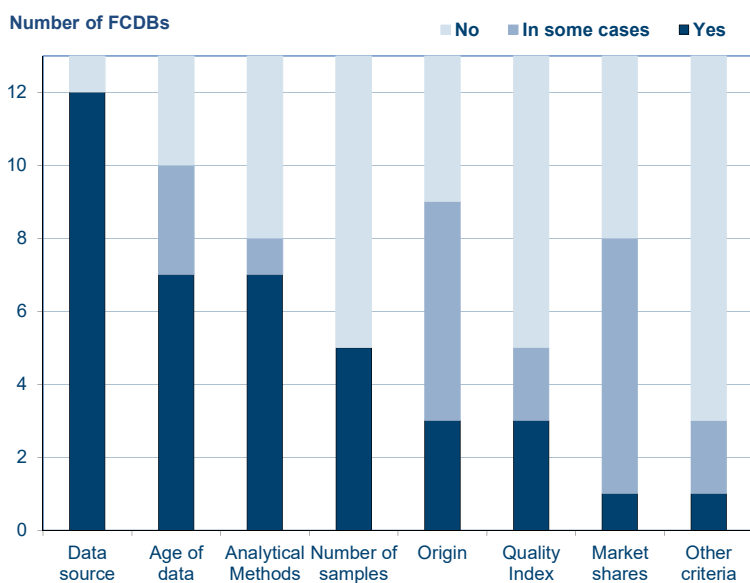


**Figure 1:** Three successive steps of data aggregation procedure to determine the best estimate



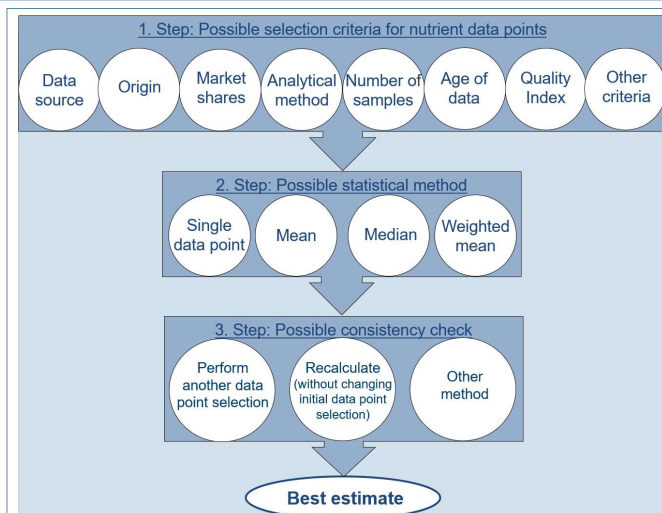**Figure 2:** Use of various criteria for the selection of nutrient data points by EuroFIR FCDBs
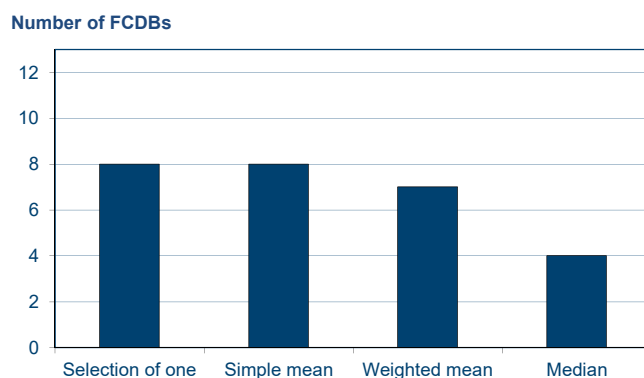


**Figure 3:** Use of statistical methods for calculation of the best estimate by EuroFIR FCDBs

## Conclusion

The overview of different approaches to data aggregation of EuroFIR FCDBs confirm the necessity of the harmonization of data aggregation procedures within EuroFIR. The EuroFIR working group agreed upon prioritizing topics for their upcoming work: Application of common selection criteria for nutrient data points based on data source types and definition of criteria for the choice of an appropriate statistical method to calculate the best estimate.

Reference: [1] Greenfield H, Southgate DAT: Food composition data – production, management and use. FAO, Rome, 2, 2003.