

H2020 Partnership Landscape and its relevance for Horizon Europe – Cluster ‘Food and Natural Resources’

Description and Analysis

Information

Project no.	811171
Project acronym	ERA-LEARN
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Background	<p>The description and analysis of networks follow the recommendation of the ERAC ad hoc Working Group on Partnerships to provide an analysis on the status-quo of partnerships in prospective areas of Horizon Europe. The individual Cluster Reports will inform a Synthesis Report which is based on the partnership analyses that have been performed in relation to the clusters under Pillar II “Global Challenges and Industrial Competitiveness” of Horizon Europe (Commission proposal).</p>

Disclaimer

The Cluster Reports were elaborated by ERA-LEARN to support the coordination and cooperation among networks. They are work in progress and should be seen as a basis for starting discussions among the networks about the potential to adjust and streamline the partnership landscape in view of the challenges addressed by Horizon Europe. They are based on:

- a listing of networks provided by DG RTD, reviewed and partly modified by ERA-LEARN experts
- the ERA-LEARN database and
- desktop research and professional background knowledge of the ERA-LEARN authors of the individual Cluster Reports.

While due diligence was applied there are certain limitations that readers should bear in mind:

- The papers display and discuss existing partnerships, serving current framework priorities, and apply educated guesses about their relevance for the thematic clusters and (groups of) intervention areas sketched for Horizon Europe. They do not take into account the gradual thematic flexibility of networks or parts thereof, or the changes of research priorities that national ministries and funding initiatives may undertake. Nor do they consider the invaluable capacity of ministries to design and implement MS-based transnational funding initiatives across Europe across all innovation phases and aspects, and beyond their mere match with future thematic intervention areas of the clusters under Pillar II “Global Challenges and Industrial Competitiveness” of Horizon Europe (Commission proposal).
- The clustering of intervention areas to sub-clusters has been determined by the authors by means of expert assessment, for greater clarity of the connections displayed.
- The displayed connections are limited to formal connections and existing collaborations among partnerships.

Taking these limitations into account the parties involved in creating the databases and drafting the Cluster Reports would like to emphasize that references to networks and/or their relevance and/or their connections are not meant to be exhaustive nor judgemental but a preliminary input to the discussion process on the rationalisation and reform of the partnership landscape.

Background

This report is part of a series of reports addressing the five suggested Clusters of Horizon Europe (EC Proposal from June 2018). General information about the scope and methodology applied as well as on the description of the network types, etc. is provided in the so-called “Synthesis Report” to avoid duplication. All reports focus on R&I related partnerships in the areas suggested for Horizon Europe. Other networks are not considered. The Synthesis Report also includes the definition of the different partnership types that are considered in the individual reports.

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1. Overview of the Cluster, Actors and Activities

1.1. Overview

A: Description of Cluster

The EC proposal for Horizon Europe¹ proposes to include a new “Food and Natural Resources Cluster” under Pillar II of the EU Framework Programme for Research and Innovation. This cluster will gather parts of the Horizon 2020 **Societal Challenge 2** (Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research and the Bioeconomy) and parts of **Societal Challenge 5**, Climate Action, Environment, Resource Efficiency and Raw Materials.

The Food and Natural Resources Cluster aims to develop the adequate knowledge base and promote the emergence social and technical innovations needed to address the challenge of **nourishing the planet’s growing population while tackling climate change and natural resources depletion**. It is organised around **7 sub-topics or “areas of intervention”**: (1) Environmental Observation, (2) Biodiversity and Natural Capital, (3) Agriculture, Forestry and Rural Areas, (4) Sea and Oceans, (5) Food Systems, (6) Bio-based Innovation Systems, and (7) Circular Systems (see table 1 below). These intervention areas are closely related to each other, and overlap sometimes (e.g., “nature-based solutions” is listed both under “biodiversity” and “agriculture, forestry and rural areas”; circularity is mentioned under “food systems” and under “circular systems”).

Research and innovation activities funded under this Cluster are expected to contribute to several EU strategies and policies, e.g. Common Agricultural Policy, Common Fisheries Policy, Maritime Policy, Circular Economy Action Plan, Bio-Economy Strategy, 2030 Climate and Energy Framework, and Food2030 Policy Framework, as well as the UN Sustainable Development Goals.

The Food and Natural Resources Cluster has a proposed budget of **10 billion euros** for 2021-2028, as provided in the EC proposal for Horizon Europe (this represents 10% of the proposed total budget for the Horizon Europe Framework Programme). Activities to be funded are targeted at both public and private sector stakeholders (a multi-actor approach to research and innovation is in fact encouraged).

¹ COM(2018)436 FIN

B: Description of partnership programmes related to the intervention areas

Table 1: Intervention areas and relevant sub-topics of the Cluster ‘Food and Natural Resources’ in Horizon Europe

Relevant Sub-Topics	Intervention Areas						
	Environmental Observation	Biodiversity and Natural Capital	Agriculture, Forestry, Rural Areas	Sea and Oceans	Food Systems	Bio-based Innovation systems	Circular systems
	User-driven and systemic approaches including open data, to environmental data and information for complex modelling and predictive systems	The state of biodiversity, terrestrial and marine ecosystems, natural capital and ecosystem services	Methods, technologies and tools for sustainable and resilient production in farming and forestry	Sustainable sea and ocean farming, fisheries and mariculture for food, including alternative sources of protein	healthy diets for people's well-being across their lifespan Sustainable and	Sustainable biomass sourcing and production systems,	Systemic transition to a resource-efficient and circular economy, with new Business models
	Extension of the Copernicus product and service portfolio	Systemic approaches for linking biodiversity, ecosystems and ecosystems services	Sustainable management and efficient use of natural resources (water, soil, nutrients)	Strengthened resilience of marine ecosystems	Personalised nutrition, to mitigate the risk factors diseases	Life sciences and their convergence with digital technologies for prospecting, understanding and sustainably using biological resources	Metrics and indicators for measuring the circular economy and life cycle performance
	User-oriented applications including their scaling up, to contribute to the management of European natural resources and ecosystems services and their related value chain	Modelling of trends and integrated scenarios for biodiversity, ecosystem services and good quality of life at different scales and horizons	Climate and environmental impact of activities in the primary sector; potential of agriculture and forestry for mitigation of greenhouse gas emissions	Ocean governance at global and regional levels	Consumers' behaviour, lifestyle and motivations, promoting social innovation and societal engagement for better health and environmental sustainability	Bio-based value chains and materials	Solutions for sustainable and regenerative development of cities, peri-urban areas and regions
		Ecotoxicology of compounds and new pollutants, their interactions and environmental behaviour, and altered biochemical loops under changing climate	Plant pests and diseases and animal health and welfare; alternatives to the use of contentious pesticides, antibiotics and other substances	Technologies for the digital ocean	Modern food safety and authenticity systems	Biotechnology	Eco-innovation for prevention and remediation of environmental pollution from hazardous substances and chemicals of emerging concern

Environmental Observation	Biodiversity and Natural Capital	Agriculture, Forestry, Rural Areas	Sea and Oceans	Food Systems	Bio-based Innovation systems	Circular systems
	Mainstreaming biodiversity and ecosystem services in decision-making frameworks and accounting systems	Antimicrobial resistance and threats from biological and agrochemical hazards; tackling the links between plant, animal, ecosystems and public health from One-Health	Monitoring and predictive/forecasting capacities including sea-level rise and other natural hazards	Food system mitigation of and adaptation to climate change	Circularity of the bio-based economy through technological, systemic, social and business model innovation	Circular use of water resources
	Nature-based solutions	The use and delivery of ecosystems services in agriculture and forestry systems	Blue value-chains, the multiple-use of marine space and growth of the renewable energy sector	Environmentally sustainable, circular and resource efficient food systems from land and sea, towards zero food waste throughout the entire food system	Increased understanding of the boundaries of the bio-based economy and its synergies and trade-offs with a healthy environment	
	Multi-actor living labs, approaches engaging stakeholders	Innovations in farming at the interfaces between agriculture, aquaculture and forestry and in urban areas	Nature-based solutions based on marine and coastal ecosystem dynamics	Innovation and food systems for place-based innovation and empowerment of communities, fostering fair trade and pricing, inclusiveness and sustainability through partnerships between industry, local authorities, researchers		
		Land use, rural development and territorial linkages				
		Digital innovations in farming, forestry and rural areas				
		Agricultural knowledge and innovation systems				

Source: COM(2018) 436 final Annexes: https://eur-lex.europa.eu/resource.html?uri=cellar:7cc790e8-6a33-11e8-9483-01aa75ed71a1.0002.01/DOC_2&format=DOC

Currently, there are a total of **51 “fully relevant” research partnerships** in this Cluster:

34 are public-to-public research partnerships (P2Ps):

- 26 are European Research Area Networks (ERA-NETs)
- 5 are Joint Programming Initiatives (JPIs)
- 2 are Article 185 Initiatives
- 1 is a European Joint Programme (EJP)

17 are other types of partnerships or networks:

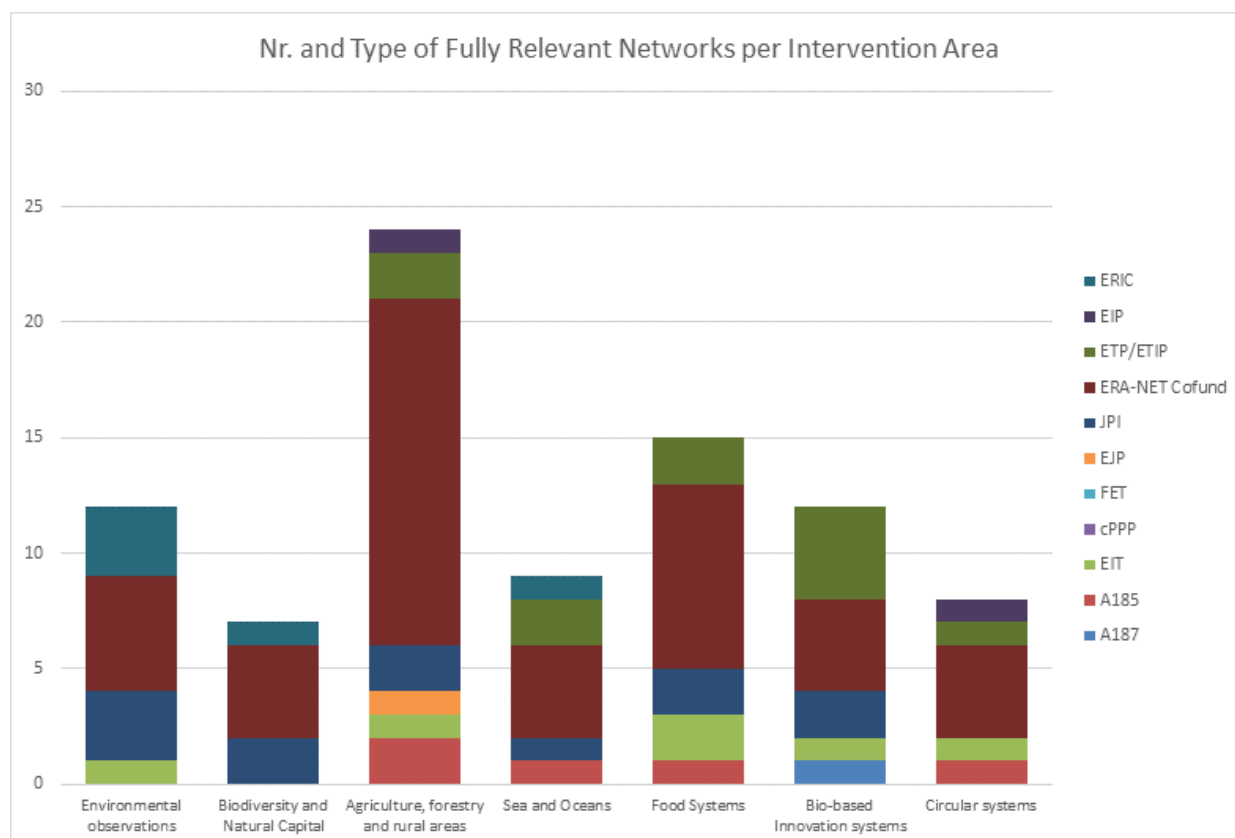
- 7 are European Technology Platforms (ETPs)
- 2 are European Innovation Partnerships (EIP)
- 5 are ERICs
- 2 are Knowledge and Innovation Communities (EIT-KICs)
- 1 is an Article 187 Initiative

Regarding the classification of networks as fully or partly relevant, please note:

- We consider initiatives as fully relevant if the initiative and its research and innovation programme and/or activities deals with the thematic content of the specific intervention area to a large extent. For example, Electronics in Health is one of the top priorities of large PPP ECSEL, it is therefore considered to be fully relevant for the intervention area “Tools, Technologies and Digital Solutions for Health and Care” in the Cluster Health.
- We consider initiatives as partly relevant, if certain parts of the research and innovation programme and/or activities of a partnership initiative are relevant for the intervention area. For example, the JPI MYBL launched a call on “Welfare, Wellbeing and Demographic Change: Understanding Welfare Models” in 2016. It is therefore deemed to be partly relevant for the intervention area “Social and Economic Transformation” as the results of this action could provide some knowledge base for “policy advice” and related studies concerning “changes in the labour market”.
- A network can also be partly relevant to a specific area of intervention in case the focus of the network serves as the application area for the respective technologies or services to be developed in the intervention area. For instance, EIP on Active and Health Ageing is partly relevant to the intervention area of 'Digital Technologies' as digital technologies can be applied to improve healthy ageing of people. In a similar line, EIP on Smart Cities and Communities is partly relevant for the areas "Next

Generation Internet" or "High-performance Computing and Big Data" as the respective technologies or services can find various application opportunities in the framework of smart cities.

Figure 1: Number of current networks that are considered fully relevant for Cluster ‘Food and Natural Resources’²



Source: ERA-LEARN

As can be seen in Figure 1, the majority of fully relevant partnerships and networks in this Cluster are **P2Ps**, in particular **ERA-NETs** (26, or 51% of the total). While these are spread across the 7 intervention areas in this Cluster, a majority focuses on “agriculture, forestry and rural areas” and “food systems”. In addition, this Cluster also includes 5 JPIs (10% of all partnerships and networks). Each JPI focuses on a different intervention area. For example, JPI HDHL is fully relevant to “food systems” while JPI Oceans to “seas and oceans”. Finally, this Cluster also includes 7 ETPs (14% of the total) spread across 5 intervention areas. ETPs are industry-led fora that identify the most pressing research priorities that they wish to see reflected at EU (Framework Programme) and Member State levels.

² A specific note is pertinent here. Some ERA-NET Cofund Actions may be serving the needs of JPIs or FET Flagships in terms of implementing the joint calls and possibly other joint activities. In these cases the ERA-NET Cofunds can be regarded as integral parts of the wider initiatives (the respective JPIs or FET Flagships). However, they are considered as individual partnerships as they consist of separate H2020 contracts with their own scope, objectives, timeline and expected impacts. More details in section C below.

Table 2: Intervention areas of the ‘Food and Natural Resources’ Cluster and number of relevant ongoing partnerships and networks (a partnership/ network may be relevant to a number of different intervention areas)³

<i>Intervention areas in Horizon Europe</i>	<i>Fully relevant</i>	<i>Partially relevant</i>	<i>P2P</i>	<i>PPP</i>
Environmental observation	12	7	13	7
Biodiversity and natural capital	8	15	17	5
Agriculture, forestry and rural areas	26	12	27	8
Sea and oceans	8	11	12	6
Food systems	16	17	26	5
Bio-based innovation systems	13	11	12	7
Circular systems	7	12	15	2

Source: ERA-LEARN

It is important to note that several partnerships are fully or partly relevant to more than one area of intervention, as is for example the case of the Partnership for Research and Innovation in the Mediterranean Area (PRIMA Article 185 Initiative) and the Joint Programming Initiative on Agriculture, Food Security and Climate Change (FACCE-JPI).

Figure 2 shows a network analysis of the existing H2020 partnerships that are fully or partly relevant to the intervention areas within the Cluster ‘Food and Natural Resources’ in Horizon Europe. Intervention areas are red dots, networks grey ones. The connections are black lines when the network is fully relevant to the intervention area and grey if the network is only partly relevant. The more connections a dot has, i.e. the more networks are relevant (either fully or partly) to an intervention area, the larger the dot is. The algorithm places those networks/intervention areas with more connections closer to the centre. The illustration only shows how many intervention areas a specific network is relevant to. The larger grey dots indicate that the respective networks are relevant to more intervention areas than other networks. However, this cannot be considered to imply that they are in any respect more important than other networks, nor that their connections to the specific areas are in any way stronger than those of other networks.

³ For a detailed overview, see the Appendix

Considering the size of the red dots, we can see that the **most populated areas of intervention are “agriculture, forestry and rural areas” and “food systems”**. In fact, these areas attract half of all partnerships in this Cluster. This could be explained by several factors. *First of all*, achieving more resilient, sustainable and healthy agricultural and food systems is high on the EU policy agenda (e.g., CAP reform, new Food2030 Policy Framework, decarbonisation strategy 2050). These policy priorities may have generated a demand for new European knowledge. *Second*, the EU’s Standing Committee on Agricultural Research (SCAR) (est. in 1974), which advises the European Commission and EU Member States on the coordination of agricultural, forestry and food systems related research in Europe, is related to the emergence of the H2020 Societal Challenge 2 ERA-NETs that were subsequently inserted into the EU Framework Programme.

C: Networks working under a common roof

The current report considers all networks that have a separate Horizon 2020 contract. This means that even in the cases where certain ERA-NET Cofunds are implementing parts of the research and innovation programmes of other networks such as JPIs or FET Flagships, these are considered as separate initiatives in our analysis. This is the case for the following networks in the Cluster ‘Food and Natural Resources’:

- JPI FACCE served as a “common roof” for many food related ERA-Nets.

Further details can be seen in the following chapter, where connections between contracts are discussed.

1.2. Actors and activities

Many of the ERA-NETs in this Cluster are **connected** to more structuring or institutionalised public partnerships (e.g., JPIs or Art. 185/ 187 initiatives).

Each of the JPIs in this Cluster has developed a Strategic Research and Innovation Agenda and proposed new ERA-NETs in its respective intervention area. In addition, these JPIs have often also helped develop other alignment actions, without any EC co-funding, e.g., Knowledge Hubs that help strengthen a community of practice (e.g., FACCE-JPI), and knowledge platforms that help link and valorise the results of national research projects on a similar topic (e.g., Water JPI). JPI HDHL has also set up a Policy Evaluation Network to help monitor, evaluate and benchmark national and EU policies that affect dietary and physical activity through a standardised approach.

This Cluster also includes 2 Article 185 Initiatives (PRIMA and BONUS), which each have different thematic and geographic foci (agriculture and food systems in the Mediterranean region; environmental challenges in the Baltic sea). These initiatives often also serve a wider and more political goal, e.g., in the case of PRIMA, strengthen the overall Euro-Mediterranean cooperation.

There are nor fully relevant contractual public-private partnerships (cPPPs) nor FET Flagships in this Cluster. There is however one large Joint Undertaking on Bio-based Industries (BBI), which is a Public-Private Partnership (PPP) between the EU and the Bio-based Industries Consortium (BIC) that relies on the Art. 187 instrument (budget: €3.7 billion).

Likewise, there are 2 Knowledge and Innovation Communities (KICs) in this Cluster, which aim to promote and financially support innovations in the areas of, respectively, climate action and food, by working closely with public, private and not-for-profit actors (e.g., large corporations, start-ups, universities, public research institutes).



The relatively low proportion of public-private R&I partnerships in this Cluster (31%) may have to be addressed in the future, in order to effectively tackle the need of nourishing the planet's growing population while tackling climate change and natural resources depletion (see below).

Finally, there are 5 ERICs in this Cluster, the majority of which are dedicated to environmental observations, on land, sea and air. For example, ICOS, which gathers 12 member countries and over 130 greenhouse gases measuring stations, aims to quantify and understand the greenhouse gas balance of the Europe and neighbouring regions.

2. Connections between partnerships and networks

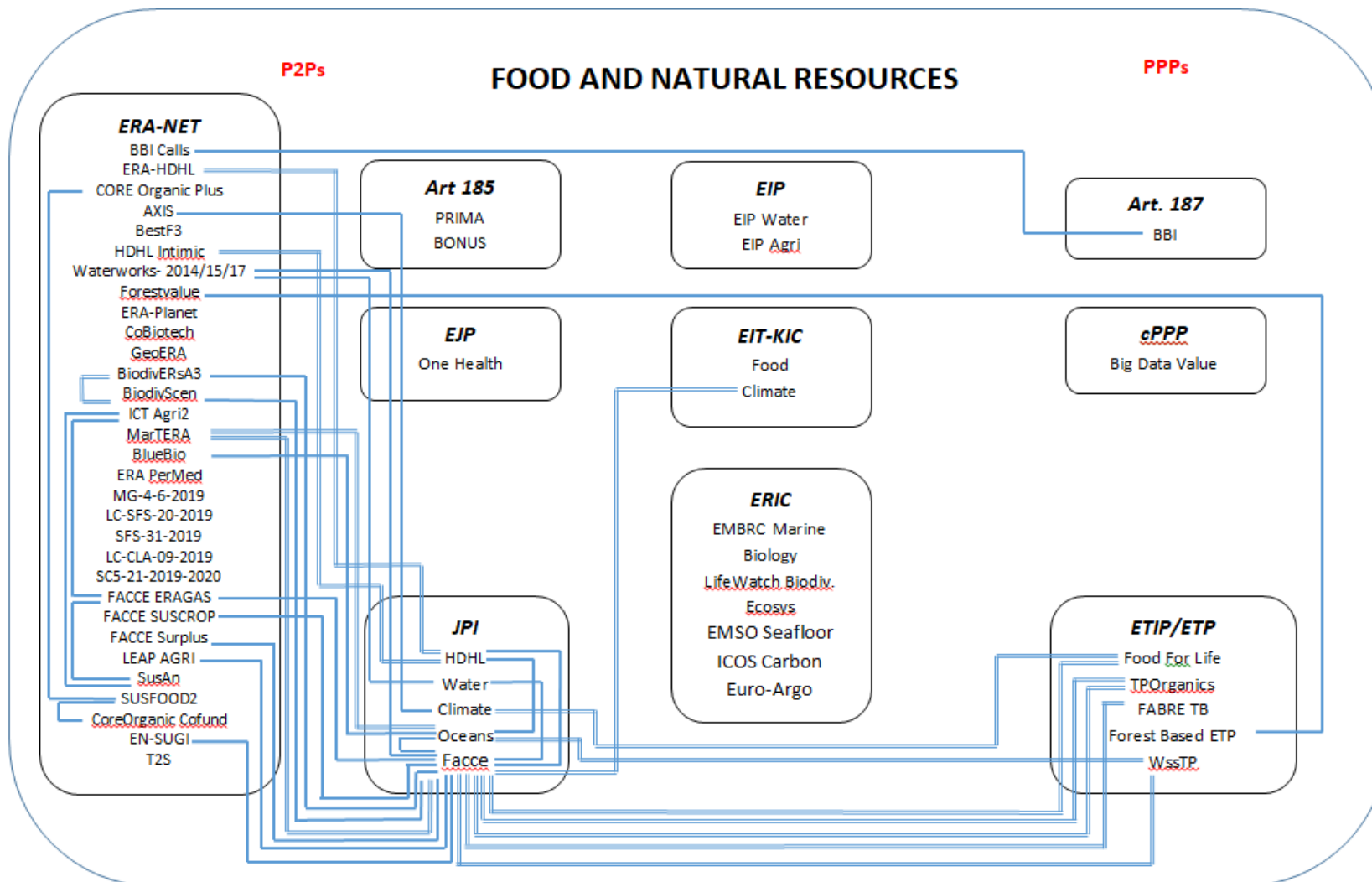
2.1. *Type of connections between the partnerships and networks*

The analysis below is an attempt to highlight the main connections that are apparent from desk research across the seven main thematic areas of the Cluster 'Food and Natural Resources'. It does not attempt to be comprehensive but provides an indication of the more obvious connections that are further discussed in the following sections. They include

-  Existing collaborations: e.g. joint calls or other joint activities (single, thick line). An example of existing collaboration is the joint call between Water JPI and FACCE-JPI, or the joint Knowledge Hub between JPI HDHL, JPI Oceans and FACCE-JPI.
-  Formal connections: e.g. where one partnership is clearly linked to another (twin line). An example for a formal connection is Water-JPI and its Cofunds (WaterWorks 2014, 2015, 2017).

Please keep in mind that the lines do not show strength of connections but they just illustrate a certain type of collaboration as this was retrieved from the information of the networks' websites and expert knowledge available in the ERA-LEARN consortium.

Figure 3: Description of connections between current partnerships and networks related to the Cluster 'Food and Natural Resources' of Horizon Europe



As is shown in Figure 3, there are many formal connections and collaborative activities between ERA-NETs, JPIs and ETPs. This can be explained by the fact that all JPIs in this Cluster have facilitated the launch of ERA-NETs to implement their respective Strategic Research Agendas and Implementation Plans, and have therefore formal connections with these. Likewise, many JPIs have included ETPs in their resp. Stakeholder Board.

Furthermore, several JPIs have also developed collaborative activities amongst themselves, such as joint calls or knowledge hubs.

There are however fewer connections between P2Ps on the one hand, and other partnerships/networks such as KICs and EIPs. Looking ahead, there may be room to develop more of such connections in the future, to ensure greater complementarity between their work and facilitate the uptake of (publicly funded) research findings amongst (private) end-users.

Likewise, the ERICs in this Cluster do not seem to have formal connections with other partnerships/networks.

2.2. Examples of different types of interactions

A few selected examples are listed below to illustrate the different types of connections among the partnerships and networks.

Formal connections (e.g. one serves as continuation or implementation of the other's work-programme)

- As noted above, all JPIs have launched ERA-NETs: For example, FACCE-JPI has launched FACCE ERA-GAS, FACCE SURPLUS and FACCE SusCrop; JPI HDHL has launched ERA-HDHL and HDHL Intimic; JPI Climate has launched AXIS ERA-NET and ERA4CS (in the Cluster on Climate and Energy). This has also led to an overlap in memberships.
- The same is valid for Article 185/187 Initiatives: Bonus has launched the Bonus ERA-NET and BBI a BBI Calls for Proposals.
- In fact, 11 out of the 26 ERA-NETs in this Cluster (**42%**) directly emanate from these JPIs or Art. 185/187 Initiatives.
- The remaining ERA-NETs in this Cluster are often **connected to earlier ERA-NETs**: for example, BestTF3 ERA-NET is the continuation of BestTF and BestTF2; ICTAgri3 is the continuation of ICTAgri 1 and 2, and BiodivScen is the successor of BioDiversa 2 and 3.

- Likewise, some JPIs have formal connections with **Article 185 initiatives**. For example, JPI Oceans has a strategic engagement with the BONUS Article 185 initiative, with a joint working group at Board level, chaired jointly by a representative of the JPI Oceans Management Board and the chair of the BONUS Steering committee.
- Several **ETPs** are also formally connected to JPIs. For example, ETP Food for Life, TPOrganics, Plants for the Future, FABRE TP and WssTP are members of the FACCE-JPI Stakeholder Advisory Board, and as such take part in the entire JPI programming cycle.
- This points to a high degree of **inter-connections** between P2P partnerships in this Cluster.

Existing collaborations (e.g. joint activities, some joint decision making through common membership in boards)

- As noted above, several JPIs have developed **joint activities cutting across their respective SRAs**. This is for example the case of FACCE-JPI and JPI Water (WaterWorks2015 ERA-NET, which focuses on sustainable water management in agriculture), and JPI Climate and JPI Oceans (Joint Transnational Call on Next Generation Climate Science in Europe for Oceans).
- Likewise, some **ERA-NETs** have also developed joint (non-co-funded) calls with JPIs or other ERA-NETs on issues of common interest, e.g., the BlueBio ERA-NET is the result of a collaboration between the former ERA-NETS COFASP and ERA-MBT and JPI Oceans; the BioDiversa ERA-NET and FACCE-JPI have developed a joint call on synergies between food supply, biodiversity and ecosystem services.
- Hence there has been some “**trans-disciplinary**” collaboration where relevant across different partnerships in this Cluster.
- Some JPIs have also had collaborative activities with relevant **EIPs**. For example, Water JPI and EIP Water have organised joint workshops on strategic communication planning and stakeholder engagement. Likewise, FACCE-JPI and EIP Agri are discussing possible collaboration in the area of dissemination and valorisation of research results towards end-users.

Other informal connections (e.g. sharing information, considering each other's priorities)

- The **JPIs** are regularly sharing information amongst themselves about their respective work priorities and conducting joint advocacy efforts through the “10 JPI Chairs Group”.
- **ERA-NETs** have also been sharing information via the PLATFORM project, which brought together networks in the area of the bioeconomy: food, agriculture, aquaculture, fisheries, forestry, climate, biodiversity and biotechnologies. PLATFORM has played a central role in facilitating and improving the coherence between the P2P networks active in the bioeconomy.
- **PRIMA Article 185** and the 3 JPIs active in its thematic remit, FACCE, HDHL and Water, also regularly share information about their respective work programmes, in order to avoid duplication and ensure complementarities.
- **BBi Article 187** regularly shares information and attends the meetings of other networks, such as those of FACCE-JPI SURPLUS ERA-NET.

2.3. Summary on overall connectivity between the networks

- P2Ps, and in particular JPIs, ERA-NETs and Article 185/187 initiatives in this Cluster are **well-connected**. They have formal connections and/or collaborative activities.
- In contrast, there seems to be **more limited connections between the P2Ps and other initiatives (e.g., EIP, KICs, ERICs)**. However, the connections are often of an informal nature (e.g., participation in each other's meetings).
- Greater connectivity between P2Ps and other types of networks may be warranted to address the global challenges this Cluster is focussing on.
- Likewise, more connections could be established between partnerships of different intervention areas, so as to promote more complementarities and integrated approaches to sustainability.

After this initial documentation of publicly available and well documented facts, many relevant questions remain unanswered. Open questions include, but are not restricted to:

- A prominent pattern of connection/cooperation in the Food and Natural Resource Cluster is that JPIs initiate a set of ERA-NETs for implementation. Other Instruments (KICs for instance) do not need to acquire additional contracts. Therefore the question arises, if there is a way to innovate the set of instruments in a scope that increases speed and decreases bureaucratic burdens for the initiatives?

- How can, in a similar way, themes and partnerships in “agriculture”, “environmental observation” and “food systems” be connected with a scope to align policies, programmes and projects, and with a scope to quicker disseminate relevant research outcomes to other intervention areas? Which role can P2Ps play here?
- Which significance do Knowledge and Innovation Communities have for the intervention areas? Is their limited connection to the other P2Ps mainly a historic leftover or could and should they better be connected with other P2Ps in this cluster?
- It remains open, why (typically) industry dominated Technology Platforms did link well with the P2Ps, while ERICs and e.g. the Food KIC were formally less well connected to the Agriculture and Food P2Ps.

3. Appendix

Summary of the various partnerships and networks that are relevant to the Cluster 'Food and Natural Resources'

The black dots indicate 'full relevance' to the specific intervention area, whilst the white dots indicate 'partial relevance'.

Network type and acronym	Full title	Environmental observations	Biodiversity and Natural Capital	Agriculture, forestry and rural areas	Sea and Oceans	Food Systems	Bio-based Innovation systems	Circular systems	Start	End	Members
A187											
EUROHPC	HPC – <i>High-Performance Computing</i>	○							2019	2026	
BBI	Bio-based Industries						●		2014		
A185											
EDCTP 2	European and Developing Countries Clinical Trials Partnership	○	●				●		2014	2024	29
PRIMA	Partnership for Research and Innovation in the Mediterranean Area			●		●		●	2018	2023	18
BONUS	Joint Baltic Sea Research Programme				●				2010	2021	8
EJP											
One Health	Promoting One Health in Europe through joint actions on foodborne zoonoses, antimicrobial resistance and emerging microbiological hazards			●					2018	2022	41
EIT-KIC											
Food	European Institute of Innovation and Technology - Food			○	○	●	○	○	2014	2020	30
Climate	European Institute of Innovation and Technology - climate	●	○	●		●	●	●	2014	2020	38

Network type and acronym	Full title	Environmental observations	Biodiversity and Natural Capital	Agriculture, forestry and rural areas	Sea and Oceans	Food Systems	Bio-based Innovation systems	Circular systems	Start	End	Members
JPI											
HDHL	A Healthy Diet for a Healthy Life			○		●			2016	2021	26
Water	Water Joint Programming Initiative Water Challenges for a Changing World		●	●		○	●		2011	2022	30
Climate	Connecting Climate Knowledge for Europe	●	○	○	○	○		○			16
FACCE	Agriculture, Food Security and Climate Change	●	●	●	○	●	○	○	2012	2022	22
Oceans	Healthy and Productive Seas and Oceans	●	○		●	○	●		2011	2022	21
ERA-NET Cofund											
ERA-HDHL	ERA-NET Biomarkers for Nutrition and Health implementing the JPI HDHL objectives					●			2016	2021	19
CORE Organic Plus	Coordination of European Transnational Research in Organic Food and Farming Systems					●			2013	2021	23
AXIS	Assessment of Cross(X)-sectoral climate Impacts and pathways for Sustainable transformation	●		○	○	○			2018	2022	11
BestTF3	Bioenergy Sustaining the Future					●			2016	2020	12
HDHL Intimic (JPI HDHL)	ERA-Net on INtesTInal MICrobiomics, diet and health, implementing JPI HDHL objectives					●			2016	2021	15
Forestvalue	ForestValue - Innovating forest-based bioeconomy		○	●			●	○	2017	2022	31
ERA-PLANET	The European network for observing our changing planet	●	○						2016	2021	45
CoBiotech	Cofund on Biotechnologies			○		○	●		2016	2021	27
GeoERA	Establishing the European Geological Surveys Research Area to deliver a Geological Service for Europe	○							2017	2021	48

Network type and acronym	Full title	Environmental observations	Biodiversity and Natural Capital	Agriculture, forestry and rural areas	Sea and Oceans	Food Systems	Bio-based Innovation systems	Circular systems	Start	End	Members
BiodivERsA3	Consolidating the European Research Area on biodiversity and ecosystem services		•	•					2015	2020	34
BiodivScen	Promoting and implementing joint Programming at the international level to reinforce research on the development of scenarios of biodiversity and ecosystem services		•	○					2017	2022	25
ICT AGRI2	Information and Communication Technologies and Robotics for Sustainable Agriculture			•					2014	2018	23
MarTERA	Maritime and Marine Technologies for a New ERA				•				2016	2021	19
BlueBio	ERA-NET Cofund on Blue Bioeconomy - Unlocking the potential of aquatic bioresources				•	○	○		2018	2023	27
FACCE ERAGAS	Research and innovation on greenhouse gas	○		•		○	○		2016	2021	21
FACCE SUSCROP	Sustainable Crop production		○	•		○			2018	2022	32
FACCE SURPLUS	Sustainable and Resilient agriculture for food and non-food systems		○	•		○	•		2015	2020	25
LEAP-AGRI	A long term EU-Africa research and innovation partnership on food and nutrition security and sustainable agriculture		○	•		•			2016	2021	34
SusAn	European Research Area on Sustainable Animal Production Systems		○	•		○			2016	2021	40
SUSFOOD2	ERA-Net Cofund on Sustainable Food Production and consumption (SUSFOOD2)			•	•	•	○	○	2017	2021	28
BBI (Calls for Proposals)	Feedstock, Bio Refineries						•		2014	2020	
EN-SUGI	Eranet Sustainable Urbanisation Global Initiative			○	○	•	○	•	2016	2021	23

Network type and acronym	Full title	Environmental observations	Biodiversity and Natural Capital	Agriculture, forestry and rural areas	Sea and Oceans	Food Systems	Bio-based Innovation systems	Circular systems	Start	End	Members
T2S	Transformations to Sustainability							○	2017	2021	14
CORE Organic Cofund	CORE Organic Cofund		●	●		●		○	201	2021	27
ERA PerMed	ERA-NET ON PERSONALISED MEDICINE						○		2017	2022	32
MG-4-6-2019	Mobility for Growth							○			
LC-SFS-20-2019	Low Carbon Sustainable Food Security	●	○	●		○					
SFS-31-2019	Sustainable Food Security			●		●	○				
LC-CLA-09-2019	Building a low-carbon, climate resilient future: climate action in support of the Paris Agreement	●	●	●	●	●	○	○			
SC5-21-2019-2020	Cofund action for climate action, environment, resource efficiency and raw materials	●		●				○			
Waterworks 2014	Technopological Solutions for Water distribution and measurement, waste water treatment and reuse, desalination, floods and droughts	○		●				○	2015	2020	25
Waterworks 2015	Sustainable water use in agriculture			●				●	2016	2020	33
Waterworks 2017	Closing the water cycle gap			●				●	2018	2022	23

Network type and acronym	Full title	Environmental observations	Biodiversity and Natural Capital	Agriculture, forestry and rural areas	Sea and Oceans	Food Systems	Bio-based Innovation systems	Circular systems	Start	End	Members
ETP											
Forest-based ETP	Forest-based Sector			•			•				
Oceans	Oceans				•						
WssTP	Common Vision for Water Research and Innovation			○				•			
Food for Life	Food for Life					•					
TPOrganics	European Technology Platform for organic food and farming			•		•	•				
Plants for the Future	Plants for the Future			○	•		•				
FABRE TP	Farm Animal Breeding & reproduction Technology Platform			○			•				
EIP											
EIP Water	European Innovation Partnership on Water	○	○					•			
EIP Agri	The agricultural European Innovation Partnership		○	•		○					

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