



# FNS - Cloud

Food Nutrition Security

# Opening up food and nutrition science: the FNS-Cloud project

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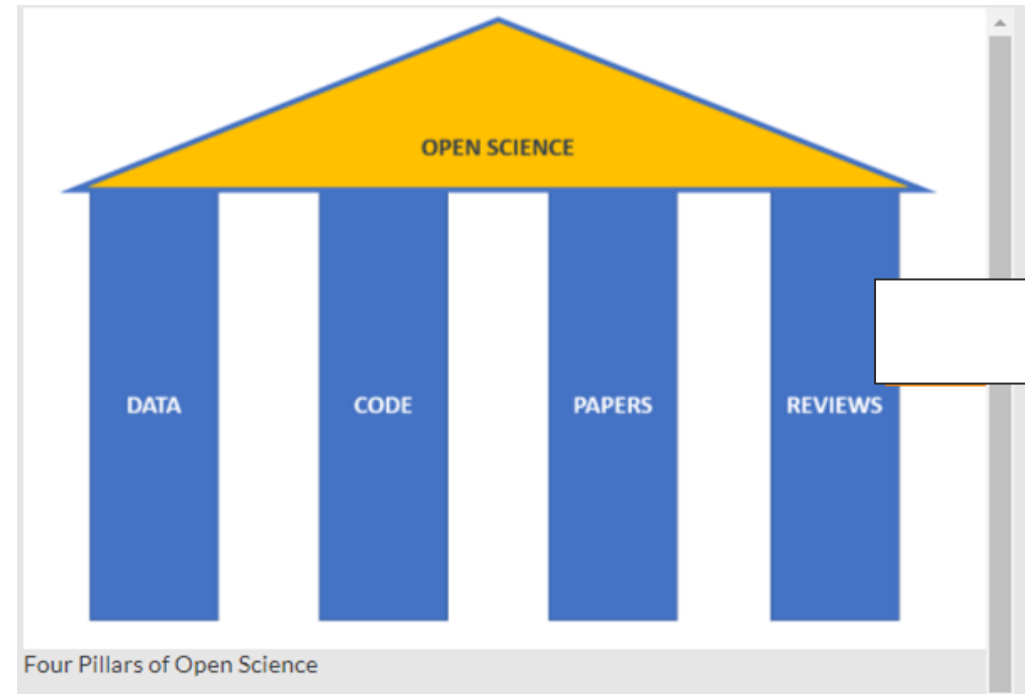
How do you feel when you hear the words  
“Open Science”?

**ONE or TWO WORDS**

link to padlet here

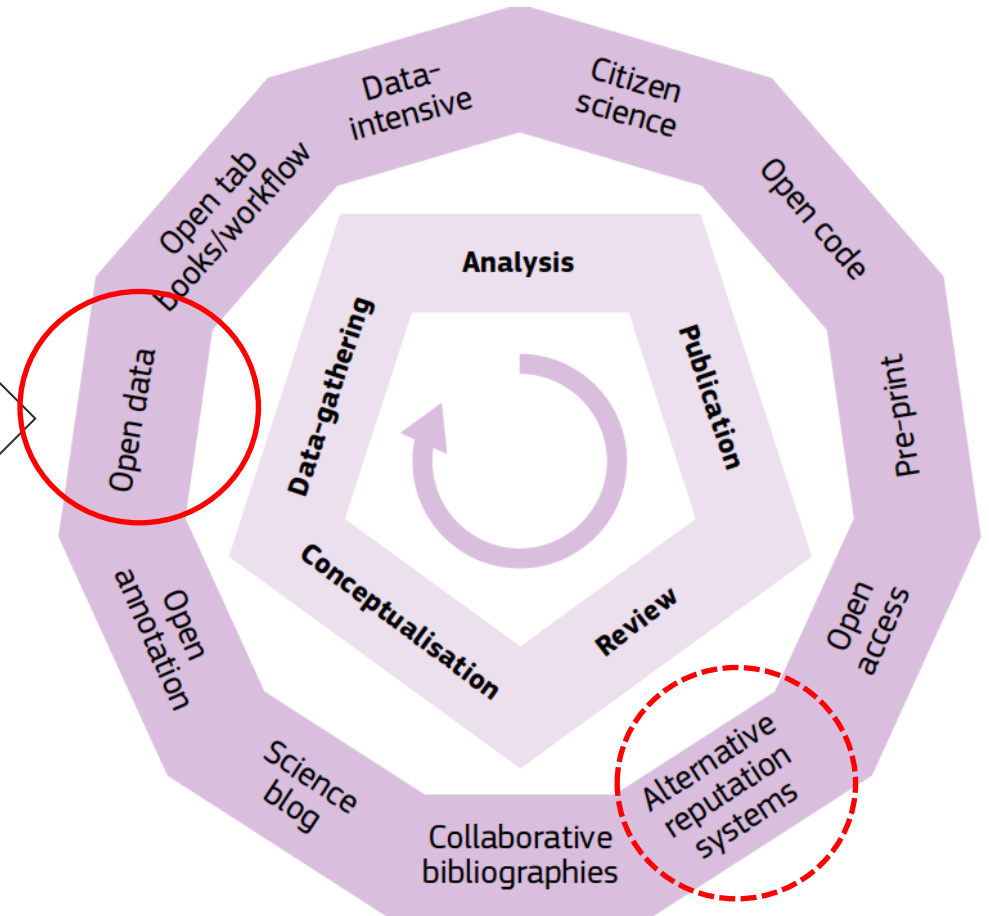
<https://padlet.com/kflynn49/FNS>

# Pillars of Open Science



FOSTER Project: Intro to Open Science

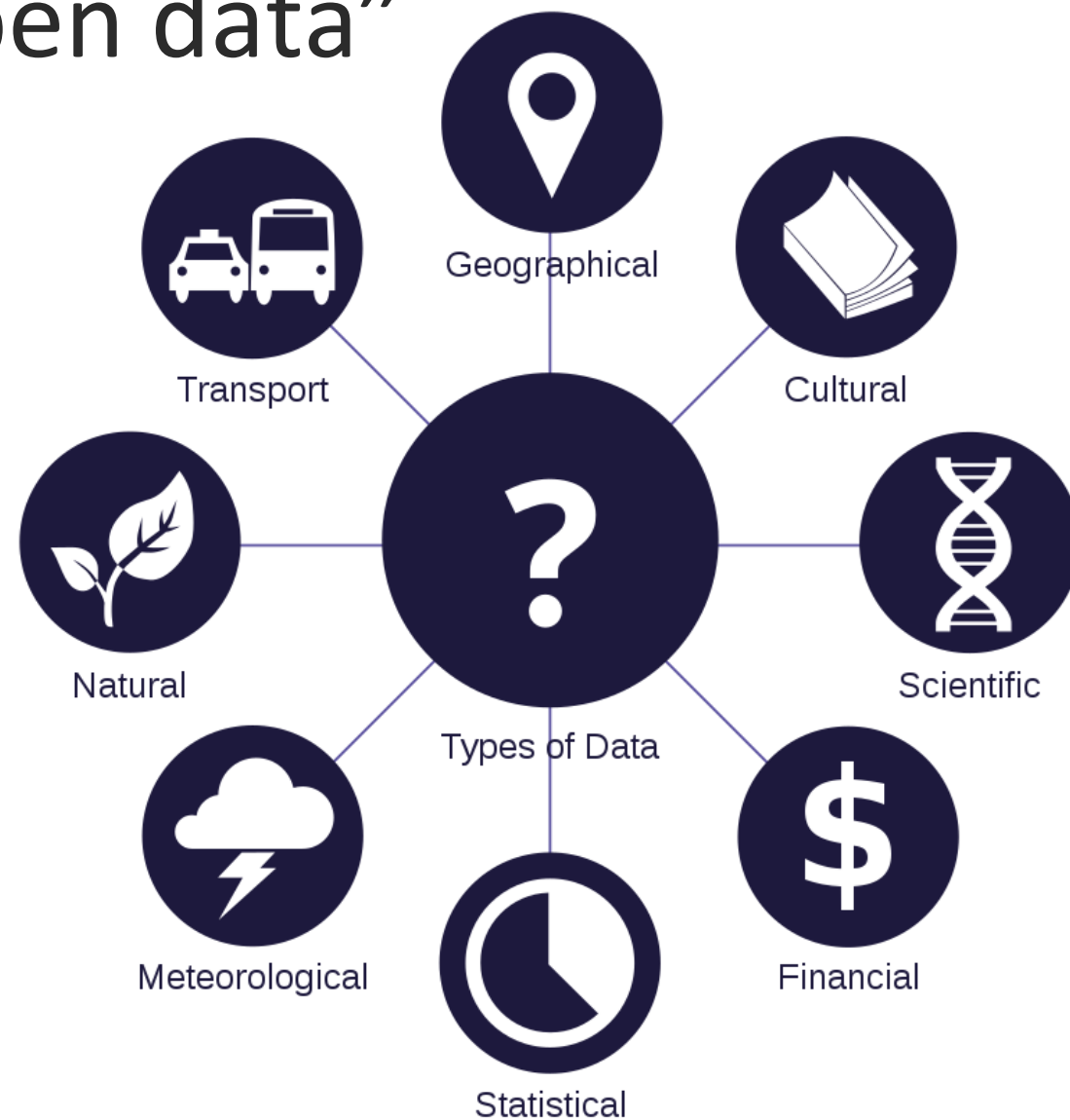
# Wheel of Open Science



European Commission Public Consultation Science 2.0: Science in Transition

# What are “data” and “open data”

- **Data** are a set of values, of qualitative or quantitative variables, about persons or objects.
- **Open data** are data that are freely available for everyone to use and re-publish as they wish, without restrictions from copyright, patents, charges, or other mechanisms of control.



**Have you ever produced research data?**

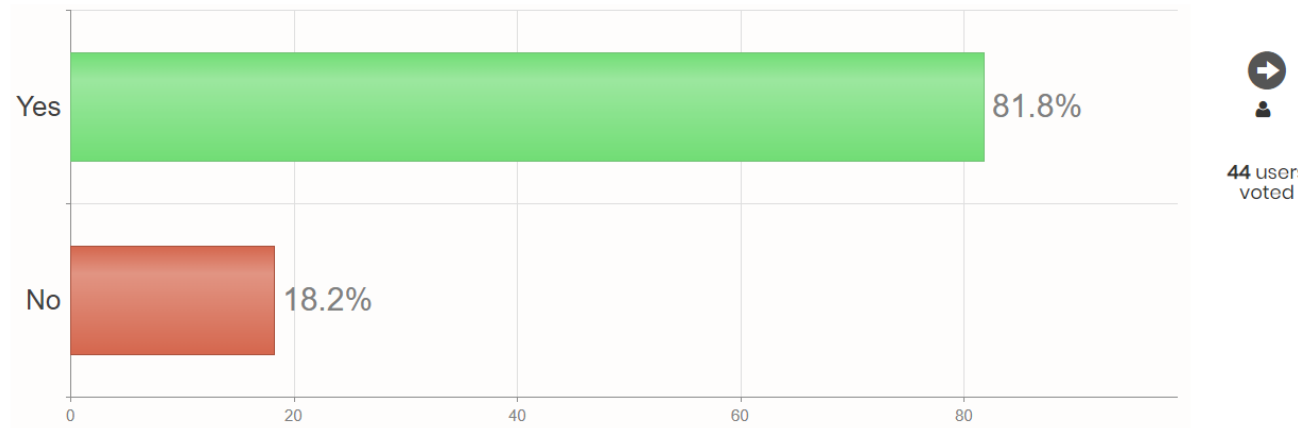
**Have you ever uploaded data to an open data repository?**

**Have you ever searched for data in an open data repository?**

Vote on [live.voxvote.com](https://live.voxvote.com)

**PIN: 11956**

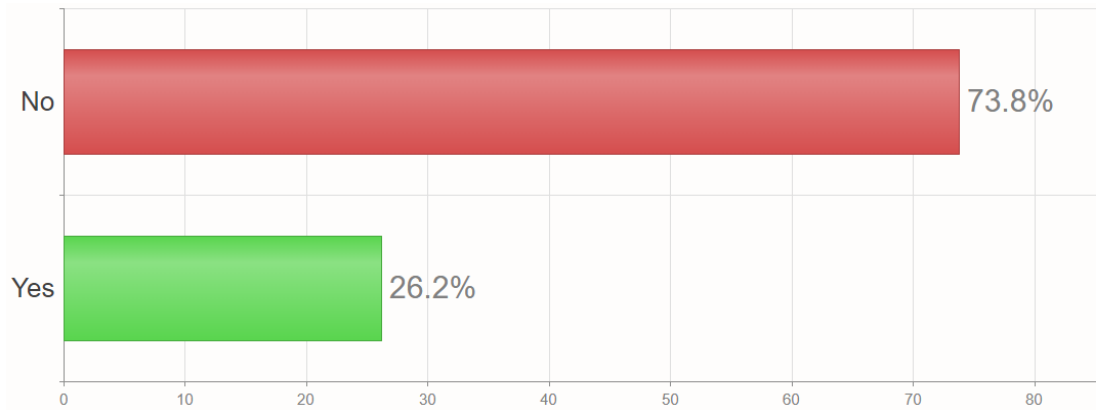
### 1. Have you ever produced research data?



**VOXvote**  
Create your own for free

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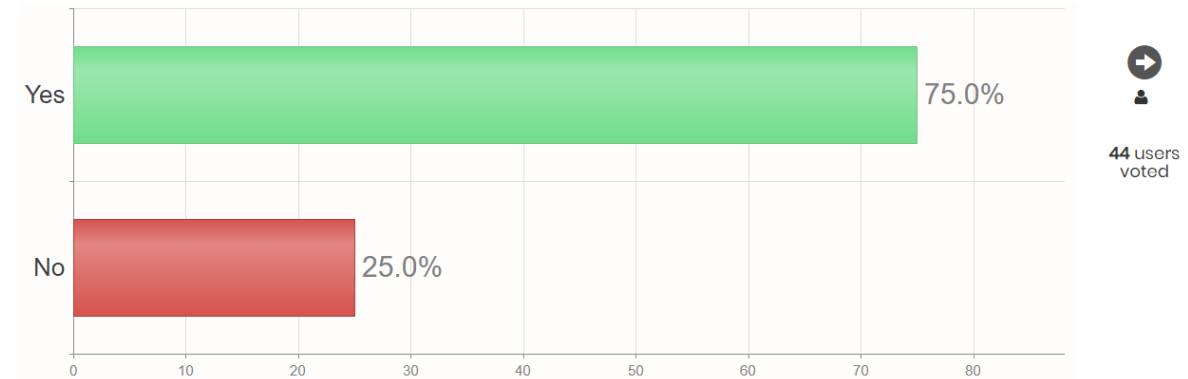
### 2. Have you ever uploaded data to an open data repository?



**VOXvote**  
Create your own for free

Vote on [live.voxvote.com](https://live.voxvote.com) PIN: 49004

### 3. Have you ever searched for data in an open data repository?



**VOXvote**  
Create your own for free

Vote on [live.voxvote.com](https://live.voxvote.com) PIN: 49004

# What is the single biggest obstacle to making your data open?

link to padlet here

<https://padlet.com/kflynn49/FNS2>

# Open data is licensed !

A “Creative Commons” license is suggested because it is

- Easy to use
- Widely used
- Flexible
- Easily machine- and human-readable
- High likelihood of data being used
- Data can be cited just as publications can be cited

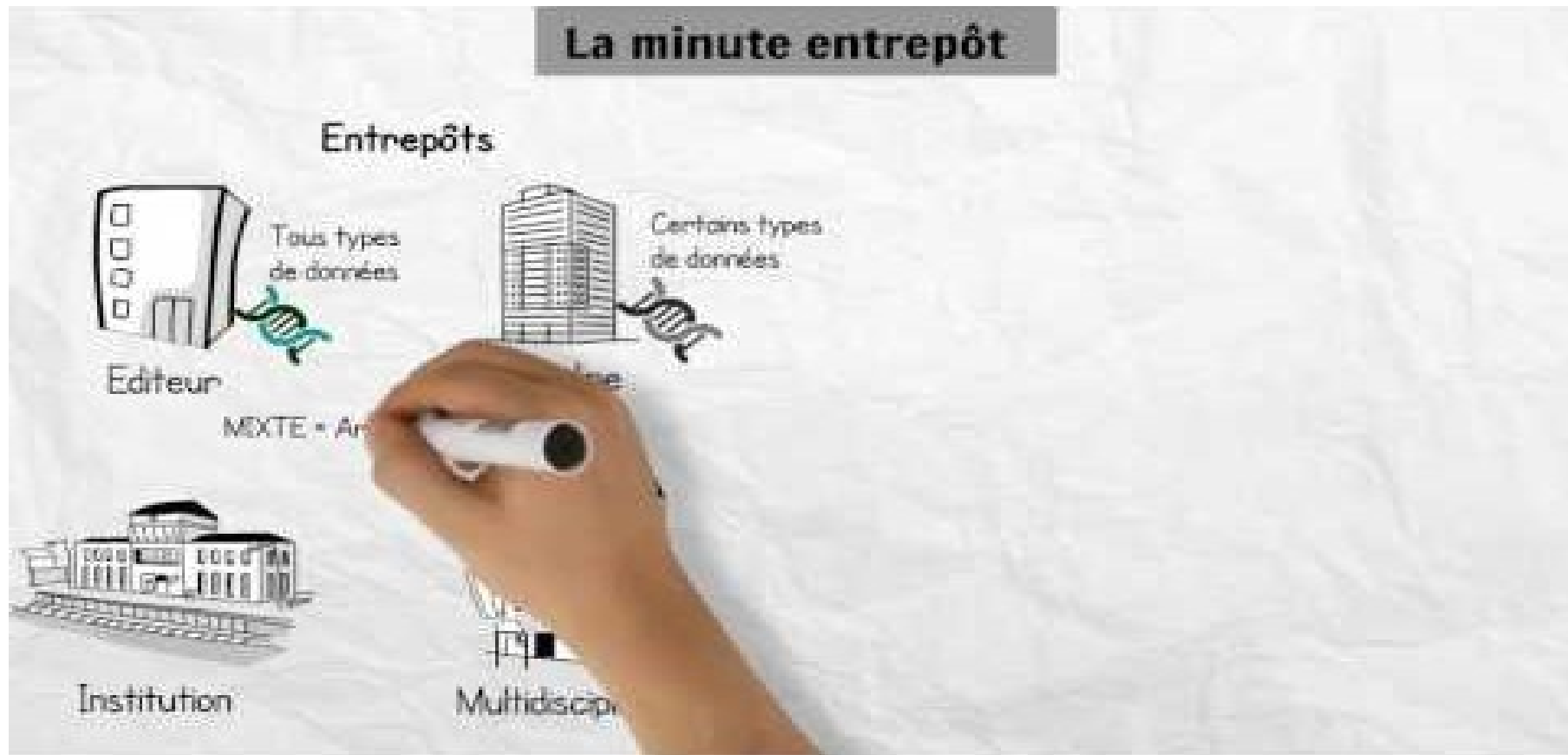


This License Selector Tool will help decide which of the 7 CC licenses is best for your data.

<http://ufal.github.io/public-license-selector/>



# Open Data lives in a Data Repository



<https://www.youtube.com/watch?v=sXvSuiuzmTs>

# Some examples of data repositories

## GENERAL DATA REPOSITORIES

- [Figshare](#)
- [Dryad](#)
- [Open Science Framework](#)

## SOCIAL SCIENCES

- [Archaeology Data Service](#)
- [Inter-University Consortium for Political and Social Research \(ICPSR\)](#)
- [Open ICPSR](#)
- [Qualitative Data Repository](#)

## BIOLOGICAL AND LIFE SCIENCES

- [GenBank](#)
- [NCBI Sequence Read Archive \(SRA\)](#)
- [MGnify](#) (Microbiome data)
- [Protein DataBank](#)
- [Database of Genotypes and Phenotypes \(dbGaP\)](#)
- [ArrayExpress](#)

## CHEMISTRY

- [Cambridge Structural Database](#)
- [ioChem-BD Computational Chemistry Datasets](#)
- [NCBI PubChem Substance](#)

## EARTH AND ENVIRONMENTAL SCIENCES

- [NASA Goddard Earth Sciences Data and Information Services Center](#)
- [PANGAEA](#)
- [World Data Center for Climate at DRKZ \(WDCC\)](#)

Source: Scientific Data,  
[Recommended Data Repositories](#).

# Open data should also be FAIR



<https://www.youtube.com/watch?v=7CrOp7cftV4>

# Community of Practice

The screenshot displays the myFNS - Cloud website interface. At the top, the logo for myFNS - Cloud (Food Nutrition Security) is visible, along with navigation links for News, Members, Events, Forum, Blogs, Opportunities, Repository, and Partners. A user profile for Katherine is shown in the top right corner.

The main content area features a post from @FNSScloudEU retweeted by @EuroFIRAIISBL. The post text reads: "Don't miss out on the Webinar! OPEN Science: challenges and opportunities to promote a knowledge-based innovation of the Food System". It includes a calendar icon indicating the event is on April 7th, 2021, from 2:00 pm to 4:00 pm (CEST), with free registration at <https://t.co/65A1ZIEuqs>. The post also lists several related accounts: @AskfoodE, @ScienceEurope, @SEKIFood, and @EUErasmusPlus, along with a link <https://t.co/IPZaFCOWgH>.

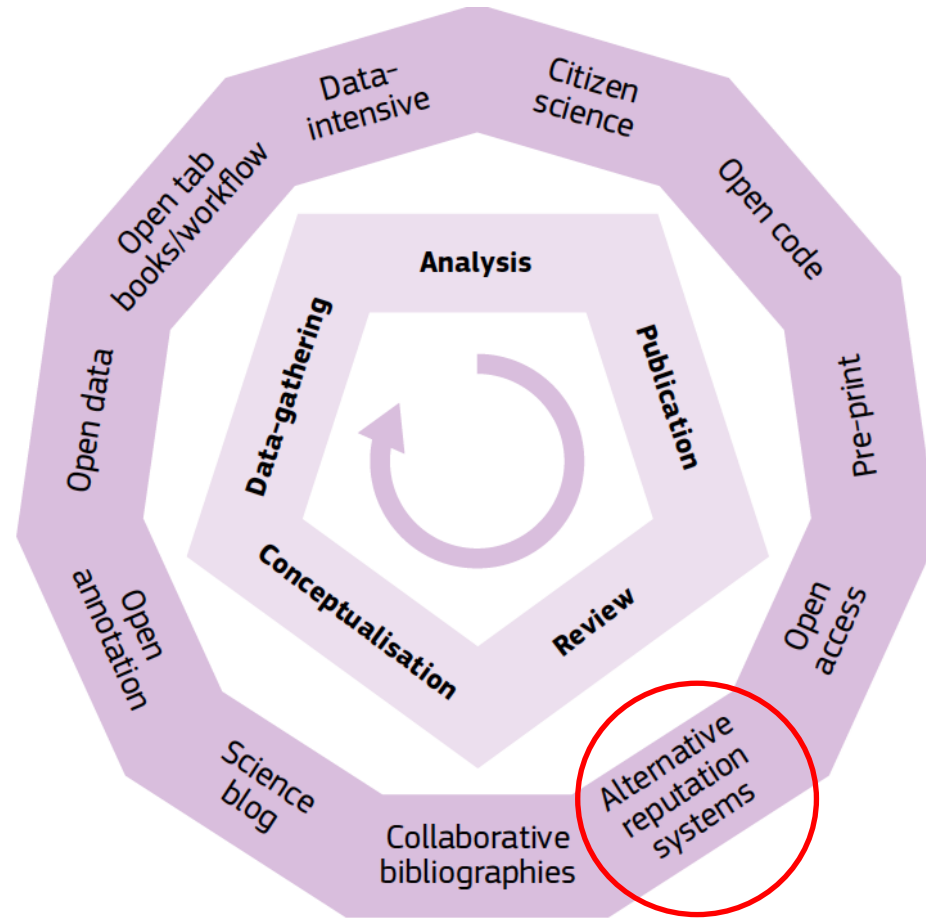
The post content includes a graphic for the "askfood" webinar series titled "OPEN SCIENCE: challenges and opportunities to promote knowledge-based innovation of the Food System". The graphic lists the following details:

- ASKFOOD Webinar Series**
- BEYOND COVID-19: CHALLENGES AND NEW OPPORTUNITIES FOR SUSTAINABLE AND INNOVATIVE FOOD SYSTEMS**
- Beyond COVID-19: Skill Changes and New Competences for Sustainable and Innovative Food systems, 19th January 2021**
- FOOD SAFETY CULTURE DEVELOPMENT: Best practices for a more sustainable food system, 5th February 2021**
- 13:45: OPENING OF THE VIRTUAL ROOM**
- 14:00: WELCOME AND INTRODUCTION**  
*Paola Pittia, University of Teramo (IT), ASKFOOD Project Coordinator*  
*Julian Drausinger, LVA (AT)*
- 14:10: TALKS**
- OPEN SCIENCE: PROGRESS AND OPPORTUNITIES**  
*Lilija Rovell, Damian, Science Europa*

Below the main post, there is another tweet from @FNSScloudEU dated 21 days ago, mentioning a PhD Scholarship opportunity: "Transforming Diets for Environmental Sustainability through Experimental Interventions - contact Dr Natasha Grist (mailto: n.grist@uea.ac.uk) with any questions - <https://t.co/5ilBse4Maz> <https://t.co/OHsYqPwdf>".

On the right side of the interface, there is a "Profile" section showing a progress indicator that the user's profile is 77% complete, with an "Edit Profile" button. Below this is a "Featured Blogs" section with a blog post titled "When to use the forum, a room or a blog - a few suggestions" by Annette Fillery Travis, dated 09/09/2020. The "Our most recent members" section lists three members: Jelena Milesevic (Science Associate at CAPNUTRA, 16 days ago), Mirjana Gurinovic (Principal Research Fellow, Senior researcher at Association for Capacity Development in Nutrition, 20 days ago), and Grace Bennett (a month ago).

# Wheel of Open Science



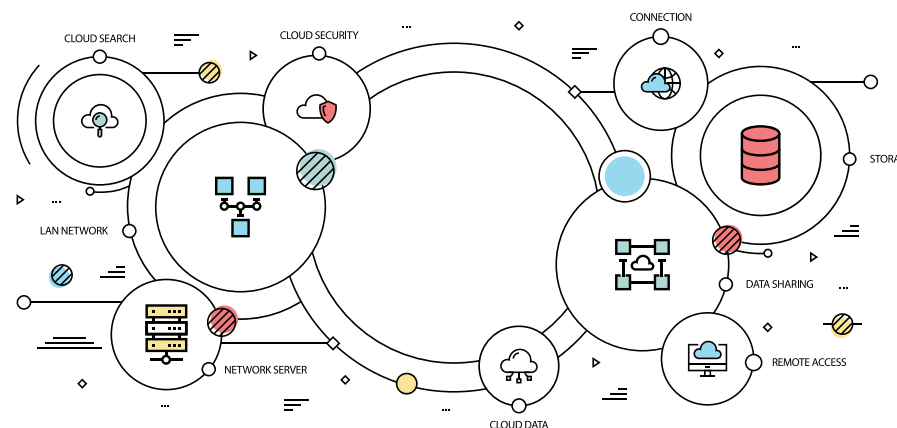
European Commission Public Consultation Science 2.0: Science in Transition



# FNS - Cloud

Food Nutrition Security

# Food Nutrition Security



# FNS-Cloud vision

FNS-Cloud will help overcome European research fragmentation by integrating and federating existing food nutrition security (FNS) data, tools and services, to provide added value FAIR data that can reduce knowledge gaps, facilitate better research and exploitation, inform policy, and help deliver sustainable diets to European citizens.





# FNS-Cloud mission

- Implement and test cloud via Use Cases (WP4) and Demonstrators (WP5) to test existing and emerging data
- Develop, integrate, and test innovative FNS Cloud tools and services
- Enable harmonisation and standardisation of FNS data (sources, formats, languages) and external services (e.g., apps) to facilitate integration and interoperability
- Engage FNS user communities (especially FNS researchers) to improve co-operation and reduce barriers to innovation and exploitation
- Develop sustainable FNS Cloud governance and business models, in parallel with the wider EOOSC user community

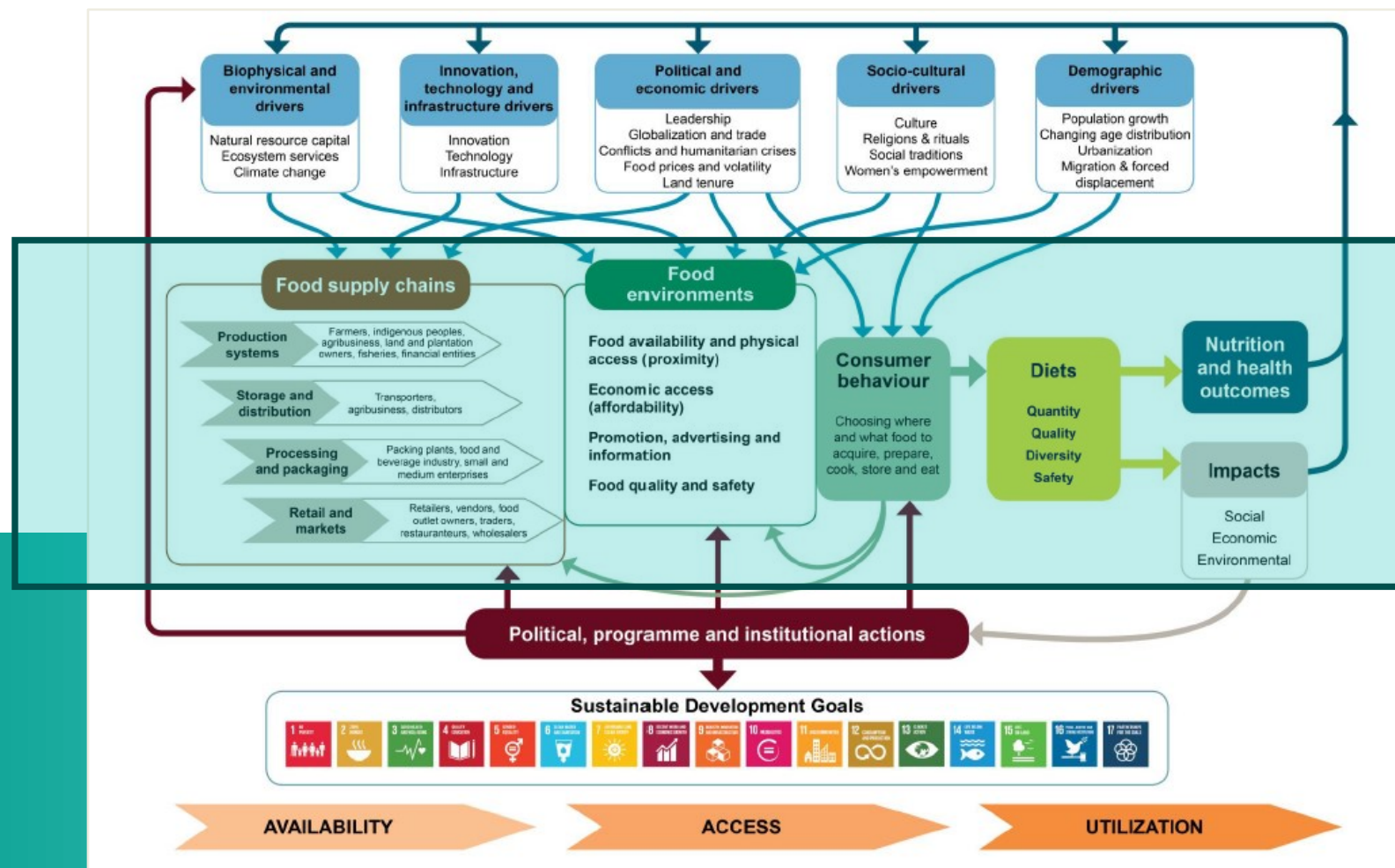
## About Us

[www.fns-cloud.eu](http://www.fns-cloud.eu)



# Supporting Dietary Behaviour Change

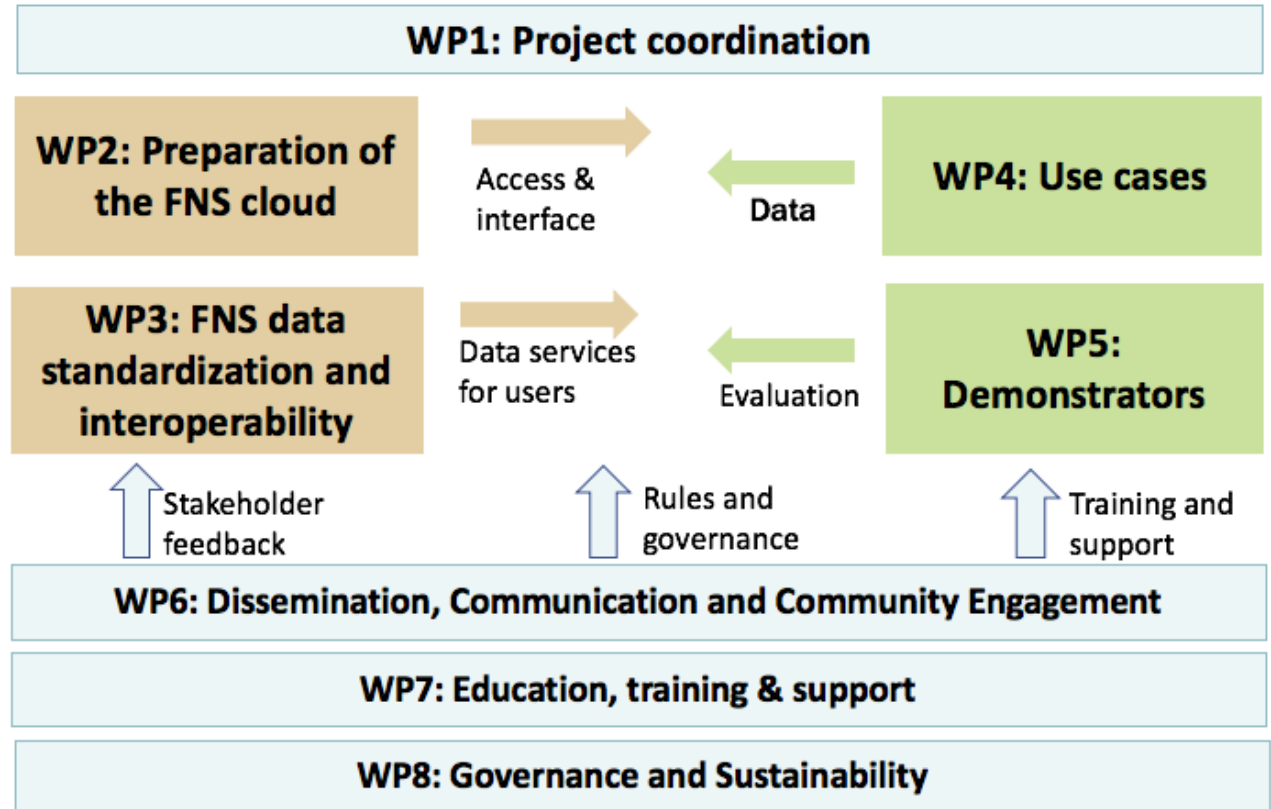
■ FNS - Cloud



■ Food | Nutrition | Security | Cloud

### WP Leaders

WP1	RTDS
WP2	PMT
WP3	JSI
WP4	UCD
WP5	QIB
WP6	EuroFIR
WP7	UWTSD
WP8	JdIC
(WP9)	RTDS)



## About Us

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# FNS-Cloud Consortium



- 35 beneficiaries
- 11 EU Member States (AT, BE, BG, DE, DK, ES, GR, IE, IT, NL, and SI), UK, Serbia, & Switzerland
- Research organisations including universities
- For-profit and non-profit SMEs and Associations
- IT specialists, FNS researchers and social scientists, lawyers, science communicators, multiplier organisations

# FNS-Cloud: Feeding the research landscape

Input

From research and innovation activities



Output

ESFRI Research Infrastructures and EOSC



## FNS - Cloud

Food Nutrition Security

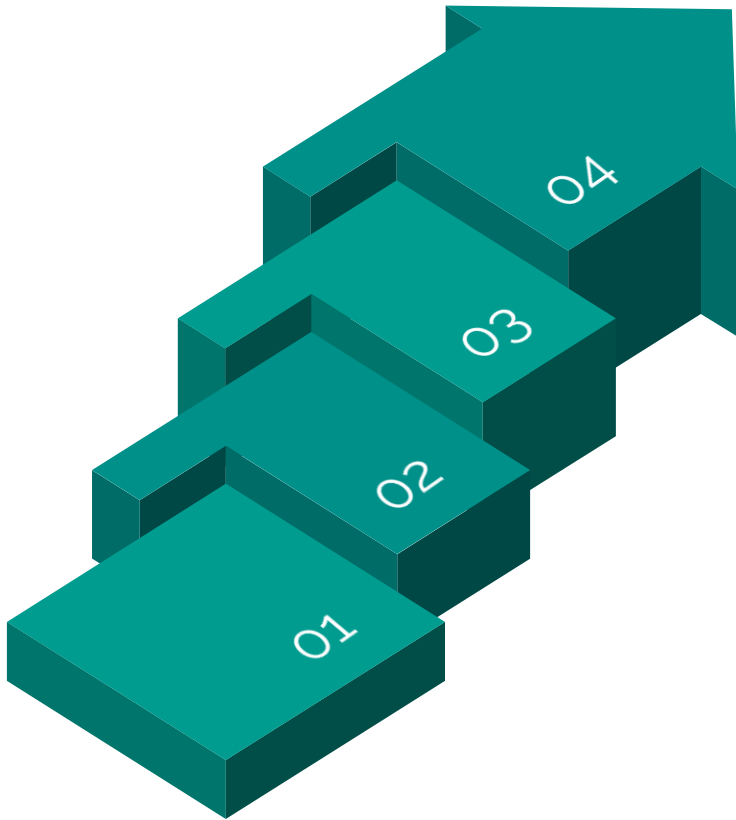
# FNS-Cloud in the food and health landscape

PRIMARY PRODUCTION



HEALTH

# FNS-Cloud implementation



## Nine use cases and field labs focus on:

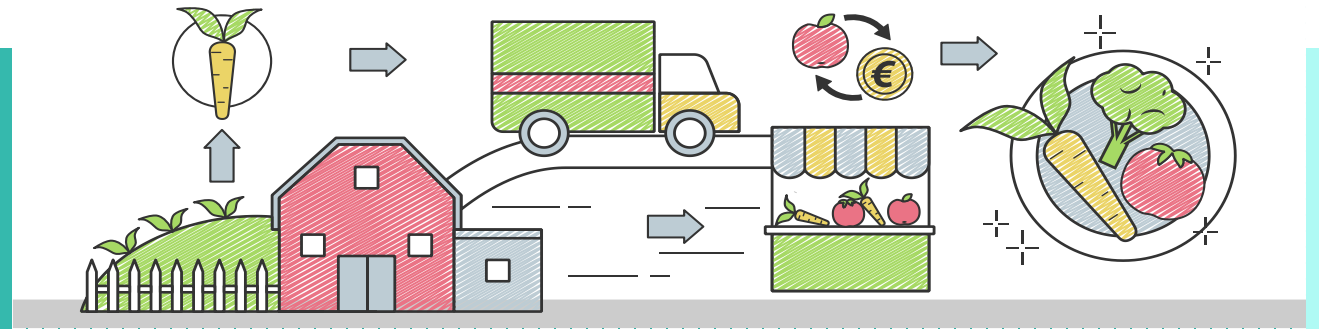
- Making existing and emerging FNS data FAIRer
- Generating proof-of-principle data where none exists
- Testing the FNS-Cloud infrastructure, tools, and services

## Feed into three Demonstrators that will:

- Be tested amongst user communities
- Address any limitations and implement improvements
- Analyse advancements in TRL and performance



# FNS-Cloud Use Cases & Field Trials



## Existing data, use cases to develop ...

- Food traceability & metrology search engine (milk, olive oil, fish) (ENEA, IT)
- Food labelling data and reformulation tools (branded foods db) (NUTRIS, SI)
- Total diet studies risk assessment (consumers, professionals) (RIVM, NL)
- Food intake, consumer behaviour & lifestyle (mapping tool, merging strategies, data quality and usability assessment) (UCD, IE)
- Lifestyle and NCDs cohort data (type 2 diabetes risk) (HUA, GR)

## Emerging or no data, field trials to fill gaps ...

- Novel dietary intake and behaviour tools (24 h recall ethnic groups) (UCD, IE)
- Novel dietary intake and behaviour tools (eNutri FFQ, elderly) (UoR, UK)
- Family meal planning (Lifely, IT)
- Healthy diets for healthy microbiome (QIB, UK)
- Alert classification system for food-diet-drug interactions (IMDEA, ES)



# FNS-Cloud Demonstrators

## Bringing use cases and field trial data, knowledge, tools, and services together to answer research questions

- Agri-food data and tools (DEM01) – traceability, metrology, labelling, (re)formulation, and benefit:risk
- Nutrition & Lifestyle (DEM02) – intake, behaviour, purchase, preparation, consumption, and composition
- Non-communicable diseases and microbiome (DEM03) – healthy diets, healthy microbiome, risk for T2D, food-drug interactions



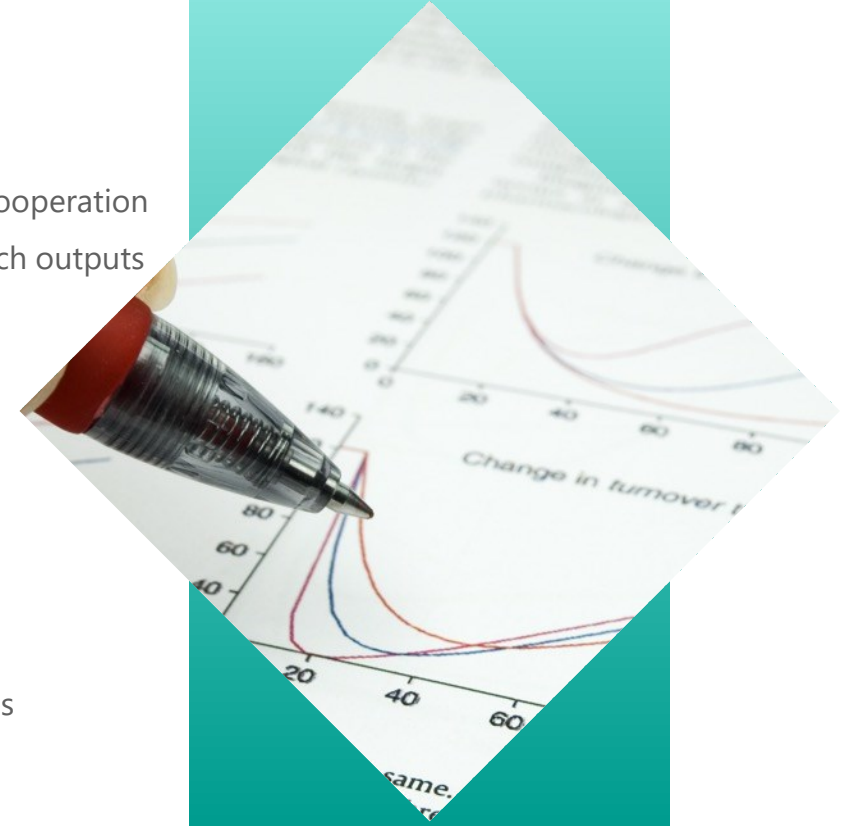
# Expected Impacts

## Outputs of the project

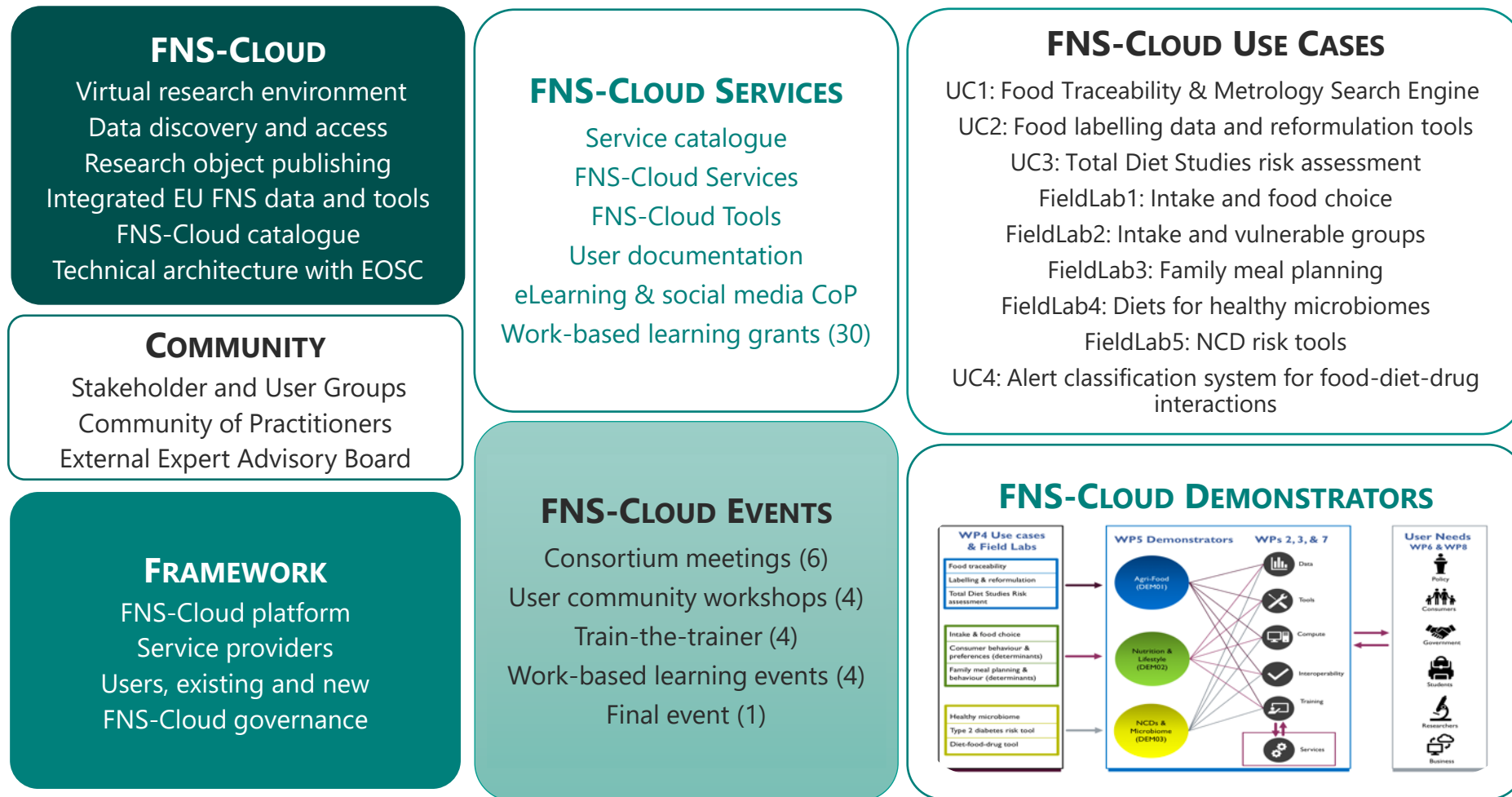
- Improved professional skills and competencies and confidence
- Increased trans-national and trans-interdisciplinary exchange/ cooperation
- Greater emphasis on user-communities and user-centred research outputs
- Sustainability (cloud, users, potential to grow)
- Scientific excellence globally and employments opportunities

## Uptake of recommendations

- Measurable increase in FNS data FAIRification
- Facilitation of dialogue and exchange amongst user communities
- Improved and more frequent exchange with stakeholders
- Improved health in older adults, prolonging quality-of-life
- Sustainable food chain generating safe, nutritious, affordable foods



# FNS-Cloud outputs





# THANK YOU