

WP 6 – A TDS Information System

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Outline

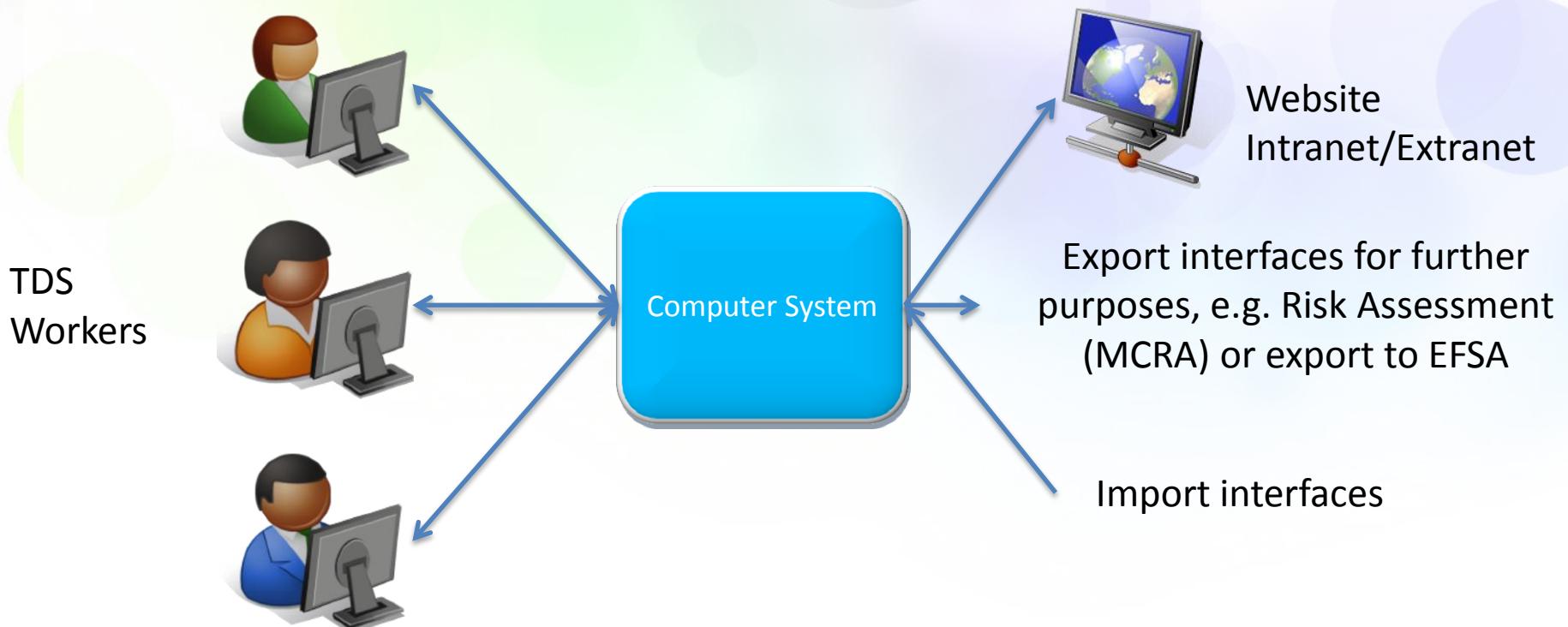
- ▶ Information about WP6
- ▶ What is a TDS information system
- ▶ Look&Feel of a TDS information system
- ▶ Why a TDS information system
- ▶ Linkage between TDS data, food composition data and consumption data

GENERAL PRESENTATION OF WP6

- ▶ WP partners: ETHZ, EuroFIR AISBL, RIVM, INRAN, UGR, NUID UCD, UGENT, INSA and URV
- ▶ Main objectives:
 1. Collect requirements for a TDS information system
 2. Create TDS information system
 3. Proposal of data structure and detail for TDS data
 4. Create an automated quality framework for TDS data
- ▶ WP6 needs input from most WPs
- ▶ WP6 provides output to WP9

What is a TDS information system

IT stuff to collect, filter, process, create and distribute data.



What is a TDS information system



Collect food
according to
consumption info



Prepare as consumed
(cooking or other
kitchen preparation)

Food A
Food B
Food C
...



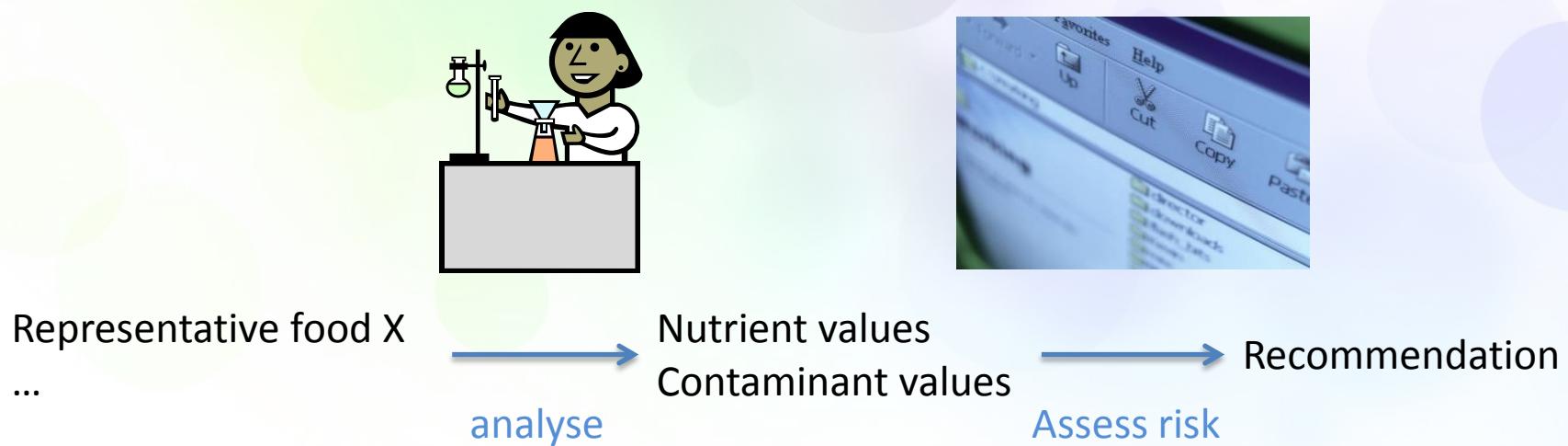
Food A
Food B
Food C
...



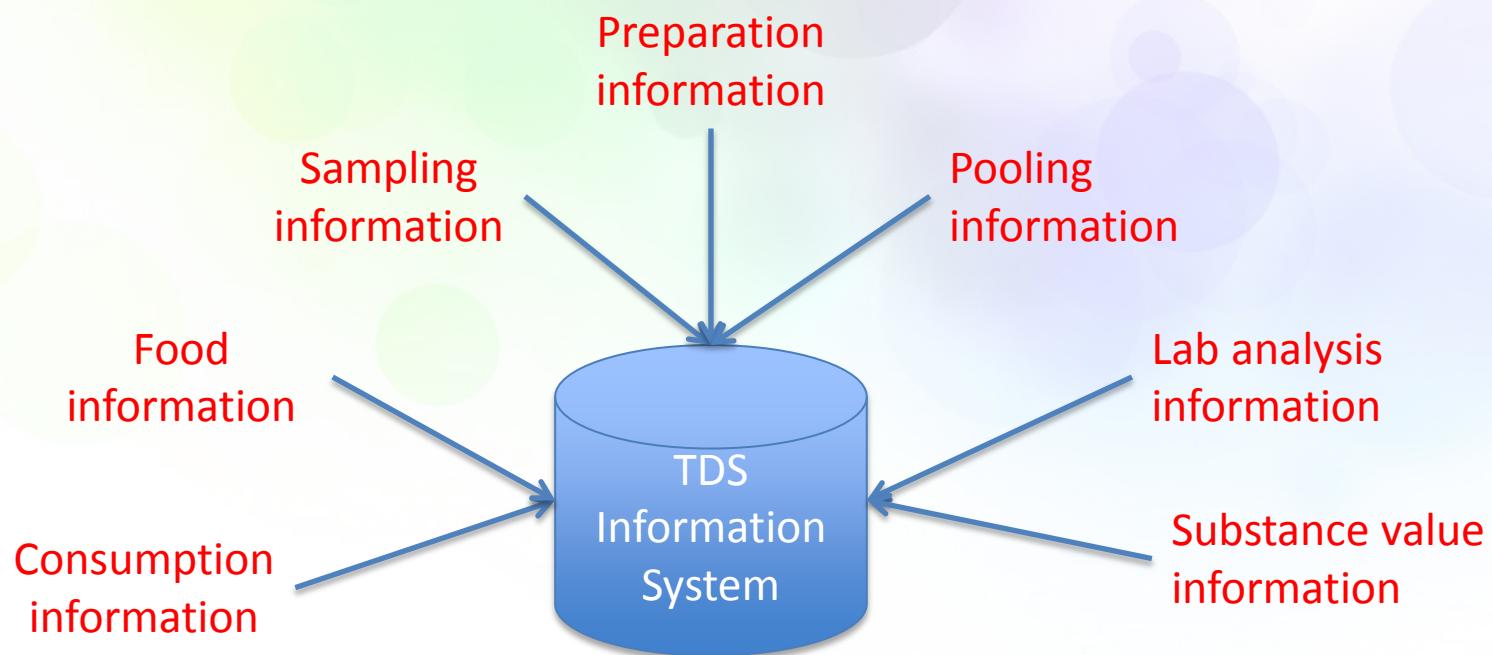
Representative food X

...

What is a TDS information system



What is a TDS information system



Amount of TDS Data

The following numbers were identified:

- ▶ 12 entities (= real world object such as food or value)
- ▶ 166 attributes for one compound value

Example:

200 food items with about 5 compounds -> at least 166'000 data points

Approach and Results

- ▶ Collect requirement for TDS information system
 - Literature research
 - Discussion with project partners

Result: Software specification (52 pages) containing proposal of data structure and detail for TDS data

Starting Mask - Overview

Search Area

Data Listing Area

Food items

Beneficial and
harmful substances

FoodCASE V1.4.4

File View Tools Help

Single Values Aggregated Values Recipes References Versions

Food Search

Food criteria

Column <all columns>

Function contains

Term

Case sensitive Ignore time

Component criteria

Component

And Or

Search Clear

Component Search

Column <all columns>

Function contains

Term

Case sensitive Ignore time

Search Clear

► Food Markers

► Value Markers

► LanguaL Codes

Single foods

Single Food ID	English Name	Name
1305	Pineapple aggregated	Ananas aggregated
8	Pineapple, raw	Ananas, roh
9	Pineapple, unsweetened, canned	Ananas, ungesüßert, Konserve
1366	Cherimoya	Anona lisa
10	Apple, peeled, dried	Apfel, geschält, getrocknet
11	Apple, fresh	Apfel, roh
12	Applesauce, sweetened (Coop)	Apfelmus, gezuckert (Coop)
13	Applesauce, sweetened, canned	Apfelmus, gezuckert, Konserve
14	Applesauce, unsweetened, canned	Apfelmus, ungesüßert, Konserve
15	Apple juice	Apfelsaft
16	Cider, 4% vol	Apfelwein, 4 % vol
17	Cider, 6.2% vol	Apfelwein, 6.2 % vol
1318	Apple Elstar w skin	Apfel Elstar m schil
1317	Apple Jonagold w skin	Apfel Jonagold m schil
18	Appenzeller, at least 15% ffirm	Appenzeller, viertelfett

Refresh 1370 rows Open New...

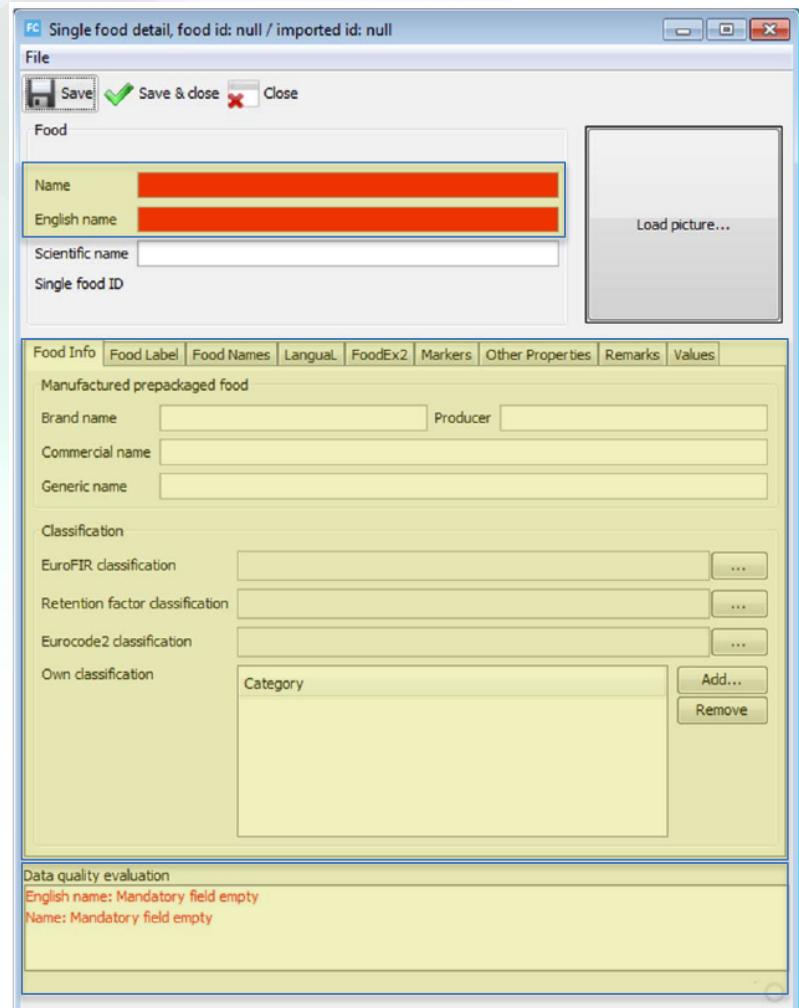
Single components Apfel, roh

Single Val...	Component Name	Code	Value Type	Value	Unit	Matrix Unit
8596	alcohol	ALC	trace	3.0	g	W
41386	alcohol	ALC	mean	0.0	g	W
37765	all-trans retinol	RETOLAT	mean	0.0	ug	W
37764	all-trans retinol equivalents	RETOLENATE	mean	0.0	ug-RE	W
37767	alpha-carotene	CARTA	value type not kn...	0.0	ug	W
37768	beta-carotene	CARTB	mean	60.0	ug	W
37766	beta-carotene equivalents (provita...	CARTBEQ	mean	26.0	BCE	W
37769	beta-cryptoxanthin	CRYXPB	mean	4.0	ug	W
8598	calcium	CA	mean	5.02	mg	W
41391	carbohydrate, total	CHOT	mean	11.8	g	W
8609	carbohydrate, total	CHOT	mean	13.8	g	W
8599	chloride	CLD	mean	2.2	mg	W
8600	cholesterol	CHORL	mean	0.0	mg	W
8604	fat, total	FAT	mean	0.3	g	W

Refresh 44 rows Open New... Duplicate Clipboard

Managing Food

- ▶ Mandatory fields
- ▶ Many other attributes for a single food
- ▶ Data quality panel



Managing Analysed Values

- ▶ Many available attributes
- ▶ Data quality panel

fc Single value detail

File

Save Save & close

Food name	Apfel, roh	Single value ID	8598
Component name	calcium		
Selected value	5.02	Value type	mean
Unit	(mg) milligram	Matrix unit	(W) per 100g edible portion

Value Samples Methods Quality Index Markers Remarks References

Properties

Acquisition type: Food composition table/database Method type: Method type not known

Statistics

Mean Median
Minimum Standard deviation
Maximum Standard error

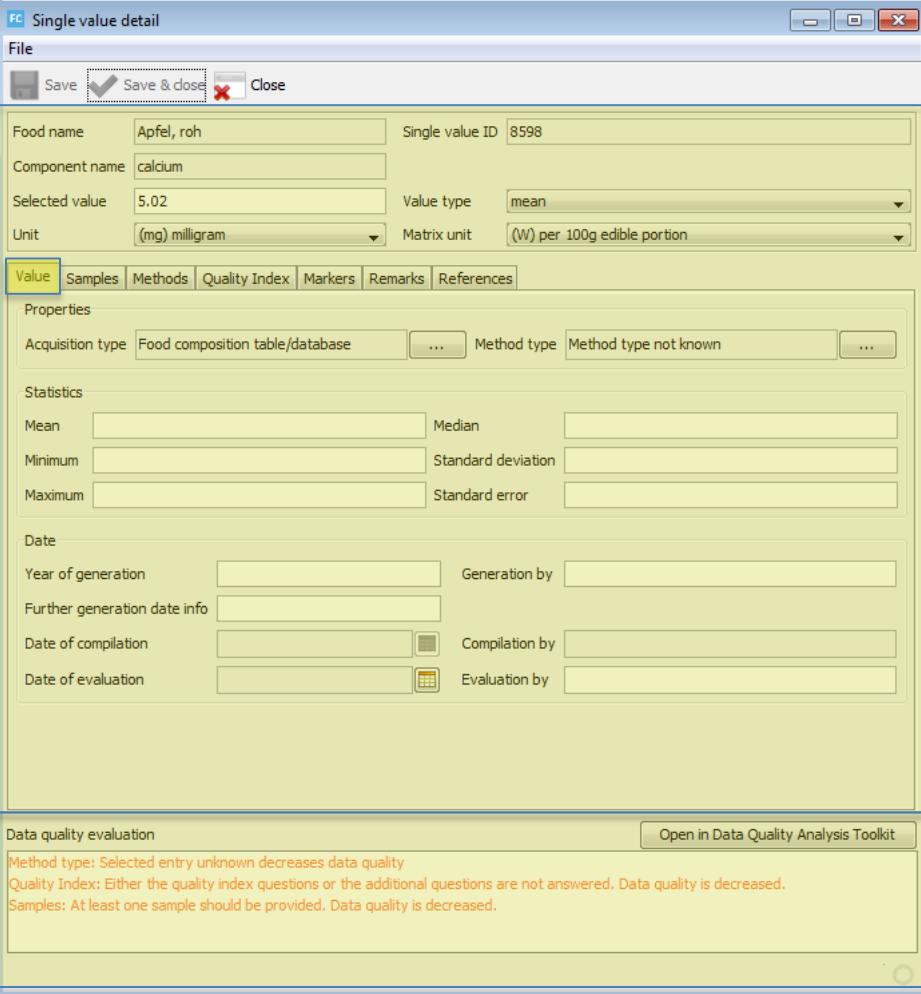
Date

Year of generation Generation by
Further generation date info
Date of compilation Compilation by
Date of evaluation Evaluation by

Data quality evaluation

Method type: Selected entry unknown decreases data quality
Quality Index: Either the quality index questions or the additional questions are not answered. Data quality is decreased.
Samples: At least one sample should be provided. Data quality is decreased.

Open in Data Quality Analysis Toolkit



Managing Samples

- ▶ Tree view
- ▶ Attributes depending on the tree node selection
- ▶ Pooled / Prepared / Single sample

Single value detail

Food			
Name	Apple, fresh	Single value ID	8598
Component name	mercury		
Selected value	1	Value type	mean
Unit	(mg) milligram	Matrix unit	(W) per 100g edible portion

Value Samples Methods ...

sampling

- pooled sample
 - prepared sample 1
 - single sample 1
 - single sample 2
 - prepared sample 2
 - single sample 3
 - single sample 4

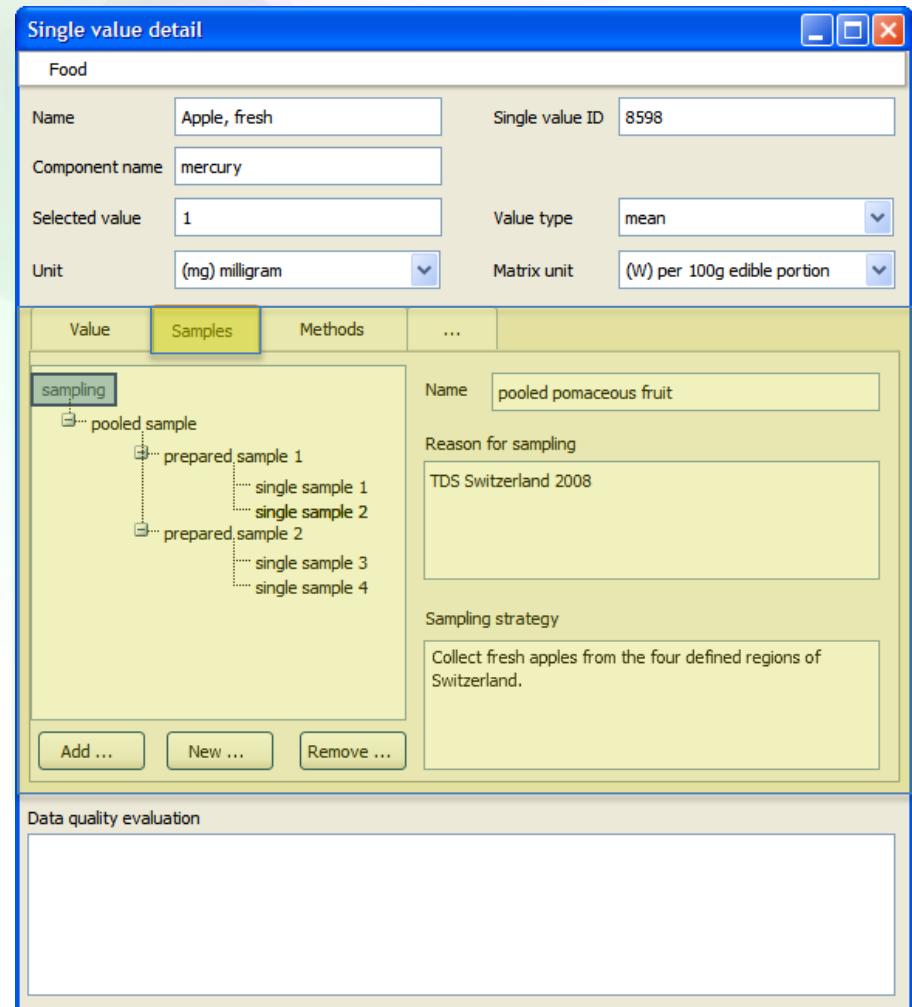
Name: pooled pomaceous fruit

Reason for sampling: TDS Switzerland 2008

Sampling strategy: Collect fresh apples from the four defined regions of Switzerland.

Add ... New ... Remove ...

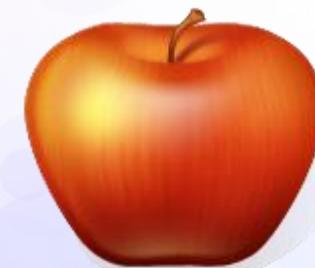
Data quality evaluation



Spreading Analysed Values



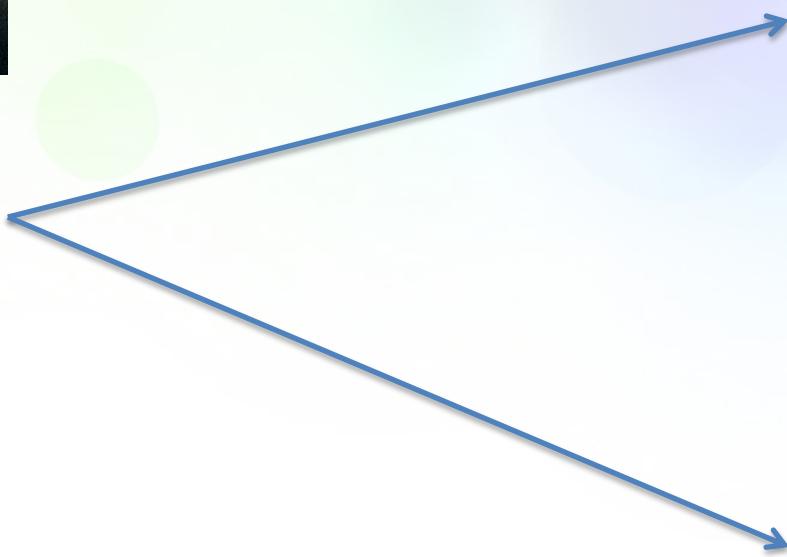
1 mg mercury
per 100g



1 mg mercury
per 100g



1 mg mercury
per 100g



Spreading Analysed TDS Data

- ▶ Choose the target matrix unit
- ▶ Possibly add additional values or remove values from the list
- ▶ Define target foods

Specify value spreading parameters

Spread Target foods

Target matrix unit (W) per 100g edible portion

Note: Using "per 100g" is highly recommended

Replace existing values

Contributing values

Component	Component code	Value	Unit	Matrix unit	Weight
mercury	Hg	1	mg	(W) per 100g edible portion	1
selenium	Se	2	mg	(W) per 100g edible portion	1

Add value ... Remove value

Data quality evaluation

Why a TDS information system

- ▶ Store data at a central place
- ▶ Store data for long-term access
- ▶ Increase the visibility of your work
- ▶ Enable other to access your data
- ▶ Save time and resources in long run
- ▶ Documentation of your data ensures data integrity

Why a TDS information system

- ▶ Facilitate new discoveries
- ▶ Enhance access security and minimise risk of data loss
- ▶ Meet grant requirements
- ▶ Be ready for open data (=publicly funded data must be publicly available)
- ▶ See data as a product for which funding were used
- ▶ Have automated support to maintain data quality

Why a TDS information system

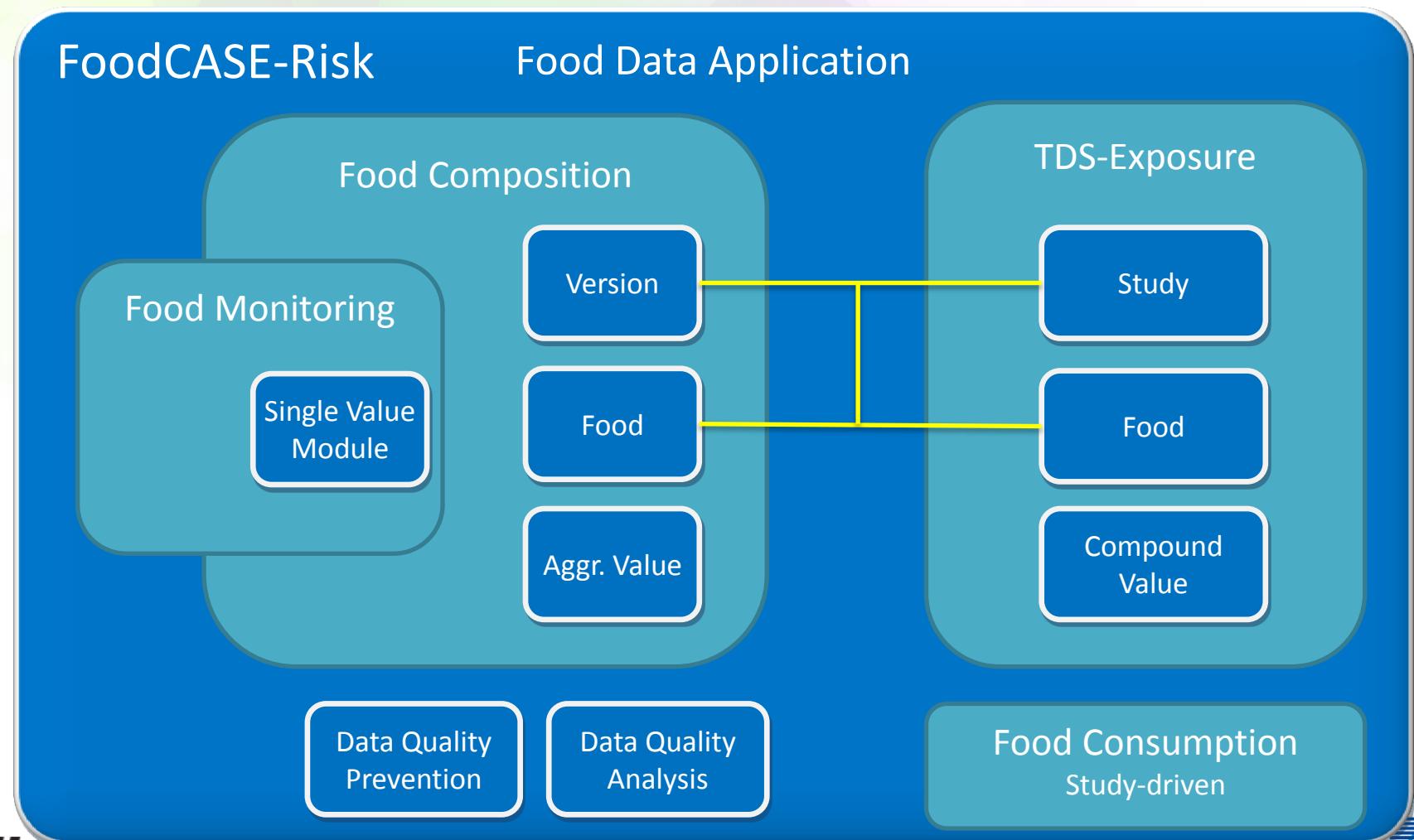


With a TDS information system

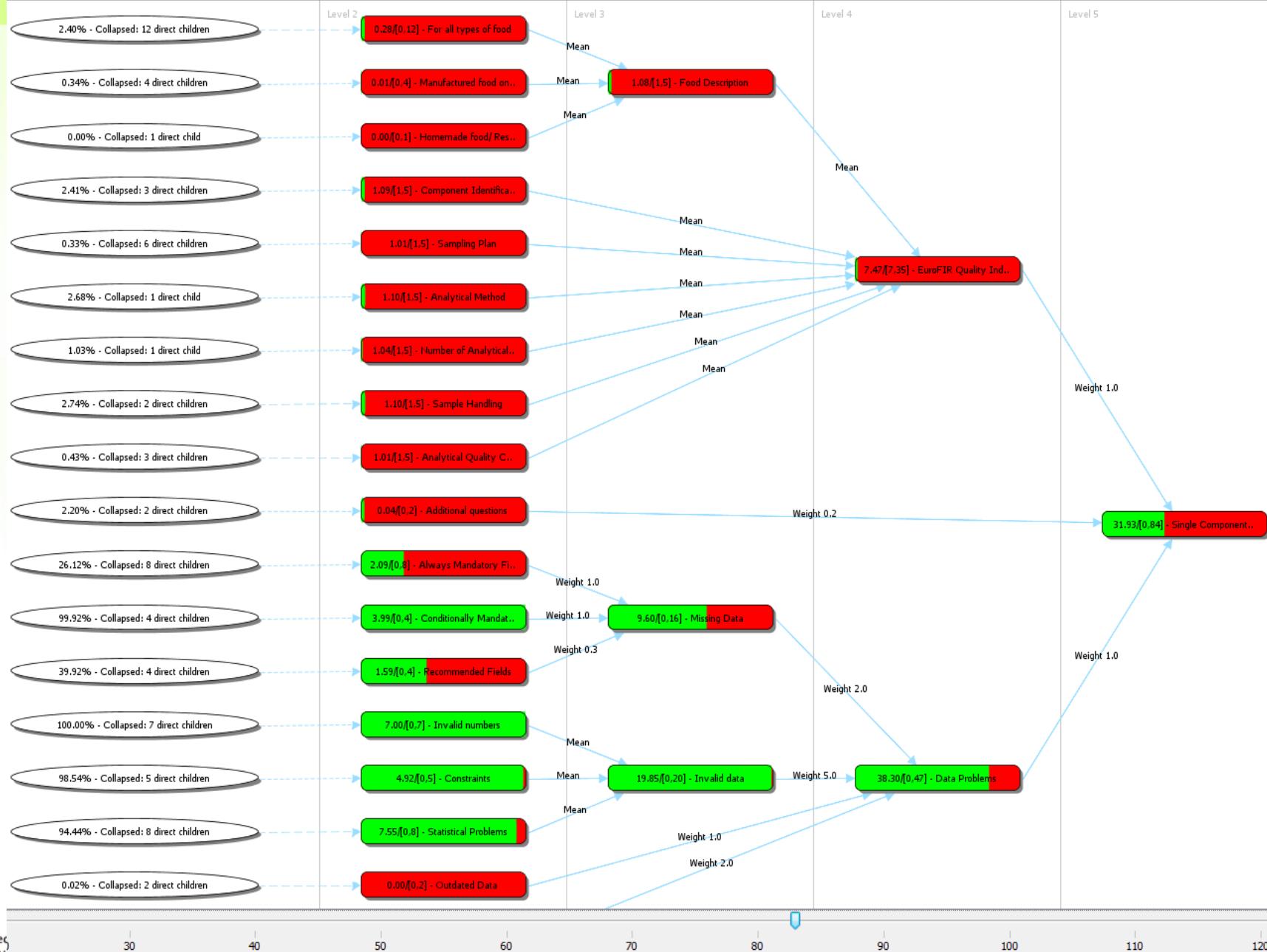


Without a TDS information system

TDS Data in the Context of Food Data



Thank you for your attention



TDS Data on a Time Scale

Assemble food list



Assemble shopping list plus additional information

Form pool groups



...

Enter substance values

Archive data

- FoodCASE-Risk can provide food items, consumption data and former TDS data
- Possibility to change to a preferred tool such as EXCEL or to use a mix
- Use FoodCASE-Risk

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