











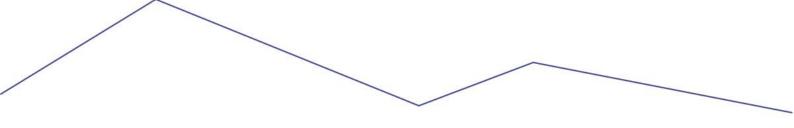


# Re-UNITA project Research for UNITA

D2.3 - White paper on local, regional and international research frameworks



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#### **Abstract**

This white paper presents how UNITA Alliance's partners are mobilizing research funding opportunities at local, regional, national and international levels. At each level, the document details which partners are favored, the terms and conditions of funding, and how UNITA members seize these opportunities. It provides recommendations and perspectives for strategies to fund research activities, particularly collaboratives ones between UNITA partners.

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#### Introduction

The Universitas Montium Alliance brings together six universities: Universidade de Beira Interior (UBI), University of Zaragoza (UNIZAR), Université de Pau et des Pays de l'Adour (UPPA), Université Savoie Mont Blanc (USMB), Università di Torino (UNITO), and Universitatea de Vest din Timisoara (UVT). Together, the six partners share three main key characteristics and objectives:

- Location in rural and cross-border mountain regions across southern, central and eastern Europe: Serra da Estrela (Beira Interior), the Pyrenees (Pau and Zaragoza), the Alps (Savoie Mont Blanc and Torino), and the Banat Mountains (Timisoara), i.e. in ecosystems sharing similar challenges, particularly in the face of climate change;
- Intention of actively use of Romance languages in addition to English, thus enhancing linguistic diversity and promoting inclusion;
- Innovative educational and research areas, especially in the fields of Renewable energies, Cultural heritage, and the Circular economy which yield a considerable propagative impact, both in terms of the sustainability of the ecosystems and in terms of employability for students and citizens.

Through the Re-UNITA project, the six partners are seeking to develop a common scientific strategy and scientific collaborations with a high scientific and societal impact, in particular to contribute to the development of our societies and territories in a European dimension.

In order to meet this general objective, all partners must provide financial support for research activities, either through operating expenses, investment in research equipment or financing labor costs (research support staff and researchers' wages).

The mapping of scientific policies within the Alliance (deliverable D2.2) has shown that partners cannot rely only on the State's subsidies, where they exist, to fund their research activities. They then have to mobilize other funding opportunities. However, these opportunities vary greatly from one country to another, due to very different political systems for funding research.

The aim of this white paper is to present how the six UNITA partners are mobilizing the available opportunities to fund research. Therefore, it does not present theoretical funding opportunities, but rather those that are currently being activated by partners.

Based on an *ad-hoc* survey, this white paper highlights the need for a multi-level approach, taking into account not only national and international research funding opportunities, but also local and regional ones. Although this level was not anticipated at the outset, it has been added to the document and analyzed in detail, as, in some countries, local and regional institutions contribute significantly to research funding. In addition, this white paper focuses only on research funding opportunities other than those arising from scientific collaboration with private partners, leading to a research contract and results that may be co-owned. These transfer activities are of course carried out by UNITA's partners but are not analyzed in this report.

At the end of this white paper, recommendations are formulated to help Alliance partners share best practices and optimize or even coordinate research funding applications.

## Methodology

To identify the research funding opportunities that each UNITA's partner actually mobilizes, it was necessary to develop a specific survey. Its goal was to obtain precise and confidential information for each UNITA partner on funding opportunities, regardless of the scientific field of the research funded. We then considered all the funding opportunities, expect those from collaborations with private partners (transfer activities), rather than focusing the analysis solely on opportunities for the three scientific fields developed by UNITA (cultural heritage, renewable energies and circular economy). This enables us to take a more global approach, and to take account of the partners' goal to broaden the fields studied in the UNITA 2 project due to start in November 2023.

To set up the survey, a working group (which included a representative from each university - see composition in Appendix 1) was created and met in three key phases:

- an initial remote meeting to define the survey scope. This first meeting identified the need for a multi-level analysis, including local, regional, national and international (including European) levels;
- a face-to-face meeting in Timisoara in June 2022 to finalize the structure of the questionnaire;
- a questionnaire pre-test phase.

The survey was launched online in Summer 2022 at the same time as the survey for the cartography of scientific policies within the Alliance. Once the results of the survey had been processed, a presentation meeting was held in Zaragoza during the UNITA Days in February 2023 to consolidate the data collected and discuss more qualitative information to be added.

The survey has enabled to gather precise information on funding opportunities for research activities (regardless the scientific fields and the type of funding - investments, operating expenses or human resources expenses) at three levels:

- local and regional levels;
- national level;
- international level (European and non-European).

For all these elements, the data collected are the ones corresponding to Spring 2021. The structure of the questionnaire is given in Appendix 2.

All data collected is strictly confidential. Their storage and access have been defined in the UNITA project's data management plan. Data are stored on a secure space (UNITA Cloud) with access restricted to Re-UNITA project members.

# An overview of funding opportunities for research projects within UNITA

To finance research activities, all UNITA partners seek funding from a multitude of institutions and organizations. These funders are either local and regional, national or international (European or non-European). In all cases, this search for funds is carried out through competitive calls for projects, mainly on researchers' individual initiatives.

The survey carried out for collecting data to construct this white paper shows that by 2021, the six UNITA partners will have raised almost €106 millions to finance their research (excluding collaborative agreements with private socio-economic partners). This amount is in addition to permanent government grants, where they exist, which can cover the salaries of researchers and research support staff with civil servant status, as is the case in France.

Figure 1 shows the relative weight of the various research funders in supporting research in the UNITA Alliance.

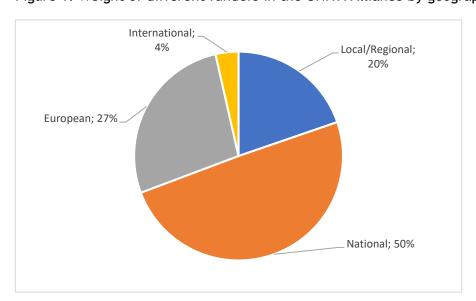


Figure 1: Weight of different funders in the UNITA Alliance by geographical level

On average, national funding accounts for half of UNITA partners' research funding, while international (mainly European) funding accounts for 31%. Local or regional funding accounts for 20% of total funding, making local funders players not to be overlooked. We propose to detail below how UNITA's partners are mobilizing the various funding opportunities.

## Local and regional funding opportunities for research

Local and regional funding for research represents 20% of the total funding raised by the six partners of UNITA.

This average, however, conceals very significant differences, as seen in Figure 2. UVT is not at all covered by these opportunities, whereas for UBI they represent 27% of the research resources. Even within one country, France (UPPA and USMB), the involvement of local and regional institutions in research funding is very different.

All these differences are due as much to national policies on the distribution of roles and funding prerogatives between local and regional institutions and national institutions, as to the more or less strong relationships that each partner has built up over time with local institutions.

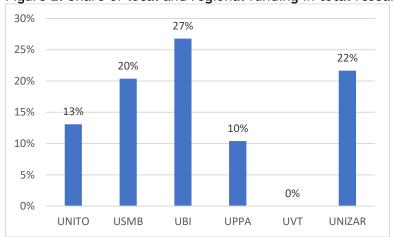


Figure 2: Share of local and regional funding in total research funding

At this level, a wide range of actors are involved, reflecting the diversity of local political organizations (public authorities) and the existence of regional chairs or foundations, as in Spain.

Table 1 summarizes the various local and regional institutions that funded research in the UNITA partners in 2021.

Table 1: Local and regional partners involved in research funding in 2021

	Type of funding	Details	
UBI			
CCDRC - Comissão de Coordenação de Desenvolvimento Regional do Centro	multi-year aid; calls for projects	Funding schemes supporting people, research projects and research units	
Regional do Centro	projects	projects and research units	
UNITO			
	multi-year aid ; calls for		
Regione Piemonte	projects; international		
	support		
UPPA			
Communauté d'agglomération Pau Béarn Pyrénées (CAPBP)	multi-year aid; one-time aid; calls for projects	All disciplines (cooperation agreement)	
Communauté d'Agglomération Pays Basque (CAPB)	multi-year aid; one-time aid; calls for projects	All disciplines (cooperation agreement)	
Communauté de communes de Lacq-Orthez (CCLO)	multi-year aid; one-time aid; calls for projects	Energy / environment (cooperation agreement)	
Département des Landes (CD40)	multi-year aid; one-time aid; calls for projects	All disciplines (cooperation agreement)	
Conseil régional Nouvelle Aquitaine (CRNA)	calls for projects ; international support	All disciplines (cooperation agreement)	
Communauté d'Agglomération Tarbes Lourdes Pyrénées (CATLP)	one-time aid		
Mont de Marsan Agglo.	one-time aid		
USMB			
Conseil Savoie Mont Blanc	multi-year aid	Three main priorities: a) funds for research projects; b) funds for equipments and technological transfer; c) funds for open science - 4 years aid (cooperation agreement)	
Grand Annecy	one-time aid ; international support	Funds for equipments; funds for cross-border scientific collaborations	
Région Auvergne Rhône Alpes	multi-year aid; one-time aid; calls for projects; international support	Annual calls for projects (only for exploratory projects); Fonds amorçage europe to support responses to european calls	

The survey highlights that local and regional funding opportunities usually provide multiyear support for research, sometimes within the framework of institutional cooperation agreements, which guarantee a certain continuity of funding.

This multi-year support may be **combined with more** *ad-hoc*, **annual grants**, often focused on strategic objectives, either in terms of support for a scientific and societal challenge, or in terms of funding for large-scale research equipment. There may also be **support for international collaborations**, particularly in France, notably from regional authorities. In this case, support consists of seed funding to launch European projects, as well as assistance with the European Commission through a dedicated office (Auvergne Rhône Alpes Region - for USMB).

## National funding opportunities for research

National sources of funding for research activities account for 50% of the funds raised by UNITA alliance partners in 2021. These opportunities are therefore particularly important for Alliance members, especially as they represent over 80% of funding sources for some partners, such as UPPA (Figure 3).

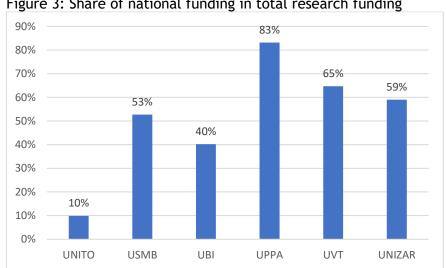


Figure 3: Share of national funding in total research funding

According to the implemented survey, research funding opportunities at national level share a number of common features, but also a notable difference.

#### Common features

Three common points can be identified.

A) For all partners, a national research agency organizes scientific policy and coordinates a main call for projects (see below).

Table 2 details the missions of the research agencies across the five countries.

		ional research agencies - Missic	
Country	Partners	National research agency	Missions
Italy	UNITO	National Research Council (Cnr) https://www.cnr.it/en	"Cnr's mission is to perform research in its own Institutes, to promote innovation and competitiveness of the national industrial system, to promote the internationalization of the national research system, to provide technologies and solutions to emerging public and private needs, to advice Government and other public bodies, and to contribute to the qualification of human resources."  Source: CNR
France	UPPA and USMB	French National Research Agency (ANR) https://anr.fr/en/	"The ANR promote French project-based research and to stimulate innovation by promoting the emergence of collaborative multidisciplinary projects and encouraging collaboration between the public and private sectors.  It funds and promotes the development of basic and targeted research, technological innovation, technology transfer and public-private partnerships. The ANR also implements the Work Programme approved by the French Minister of Research, following consultation with the supervisory ministers of France's research bodies and public higher education institution  Source: ANR
Portugal	UBI	Fundação para a Ciência e a Tecnologia (FCT) https://www.fct.pt/index.phtml.en	"FCT attributes, in competitive calls with peer review, of fellowships, studentships and research contracts for scientists, research projects, competitive research centres and state-of-the-art infrastructures. FCT ensures Portugal's participation in international scientific organisations, fosters the participation of the scientific community in international projects and promotes knowledge transfer between R&D centres and industry. Working closely with international organisations, FCT coordinates public policy for the Information and Knowledge Society in Portugal and ensures the development of national scientific computing resources."
Spain	UNIZAR	The State Investigation Agency (AEI) https://www.aei.gob.es/	"The mission of the AEI is to promote scientific and technical research in all areas of knowledge through the efficient allocation of public resources, the promotion of excellence, the promotion of collaboration between the agents of the System and support for the generation of knowledge of high scientific and technical, economic and social impact, including those aimed at solving the great challenges of society, and the monitoring of financed activities as well as the necessary advice to improve the design and planning of actions or initiatives to through which the R+D policies of the General State Administration are implemented."
Romania	UVT	The Executive Unit for the Financing of Higher Education, Research, Development and Innovation (UEFISCDI) https://uefiscdi.gov.ro	"UEFISCDI, a public institution subordinated to the Ministry of Education and Research, ensures both the realization of studies that underpin the process of distributing the funds allocated from the state budget for universities, as well as the coordination, from an administrative point of view, of some programs and sub-programmes from the Plan National Research, Development, Innovation." Source: UEFISCDI

With the exception of Italy, where the CNR is more akin to a national research institution, such as the CNRS in France, national research agencies all have one thing in common: they promote research and allocate funds on the basis of a competitive model that rewards excellence.

- B) All funding opportunities coordinated mainly by the national research agencies are subject to **annual national calls for projects**, based on precise specifications defining strategic orientations, the scientific fields supported, and funding and reporting procedures.
- With regard to strategic orientations, all calls for projects aim to support excellence and high-impact research. They involve competition between research teams on the basis of projects submitted, which are then evaluated by experts (national and/or international, depending on the case). It should be noted that these funding opportunities require researchers to devote time to setting up projects, which can cut into their actual research time. Support for researchers is therefore essential in this field.

Beyond this general objective of excellence and impact, calls for projects often support two strategies:

- the internationalization of research and scientific collaborations between researchers from different countries, either through specific funding or simply through a bonus in the evaluations;
- collaborations with the socio-economic world to support technology transfer and innovation.
- In terms of scientific fields, all calls for proposals aim to support projects on topical issues of major societal importance, more or less explicitly linked to the United Nations' sustainable development goals. However, there are differences between countries, depending on national differentiation strategies and the economic stakes involved. These differences are particularly apparent in the implementation of national policies *via* excellence initiatives (see below).

In the calls, interdisciplinary research is promoted, as it enables complex problems to be better taken into account and systemic solutions to be envisaged (cf. ReUNITA D.2.1). But funding can also be devoted entirely to disciplinary research. In this case, research with a very high international scientific impact is targeted, potentially contributing to major breakthroughs.

- In all cases, national calls for projects are governed by precise financial terms and conditions, which require upstream definition of expenditure items and their timing. Expenditure (operating expenses, investment and labor costs) is subject to reporting in line with project progress. This monitoring process requires special financial engineering competences, which in all cases requires support from qualified staff, the cost of which is not covered (entirely or not at all) by calls for projects.
- C) The third common feature of national funding opportunities is that **multiple actors** are involved. While national research agencies coordinate calls for projects and implement national science policy in some countries, the fact remains that researchers are faced with a multiplicity of possible funders, each with their own objectives and operating methods. These include ministries (in their various fields of competence: health, agriculture, *etc.*), national agencies specializing in a particular field (notably the environment, such as <u>ADEME</u> in France), scientific societies, national foundations, NGOs, *etc.* Table 3 presents national funders for UNITA partners in 2021.

Table 3: Multiple actors for funding research at the national level: some examples

	Funding actors for research		
	Ministry of University and Research		
UNITO	MIPAAF - Ministry of Agriculture, Food and Forest Policies		
	Ministry of Health		
	Different Ministries		
	ADEME (Agence de la transition écologique)		
UPPA and USMB	INSERM (Institut national de la santé et de la recherche médicale)		
	Agence de l'Eau		
	OFB (Office Français de la Biodiversité)		
	ANI - Agência Nacional de Inovação		
UBI	Scientific Societies		
	ONGs (e.g. portuguese cancer league)		
UNIZAR	Institute Carlos III		
	Different Ministries		
	Banco Santander		

#### Differentiating factors

The survey highlighted one notable difference in terms of national funding opportunities. In Italy and France, a **national excellence initiative** defines structuring actions for higher education and research.

- In Italy, the <u>Department of Excellence</u> is responsible for evaluating research departments (based on university applications) and allocating funding to projects of excellence (staff recruitment, staff rewards, research infrastructure, and highly qualified teaching and scientific activities).
- In France, the <a href="Programme d'investissements d'avenir">Programme d'investissements</a> d'avenir</a> (PIA) was set up by the French government to finance innovative and promising investments, enabling France to increase its growth and employment potential. This program has supported the emergence of centers of excellence, by promoting university mergers and/or differentiation (IDEX and Isite), funded Graduate Schools (supporting the training-research link) and priority research programs and equipment (PEPR). Université de Pau et des Pays de l'Adour (UPPA) is one the 9 universities in France to have been awarded this label of excellence "I-SITE" for its E2S project, "Solutions for Energy and the Environment", in 2017, and definitively labelled in 2022. E2S UPPA relies on a consortium UPPA-INRAe-INRIA-CNRS research teams to, among other things, support the energy and environmental transition of local businesses and local authorities. Around this project, scientists, sociologists and lawyers are working to increase UPPA's international appeal, by participating in cutting-edge training and research projects with renowned institutions (Stanford, UC Berkeley, MIT, Northwestern University).

## International funding opportunities for research

UNITA's partners also take advantage of international funding opportunities, which account for a total of 31% of funding received (excluding direct grants from the Ministry of Higher Education, where these exist, and excluding collaborative agreements with socio-economic partners). Of this 31%, 87% comes from European funding and 13% from international funding outside Europe. Three partners (UNITO, UPPA and UVT) do not receive any international funding at all (in 2021).

European funding therefore accounts for 31% of the funds raised by the partners, and Figure 4 highlights the considerable heterogeneity between partners.

UNITO attracts 77% of these funds for research via European projects, testifying both to the quality of the projects submitted and to its expertise in submitting these projects.

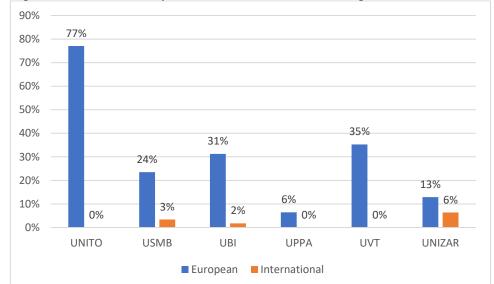


Figure 4: Share of European and international funding sources in the total of funding

#### **European funding opportunities**

While all partners have won ERASMUS+ projects, if only through the UNITA project, but also INTERREG projects, all partners have also developed projects under Horizon Europe pillar 1 (Excellence Science) and pillar 2 (Global Challenges and European Industrial Competitiveness).

With regard to Horizon Europe pillar 1 (Table 4), all partners are mobilizing support for doctoral training *via* Marie Sklodowska-Curie actions. However, only two partners (UNITO and UNIZAR) have succeeded in obtaining ERC grants.

Table 4: Type of funding obtained by partners under Horizon Europe pillar 1 (Excellence Science)

	European Research Council (ERC)	Future and Emerging Technologies (FET)	Marie Sklodowska- Curie Actions	Research Infrastructures
UNITO	1	1	1	1
USMB	0	0	1	0
UBI	0	0	1	1
UPPA	0	0	1	1
UVT	0	0	1	1
UNIZAR	1	1	1	0

Note: 1 means that at least one project has been financed via the Pillar 1 action.

With regard to Horizon Europe pillar 2, partners have obtained funding for projects in a number of areas, as shown in Table 5.

Table 5: Type of funding obtained by partners under Horizon Europe pillar 2 (Global Chal-

lenges and European Industrial Competitiveness)

	UNITO	USMB	UBI	UPPA	UVT	UNIZAR
INDUSTRIAL LEADERSHIP AND COMPETITIVE FRAMEWORKS	1	0	0	1	1	1
NANOTECHNOLOGIES, ADVANCED MATERIALS, BIOTECHNOLOGY AND ADVANCED MANUFACTURING AND PROCESSING (NMBP)	1	0	0	0	0	1
KEY TECHNOLOGICAL FIELDS	0	0	0	0	1	1
TACKLING SOCIETAL CHALLENGES	1	1	1	0	1	1
HEALTH, DEMOGRAPHIC CHANGE AND WELLBEING	1	0	1	0	0	1
SECURE, CLEAN AND EFFICIENT ENERGY	1	0	0	0	1	1
SMART, GREEN AND INTEGRATED TRANSPORT	1	0	1	0	0	1
CLIMATE ACTION, RESOURCE EFFICIENCY AND RAW MATERIALS	1	1	0	0	1	1
INCLUSIVE, INNOVATIVE AND SECURE SOCIETIES	1	1	0	0	0	1
SECURE SOCIETIES	1	0	0	0	0	1

Note: 1 means that at least one project has been financed *via* the Pillar 2 action.

While the three UNITA fields are reflected in the projects obtained, we note that several partners have projects around other subjects (industrial leadership, nanotechnologies, health...), which may provide avenues for broadening the UNITA 2 themes, and hence for future collaboration.

The results of the survey also revealed that UNITA partners are involved in other European calls for projects, whether these relate to innovation or science with and for society (pillar 3). But partners' involvement in these European calls for projects is heterogeneous (Table 6).

Table 6: Type of funding obtained by partners under Horizon Europe specific calls (pillar 3 or other calls)

	H2020 RESEARCH & INNOVATION PUBLIC-PRIVATE PARTNERSHIPS	H2020 RESEARCH & INNOVATION CROSS-CUTTING ACTIVITIES	SPREADING EXCELLENCE & WIDENING PARTICIPATION IN HORIZON 2020	SCIENCE WITH AND FOR SOCIETY	H2020 RESEARCH & INNOVATION EURATOM CALLS
UNITO	1	1	1	1	0
USMB	0	0	0	0	0
UBI	1	0	0	1	0
UPPA	0	0	0	1	0
UVT	0	1	1	1	0
UNIZAR	1	1	0	1	1

Note: 1 means that at least one project has been financed.

#### International (non-European) funding opportunities

UNITA's partners make little use of research funding opportunities outside Europe (4% of funding). When these opportunities are mobilized, they involve collaborative projects with research teams outside Europe. Three sources of international funding are mobilized:

- From international organizations such as the United Nations (UNITO) and North Atlantic Treaty Organization (USMB);
- From foreign ministries: Japan's Ministry of Defense or Ministry of Higher Education (USMB); the US Department of Defense (UNIZAR);
- From specific national institutes, such as National Institutes of Health (NIH) USA (UNITO) or foundations, as Aga Kan Foundation (UNIZAR).

In all cases, the funding obtained is aimed at supporting strategic research into mainly national defense or health.

### Recommendations and perspectives

This white paper maps out all the funding opportunities that UNITA's partners are taking advantage of to finance their research activities (excluding collaborative research with private partners).

It also outlines a number of recommendations and perspectives:

- Almost all research funding opportunities are through competitive calls for projects.
  Responding to these calls for proposals, as well as monitoring and reporting on projects, requires special technical skills that researchers do not necessarily possess.
  Universities therefore need to recruit qualified staff, working in close collaboration with researchers, within dedicated units (to promote skills transfer between staff and specialization). They also need to set up training programs to teach researchers how to manage projects.
- 2. In view of the multiplicity of calls for projects and funders, active monitoring of funding opportunities should be implemented. This monitoring should not be limited to a simple listing of available opportunities, but should include a strategic analysis for universities, in order to prioritize opportunities and direct researchers towards the most appropriate ones, given the projects being developed.
- 3. Some funders offer support for the internationalization of research activities. Partners should use this support strategically to leverage the development of ambitious collaborative projects between Alliance members.
- 4. As UNITA partners mobilize funding opportunities in different ways, sharing experiences and best practices could enable each Alliance member to progress and better mobilize opportunities. For example, collaboration between the Europe Units of the various partners, which support researchers in setting up and monitoring European projects, could certainly help to increase staff skills and benefit all concerned.
- 5. The white paper points out that many projects are funded on scientific fields that go far beyond the three UNITA fields. The Alliance therefore has research strengths that do not seem to be fully exploited. The broadening of scientific fields in the UNITA 2 project will certainly enable these strengths to be better mobilized. The definition of new subjects should take into account projects already underway, in order to capitalize on success stories.

# APPENDIX 1

## Composition of the working group

University	Representatives name	Function
USMB	Mareva Sabatier	Vice-Rector for Research
USMB	Clotilde Menici	ReUnita Project Manager
UBI	Silvia Socorro	Vice-Rector for Research
UBI	Natalia Alvés	ReUnita Project Manager
UNIZAR	Pilar López	Director for Scientific Policy
UNIZAR	Inés Domínguez	Technician
UPPA	Frédéric Marias	ReUnita Scientific Coordinator
UPPA	Clément Bardoux	ReUnita Project Manager
UPPA	Xavier Peres	ReUnita Support Officer
UNITO	Cristina Prandi	Deputy-Rector for Research
UNITO	Serena Ballarin	Head of Pre-award Research Office
UVT	Florin Sava	Vice-Rector for Research
UVT	Daniel Luches	Director of Research Department

# APPENDIX 2

Survey on research policies and project funding - Structure of the questionnaire

Part 1. Local and Regional research frameworks	<ul> <li>List of partners who fund research activity - identification of the local/regional level</li> <li>Methods of support: multi-year aid (contract between the university) / one-time aid, call for projects (what time frame, what priority axes, link with UNITA topics), international support</li> </ul>
Part 2. National research frameworks	<ul> <li>State (Ministry) contribution (permanent grant, annual supplements, calls for projects in national research policy)</li> <li>Existence of a national research agency? What is its role? How?</li> <li>Other organizations that can provide support? How can this be done?</li> <li>NB: for UPPA and USMB, same framework</li> </ul>
Part 3. International research frameworks	<ul> <li>At the European level, list of calls for projects and funding opportunities, especially specific to the European Alliances</li> <li>At the international level (outside Europe)</li> <li>NB: common to all</li> </ul>