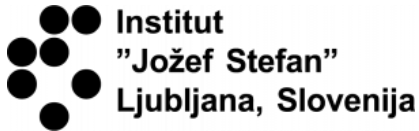


EOSC SYMPOSIUM



FNS-Cloud Catalogue App



Dr. Karl Presser, Premotec GmbH



EOSC Symposium 2022

14-17 November 2022, Prague, Czech Republic



Food Nutrition Security Cloud (FNS-Cloud) has received funding from the European Union's Horizon 2020 Research and Innovation programme (H2020-EU.3.2.2.3. – A sustainable and competitive agri-food industry) under Grant Agreement No. 863059 – www.fns-cloud.eu

What is FNS-Cloud?

- EU Project in H2020
- FNS = Food and Nutrition Security
- thematic EOSC cloud for food and nutrition
- Also called “Food Cloud”
- Goal: Develop a first-generation “food cloud” by federating existing and new resources
- 35 beneficiaries
- 11 EU Member States (AT, BE, BG, DE, DK, ES, GR, IE, IT, NL, and SI), UK, Serbia, & Switzerland
- Duration: 48 months (Oct 2019-Sept 2023)
- Budget: 10 Mio Euro



PREMOTEC

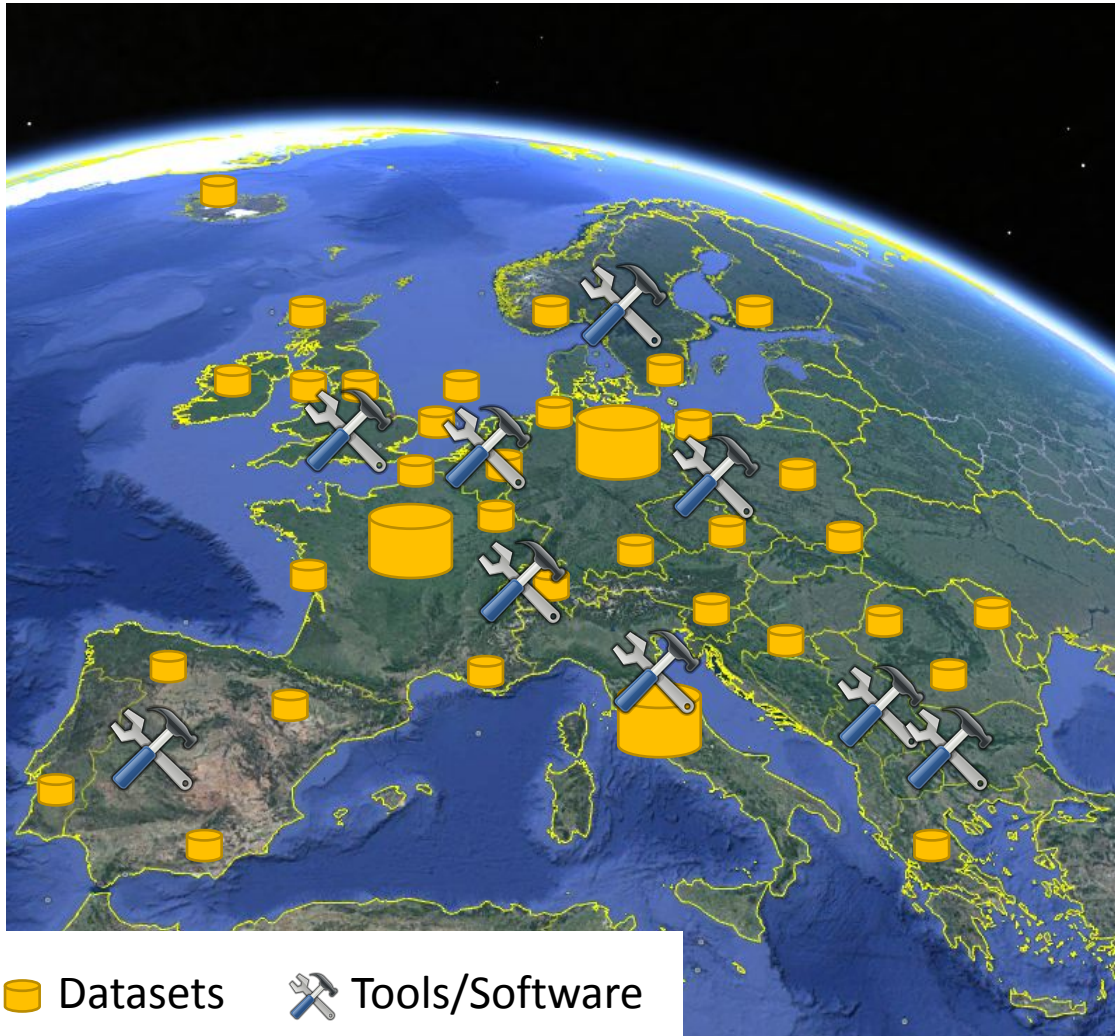


FNS - Cloud

Food Nutrition Security



Fragmentation



- Highly fragmented
- National/institutional repositories
- Reason: National data, regional data, seasonal data, many small studies, living data
- Not many “central” databases

-> Findability is challenging and advanced **catalogues** are needed

FNS-Cloud Catalog

- 4 catalogues for datasets, apps, services, and training and education
- Different search options (simple, advanced and table search)
- Details about resources
- Compliant with the EOSC marketplace
- Quality rating by users
- Login needed to add resource (owner) and only owner can change resource

FoodCASE

Premotec GmbH

★★★★★ 0 (0)

Food Intake & Lifestyle Agri-Food Safety Composition Food Classification & Description Labeling Consumption

FoodCASE is a data management system to manage food composition, food consumption, TDS and branded food data. In the food composition module it is possible to calculate and aggregation nutrient values and to perform recipe calculations.

CONTACT:

Person: Karl Presser
Email: karl.presser@premotec.ch
Phone:

DETAILS:

Licence:
Region:
Languages: English
Countries:
Available online: Yes
Part of FNS Cloud:
Used in publications:
Publications url:
Access mode: User of the food composition module should be EuroFIR members
Target audience: Government Agencies, Researchers & Scientists
Supply Chain Steps:

TECHNICAL DETAILS:

Format: , Depending on the module, EuroFIR FDTP file export, EXCEL file export, PDF file export, APIs with own JSON format and ACCESS file export

Ontologies:
Parameter of interest:
Code url:
Technology stack: Java, WildFly and PostgreSQL

COLLABORATION OPTIONS:

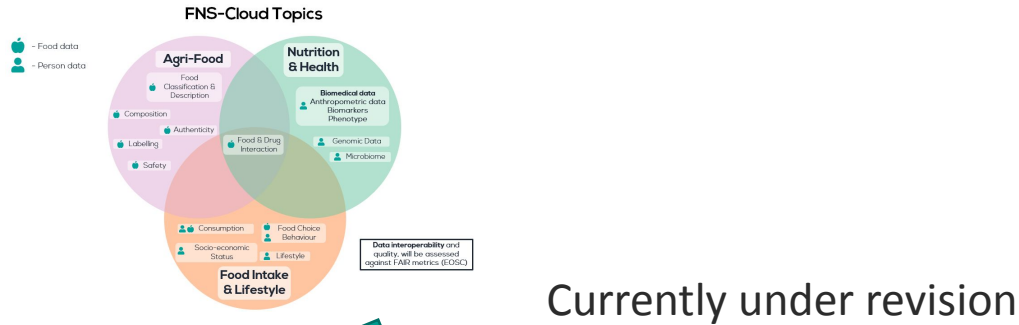
Non-profit: Yes
Joint-project: Yes
Commercial: Yes

LINKS TO THE RESOURCES:
(site: www.foodcase.org)

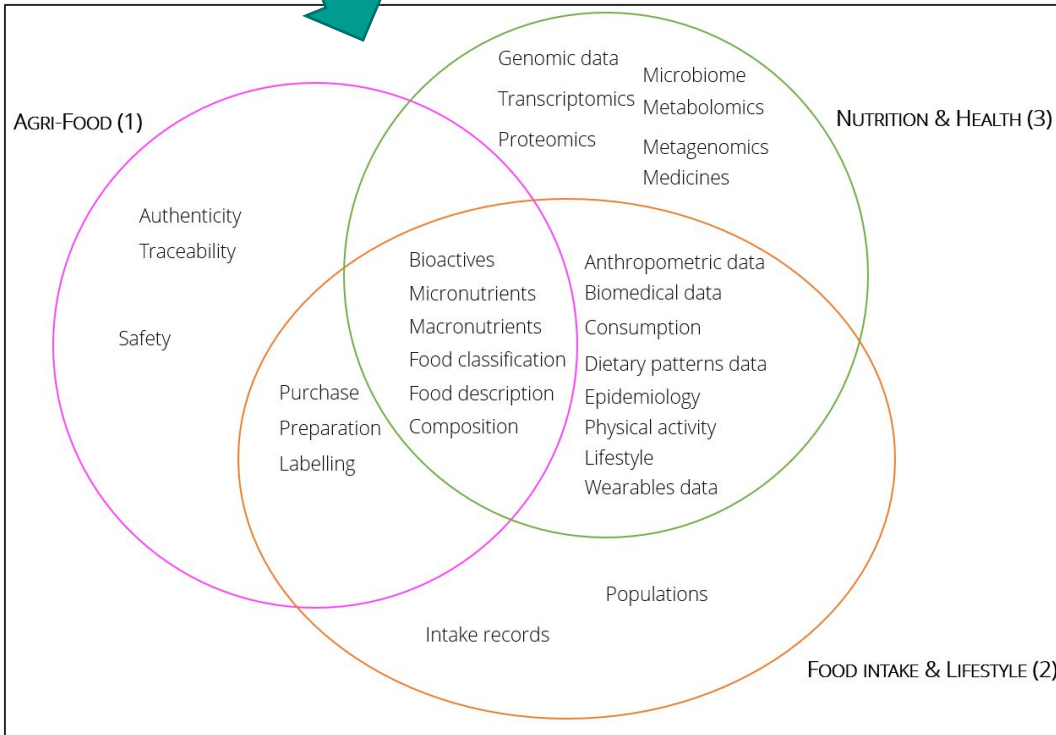
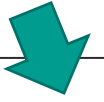
LINKS TO OTHER RESOURCES IN THE CATALOGUES:
No connected resources



Maps of Topics



Currently under revision



- 3 topics groups (agri-food, food intake & lifestyle, nutrition&health)

- Sub-topic groups, overlapping areas

-> tags were generated for each topic and assigned to each resource

EuroFIR Food composition datasets (via FoodEXplorer)

EuroFIR AISBL

Composition

37 harmonised national food composition datasets from across Europe; Africa plus CA, FoodEXplorer tool



Topic-specific Tags

Apple, fresh

Search results

Name

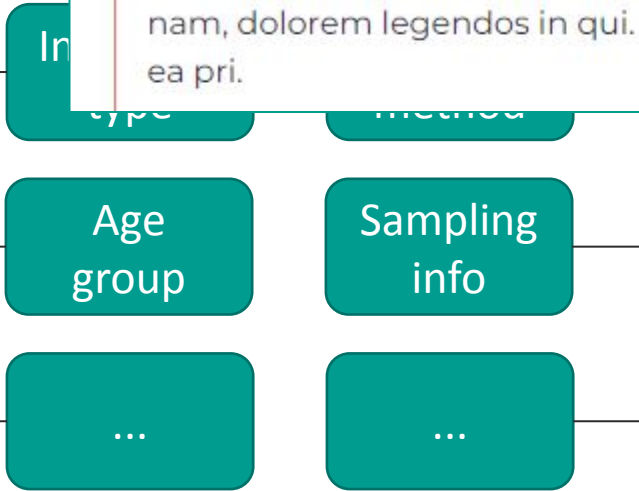
Owner

Food & Drug Interaction Authenticity Anthropometric data Biomarkers Activity Level

Lorem ipsum dolor sit amet, ea pri iisque facilis reformidans. Eu saperet eloquentiam comprehen
nam, dolorem legendos in qui. Habeo civibus his ei. Ne aperiam sanctus feugait usu, rebum brute
ea pri.



Consumption



- Tags can be defined and assigned to resources
- Some tags depend on the topic are only visible if topic is selected

Relation between Resources

LINKS TO OTHER RESOURCES IN THE CATALOGUES:

Datasets:

-  Slovenian branded food database
-  The Serbian National Food Consumption Survey
-  Swiss Food Composition Database

Tools:

-  Fairspace
-  FoodCASE

Services:

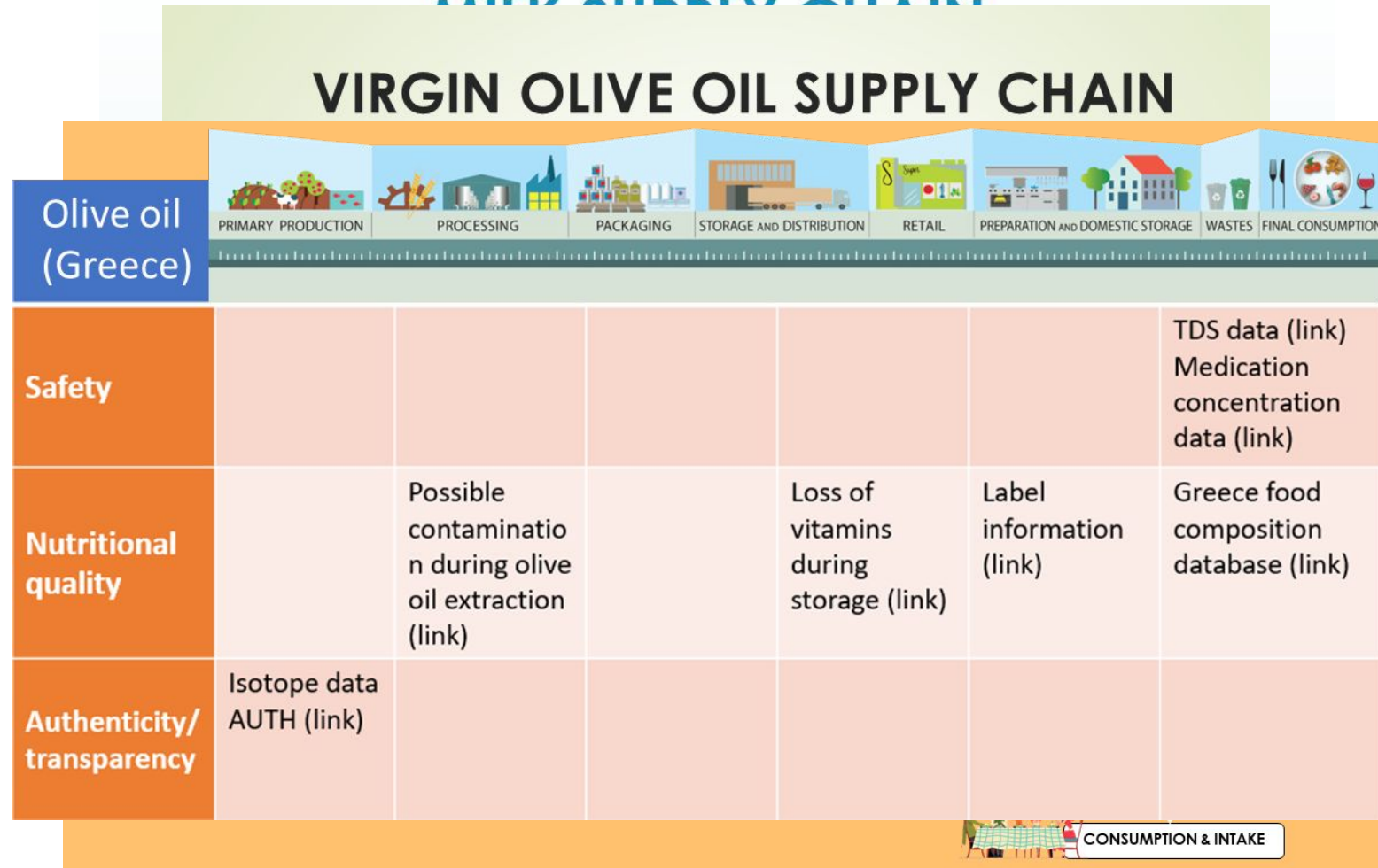
-  Data management, data processing, data visualisation

- A resource can have relation with others, e.g.
 - Two datasets collected in same study
 - A app is needed in conjunction with a dataset
 - A training resource is available for a dataset
- One or multiple relations can be defined in FNS-Cloud catalogue app
- Relations is presented as link to other resources



Food Supply Chain

- Per each food group, a separate food supply chain exist
- Catalogue offer to search datasets along these supply chains
- Result is presented in a 2-dimensional table allowing to identify resources and gaps





How Search is Working?

Standard Search Table Search Advanced Search

Search query

FNS-Cloud Topics

SEARCH

CLEAR

- Requirement: One search field to search over multiple attributes: Name (short string), short desc (string), long desc (long string), FNS topic (tags), production chain steps, chemical substance, access mode

How Search is Working?

apple <-> **applle**

apple -> {__a, _ap, app, ppl, ple, le_}

applle -> {__a, _ap, app, ppl, pll, lle, le_}

Jaccard function: $J(A, B) = \frac{|A \cap B|}{|A \cup B|}$

Intersection = 5

Union = 8

Similarity = 0.625

Difference = 0.375

- **Trigrams** proved to be very effective for measuring the similarity of words in many natural languages
- Use difference because it is faster implemented
- Exclude some irrelevant words (stop words)
- Threshold for difference is 0.9 (defined by PMT based on experience and experiments)
At least a similarity of 10% is needed otherwise it is considered as irrelevant
- Trigrams for search if terms have similar lengths otherwise similarity is too small
- Trigram search in short strings, “like” search in long strings

<https://catalogues.fns.foodcase-services.com>
<https://www.fns-cloud.eu/>

Thank you for your attention

Karl Presser
karl.presser@premotec.ch