EUROPEAN OPEN SCIENCE CLOUD

Implementing an inclusive European Open Science Cloud

EOSC SYMPOSIUM 2021

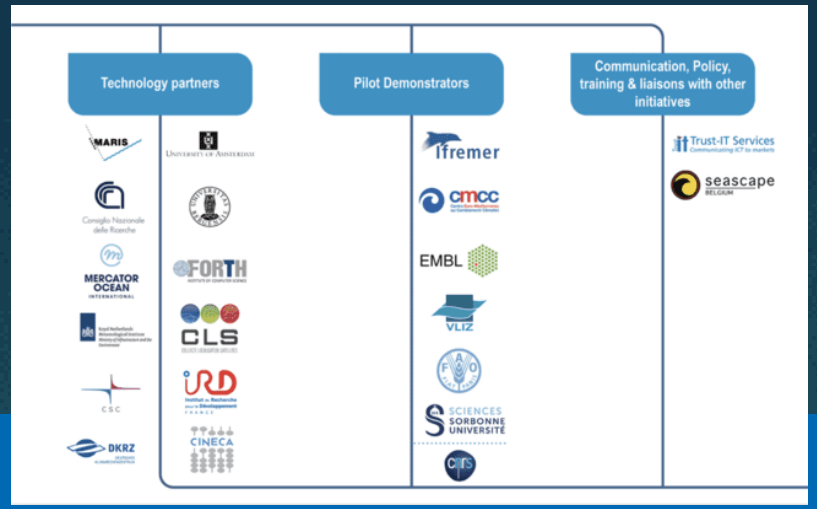
Blue-Cloud and FNS-Cloud: a synergy to strengthen open research in the fisheries field

- **Blue-Cloud has been cooperating with the FNS-Cloud project since April 2020, due to the commonalities shared by the initiatives in integrating data on the thematic European Open Science Cloud (EOSC) and fostering methods to make data more FAIR (Findable, Accessible, Interoperable, and Reusable).**
- The collaboration has brought important results in a relatively short period of time. Blue-Cloud and FNS-Cloud support the development of the new **FAO uFish dataset**, a widely used and cited reference table of food composition values of aquatic products. The data are taken from selected publications and undergo a thorough review and validation process that must be replicated in this application.

Blue-Cloud Mission

Blue-Cloud aims to promote the **sharing** of *data, processes and research findings* in the marine domain by delivering a **collaborative web-based environment** that enables *open science*, underpinned by simplified access to **an unprecedented wealth of marine data resources** and **interoperable added-value services and products**”

Funding: H2020: The ‘Future of Seas and Oceans Flagship Initiative’ (BG-07-2019-2020) topic: [A] 2019 - Blue Cloud services
Timing: 36 Months (start October 2019)
Budget: 5.9 Million Euro
Partnership: 20 partners + **13 Blue federated Infrastructures**



Blue-Cloud key products and services

- **Blue-Cloud Data Discovery & Access service**, federating key European data management infrastructures, to facilitate users in finding and retrieving multi-disciplinary datasets from multiple repositories
- **Blue-Cloud Virtual Research Environment infrastructure** to provide a range of services and to facilitate orchestration of computing and analytical services for constructing, hosting and operating Virtual Labs for specific applications

- **Blue-Cloud Virtual Labs**, configured with specific analytical workflows to serve five **Demonstrators,** developed to showcase the potential of the European Open Science Cloud, which can be adopted and adapted to support other thematic communities.

https://blue-cloud.d4science.org/

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Zoo & Phytoplankton EOV products

Plankton Genomics

Fish a matter of scales

Marine Environmental Indicators

Aquaculture Monitor

FNS-Cloud mission
(Food-Nutrition-Security)

FNS-Cloud is developing the **first-generation 'food cloud'** by **federating existing and emerging datasets,** making them online available and developing and integrating **tools and services** to support the FAIR approach for the food science community and beyond.

- 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

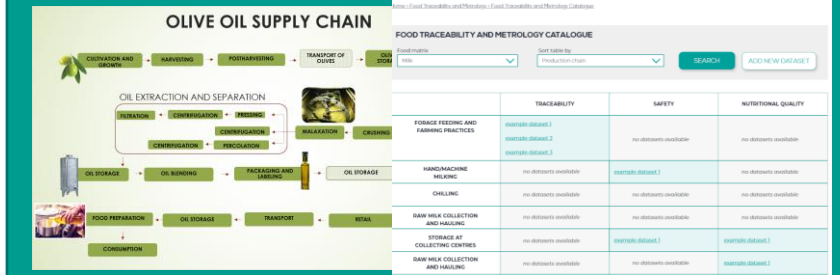
FNS - Cloud
Food Nutrition Security

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

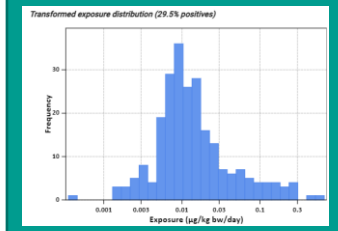
Demonstrators and Use Cases

Demonstrator 1: Agri-Food

Advanced catalogues



Branded Food database

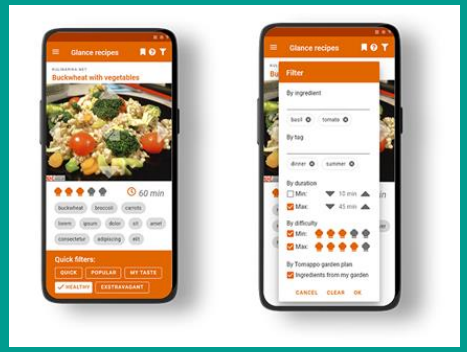


Exposure to contaminants

Demonstrator 2: Nutrition & Lifestyle

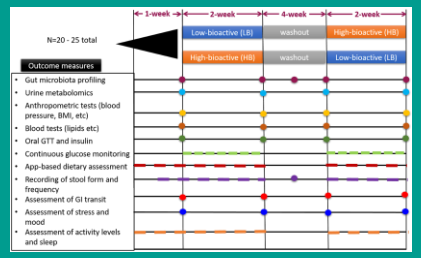
4 consumption surveys
-> 1 database
-> Meal analysis tools

Seed exchange platform (gardening)
Family meal planning

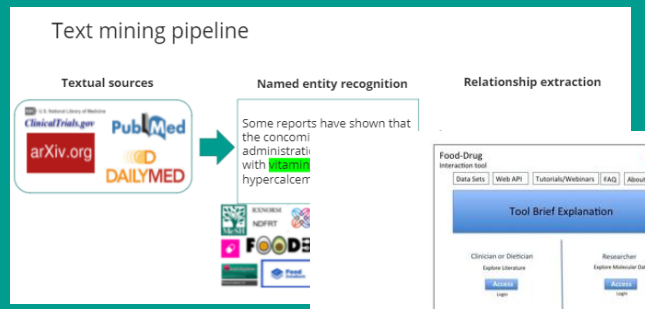


Demonstrator 3: NCDs & Microbiome

Microbiome study

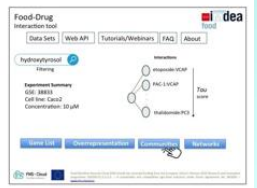


Food-diet-drug interaction



Clinical Area

Researcher Area



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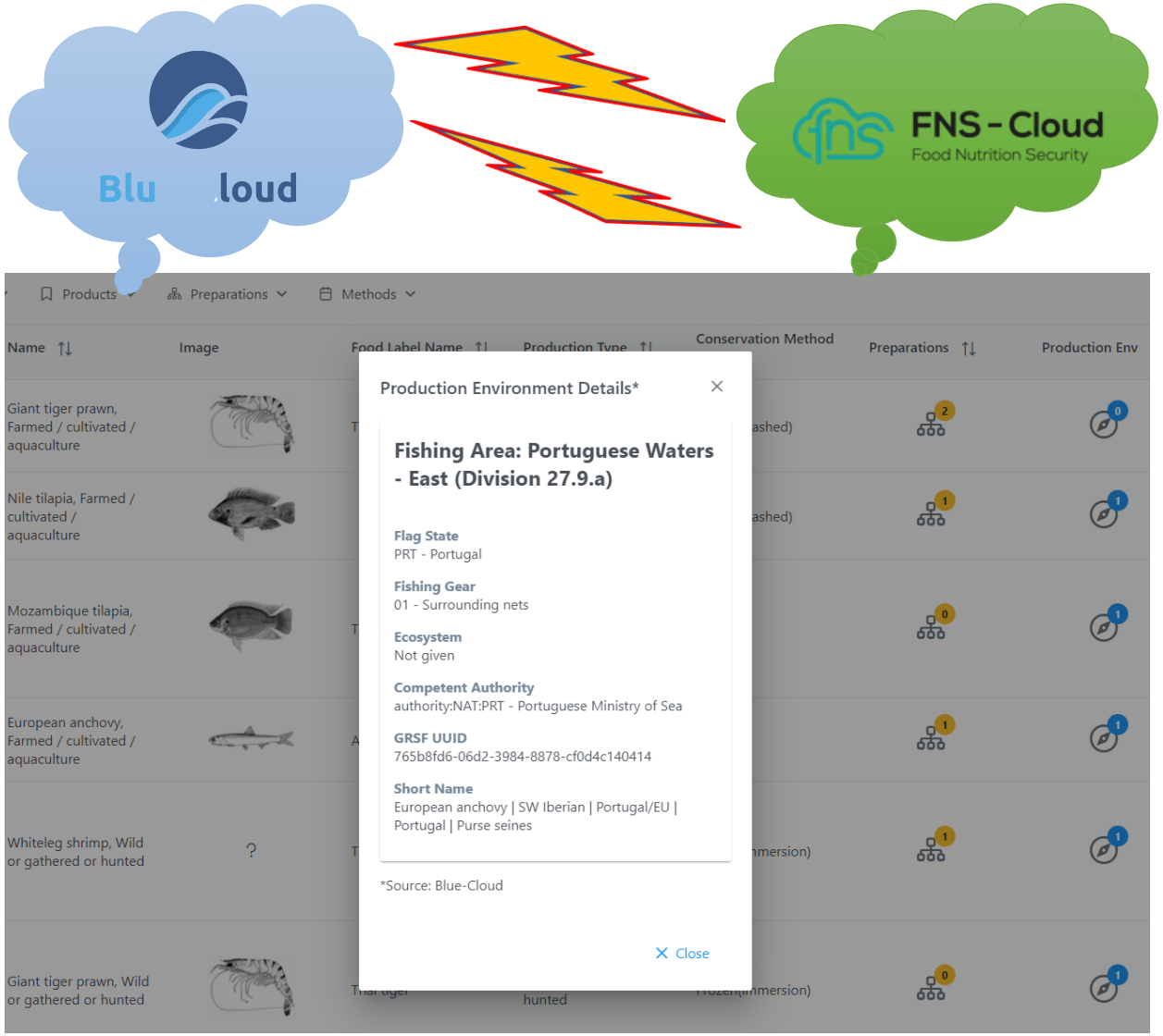
BLUE CLOUD AND FNS CLOUD Data experiment

In 2021 FAO led a **Service driven experiment** to test the 'fish'ability for data sharing and harmonization, with the goal to release **Fish Food Composition Data Tables**, an InFoods product used globally

- With reference data from key institutes and FOODEX2 codes
- As a new Data Entry Tool in the Blue Cloud
- As an Angular / JAVA / MySQL Application
- Deployed with Docker as a Blue Cloud service

After only 70 days of development the app is ready for testing here: https://ufish-client.d4science.org/ - That works great!



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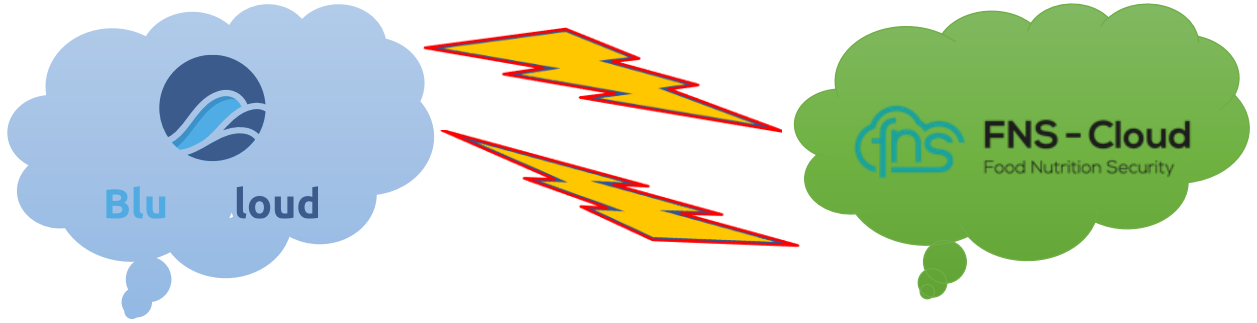
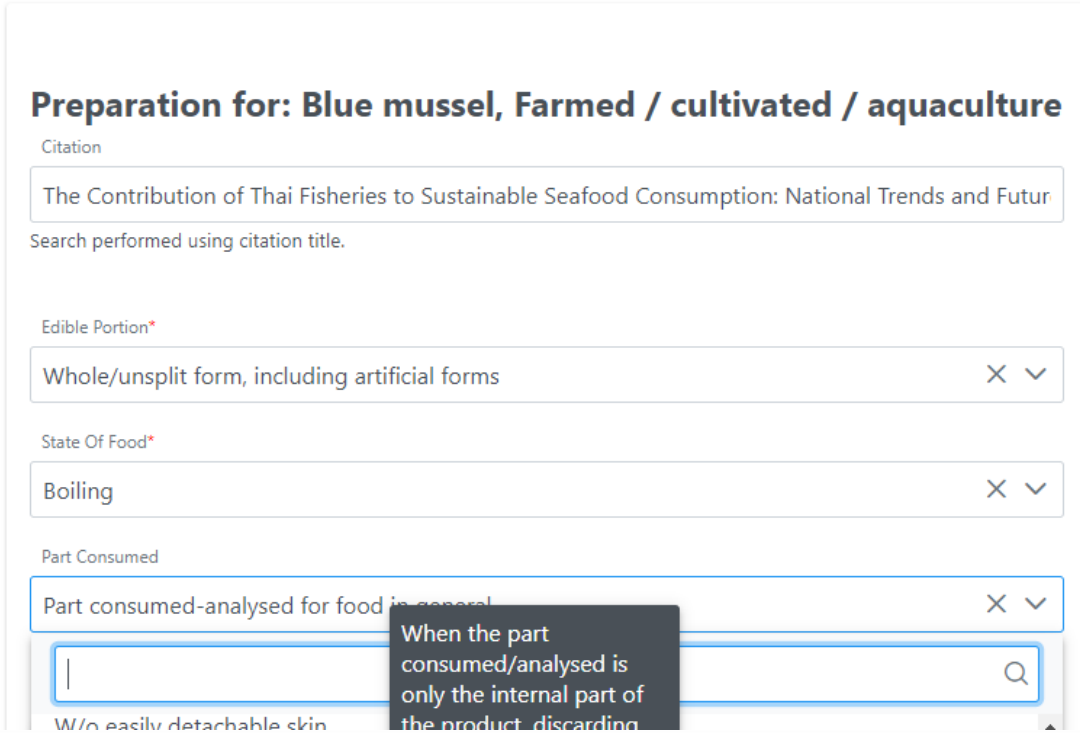
BLUE CLOUD AND FNS CLOUD
Future options

- In 2021 we will continue on uFish data entry tool
- FAO will use it for data entry and:
  - Proxy values estimates (Using Blue Cloud Environmental data)
  - Food Systems analysis (with higher spatial resolutions)
  - Trade related issues (Using commodity classifications)
- Blue Cloud and FNS Cloud can test usefelness in seafood traceability
- Sustainability; uFish is a dataset, but we identified needs for systemic support:
  - FOODEX2 / Methods / Food-chains / environmental alerts
  - Provenance and traceability of food (also for food safety)
  - SDG Monitoring (Food-systems related indicators)
  - Scientific excellence; requirements specifications
  - For sampling and analytical protocols, and method harmonization
- A task for EOSC?



Complete form for creating new preparation



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