



Food consumption database and *EU Menu* proposal

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What's on the menu in Europe?

A harmonised pan-European food consumption survey



Building the case for and understanding of the need for the *EU Menu* project

Basic premise

- Foods consumed should not cause harmful effects to human health
- Need to know:

- | | |
|-----------------|---------------|
| – toxicity | toxicologists |
| – concentration | chemists |
| – consumption | nutritionists |

*Chemical
Occurrence*



Exposure
Assessment



*Food
Consumption*

What we do

- Data collection system



- Chemical occurrence data



- Food consumption data



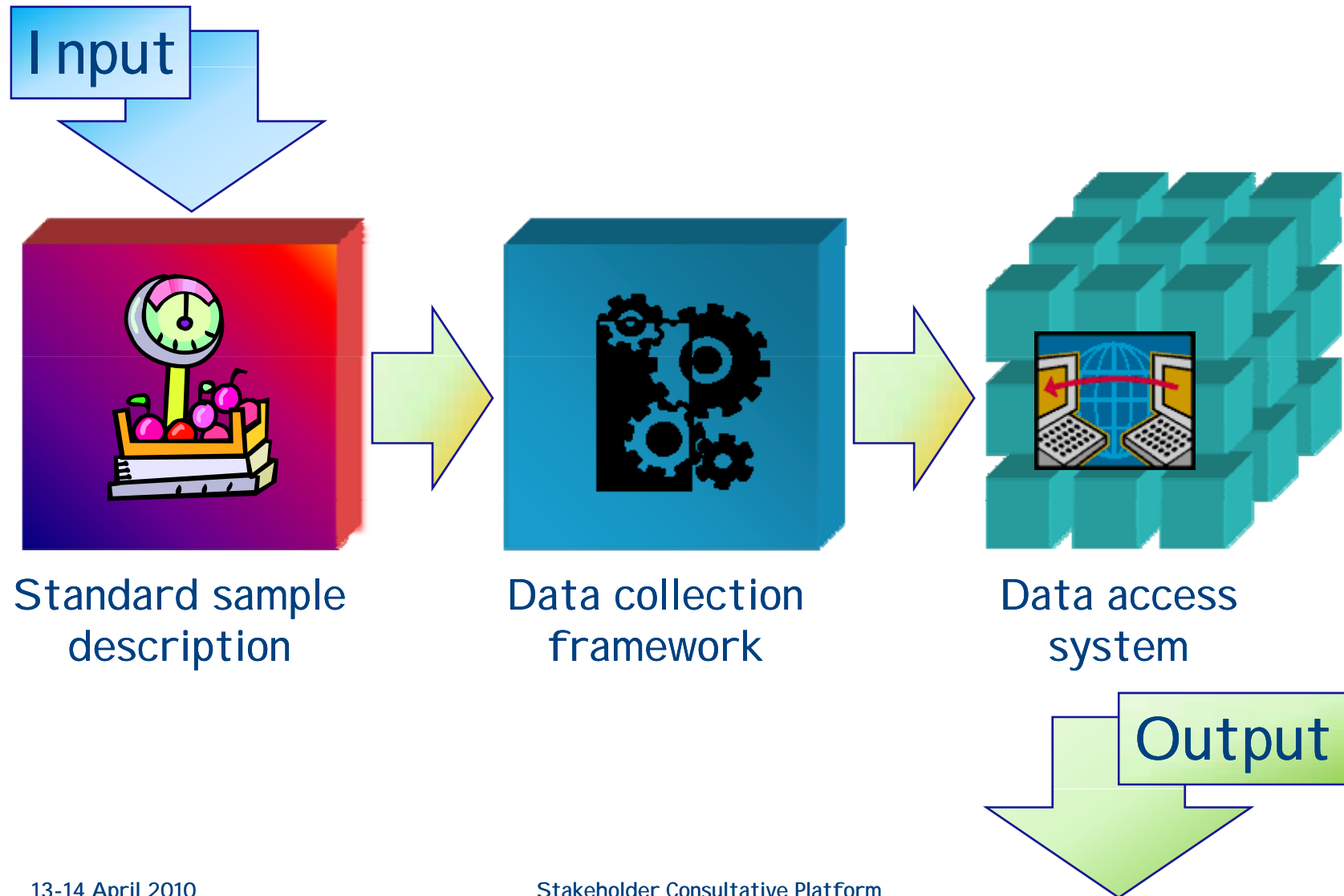
- Food classification



- Exposure assessment



Data collection system

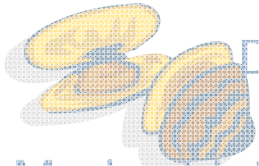


Chemical occurrence data

Acrylamide



Cadmium



Dioxin

Marine biotoxins



Ethyl carbamate

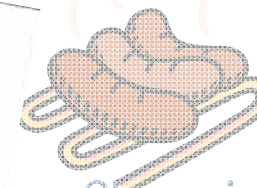


Aflatoxin

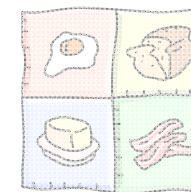
Furan

Brominated flame retardants

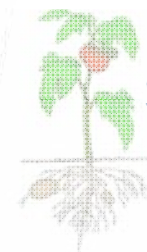
Smoke flavouring



Chromium



PAH

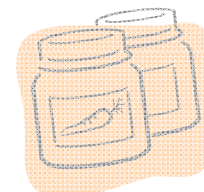


Selenium

Lead



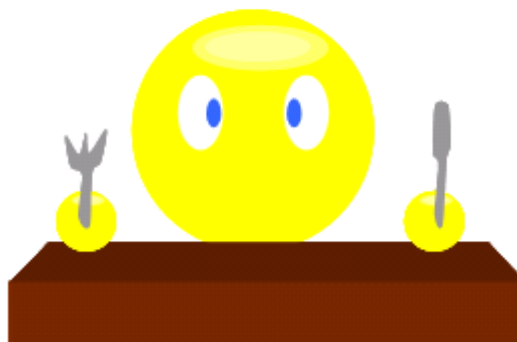
Vitamin A



Arsenic

- *Environment contaminants*
- *Process contaminants*
- *Additives*
- *Nutrients*
- *Veterinary drug residues*

Food consumption data

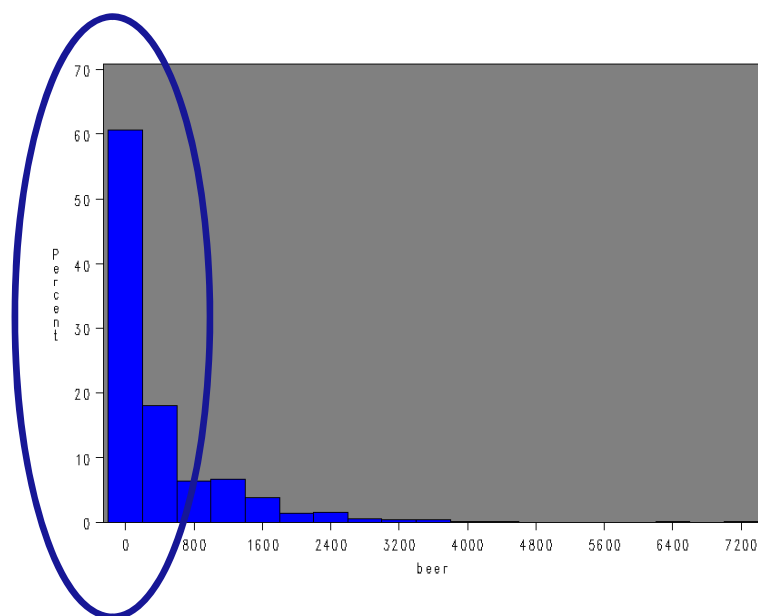


Food classification

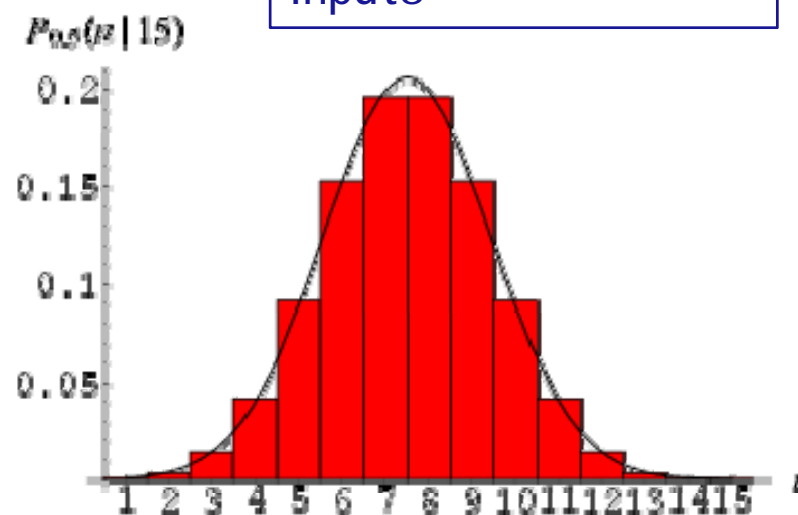


Consumption food descriptions must match with occurrence food descriptions

Calculating exposure

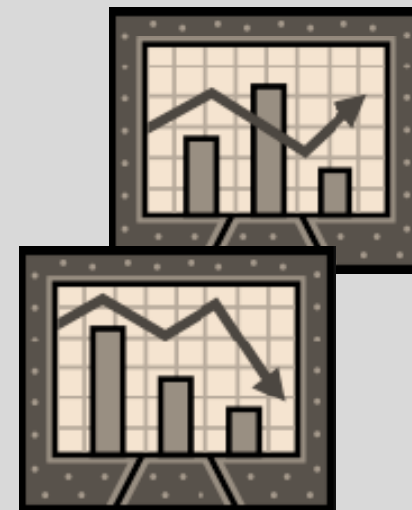


Precision in estimate
requires accuracy in
inputs



Less accuracy requires conservative estimates

- Extrapolation uncertainty
 - Extrapolation from food production or food purchase volumes to food consumption
- Measurement uncertainties
 - Too short survey periods, low analytical sensitivity (LOD)
- Sampling uncertainty
 - Response rate, seasonality, sampling bias
- Model structure uncertainties
 - Food aggregation, food equivalence



Food consumption

How to provide certainty?



Estimating food consumption



World Health Organization
GEMS/Food Cluster Diets



Per capita food
production/purchase
as proxy for **mean**
consumption only

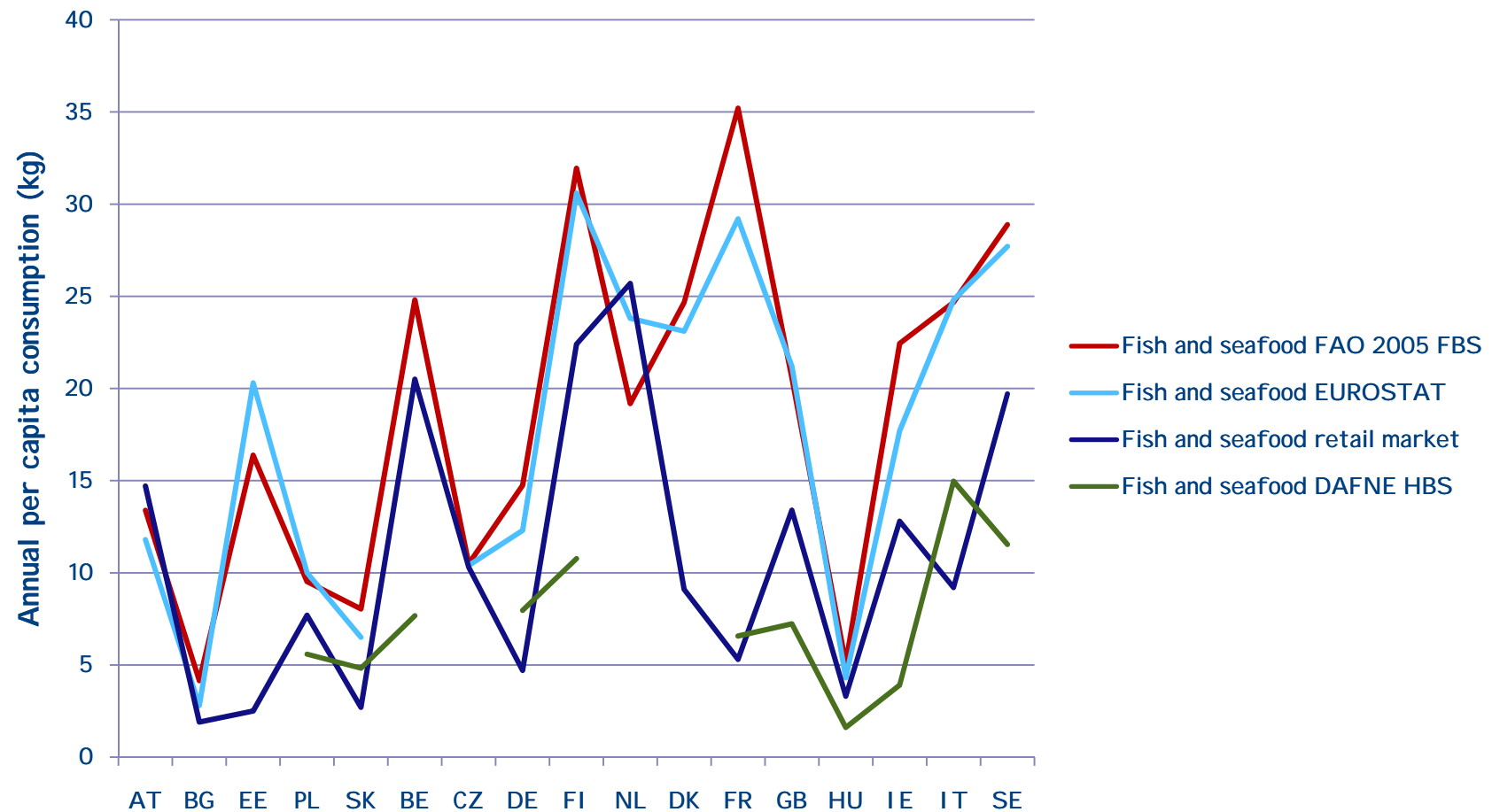
We need accurate
food consumption
information for **mean**
and **high** consumers



Pan-European database
efsa

Market information

Per capita fish and seafood market



Needs assessment



Consumption data

Representative for EU
Capturing regional differences
Acute and chronic exposure



Vulnerable groups

Special diets
Pregnant women
Children



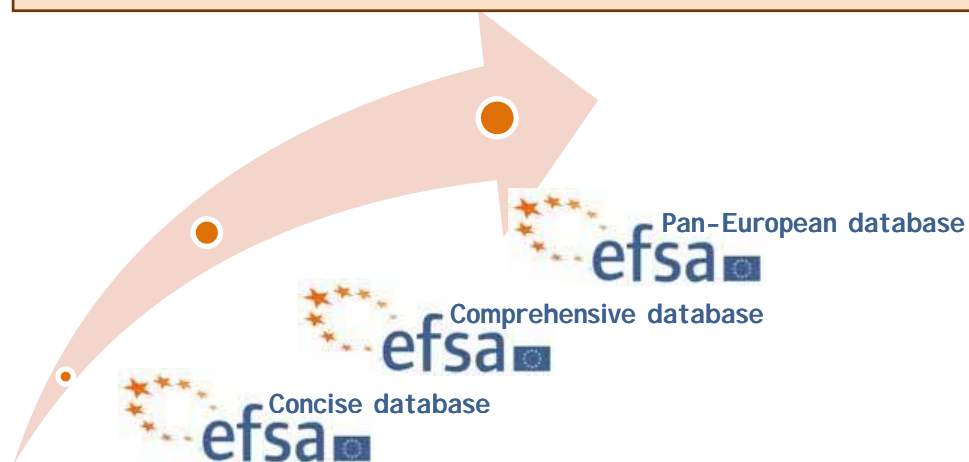
High consumers

Ethnic diets
Big eaters
"Unusual habits"

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”



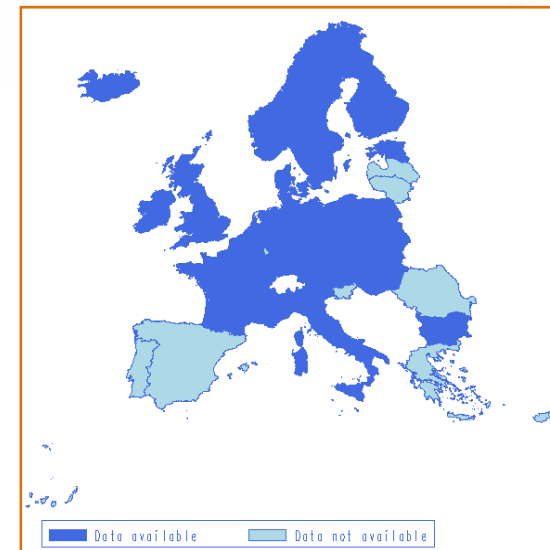
First step

Towards the concise database



Concise database

- The Concise European Food Consumption Database:
 - currently contains data from **19 European countries**
 - provides data in a limited number of **15 only main food categories** (+13 sub-categories)
 - is intended to be used as a **screening tool** for preliminary exposure assessments
 - summary statistics published on the EFSA website **January 2008**



Concise European Food Consumption Database

Exposure assessment is a key part of the risk assessment process. The quality of available data - both on food consumption and on occurrence levels - can have a major impact on the outcome of risk assessment. Food consumption data from dietary surveys are available in a variety of European countries. However, data obtained at national level often cannot be compared directly due to different survey methodologies, food categorisation systems, etc. To overcome this, EFSA has developed the "Concise European Food Consumption Database".

The concise database gathers data on average daily consumption of foods per person sourced from the Member States. It comprises 15 broad categories (e.g. milk and dairy-based products) and 23 sub-categories (e.g. cheese). The objective of the concise database is to provide a valuable tool supporting risk assessment for EFSA, its Scientific Panels, and potentially to other countries in Member States, to help carry out preliminary exposure assessments. It will serve as a starting point for EFSA to develop a more comprehensive database with information on more refined food categories and specific population groups (e.g. children).

The database was set up with the involvement of the EFSA Expert group on food consumption data, a network currently composed of members representing EU and neighbouring countries. The group coordinated the collection and formatting of national data and transfer to EFSA. It is also responsible for discussing the requirements for the concise comprehensive database.

The need for such data at European level was noted at the colloquium on "European Food Consumption Database - Current and medium to long term strategies" organised by EFSA in Brussels in April 2005. The full report of this colloquium is available in Annex 1.

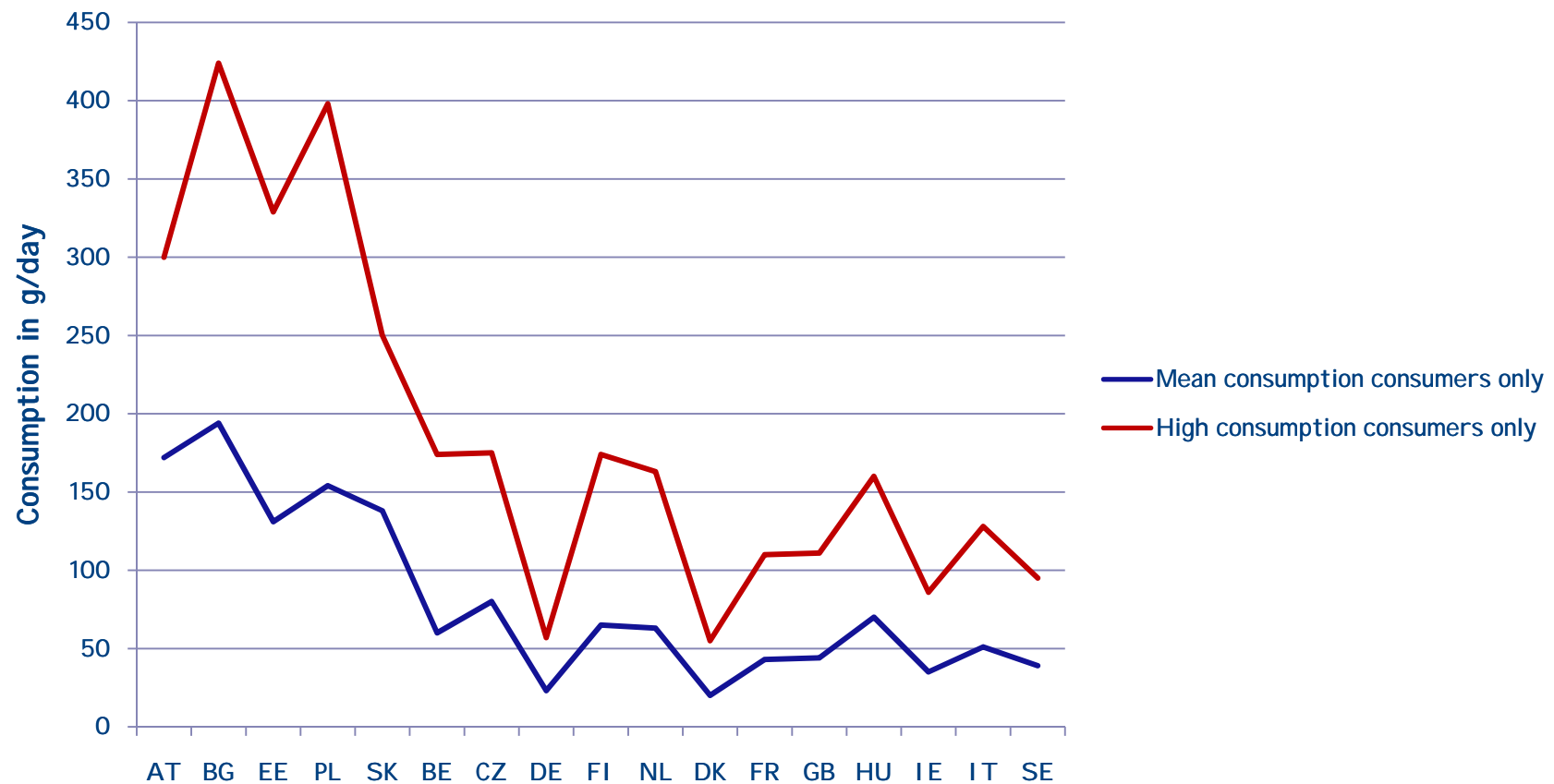
Summary Statistics

Food consumption data are collected at country level, according to both broad categories and sub-categories. Moreover, summary statistics are calculated at the total population as well as for consumers only. The available data, together with information on the dietary surveys used as sources, are presented in the following list:

Country	Category	Sub-category
Austria	Dairy products	Other dairy products
Belgium	Dairy products	Other dairy products
Denmark	Dairy products	Other dairy products
France	Dairy products	Other dairy products
Germany	Dairy products	Other dairy products
Greece	Dairy products	Other dairy products
Ireland	Dairy products	Other dairy products
Italy	Dairy products	Other dairy products
Latvia	Dairy products	Other dairy products
Lithuania	Dairy products	Other dairy products
Malta	Dairy products	Other dairy products
Netherlands	Dairy products	Other dairy products
Poland	Dairy products	Other dairy products
Portugal	Dairy products	Other dairy products
Romania	Dairy products	Other dairy products
Slovakia	Dairy products	Other dairy products
Slovenia	Dairy products	Other dairy products
Spain	Dairy products	Other dairy products
Sweden	Dairy products	Other dairy products
United Kingdom	Dairy products	Other dairy products

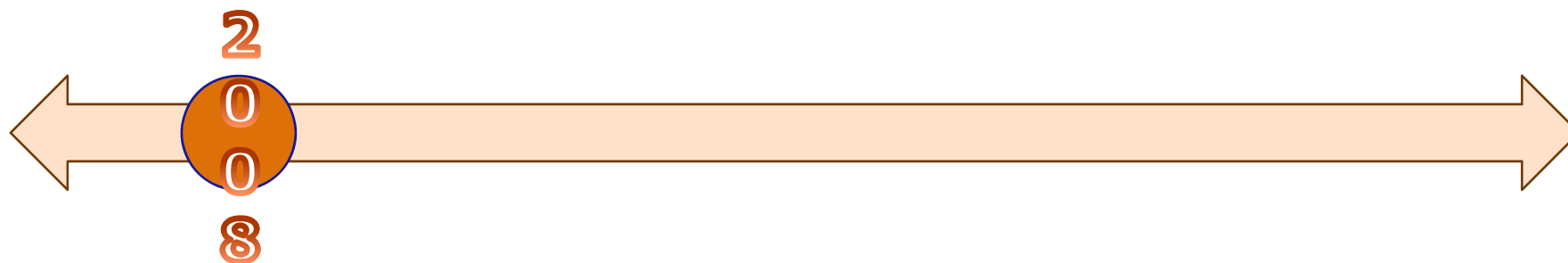
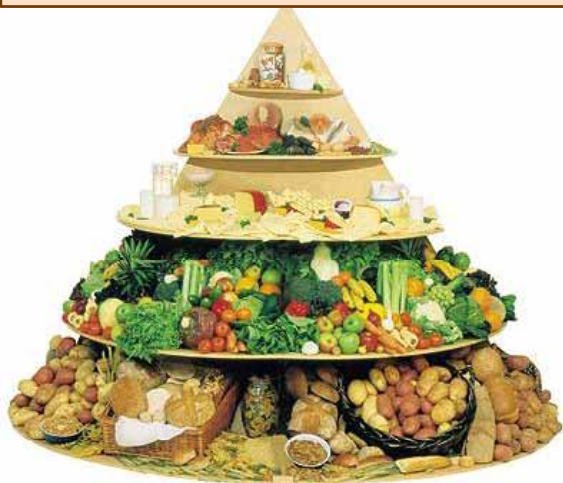
Mean vs. high consumers

Fish and seafood consumption



Timeline 1

Broad categories, not
covering children, not
harmonised, no FFQ



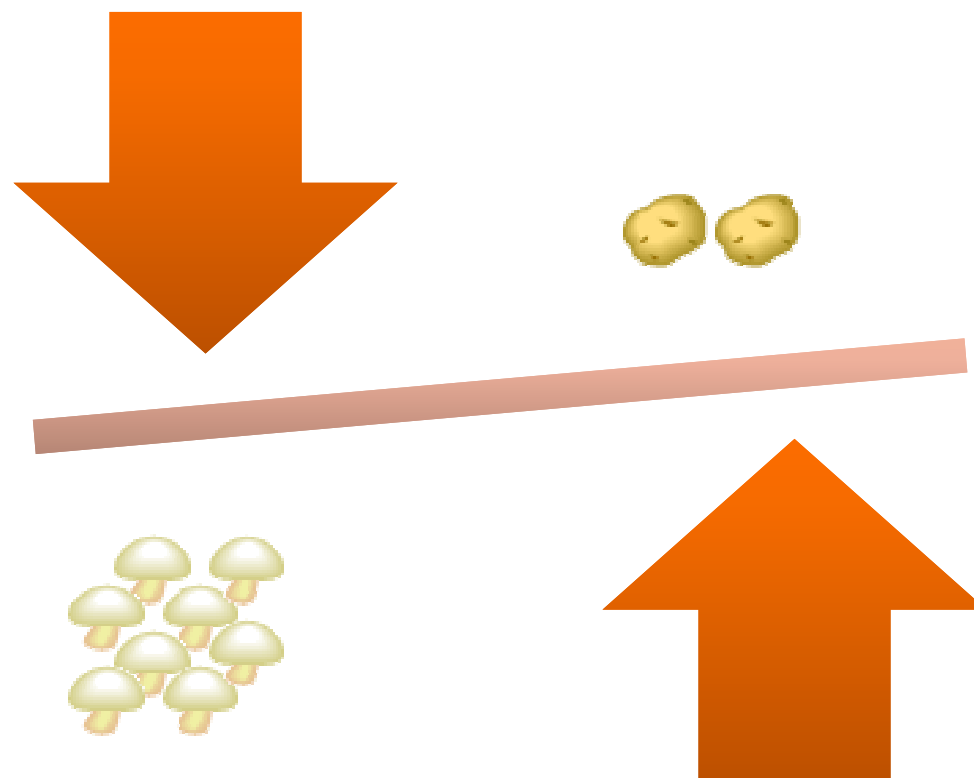
Vegetables

In Concise database

Not in concise database

Category	Sub-category	Groups
04. Vegetables, nuts, pulses	04A. Vegetable soups	Brassica vegetables Dried vegetables Fresh herbs Fungi Leafy vegetables Nuts Oilseeds Other vegetables and vegetable products Pulses (legumes) Root vegetables Stem vegetables
	04B. Vegetables, nuts, pulses except vegetable soups	

Weighting of results



The second step

Towards the comprehensive database

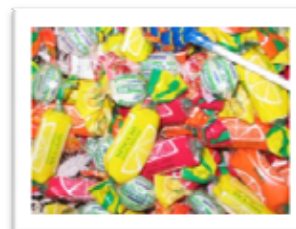


Comprehensive database adults

- Competent organisations in 20 Member States delivered:
 - the most recent data within the country
 - representative consumption at national level for the adult population
 - at detailed individual level by means of a 24 hour recall or dietary record



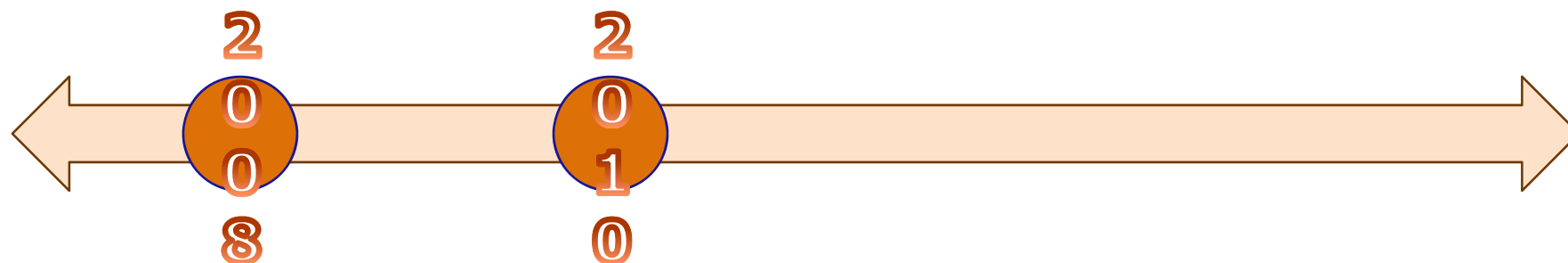
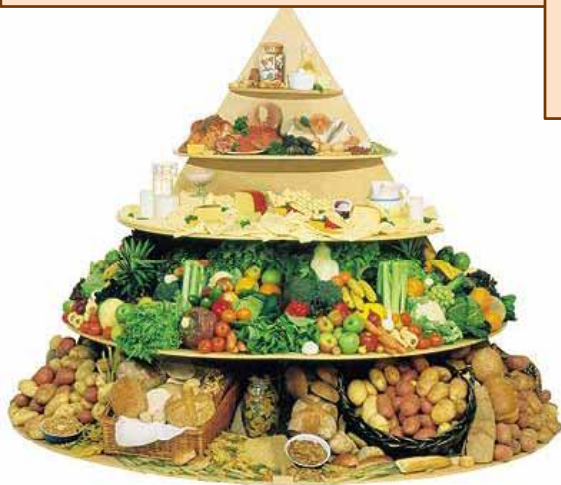
- Competent organisations in 12 Member States deliver:
 - the most recent data within the country
 - representative consumption at national level for children
 - at detailed individual level by means of a 24 hour recall or dietary record



Timeline 2

Broad categories, not covering children, not harmonised, no FFQ

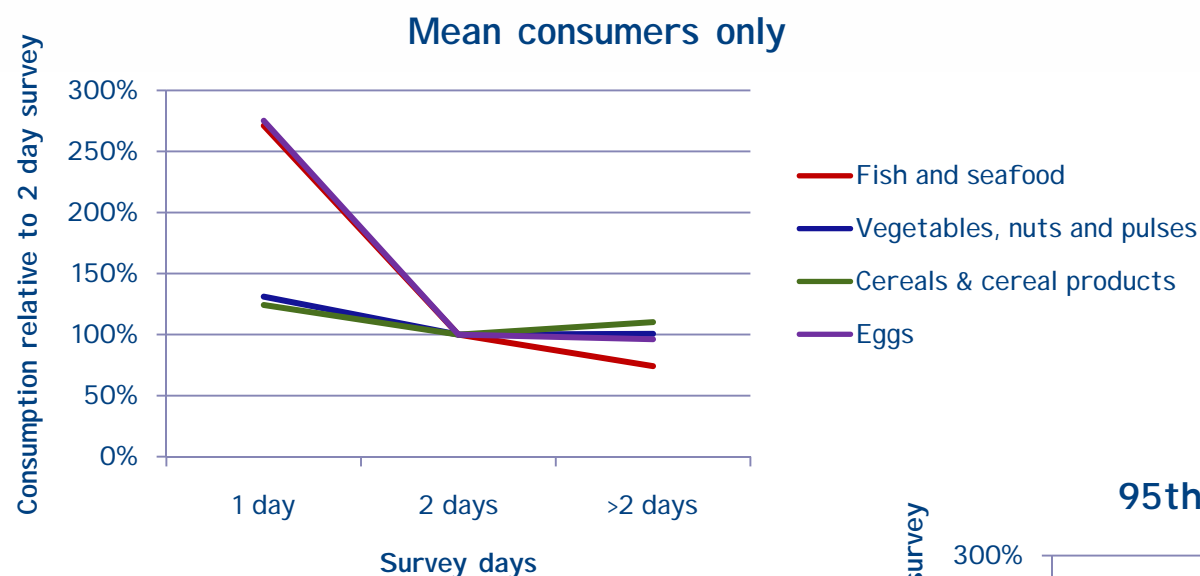
Detailed categories, partly covering children, not harmonised, no FFQ



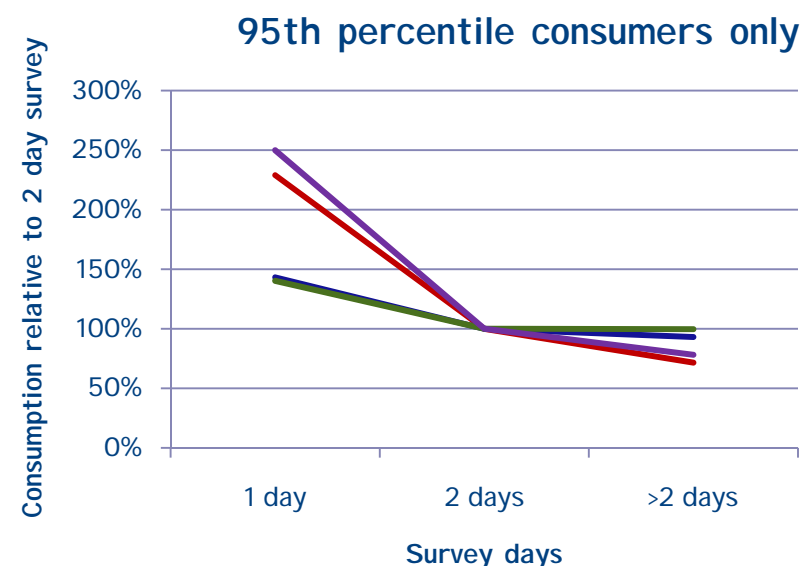
Different interview methods

- Covering respectively periods in 1997 to 2009
- 24 hour dietary recall one time
 - Austria, Bulgaria, Estonia, Poland, Slovakia, Slovenia
- 24 hour dietary recall two times
 - Belgium, Bulgaria I I , Czech Republic, Finland, Germany, Latvia, the Netherlands, Spain I I
- Food record
 - Hungary (3d), Italy (3d), Spain (3d), Denmark (7d), France (7d), Ireland (7d), Sweden (7d), UK (7d)

Impact of survey days

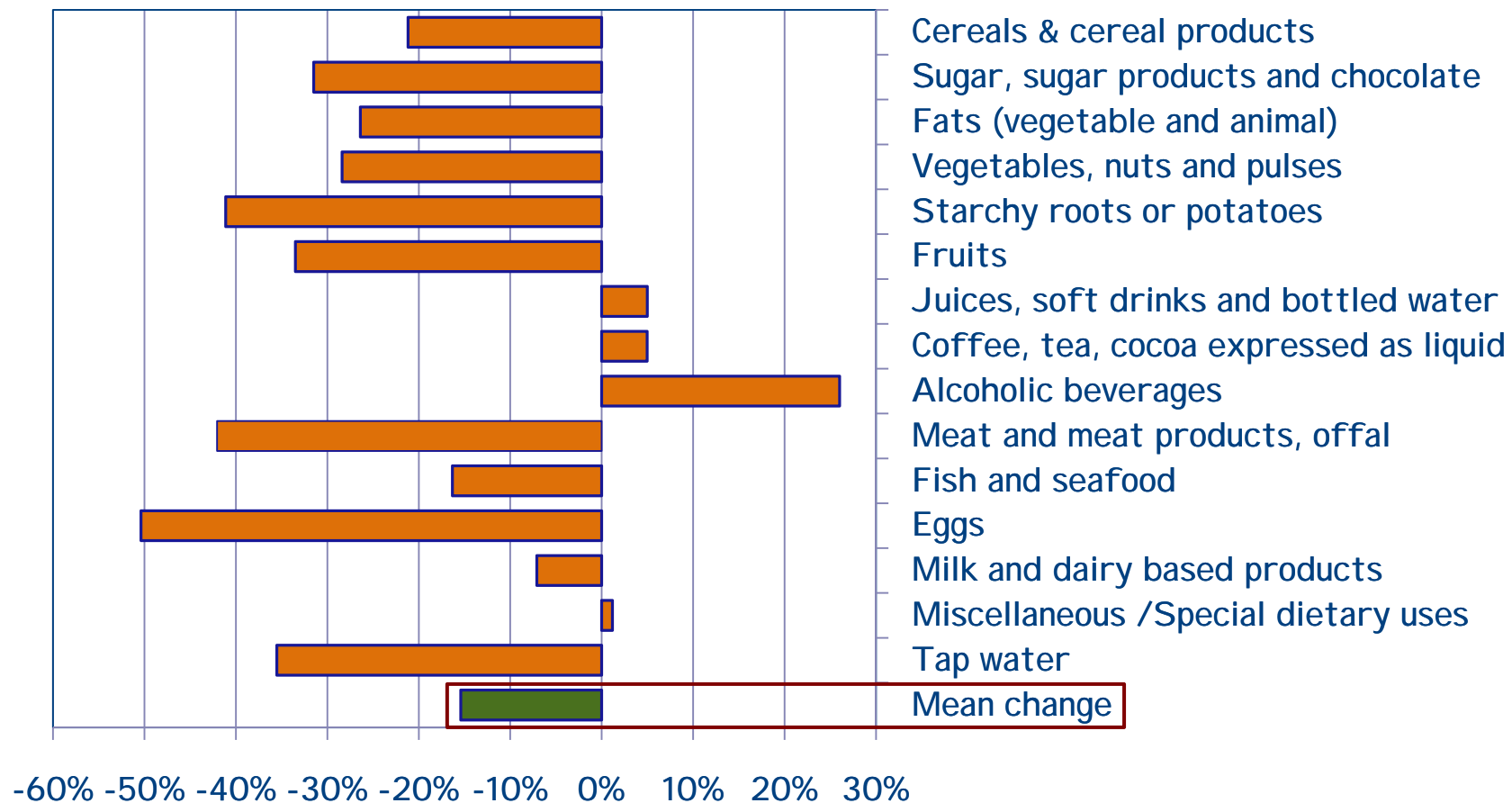


Still a challenge to extrapolate from short term consumption measurements to long term consumption particularly for high consumers

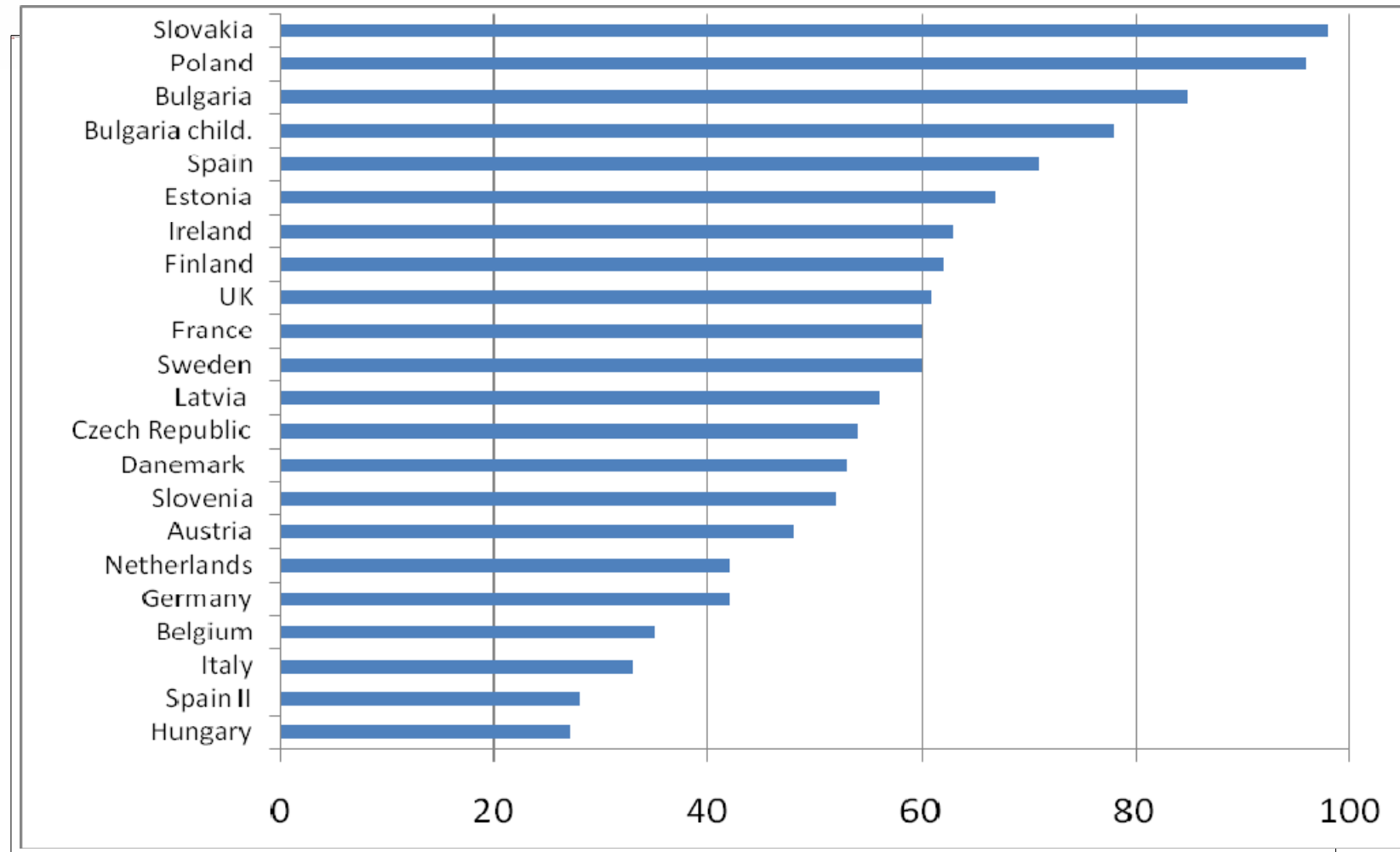


Survey length impact

Impact of >2 vs. 1 day consumption on lead exposure



Response rate (%)



The third step

How can we sharpen our tools?



Guideline issued



- Standardised methodology
- Sample selection
- Survey tool
- Recipe calculations
- Food frequency
- Data validation
- Data interpolation

First draft circulated for comments in September 2009,
discussed and endorsed by the Expert group on food
consumption in October 2009 and published December 2009

The first harmonised pan-European food consumption survey

- Create collaborative MS consortium
- Link up with interested external partners
- Present project plan, time line and budget
- Organise internal and external funding
- Finalise pilot projects
- Collect representative food consumption data over all four seasons

The details

Activity completed by	2010	2011	2012	2013	2014	2015	2016	2017
Project preparation								
Dietary survey in 5-7 countries								
Dietary survey in 5-7 countries								
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Dietary survey in 5-7 countries								
Dietary survey in 5-7 countries								

Countries selected in:

- different geographical areas to immediately have a good coverage of consumption patterns across Europe (macro areas to be identified)
- children and adults

Collaborating organisations

Country	Organisation
Austria	University of Vienna, Department of Nutritional Sciences
Belgium	Institute of Public Health
Bulgaria	National Centre of Public Health Protection
Cyprus	State General Laboratory
Czech Republic	National Institute of Public Health
Denmark	Department of Nutrition – Danish National Food Institute
Estonia	National Institute for Health Development
Finland	National Institute for Health and Welfare
France	Afssa - French Food Safety Authority
Germany	Max Rubner Institute
Greece	Hellenic Food Authority
Hungary	Hungarian Food Safety Office
Ireland	Food Safety Authority of Ireland
Italy	National Research Institute for Food and Nutrition
Latvia	Food Centre of Food and Veterinary Service
Lithuania	National Nutritional Centre
Luxembourg	OSQA – Food Security and Quality Office
Malta	Malta Standards Authority
Poland	National Food and Nutrition Institute
Portugal	National Health Institute
Romania	National Sanitary Veterinary and Food Safety Authority
Slovak Republic	Ministry of Agriculture of Slovak Republic
Slovenia	National Institute of Public Health of Slovenia
Spain	University Computense de Madrid
Sweden	Swedish National Food Administration - Nutrition Division
The Netherlands	National Institute of Public Health and the Environment (RIVM)
United Kingdom	Food Standards Agency

Sampling plan

Member States	Total population	Regions	Infants		Toddlers		Other children		Adolescents		Adults		Elderly		Pregnant women	Total
			Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female		
Malta	413 609	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Luxembourg	493 500	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Cyprus	796 875	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Estonia	1 340 415	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Slovenia	2 032 862	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Latvia	2 261 274	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Lithuania	3 349 872	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Ireland	4 450 014	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Finland	5 326 314	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Slovakia	5 412 254	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Denmark	5 511 451	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Bulgaria	7 606 551	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Austria	8 355 260	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Sweden	9 256 347	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Hungary	10 030 975	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Czech Republic	10 467 542	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Portugal	10 627 250	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Belgium	10 750 000	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Greece	11 260 402	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Netherlands	16 485 787	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Romania	21 498 616	1	154	154	154	154	154	154	154	154	154	154	154	154	154	2 000
Poland	38 135 876	2	308	308	308	308	308	308	308	308	308	308	308	308	308	4 000
Spain	45 828 172	2	308	308	308	308	308	308	308	308	308	308	308	308	308	4 000
Italy	60 045 068	3	462	462	462	462	462	462	462	462	462	462	462	462	462	6 000
United Kingdom	61 634 599	3	462	462	462	462	462	462	462	462	462	462	462	462	462	6 000
France	64 350 759	3	462	462	462	462	462	462	462	462	462	462	462	462	462	6 000
Germany	82 002 356	4	615	615	615	615	615	615	615	615	615	615	615	615	615	8 000
Total	499 723 520		5 846	5 846	5 846	5 846	5 846	5 846	5 846	5 846	5 846	5 846	5 846	5 846	5 846	76 000

• Age and gender distribution

• Population-based sampling

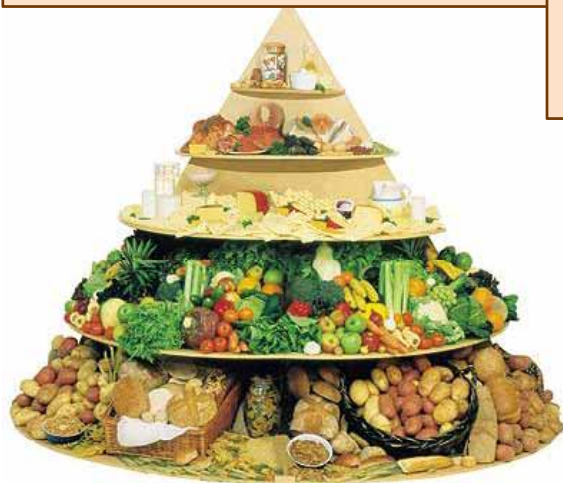
In short ...

- Survey of 50,000-80,000 people in total
- In 27 Member States if possible
- Using the EPI Csoft software that has been developed and tested through the EU funded projects EFCOSUM and EFCOVAL
- Timeframe ~8 years



Timeline 3

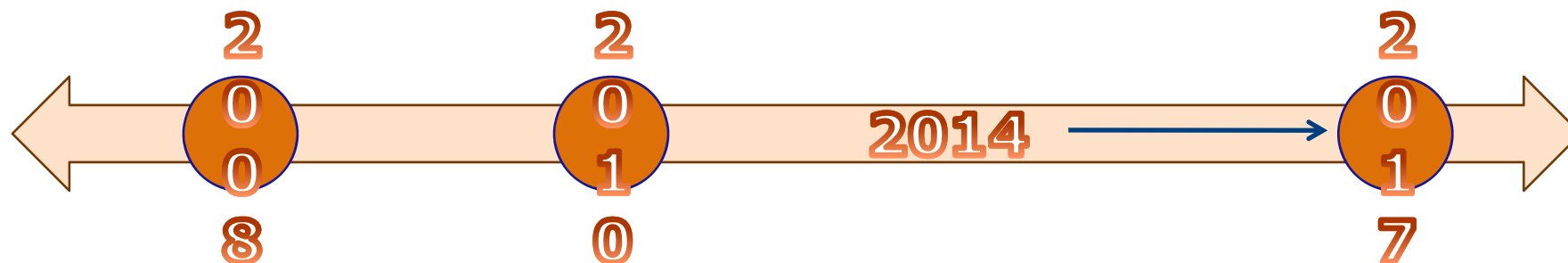
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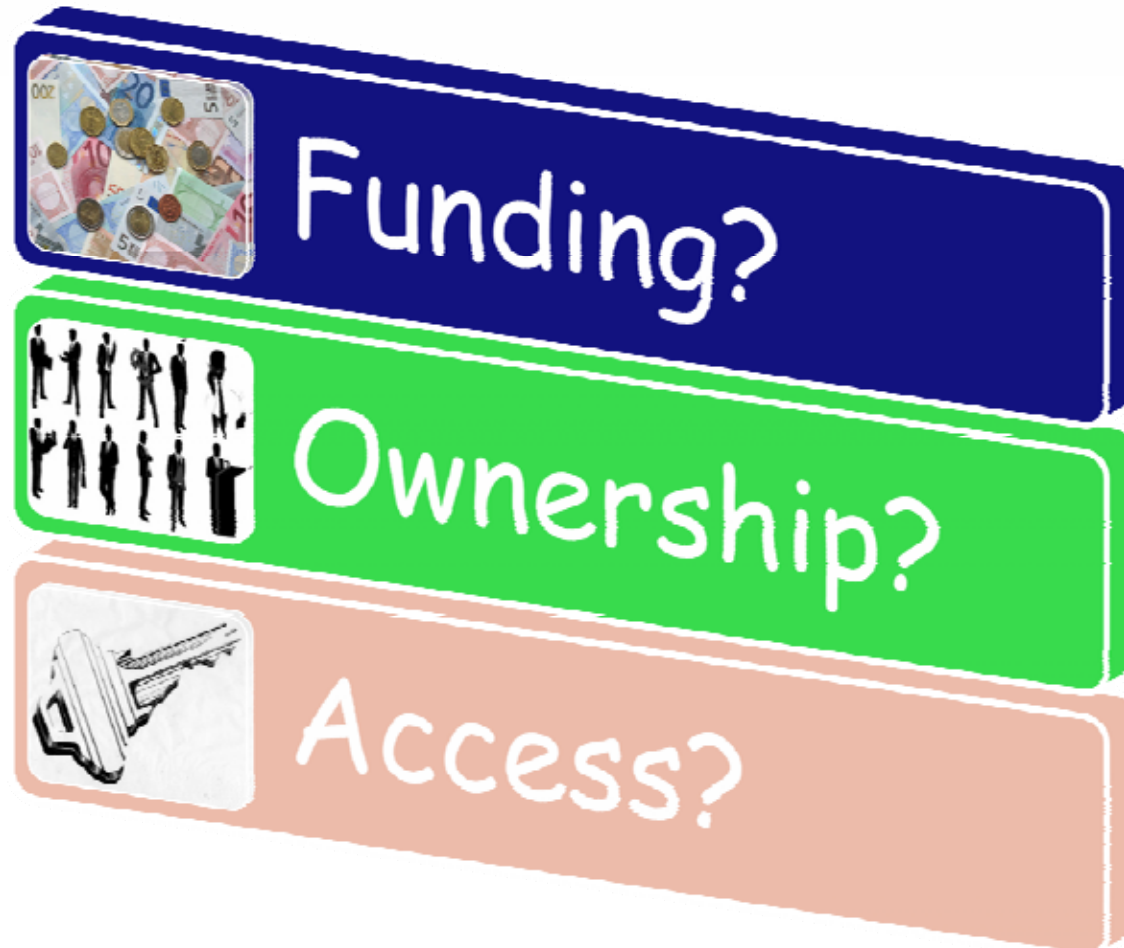
Detailed categories, partly covering children, not harmonised, no FFQ



Detailed categories, covering children, harmonised including FFQ



Still to resolve



What's on the Menu in Europe?



- Improving the accuracy of food safety risk assessments and thus limiting conservative assumptions has the potential of reducing compliance costs for the food industry while still providing full protection to the consumer – **a win/win situation**
- Knowing more about what we eat can provide the basis for long-term health policies to curb escalating hospitalisation costs for treating lifestyle diseases

Thank you

Cooperation with Member States



Harmonised approach