CREA - Alimenti e Nutrizione

EuroFIR FOOD FORUM

Richfields Workshop on Dietary Assessment and Food Matching Tools,
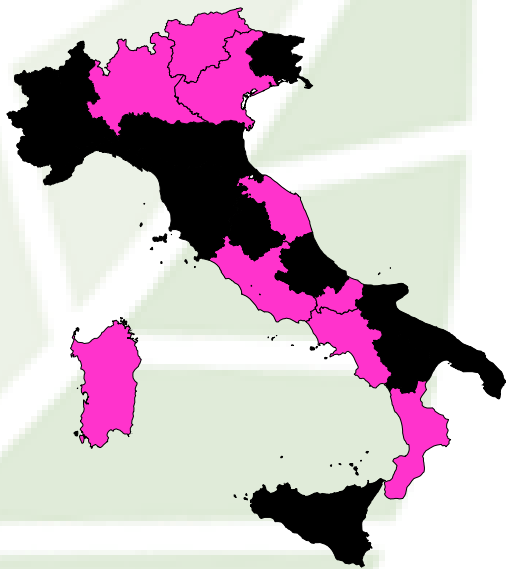
Penta Hotel, Brussels, 8th April 2016 09:30-16:30

Food matching experiences in Italy

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The nationwide dietary surveys

- **INN 1980-84**
- **INN-CA 1994-96**
- **INRAN-SCAI 2005-2006**

Indagine nazionale sui consumi alimentari delle famiglie 1980-84
alcuni principali risultati

A. Saba, A. Turrini, G. Mistura, E. Cialfa
Istituto nazionale della nutrizione - Roma

M. Vichi
Università Luiss - Roma

La Rivista della Società Italiana di Scienza dell'Alimentazione, anno 19, n. 4 1990

...mmunication
...mption patterns in Ital...

..., D Perrone[2], E Cialfa[1] and A D'A...

...rca per gli Alimenti e la Nutrizione (INRAN),

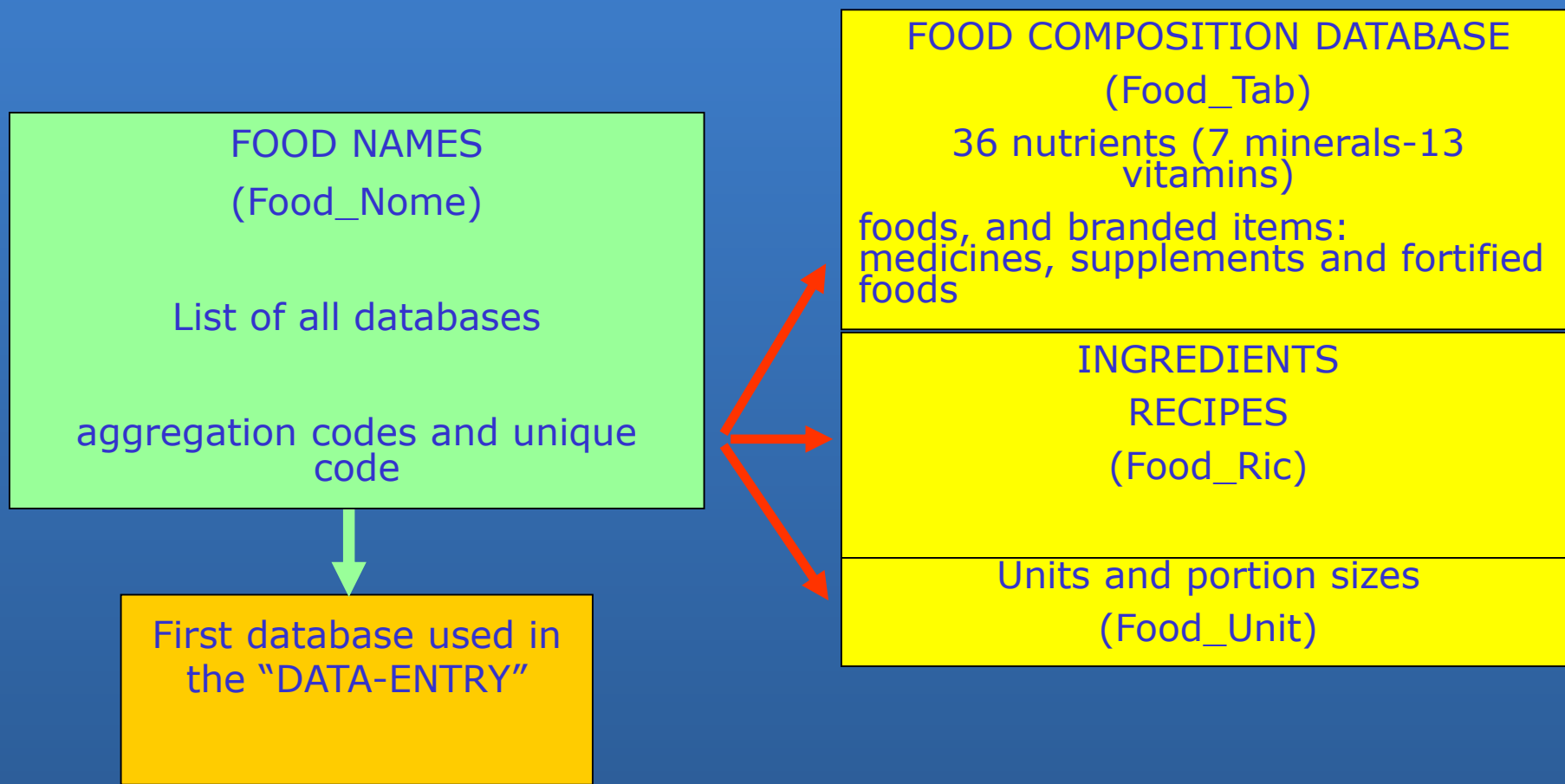## The Italian National Food Consumption Survey INRAN-SCAI 2005–06: main results in terms of food consumption

Catherine Leclercq*, Davide Arcella, Raffaela Piccinelli, Stefania Sette, Cinzia Le Donne and Aida Turrini on behalf of the INRAN-SCAI 2005–06 Study Groupt
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Food matching experiences in Italy
The nationwide dietary surveys

Project	Type of application	Code	Type of data	No items	Matching tool
1980-84 IPRA project CNR	Post-hoc coding	In-house mnemonic/hard code hierarchy+descriptor	Consumption food list	12,000	Manual
			Composition DB	3,300	
1994-96 Food education campaign Project MAF	On-the-job coding	In-house enhanced mnemonic/hard code hierarchy+descriptor (Ref.1)	Consumed food products	43,000	Semi-manual
			Composition DB	2,200	
2003	Algorithm	Fuzzy Food classification (Ref.2)	Consumption food products	43,000	SAS routine
2005-06 Food Quality project MiPAAF	Web-managed grouping	In-house hierarchy	Consumption microdata	>300,000 eating occasions	Computer assisted coding + experts' management
			Composition DB	1,500	

INRAN - DIARIO SOFTWARE ver 3.1
Underpinning databases

FOOD NAMES

(Food_Nome)

List of all databases

aggregation codes and unique code

First database used in the "DATA-ENTRY"

FOOD COMPOSITION DATABASE

(Food_Tab)

36 nutrients (7 minerals-13 vitamins)

foods, and branded items: medicines, supplements and fortified foods

INGREDIENTS
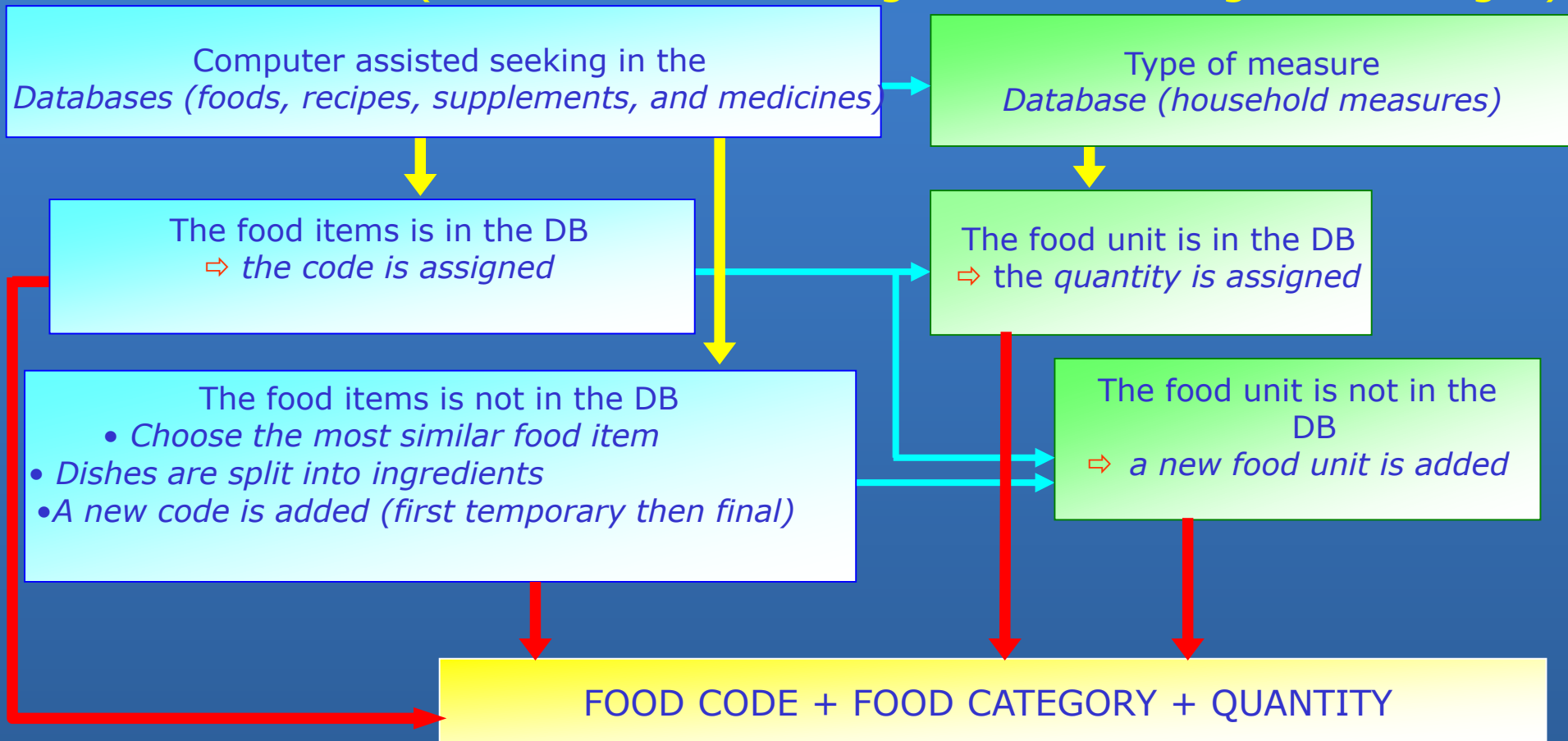
RECIPES

(Food_Ric)

Units and portion sizes

(Food_Unit)

The nationwide dietary surveys

CLIENTS

INRAN-DIARIO SOFTWARE

Food diary data entry
(all variables including individual weight and height)

| Computer assisted seeking in the *Databases (foods, recipes, supplements, and medicines)* | Type of measure *Database (household measures)* |

The food items is in the DB
⇨ *the code is assigned*

The food unit is in the DB
⇨ the *quantity is assigned*

The food items is not in the DB
• *Choose the most similar food item*
• *Dishes are split into ingredients*
• *A new code is added (first temporary then final)*

The food unit is not in the DB
⇨ *a new food unit is added*

FOOD CODE + FOOD CATEGORY + QUANTITY

Food matching experiences in Italy
Subsequent project

Project	Type of application	Code	Type of data	No items	Matching tool
2008 EuroFIR NoE 6th FP	Re-coding	LanguaL	Food Composition Tables	780	Semi-Manual
2009 EFSA Comprehensive Database	Re-coding	FoodEx1 (Ref. 3)	Consumption food list	1,500	Semi-Manual
2012 EFSA composition tables	Re-coding	FoodEx2	Food Composition Tables	780	Semi-Manual
2013 INRAN DB system	Research grant	Food classification	Food lists & composition tables	43,000	Statistical analysis
2014-2015 EURODISH 7th FP	Linking	FoodEx1-FoodEx2-LanguaL	Consumption food list	1,500	Excel functions

Specific references

- D'Addezio L (2002): Un approccio fuzzy per la formalizzazione del problema della classificazione degli alimenti [*A fuzzy approach to the food classification statistical problem*]. Dipartimento di Statistica, Probabilità e Statistiche Applicate (DSPSA), coll. Tesi, 2, Università La Sapienza, Roma

- De Neve M, Sioen I, Boon PE, Arganini C, Moschandreas J, Ruprich J, Lafay L, Amiano P, Arcella D, Azpiri M, Busk L, Christensen T, D'Addezio L, Fabiansson S, Hilbig A, Hirvonen T, Kersting M, Koulouridaki S, Liukkonen KH, Oltarzewski M, Papoutsou S, Rehorkova I, Ribas-Barba L, Serra-Majem L, Tornaritis M, Trolle E, van Klaveren JD, Verger E, Walkievicz A, Westerlnd A, De Henauw S and Huybrechts I (2010): Harmonisation of food categorisation systems for dietary exposure assessments among European children. Food Addit Contam. Part A, 27(12):1639-1651

- Turrini A (1999): Food coding in nutritional surveys, in: Classification and Data Analysis. Theory and Application, M. Vichi, O. Opitz (Eds) Proceedings of the Biannual Meeting of the Classification Group of Società Italiana di Statistica (SIS) Pescara July 3-4 1997, Springer-Verlag, Berlin Heidelberg, pp. 361-366

Food Name
- Matching to English food name is possible. However, we realized that some translation problems occurred.
- Using the scientific name would help the identification of the food

Brandname
- Presently matching to brand name is not possible because those are not included in the Italian FCT. Maybe a facility to use the brand name (e.g., linking current brands and food synonyms) would help.

Overall evolution

- **Manual ➔ using the hierarchy to match food**

- **Semi-manual ➔ using the hierarchy + descriptor + sorting to facilitate the matching**

- **Computer assisted ➔ the software offer a list to choice within**

The nationwide dietary surveys

EU-Menu Program
IV SCAI
- CHILDREN (first wave)
- ADULTS (second wave)
2015-2019

European Food Safety Authority

Sampling unit: individuals

Method:
- 24 H recalls (adults)/food records (children)
- Recipes
- Food Propensity Questionnaire
- Anthropometric variables and sociodemographic questionnaire
- Portion size: household measure and estimating portion sizes with the use of picture books (children and adults)

Sample:
- 1073 (0-9 years)
- 1217 (10-65+ years)

Project	Type of application	Code	Type of data		Matching tool
2015-2019 EU-MENU	New survey	Software based grouping + FoodEx2	Consumption food list	Eating occasions + composition DB	Computer assisted coding + new codes management experts' check

Continuing to tackle the food classification issue and the automated web searching tool

Thanks for your attention