WORKSHOP
A Harmonised Approach to European Total Diet Studies
Food Sampling: Food Products Collection

Aida Turrini (CREA-FOOD AND NUTRITION)

Brussels. 8th October 2015

The food shopping list

A detailed list of food products to be purchased by food item and that will form a representative sample of the total diet in a specific population group according to the TDS Food List. The food shopping list should indicate, as appropriate, type, variety, brand, number of items, and amount in grams, places, time, frequency, and seasonality, (Report <u>European TDS Vocabulary)</u>

1) Characterizing the TDS food list

Background information:

- Food consumption data (food supply – food balance sheets FBS, household food availability – household budget survey HBS, food intake – individual dietary survey IDS)

- Food monitoring programmes

- Warning systems (R.A.S.F.F.)

- Country specific characteristics: regions, climate and seasons, relevant geographical and socio-economic anthropic strata

- Statistics on access to food: trade, retailing system, catering system

- Ancillary data:

  food: food safety regulation, food products databases/market share, recipes and preparation methods database

  consumer: food style surveys including consumer's choice (propensity) and food procurement habits

1) Characterizing the TDS food list

Procedures:

- desk analysis for identifying the reference diet for the selected population group,

- applying EFSA criteria to select representative food items (90% of the diet, >5% consumer rate)

- including relevant food items excluded at quantitative level, but considered important for the targeted substances and/or population groups

Tools:

- Generalised core food list (FoodEX2 1st-4th level), possible automated food selection

Main steps

2) Sampling plan

Which (food products - variety/branded food by food category, food group)

Where (region, type of shop/deliver)

When purchasing (season)

2) Sampling plan

Background information:

- Relevant strata
- Retailing system
- Market share
- Food list evidencing common/local food products; fresh/processed; variation by age-gender/population/stratum specific

Procedures:

- Shops/deliverers selection (extraction from inherent databases, random walking, GDO/small shops)

Tools:

- Shopping list: food category, amount to purchase by relevant parameters (which, where, when), variety (fresh food)/brand(processed food)

tds ▶ exposure

Main steps

3) Food products collection

Purchasing food products

Shopping bag/market basket

Transportation

Storage

Recording information

3) Food products collection

Background information:
- Sampling plan
- Food list and ancillary information

Procedures:
- Criteria to select food products within the shop

Tools:
- Letter of presentation
- Devices (cooler bags; photographic machine)
- Criteria for in shop selection
- Food form to record information on purchased food products (obligatory, recommended, and voluntary information)
- Data entry software and hardware

Options

Different options can be considered in each step:

- Type of food consumption data (IDS, HBS, FBS, other surveys) (step 1)
- Methods of shops selection (e.g., using information on food habits, building/using existing datasets, random walking)
- Methods of food products selection (e.g., market share based, shelf based, reasoned/random)

The solution adopted in a certain step will influence the subsequent one(s). The most important aspect is to take accurate notes using the prepared checklists including the possible options and the amount per type of food category.

Bread (unpacked) intake (g/day/per-capita)

	Age class (years)	n	Mean	Standard deviation	Median/P50	P95	P99	cons-umers	consumer rate %
FEMALES	Infants and toddlers (0-2 years)	23	19	29	0	78	86	8	35%
	Children (3-9 years)	99	70	56	59	166	240	88	89%
	Adolescents (10-17 years)	139	85	64	75	206	240	126	91%
	Adults (18-64 years)	1245	86	63	75	210	260	1134	91%
	Elderly (65-97 years)	316	**102**	74	90	240	315	292	92%
	TOTAL	*1822*	*87*	*66*	*75*	*210*	*270*	*1648*	*90%*
MALES	Infants and toddlers (0-2 years)	29	17	29	0	90	95	13	45%
	Children (3-9 years)	94	77	65	62	185	295	84	89%
	Adolescents (10-17 years)	108	121	81	113	280	370	105	97%
	Adults (18-64 years)	1068	**127**	85	115	285	375	1015	95%
	Elderly (65-97 years)	202	**138**	91	120	299	448	195	97%
	TOTAL	*1501*	*123*	*86*	*110*	*280*	*375*	*1412*	*94%*
ALL	Infants and toddlers (0-2 years)	52	18	28	0	86	95	21	40%
	Children (3-9 years)	193	74	61	60	180	290	172	89%
	Adolescents (10-17 years)	247	101	74	88	230	330	231	94%
	Adults (18-64 years)	2313	105	77	91	248	335	2149	93%
	Elderly (65-97 years)	518	**116**	82	100	260	375	487	94%

Bread (unpacked) intake (g/kg body weight/day/per-capita)

	Age class (years)	n	Mean	Standard deviation	Median/P50	P95	P99
FEMALES	Infants and toddlers (0-2 years)	23	**1.64**	2.54	0.00	6.62	7.83
	Children (3-9 years)	99	**2.82**	2.39	2.48	7.50	13.00
	Adolescents (10-17 years)	139	**1.78**	1.36	1.60	4.11	6.60
	Adults (18-64 years)	1245	1.41	1.05	1.24	3.38	4.38
	Elderly (65-97 years)	316	**1.61**	1.19	1.44	3.92	4.85
	TOTAL	*1822*	*1.55*	*1.28*	*1.35*	*3.87*	*5.63*
MALES	Infants and toddlers (0-2 years)	29	1.32	2.19	0.00	7.04	7.88
	Children (3-9 years)	94	**3.09**	2.82	2.59	8.50	16.47
	Adolescents (10-17 years)	108	**2.21**	1.52	2.00	5.90	6.30
	Adults (18-64 years)	1068	1.64	1.12	1.49	3.73	5.18
	Elderly (65-97 years)	202	1.78	1.16	1.63	3.65	5.62
	TOTAL	*1501*	*1.79*	*1.40*	*1.56*	*4.09*	*6.25*
ALL	Infants and toddlers (0-2 years)	52	1.46	2.33	0.00	7.04	7.88
	Children (3-9 years)	193	**2.95**	2.60	2.50	7.63	13.18
	Adolescents (10-17 years)	247	**1.97**	1.44	1.75	4.80	6.60
	Adults (18-64 years)	2313	1.52	1.09	1.36	3.57	4.80
	Elderly (65-97 years)	518	**1.68**	1.18	1.52	3.84	5.17

Bread (unpacked) shopping places by geographical areas (North-West, North-East, Centre, South & Islands)

GEOGRAPHICAL AREA	1.traditional shop	2.supermarket	3.street market	4.bakery	5.organic shop	6.home delivery	n.r.
1.NORTH-WEST	73.8%	14.2%	0.0%	2.5%	0.0%	3.3%	6.3%
2.NORTH-EAST	79.7%	11.6%	0.0%	4.1%	0.4%	0.8%	3.3%
3.CENTRE	63.9%	22.7%	1.3%	1.7%	0.0%	2.5%	8.0%
4.SOUTH & ISLANDS	66.7%	14.1%	4.4%	8.5%	0.0%	0.0%	6.3%
Total	*70.7%*	*15.3%*	*1.7%*	*4.6%*	*0.1%*	*1.6%*	*6.0%*

Bread (packed) shopping places by geographical areas (North-West, North-East, Centre, South & Islands)

	1.traditional shop	2.supermarket	3.street market	4.bakery	5.organic shop	6.home delivery	n.r.
1.NORTH-WEST	2.2%	34.9%	0.0%	0.3%	0.3%	0.5%	61.9%
2.NORTH-EAST	4.1%	56.8%	0.0%	0.4%	0.4%	0.0%	38.2%
3.CENTRE	2.9%	37.4%	0.4%	0.0%	0.0%	0.8%	58.4%
4.SOUTH & ISLANDS	7.1%	33.3%	1.2%	0.5%	0.0%	0.0%	57.9%
Total	*4.3%*	*39.1%*	*0.5%*	*0.3%*	*0.2%*	*0.3%*	*55.4%*

Example: one food category in Italy

Bread – food products

http://www.inran.it/710/l_consumi_alimentari__INRAN-SCAI_2005-06.html

FRISELLA PANE	Bread, «frisella» type
PANE AL LATTE	Bread, milk dough
PANE ALL OLIO DIVERSE MISURE	Bread, oil dough
PANE AZIMO	Bread, unleavened
PANE BISCOTTATO APROTEICO	Toasted bread, protein free
PANE CARASAU SARDO	Bread, «carasau» type
PANE CON PATATE	Bread with potatoes in the dough
PANE DI FARRO	Spelt flour bread
PANE DI GRANO DURO	Durum wheat bread
PANE DI KAMUT	Kamut bread
PANE DI MAIS	Corn bread
PANE DI SEGALE	Rye bread
PANE DI SOIA	Soy flour bread
PANE INTEGRALE	Wholemeal bread
PANE PAN BRIOSCE NON FARCITO	Sandwich bread (packed)
PANE ROSETTA FARINA TIPO 00	Bread, 00 flour, type «rosetta»
PANE SCIAPO	Bread without salt
PANE SENZA GLUTINE	Bread, gluten free
PANE TIPO 0	Bread, 0 flour type
PANE TIPO 00	Bread, 00 flour type
PANE TIPO 1	Bread, 1 flour type

Mandatory information	Motivation	Notes
Sample code	To ensure the compliance with the specific food list	
FoodEX2 coding	Common classification system	Foodex 2 provides food group and subgroups until level 4, so it is not necessary
Identification of the food shop	Sample qualification for representativeness	It can be his is quite imput in the first "collection report" and copied and pasted in the following one. The important thing is that all sheets related to one shop are put together.
Date of collection	Self-explanatory	
Bar code for packed foods	A number of information are coded including country of import (the first two digits according to the GS1 software). This does not ensure the origin of ingredients but the import country where the food product is commercialised.	It is not completely reliable for all the details of a product, but to make faster the registration when shopping it allows for recognising the specific food. The shopper can fill in the rest of the form later, in a less hectic situation
Origin of the product	crucial element for the interpretation for possible contaminants (or different composition when talking about nutrients).	Not always available "UE/NON UE" is the notation currently used
Description of the food product	Food name on the shelf Food name on the package	
	Number of pieces, weight(s)	AS an example, when a medium is used the weights are total, and drained.

tds ▶ exposure

Recommended information	Motivation	Notes
Description of food characteristics	Classification can vary a lot from person to person even though in the same country, a good description makes easier to a) identify the right food code; b) to select the FACETS	Sometimes the writing style can be very limited. Also in this case a photo can help the subsequent recording
Description of the position in the shop	To select from the recommendations	A list of recommendation on how to select the food in the shop

Voluntary information	Motivation	Notes
Details about the composition of the food	Each food group/subgroup has characteristic to describe to identify aspects that can be considered in the laboratory analysis task (e.g., occurrence of fats, salt, etc.)	The more precise is the description the higher will be the possibility to get a correct interpretation of the results and to use those information for future study (e.g. rotation of brands, substitution of no more commercialised foods, etc.)

tds ▶ exposure

Testing an «evidence based» formulation for a generalised core food list
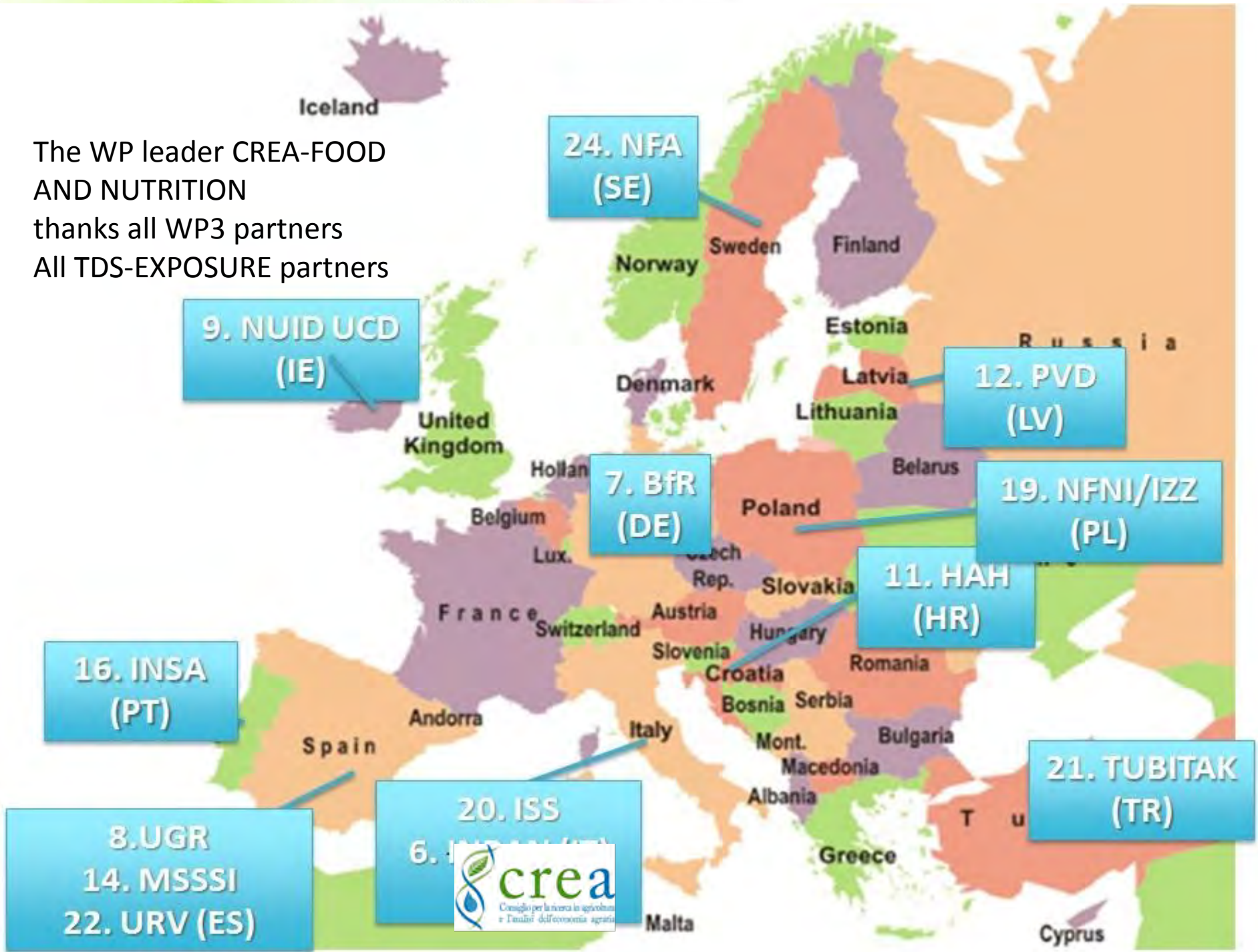
Literature: already formulated food list

Comprehensive database: reference diet

FoodEx 2: food coding system allowing for linking different items

Comparing the results with food monitoring and regulatory information

Discussing feasibility together with researcher performing pilot studies

The WP leader CREA-FOOD AND NUTRITION
thanks all WP3 partners
All TDS-EXPOSURE partners

24. NFA (SE)

9. NUID UCD (IE)

12. PVD (LV)

7. BfR (DE)

19. NFNI/IZZ (PL)

11. HAH (HR)

16. INSA (PT)

21. TUBITAK (TR)

8. UGR
14. MSSSI
22. URV (ES)

20. ISS
6. INRAN (IT)

tds ▶ exposure

THANKS FOR YOUR ATTENTION