

**ERA-HDHL  
D7.14**

**Statistical analysis of the fifth JFA results**

January 21<sup>th</sup>, 2022

*Draft*  *Final*

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**Contract N°696295**



## Table of Content

Definitions .....	3
1. Introduction.....	4
2. Evaluation procedure .....	5
3. Statistical analysis.....	6
3.1 Geographical distribution of the applicants.....	6
3.2 Size of the consortia .....	8
3.3 Gender Distribution .....	8
3.4 Budget.....	10
3.5 Topics of the proposals.....	11
3.6 Organisation type .....	14



## Definitions

Consortium	Association of research groups/entities with the objective of achieving a common research project
Partner	Research groups participating in a project
Eligible Partner	A partner participating to the consortium and applying for funding
Collaborator	A partner participating to the consortium without applying for funding. Collaborators are expected to secure their own funding.
Coordinator	Eligible partner who is in charge of the coordination of the consortium
Principal Investigator (PI)	People representing a research group or entity



## 1. Introduction

The FOOD\_HYPERSENS call was the fifth non-co-funded joint activity (JFA5) under the framework of the ERA-Net ERA-HDHL. The call was launched on February 2<sup>nd</sup>, 2021. The call aimed to support transnational, collaborative research projects focused on how food ingredients and food processing methods can induce or prevent the occurrence of food intolerances and allergies among the consumers.

Five different topics were described in the call text:

- the mechanisms, responsible for inducing or preventing food intolerances and food allergies, both in children and adults (e.g. immunity; inflammation; nutrient metabolism; genetics; microbiota; physiology);
- how food processing and food ingredients can modulate the occurrence of food allergies/intolerances;
- the development of new approaches to food processing (e.g. novel food ingredients, novel processing methods) to decrease food intolerance/food allergy;
- the development and/or validation of diagnostics/methods to distinguish between actual and perceived food intolerances and allergies (IgE and non-IgE-mediated);
- the development and/or validation of detection methods for adverse or beneficial food components generated through food processing.

The following 10 countries participated in this call: Belgium, France, Germany, Israel, Italy, Latvia, Norway, Poland, Spain and United-Kingdom. Table 1 presents an overview of the participating countries and funding organisations including their initial committed budget.

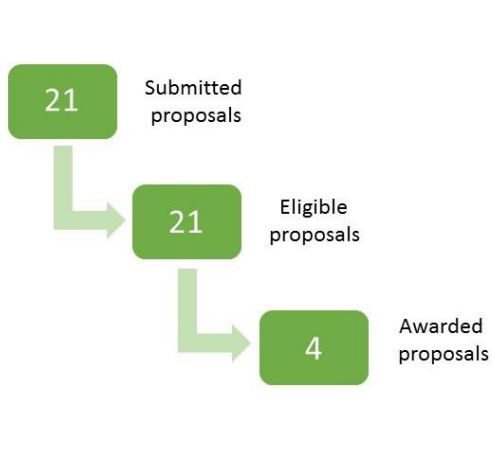
**Table 1:** Participating countries, funding organisations and their committed budget

Countries	Funding organisations	Committed Budget (Million €)
Belgium	FWO	0,20
France	ANR	1,50
Germany	BMBF represented by DLR	1,50
Israel	MOST	0,20
Italy	MIPAAF	0,20
Latvia	IZM	0,15
Norway	RCN	1,00
Poland	NCBR	0,40
Spain	ISCI	0,50
United Kingdom	BBSRC/UKRI	0,50
	MRC/UKRI	0,50
	FSA	0,25

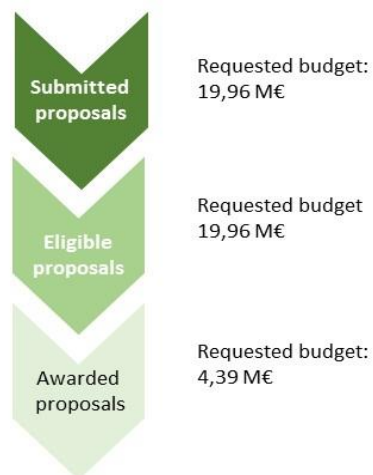
Total	6,90
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## 2. Evaluation procedure

The FOOD\_HYPERSENS Call was implemented in a one-step procedure followed by a rebuttal. The closure of the call was set on April 8<sup>th</sup>, 2021. In total, twenty-one proposals were submitted by 116 research groups. All proposals have been declared eligible. After a remote evaluation and a rebuttal phase, the Scientific Evaluation Committee (SEC) met digitally on September 2<sup>nd</sup>. Based on the ranking list elaborated by the Scientific Evaluation Committee and on the available funding, the Call Steering Committee (CSC) finally selected four full proposals for funding. The four-awarded projects represent a global success rate of 19%.



**Figure 1:** Flow chart of the submitted and awarded proposals.



**Figure 2:** Flow chart of the requested and awarded budgets.

The four funded projects requested a total amount of 4,39 million Euros. This amount represents approximately 22% of the budget requested in the proposals.

Ten international experts (4 women and 6 men) from nine different countries composed the Scientific Evaluation committee (Figure 3). Each proposal was independently reviewed by at least three committee members.



**Figure 3:** Geographic origin of the Scientific Evaluation committee members

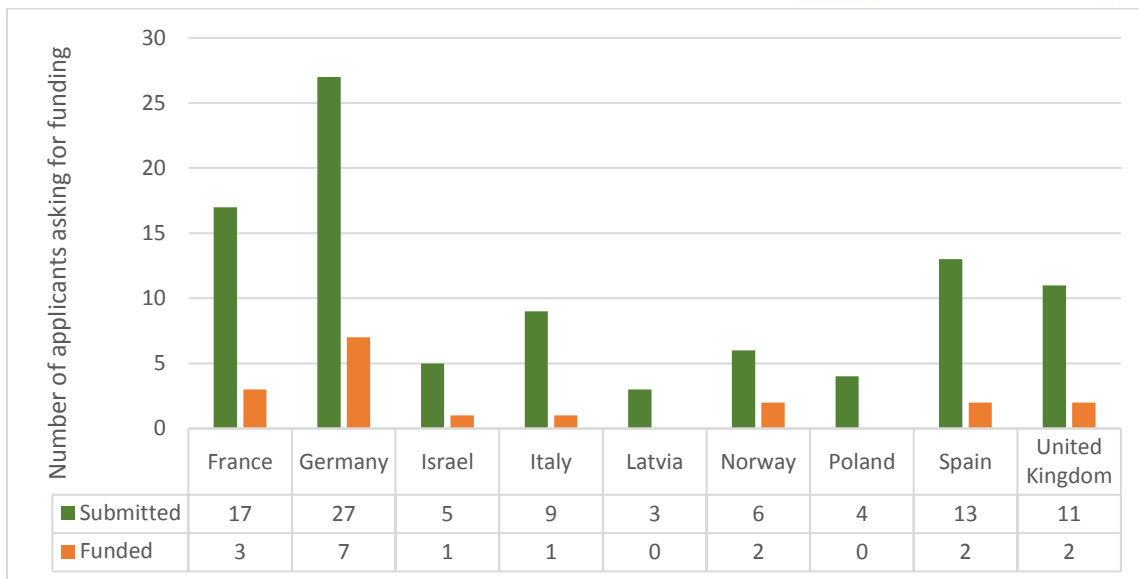
### **3. Statistical analysis**

#### **3.1 Geographical distribution of the applicants**

The four funded projects involve 18 funded partners from seven different countries (France, Germany, Israel, Italy, Norway, Spain and the United Kingdom). In addition to the funded partners, 5 additional collaborators participate to the funded projects with their own resources.

The geographical origin of the partners asking for funding is represented in Figure 4. Nine out of the ten participating countries were represented in the submitted proposals (France, Germany, Israel, Italy, Latvia, Norway, Poland, Spain and the United Kingdom). No partners from Belgium applied. In those proposals, 46% of the principal investigators asking for funding came from either France or Germany. 80% of the submitted proposal includes a partner working in Germany.

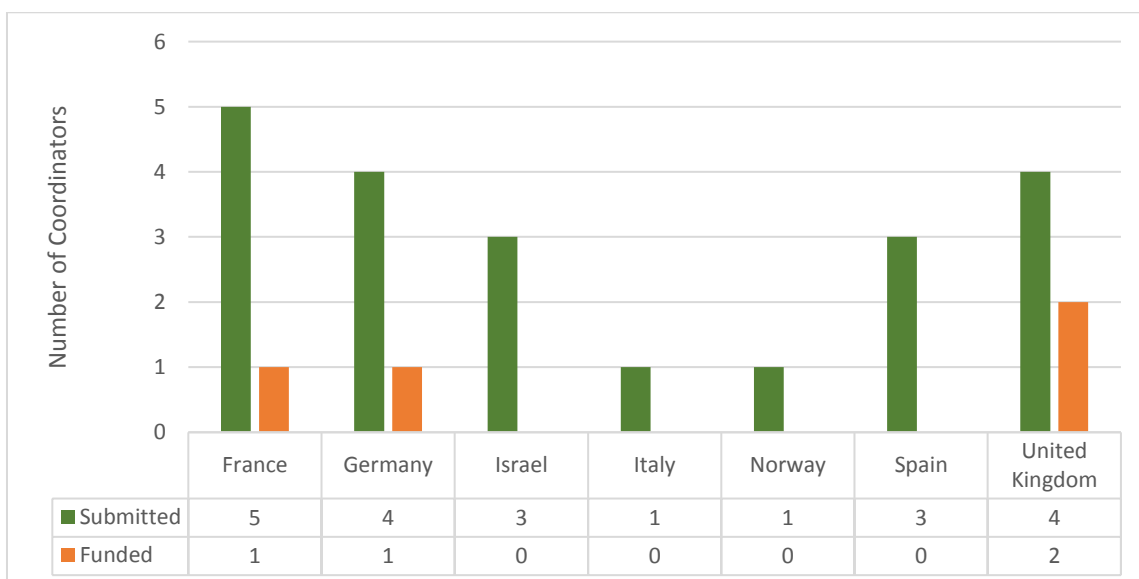
Seven out of the nine represented countries in the proposals were represented in the selected proposals (France, Germany, Israel, Italy, Norway, Spain and the United Kingdom). Unfortunately, no applicants from Latvia and Poland were present in the selected projects.



**Figure 4:** Geographic distribution of the partners asking for funding.

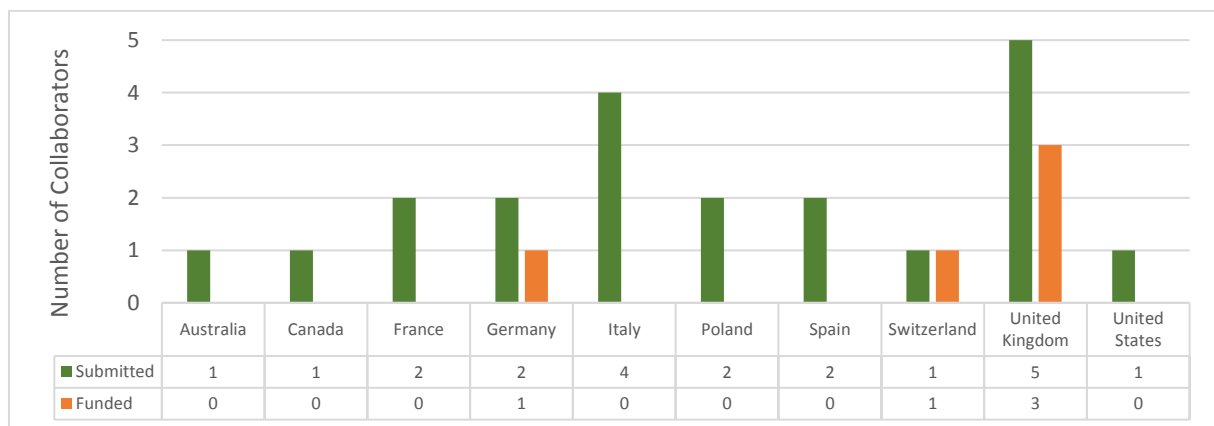
The geographical origin of the project coordinators is represented in Figure 5. France was the most represented country among the coordinators of the submitted proposals (24% of the submitted proposals were coordinated by a French researcher), following by Germany and United Kingdom. Israel has the highest rate of coordination within the applicants (Israeli applicants coordinate the proposal in which they are involved in 60% of the cases). No applicants from Latvia or Poland were coordinating a research proposal.

The four funded projects were coordinated by researchers coming from three different countries: France, Germany, and The United Kingdom.



**Figure 5:** Geographic distribution of the project coordinators

Collaborators were present in 67% of the submitted proposals and in 75% of the selected proposals. The number of collaborators per consortia was 1 in average in the submitted proposals and 1.25 in average in the selected proposals. The geographical distribution of the collaborators is presented in Figure 6. 19% of collaborators were coming from countries that were not directly engaged in the call (Australia, Canada, Switzerland, and the United States), the other 81% were not eligible for a funding by the participating funders.



**Figure 6:** Geographic distribution of the collaborators

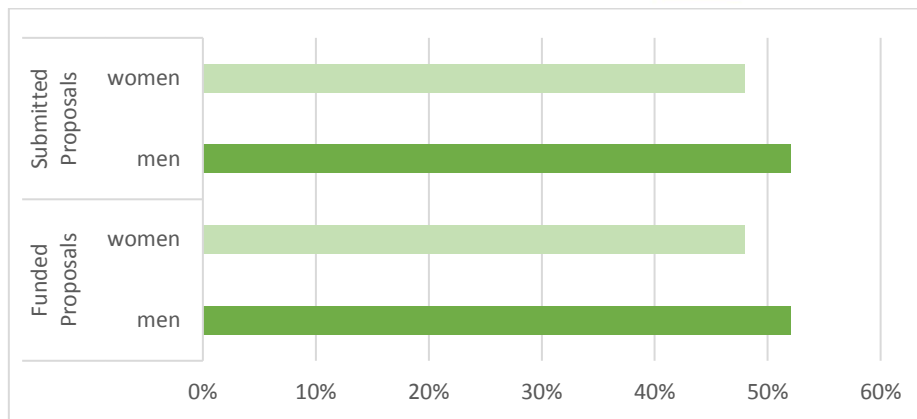
### 3.2 Size of the consortia

Each consortium includes an average number of 5.5 partners in the submitted proposals (in average, 4.5 partners asking for funding and 1 collaborator per proposal). The size of the consortia is almost similar in the funded projects. Indeed, in funded proposals, each consortium includes an average number of 5.75 partners (in average, 4.5 partners asking for funding and 1,25 collaborators per proposal).

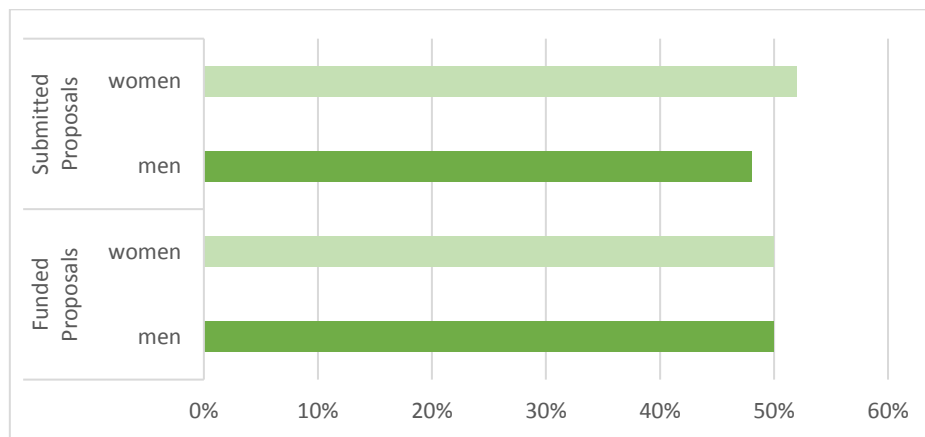
### 3.3 Gender Distribution

The gender distribution among the principal investigators involved in the submitted proposals was almost balanced (Figure 7, Figure 8 and Table 2). Indeed, 48% of the principal investigators involved in a submitted proposal are women and 52% of the submitted proposals were coordinated by a woman. No bias was observed during the selection. Indeed, women still represent 48% of the principal investigators involved in a selected proposal and half of the selected proposals are coordinated by women.





**Figure 7:** Gender balance of the principal investigators



**Figure 8:** Gender balance of the coordinators

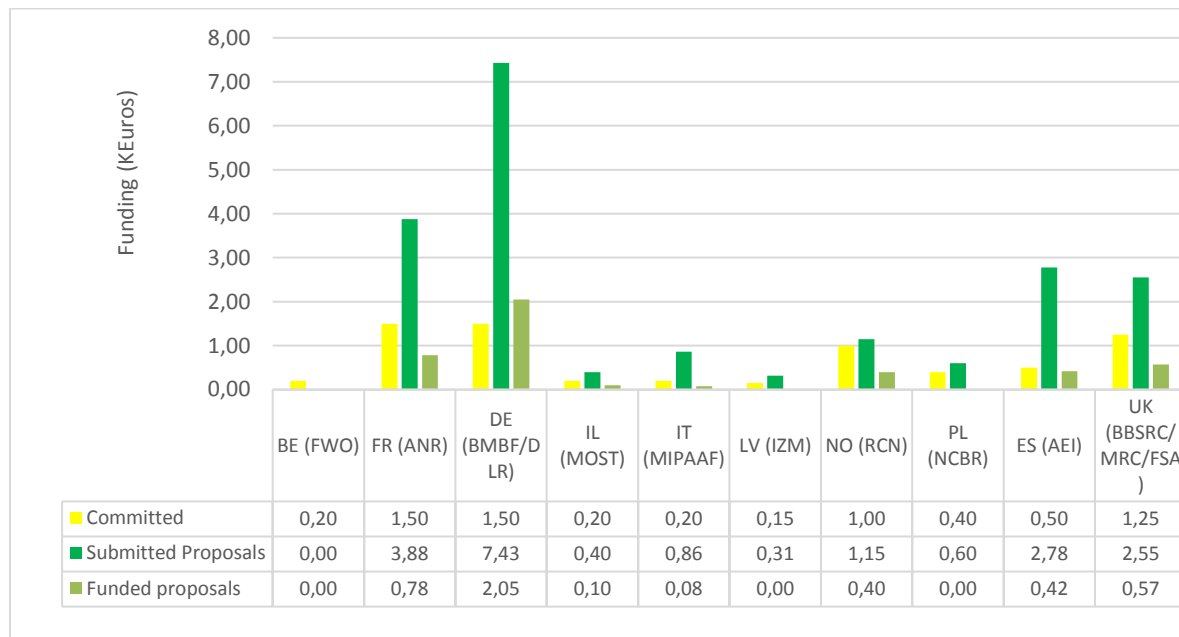
**Table 2:** Women's representation by country in the submitted proposals

	Coordinator			Partners Eligible for funding (Coord. Excluded)		
	Total Number	Number of Women	Women's representation	Total number	Number of Women	Women's representation
France	5	2	40%	12	6	50%
Germany	4	2	50%	23	10	43%
Israel	3	0	0%	2	0	0%
Italy	1	1	100%	8	3	38%
Latvia	0	0	N/A	3	1	33%
Norway	1	1	100%	5	2	40%
Poland	0	0	N/A	4	3	75%
Spain	3	3	100%	10	5	50%
United Kingdom	4	2	50%	7	3	44%

### 3.4 Budget

Figure 9 is a graphical representation of the requested funding by country and by funding organisation.

The initial committed budget was about 2.9 times over-subscribed (Table 3). 64% of the initial committed budget was allocated to the funded projects. Germany increased its budget for this call in order to finance the awarded projects.



**Figure 9:** Budget distribution (in M€) by country and by funding organization

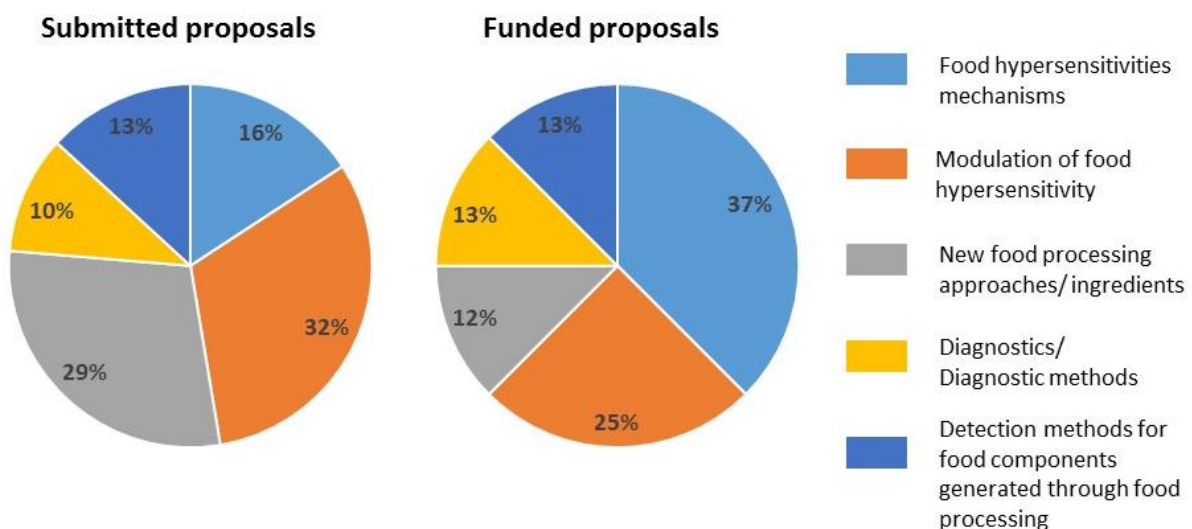
**Table 3:** Over-subscription factor

Funder	Committed funding €	Requested funding €	Oversubscription
FWO	200000	0	N/A
ANR	1500000	3881691	2,6
BMBF represented by DLR	1500000	7434049	5,0
MOST	200000	398670	2,0
MIPAAF	200000	861861	4,3
IZM	150000	313750	2,1
RCN	1000000	1145679	1,1
NCBR	400000	600080	1,5
AEI	500000	2775881	5,6
BBSRC/MRC/FSA	1250000	2552744	2,0
<b>Total Budget</b>	<b>6900000</b>	<b>19964405</b>	<b>2,9</b>

### 3.5 Topics of the proposals

The following five topics were described in the call text:

- the mechanisms, responsible for inducing or preventing food intolerances and food allergies, both in children and adults (e.g. immunity; inflammation; nutrient metabolism; genetics; microbiota; physiology);
- how food processing and food ingredients can modulate the occurrence of food allergies/intolerances;
- the development of new approaches to food processing (e.g. novel food ingredients, novel processing methods) to decrease food intolerance/food allergy;
- the development and/or validation of diagnostics/methods to distinguish between actual and perceived food intolerances and allergies (IgE and non-IgE-mediated);
- the development and/or validation of detection methods for adverse or beneficial food components generated through food processing.



**Figure 10:** Topic of the proposals

The applicants chose to consider only a limited number of topics within the same proposal. Indeed, 86% of the submitted proposals and 75% of the funded proposals focused on only one or two topics within the same proposal, respectively.

The five proposed topics were represented both in the submitted proposals, as well as the funded proposals (Figure 10 and Table 4). Nevertheless, the weight of each topic in the proposals changed during the selection process: the proposals focused on the mechanisms

responsible for inducing or preventing food intolerances and food allergies received better evaluation scores compared to the proposals focused on the other topics.

The objectives, approaches and the expected impact of the funded projects are displayed on table 5. For more details, the public abstracts are published on JPI HDHL web site and gathered in D7.15.

**Table 4:** Topic of the funded proposals

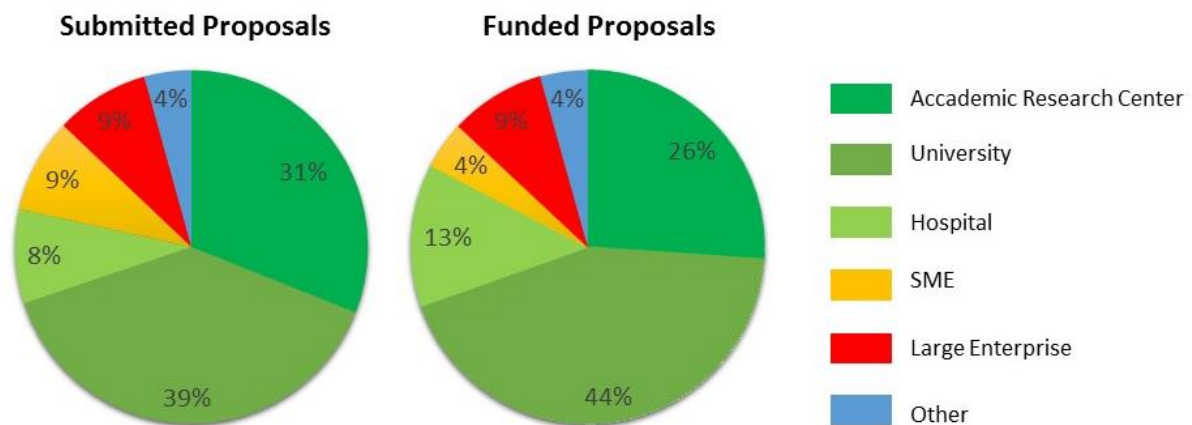
Acronym	Project Title	food hyper-sensitivities mechanisms	Modulation of food hyper-sensitivity	New food processing approaches/ ingredients	Diagnostics/ Diagnostic methods	Detection methods for food components generated through food processing
EcoBiotic	Physiological and Ecological impact of pre- and probiotic interventions in relation to food allergy in early life		√		√	
GenMalCarb	Genetic carbohydrate maldigestion as a model to study food hypersensitivity mechanism and guide personalised treatment using a non-invasive multiparametric test	√				
ImmunoSafe-CeD	Towards comprehensive analytical methods for partially hydrolysed gluten to assess product safety for celiac disease patients (CeD)	√	√	√		√
TRANS-FOODS	Preventing peanut allergy through improved understanding of the transcutaneous sensitisation route, novel food processing and skin care adaptations	√				

**Table 5:** Objectives of the funded projects

	<b>Food intolerance or allergy topic</b>	<b>Approach</b>	<b>Expected impact</b>
<b>EcoBiotic</b>	Food hypersensitivity in early life	Effect of pre- and probiotics exposure during perinatal period on food hypersensitivity (e.g. gut barrier function, host immunity)	New pre- and probiotics dietary supplement as prevention strategy
<b>GenMalCarb</b>	Carbohydrate malabsorption in patients suffering from the Irritable Bowel Syndrome (IBS)	<p>Epidemiology study</p> <p>Characterize the hypomorphic mutations of the Sucrase Isomaltase (SI), an enzyme responsible for IBS (enzymatic activity, digestive problems).</p> <p>Elucidate what part of the digestive process is affected by a dysfunctional SI</p>	<p>Diagnostic test</p> <p>Method to care IBS: new dietary interventions and/or enzyme supplementation</p>
<b>ImmunoSafe-CeD</b>	Celiac disease (CeD)	<p>Better understand the contribution of gluten sources and hydrolysis level in CeD pathogenesis</p> <p>Develop easy-to- perform and reliable analytical tool that quantitate and predict immunogenicity (toxicity) of wheat, rye and barley products for CeD patients</p> <p>Define grains-based foods that CeD patients can tolerate</p>	<p>New Diagnostic test</p> <p>Development of food products for patients suffering from CeD.</p>
<b>TRANS-FOODS</b>	Peanut allergy	<p>Understanding the mechanisms through which peanut allergy is promoted by transcutaneous routes</p> <p>Designing and testing novel prevention approaches, such as modification in the peanut manufacturing processes and the adaptation by skin care practices</p>	<p>New guidance to reduce the risk of peanut allergy</p> <p>New strategies to process peanuts in Industry</p>

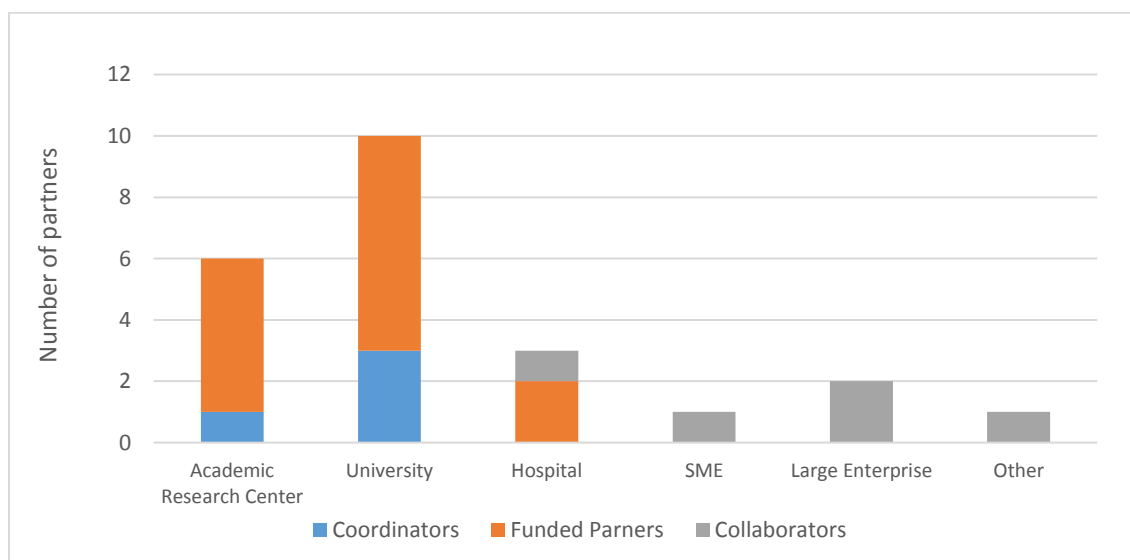
### 3.6 Organisation type

Applicants are mainly coming from universities, academic research centres, and public entities such as hospitals (Figure 11). Nevertheless, 18% of the participants in the submitted proposals and 13% of the participants in the funded projects are working in private entities (such as SME and Large enterprises). The topics of the FOOD\_HYPERSENS call can explain the great interest of private entities for this call especially the topics on food processing or diagnostic could be particularly interesting for the enterprises.



**Figure 11:** Organisation type distribution during the selection process

Private companies, not always eligible for funding by the participating funding organisations, are often participating with their own funds (Figure 12).



**Figure 12:** Organisation type distribution (funded projects)



Universities and Research Centers involved in this call are covering a wide spectrum of expertise: medicine, physiology, biochemistry, molecular biology, food science. Different technical universities were also represented, as well as institutions in charge of food safety/ food regulation.