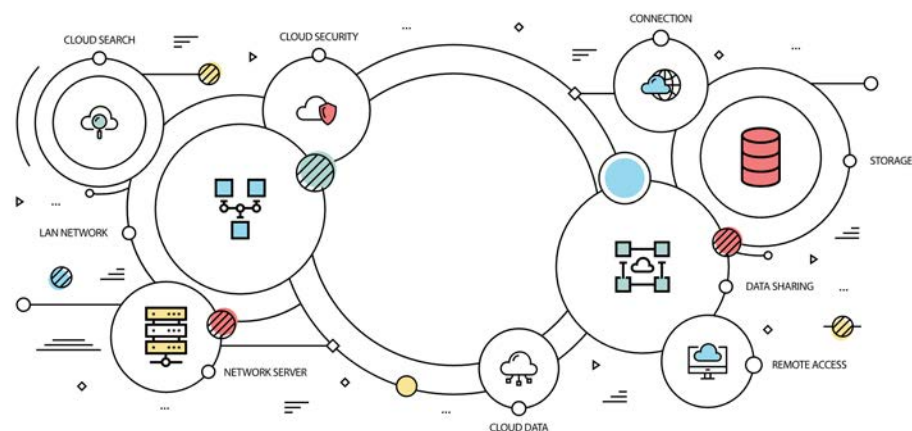




# FNS - Cloud

Food Nutrition Security

# Food Nutrition Security

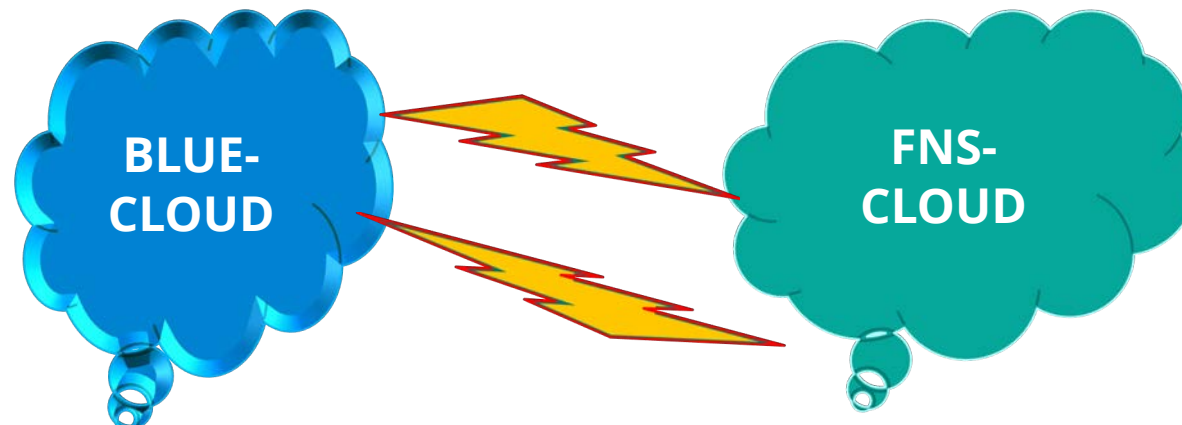


Cloud

Food | Nutrition | Security |

## BLUE CLOUD AND FNS CLOUD LIAISON

### Data experiment – uFish FAIRy TALE



- In 2021 FAO led a Service driven experiment
- To test the FAIRification 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
- In a new Data Entry Tool in the Blue Cloud
  - As an Angular / JAVA / MySQL Application
  - Deployed with Docker as a Blue Cloud service
  - Test it here: <https://ufish-client.d4science.org/>
  - That works great! And it is FAIR enough
  - After only 70 days of development
  - Open Source on Github

**Production Environment Details\***

**Fishing Area: Portuguese Waters - East (Division 27.9.a)**

**Flag State**  
PRT - Portugal

**Fishing Gear**  
01 - Surrounding nets

**Ecosystem**  
Not given

**Competent Authority**  
authority:NAT:PRT - Portuguese Ministry of Sea

**GRSF UUID**  
765b8fd6-06d2-3984-8878-cf0d4c140414

**Short Name**  
European anchovy | SW Iberian | Portugal/EU | Portugal | Purse seines

\*Source: Blue-Cloud

Close

# BLUE CLOUD AND FNS CLOUD

## uFish2 – The menu





















**uFish2.0**

The menu items - from left to Right

- An image of a fish
- Citations – All information needs a citation, can use the new FAO OpenASFA system
- Species – Seems easy to connect a species (in an area) to a product (without an area) – IT is not – we could map 15% only
- Products – The standard description of products using FOODEX2 Codes
- Preparations – The analytical results by components of the food (by preparation)
- Components – The reference tables of possible component
- The User – We can have different roles by user category
- Logout – In addition there are print and download options

## Citations









Table of citations included in uFish

Title ↑↓	Keywords ↑↓	Publisher ↑↓	Year ↑↓	File ↑↓	Preparations ↑↓			
The Contribution of Thai Fisheries to Sustainable Seafood Consumption: National Trends and Future Projections	Aquaculture development	Foods	2021					 
FAO/INFOODS global food composition database for fish and shellfish, version 1.0 - uFish1.0	Aquaculture development	Food and Agriculture Organization of the United Nations (2016). FAO/INFOODS Global Food Composition Database for Fish and Shellfish Version 1.0 - uFish1.0. Rome, Italy.	2016					 
indian food Composition Tables	Aquaculture development	National Institute Of Nutrition; Indian Council of Medical Research; Department of	2017					 

# BLUE CLOUD AND FNS CLOUD

## uFish2 – The origin of Species – Identifiers from a variety of databases

The screenshot displays the uFish2 web application interface. At the top, there are navigation menus for Citations, Species, Products, Preparations, and Components. Below this is a 'Species' section with a search bar and a table of species. The table has columns for Image, 3 Alpha Code, Scientific Name, English Name, ISSCAAP, and FoodEx Code. A modal window titled 'Species Details\*' is open over the first row, showing detailed information for *Clarias gariepinus*.

Image	3 Alpha Code	Scientific Name	English Name	ISSCAAP	FoodEx Code
	CLZ	<i>Clarias gariepinus</i>	North African catfish	I,13	A081A
	CSH	<i>Crangon crangon</i>			
	PRA	<i>Pandalus borealis</i>			
	MPM	<i>Metapenaeus macleayi</i>			
	WKP	<i>Penaeus latisulcatus</i>			
	LOX	Reptantia			
	SWM	Portunidae			
	PPF	<i>Macrobrachium</i> spp.			

### Species Details\*

**3-Alpha Code**  
CLZ

**Scientific Name**  
*Clarias gariepinus*


**English Name**  
North African catfish

**Family Name**

**Order**

**ISSCAAP**  
I,13






**Term Code**  
A081A



**Term Scope Note**  
Live animal of the taxonomic species *Clarias gariepinus*, within the Family Clariidae. The organisms are commonly known as North African catfish or Poisson-chat nord-africain or Pez-gato. The part considered is by default the whole living organism. <http://www.fishbase.se/summary/Clarias-gariepinus.html> <http://www.marinespecies.org/aphia.php?p=taxlist&tName=Clarias>


# BLUE CLOUD AND FNS CLOUD

## uFish2 – Products of Species – One species can have multiple products







 Citations ▾  Species ▾  Products ▾  Preparations ▾  Components ▾

▼ **FAO/INFOODS global food composition database for fish and shellfish, version 1.0 - uFish1.0**

Oysters(*Crassostrea virginica*), Aquaculture / farmed / cultivated



Aquaculture / farmed / cultivated

Preparations			
Citation ↑↓	Name ↑↓	Status ↑↓	
FAO/INFOODS global food composition database for fish and shellfish, version 1.0 - uFish1.0	Oysters( <i>Crassostrea virginica</i> ), Aquaculture / farmed / cultivated, Whole/unsplit form, including artificial forms W/o shell, Boiling	VALIDATED	 
FAO/INFOODS global food composition database for fish and shellfish, version 1.0 - uFish1.0	Oysters( <i>Crassostrea virginica</i> ), Aquaculture / farmed / cultivated, Whole/unsplit form, including artificial forms W/o shell, Steaming	VALIDATED	 
FAO/INFOODS global food composition database for fish and shellfish, version 1.0 - uFish1.0	Oysters( <i>Crassostrea virginica</i> ), Aquaculture / farmed / cultivated, Whole/unsplit form, including artificial forms W/o shell, Raw, no heat treatment	VALIDATED	 







# BLUE CLOUD AND FNS CLOUD

## uFish2 – Preparations – One products can have many preparations

<input type="checkbox"/>	Citation ↑↓	Preparation Name ↑↓	Edible Portion ↑↓	State Of Food ↑↓	Part Consumed ↑↓	Compositions ↑↓
<input type="checkbox"/>	FAO/INFOODS global food composition database for fish and shellfish, version 1.0 - uFish1.0	Cuttlefish, common(Sepia officinalis), Whole/unsplit form, including artificial forms W/o external layer/rind/casing (only internal part), Broiling/grilling	Whole/unsplit form, including artificial forms	Broiling/grilling	W/o external layer/rind/casing (only internal part)	   

### Manage Compositions

Group ↑↓	Acronym ↑↓	Component ↑↓	Value ↑↓	Unit ↑↓	Samples ↑↓	Standard Deviation ↑↓	Method ↑↓	Status ↑↓
Amino acids: individual and aggregations	ARG	arginine	1,600	[mg]			not given	APPROVED  
Amino acids: individual and aggregations	ILE	isoleucine	1,060	[mg]			not given	APPROVED  
Amino acids: individual and aggregations	GLU	glutamic acid	3,520	[mg]			not given	APPROVED  
Amino acids: individual and aggregations	ALA	alanine	1,560	[mg]			not given	APPROVED  
Amino acids: individual and aggregations	LEU	leucine	1,650	[mg]			not given	APPROVED  

# BLUE CLOUD AND FNS CLOUD

## uFish2 – Components – 174 reference values

### Components

Table of components included in uFish

Group ↑↓	Acronym ↑↓
Amino acids: individual and aggregations	GLY
Amino acids: individual and aggregations	VAL
Amino acids: individual and aggregations	GLU
Amino acids: individual and aggregations	TRP
Amino acids: individual and aggregations	THR
Amino acids: individual and aggregations	ALA
Amino acids: individual and aggregations	PHE

### Component Details

**Component (Source: FAO - INFOODS)**

**Name**  
glutamic acid

**Acronym**  
GLU

**Unit**  
mg

**Group**  
Amino acids: individual and aggregations

**Comment**  
glutamic acid

---

**Analytical method (Source: FAO - Codex Alimentarius, 1999.)**  
not given

**Significant Digits**  
3

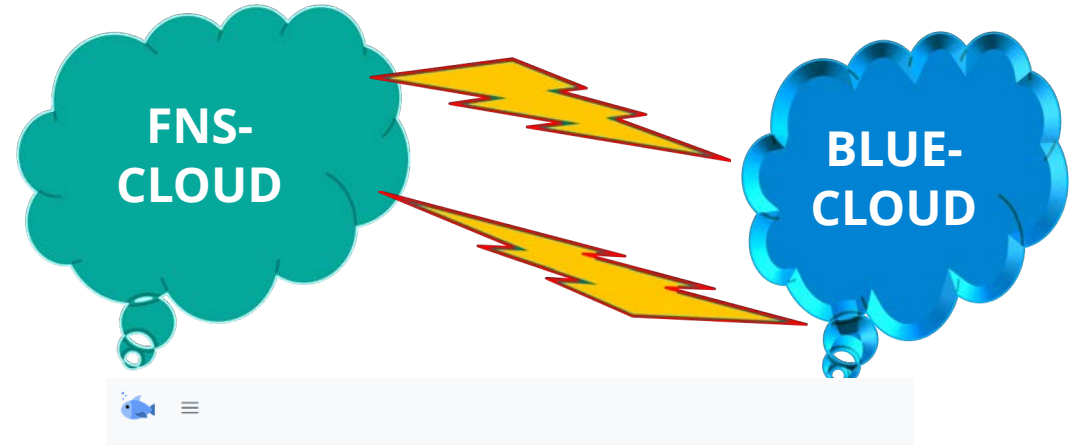
**Decimal places**  
0

[Close](#)



# BLUE CLOUD AND FNS CLOUD CONCLUSION AND FUTURE OPTIONS

- FAO intends to use it to improve data accuracy and precision
  - uFish Data entry and review with proper user management
  - Connect to online reference publications OpenASFA (incl for grey literature)
  - Improve understanding of source material provenance location, time, processing (and improve FOODEX2 codes)
- Data analysis challenges and options
  - FAIR is easier said than done; mapping is a complex task
  - uFish needs better alignment with GRSF to connect food production systems to Food Systems => Geospatial data are key for mapping (and maps obviously..)
  - Proxy values estimates are needed for the 1000's of missing analyses (Using Blue Cloud GRSF data and Fishbase)
- Conclusion: Blue Cloud and FNS Cloud can contribute to seafood traceability and improve understanding of seafood systems, but more expert input is needed



## Preparation Form

Complete form for creating new preparation

### Preparation for: Blue mussel, Farmed / cultivated / aquaculture

Citation

The Contribution of Thai Fisheries to Sustainable Seafood Consumption: National Trends and Futur

Search performed using citation title.

Edible Portion\*

Whole/unsplit form, including artificial forms

State Of Food\*

Boiling

Part Consumed

Part consumed-analysed for food

W/o easily detachable skin

W/o entrails

W/o external layer/rind/casing (only internal part)

W/o germ

When the part consumed/analysed is only the internal part of the product, discarding the rind or casing or external layer