



# European food consumption data: achievements made so far and future challenges

Davide Arcella

7<sup>th</sup> October 2015

1<sup>th</sup> Croatian Food Safety Risk Assessment Conference

# EUROPEAN FOOD SAFETY AUTHORITY (EFSA)

The **EFSA** is the keystone of European Union (EU) risk assessment regarding food and feed safety.

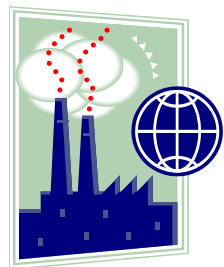


# DATA PROVIDERS

Member States  
European Commission



Industry



Consumers  
associations



University, academia, etc.



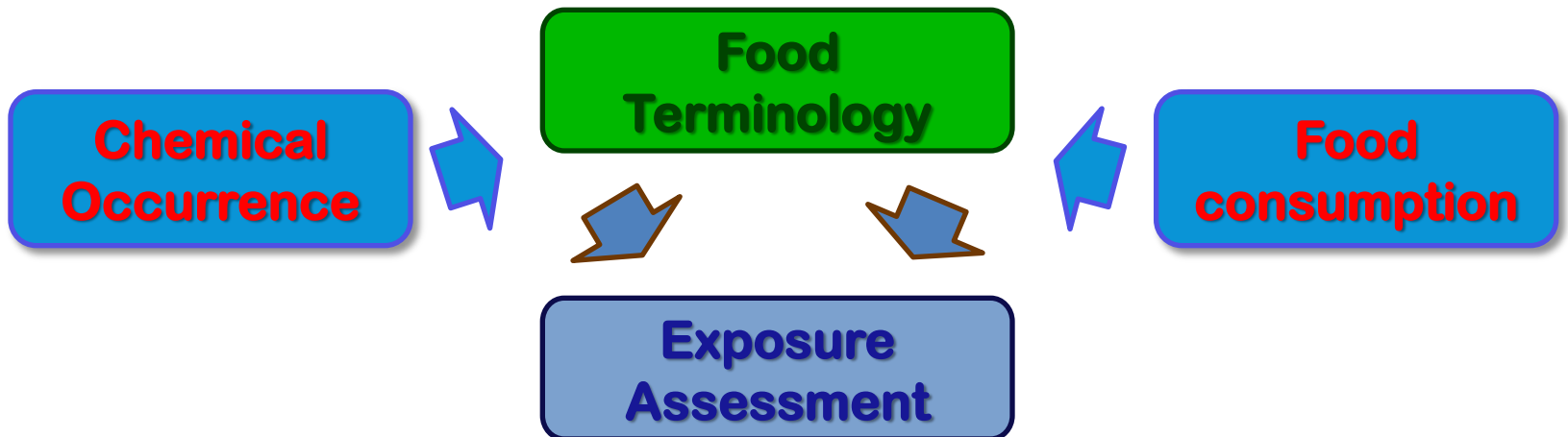
# FROM CHAOS .... TO ORDER

Standardisation e  
harmonization



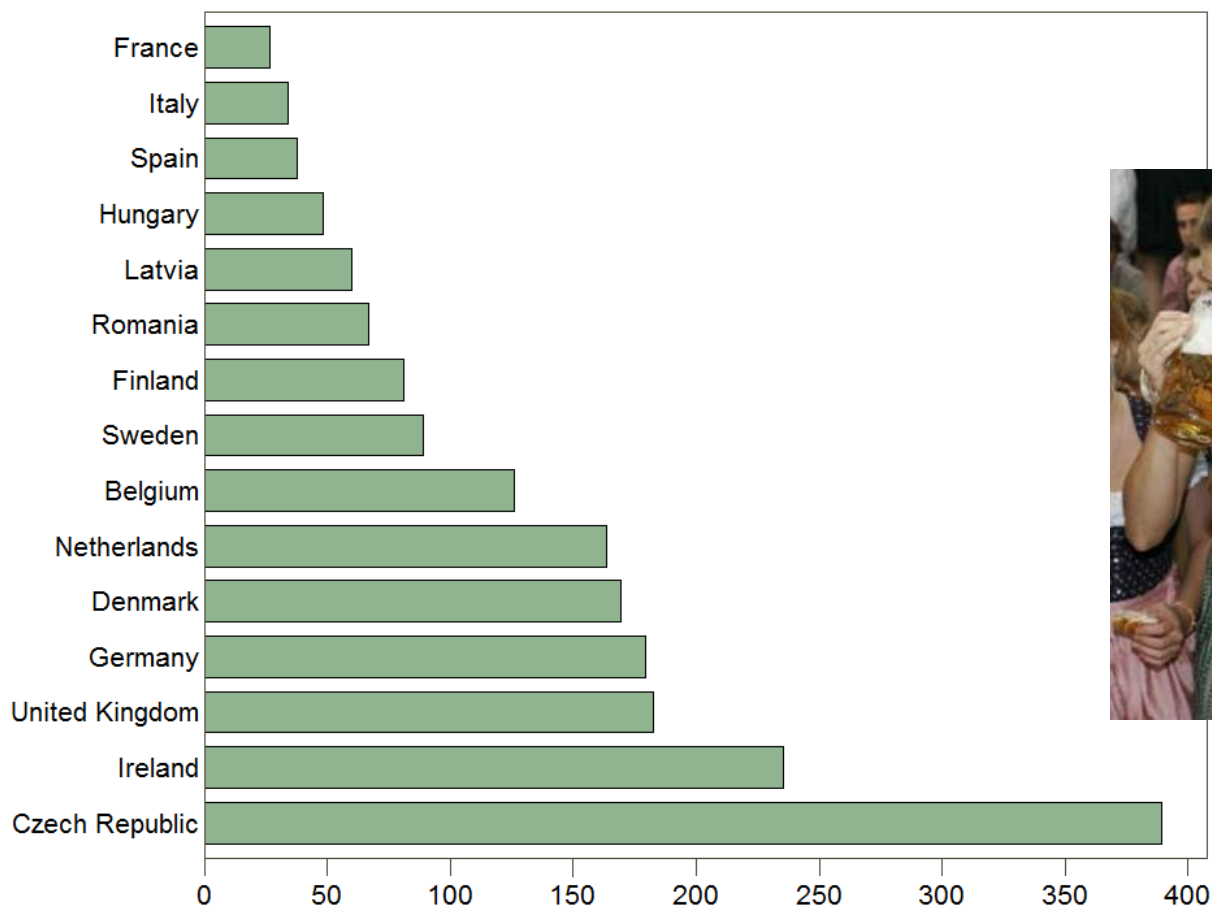
Coordinated approaches  
Standard protocols  
Compatible systems

# DIETARY EXPOSURE ASSESSMENT



# REGIONAL VARIABILITY IN THE EUROPEAN UNION

Average consumption of beer (g/day) in the adult population in 15 EU Member States\*



\*EFSA Comprehensive European food consumption database, 2014

# TARGET POPULATION



Special groups: pregnant women  
vegetarians, diabetics, ethnic groups and  
different socio-economic strata ...

## HIGH CONSUMERS

High percentiles (95<sup>th</sup>, 97.5<sup>th</sup>, 99<sup>th</sup> and even 99.9<sup>th</sup>) are often used to identify high-level consumers.

The definition of high-level consumers determines the proportion of the population that would have to exceed a health based limit value before action is considered necessary to reduce dietary exposure.







## REGULATION (EC) N° 178/2002



- EFSA “shall search for, collect, collate, analyse and summarise relevant scientific and technical data in the fields within its mission. This shall involve in particular the collection of data relating to food consumption and the exposure of individuals to risks related to the consumption of food”;
- EFSA “shall work in close cooperation with all organisations operating in the field of data collection, including those from applicant countries, third countries or international bodies”.

# EFSA SCIENTIFIC COLLOQUIUM



“A common database on food consumption would improve the consistency and reliability of exposure assessments carried out by the various EFSA Panels and other experts in Europe”

## EXPERT GROUP ON FOOD CONSUMPTION DATA

Network of 35 members, each member representing a European or a neighboring country.



The Network is a platform for exchange of views with the best experts in Europe on ways to:

- harmonise methodologies for the collection and collation of food consumption data;
- promote collection of harmonised food consumption information.
- agree on reporting and data submission formats.

Network members are asked to liaise as appropriate at national level before and after each Network meeting.

# COMPREHENSIVE CONSUMPTION DATA

The EFSA Comprehensive European food consumption database contains data:

- 24-hour recall or dietary record method
- data collected at individual level
- most recent data within each country
- random sample at national level
  - different age classes, from infants to elderly
  - special population groups



## MAGNITUDE OF THE CONSUMPTION DATABASE

Number of

Member States	23
---------------	----

Dietary surveys	51
-----------------	----

Population groups	128
-------------------	-----

Subjects	94,532
----------	--------

Different national food codes	127,912
-------------------------------	---------

Different standard food codes	1,578
-------------------------------	-------

Consumption records	10,470,332
---------------------	------------

## AGE CLASSES

Age class	Age range (years)	Number of countries
Infants	0 – 1	6
Toddlers	1 – 3	10
Children	3 - 10	17
Adolescents	10 - 18	17
Adults	18 - 65	21
Elderly	65 - 75	15
Very elderly	> 75	14
Special population group		2



## DIETARY SURVEY METHODOLOGY

Different consumption patterns between countries can simply be induced by the survey methodology

Examples of differences in survey methodology:

- 24 h dietary recall vs. food record
- from 1 to 7 days per subject
- sample size and sampling design
- week end days not always evenly represented
- seasonality not always covered
- body weight and height measured or estimated
- food classification



## WHAT'S ON THE MENU IN EUROPE?



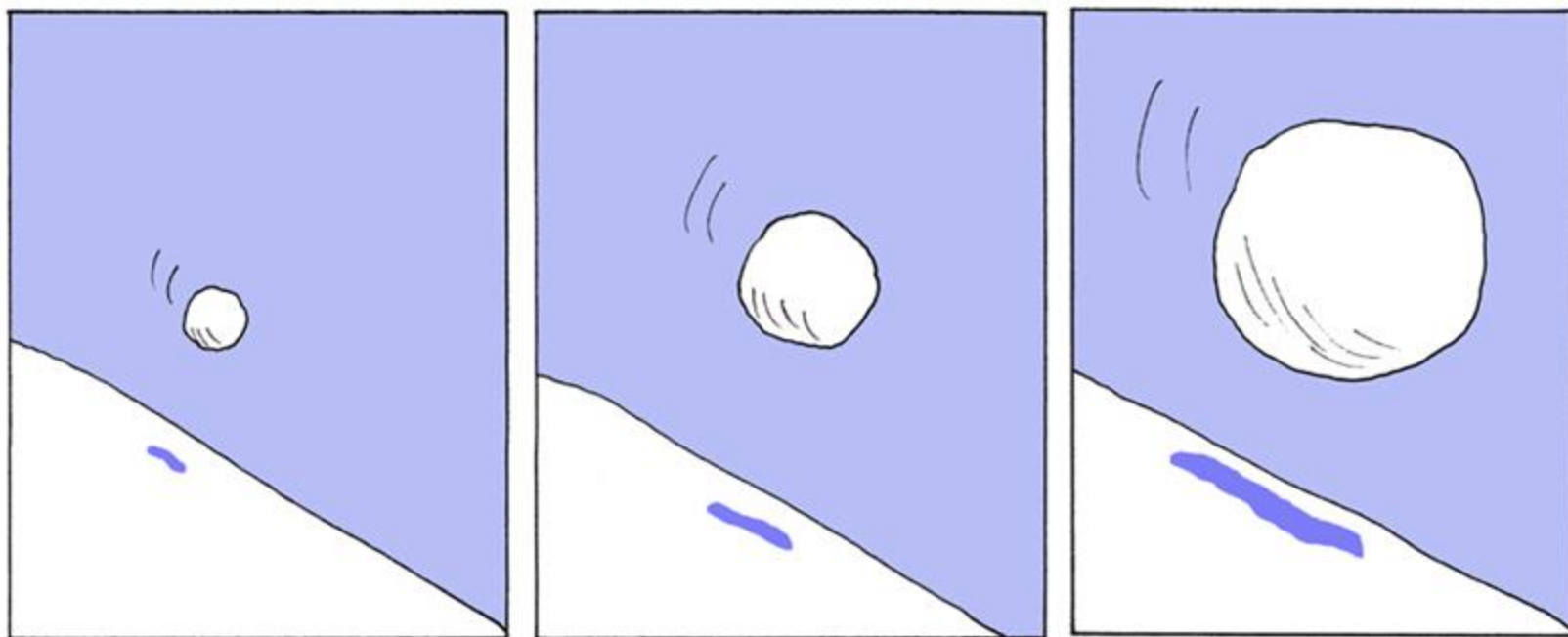
**EFSA** Harmonisation Collaboration  
Food Consumption European Food Safety Authority  
**EUMenu**  
Survey  
Diet

Aims to collect food consumption data at EU level:

- in **different age classes** (from infants to elderly)
- in **all Member States** (minimum 80,000 subjects)
- using **methods allowing the comparison of the results** from different Member States



## STRATEGY AND ROADMAP SUMMARISED



.... harmonised and detailed food consumption data across Europe ...

## EFSA GUIDANCE

### General principles for the collection of national food consumption data in the view of a pan-European dietary survey

- EFSA needs
- Sampling method and design
- Dietary assessment methodologies
- Administration of the interview
- Dietary survey tools
- Non dietary information and quality control



Discussed and endorsed by the **Expert group on food consumption data**

First released published on the EFSA Journal in December 2009

## PILOT PROJECTS

### 1. PANCAKE

Pilot study for the Assessment of Nutrient intake and food Consumption Among Kids in Europe  
RIVM (The Netherlands) 2009–12

### 2. PILOT-PANEU

Pilot study in the view of a Pan-European dietary survey – Adolescents, adults and elderly  
HFSO/NEBIH (Hungary) 2010–12

### 3. Update and test of EPIC-SOFT dietary software IARC (UN) 2011-12

### 4. Dietary monitoring tools for risk assessment Hellenic Health Foundation (Greece) 2012–14



# GUIDELINE ON THE EU MENU METHODOLOGY

## GUIDANCE OF EFSA

### Guidance on the EU Menu methodology<sup>1</sup>

European Food Safety Authority<sup>2,3</sup>

European Food Safety Authority (EFSA), Parma, Italy

#### ABSTRACT

The availability of detailed, harmonised and high-quality food consumption data for use in dietary exposure assessments is a long-term objective of EFSA. In 2009, the EFSA guidance on “General principles for the collection of national food consumption data in the view of a pan-European dietary survey” was published, and a pan-European food consumption survey, also known as the “EU Menu”, was launched. Based on the 2009 EFSA guidance, two EU Menu feasibility pilot studies and two methodological projects, EFSA has updated the former guidance document to cover the EU Menu methodology and therefore facilitate the collection of more harmonised food consumption data from all European Union Member States by the year 2020. This guidance has been developed by the EFSA Evidence Management Unit (DATA) and the EU Menu Working Group with Advisory Function, and has been endorsed by the EFSA Network on Food Consumption Data. It provides recommendations for the collection of more harmonised food consumption data among the EU Member States for use in dietary exposure assessments of food-borne hazards and nutrient intake estimations under the remit of EFSA’s scientific panels. Food consumption information should be collected for two non-consecutive days. The 24-hour food diary method, followed by a computer-assisted personal or telephone interview (CAPI/CATI), should be used to collect data from infants and children. For all other age groups, the 24-hour dietary recall CAPI/CATI method should be used. The reported foods should be described in accordance with the EFSA FoodEx2 food classification system. A short food propensity questionnaire should be used to collect information on the consumption of some less frequently eaten foods and the consumption frequencies of food supplements. Information on the weight, height and physical activity levels of participants should also be collected in the survey.

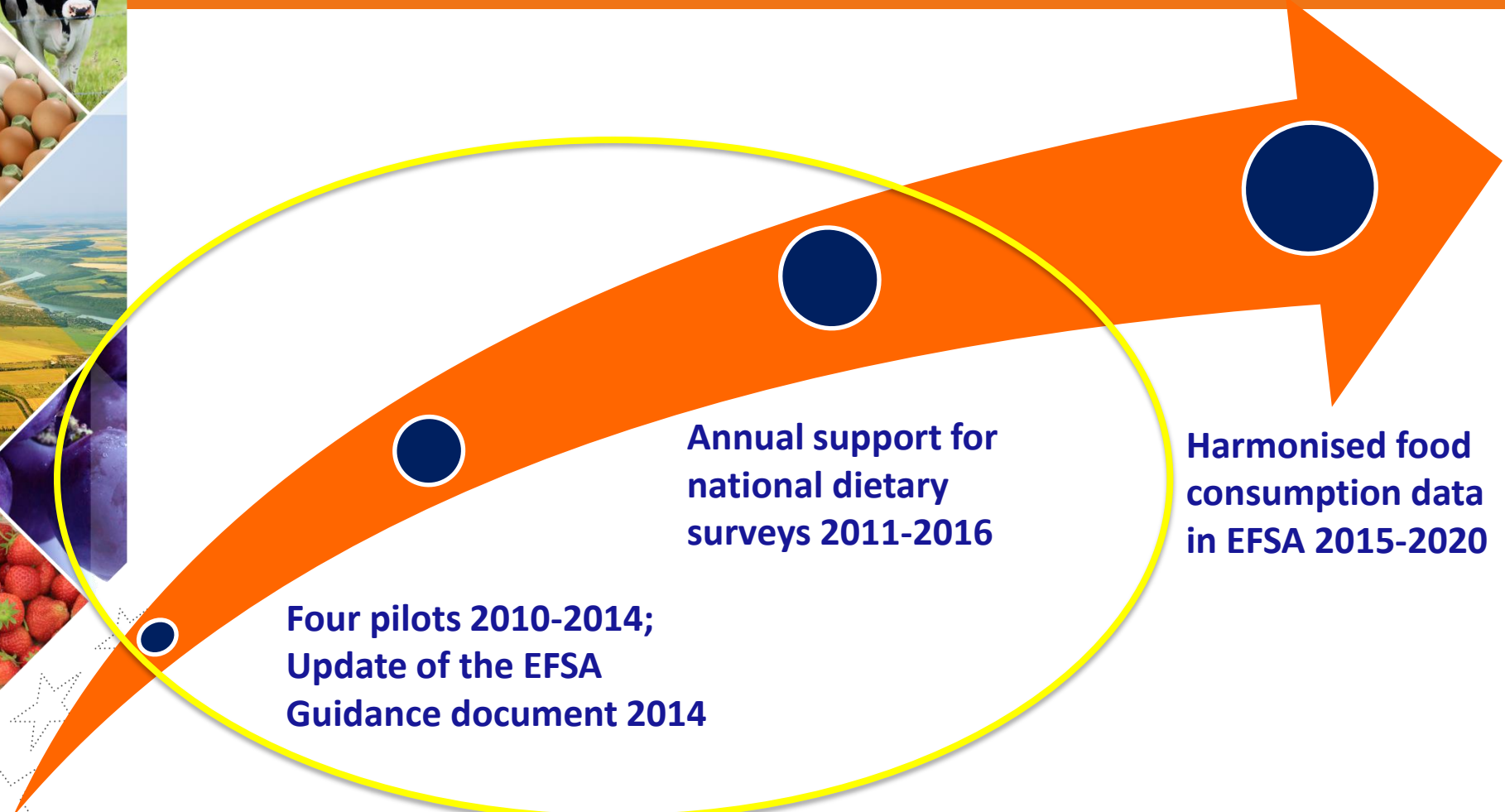
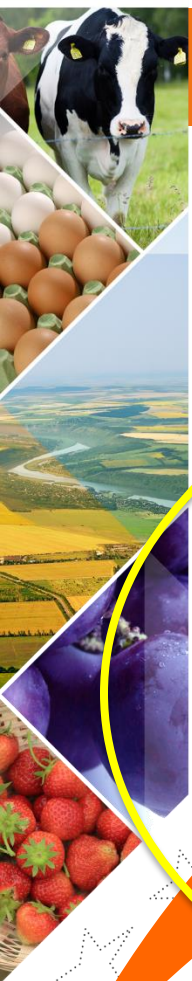
© European Food Safety Authority, 2014

#### KEY WORDS

EU Menu, pan-European dietary survey, food consumption, exposure assessment, 24-hour recall, food diary, harmonisation



# HARMONISED FOOD CONSUMPTION DATA BY 2020



**EFSA Guidance document  
on a pan-European dietary survey;  
EFSA EU Menu proposal 2009**

**Four pilots 2010-2014;  
Update of the EFSA  
Guidance document 2014**

**Annual support for  
national dietary  
surveys 2011-2016**

**Harmonised food  
consumption data  
in EFSA 2015-2020**

# EU MENU PROJECTS



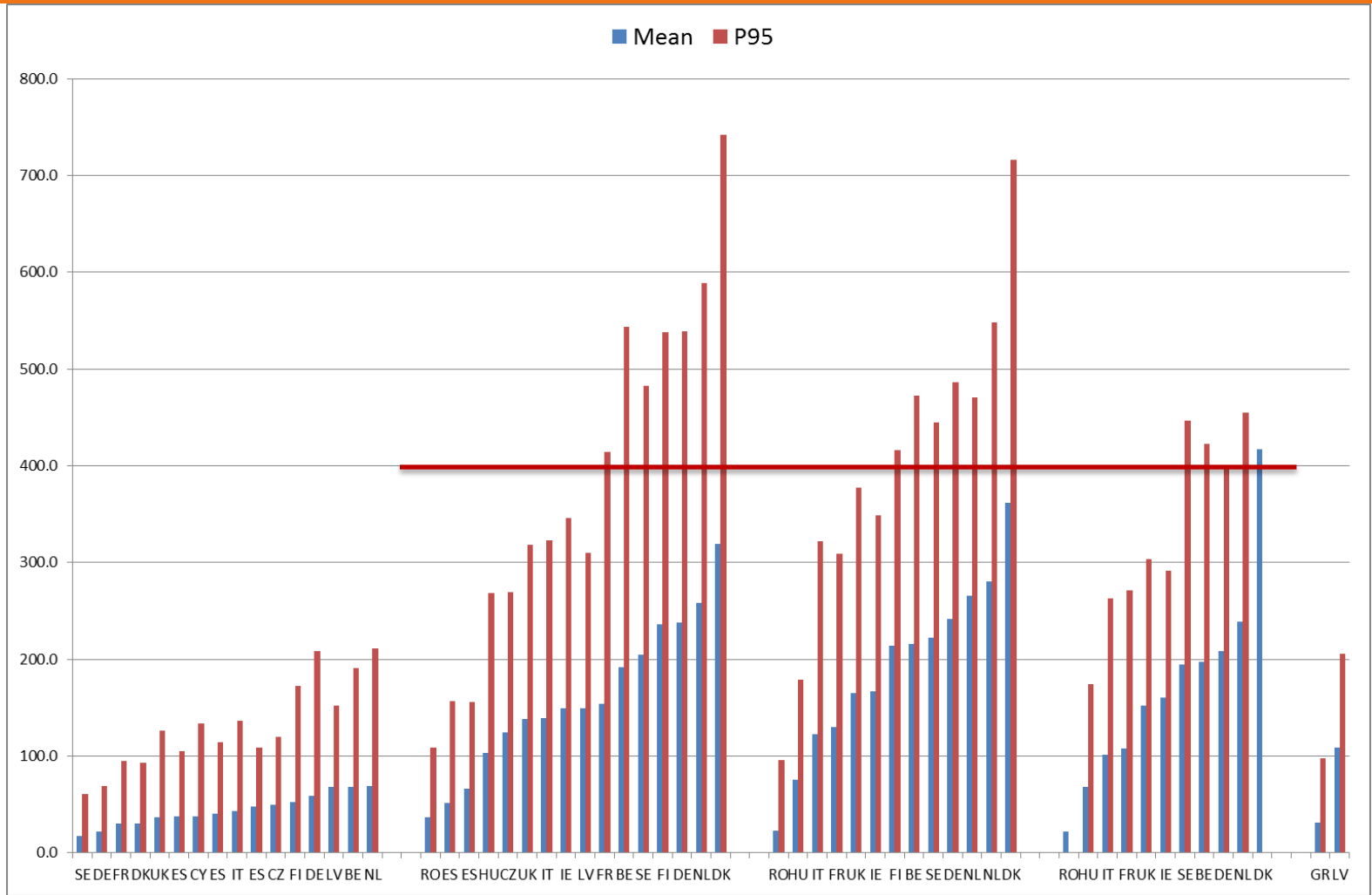
Project started in	Dietary survey on	
	Children	Adults
2011	France	France
	Estonia	
2012	Latvia	Latvia
	Netherlands	Netherlands
	Portugal	Portugal
	Spain	Estonia
2013	Belgium	Belgium
	Cyprus	Cyprus
	Romania	Greece
		Spain
2014	Hungary	Hungary
	Italy	Italy
	Slovenia	Slovenia
	Greece	Austria
		Romania
2015	?	?
<b>Number of dietary surveys</b>	<b>13</b>	<b>14</b>



# Example: Caffeine intake estimation



# ADULTS – INTAKE PER DAY



Adolescents

Adult

Elderly

Very elderly

Special

Daily caffeine intake in mg per day



# ADULTS - SOURCES

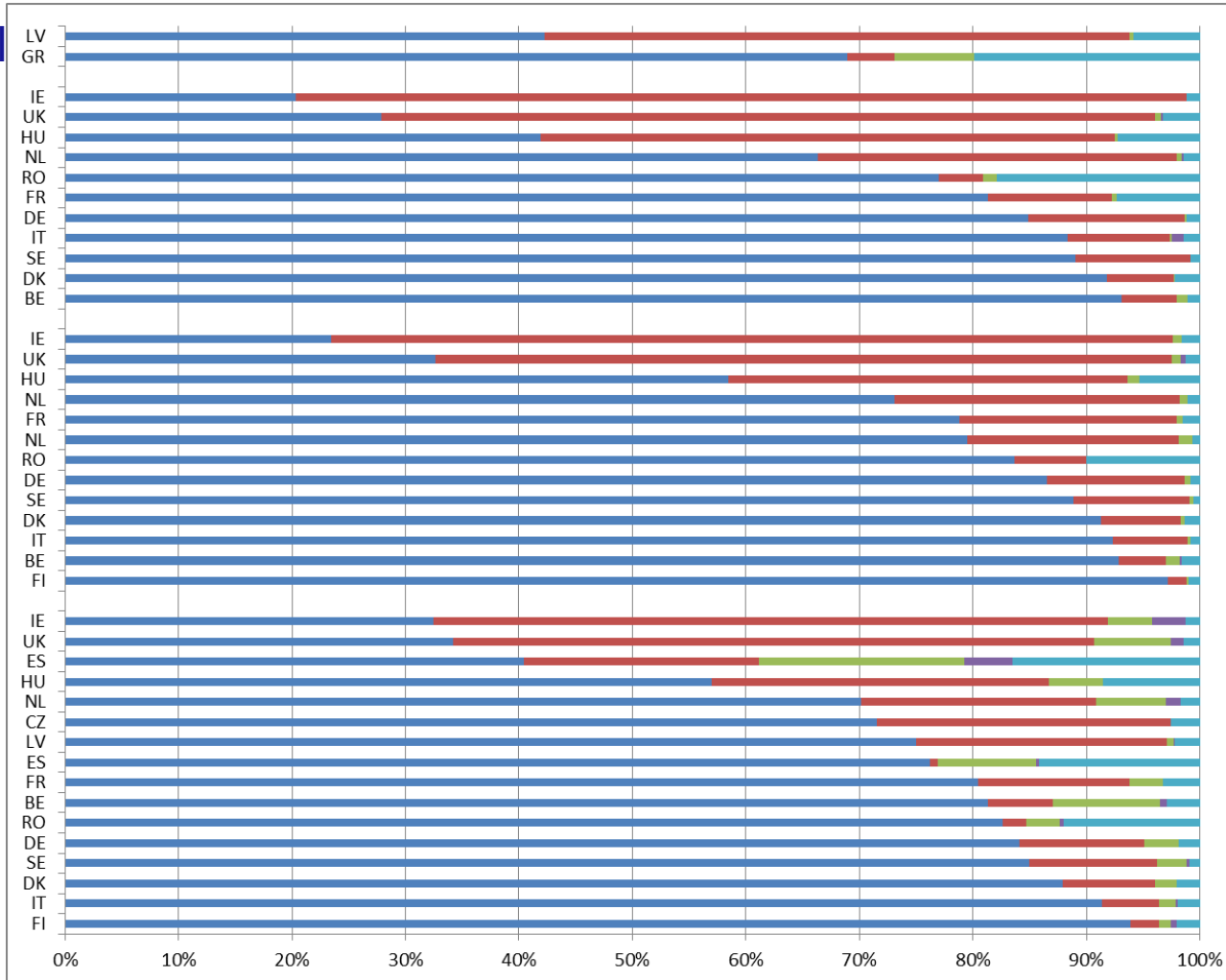


Special

Very elderly

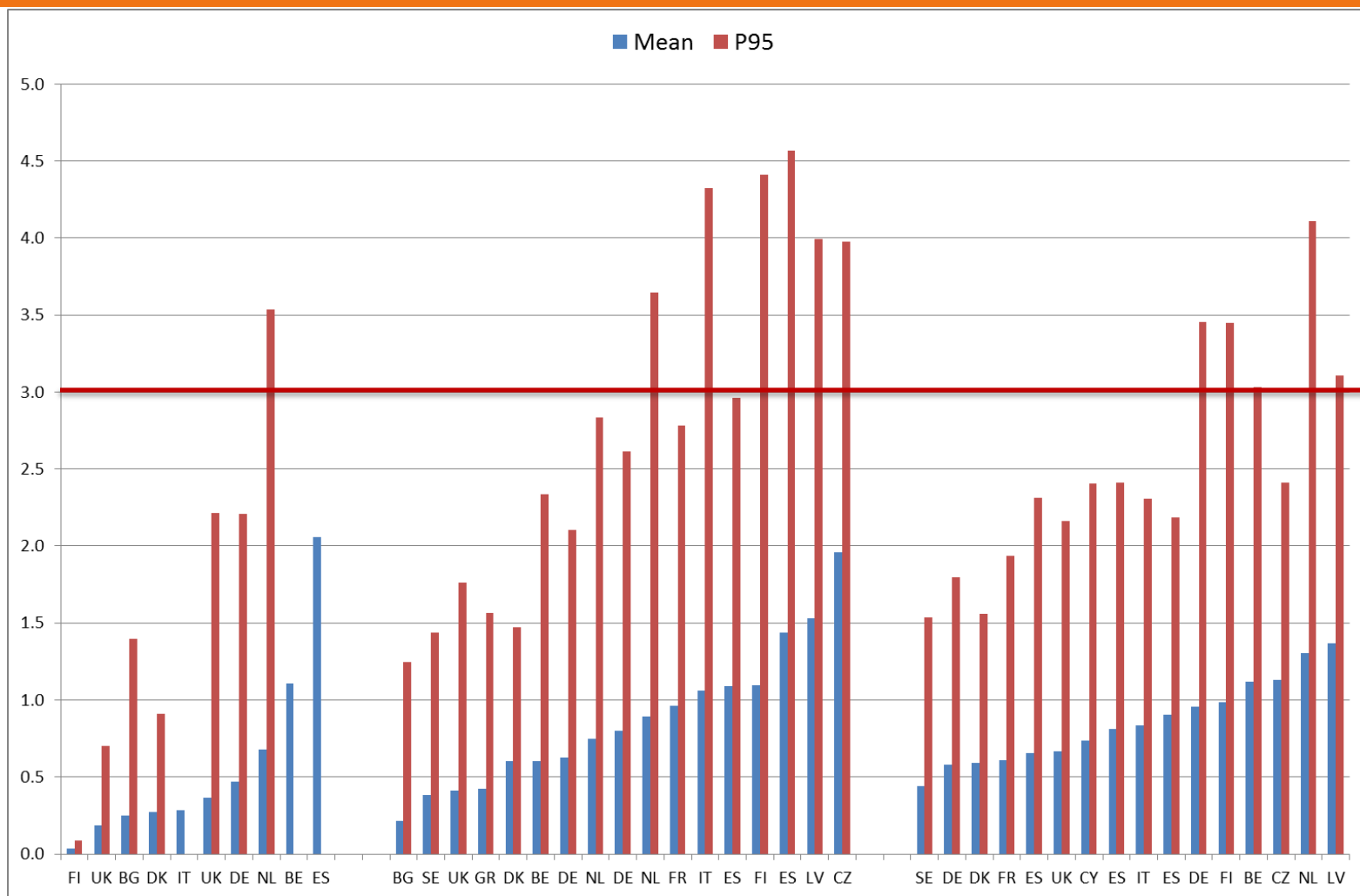
Elderly

Adults



- Coffee
- Tea
- Cola beverages
- Energy drinks
- Chocolate

# CHILDREN – INTAKE PER KG BODY WEIGHT PER DAY

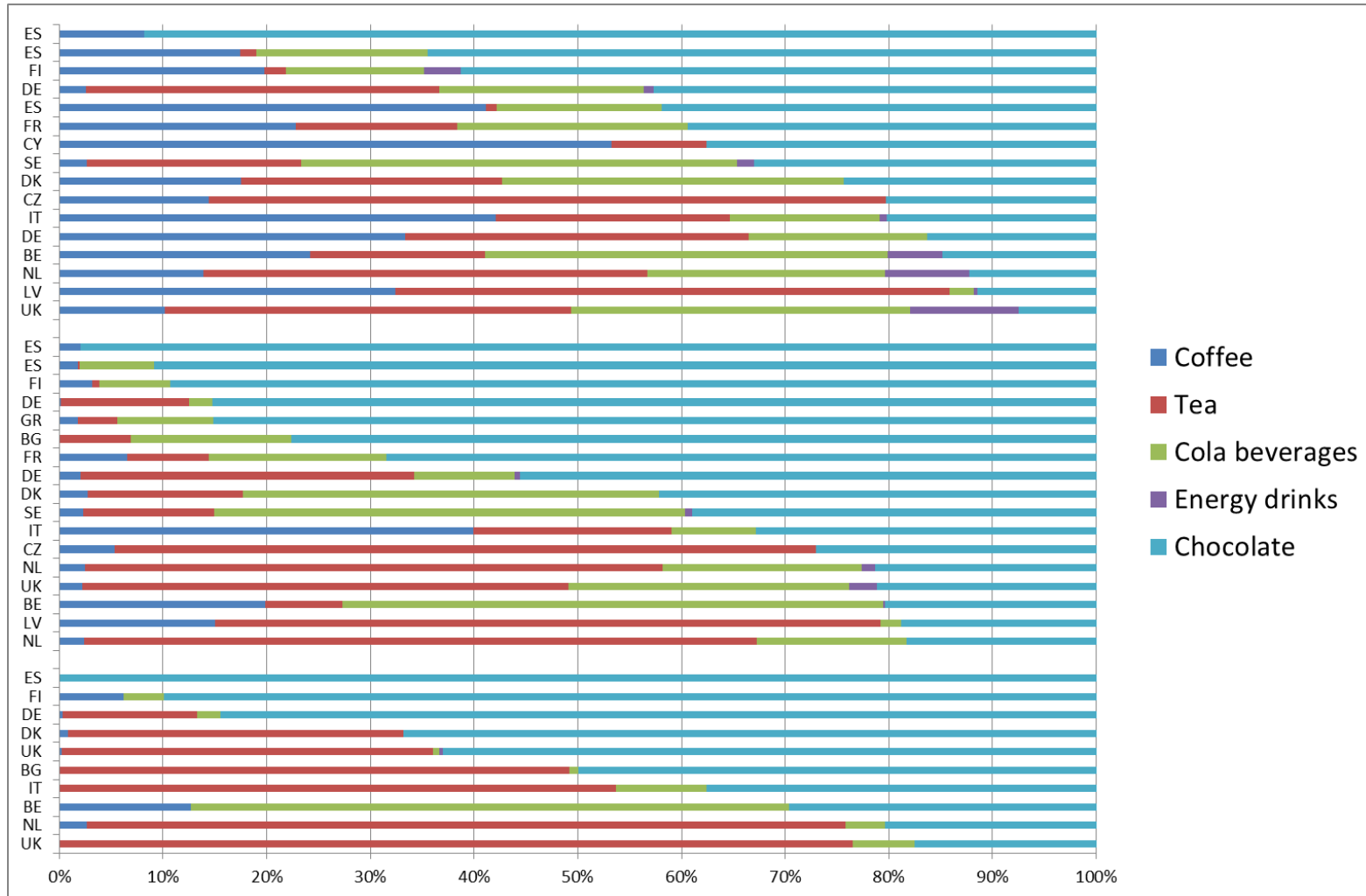


Daily caffeine intake in mg/kg body weight per day

# CHILDREN - SOURCES



Other children  
 Adolescents  
 Toddlers



## FINAL MESSAGE

- Precision in estimate requires accuracy in inputs
- Less accuracy requires conservative estimates





# Thank you!



Questions:  
Davide Arcella  
[davide.arcella@efsa.europa.eu](mailto:davide.arcella@efsa.europa.eu)