



Excellent peripheries for a strong
European Research Area

Azores and Canary Islands Regional ecosystem assessment reports

Grant Agreement n°. 101071329



Funded by
the European Union

Version History			
Ver.	Date	Comments/Changes	Author
0.0	21/04/2023	Initial structure of the mapping for UAC and ULPGC sent for feedback	FCPCT – Tanausú J. Dávila
0.1	16/05/2023	First outline and draft, table of contents (“General Overview”) for feedback.	FCPCT – Tanausú J. Dávila
1.0	26/05/2023	First version sent to the SC/GA/reviewers (“External stakeholders’ reports: Interviews and results for each ecosystem”).	Atrineo AG – Thor Rodrigues
2.0	31/05/2023	Revision of Chapter 5	Atrineo AG – Thor Rodrigues
3.0	09/06/2023	First version sent to the responsible entity (ULPGC), including the point “4.1 - Mapping for UAc including a list of infrastructures”	UAC – Emanuel Alberto Mecha
4.0	26/06/2023	Latest version sent to the SC for revision and feedback.	FCPCT - Tanausú J. Dávila
4.1	28/06/2023	Completion and inclusion of Chapter 2. “Framework of Research, Development and Innovation for Azores”. Inclusion of a new Chapter: “Internal Stakeholders’ Reports: Self-assessment results for each ecosystem”, and correction of some minor errors.	Atrineo AG – Thor Rodrigues UAC – Emanuel Alberto Mecha FCPCT – Tanausú J. Dávila
5.0	29/06/2023	Final version of the deliverable submitted to the EC.	FCPCT - Tanausú J. Dávila

Deliverable information											
Project Acronym	EXPER										
Project Title	Excellent peripheries for a strong European Research Area										
Type of action	HORIZON Coordination and Support Actions										
Topic	HORIZON-WIDERA-2021-ACCESS-05-01										
Call	HORIZON-WIDERA-2021-ACCESS-05										
Granting authority	European Research Executive Agency										
Project Start Date	01/10/2022										
Project end date	31/03/2025										
Project duration	30 months										
Work Package	WP1 Regional ecosystems assessment and cooperation models										
Deliverable	D.1.2 Azores and Canary Islands Regional ecosystem assessment reports										
Due Date	30/06/2023										
Submission date	29/06/2023										
Dissemination Level	PU										
Responsible	University of Las Palmas de Gran Canaria (ULPGC)										
Version	5										
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Acronyms & Abbreviations	
ACIISI	Canary Islands Research, Innovation and Information Society Agency
ANI	Portuguese National Innovation Agency
BU	Bibliometric Unit
CCBAT	Center for the Conservation of Agricultural Biodiversity of Tenerife
CDTI	Centre for the Development of Industrial Technology
CEC	Canary Islands Space Center
CMC	Cluster Marítimo de Canarias
CIE	Canary Institute of Equality
COC	Oceanographic Center of the Canary Islands
CPLP	Community of Portuguese Speaking Countries
D	Deliverable
DGs	European Commission Directorate-Generals
DRCT	Regional Directorate for Science and Technology
DREC	Regional Directorate for Entrepreneurship and Competitiveness
DRPFE	Regional Directorate for Planning and Structural Funds
EC	European Commission
EDA	Azores electricity provider company
EMERGE	Asociación Canaria de Startups, Empresas de Base Tecnológica e Inversores Ángeles.
EPO	European Patent Office
ESIF	European Structural and Investment Fund
ESS	School of Health Sciences of the University of the Azores
ESTA	School of Technologies and Administration of the University of the Azores
EU	European Union

FCAA	Faculty of Agricultural and Environmental Sciences of the University of the Azores
FCPCT	Canarian Science and Technology Park Foundation
FCSH	Faculty of Social and Human Sciences of the University of the Azores
FCT	Faculty of Sciences and Technology of the University of the Azores
FEDER	European Regional Development Fund
FEG	The Faculty of Economics and Management of the University of the Azores
FIISC	Health Research Institute Foundation of the Canary Islands
FP	Framework Programmes for Research and Innovation
FP7	Seventh Framework Program of the European Community for Research, Technological Development and Demonstration Activities
FRCT	Regional Fund for Science and Technology
FSE	European Social Fund
GD	General Directorate
GDP	Gross domestic product
H2020	Horizon 2020 European Program for Research and Innovation
HE	Horizon Europe
HEI	Higher Education Institution
HR	Human Resources
HRS4R	Human Resources Strategy for Researchers
IAC	Institute of Astrophysics of the Canary Islands
IAMA	Institute of Food and Agricultural Markets
ICIA	Canary Islands Agricultural Research Institute
ICTs	Information and Communication Technologies
IMAR	Sea Institute from University of the Azores
INIPRO	Research and Science Institute of Puerto del Rosario

InUAc	Technology-Based Incubator of the University of the Azores
IP	Intellectual property
IPNA	Institute of Natural Products and Agrobiology
IPR	Intellectual property rights
ISTAC	Canary Islands Statistics Institute (ISTAC)
IITAA	Institute of Agricultural and Environmental Research and Technology of the University of the Azores
ITC	Technological Institute of the Canaries
ITER	Institute of Technology and Renewable Energies
IVAR	Institute of Volcanology and Risk Assessment of the University of the Azores
KMU	Knowledge Management Unit
LGL	Lanzarote Geosciences Laboratory
LREC	Regional Civil Engineering Laboratory
MAC	Macaronesia
MEC	Ministry of Education and Science
NGOs	Non-Governmental Organizations
NUTS	Nomenclature of Territorial Units for Statistics
OKEANOS	Institute of Marine Sciences Research of the University of the Azores
OPCI	Oceanic Platform of the Canary Islands
OPE	European Projects Office
OPII	Intellectual Property Office
OR's	Outermost Regions
OTRI	Research Results Transfer Office
PCT	Patent Cooperation Treaty
PO Açores	Operational Plan of the Azores
POMAC	Cross-border cooperation program Azores-Madeira-Canary Islands

RAA	Azores Autonomous Region
R&D	Research & Development
R&I	Research & Innovation
RIS3	Research and Innovation Smart Specialisation Strategy
RRGs	Recognized Research Groups
S&T	Science and Technology
SAB	Spanish Algae Bank
SDG	Sustainable Development Goal
SMEs	Small and Medium Enterprises
SPEGC	Society for the economic promotion of Gran Canaria
SCTA	Scientific and technological system in the Azores
TRS	Teaching and research staff
UAC	University of Azores
ULL	University of La Laguna
ULPGC	University of Las Palmas de Gran Canaria
URIs	University Research Institutes
WP	Work Package
ZEC	Canary Islands Special Zone

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EXECUTIVE SUMMARY






Within the framework of the EXPER project, the main objective of work package one (WP1. Regional ecosystems assessment and cooperation models) is to assess regional ecosystems of the HEI widening partners (ULPGC and UAC) to identify barriers at institutional/regional and national level, which could hamper HEIs' potential role as driver of regional development and competitiveness.

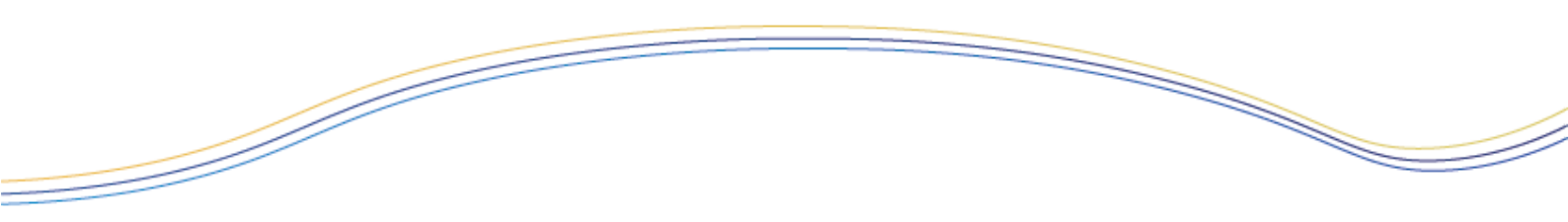
As described in *Task 1.1 Methodology for assessment* and *Task 1.2 Widening Universities assessment* of the project, this assessment should identify challenges and opportunities for cooperation between Widening universities and their ecosystems. For this purpose, a map of the R&D&I ecosystem should be made based on the same structure as the one made previously in the [H2020 FORWARD project](#) in which the mentioned universities (ULPGC and UAC) were involved.


Through the common methodology implemented in Task 1.1, an internal assessment of UAC and ULPGC has been accomplished, involving internal members of each organisation with the aim of understanding in depth the strengths, weaknesses and operational capabilities of both universities in terms of scientific excellence, talent attraction and retention, and knowledge and technology transfer.

In addition, the feedback provided by stakeholders to the universities has been integrated in this work, which was obtained by conducting interviews with these external agents. The analysis of their answers will allow us to know their criteria regarding the role that these two Widening Universities should play in terms of promotion and support for regional development, and how cooperation between agents of the ecosystem itself should be developed.

This will contribute to achieving the following objectives:

-  To obtain a general and a particular overview of the state of R&D&I in the Azores and the Canary Islands, as well as in the Widening universities (UAC and ULGPC), respectively.
-  To elaborate and describe a mapping of R&D&I in the Azores and the Canary Islands.
-  To better comprehend the UAC and ULPGC strengths, weaknesses, and operations, through an internal assessment and analysis methodology.
-  To know in detail the vision of stakeholders regarding the UAC and ULPGC' role in terms of promotion and support for regional development.
-  To identify challenges and opportunities for cooperation between UAC and ULPGC and their ecosystems.









 Finally, to assess regional ecosystems in Azores and Canary Islands regarding the three pillars of the EXPER project:

- Excellence in research.
- Talent acquisition and retention.
- Knowledge and technology transfer and connection with business environment.

1. INTRODUCTION

1.1. PURPOSE OF THE DOCUMENT







The purpose of this deliverable is to assess the two Widening universities (UAC and ULPGC) and especially their ecosystems, in order to detect their challenges and opportunities as promotion and regional development vectors. For this purpose, the following points are established and detailed in this document:

-  Definition of the R&D&I framework in the Azores and the Canary Islands, both globally and specifically (UAC and ULPGC).
-  Mapping of the ecosystems for both universities, in relation to the three pillars of the project: attraction and retention of talent, excellent and responsible science, knowledge transfer and connection with the business environment.
-  List of infrastructures of the universities and other regional actors in terms of R&D&I.
-  Results of the self-assessment of both universities.
-  Results of the interviews with stakeholders of both universities.
-  Detection of challenges and opportunities in the cooperation between universities and their ecosystems.

In summary, this document constitutes the necessary basis for establishing a common strategy and vision, as well as an institutional transformation agenda of the two universities (as established in *Task 2.3 Developing a joint strategy*, of the project). Moreover, also to establish action plans that include concrete actions (as established in *Task 2.4 Developing action plans*, of the project), and that will allow us to develop the aforementioned strategy.

1.2. STRUCTURE OF THE DOCUMENT

This deliverable has the following content and structure:

-  Framework of Research, Development and Innovation for Azores (section 2).
-  Framework of Research, Development and Innovation for Canary Islands (section 3).
-  Mapping for UAC and ULPGC in the framework of the EXPER project (section 4).
-  Internal stakeholders' reports: Self-assessment results for each ecosystem (section 5).
-  External stakeholders' reports: Interviews and results for each ecosystem (section 6).
-  General conclusions (section 7).

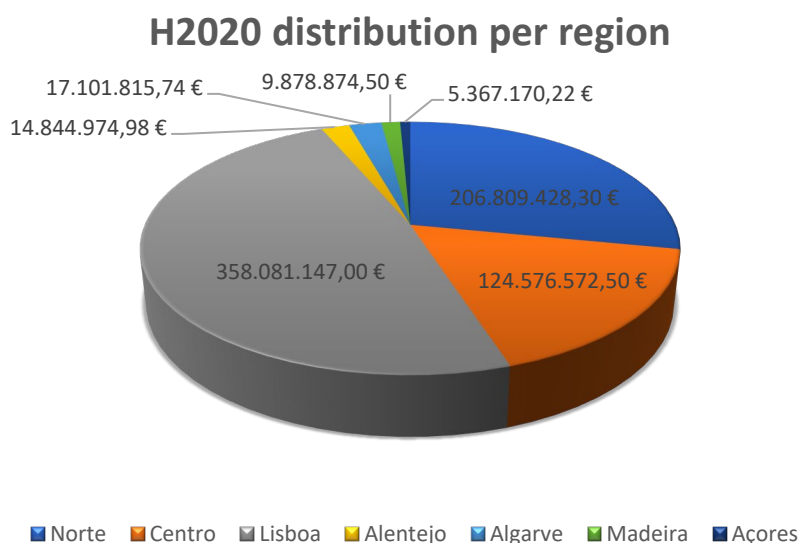
2. FRAMEWORK OF RESEARCH, DEVELOPMENT AND INNOVATION FOR AZORES.

2.1. GENERAL OVERVIEW

2.1.1. EVOLUTION OF REGIONAL PARTICIPATION IN EU FRAMEWORK PROGRAMMES FOR RESEARCH AND INNOVATION

From 2007 to 2013, on the context of PF7 the Azores registered 28 participations in projects, that had a budget for the region of 4,2 million €. From the framework project (FP) of FP7 ((2007-2013) to the H2020 (2014-2020) there was the same number (from 2014 to the semester of 2019) , since that in the context of the H2020 Azores maintained their level of participation, that is translated in to a 5.367.170,22 € under this FP period for the Azores to date, and there is still one year to go to close this FP period. The Azorean H2020 per capita per year is 4,23 €, a number that taking the regions in the EU into account is quite good, ranking the Azores in 170 on 274 regions. However, we should analyze the numbers having as a reference the national figures (see figure 1), as well as at a European level. At a European level, vis à vis NUTS 2 regions, Azores is at number 148 in a rank of a total of 274 regions classified as NUTS 2. Azores region is still a long way to go forward when we compare the regional participation with the national context, (1% of the total participation – figure 1), as well as it's added value in the context of the R&I ecosystem (Silveira et al., 2019).

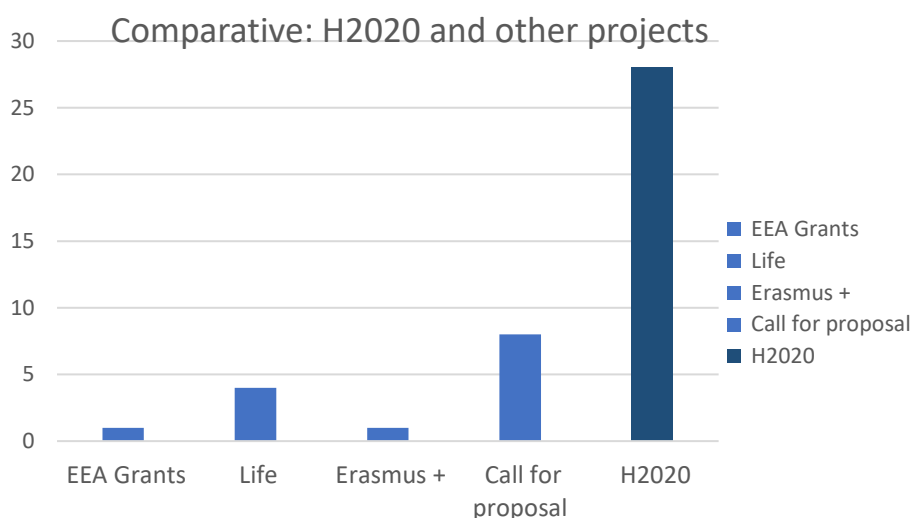
Figure 1. H2020 programs distribution per region in Portugal (data from NCP)



2.1.2. PARTICIPATION IN THE DIFFERENT PROGRAMMES AND FUNDING SCHEMES

If we analyze the EU financed projects in the region in the area of R&I we realize that the H2020 is quite ahead in terms of EU projects in the region, H2020 with 128 ongoing projects, compared with a total of 21 projects. We should mention, although it's not part of the table, Interreg MAC projects take a high number of projects in Azores, 103 in total, overpassing the H2020 by 75 projects.

Figure 2. Comparative between H2020 and other EU financed programs

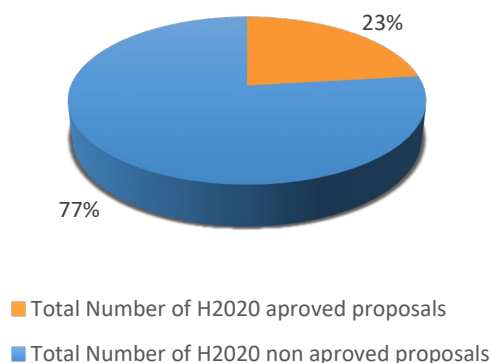


In total we have submitted 121 submitted for Horizon 2020, with just 28 successfully approved, which means we only manage to have a 21% success rate. At a national level the success rate is around 15% (data from National Contact Point), since the number of proposals is much higher, as in Excellence in Science that has a total number of submissions (according to data from the National Contact Point from 2014 to 2018) of 3663 submissions.

Although the level of success in Azores low comparing to the EU level (of almost 30% - National contact point data), it's in a good position at a national level. Less summited projects however better success rates. This can reflect the high capacity that Azores can still explore and develop in order to increase its approval rate. The high level of competition requires a better level of support, a need reinforced, by the key players of the R&I ecosystem.

Figure 3. Global Success rate of H2020 in Azores, comparison between approved and non-approved projects.

Global Success Rate of H2020 in Azores



Despite the equal number of projects between FP7 and H2020, of 28 projects, the difference is in the specific program of these projects. For example, H2020 has a more diverse range of areas, with an investment in Excellence in Science projects, with 6 projects overall. Although the concentration of projects remains in one specific program, “Societal Challenges projects”, with 19 projects, more than half of the H2020. Leaving second, with just six projects in “Spreading excellence & widening participation” and one per the remaining three areas, as “Industrial Leadership”, “Spreading excellence & widening participation” and “Science with and for society”.

On the other hand, there was a higher concentration in FP7 in “Cooperation”, with 22 projects in total on this specific program, in projects dedicated to space and environment, for example. The concentration left only space for 4 projects in projects in the specific program of “people” and 2 in “capacities”

2.1.3. THEMATIC DISTRIBUTION

Regarding the analysis of thematic distribution, we will focus on H2020 framework programs participation, the conclusion reach is that the H2020 programs in Azores are under Pillar III, Societal Challenges. H2020 have more projects under the scientific domains analysis of LS8-Ecology, Evolution and Environmental Biology, with 9 projects. These represents 32% of the total projects, with an amount of EU contribution from this scientific domain of 60.574.937,00 €, that represents 36% of the total of the EU contribution for the total of EU H2020 bugged to the region under this scientific domain.

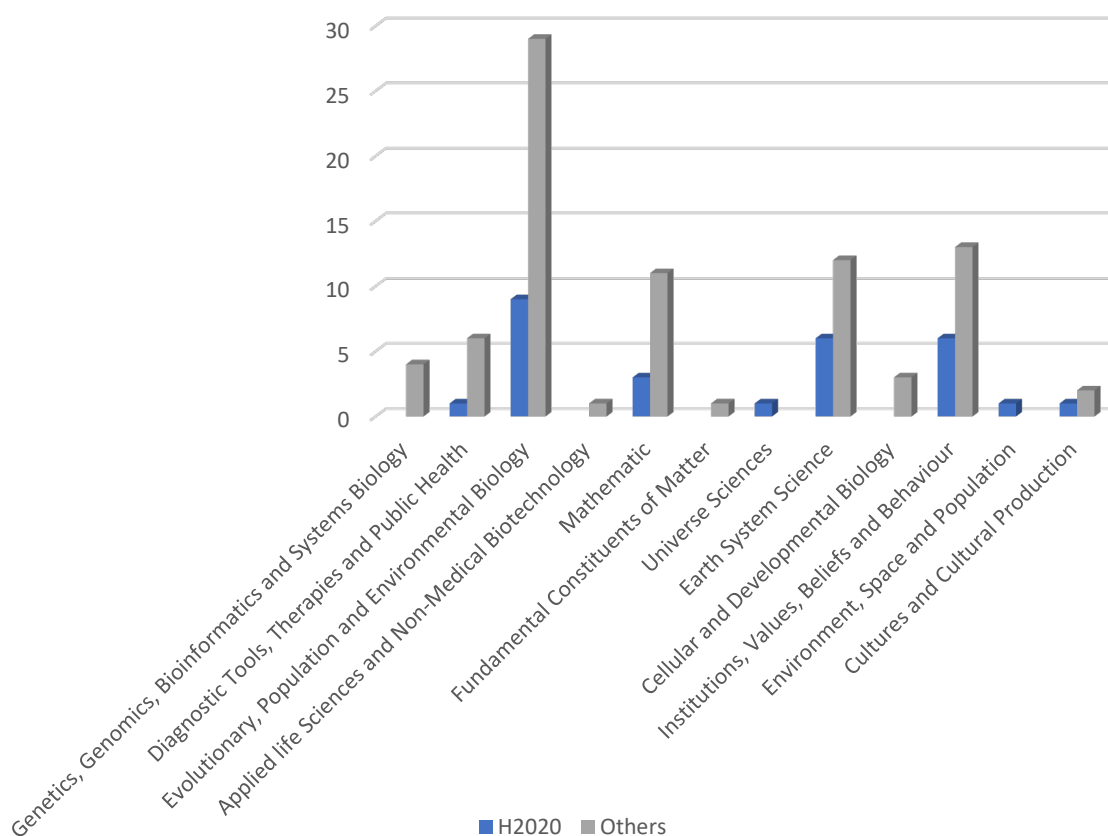
The second most represented scientific domain is PE10 – Earth System Science, with 21% of share of total contribution for the scientific domain areas in H2020 for Azores (6

projects), although that in terms of EU budget it only represents 15% in the total of the H2020 projects.

In third place, the most represented scientific domain in H2020 projects in Azores is SH2- Institutions, values, environment and Space, with 5 projects in H2020, that corresponds to 17% of the scientific domain's representation in the total, and it corresponds to 10% (16.765.482,50 €) of the EU contributions for this scientific domain in Azores, as the third most represented.

Figure 4. Scientific areas distribution: H2020 vs other EU financed projects in R&I areas

Scientific Areas: H2020 vs other EU finances projects



The participation in INTERREG programs (Europe; Atlantic; MAC) overcomes largely the number of H2020 programs, with 66 INTERREG programs approved. In terms of scientific area, the other projects are mainly in the scientific area defined as LS8 - Evolutionary, Population and Environmental Biology. This is also the scientific area with more projects on H2020 programs, with 29 projects dedicated to Evolutionary, Population and Environmental Biology that corresponds to 35% of all the other programs list. The second scientific area with more projects, with 13 in total, is the SH2 - Institutions, Values, Beliefs and Behavior. This area includes sociology, social

anthropology, political science, law, and communication, social studies of science and technology projects. With projects as the SIMPLIMAC dedicated to improving public efficiency through administrative simplification or PI ESPECIAL that implement an interactive platform for special education. This may show the importance of linking the implementation of projects with cohesion policies, taking in to account the social reality of the Outermost regions, namely the goal to promote the creation of jobs, promote social inclusion and address the current macroeconomic imbalance and the external deficit.

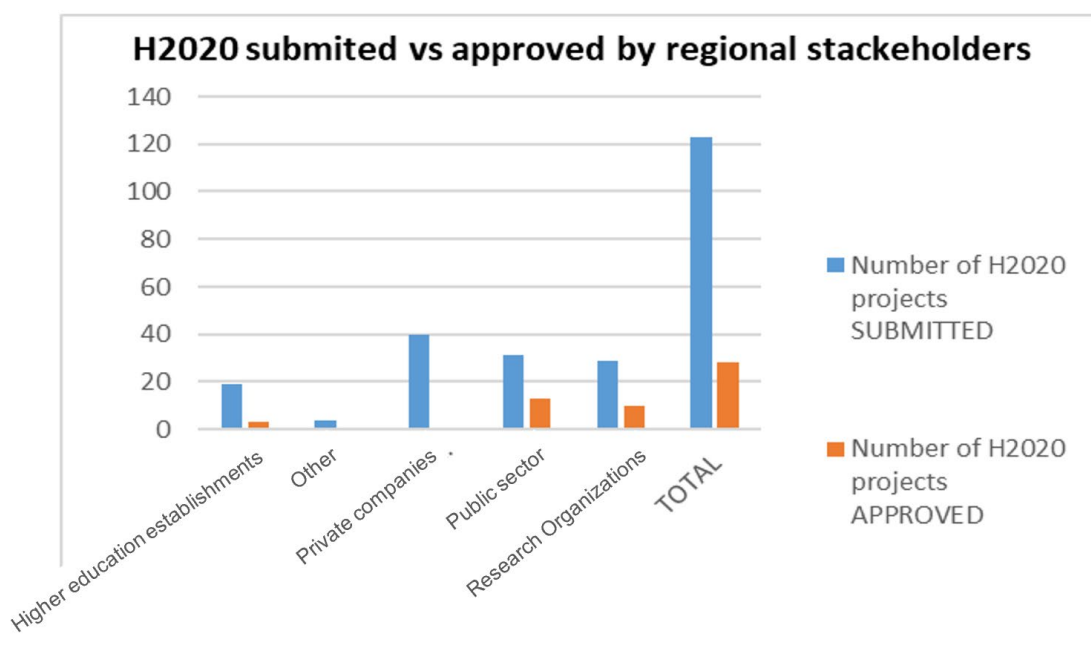
2.1.4. STAKEHOLDERS MAPPING (TYPE OF STAKEHOLDERS)

The conclusion regarding the analysis of stakeholders shows a great concentration of projects in a small number of organizations.

In the Seventh European Framework Programme for Research and technological development (2007-2013) had in the top of the most successful participants in FP7 IMAR, with 16 projects, which represents 57% of all FP7 in the Azores, followed, in second place, by University of the Azores, with 6 projects that represents 21% of the total FP7 projects. EDA, the regional, a private-public managing company for electricity in the Azores, with 3 projects stands in the third place, with 11% of the projects.

The Horizon 2020, changed a bit the stakeholder's panorama, however the concentration of partners is still an issue inherent to the region participation profile in FP. The H2020 EU Framework Programme for Research and Innovation (2014-2020), has FRCT in the top of the ranking of participation, with 11 projects and 39% of the total of projects in Azores. IMAR was surpassed in second place in the ranking, with 9 projects and 32% of the total of projects. University of the Azores (UAc) went to third place in the ranking with just 4 projects and 14% of the total of FP projects in the region. FRCT as a public organization overpassed IMAR and UAc, two organization dedicated to research and as in FP7, the participation on H2020 is concentrated on a limited number of stakeholders. This may be a result of the lack of information, lack of skills of the human resources available in the region as well as a limited access to information regarding H2020 in the R&I ecosystem.

Figure 5. H2020 submitted and approved per stakeholder type. Sourced from GPPQ



The numbers that were given from the National Contact Point tell another side of the story to the H2020 participation since it presents the number of submitted projects, which indicates that the regional stakeholders have made an effort to participate and submit projects to H2020, as for example the private companies, with 40 projects submitted, however only 1 projects were approved (a graphic representation in figure 5), a very high number of unsuccessful candidatures that can produce a frustration and “unreachable” image regarding this FP and that demands a close approach to this stakeholders in order to support their interest and capacitate their HR in order to give them better changes to be successful on their endeavors. The Research Organizations (REC) also had a high number of 29 projects submitted with less than half approved – with 10 H2020 projects approved. The interest in the FP is expressed by the number of projects submitted, which is significant, however the number of projects that are not approved shows the need of attention and support that the stakeholders need to be successful in their endeavors.

The concentration of FP projects on a limited number of stakeholders can be a source of vulnerability, if such institutions face a crisis or suddenly changes its policy. Therefore, it’s important to promote and empower other organizations trough training, capacitation and promoting the H2020 advantages for innovation to widespread the participation by regional stakeholders.

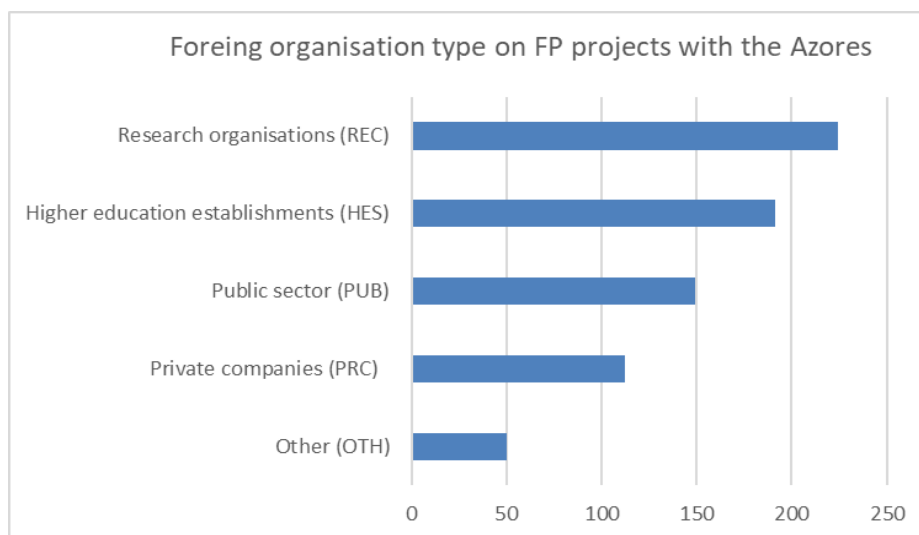
Regarding the role of the Azores within the projects, is mainly as a partner, although having the lead on Work Packages on most FP projects. Azores took the lead mainly in projects that are related to the Sea and Fisheries, as NetBiome-CSA (H2020), Move, Mistic Sea’s and MarSP. Despite the region has a lower rate of coordination role in

H2020 project that does not repeat itself in other financed projects in the area of research and innovation. This may come across as lack of confidence or capacity of taking the lead in the network context in FP, since it's not clearly lack of capacity either experience, especially in the cases of institutions that have a concentration of projects, as IMAR, FRCT and UAc with high level of PhD human resources and researchers.

We also find a wider range of stakeholders, taking part of projects, as representatives of higher education and research centers, such as IAMA, Fundação Gaspar Furtuoso, etc, to private sector, with Fundo de Maneio and Boa Fruta, to public services as Regional Directory for Energy, or the Regional Direction for European Affairs.

When we look into organizations outside the national sphere, regarding type of organization that participate with the Azores in FP projects we can realize that most of our network is composed of Research Organizations and High education establishments, illustrated in figure 6.

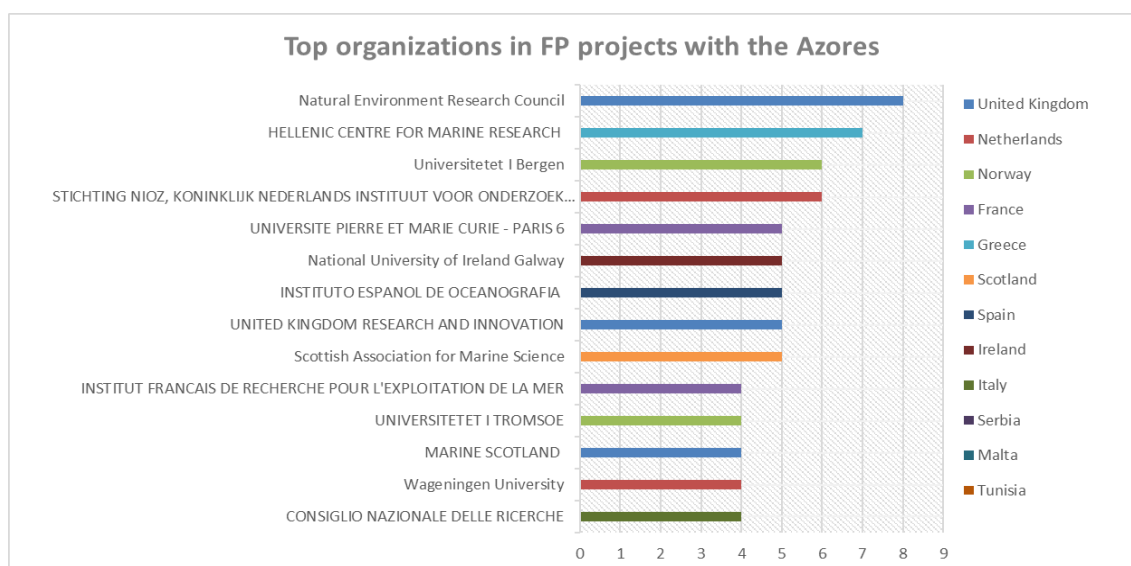
Figure 6. Foreign organizations, outside Portugal that are involved in FP projects with Azores



2.1.5. INTERNATIONAL CONNECTIONS AND NETWORK

The top ten organizations that are involved in FP projects with the Azores are The Natural Environment Research Council, from United Kingdom, with 8 projects in total, followed by a Greek organization in the area of marine research with 7 projects. In third place in the ranking there are 2 other organizations, involved in 6 other projects, one from Netherlands, in the area of Sea, another a University from Norway. There are also 5 other organizations with that are in 5 other projects, from countries as Spain, France, for example and finally there are 5 other organizations with 4 FP projects with Azorean partners, from France, Norway, UK, Netherlands and Italy. This shows a great variety of nationality and organizations, which also demonstrates that we do not focus on certain organizations and countries, namely OR's.

Figure 7. Network: Ranking of top organizations involved in FP projects with Azores



Another analysis was the level of influence that this top 10 organizations have in the H2020 network, as represented in figure 7. By analyzing the amount of projects that these organizations are involved, at least 7 out of the 14 that are included in the top 10 (since there are in the top 10 organizations that have the same amount of project numbers with Azores, therefore they are 14), so 50%, have between 80 to 478 projects. And 4 of them, 29%, have more than 100 projects. So big players that can open up other opportunities and can contribute to the development of capacities and exchange of good practice due to their large experience in H2020.

Table 1. Ranking of top organizations involved with Azores in H2020 projects (2014-2019).

RANKING	PARTNERS ON H2020 PROJECTS WITH THE AZORES	NUMBER OF PROJECTS	NATIONALITY
1	Natural Environment Research Council (NERC)	81	United Kingdom
2	Universitetet i Bergen	105	Norway
3	Universite Pierre et Marie curie - paris 6	89	France
5	United Kingdom Research and Innovation	231	United Kingdom
6	Wageningen University	152	Netherlands
7	Consiglio Nazionale delle Ricerche	478	Italy

Another comparison was at the level the program INTERREG V-A Spain-Portugal MAC Cooperation Programme (Madeira-Azores-Canarias). This is important to highlight since it involves strategic neighboring countries, namely two OR's, Madeira and Canary

Islands and the neighboring countries, concentrated in Africa, as Cape Verde (Portuguese speaking), Senegal and Mauritania.

Table 2. Network: Ranking percentage of Third countries involved with Azores in Interreg Mac projects (from 2007 to 2020)

INTERREG V-A Spain-Portugal MAC Cooperation Programme - Azores				
Framework	Call	Number projects	Projects with Third countries	Participation rate of third countries
2007-2013	1st CALL	23	0	0%
2007-2013	2nd CALL	0	0	0%
2007-2013	3td CALL	0	0	0%
2014-2020	1st CALL	32	23	72%
2014-2020	2nd CALL	42	36	86%
	TOTAL	97	59	61%

Only from 2014 on the participation of the Azores is visible and the relation with third countries have intensified in the last years, especially with Cape Verde that is present in every project (23 project with 23 Cape Verde participation; 36 projects with 36 participation). A valuable partner, especially because the official language is also Portuguese and because it's also an archipelago, as Azores, being an equivalent territory to share projects and experiences at a geographical, environmental and social level.

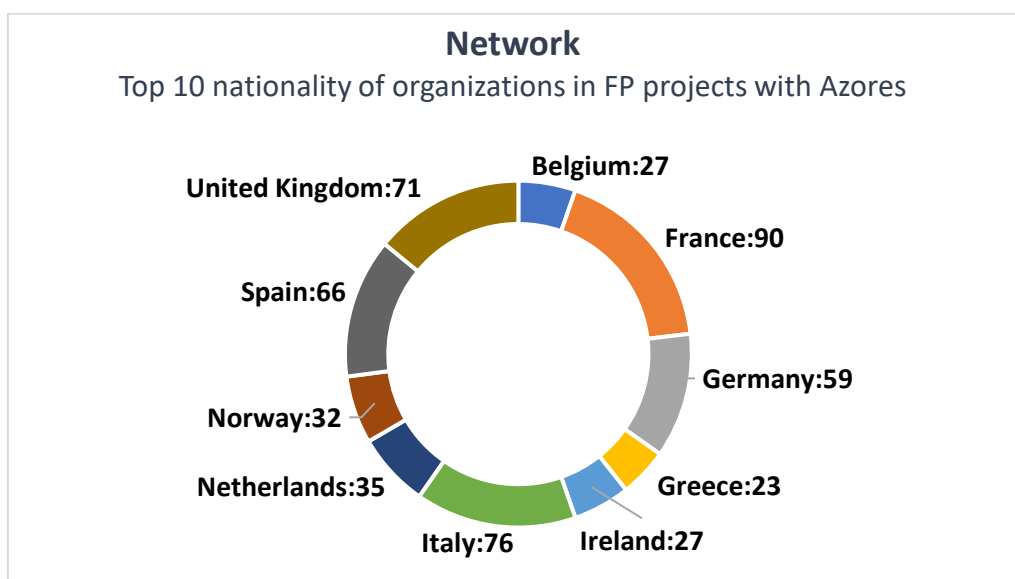
Table 3. Network analysis of the Third countries involved with Azores in Interreg Mac projects (from 2007 to 2020)

INTERREG V-A Spain-Portugal MAC Cooperation Programme – Azores					
FP	CALL	Number projects Azores and Third countries	Cape Verde	Senegal	Mauritania
2007-2013	1st CALL	0	0	0	0
2007-2013	2nd CALL	0	0	0	0
2007-2013	3rd CALL	0	0	0	0
2014-2020	1st CALL	23	23	8	7
2014- 2020	2nd CALL	36	36	14	9
	TOTAL	59	59	22	16

2.1.6. REGIONAL COLLABORATION (WITH OTHER OR'S & THIRD COUNTRIES)

Another conclusion that we can reach by analyzing the involvement of OR's in framework programs is that more than one OR's in FP7 project is still low, registering 27% of projects, and only 21% of more than one OR's per project in H2020 projects. This may mean that from one framework program to the following the OR's have lowered their successful number of approved projects that included more than one OR.

Figure 8. Network: Top 10 nationalities from organizations that are involved with the Azores in FP projects.



The analysis revealed that partners that are in the projects we are involved in, H2020 and others, do not reflected the advantage of our geostrategic position, neither our connection with OR'S, as expressed in figure 8. In other hand, the Interreg MAC in this regard is the main tool of third countries interaction at EU financed projects that Azores use in order to promote the privileged relations with Macaronesia countries. This may be explained by the specific projects in this regard and lower competitive required, as well as the better structured network in this geographical context.

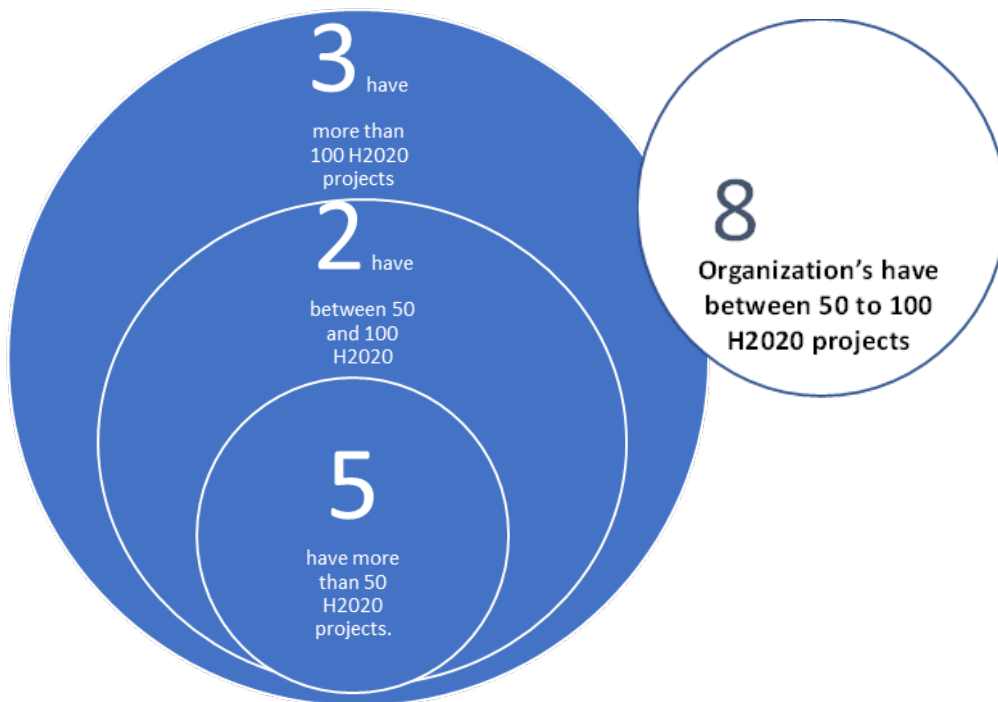
We have a total of 726 foreign organizations that participated with Azores in FP projects. By analyzing these organizations nationality and intensity of participation we conclude that the 10 top nationalities of the organizations, outside the national sphere, that participate in the framework projects with Azores as partners are Italy, with 76 organizations participating with Azores, followed by United Kingdom, with 71 organizations and Germany, with 59 organizations in total. Also, we can highlight that the only third country in the top 10 is Norway, with an expressive number of 32 organizations, largely ahead of our fellow member state Greece (23) and Belgium (27), for example.

2.1.7. ANALYSIS OF PARTICIPATION DETERMINANTS – NETWORK ANALYSIS

2.1.7.1. GLOBAL NETWORK

Analyzing the global network, we have looked into the size of the stakeholders in framework projects, with focus on the partners with 100 or more projects, so we could have an idea of the reach and experience of the project partners engaged with the Azores. We conclude that the Azores has 8 organization's that are partners between 50 to 100 FP projects. These 8 organizations have in average 5 projects with the Azores.

Figure 9. Network analysis: organizations with more than 50 projects that are in H2020 projects with the Azores

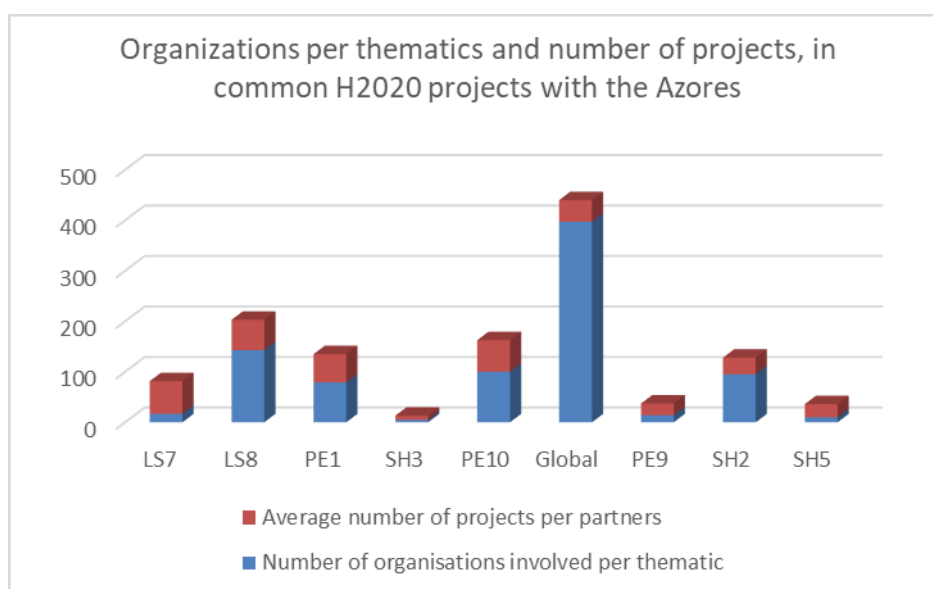


The network of partners that Azores is involved in FP participation only includes 3 partners with more than 100 projects. These 3 partners are organizations with focus on science and research: as Agencia Estatal Consejo Superior de Investigaciones Cientificas (CSIC), from Spain; the UK Research and Innovation, a British organization that works in partnership with universities, research organizations, businesses, charities, and government; and thirdly Universitetet i Bergen, a Norway internationally recognized research University.

However, Azores only includes 8 relatively experienced organizations relations in our H2020 projects (with more than 50 projects), those major partners are important to access major networks and other partners and be included in future projects, as in figure 9.

Another matter to analyze regarding the network is thematic in which our partners are engaged in and their preponderance and experience in projects in these thematic areas in H2020 projects. By analyzing the thematic that these partners are involved and the number of partners by thematic we can acknowledge the reach of these thematic that we are involved in, as the larger the number of partners per thematic stronger the network in that area. On this regards the thematic related to are the **Physical science and engineering** (PE1;P9;P10)¹ is the one that concentrate the larger amount of partners on H2020 with Azores, followed by **Life sciences** (LS7; LS8)². In third place, the smallest number of partners, are concentrated in **Social science and humanities**³.

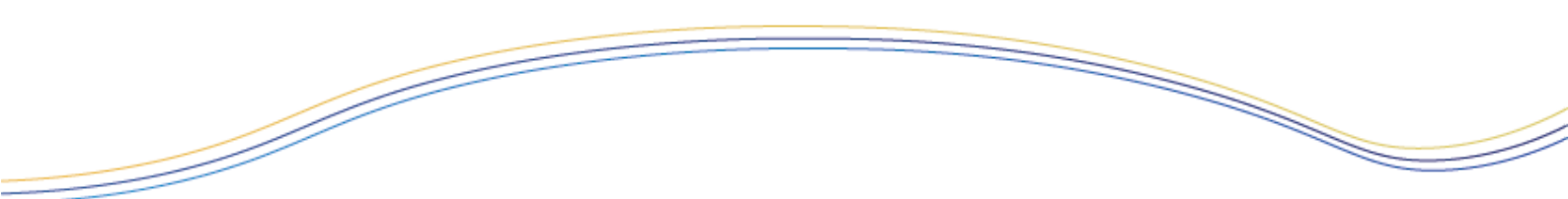
Figure 10. Organizations with projects with Azores and their number of projects, as well as total number of organizations per thematic (area-discipline in footnote)



Larger the amount of partner that are integrated in a thematic the stronger the network, therefore the thematic of physical science and engineering is the one with a larger network available through projects that Azores is already engaged in.

2.1.7.2. THIRD COUNTRIES PARTICIPATION

In terms of Third countries participation, we still do not see reflected the full use of the advantages of the geostrategic positioning of the Azores and other advantages that involve the CPLP countries or the countries in which we have stronger connections due to our diaspora. By counting, the number of organizations from third countries included in the consortium that we are a part of Norwegian (27 projects) and Switzerland (12) are



leading the rank. Countries, to whom we have favored relations compared to other European regions, as United States of America and Canada (with an extensive and influent Azorean diaspora) only are accounted for 6 and 7 projects, respectively. A low number compared to the leading countries and also to other third countries that are quite in ahead, as Iceland with 14 projects (mainly in the area of energy) and Turkey with 10 projects.

Other countries as Cabo Verde, with the same official language and similar geographical conditions (being an archipelago) we only account two projects in H2020. We integrate also projects with strong third countries in the international sphere, as China, Russia and South Africa, but one in one project with each.

¹ PE1: Mathematical foundations; PE9: Universe sciences; PE10: Earth system science.

¹ LS7: Diagnostic tools, therapies and public health; LS8: Evolutionary, population and environmental biology.

¹ SH3: Environment and society; SH4: The Human Mind and its complexity; SH5: Cultures and cultural production.

2.1.8. ANALYSIS OF PARTICIPATION DETERMINANTS – REGIONAL INNOVATION SYSTEM

2.1.8.1. MAPPING THE REGIONAL INNOVATION SYSTEM

As it was mentioned in the Regional Innovation Scoreboard 2012, “Innovation is a key factor determining productivity growth. Understanding the sources and patterns of innovative activity in the economy is fundamental to develop better policies.” In Azores the data related to regional innovation performance, namely in research and private sector is still little and not easy to compile, since it’s dispersed and not always available.

2.1.8.2. REGIONAL INNOVATION SYSTEM PERFORMANCE

The information available to properly build a Regional Innovation Mapping was scarce, nevertheless, we found several enterprises that had participated in some programs and some started some level of innovation. The gathered information revealed the Azores as being far from the mainland’s percentage of participation on FP projects. This unwillingness of businesses to participate was explained by the R&I stakeholders, as being easier and faster to apply for a regional programs instead.

With the information (forecasted) available for 2019 the R&D expenditures in the private sector as percentage of GDP is 0,02, and the same expenditures in the public sector the percentage of GDP is 0,27. The public sector investment for this year is higher, reflecting the difference between public and private sectors participation in FP projects. Also in 2019, the EPO patent applications per billion GDP value is 1.28, which may be considered a good indicator compared with the most developed region of Portugal (Lisbon 1.59). To reinforce the difference between the two regions and also to validate the previous information as a good indicator, the European Trademark applications per billion GDP* value for Azores is, also for 2019, 1.26 and Lisbon has 6.83.

Table 4. Position of the Portuguese regions in the Regional Innovation Scoreboard

	“2011” - score relative to EU 2011	“2017” - score relative to EU 2011	“2017” - score relative to EU 2017	Performance group
Norte	79,1	81,7	79,6	Moderate +
Algarve	63,5	54,9	53,5	Moderate -
Centro	84,2	87,2	85,0	Moderate +
Lisboa	98,2	90,6	88,2	Moderate +
Alentejo	70,0	70,2	68,4	Moderate
RA Açores	53,4	54,2	52,9	Moderate -
RA Madeira	55,2	56,4	55,0	Moderate -

Fonte: Regional Innovation Scoreboard, 2017.

The position of the Azores in the Regional innovation scoreboard is in the bottom at a national level. A disadvantaged position, even below the RA Madeira, fellow Outermost Region. Being qualified as “- moderate”, less then moderated performer in the national overall score.

2.1.8.3. REGIONAL RESEARCH PERFORMANCE

There are 12 research groups in University of the Azores, the only high education institution in the region, since 2015 to the present year. In terms of regional research performance little is to say in terms of data fluctuation, since the numbers have been quite stable since 2015 to 2019 (the available data that we have accessed through UAc), presenting the same number of PhD students, with average number of 15 doctoral graduates per year. As it has the same average number of foreign post docs (3) during the same period.

Regarding the number of scientific publications (indexed within Elsevier's scopes on all field), has dropped slightly in 2018, from 225 in the year 2017 to 210 publications in the year of 2018. In 2019 we just accounted 70 publications to the moment. From the total of publications, a percentage of 49% are from co-publications with national partners and 62% are from co-publications with international partners (including partners from EU countries). From these international co-publications, almost half are from European partners (49%). These may point us to the fact that the University of the Azores (UAc) has a good international network that may be a good network to promote to foster financed projects and that could empower the region capacity to reach international networks and key partners internationally for key project. A potentiality that possibly is not being used to its full potentiality, since this do not reflect on the number of FP that the UAc is currently included.

2.1.8.4. PRIVATE SECTOR IMPLICATION

The R&I expenditure in the business sector as percentage of GDP is 0.02, despite this information, we lack information to do a more thorough. We do not have information's regarding the non-R&D innovation expenditures of SMEs as percentage of total turnover and we have scarce information regarding innovation activities in SME and impacts, namely in employment. The implication of the private sector in the R&I is not measurable at the moment due to little information available. Nevertheless, it's important to stress that this information is fundamental to better understand the added value in R&I in the private sector, as a conclusion, by the R&I stakeholders. The analysis concluded that there is a weak articulation of the companies with the actors of the scientific and technological system which does not potentiates an environment of innovation and development of new products, processes and services. Therefore, there is a need to articulate initiatives that promote greater investment in particular in the business fabric

to promote the articulation of the scientific system with companies, especially in the areas of intelligent specialization, such as in agriculture or tourism.






RIS3 priorities

Smart specialization is a strategic approach to economic development through targeted support to Research and Innovation (R&I) as part of the future Cohesion Policy's contribution to the Europe 2020 jobs and growth agenda. This process Azores choose an approach through its main priority areas:

- 1) Agriculture and Agroindustry;
- 2) Sea and Blue Economy;
- 3) Tourism and Heritage;
- 4) Space and Data Science;
- 5) Health.

As for the cross-cutting areas, these can be understood as the main challenges that the RAA faces and to which a research and innovation strategy can provide a response. The existence of cross-cutting areas has allowed for the enhancement of different fields that serve as drivers of development, innovation, and differentiation. The process of defining the cross-cutting areas involved the aggregation and establishment of relationships between different contributions received throughout the participatory process.

In this context, the following challenges can be highlighted:

-  Valorization of Azorean resources: associated with different areas of the RIS3, several contributions focused on the need to promote the valorization of Azorean resources. This includes challenges such as substituting imports with Azorean products, identifying unique properties of local products with market value, or valorizing waste, among others;
-  Promotion of environmental sustainability in the Azores: There was a strong concentration of contributions focused on challenges related to sustainability, the environment, geobiodiversity, ecosystems, and combating and adapting to climate change;
-  Digital transformation and the 4.0 economy: transversely across different areas, challenges associated with the intensification of technological capacity and the introduction of new industrial and business solutions arising from digitization and connectivity were identified;
-  Addressing current challenges of social development and improving quality of life: this challenge considers a diverse range of contributions with a strong focus on social sciences. It includes issues such as aging, social integration, poverty, or education, among others;
-  Leveraging the strategic geographical position of the Azores and its differentiating characteristics: this challenge is related to the archipelago's location and natural features, particularly those that are most distinctive for the development of scientific and technological excellence with international projection.

Based on the presented challenges, the following designations were adopted for the cross-cutting areas:

- 1) Territory, resources, and circular economy;
- 2) Environment and climate action;
- 3) Digital transformation and the 4.0 economy;
- 4) Quality of life and social development;
- 5) Atlantic dynamics and geostrategic factors.

In the context of the smart specialization strategy the project RIS3_Net, MAC/5.11 A/075, was approved by the Management committee of the INTERREG MAC 2014-2020 Cooperation program, aims to promote inter-regional cooperation for the smart growth of the MAC space regions.

RIS3_Net aims to develop an institutional cooperation and a common governance system strategy, directed to the institutions responsible for planning, implementing and monitoring the smart specialization strategies on the MAC Regions, also taking into account the potential of including the third countries. This project will allow increasing the common knowledge of the RIS3 strategies of the participating regions.

This S3 approach is the basis for a structural investment as part of the cohesion policy contribution to the objectives of the Europe 2020 strategy. Although this strategy is having positive results in terms of other financed projects, as the Operational Programs (FEDER & FSE) there is a lack of alignment in terms of thematic between the H2020 and smart specialization areas defined by RIS3 in Azores. The defined RIS3 are not reflected in the majority of the projects we are included. This demonstrates the need for revising and reflecting on the priorities expressed by the R&I stakeholders. The RIS3 need to be realigned with the H2020 in order to be more competitive in the access of the financing, promote areas of interests from the R&I ecosystem and reach a broader international network. In terms of percentage, in terms of H2020 (on FP1), 61% (23 projects in 38 H2020) of the projects that Azores are involved on do not correspond to Azores smart specialization area, even in the F2 regarding other projects, as INTERREG and Call for proposals, 55% (45 projects in 82 in total) do not correspond to the defined Smart specialization areas for the Azores. This lack of specialization has missed the mark to showcase the differentiation of OR's, however many PO projects have been implemented on this context with great success, as you can see by the approved projects and investments illustrated in the table 5.

Table 5. Operational Programs approved in Portugal and budget

Azores Operational Program 2020 (FEDER/FSE)	Approved projects (total costs approved) (€)	Eligible investment of approved operations in execution (€)
Açores	53.154.052,82	31.423.685,95
Alentejo	20.106.625,20	5.667.951,20
Algarve	3.780.749,22	1.852.999,92
Centro	42.022.711,94	12.227.545,52

Lisboa	5.510.025,65	1.051.655,61
Madeira	23.049.247,14	6.756.249,67
Norte	84.176.745,89	17.815.788,10

2.1.8.5. PUBLIC POLICIES




The total ESIF dedicated to R&I registered is 186 M€, with a total ESIF dedicated to R&I per year per capita of 108,98€. The total of H2020 per capita per year is still 4,23€. This is translated into a ratio between the “Total H2020 per capita per year” and “Total ESIF dedicated to R&I per capita per year” of 0,04.

The public policies tools in practice in the regions highlighted are “PACT”, “Agenda de Inovação” and “Competir+”, grants that has Public and private research labs, Researchers from public institution and Private sector as target public, respectively. These programs orientate and mobilize instruments of support for the R&I ecosystem.

“PACT” is a call dedicated to finance research projects / Innovation projects with regional interest and/or relating to RIS3 priorities. A policy that promotes the participation in H2020 through evaluation of criteria on the impacts of the project include the perspective of competitive projects submission, however this criteria is not mandatory.

“Agenda de Inovação” as also the aim to develop international research collaborations in RIS3 priorities through ingoing and outgoing, short and long term mobility (from 6 to 24 months), promoting not only the strategic areas defined and the region as it promotes the widening of researchers network. This tool can be used to prepare collaboration aiming at H2020 consortium building. Since this is a recent policy, the aim was also to have in to mind the preparation for the Horizon Europe framework program.

“Competir+” is a public policy more directed to the private sector for the 2014-2020 period and it has three main objectives:

-  Increase the productivity and value of investment projects, giving greater emphasis to the component of "best investment", when compared with "more investment", as well as the positioning of business activity in competitive markets;
-  Develop competitive factors associated with knowledge, culture and creativity, through innovation;
-  Intensify the participation of regional companies in globalization, reflecting resources towards the production of tradable goods and services and rebalancing threats and opportunities. Compensate regional companies of additional costs resulting from the pursuit of economic activities in an outermost region.





As existing R&I policies we mentioned, that encourage mutual learning between outermost regions through a comprehensive overview of the orientations and instruments mobilized by the partners, study the synergies between the cohesion policy,

sustained by European Structural and Investment Funds, and the participation to the FP, the two following policy frameworks:

Pro Scientia Plan

The Regional Government, through the Regional Directorate for Science and Technology, has opened two calls under Pro-Scientia for the allocation of support to initiatives and projects aimed at the dissemination of scientific and technological culture, providing an overall funding of 40.0000 €. One of the calls is specifically aimed at supporting projects, initiatives, campaigns or challenges under the "Citizen Science" initiative. It intends to foster the active participation of social actors in scientific research processes and in the collaborative construction of knowledge, while aligning research results with the expectations, needs and challenges of the society. In turn, the other call is focused on the creation of Science and Technology contents in multimedia format for dissemination in the media with a view to increasing the scientific and technological literacy of citizens. It intends to encourage the creation of contents in multimedia format as well as to promote informal learning contexts. These calls intend to contribute to the implementation of the Action Plan for Scientific and Technological Culture of the Azores (PACCTO Azores). Its measures and operational actions are intended to reach the entire Azorean society, thus creating conditions for greater involvement of all citizens in search of innovative solutions to the challenges of today's world.






Pro Scientia Plan has as objectives:

-  (Create) Value through the following action, first of all empower the entities in the Scientific and technological system in the Azores (SCTA) and value it's activities and secondly promote activities of research, innovation development and innovation in the entrepreneurship context;
-  (Foster and reinforce) Cooperation through the following actions: reinforce the cooperation and knowledge transfer in technologies incentive the creation and partnership with the exterior;
-  (Promote) Update through improving accessibility and conditions used in the development of technology of information & communication;
-  (Promote, support, stimulate, incentive) Qualification through the following action: improve accessibility and conditions used in the development of technology of information & communication

RIS3 Azores - Research and innovation strategy for the intelligent specialization of the autonomous Region of the Azores

The development process of the RIS3 Azores was defined as referring to the necessary selection of priorities, which allow the region to focus its investments on a limited set of options, taking into consideration the Competitive advantages and international expertise. As a basis for the construction of the aforementioned priority selection

process, a preliminary definition of comprehensive thematic areas was made for 2022-2027, the selection of which was supported in aspects such as existing assets, regional policy priorities, or the potential of these sectors in terms of economic development and job creation in the autonomous region of the Azores:

-  Agriculture and Agroindustry;
-  Sea and Blue Economy;
-  Tourism and Heritage;
-  Space and Data Science;
-  Health;

These thematic areas were explored in different ways in the development of the RIS3 Azores. It was intended that, in each case, the vision allowed guiding the elaboration of the subsequent strategic definition levels, allowing to collect clues about the way to go and motivate reflections around the strategy to be adopted. At the moment these areas are being revised since the framework conditions have changed at regional, EU and international level therefore its being analyses and restructured.

As it was mentioned in the paragraph regarding the RIS3 (and illustrated by a table), the PO Açores 2020 European funds, managed by the regional authorities are aligned with the Smart Specialization Strategies RIS3, however when it comes to externally managed funds, as the H2020 the areas go beyond the regional managed funds.

2.1.9. REGIONAL ORGANIZATIONAL CHARACTERISTICS

In terms of economic situation, the Azores have a global value of 3.731 M€ and a GDP per capita of 15.898 € (ratio from 2015 to 2018 data), with a R&I intensity of 0, 7 in percentage of the GDP. With a H2020 budgeted per capita per year of 4,23 €.

The support services available in Azores region, despite its variety of approach and organic and goals, have a strong participation of public support/participation. This may constrain the type of processes and network that can be built by this organizations that is meant to support. With most of the regional organizations having strong public participation, it may format the goals and mission, and this may have an impact on the perspective and result of the innovation and research developed. Therefore, it's important that the public support may not gain characteristics of nurturing since it's fundamental to build a resilient and competitive R&I ecosystem. The public support should exist as a beginning but not as an end, in order to promote a stronger and diverse R&I ecosystem.

2.1.9.1. REVIEW OF HIGHER EDUCATION AND RESEARCH ORGANIZATIONS' PARTICIPATION DETERMINANTS

The Azores has the advantage of having one high education organization in the Region as well as 12 research groups operating in the region. From the 9 islands, three of them has facilities from the University (São Miguel island, as headquarter, Faial island, Terceira island), as well as research groups operating. This allows not only to fix the young population and researcher in the region, and its islands, as well as gain attractiveness and critical mass and infrastructures for external researchers and students. With 70% of the population between the age of 15 to 64 years old, with a total Marine area of 23.663 km² and an Exclusive economic zone of 930.687 km², the Azores have unique characteristics that set them apart from other EU Regions and within the Outermost Regions giving the perfect conditions to gain competitive advantage that can be promoted through scientific research combined with innovative approaches, methods and products.

From a previous analysis of questionnaires made to researchers from the University of the Azores, the main conclusions are:

- 🌍 A vast majority of respondents point out as the main causes for low participation rates not having sufficient knowledge about the FP programs and the fact they seemed to be designed to favor the greatest European research institutions;
- 🌍 Despite these considerations, Azorean researchers consider that they have the conditions to integrate international consortia, taking into account the lines of research in which they work, as well as the academic qualifications they possess. However, the fact that they do not integrate international networks is also a condition to the unsuccessful participation in FP program calls;
- 🌍 The easy access to less competitive and less demanding regional funding resources also contributes as a factor to a low participation of regional researchers in European project proposals;
- 🌍 Despite a certain distance from European funding opportunities, the Azorean researchers consider that is important to strengthen their participation on it through a concerted strategy to this end, which should be developed by all players of the regional research and innovation ecosystem.

2.1.9.2. ANALYSIS OF THE CHARACTERISTICS OF HIGHER EDUCATION AND RESEARCH INSTITUTIONS


The University of the Azores plays a fundamental role in education and research in the region, thus contributing to professional qualification, scientific innovation, social improvement and intercultural awareness. The University of the Azores integrates three Campi located on the islands of São Miguel, Terceira and Faial, and comprises university and polytechnic organic units. Its organic is based on a logic of departments and schools, which are units intended for the continued realization of teaching and research. Its teaching, research, services and cultural extension activities cover the most diverse areas of Exact and Technological Sciences, Natural and Environmental Sciences, Medical and Health Sciences, Agrarian Sciences, Social Sciences and Humanities.

As a result of its framework and regional, national and international priorities, the University of the Azores is currently focusing on differentiating areas of training and research, such as the sea, including fisheries and aquaculture, and natural hazards such as volcanology and seismology, climatology and meteorology. Other areas are also relevant to de UAc strategy, such as biodiversity, biotechnology and biomedicine, agriculture and livestock, geological and energy resources, economics and marketing, sociology and geography, pedagogy and psychology, language and communication, history and philosophy, archeology, political science. In what concerns the new technologies, the most relevant areas are information and communication technologies and technologies of materials.

As far as research is structured, the University of the Azores has 12 FCT accredited research groups, namely 3 research institutes, 7 research centers and 2 internal research centers. In the most recent evaluation carried out by FCT, 4 of the research groups were rated excellent and the remainder mentioned very good.

2.1.9.3. ANALYSIS OF INSTITUTIONAL STRATEGIES

The strategy of the University of the Azores for the coming years includes concrete measures to support the research sector in order to promote the recognition and excellence of the work that researchers carry out in the various scientific areas in which they work. For this purpose, in 2017 the Science and Technology Service was created to support scientific research, technology transfer and innovation. The operational objectives of the service include:

-  Diffusion of relevant information, in particular on calls, notices and other science and technology initiatives;

- 🌐 Give support to proposals submissions, services, scholarship and other S&T initiatives, in articulation with UA organic units, other research units, other public or private research institutions, S&T management entities and funding agencies;
- 🌐 Provide support to financial and material report of projects, services, scholarships and other S&T initiatives.

2.1.9.4. ANALYSES OF SUPPORT SERVICES

University of the Azores

The research support services at the University of the Azores is currently centered on the Science and Technology Service. In addition to the services already provided by that structure, it is intended in short term to strengthen the capacity of its staff in order to improve the participation rates of researchers from the University of the Azores in European programs, in close collaboration with other regional and regional structures with S&T competences.

Science and Technology Parks

1. NONAGON and TERINOV





Other support services mentioned in the RDI Mapping FORWARD mapping are NONAGON and TERINOV. Both are associations with public participation, parks for science and technology. These organizations have entrepreneurs; technology-based viable SME's, researchers and public in general as target public. These organizations provide conditions for sustained growth, supported by innovation, technology, entrepreneurship and, consequently, valuing products, companies and Azorean organizations. These parks for science and technology foster the development of new leadership paradigms and promote the catalyze of innovation and creativity; Trough the promotion of the interaction between companies, R&D organizations and public entities, support the promotion and establishment of regional, national and international partnerships. These are places of innovation as the foundation for business competitiveness that contribute to attract and retain new talents, being a fundamental issue in regions as the Outermost Regions. These organizations are platform for cooperation between the business fabric and local and regional entities, such as the University of the Azores, institutions of I&D and public bodies. Through the services and support they provided are designed to increase the competitiveness of local and regional companies through the development and dissemination of a culture of innovation and creativity.

As enabling and available technology & machinery we can highlight that TERINOV provides two wards of research and development laboratories for the agro-food industry and biotechnology, and a laboratory for innovation in dairy products. A support service that invest in agriculture innovation in the area, joining private sector with research, supporting simultaneously one of the Smart specialization strategies (RIS3) areas signalized in the region by the Azorean government.

Public support services

1. FRCT - Regional Fund for Science and Technology

FRCT is a public body that was created with the objective of coordinating and manage the financial resources available for scientific research and technological development from Regional, European and International programmes. The target public of FRCT initiatives are researchers; private and public sector and society. The FRCT mission is to promote the Science and Technology System of the Azores (SCTA) R&D+I, through the following actions:

-  Funding of Research Grants & Fellowship;
-  Promoting the participation of other SCTA entities in international programs and projects;
-  Providing support to the SCTA in the preparation of project proposals;
-  Participating in R&D+I projects under external financing programmes.

2. INOVA - Institute of Technological Innovation of the Azores

INOVA is a Research and Technology Organization association, with public participation, in the area of agriculture. INOVA targets public the private sector and it's support services are focused in technological development, technology transfer, the provision of specialized services and quality support to the regional industry and promoting applied research. It's a technological infrastructure of reference in the regional context, with increased strategic importance and necessary to the development of the Azorean business fabric and economy. Once again the support services area focused on Smart Specialization areas defined by the region.

3. LREC – Regional Laboratory of Civil Engineering






The LREC is a Public entity, the Regional Laboratory of Civil Engineering is a public institution that provides services in various areas of Civil engineering. Among the services provided are the studies, opinions and essays. LREC has a laboratory of materials, chemistry and is also equipped with all the technology that allows to gauge, measure and correct all parts that are part of any engineering work and contributes to guarantees that the materials that constitute it have the necessary quality contributing to the longevity of any construction. LREC has a annual trainings plan, that includes

trainings in several innovative areas, such as passive houses, energy efficiency in general, as well as renewable energy applied to engineering, on financed projects and meteorological instrumentation. LREC also implements partnerships, supports publications and thesis in the context of innovation and technologies in Engineering.

Chambers of Commerce

1. CCIA - Chamber of Commerce and Industry of the Azores

The CCIA was created in 1979 and it acts as an “umbrella” of the 3 Azorean Chambers of Commerce, that represent the secondary and tertiary sectors. This structure of business associations of the Azores unifies the existence of 3 centennial chambers of Commerce, increasing their capacity for intervention and the recognition in their geographical areas of influence. The CCIA's main intervention areas are:

-  Social-economic partner;
-  Promotion of the region and its products/services;
-  Liaison between businesses and innovation/knowledge centres;
-  It's has been an important partner for the Regional Government and other organizations;
-  Through its affiliates it renders a wide scope of businesses services and support.

Management authorities for the support services

1. DRPFE – Regional Directorate for Planning and Structural Funds

This public body is under the authority of the Vice-Presidency of the Regional Government of the Azores, Employment, Entrepreneurship and Competitiveness, of the Regional Government of the Azores. The Regional Directorate for Planning and Structural Funds it's an Innovative entrepreneurship support services that manages the RIS3-NET plan, supports entrepreneurs, SME; Citizens in general; Associations; NGO 's. It's the operative service, at a regional level, responsible for preparing and monitoring the implementation of the Regional plan (financed projects by the Region and structural funds - FEDER e FSE), namely the Operational Plan of the Azores, as well as implementing interventions with community support and conducting studies of socioeconomic nature.

2. DRCT – Regional Directorate for Science and Technology

DRCT is a governmental body under the authority of the Regional Secretary for Sea, Science and Technology. The Regional Directorate for Science and Technology is an

innovative entrepreneurship support services or programs that is also responsible for managing the RIS3-NET plan. Its public target includes: research center's and businesses; associations ; NGO's; private sector and public in general. This Regional Directorate has the mandate to settle regional policy in the fields of science and technology, as well as coordinating and developing the actions necessary for its implementation. Its main lines of action focus on supporting scientific research programs and projects, experimental development and technological innovation and modernization, promoting infrastructure to support research activities Scientific and technological development and dissemination of science and technology, and in encouraging the qualification of human resources and the specialized training and dissemination of science and technology. Knowledge creation and its transfer to the economic fabric are key factors for the sustainable development of the Azores. The challenge to be launched by researchers is towards a culture of innovation, based on the transfer of knowledge and technology and the promotion of value-added areas. Strengthening the establishment of knowledge partnerships and the articulation between the entities of the scientific and technological system of the Azores (SCTA) and the socio-economic fabric, and between research, innovation and entrepreneurship, in order to reinforce the cooperation between research center's and businesses, encompassing and strengthening each link in the innovation chain, from fundamental research to technological transfer. As well as supporting scientific research programs and projects, experimental development and technological innovation and modernization; establishment of knowledge partnerships and the articulation between the entities of the scientific and technological system of the Azores (SCTA) and the socio-economic fabric, and between research, innovation and entrepreneurship; encompassing and strengthening each link in the innovation chain, from fundamental research to technological transfer; develop and manage European financed programs - from H2020 to INTERREGS; grant fellowships to researchers, especially in RIS3 areas.

2.2. UAC: INTERNAL OVERVIEW

With its headquarters located in Ponta Delgada, the University of the Azores was founded in 1976 with the objective of increasing the qualification of human resources and, simultaneously, promoting the integral development of the region. Likewise, and with a view to extending its activities to the entire Region, it is organized in a tripolar structure, with poles in Ponta Delgada (São Miguel island), Angra do Heroísmo (Terceira island) and Horta (Faial island).

UAc comprises the following organic units for teaching and research (UOEI): the Faculty of Agricultural and Environmental Sciences (FCAA), the Faculty of Sciences and Technology (FCT), the Faculty of Social and Human Sciences (FCSH), and the Faculty of Economics and Management (FEG), as well as the School of Health Sciences (ESS) and the School of Technologies and Administration (ESTA).

Regarding the research units (UOI), alongside other R&D units responsible for scientific and laboratory support in particular for 2nd and 3rd cycle courses, there are the Institute for Investigation of Agronomy Technology and Environment (IITAA), the Institute of Volcanology and Risk Assessment (IVAR), and the Institute of Marine Sciences Research (OKEANOS).

As for general services, UAc have the following services: Rectorate Service, Academic Management Service, Information and Communication Technologies Service, Science and Technology Service, Human Resources Service, Financial Resources Service, and Procurement and Asset Service. Additionally, it also benefited from the Social Action Services (SASE).

As units for cultural extension, there are the Senior Academy and Junior Academy, the Continuing Education Center, the Library, Archive, and Museum (BAM), and more recently established under the new statutes, the Academy of Arts, the Incubator of Technological-Based Companies (InUAc), and the Emergency Response Center (UAc, 2023).

The UAc recently defined the "Promotion of Sustainability in the RAA" as its development theme. Throughout its nearly 50 years of existence, this has been a constant demand of the UAc, with a clear impact on the development of the nine islands and the consolidation of the autonomy of the RAA. In the context of Agenda 2030, PO 2030, and RIS3-Azores, new challenges arise for the future of the RAA in terms of environmental and socio-economic sustainability, which the UAc embraces as its strategic mission.

The UAc is the key strategic partner of the Public Administration for evidence-based decision support in the design, implementation, monitoring, and evaluation of public policies in the RAA, which are the main driver for promoting sustainable development in the region. All these policies and strategies for sustainable development are shaped and highly influenced by the Atlantic dimension, the insular and outermost character of the





RAA, its geodynamic location, the limited and fragile terrestrial natural resources, and the still largely unknown marine natural resources (including the deep ocean) that exist.









Therefore, the entire territory of the RAA (land and sea) constitutes an excellent natural laboratory of global interest for the development of scientific activities and projects, whether highly specialized in certain areas of knowledge (e.g., oceanography, volcanology, renewable energies, tourism, biodiversity, and biotechnology), or with multidisciplinary scope, contributing to a better understanding and enhancement of the global role of islands in the current context (e.g., island studies, socio-economic dynamics, evolution of culture and tangible heritage, transatlantic international relations).

Through mobilizing the valuable human resources of its teaching and research units, and capitalizing on all the knowledge produced, the UAc must:

- 1) Leverage this excellence potential of the RAA as a natural and geostrategic laboratory to effectively contribute to its sustainable development (in line with the SDGs);
- 2) Significantly advance the state-of-the-art (through high-quality scientific production and the acquisition of competitive regional, national, and international R&D&I projects) of sustainability in islands/archipelagos at a global level, in accordance with the RIS3-Azores, in order to fulfill its fundamental missions as a University.

This regional and global scientific contribution of UAc should be concretized primarily based on the identification of the main pillar and various thematic pillars that substantiate the sustainable development of any geographically, environmentally, and socioeconomically complexity region of RAA. The UAc's organic units for teaching and research (UOEI and UOI) associated with these elements can directly and effectively contribute to their development and implementation, namely:

-  **Transversal Pillar: Education, Training, and Higher Qualification** promoted by the Faculties and Higher Schools of UAc (FCAA, FEG, FCSH, FCT, ESS, and ESTA);
-  **Pillar 1: Education for Sustainability** promoted by UOEI FCAA, FCSH, FCT, and R&I units OKEANOS, IITAA, CICS.Nova.UAc, GBA-cE3c, CIBIO, and NICA.
-  **Pillar 2: Food Self-Sufficiency** (resulting from the necessary agroecological transition) promoted by R&I unit IITAA;
-  **Pillar 3: Energy Sustainability** (resulting from effective energy transition) to be studied and promoted in its various dimensions (socioeconomic, environmental, and technical/engineering) by multiple R&I units with related expertise (OKEANOS, IVAR, IITAA, GBA-cE3c, CEEApIA, CICS.NOVA.UAc, CIBIO, and IS2E);

-  Pillar 4: **Transition to a Circular Economy** (resulting from a paradigm shift in the production systems of goods/services and waste management/valorization) to be leveraged in its various socio-economic dimensions (R&I units CEEApIA and CICS.NOVA.UAc) and technical/environmental dimensions (R&I units IITAA, CBA, CIBIO, and GBA-cE3c);
-  Pillar 5: **Protection and valorization of Natural Heritage**, primarily promoted by the three excellent R&I units FCT at UAc in this domain: OKEANOS (for the coastal and marine component), CIBIO (for the terrestrial and coastal component), and GBA-cE3c (for the terrestrial component);
-  Pillar 6: **Protection and valorization of material and intangible Cultural Heritage**, to be enhanced by the three R&I units of UAc operating in the fields of Humanities (CHAM and CEHu) and Social Sciences (CICS.Nova.UAc);
-  Pillar 7: **Promotion of Public Health and Well-being**, to be leveraged in its technical dimensions (R&I units IITAA, CBA, NiDES, and NICA) and socio-economic dimensions (CEEApIA and CICS.NOVA.UAc);
-  Pillar 8: **Adaptation to Climate Change and Natural Risk Mitigation**, to be promoted at UAc in the components of climate change monitoring and development of adaptation strategies (R&I units IITAA, OKEANOS, GBA-cE3c, and CIBIO) and in the assessment and monitoring of geological risks and crisis management (R&I unit IVAR);
-  Pillar 9: **Promotion and development of the Blue Economy**, particularly through the creation of a Regional Sea Cluster in Faial (underway by the Regional Government of the Azores), in which the excellent R&I unit FCT OKEANOS should play a pivotal role, complemented in the economic component by the contribution of CEEApIA;
-  Pillar 10: **Promotion of Sustainable Tourism**, which should be leveraged at UAc in its socio-economic dimensions (R&I units CEEApIA and CICS.NOVA.UAc) and environmental dimensions (OKEANOS, GBA-cE3c, and CIBIO);
-  Pillar 11: **Promotion and development of the Digital Economy** (resulting from effective digital transition), which should be enhanced at UAc in its socio-economic dimensions (R&I units CEEApIA and CICS.NOVA.UAc) and technical dimensions (NiDES and IS2E).

It is important to highlight that the theme "Promotion of Sustainability in the Autonomous Region of the Azores" arises naturally from the history, mission, and institutional strategy of UAc. In fact, since its establishment, the Azorean academy has been a pillar of the region's development, as reflected in the institution's mission, strategic plan, and educational, scientific, and cultural project. The upcoming challenges in the next decade, particularly within the context of the UN's 2030 Agenda for sustainable development, could not find a different response within UAc. The focus on sustainability stems from the specificities and context in which the RAA operates.

This interdisciplinary strategic project aims not only to promote sustainable development in the RAA and advance the scientific state-of-the-art in sustainability of the islands, but also to significantly enhance effective collaboration among UAc's R&I units operating in different fields of knowledge and collaboration between UAc's R&I units and non-academic entities (particularly companies), especially at the regional level. Both factors have been identified as institutional weaknesses in the R&D and are intended to be reversed in the next 5 years. Consequently, the joint design and development of R&D projects in partnership in any of these pillars, which can also benefit from the active participation and contribution of the most relevant public stakeholders (e.g., Central, Regional, and Local Public Administration; National Agencies; Public Companies; Science and Technology Parks; Science Centres) and private stakeholders (e.g., companies, chambers of commerce, producer/industrial associations, industrial clusters, professional associations, associative movement/NGOs), and which can also result in attracting competitive regional funding (e.g., PRR, PO Açores 2030), national funding (e.g., PRR, PO 2030, FCT, ANI), and international funding (e.g., Horizon Europe, INTERREG), should constitute the main axis of action for this initiative, aligning fully with the institutional strategies described for research and knowledge and technology transfer.

2.2.1. ACADEMIC COMMUNITY

2.2.1.1. EDUCATIONAL PROGRAMS

UAc currently offers 23 undergraduate programs, 26 master's programs, 10 doctoral programs, 6 Technical Higher Education Courses (TeSP) programs, various postgraduate courses, and other training modalities aimed at the updating and specialization of different national and international audiences. This range of programs provides educational opportunities in various fields of knowledge, ranging from more classical or recurring areas (history, philosophy, languages, literatures and cultures, education, psychology, sociology, economics and management, biology and geology, medicine, nursing, and technologies) to more specific areas that arise from the socio-cultural, economic, geopolitical, and environmental context of the institution (island and Atlantic history, literatures and cultures, tourism, European studies, cultural and natural heritage, agricultural sciences, veterinary medicine, marine sciences, volcanology, and civil protection).

Within this framework, the educational project of UAc aims to enhance the quality of educational offerings and promote teaching activities that are increasingly student-centered, supported by information technologies, project-based, problem-solving oriented, and geared towards closer alignment with the socio-professional reality. To achieve this, it is important to deepen the training of the teaching staff and their pedagogical updating, as well as increase the inclusion of internship and project-based courses in the study plans.

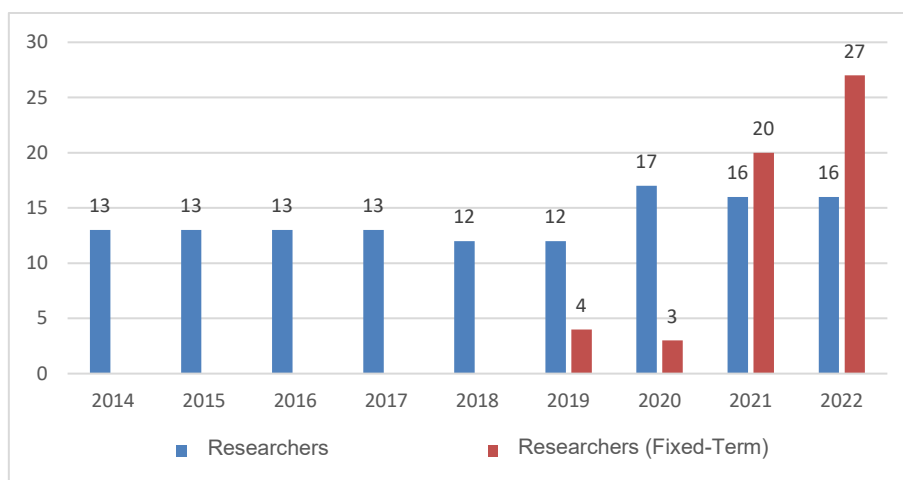
In terms of educational offerings, UAc will continue with periodic evaluation of the continuity of courses with low demand and review and update of curriculum plans. It will also focus on creating new training and specialization programs in response to the needs of the Azores Autonomous Region (RAA) and market trends, strengthening partnerships with other higher education institutions and organizations in the public and private sectors at regional, national, and international levels.

Considering that UAc is located in an insular and territorially discontinuous region, it is also essential and strategic to implement distance learning solutions, addressing the training needs and aspirations of all Azoreans and expanding its recruitment capacity beyond the region. For this purpose, a mission group has already been established to design a project for technical and human capacity building in this area, plan, organize, and monitor the training and certification of the teaching staff, and oversee the design and implementation of b/e-learning offerings. In this context, UAc has already signed an agreement with Universidade Aberta, and the first edition of certified training in this area is already scheduled. Furthermore, there are plans to establish a multimedia laboratory to support distance learning activities.

2.2.1.2. RESEARCHERS

The total number of permanent researchers at UAc remains low, but it has been gradually increasing in recent years as a result of the provisions of Law No. 112/2017 from December 29, under which 7 researchers were integrated into UAc's permanent staff. Additionally, within the framework of the scientific employment stimulus program established by Decree-Law No. 57/2016 from August 29, as amended by Law No. 57/2017 from July 19, there has been an increase in permanent researchers. Currently, UAc has 16 career researchers and 27 fixed-term researchers, representing a 35% growth compared to 2021 (Figure 11). It is estimated that the number of researchers may continue to increase through open science programs and competitions, including those offered by the Foundation for Science and Technology, to which UAc is an applicant.

**Figure 11. Evolution of the Total Number of Researchers in the Staff Map
(Permanent and Fixed-Term)**



In the research career, the predominance of assistant researchers remained in 2022 (Figures 12 and 13), accounting for approximately 81% of the total, as well as male researchers representing around 68.7% (Figures 14 and 15). Despite the increase in the number of researchers, the average age has increased by one year, currently standing at 57 years old (Figures 16 and 17), a value still lower than those recorded between 2016 and 2019.

Figure 12. Evolution of the Distribution of Researchers in the Permanent Staff, by category

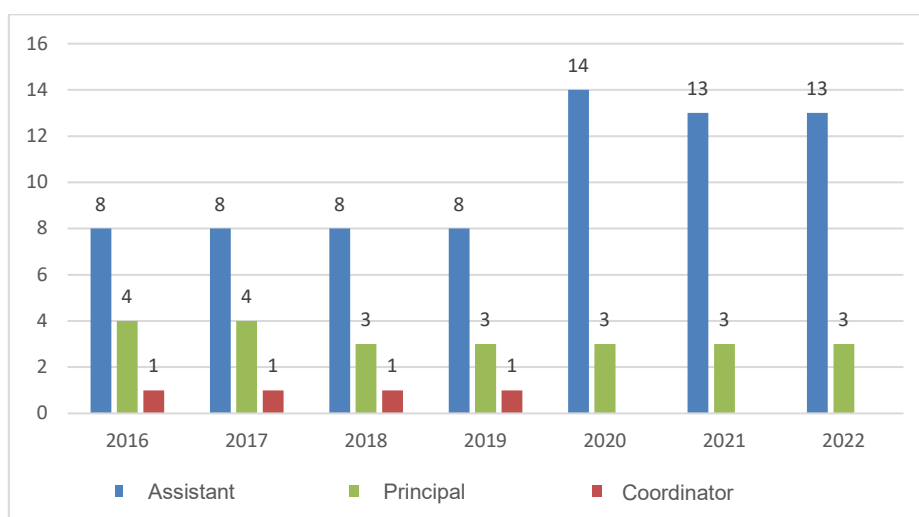


Figure 13. Distribution of Permanent Researchers in the Staff by Category, in 2022

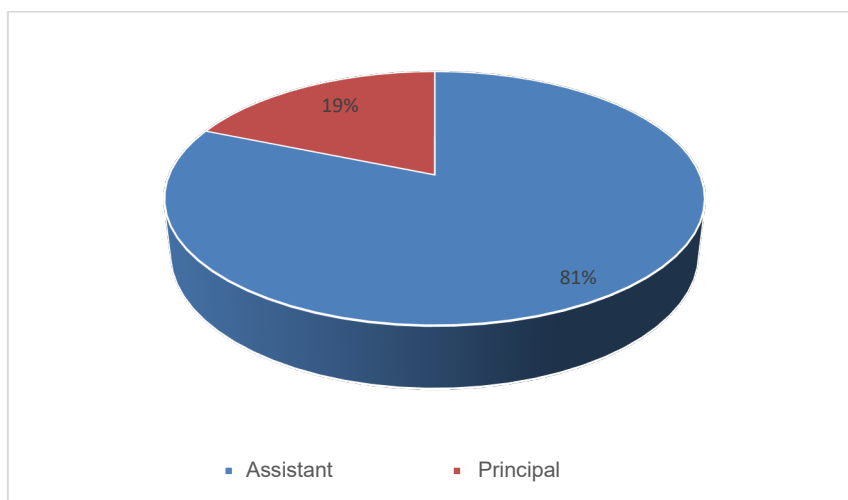


Figure 14. Evolution of the Distribution of Permanent Researchers in the Staff, by Gender

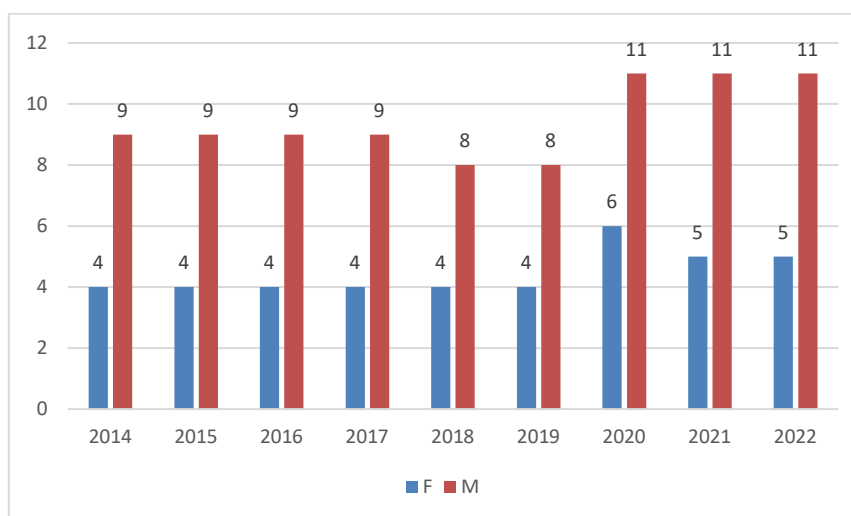


Figure 15. Distribution of Permanent Researchers in the Staff by Gender, in 2022

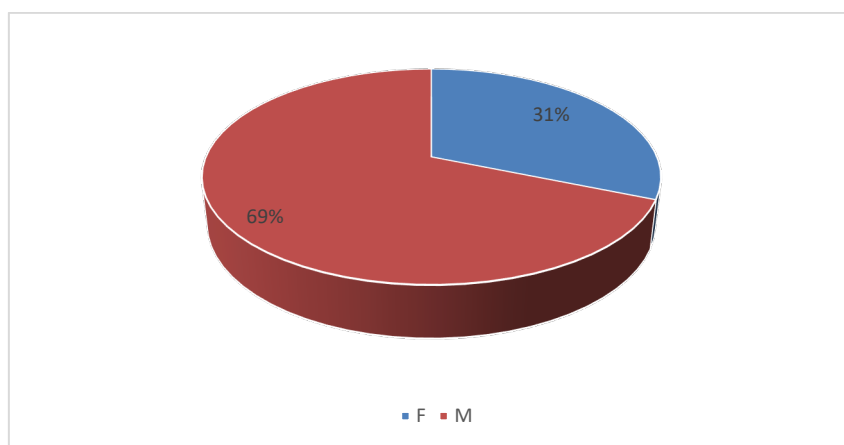


Figure 16. Evolution of the Distribution of Permanent Researchers in the Staff by Age Group

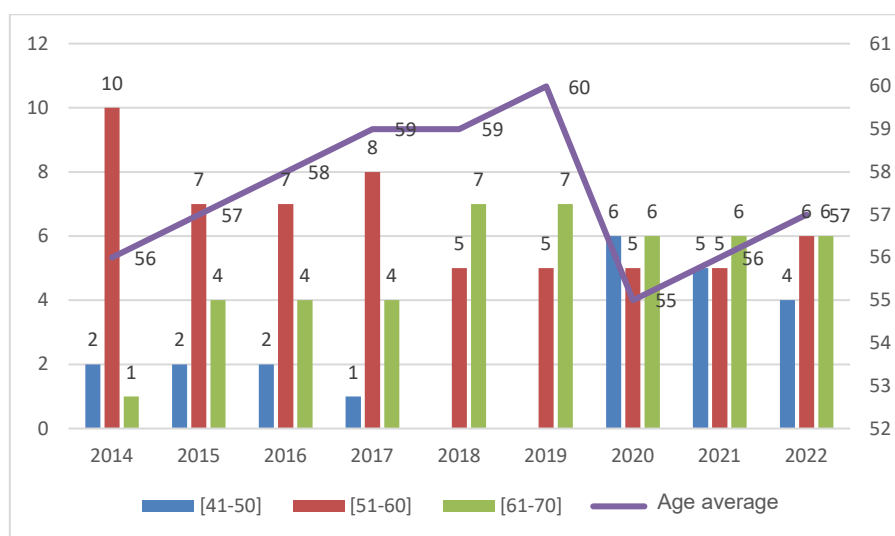
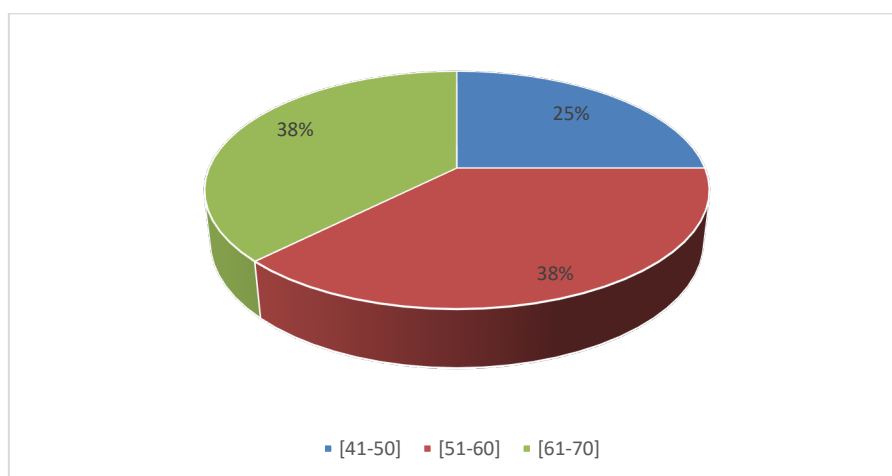


Figure 17. Distribution of Permanent Researchers in the Staff by Age Group, in 2022



2.2.1.3. RESEARCH FELLOWSHIPS AND OCCASIONAL COLLABORATORS

The academic community of UAc includes doctoral, master's, management and research fellows, as well as occasional collaborators, including researchers, technicians, and operational staff hired under projects, R&D services, and social support programs. On average, UAc has maintained around 90 fellows and 180 occasional collaborators per year (Table 6), with the observed fluctuations corresponding to the varying number of competitive competitions and regional, national, and European employment programs available. It should be noted that the significant fluctuations in the number of fellows and occasional collaborators in 2020, 2021, and 2022 are a direct consequence of the impact of the pandemic. In the first case, it resulted in a reduction in fellowship programs and mobility, while in the second case, external personnel were needed for teaching due to the division of classes and the reinforcement of surveillance and cleaning services, among others.

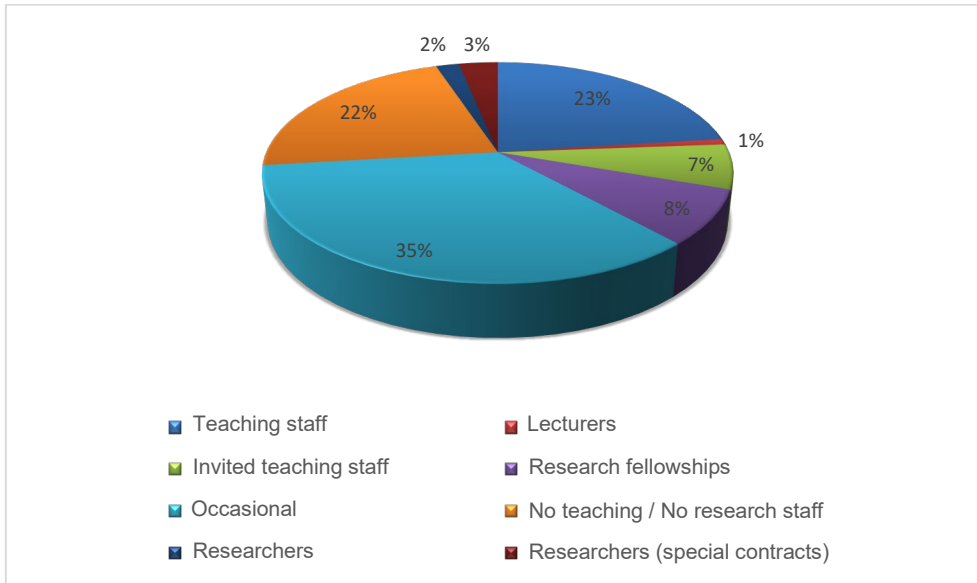
Table 6. Total Number of Fellowships and Occasional Collaborators

	2016	2017	2018	2019	2020	2021	2022
Research fellowships	82	85	102	118	87	61	67
Occasional collaborators	205	264	54	47	42	296	294
Total	287	349	156	165	129	357	361

2.2.1.4. RELATIONSHIP AMONG ACADEMIC COMMUNITY GROUPS

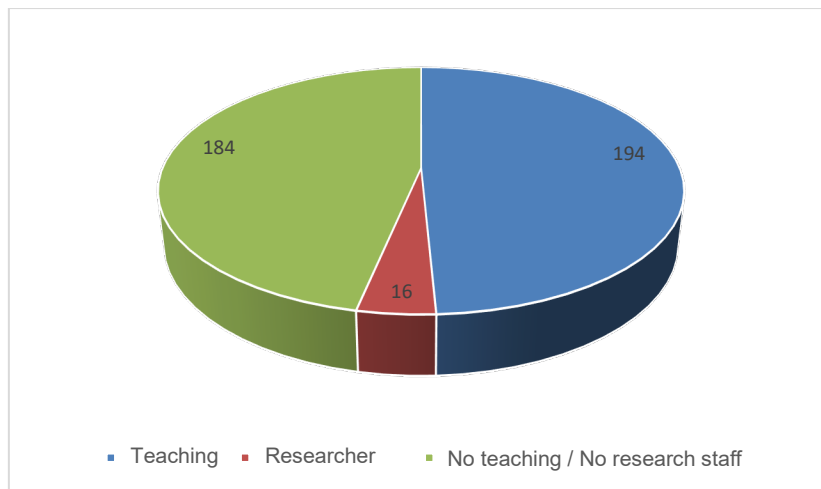
The relationship among the members of the academic community shows that permanent staff accounts for just over 50% of the total workforce and collaborators at UAc (Figure 18).

Figure 18. Proportion of Different Groups in the Academic Community, excluding students, in 2022.



Regarding permanent staff members, it can be concluded that the ratio of teaching and research staff to non-teaching and non-research staff is 1 to 1 (Figure 19).

Figure 19. Distribution of Permanent Staff in 2022



2.2.2. RESEARCH AND DEVELOPMENT

2.2.2.1. RESEARCH AND TEACHING SUPPORT UNITS

In 2022, UAc continued to have 12 scientific research structures dedicated to research and technological development, as well as supporting teaching, including institutes, centers, and specialized R&D units.

As a result of the latest evaluation process of R&D Units in the National Scientific and Technological System (SCTN) promoted by the Foundation for Science and Technology (FCT), the number of UAc R&D units accredited in the SCTS is currently 9 (Table 7). Compared to the previous evaluation process, the classification of the centers was generally higher, with four R&D units achieving an Excellent rating and three achieving Very Good. It should be noted that the classification of CHAM (Center for Humanities), which includes CHAM-A, was reevaluated in 2020, changing from Good to Very Good.

Table 7. Result of the evaluation of research units at UAc by the Foundation for Science and Technology in 2019/2020

Organic Research Unit	National R&D unit	Integrated members	FCT Evaluation 2013	FCT Evaluation 2019
IITAA - Institute of Agricultural and Environmental Research and Technology	-	23	Good	Very Good
IVAR - Institute of Volcanology and Risk Assessment	-	20	Very Good	Excellent
OKEANOS - Institute of Marine Sciences Research	-	46	Not Applicable	Excellent
R&D Unit	National R&D unit		FCT Evaluation 2013	FCT Evaluation 2019
CBA - Azores Biotechnology Center	-	22	Not Applicable	Very Good
CEEApIA-A - Center for Applied Economics Studies of the Atlantic	-	20	Good	Good
CHAM-Açores - Center for History of the Behind and Beyond the Sea	CHAM - Humanities Center	23	Excellent	Very Good
CIBIO-A - Research Center for Biodiversity and Genetic Resources - Azores	InBio - Research Network on Biodiversity and Evolutionary Biology	29	Very Good	Excellent
CICS-UAc - Interdisciplinary Center for Social Sciences	CICS - Interdisciplinary Center for Social Sciences	19	Very Good	Good
GBA - Azores Biodiversity Group	cE3c - Center for Ecology, Evolution, and Environmental Changes	20	Excellent	Excellent
CEHu - Center for Humanistic Studies	-	22	Not Applicable	Not Applicable
R&D Specialized Group	National R&D unit		FCT Evaluation 2013	FCT Evaluation 2019
NICA - Interdisciplinary Research Nucleus of Child and Adolescent	-	13	Not Applicable	Not Applicable
NIDeS - Research and Development Nucleus in e-Health	-	8	Not Applicable	Not Applicable

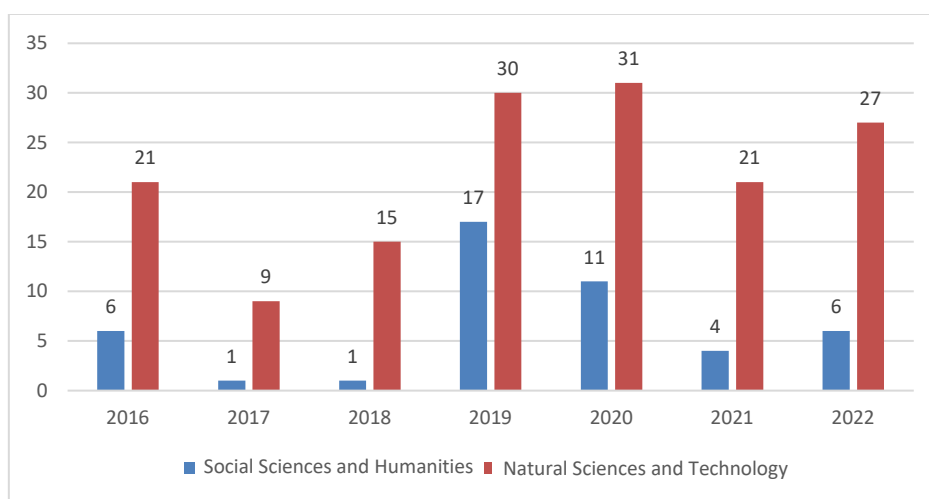
It is UAc objective to continue increasing its scientific production in all scientific areas, particularly in the R&D units of SCTN that have not yet achieved the "Excellent" classification, and in those that are only accredited in SCTA, in order to envision a potential emancipation to the SCTN in the medium term.

2.2.2.2. R&D PROJECTS

The increasing dynamism and initiative of the institution's researchers have greatly contributed to a significant increase in the acquisition of competitive funding from regional (DRCT), national (FCT), and European/international (e.g., H2020, Horizon Europe, INTERREG) R&D programs. From 34 funded projects between 2013-2017 with a total budget of 3.677.304 € for the UAc as a whole, the number has risen to 79 projects between 2018-2022 with a total budget of 11.999.318 €. With the start of a new regional (PO Açores 2030) and European (Horizon Europe) scientific funding framework, UAc expects to maintain its increasing capacity to attract competitive funding in all areas of knowledge within the institution.

Considering UAc and the Gaspar Frutuoso Foundation as management entities, there was an increase in the number of R&D project contracts in 2022 compared to the previous year (Figure 20). In this context, it is worth mentioning that both the field of Social Sciences and Humanities and the field of Natural Sciences and Technology show growth. However, it is important to note that the number of contracted projects is naturally influenced by the existence of competitions promoted by external funding entities to the University.

Figure 20. Evolution of Total R&D Project Contracts, by Scientific Area

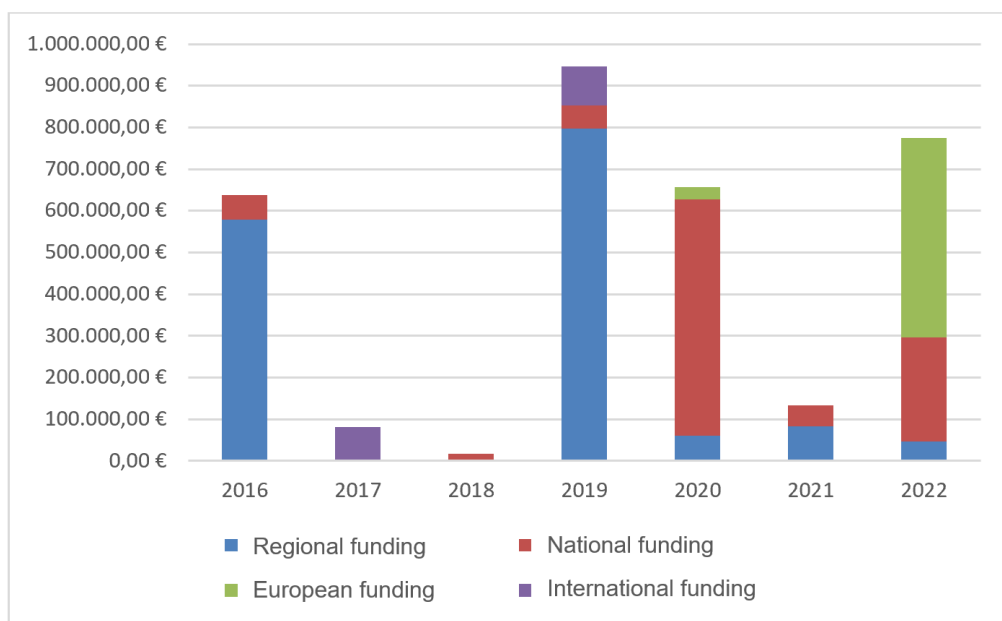


Regarding the contracted amounts, in 2022, the second-highest value in recent years was reached in the field of Social Sciences and Humanities. It is important to note that these contracts do not reflect the funding for the reported year, but rather what will be

guaranteed throughout the duration of the projects, typically two or more years (Figures 21 and 22).

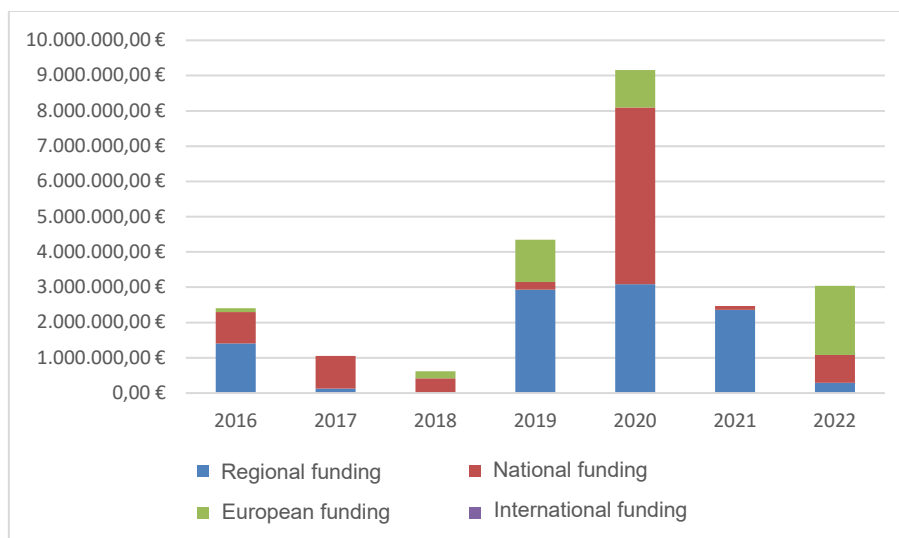
Overall, regardless of the scientific area, the execution of contracts signed with the FCT, related to the multi-year funding program for R&D units as a result of evaluation, stands out. It is also worth highlighting the increasing number of submitted and approved applications under European R&D funding programs, including projects under the Erasmus K2 Program.

Figure 21. R&D Projects - Type of Funding/Year in Social Sciences and Humanities area



Regarding the field of Natural Sciences and Technology, the data indicates a slowdown in the contracting of new R&D projects in the past two years compared to 2020, due to the transition between operational programs. In 2022, the contracted amount at the regional level was therefore residual, while there was a significant increase in the contracted volume at the European level, which nearly doubled to a value very close to 2 million euros.

Figure 22. R&D Projects - Type of Funding/Year in Natural Sciences and Technology area



UAc participated in the application for a total of 22 Horizon Europe and other EC Directorates-General proposals in 2022. The balance of Horizon Europe projects approved in 2022 was 8 funded projects: R4C, IN SITU, MARINE SABRES, TRANS-LIGHTHOUSES, EXPER, SELINA, MSP4BIO and OCEAN (Table 8).

Table 8. European funded projects approved in 2022

Program	Topic	Acronym	Title	LR	Coordinating Entity
Horizon Europe	HORIZON-MISS-2021-CLIMA-02-04	R4C	Regions4Climate	Francisco Martins	Vtt Technical Research Centre Of Finland Ltd
Horizon Europe	HORIZON-CL2-2021-HERITAGE-01	IN SITU	Place-based Innovation of Cultural and Creative Industries in Non-urban Areas	Pilar Medeiros	Centro De Estudos Sociais Da Universidade De Lisboa
Horizon Europe	HORIZON-CL6-2021-BIODIV-01	MARINE SABRES	Marine Systems Approaches for Biodiversity Resilience and Ecosystem Sustainability	Ana Cristina Costa	University College Cork - National University Of Ireland, Cork - Ucc
Horizon Europe	HORIZON-CL6-2022-COMMUNITIES-01-05	TRANS-LIGHTHOUSES	Lighthouses of transformative nature-based solutions for inclusive communities	Eduardo Marques	Centro De Estudos Sociais Da Universidade De Coimbra
Horizon Europe	HORIZON-WIDERA-2021-ACCESS-05-01	EXPER	Excellent Peripheries for a Strong European Research Area	Artur Gil	Universidad de Las Palmas de Gran Canaria

Horizon Europe	HORIZON-CL6-2021-BIODIV-01	SELINA	Science for Evidence-based & sustainable e decisions about Natural Capital	Artur Gil	Gottfried Wilhelm Leibniz Universitaet Hannover
Horizon Europe	HORIZON-CL6-2021-BIODIV-01-12	MSP4BIO	Improved Science-Based Maritime Spatial Planning to Safeguard and Restore Biodiversity in coherent European MPA network	Helena Calado	S.PRO-Sustainable Projects Gmbh
Horizon Europe	HORIZON-CL5-2022-D6-01	OCEAN	Open Science Community to Eliminate Accidents in Navigation	Rui Silva	Hogskulen Pa Vestlandet

Moreover, UAc currently participate in 29 ongoing projects from several European funding programs, which include EEA Grants, Horizon Europe, Erasmus+ and Interreg programs (Table 9).

Table 9. European funded projects approved in 2022

Program	Acronym	Title	Coordinating Entity
INTERREG	MACBIOPEST	Development of botanical biopesticides that combine innovation with popular knowledge, generating a platform of innovation and excellence that promotes sustainable agriculture in Macaronesia.	Universidad de La Laguna
INTERREG	AQUAINVERT	Development of sustainable, integrated and innovative aquaculture in Macaronesia: Research and development to foster the production of marine invertebrates of commercial interest	Universidad de Las Palmas de Gran Canaria
INTERREG	CUARENTAGRI	Identification, risk analysis, training and awareness of potential quarantine pests and regulated non-quarantine pests in the main crops of the study regions	Gestión del Medio Rural de Canarias, S.A.U.
INTERREG	AD4MAC	Promotion of the circular economy and renewable energy through anaerobic digestion of organic waste and by-products in Macaronesia	Universidad de La Laguna
INTERREG	VERCOCHAR	Vermicompost, compost and biochar, tools for adaptation to climate change, prevention and mitigation of the effects derived from natural hazards in the agricultural and forestry environment	Instituto Canario de Investigaciones Agrarias (ICIA)

INTERREG	MACFLOR2	Atlas of Reproductive Biology of the Macaronesian Flora	Jardín Botánico Canario - Cabildo de Gran Canaria
INTERREG	VOLRISKMAC II	Strengthening of R&D capacities for the development of resilience to volcanic emergencies in Macaronesia	Instituto Volcanologico de Canarias
INTERREG	MIMAR +	Monitoring, control and mitigation of proliferations of marine organisms associated with human disturbances and climate change in the Macaronesian Region	Viceconsejería de Lucha contra el Cambio Climático del Gobierno de Canarias
INTERREG	REBECA-CCT	Network of excellence in blue biotechnology (algae) of the Macaronesian region. Consolidation, certification and transfer	Fundación Canaria Parque Científico Tecnol. de la Universidad de Las Palmas
INTERREG	INV2MAC	Potential use of biomass generated from invasive Macaronesian plant species for industrial use,	Universidad de Las Palmas de Gran Canaria
INTERREG	MARCET II	Promotion of whale watching ecotourism activity as a model of sustainable economic development by the protection and conservation of cetacean populations and increasing their value as a natural heritage of the Macaronesia	Universidad de Las Palmas de Gran Canaria
ERASMUS+	FEST II	Training and higher education for the energy transition in island territories and Indian Oceania	Agence Universitaire de La Francophonie
ERASMUS+	NATOUR	Planning and management of tourism in natural areas	Universidad Autónoma de Barcelona
ERASMUS+	ESCUA	Transnational University Community Social Entrepreneurship-Azores	Cooperativa de Incubação de Iniciativas de Economia Solidária, CRL (Kairós)
ERASMUS+	B-READI	Building Reliable Effective and Aware Disaster emergency and prevention managing skills	Universita Degli Studi Dell'aquila
ERASMUS+	RELIEF	euRoepan bio-Economy aLliancE in Farming	University Of Peloponnese, Grécia
ERA-NET	MICROALGAE IN IT	Microalgae based, safety-tested and optimized fish feed value chain by using Interdisciplinary R&D and IT solutions	Estonian University of Life Sciences
ERA-NET	DEEP REST	Conservation & restoration of deep-sea ecosystems in the context of deep-sea mining	Ifremer
ERA-NET	COAST	COnservation of mArine ecosystems around Santo AnTão, Cabo Verde	University of Aveiro

HORIZON EUROPE	IN SITU	Place-based Innovation of Cultural and Creative Industries in Non-urban Areas	Centro de Estudos Sociais da Universidade De Lisboa
HORIZON EUROPE	MARINE SABRES	Marine Systems Approaches for Biodiversity Resilience and Ecosystem Sustainability	University College Cork - National University Of Ireland
HORIZON EUROPE	MSP4BIO	Improved Science-Based Maritime Spatial Planning to Safeguard and Restore Biodiversity in coherent European MPA network	S.PRO-Sustainable Projects Gmbh
HORIZON EUROPE	EXPER	Excellent Peripheries for a Strong European Research Area	Universidad de Las Palmas de Gran Canaria
HORIZON EUROPE	R4C	Regions4Climate	Vtt Technical Research Centre Of Finland Ltd
HORIZON EUROPE	TRANS-LIGHTHOUSES	Lighthouses of transformative nature-based solutions for inclusive communities	Centro De Estudos Sociais Da Universidade De Coimbra
HORIZON EUROPE	OCEAN	Open Science Community to Eliminate Accidents in Navigation	Hogskulen Pa Vestlandet
HORIZON EUROPE	SELINA	Science for Evidence-based & sustainable e decisions about Natural Capital	Gottfried Wilhelm Leibniz Universitaet Hannover
EEA GRANT	PHYSALYA PHYSALIS	Innovative and unexploited source of high added- value cosmetic products	Mesosystem, S.A.
EEA GRANT	AZEB	Azores EcoBlue	Circular Blue, Lda

2.2.2.3. R&D SERVICES

In terms of R&D services, UAc has also experienced positive growth, achieving strategic needs of the Azores Autonomous Region (RAA) and strengthening its role in shaping public policies and supporting decision-making.

Regardless of whether the managing entity is UAc or Fundação Gaspar Frutuoso, there has been a relative stability over the years in terms of the number of contracts, with the Natural Sciences and Technology areas dominating (Figure 23). In both scientific areas, regional entities provide funding (Figures 24 and 25). It is worth mentioning that the financial volume of contracted services in 2022 was the highest ever, prominently due to a service contract with the Regional Government worth over 2 million euros. The financial management of this contract is handled by FGF and therefore does not affect the balance sheet of UAc.

Figure 23. Evolution of Total R&D Services Contracts, by Scientific area

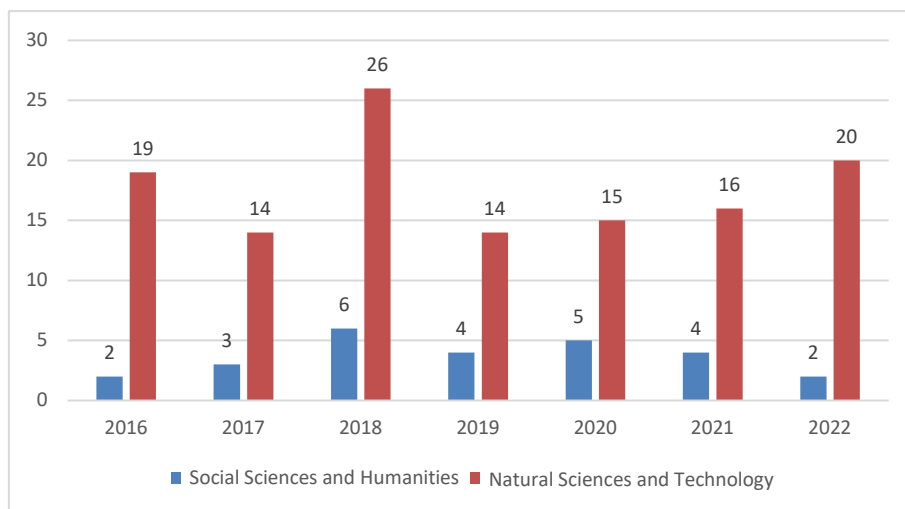


Figure 24. R&D Services - Type of Funding/Year in Social Sciences and Humanities area

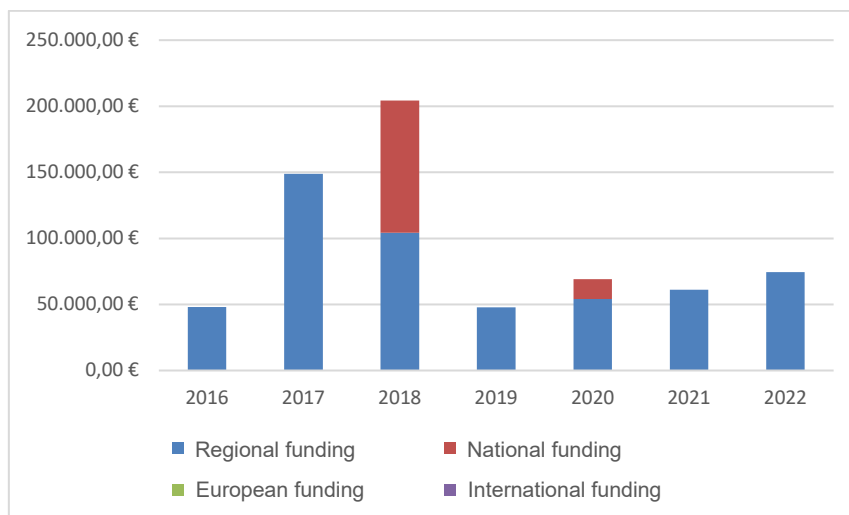
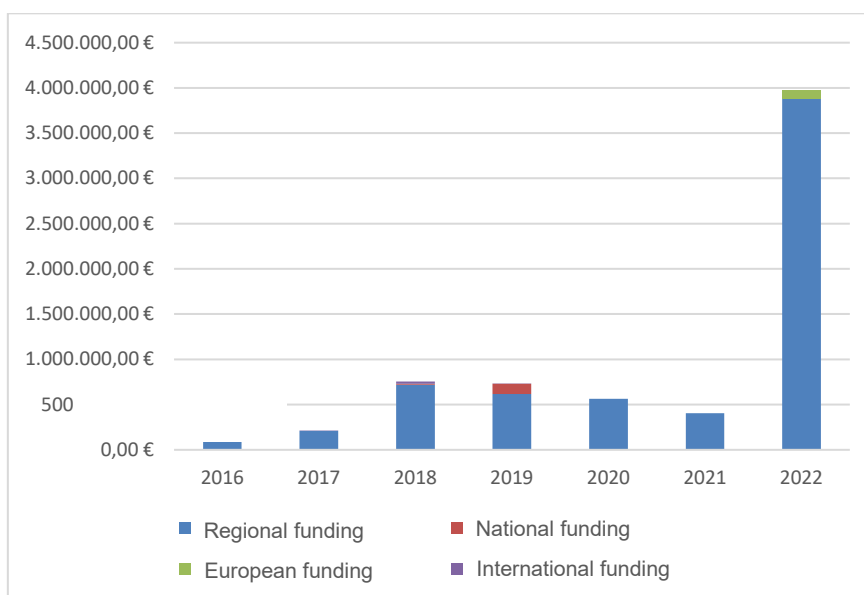


Figure 25. R&D Services - Type of Funding/Year in Natural Sciences and Technology area



2.2.2.4. OTHER R&D INITIATIVES

As for "Other R&D Initiatives," activities such as funding for scientific events, participation in conferences and scientific meetings, and support for scientific publications are included. In 2022, there was an increase in the number of funded initiatives in the field of Natural Sciences and Technology, although still at lower levels than those recorded in the pre-pandemic period (Figure 26), with the initiatives being sponsored by regional and European programs (Figures 27 and 28).

Figure 26. Evolution of the Total Contracts for Other R&D Initiatives, by Scientific Area

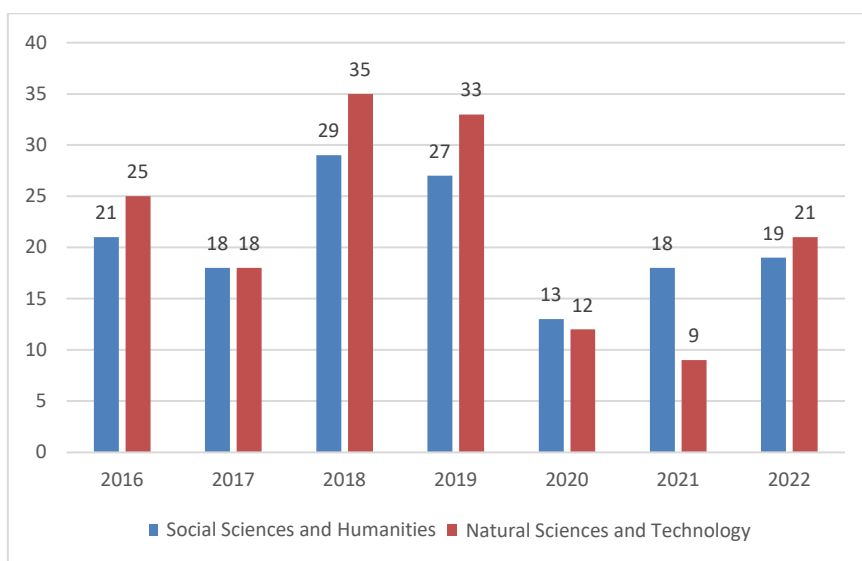


Figure 27. Other R&D Services - Type of Funding/Year in Social Sciences and Humanities area

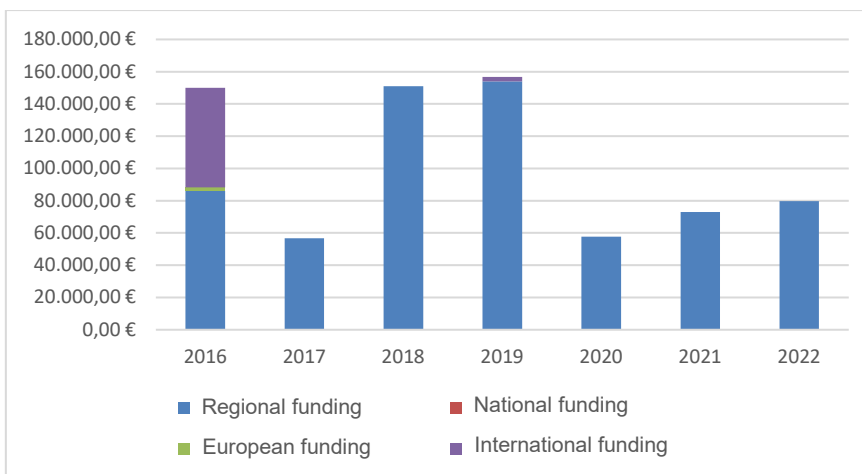
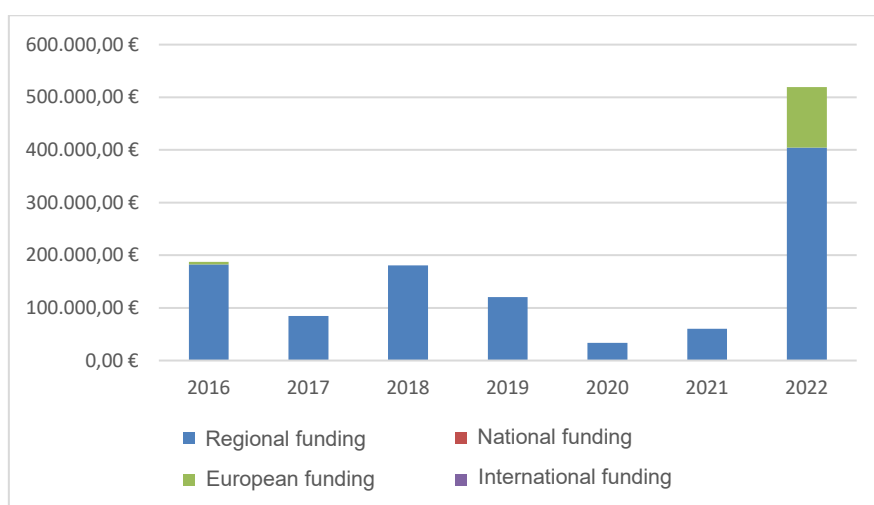


Figure 28. Other R&D Services - Type of Funding/Year in Natural Sciences and Technology area

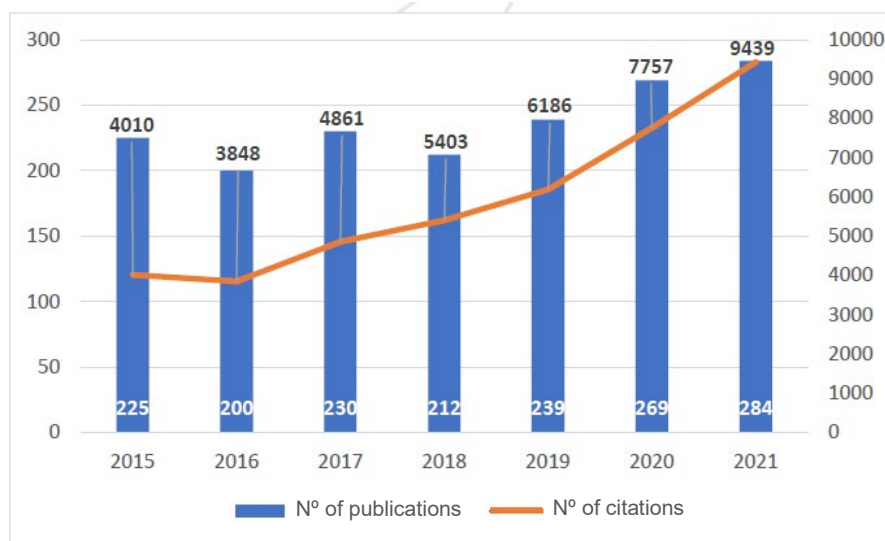


2.2.2.5. INDEXED PUBLICATIONS

One of the most relevant indicators regarding research activity is scientific output. In this regard, considering the set of databases from the Web of Science by Clarivate Analytics, it can be observed that in recent years the number of publications by researchers from the University of the Azores has shown a growing trend, reaching its peak in 2021 (284 publications). As for the number of citations associated with indexed publications in the same databases, there has been a clear increase in recent years (Figure 29).

The institution stands out nationally and internationally in areas such as "ecology and evolution" (ranked 6th in the national 2022 ranking of HEIs, according to the Research.com portal; top 500 in the Shanghai World University Rankings) and oceanography (top 150 in the Shanghai World University Rankings).

Figure 29. Evolution of the total indexed publications in the Web of Science and the number of citations



2.2.2.6. RESEARCH INTEGRITY

UAc adopts several measures to uphold the integrity of the research conducted within its institution, following the guidelines defined by FCT in its "Code of Ethics in Research".

UAc, through the publication of the "Code of Ethics of the University of the Azores" (<https://files.dre.pt/2s/2015/08/167000000/2468424687.pdf>), has established clear codes of conduct and ethical principles that guide the conduct of researchers and their practices, guided by three main objectives: (1) ensuring the highest standards of scientific integrity; (2) ensuring the highest ethical standards; and (3) using transparent, fair, and effective processes in evaluating allegations of conduct that violate the institution's code of ethics. This code emphasizes honesty, transparency, impartiality, and responsibility throughout the research and development process. UAc also has an "Ethics Committee," appointed by the Rector, responsible for analyzing ethical issues and research integrity and issuing opinions and recommendations as deemed appropriate. This committee is composed of ethics experts and representatives from the academic community, ensuring an impartial and rigorous review of the issues under analysis.

The "Regulation of the Body Responsible for Animal Welfare (ORBEA)" of UAc (<https://www.uac.pt/sites/default/files/avison.o10-2023-orbea.pdf>), which is a fundamental document for the defense of the integrity of research conducted with animals, particularly in the fields of Agricultural Sciences, Veterinary Sciences, Biological Sciences, and Marine Sciences, is currently in the process of being published in the

Official Portuguese Gazette following the completion of the respective public consultation.

UAc also establishes clear policies regarding research integrity in its "Code of Ethics," particularly regarding the practice of plagiarism, falsification, data fabrication, and conflicts of interest. In terms of plagiarism detection, all UAc faculty members and researchers have access to the URKUND software through the UAc electronic platform. URKUND is an anti-plagiarism tool that allows users to validate plagiarism in analyzed documents in a simple and intuitive manner. In addition to being used independently, it is integrated with the Moodle e-learning platform and can be used when submitting assignments.

In addition to the "Code of Ethics," UAc has other tools that significantly contribute to defending the integrity of the research conducted, including its "Personal Data Privacy Policy," its "Plan for the Prevention of Corruption and Related Offenses," which led to the recent creation (2022) of the "Office for the Prevention of Corruption and Related Offenses" (<https://uac.pt/pt-pt/conduca-e-etica#gabinete-de-preven-o-de-corrup-o-es-infra-es-conexas-gapcic->), and its "Plan for Gender Equality, Inclusion, and Non-Discrimination."

2.2.3. INNOVATION, ENTREPRENEURSHIP, AND KNOWLEDGE TRANSFER

2.2.3.1. INUAC - TECHNOLOGY-BASED INCUBATOR

The InUAc - Technology-Based Incubator from the University of the Azores, was created in 2020 with the mission of promoting and implementing activities that stimulate the academic community in the process of knowledge transfer, entrepreneurship, and the creation of technology-based companies, in close connection with the regional business community and society in general, exploring and developing innovative ideas, projects, knowledge, and businesses from members of the academic community of UAc, existing companies, as well as individuals or entities directly or indirectly linked to the Academy. In this context, the regulation of the Technology-Based Incubator was developed, defining the procedures, methods, and terms of physical and virtual incubation provided by InUAc, regarding the use of spaces and support services for pre-incubation, incubation, and post-incubation purposes.

With scientific and pedagogical autonomy in the fields of innovation and entrepreneurship, InUAc operates under the authority of the Vice-Rectorate for Science, Innovation, and Knowledge Transfer and receives direct support from the Science and Technology Service.

InUAc provides a range of specialized services (e.g., training and capacity building in the field of technology-based entrepreneurship; legal support in the creation of start-ups and


spin-offs and intellectual property protection; organization of ideation programs) and infrastructure (e.g., incubation offices, meeting rooms, training room, co-working space) to the entire academic community, with particular emphasis on its incubated projects. InUAc also has a network of strategic institutional partners and highly qualified volunteer mentors (which includes researchers and faculty members from UAc, entrepreneurs, and senior technicians from the Public Administration with extensive experience and expertise in their respective fields of activity) who provide technical and scientific support to incubated entrepreneurs and companies, as well as to the incubator itself. UAc R&D units can directly collaborate with incubated projects that need to develop, test, and evaluate procedures or products based on scientific evidence. This collaboration should be formalized through a protocol between both parties, under the supervision of InUAc.









Currently, InUAc has five incubated projects, namely in the areas of Apiculture, Geotourism, Technology applied to sustainability, Transportation and Health and Nutrition (Table 10).

Table 10. InUAc incubated projects, in 2023

Project Title	Area	Incubation phase / Modality
Apiário Margaridas	Apiculture	Pre-incubation / In person
Azoring	Geotourism	Pre-incubation / In person
Green Tech Solutions	Technology and sustainability	Pre-incubation / Virtual
New Way	Technology and transportation	Pre-incubation / In person
Raquel Santos Nutrição	Health and nutrition	Incubation / In person

Priority interventions of InUAc include stimulating technology-based entrepreneurship within the academic community, promoting the protection of intellectual property, valorizing and transferring scientific knowledge produced at UAc to society, particularly the business sector, and fostering closer collaboration between the regional business sector and UAc researchers and R&D units through collaborative initiatives (e.g., organizing meetings and technical visits to respective facilities, organizing events and joint technical-scientific training and capacity building, temporary staff exchanges, joint applications to R&D&I projects). Since its establishment, InUAc has been directly involved in the following main initiatives:

-  **BlueBio Value Ideation Program:** Cooperation with the Oceano Azul Foundation and the Calouste Gulbenkian Foundation for the implementation of the BlueBio Value Ideation Program in 2020. The program aimed to contribute to the creation of new market solutions in the context of blue economy themes. The program was open to anyone with an entrepreneurial spirit, whether they were researchers, students, or faculty members;

- 
 Green Up Ideation Program: Cooperation in this initiative promoted by Tourism of Portugal and organized by Territórios Criativos in 2020, aiming to stimulate creativity and entrepreneurial spirit among qualified young professionals in tourism, challenging them to create proposals for a more sustainable tourism;
- 
 Tourism Explorers Ideation Program: Cooperation with Tourism of Portugal, Fábrica de Start-ups, and the Science and Technology Park of São Miguel (NONAGON) for the organization of the 4th edition of the Tourism Explorers program in 2020. This program aimed to empower entrepreneurs from across the country to reduce regional asymmetries and foster the creation of successful new businesses, as well as define better business adaptation strategies for a new reality. The winner of the regional phase received a 12-month incubation prize at InUAc;
- 
 InUAc Bootcamp: Cooperation with Territórios Criativos for the development of this InUAc ideation program in 2021, hosting 12 entrepreneurial projects in various stages of maturity that were supported according to their specific needs. Out of the 12 initially submitted business ideas, seven presented a final pitch. The winning project received a 12-month incubation prize at InUAc;
- 
 Entrepreneur Fair: InUAc organized two Entrepreneur Fairs (2021 and 2022) in partnership with MOVE ONG, aiming to showcase various regional projects and companies. The event included promotional stands, thematic lectures and workshops, as well as pitch presentations of business ideas from the MOVE "Shake" training program. The winners of the pitch presentations received six and three months of incubation at InUAc, respectively;
- 
 InUAc Friday Workshops: Cooperation with Territórios Criativos, which consisted of organizing 15 thematic workshops in 2021 on technology-based entrepreneurship. These initiatives took place online during the pandemic period and were open to the entire community, becoming an excellent initial means of disseminating InUAc;
- 
 InUAc Coopera: With the aim of connecting all the incubators in the region, InUAc created the "InUAc Coopera" initiative, which aimed to promote the exchange of ideas and experiences among incubators. Five editions were held during the year 2021;
- 
 Junior Academy: InUAc organized two actions in 2022 aimed at high school students, with the aim of awakening entrepreneurial skills and ambitions in young people;
- 
 Companies@UAc: InUAc organized in 2022 the visit and meetings of a delegation from Grupo Marques with previously identified researchers from UAc laboratories and R&D units operating in areas of strategic interest to this regional multi-sectoral economic group.

In its second year of activities, the incubator continued to have a regular presence on digital platforms and social networks and increased its activity by establishing over

twenty partnerships, joining two incubation networks, involving more than 35 mentors, organizing four events, increasing the number of incubated projects to 11 since 2021, and conducting over 20 mentoring sessions. Overall, InUAc's activities involved over 650 participants and held more than 80 meetings with various stakeholders (Figure 30).

Figure 30. Activities developed by InUAc in 2022



2.2.3.2. INSTITUTIONAL STRATEGY AND POLICIES FOR KNOWLEDGE AND TECHNOLOGY TRANSFER

Since 2022, it was also assumed that InUAc would include the component of "Office for Knowledge Transfer and Valorization" as it became evident that the volume of knowledge transferred to society, whether to companies and industries, to the Public Administration, or even to non-governmental organizations (associative movement), was only a tiny fraction of all the scientific knowledge produced by UAc's R&D units throughout its short history, even in the areas considered most competitive at the international level (marine sciences, biological and life sciences, earth sciences, and civil protection). In fact, from 2007 to the present, only seven patents have been registered (and accepted) by UAc researchers, five of them in 2007 by the same group of researchers in the area of extracting compounds from endogenous natural products, the sixth in 2012 in the field of biomedical sciences, and the seventh (and most recent to date) in 2015 in the agroindustry domain (Table 11).

Table 11. InUAc active and expired patents, in 2023

Patent	Title	Involved researchers	Validity period
103668	Biocidal or biostatic compositions of essential oils extracted from <i>Persea indica</i> and their use as phagoinhibitory agents against insects	Jorge Medeiros, Paulo Rodrigues, M ^a Carmo Barreto, Carla Mascarenhas and José Silvino Rosa	01/03/2007 to 01/03/2027
103806	Utilization of essential oils extracted from <i>Viburnum tinus L. Subsp. Subcordatum</i> (Trelease) as antimicrobial and antitumoral agents	Jorge Medeiros, Paulo Rodrigues, M ^a Carmo Barreto and Carla Mascarenhas	09/08/2007 to 09/08/2027
103830	Biocidal or biostatic compositions of essential oils extracted from <i>Picconia azorica</i> and their use as antimicrobial and antitumoral agents	Jorge Medeiros, Paulo Rodrigues, M ^a Carmo Barreto and Carla Mascarenhas	24/09/2007 to 24/09/2027
103861	Biocidal or biostatic compositions of essential oils extracted from <i>Ilex perado Subs. Azorica</i> and their use as antibacterial and antifungal agents	Jorge Medeiros, Paulo Rodrigues and Carla Mascarenhas	24/10/2007 to 24/10/2027
106522	Methodology for the simultaneous determination of Ascorbic Acid and Uric Acid in human plasma by HPLC-UV	Rita Férin, M ^a Leonor Pavão and José Batista	05/09/2012 to 05/09/2032
103645	Biocidal or biostatic compositions of essential oils extracted from <i>Cryptomeria japonica</i> and their use as antimicrobial agent.	Jorge Medeiros	25/01/2007
108464	Probiotic fresh cheese.	Célia Silva, M. ^a Lurdes Dapkevicius, João Madruga, Henrique Rosa, Susana Ribeiro and Márcia Coelho	12/05/2015

Moreover, the creation of the first spinoff of UAc is currently underway (with an expected completion in 2023), which will operate in the highly competitive field of biotechnology. The proposing partners of this spinoff are researchers from the Azores Biotechnology Center (CBA).

Therefore, the inclusion of the "Office for Knowledge Transfer and Valorization" within InUAc will reinforce the connection between UAc, as a knowledge production center, and the industry and business environment, promoting synergies and the dissemination of knowledge and technologies. This structure will be responsible for intellectual property protection and its valorization in the market, enabling economic return for all involved

parties, including UAc. In this way, it will constitute an important competence base serving researchers, students, and faculty, contributing to transforming the knowledge developed at UAc into innovation and added value.

This office should have the capacity to support the socio-economic application of knowledge developed at UAc and promote the protection of intellectual property to safeguard competitive advantages and commercial returns on innovation investments. The main expected impacts of implementing this office include the regular development and updating of the "UAc Services Catalog" (in close collaboration with UAc's R&D units), the development of a web platform that serves as a simple yet fully operational interface between the incubator, researchers/R&D units, entrepreneurs, and companies.

Other expected impacts include a significant increase in the number of patent registrations by UAc researchers, the creation of new UAc-branded spinoffs/startups, an increase in R&D projects in association/partnership with non-academic entities, resulting in new value-added products based on scientific knowledge produced at UAc. It also involves increasing technical visits, work meetings, and exchanges of human resources between UAc's R&D units (or specific groups of researchers) and regional, national, or international companies to identify collaboration opportunities, maximize available resources, and enhance synergies.

Furthermore, this initiative promotes scientific employment opportunities for recent graduates (bachelor's, master's, and doctoral degree holders) and junior scientists from UAc (post-doctoral researchers up to 3 years) in regional companies and other non-academic entities at regional, national, and international levels.

In conclusion, in the short term, this service can become an integral and relevant part of the Knowledge Transfer and Valorization Network within Portuguese Higher Education, as defined by the National Innovation Agency (ANI).

2.2.3.3. COOPERATION STRUCTURES WITH THE EXTERNAL COMMUNITY AND LOCAL, REGIONAL, AND NATIONAL NETWORKS AND PARTNERSHIPS

Regarding partnerships with the regional business community, InUAc's intervention is aimed at promoting cooperation and networking, expanding the number of entities that contribute to fulfilling its mission. The goal is to establish this proximity across all the islands of the archipelago, taking advantage of the three University campus. InUAc has a network of highly qualified and capable strategic partners (companies, consultants, associations, regional government, funders, and regional, national, and international incubators) to support entrepreneurs, incubated companies, and the incubator itself. InUAc is also a member of the following networks:

- 1) **RIEA - Network of Business Incubators of the Azores**, which promotes the connection between incubators in the region, enabling the exchange of

experiences and knowledge among them. This network is coordinated by the Regional Directorate for Entrepreneurship and Competitiveness of the Azores, where funding lines in this matter are outlined;

- 2) **MetaRedX - Collaborative Network of Units and Entrepreneurship Offices of Ibero-American Higher Education Institutions**, which aims to promote entrepreneurship in HEIs through active collaboration among eight different countries, fostering a collaborative work environment and the sharing of best practices.
- 3) InUAc also participates as the coordinator of the Working Group on **Entrepreneurship Ecosystems of Portugal**.

In terms of technical support and specialized training for its staff, InUAc has also benefited from close collaboration with the National Institute of Industrial Property (INPI) and with the entities that drive the entrepreneurial ecosystem associated with the University of Coimbra, namely UC Business (Technology Transfer Division) and the Pedro Nunes Institute.

InUAc also has highly consolidated strategic partnerships with the two Science and Technology Parks of the Azores, NONAGON (São Miguel) and TERINOV (Terceira), with the main objective of bridging the gap between academia and technology-based businesses, developing synergies that benefit the missions of the three entities, particularly in terms of organizing and complementing their respective business idea incubation cycles.

The AzDIH (Digital Innovation Hub of the Azores) exemplifies this strategic partnership, with UAc (through InUAc) being its founding member. Established in 2020, it serves as a one-stop-shop aiming to play a unique role in the digitalization of the regional economy, placing digital transformation at the core of the business competitiveness in the Azores.

3. FRAMEWORK OF RESEARCH, DEVELOPMENT AND INNOVATION FOR CANARY ISLANDS.

3.1. GENERAL OVERVIEW

3.1.1. MAIN ACTORS OF THE R&D&I ECOSYSTEM IN THE CANARIES

The following table details the main actors of the R&D&I ecosystem in the Canary Islands and their spatial distribution by islands, including a brief description of each of these actors and their activity.

Table 12. Main actors of the R&D&I ecosystem in the Canaries

Location (Island)	Institution	Description
El Hierro, La Gomera, Tenerife, Gran Canaria, Fuerteventura and Lanzarote.	Canary Islands Network of Innovation and Business Development Centers (Red CIDE)	The Canary Islands Network of Innovation and Business Development Centers (Red CIDE) consists of a group of entities which has a technician specialized in advising on R&D&I projects and who is available full time to the companies in their environment to provide innovation-supporting services.
Fuerteventura	Research and Science Institute of Puerto del Rosario (INIPRO)	INIPRO is a Canary Foundation whose main objective is to stimulate and promote the scientific and technological development of the island of Fuerteventura. It has four departments or areas: environmental department, health techniques department, biotechnology department and telematics development department.
Gran Canaria	Canary Islands Space Center (CEC)	The CEC is a multifunction center technologically equipped to provide remote control, telemetry and spacecraft tracking services, as well as monitoring and control, measurement calibration and orbital determination, acquisition, processing and archiving of Earth Observation data and images, and support for international space missions.
Gran Canaria	Center for Biodiversity Research and Environmental Management	Constituted by the research groups of Chemical Environmental Analysis, Environmental Quality and Biodiversity and Conservation. It is an interdisciplinary research center. All the research groups of the Center participate in European, national and regional projects.

		Services: Development of new "clean" methodologies in environmental chemical analysis. - Marine Pollution. - Atmospheric Inputs; - Marine Biogeochemistry. - Systematics and Ecology of Marine Plants. - Biodiversity Conservation. - Paleontology and Paleoclimatology of the Canary Islands. - Management of Coastal Biological Resources. - Fisheries. - Fish Ethology.
Gran Canaria	<u>Health Research Institute Foundation of the Canary Islands (FIISC)</u>	The Health Research Institute Foundation of the Canary Islands (FIISC), promoted by the Regional Ministry of Health of the Canary Islands Government and the Canary Islands Health Service, aims to promote and support research in the field of health sciences. Its mission is to contribute to the prevention of illness, promotion and protection of health, the treatment and rehabilitation of illness and to raise the level of knowledge about the health of the population, as well as to manage the research of the Canary Islands Health Service that is entrusted to it by the Canary Islands Health Service.
Gran Canaria	<u>Innovation center for Information society (CICEI)</u>	Located in the Central Building of the Science and Technology Park of the University Campus of Tafira. Its general objective is to collaborate, in an active and practical way, in the design and implementation of a sustainable model (competitive and responsible) for the Information Society, based on the appropriate and intensive use of Information Technologies in the fields of training and learning (e-Learning), business (e-Business) and administration (e-Government).
Gran Canaria	<u>Oceanic Platform of the Canary Islands (PLOCAN)</u>	The Oceanic Platform of the Canary Islands (PLOCAN) is a public consortium created in 2007 between the Ministry of Education and Science and the Government of the Autonomous Community of the Canary Islands, with the aim of building, equipping and operating a set of marine infrastructures for research in the field of marine sciences and technologies. PLOCAN's mission is to provide a cost-effective combination of services, including housing, operations, data and access to the multi-purpose offshore platform, observatories and test bed facilities, that may offer a response to upcoming ocean science challenges and socio-economic needs.

Gran Canaria	<u>Spanish Algae Bank (SAB)</u>	<p>The Spanish Algae Bank (SAB) is an infrastructure of the University of Las Palmas de Gran Canaria managed by the Fundación Canaria Parque Científico Tecnológico (FCPCT). Its basic objectives are the isolation, characterization, conservation, supply and development of cultivation techniques and applications of microalgae and cyanobacteria from the scientific-technological point of view.</p> <p>The SAB is a member of the European Culture Collections Organization (ECCO), of the World Federation of Culture Collections (WFCC) and is included in the World Data Center on Microorganisms (WFCC-MIRCEN), being accredited by the Government of Spain as an international authority for the deposit of microorganisms, according to the provisions established in the Budapest Treaty.</p>
Gran Canaria	<u>The Canarian Botanical Garden "Viera y Clavijo"</u>	<p>The Canarian Botanical Garden "Viera y Clavijo" - Associated Unit of the CSIC is part of the Cabildo de Gran Canaria, which is the local administration responsible for the environment, conservation and management of the biodiversity of the island of Gran Canaria. This centre is dedicated to the conservation and management of the terrestrial Canary Flora through three main areas of action: research, environmental education (including dissemination) and the maintenance and exhibition of living collections of terrestrial plants, especially endemisms from the Canary Islands and Macaronesia, but also from areas of the planet that maintain floristic connections with the Canary Islands.</p>
Gran Canaria	<u>University of Las Palmas de Gran Canaria (ULPGC)</u>	<p>The University of Las Palmas de Gran Canaria is a public university born out of popular aspiration, which offers a wide range of degrees in all the major areas of knowledge and at all levels. Committed to the continuous improvement of the quality and efficiency of the public service it provides to society, its strategy is oriented towards innovation, quality and internationalisation, involving itself closely with local society. Its basic objectives are to train competent, educated, responsible and caring people, to generate, apply and disseminate knowledge and to collaborate in the economic progress and social welfare of the Canary Islands, as well as to create and spread culture and promote international relations from the Atlantic insularity.</p>

La Palma	<u>Juan José Bravo Island Agrobiology Laboratory</u>	The Juan José Bravo Rodríguez Agrobiology Laboratory provides analytical services focused on primary sector companies on the island of La Palma. Its function is to respond to requests for analysis of chemical fertility of soils, analysis of irrigation water and chemical analysis of musts and wines. It has a state-of-the-art methodology for the analysis of these types of samples, offering support to agricultural companies on the island in order to achieve adequate crop yields as well as good quality musts and wines.
La Palma and Tenerife	<u>Canary Islands Institute of Astrophysics: Roque de los Muchachos and Teide Observatories.</u>	The Observatories of the Canary Islands Institute of Astrophysics are situated at two of the most privileged sites for astronomical observation, offering unbeatable conditions for astronomical research.
Lanzarote	<u>Lanzarote Geosciences Laboratory (LGL)</u>	The Lanzarote Geosciences Laboratory (LGL) is an infrastructure that is the result of institutional collaboration between the CSIC, the UCM and the Cabildo Insular de Lanzarote. The LGL was created in 1986 and has three permanent observation modules located in the Cueva de los Verdes, Jameos del Agua and Timanfaya National Park. Multidisciplinary research activities in Geosciences are carried out in its facilities, including, among others, observations related to geodynamic activity (gravity, seismicity, geodesy, etc.), the ocean-earth-atmosphere system, environmental monitoring in underground systems or studies of terrestrial analogues.
Tenerife, Gran Canaria and Fuerteventura	<u>Canarian Science and Technology Park Foundation of the University of Las Palmas de Gran Canaria (FCPCT)</u>	The mission of Science and Technology Parks is to help diversify the regional and local economy. This will be done by developing the culture of innovation as a key to improving competitiveness, concentrating innovative and global technology companies and entities that carry out research, development or unique production of applied technology in the enclaves of these Parks, promoting knowledge transfer and recruitment of specialized talent. The final goal is to make local innovative or technology-based companies grow, boosting technological entrepreneurship and start-ups.
	<u>Science and Technology Park of Tenerife</u>	
	<u>Technology Park of Fuerteventura</u>	
Tenerife	<u>Canary Islands Agricultural Research Institute (ICIA)</u>	The Canary Islands Agricultural Research Institute (ICIA) is an Autonomous Body of the Autonomous Community of the Canary Islands, attached to the Ministry of Agriculture, Livestock

		and Fisheries. Its aims are the programming, execution and monitoring of research activities and the development and transfer of agricultural technologies in the Canary Islands, as well as any other tasks assigned to it in the field of agricultural research and technological development.
Tenerife	<u>Canary Islands Geophysical Center</u>	Research center of the Spanish Ministry of Public Works of the Central Administration, under the National Geographic Institute (IGN).
Tenerife	<u>Center for the Conservation of Agricultural Biodiversity of Tenerife (CCBAT)</u>	The Center for the Conservation of Agricultural Biodiversity of Tenerife (CCBAT), an organic unit belonging to the Technical Service of Agriculture and Rural Development of the Island Council of Tenerife, was created in 2003 and works with the fundamental objective of recovering and conserving the local agricultural biodiversity of the island of Tenerife. The CCBAT belongs to the National Network of Germplasm Banks and is committed to avoiding, as far as possible, the loss of local agricultural diversity. To this end, it carries out a series of activities such as the collection of local material, conservation, characterization, multiplication, regeneration and documentation. All this with the ultimate goal of passing on this important wealth to future generations.
Tenerife	<u>Institute of Natural Products and Agrobiology (IPNA)</u>	The Institute of Natural Products and Agrobiology (IPNA) is part of the network of research centers of the Spanish National Research Council (CSIC), State Agency of the Ministry of Science and Innovation. IPNA's activity extends from basic research to technological development. IPNA's objectives are diverse, considering that this is a multidisciplinary center with three main scientific-technical areas: Chemical Science and Technologies, Agricultural Sciences and Natural Resources.
Tenerife	<u>Institute of Technology and Renewable Energies (ITER)</u>	By initiative of Tenerife's island council (Cabildo Insular), the Institute of Technology and Renewable Energies (ITER) was established in 1990 with the aim of supporting sustainable development and innovation on the island. Today, ITER stands as an international center of reference for research into renewable energies, engineering, telecommunications, the environment and genomics.
Tenerife	<u>In vitro plant cultivation of Tenerife, S.A. (CULTESA)</u>	CULTESA is a company dedicated to obtaining plants through multiplication techniques "IN

		<p>VITRO". Offering to the farmers plants with Sanitary Guarantee.</p> <p>CULTESA is an agrobiotechnological company where research plays a key role by actively contributing to its advancement and development.</p>
Tenerife	<u>Oceanographic Centre of the Canary Islands (COC)</u>	<p>The Oceanographic Centre of the Canary Islands (COC) is one of the nine Oceanographic Centers of the Spanish Institute of Oceanography (IEO). It is located in the Dársena Pesquera area of Santa Cruz de Tenerife. It consists of two facilities: a central building and the experimental marine culture plant.</p> <p>The Spanish Institute of Oceanography (IEO) is a National Centre of the Spanish National Research Council (CSIC), under the Ministry of Science and Innovation, dedicated to research in marine sciences, especially in relation to scientific knowledge of the oceans, the sustainability of fishery resources and the marine environment.</p>
Tenerife	<u>Canary Islands Institute of Agri-Food Quality</u>	<p>The purpose of the Institute is the exercise of the competences of the Public Administration of the Autonomous Community of the Canary Islands in matters of agri-food quality.</p> <p>Likewise, the Institute will act as a service provider in relation to the control and certification of the quality of agri-food products. For the development of the aforementioned object, the Institute is entrusted with the exercise of the promotion, encouragement, protection and control of agri-food quality, including the sanctioning power inherent to the same.</p>
Tenerife	<u>University of La Laguna (ULL)</u>	<p>The University of La Laguna is the oldest higher education centre in the Canary Islands, with more than two hundred years of history. Its mission is to promote the social, cultural and economic development of the Canary Islands based on knowledge, as well as to disseminate this knowledge and facilitate access to its heritage, and to inspire technological progress aimed at improving the conditions and quality of life of the social environment.</p>
Tenerife	<u>Museum of Natural Sciences of Tenerife</u>	<p>The Museum of Natural Sciences of Tenerife is an international centre dedicated to the conservation, research and dissemination of the geology, flora and fauna of the Macaronesian archipelagos: Azores, Madeira, Salvajes, Cape Verde and especially the Canary Islands. It is an</p>




		institution with a regional vocation, open to collaboration with the international scientific community. The Museum has large and well-preserved palaeontological, marine, botanical, entomological and terrestrial vertebrate collections, as well as the best naturalistic library in the Canary Islands.
Tenerife and Gran Canaria	<u>Canary Islands Statistics Institute (ISTAC)</u>	The Canary Islands Statistics Institute (ISTAC) is the central body of the regional statistical system and the official research centre of the Government of the Canary Islands. Its functions include providing statistical information of interest to the Autonomous Community of the Canary Islands, taking into account the fragmentation of the territory and its singularities, and complying with the principles established in the European Statistics Code of Practice.
Tenerife and Gran Canaria	<u>Technological Institute of the Canaries (ITC)</u>	The ITC is a public company, an instrumental entity of the Government of the Canary Islands, whose activity is framed within the implementation of regional policies for the promotion of research and innovation applicable to the productive sector, as well as in the execution of collaborative and cooperative projects at international level. Its R&D&I activity is aligned with the areas of specialisation identified in the Government's Smart Specialisation Strategy (RIS3) of the Canary Islands for the period 2014-2020, the roadmap for the socio-economic transformation of the Islands.

3.1.2. R&D&I POLICIES IN THE CANARY ISLANDS




R&D&I policies in the Canary Islands began to take shape at the end of the 1990s. The first important precedent related to the elaboration of a true Innovation Strategy for the Canary Islands was drawn up within the framework of a EU initiative for the definition of Regional Innovation and Technology Transfer Strategies (RITTS). Then the so-called Strategic Innovation Plan for the Canary Islands (SIPCI) was made with the aim of being the basic instrument for coordinating and organizing the policies and infrastructures for supporting innovation available in the Canary Islands. This strategic formulation was not finally implemented, although it did constitute an important milestone for the future of this type of policy in the region.

3.1.2.1. LAW ON THE PROMOTION AND DEVELOPMENT OF SCIENTIFIC RESEARCH AND INNOVATION


Subsequently, Law 5/2001 was passed, better known as the Law for the Promotion and Development of Scientific Research and Innovation, which arose from the need to systematically regulate the actions of the Canarian public authorities in this area and to tackle the endemic problems of the Canarian R&D&I system. To this end, the Law addresses three lines of action:


-  The creation of an organisational infrastructure in the Canarian public administration in charge of planning, coordinating and concentrating economic and human resources in the field of scientific research, technological development and innovation around defined objectives.
-  The implementation of a planning system that defines the priority lines of action in convergence with regional development plans and programmes the use of available resources.
-  The establishment of a series of complementary measures aimed at promoting and encouraging scientific research, technological development and innovation.

This law proposed three major plans to catalyse research, development and innovation activities in the Autonomous Community:

-  Canary Islands Plan for Research, Development and Innovation: aimed at promoting and coordinating scientific research and technological innovation activities in the Autonomous Community of the Canary Islands.
-  Canary Islands Plan for Scientific and Technical Cooperation with international networks: its aim is to promote the inclusion of Canary Islands scientific groups in major national and international projects.
-  Canary Islands Plan for the Training of Research Personnel: this will contain the guidelines for action in the training and mobility of research personnel. It also encourages the creation of research teams to carry out scientific research and technological innovation projects.

Because of this Law, the following plans were created:

-  Integrated Plan for R+D in the Canary Islands (2003-2006): this plan was approved by the Parliament of the Canary Islands in March 2003. It was based on the union of the three plans established in the Law for promotion and development: the Canary Islands Plan for Research, Development and Innovation, the Canary Islands Plan for Scientific-Technical Cooperation with international networks and the Canary Islands Plan for the Training of Research Personnel.

-  Canary Islands R+D+i+d Plan 2007-2010: this followed the lines of the two previous plans, being the instrument that allowed promoting R+D activities in the Autonomous Community until 2010.

3.1.2.2. CANARY ISLANDS RESEARCH, INNOVATION AND INFORMATION SOCIETY AGENCY (ACIISI)


The Canary Islands Agency for Research, Innovation and the Information Society (ACIISI) was created as a result of the Canary Islands R+D+i+d Plan (2007-2010). From this point on ACIISI became the body of the Public Administration of the Autonomous Community of the Canary Islands responsible for promoting scientific and technological research and development, business innovation and the deployment of telecommunication infrastructures and information society services. This constituted a firm commitment by the Canary Islands Government to develop a powerful knowledge-based economy in the Canary Islands. It also implied a step forward in order to establish a strategy for economic competitiveness, making sustainable economic growth possible, without increasing the impact on the territory or natural resources, and capable of providing quality employment, all in line with the objectives set for the EU as a whole in the review of the Lisboa Strategy.

3.1.2.3. SMART SPECIALISATION STRATEGIES

In October 2011, the European Commission adopted new legislative proposals for cohesion policy for the period 2014-2020. Smart Specialisation Strategies (RIS3) have been an innovative approach to economic development and the formulation of new R&D&I&I policies in Europe. They aim to enable European regions to identify and develop their own competitive advantages by concentrating public resources on those economic activities in which each region has relevant capabilities and development potential. RIS3 defines these priority areas by considering the economic and scientific-technological potential of the regions. They also promote the efficient and effective use of European structural funds focused on these priorities in order to maximize the potential for regional economic development and the transition to a knowledge-based economy model.

The RIS3 concept represented a paradigm shift in the development of innovation, competitiveness and regional development policies and has formed an integral part of the EU's cohesion policy since 2014.

So far, two RIS3 strategies have been developed in the Canary Islands, in the context of two specific budgetary frameworks: 2014-2020 and 2021-2027:

-  **RIS3 Canarias 2014-2020:** The so-called Smart Specialisation Strategy of the Canary Islands (RIS3 Canary Islands 2014-2020), drawn up by the ACIISI, was endorsed by the Plenary of the Canary Islands Parliament in March 2014, and it has been configured as a whole agenda for the socio-economic transformation

of the archipelago in the 2014-2020 period. The Canary Islands was one of the first regions to draw up a strategy of this type, complying with the requirements imposed by the European Commission for access to European funds for the next programming period.

 **RIS3 Canarias 2021-2027:** The EU's new 2021-2027 budgetary framework has been defined in a context clearly influenced by the impact of the Covid-19 pandemic, which in addition to the health crisis has provoked a global socio-economic crisis that is being influenced by the ongoing conflict in Ukraine. The new RIS3 are therefore conceived as strategies to foster competitiveness and to build more resilient economies and societies in the face of future threats. This evolution towards the industrial transition of economies, transforming them through the digital and sustainable transitions, is developed in close coordination with other key strategies such as Next Generation EU, Horizon Europe, the Digital Agenda and the European Green Pact.

The RIS3 2021-2027 of the Canary Islands is part of the [Canarias Progreso 2030 agenda](#) of the Government of the Canary Islands. This roadmap, which provides the levers and resources to lay the foundations for research and innovation that meets the needs of Canarian society, promotes four fundamental pillars for developing the knowledge economy in the Islands:

- The Canary Islands R&D&I Plan 2023-2030.
- The New Canary Islands Law on Science, Technology and Innovation.
- [The Science Pact 2030.](#)
- [The Canary Islands Digital Agenda 2025.](#)

3.1.3. R&D&I FUNDING SOURCES

3.1.3.1. ACIISI

As previously mentioned, the Canary Islands Agency for Research, Innovation and the Information Society (ACIISI) is the body of the Public Administration of the Autonomous Community of the Canary Islands responsible for promoting scientific and technological research and development at the regional and/or local level, business innovation and the deployment of telecommunication infrastructures and information society services.

One of the Agency's objectives is to support the development of a powerful knowledge-based economy as a strategy for economic competitiveness, enabling sustainable, integrating, inclusive and social growth without increasing the impact on the territory or natural resources, and capable of providing quality employment, all in line with the objectives set for the EU as a whole.

The agency establishes an annual program of actions to achieve its objectives, with two of its four specific subprograms associated with research and development (see Table 13). Through these programs, the bodies and entities that are part of the R&D&I ecosystem in the Canary Islands receive direct contributions, allowing them to develop their activities in this area.

Table 13. ACIISI budget programs for the past year 2022

Program	Aim of the program	Program budget (€)
HUMAN CAPITAL RESEARCHER AND INNOVATIVE	Development of human capital, talent attraction and retention of talent.	8.552.044
SUPPORT FOR BASIC AND APPLIED RESEARCH	To put the value of R&D&I in a useful way for the socio-economic environment of the Canary Islands.	19.065.772
SUPPORT FOR BUSINESS INNOVATION	To improve the competitiveness of the business sector and the creation of stable employment.	28.903.784
SUPPORT FOR THE DEPLOYMENT OF THE INFORMATION SOCIETY	To facilitate people's lives and opportunities in the use and access of ICTs and their digital skills.	15.664.543

Data source: Government of the Canary Islands. Program of actions of the ACIISI in 2022.

3.1.3.2. STATE RESEARCH AGENCY

The Spanish State Research Agency (hereinafter Agency) was created through Royal Decree 1067/2015, of 27 November, which also approved its Statute.

This Agency was created with the mission of contributing to the promotion of scientific and technical research in all areas of knowledge through the competitive and efficient allocation of public resources, the monitoring of funded actions and their impact, and advice on the planning of actions or initiatives through which the R&D&I policies of the General State Administration are implemented.

The Agency carries out its activities in the framework of different annual action plans. The Annual Action Plan is a planning instrument that sets out the activities to be carried out in the corresponding year in order to achieve its objectives. It is structured around six main lines of action: Consolidation and structural development of the Agency, Management of funding instruments, Scientific-technical evaluation, Monitoring of grants, Management of agreements and Communication, dissemination and representation in R&D&I forums. All the planned actions are described through these axes. In order to quantify the degree of compliance, each activity includes an estimate of the workload, the indicator of the actual workload and the proposed target for the current year.





The current 2023 Action Plan was approved on 31 January 2023 and details the calls to be published in the current year, including the following:

Table 14. Lines of action to be published in 2023 according to the Agency's Annual Action Plan

Lines of action to be published in 2023
Ramón y Cajal contracts
Juan de la Cierva contracts
Research consolidation
Technical support staff contracts
Torres Quevedo contracts
Grants for the training of doctors in companies "Industrial doctorates".
Projects for knowledge generation
Projects in strategic lines
Public-private partnership projects
Europe Excellence Projects
European Project Management
Grants to Severo Ochoa and María de Maeztu Centers and Units of Excellence
R3 Accreditation
International Cooperation Projects
Talent Plan actions

3.1.3.3. CENTRE FOR THE DEVELOPMENT OF INDUSTRIAL TECHNOLOGY (CDTI)

The CDTI is a Public Business Entity, under the Spanish Ministry of Science and Innovation, which promotes innovation and technological development of Spanish companies. This entity channels applications for aid and support for R&D&I projects of Spanish companies at national and international level. Thus, the objective of the CDTI is to contribute to the improvement of the technological level of Spanish companies through the development of the following activities:

-  Technical-economic evaluation and granting of public aid for innovation through subsidies or partially reimbursable aid for R&D&I projects developed by companies.
-  Management and promotion of Spanish participation in international technological cooperation programs.
-  Promotion of the international transfer of business technology and support services for technological innovation.
-  Support for the creation and consolidation of technology-based companies.

The CDTI has the status of financing agent of the Spanish Science, Technology and Innovation System within the scope of the General State Administration, in accordance with Law 14/2011, of 1 June, on Science, Technology and Innovation. Among other functions, it is responsible for managing the programs or instruments assigned to it by the State Plan for Scientific and Technical Research, mainly within the framework of business R&D&I.

The CDTI currently manages, with its own funds and funds from European institutions (Structural and Investment Funds and the European Investment Bank), aid programs in the form of partially reimbursable funds and subsidies for SMEs, technology centers, audiovisual and video game R&D&I projects and aeronautical technology programs, among others.

3.1.3.4. EUROPEAN FUNDS AND PROGRAMS FOR RESEARCH, DEVELOPMENT AND INNOVATION

European Regional Development Fund (ERDF)

The European Regional Development Fund (ERDF) is one of the main financial instruments of European cohesion policy. Its objective is to contribute to reducing disparities between the levels of development of European regions and to improve the standard of living in the less favored regions. Particular attention is paid to regions suffering from severe and permanent natural or demographic handicaps, such as the

northernmost regions, which are sparsely populated, and island, cross-border and mountain regions.

The five objectives of the ERDF funds that will drive EU investments in the coming years (period 2021-2027) are the following:

- A smarter Europe, through innovation, digitalization, economic transformation and support for small and medium-sized enterprises.
- A greener, carbon-free Europe, implementing the Paris Agreement and investing in energy transition, renewable energy and the fight against climate change.
- A more connected Europe, with strategic transport and digital networks.
- A more social Europe, making the European pillar of social rights a reality and supporting quality employment, education, educational and professional skills, social inclusion and equal access to healthcare.
- A Europe closer to citizens, supporting locally managed growth strategies and contributing to sustainable urban development across the EU.

New EU Framework Program: HORIZON EUROPE.

Horizon Europe is the research and innovation (R&I) framework program of the EU for the period 2021 -2027. The Horizon Europe Program, like its predecessor Horizon 2020, will be the key instrument for carrying out the EU's R&D&I policies. The overall objective of the program is to achieve a scientific, technological, economic and societal impact of EU investments in R&I, thus strengthening its scientific and technological bases and fostering the competitiveness of all Member States (MS).

With a budget of 95.5 million euros for this seven-year period, Horizon Europe will be the Framework Program with the largest budget to date, having the potential to generate significant economic, social and scientific benefits. The program has been designed with an investment mindset rather than as a purely funding instrument, and will feature planning that will help the EU make the transition to a sustainable future.

COSME Program.

COSME is a EU Program aimed at improving the competitiveness of European companies, fostering entrepreneurial culture and promoting the creation and growth of European SMEs. It has a budget of €2.3 billion for the period 2014-2020. The Program's areas of action are access to finance, access to markets, improving competitiveness and promoting entrepreneurship.

Its main objectives in this period were the following:

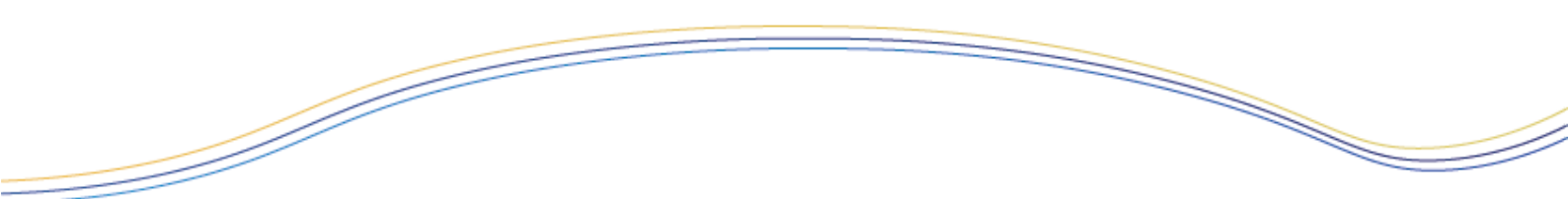
- To facilitate SMEs access to finance.
- To improve access to markets by supporting European companies so that they can benefit from the single market and take full advantage of the opportunities offered by foreign markets.
- To create a favorable environment for the competitiveness of companies, including the tourism sector. This objective includes actions aimed at improving regulatory frameworks or promoting clusters.
- To promote entrepreneurship and business culture. This includes a series of actions such as the Erasmus Program for Young Entrepreneurs, pilot projects in education for entrepreneurship and support for new and potential entrepreneurs.

3.1.4. DESCRIPTION AND ANALYSIS OF R&D&I IN THE CANARY ISLANDS

Compared to the rest of Spain, the Canary Islands offer relevant added value in terms of the framework for investment in research, development and innovation. This is mainly due to its fiscal model, i.e., the economic and fiscal regime in force in the islands. The following table summarizes and exemplifies these differences between the state framework and that of the Autonomous Community of the Canary Islands:

Table 15. Differences between the Spanish state tax model and that of the autonomous community of the Canary Islands with respect to R&D&I (data as a percentage).

Subject	Canary Islands	Spain
Technological innovation tax deduction	45	12
R&D tax deduction	Up to 75.6	Up to 42
Research staff	up to 37 of their salaries	up to 17 of their salaries
Investments in R&D activities	28	8
Annual applicable quota limit	90	50



It should be taken into account that the model applicable in Spain already fiscally rewards the execution of R&D and Technological Innovation projects, allowing the consolidation of tax savings by several means. On the one hand, from the income side, by reducing the rate for the performance of IPs and own licenses (Patent Box); reducing the impact of Social Security contributions; and finally, the best known instrument, by deducting the expenses incurred in Technological Innovation (12%) and R&D (up to 42%). It is, therefore, a hybrid model, since it allows this percentage to be increased in various circumstances (17% for researchers' salaries, 8% for investments in equipment), with a maximum limit of 50% of the tax liability and accumulated over 18 fiscal years.

These data show that the Canary Islands tax system is positioned as the most generous tax system for R&D, at a global level. In addition, this model offers a series of attributes that make it the ideal destination to take advantage of these benefits: infrastructures, connectivity, public and private resources for R&D (University of Las Palmas de Gran Canaria, University of La Laguna, Canary Islands Oceanic Platform, Canary Islands Technological Institute, Spanish Algae Bank, etc.) and research talent.

However, public investment in R&D activities in relation to the GDP of the autonomous community in the Canary Islands is one of the lowest in Spain, according to data published by the National Institute of Statistics in 2021.

Figure 31 compares these data between 2012 and 2021 among the 4 Spanish autonomous communities with the highest investment to these activities, with communities that make the lowest investment effort in this regard. Basque Country, Foral Community of Navarra, Community of Madrid and Cataluña allocate between 1.4 and 2.3% of their GDP to R&D activities, while communities as Extremadura, the Canary Islands, the Balearic Islands and Ceuta and Melilla allocate between 0.07 and 0.7% of their GDP to this area.

Figure 31. Percentage of total domestic expenditure on R&D activities with respect to GDP at market prices (base 2010) by autonomous community and year.

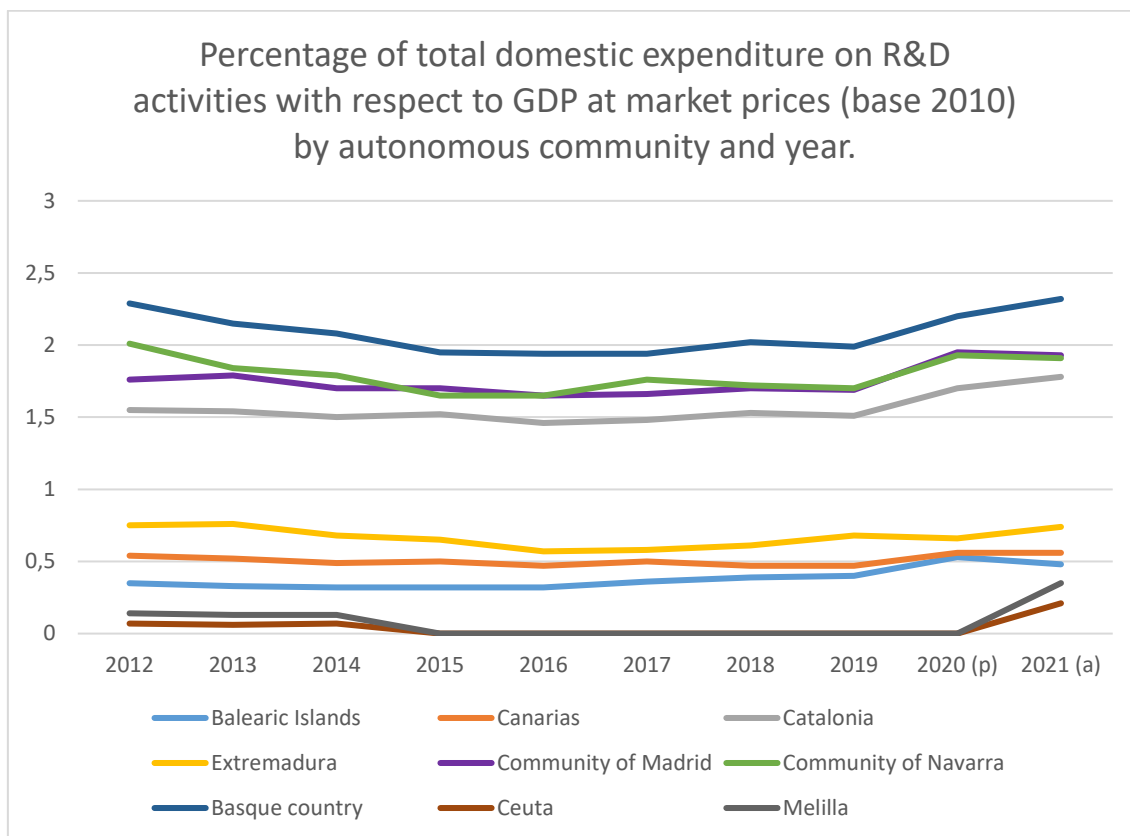
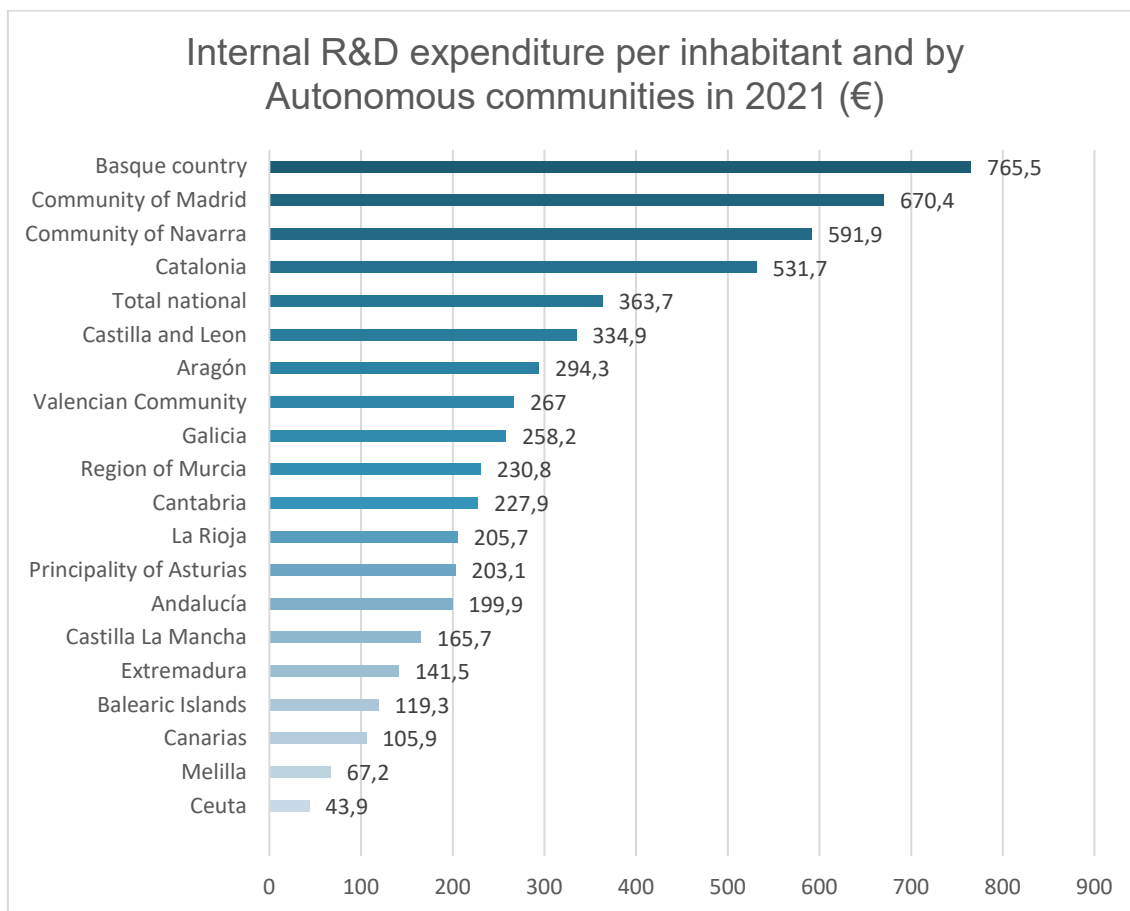


Table notes: (p) = Provisional data / (a) = Progress data. Source: Canarian Institute of Statistics (ISTAC) based on data from National Institute of Statistics (INE).

This fact is reflected, as it could not be otherwise, in the R&D&I investment made in the Canary Islands in 2021 (see Figure 32), according to the data for 2021 released by the National Institute of Statistics, which places the Canary Islands at 105.9 euros per inhabitant per year. This figure is far from the national average, (363.7 euros per inhabitant per year), and places the Canary Islands as one of the autonomous communities with the lowest investment per inhabitant per year, only surpassing Ceuta and Melilla in this area.

Figure 32. Internal R&D expenditure per inhabitant and by autonomous communities in 2021 (€)



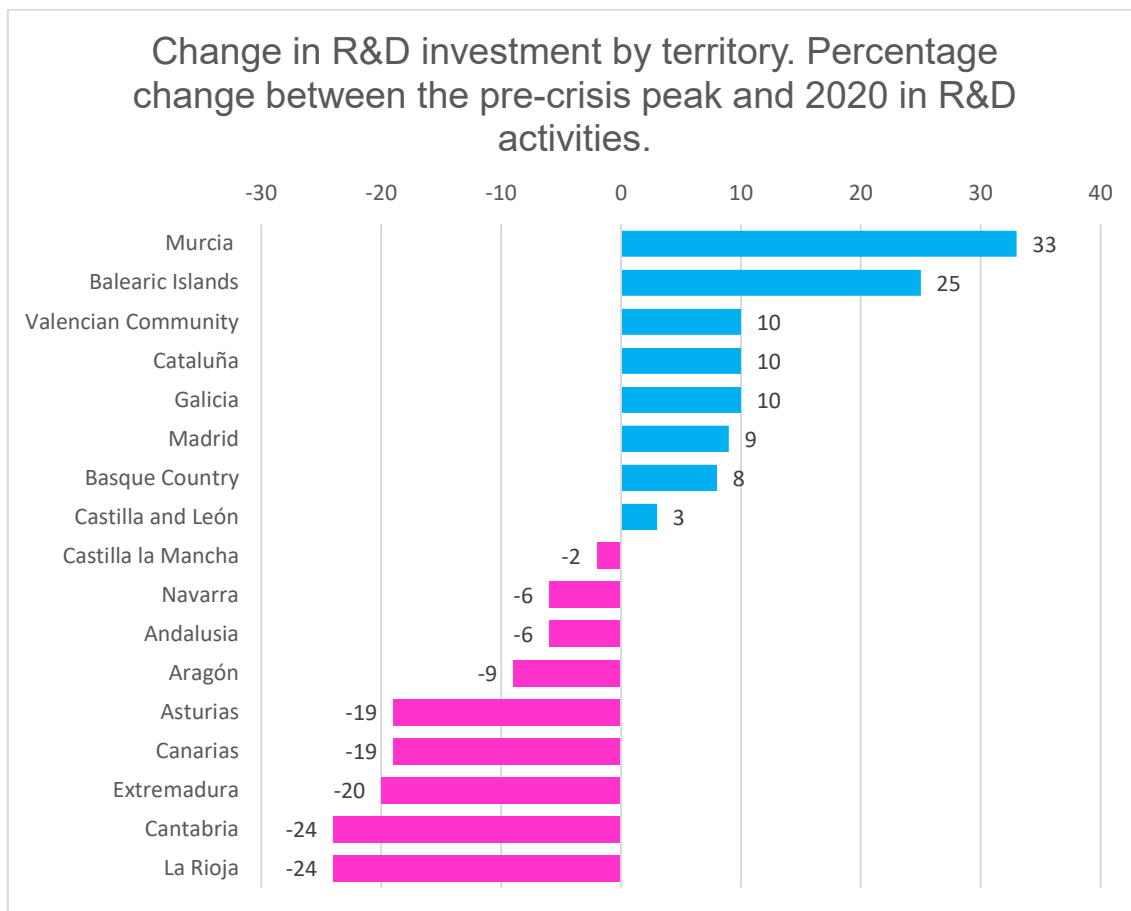
Data source: Statistics on R&D activity in 2021. National Institute of Statistics (NIS).

Figure 33 shows R&D investment levels by territory, expressed as a change percentage in investment between the peak before the financial crisis and the year 2020. It can be seen that there are eight territories that have clearly surpassed these levels. These are the Balearic Islands, Castile and Leon, Catalonia, Valencia, Galicia, Madrid, Murcia and the Basque Country. The Region of Murcia (which invests 33% more than in 2010) and the Balearic Islands (which invests 25% more) stand out in particular. At the other extreme, nine regions have not yet achieved this goal, among them the Canary Islands, with Cantabria and La Rioja being the furthest away from this goal.

In terms of employment (see Figure 34), nine regions have more R&D staff today than before the crisis, the same as in 2019. These are Andalusia, the Balearic Islands, Castile and Leon, Catalonia, Valencia, Extremadura, Madrid, Murcia and the Basque Country. The Balearic Islands (with 30% more R&D employees than in 2010) and the Basque Country (with 13% more) stand out.

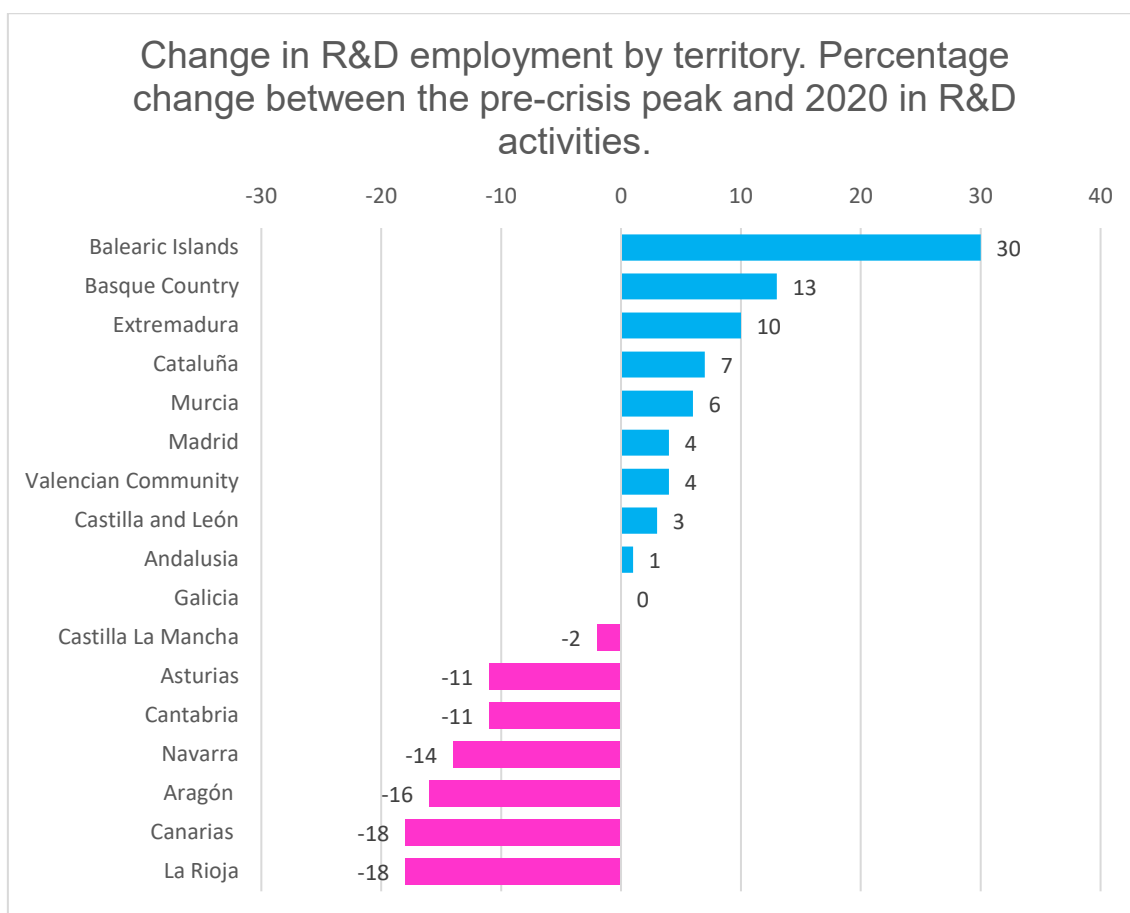
On the other hand, there are 8 regions that are still far from reaching this goal, particularly La Rioja and the Canary Islands.

Figure 33. Change in R&D investment by territory. Percentage change between the pre-crisis peak and 2020 in R&D activities.



Data source: Statistics on R&D activity in 2020. National Institute of Statistics (NIS) and Eurostat.

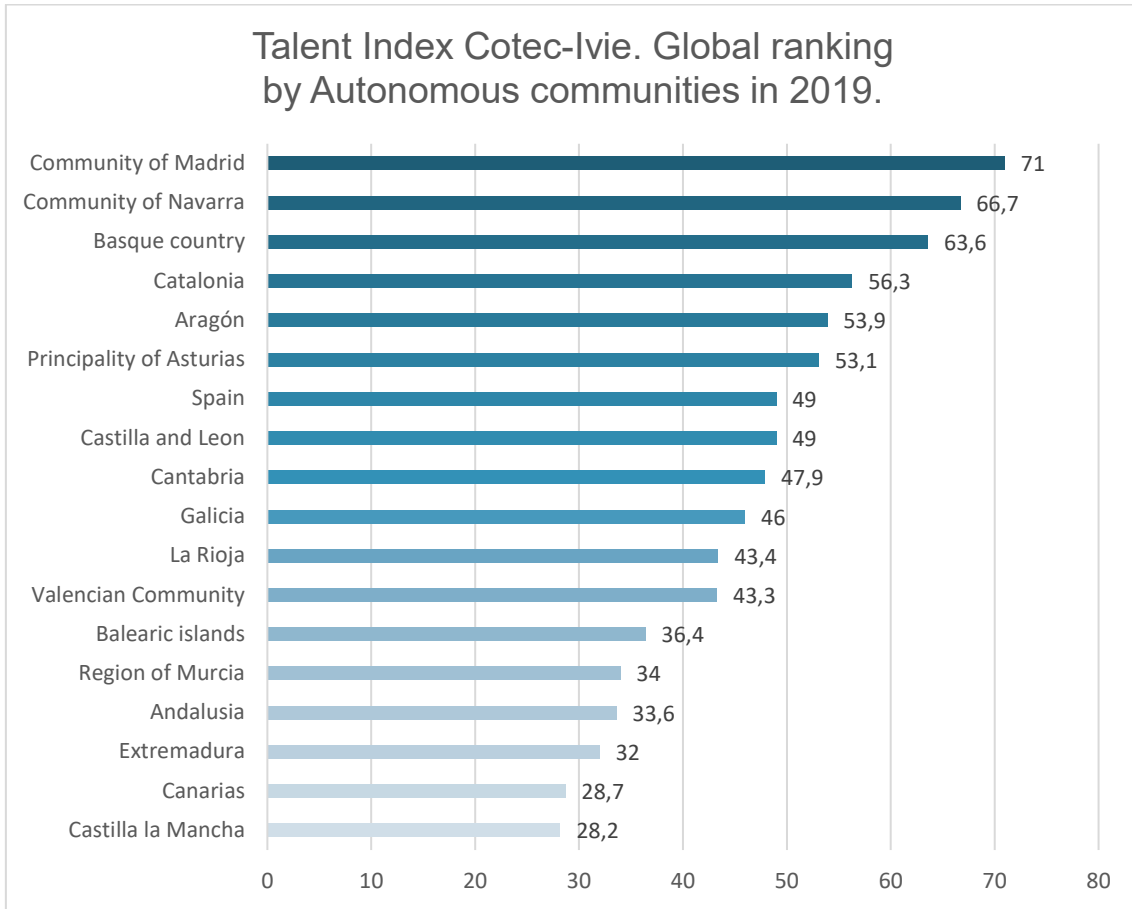
Figure 34. Change in R&D employment by territory. Percentage change between the pre-crisis peak and 2020 in R&D activities.



Data source: Statistics on R&D activity in 2020. National Institute of Statistics (NIS) and Eurostat.

The *Cotec Foundation for Innovation* is a private non-profit organization whose mission is to promote innovation as a driver of economic and social development. Annually, the Foundation prepares the "COTEC Yearbook", an informative and comprehensive report that analyzes the national R&D&I system in Spain. In the "2021 COTEC Yearbook", a talent map was elaborated as part of a study that analyzed and compared the capacity to attract and retain talent in the 17 autonomous communities of Spain, by calculating different talent indicators. Bearing in mind that attracting and retaining talent is one of the three pillars of the EXPER project; the Figure 35 shows the results of the *Cotec-Ivie talent Index* for the different autonomous communities. This index measures the capacity to attract and retain talent in developed countries, in this case Spain.

Figure 35. Talent Index Cotec-Ivie. Global ranking by Autonomous communities in 2019.



As it can be observed, talent is concentrated in the regions of northeastern Spain and Madrid. The southern Autonomous Regions and the Canary Islands are the worst positioned which points to the existence of a relatively direct relationship between talent and the degree of development of the different regions.

3.2. ULPGC: INTERNAL OVERVIEW

The University of Las Palmas de Gran Canaria (ULPGC) is a higher education research institution created in 1989, with 11 University Institutes covering all fields of knowledge, approximately 22,000 students, 16 faculties and more than 1,600 researchers. The ULPGC has 117 groups of research, many of them carrying out research projects funded by the EC and the Spanish Government as well as International Mobility Programmes.

Considered one of the main Spanish universities in the use of new technologies, is also a competitive research institution in the areas within the Blue Economy and Tourism Sector, two of the main areas described in the Research and Innovation Strategy for Smart Specialisation of the Canary Islands (RIS3).

It also has a Scientific and Technological Park to help make more dynamic the transfer of R&D&I+i results to society, as well as helping to launch technology-based companies.

ULPGC is also an active player in [EU projects](#) with more than 200 proposals submitted within the FP7 and Horizon 2020 programmes. 50 projects have been funded (36 H2020 and 19 FP7 projects).

ULPGC is EURAXESS Local Contact Point from 2014 and is also adhered to the ["Human Resources Excellence in Research" \(HRS4R\)](#), developing their activities with the support of the [European Projects Office \(OPE\)](#). OPE stimulates the ULPGC's participation, through its researchers and research groups, in regional, national and European research, development and innovation funding programmes.

The following is a description of the ULPGC's research structure, its research and innovation support services and its specific research and transfer plan for the period 2022-2025. In addition, the educational offer of the ULPGC in terms of doctoral programs is detailed.

3.2.1. ULPGC RESEARCH STRUCTURE

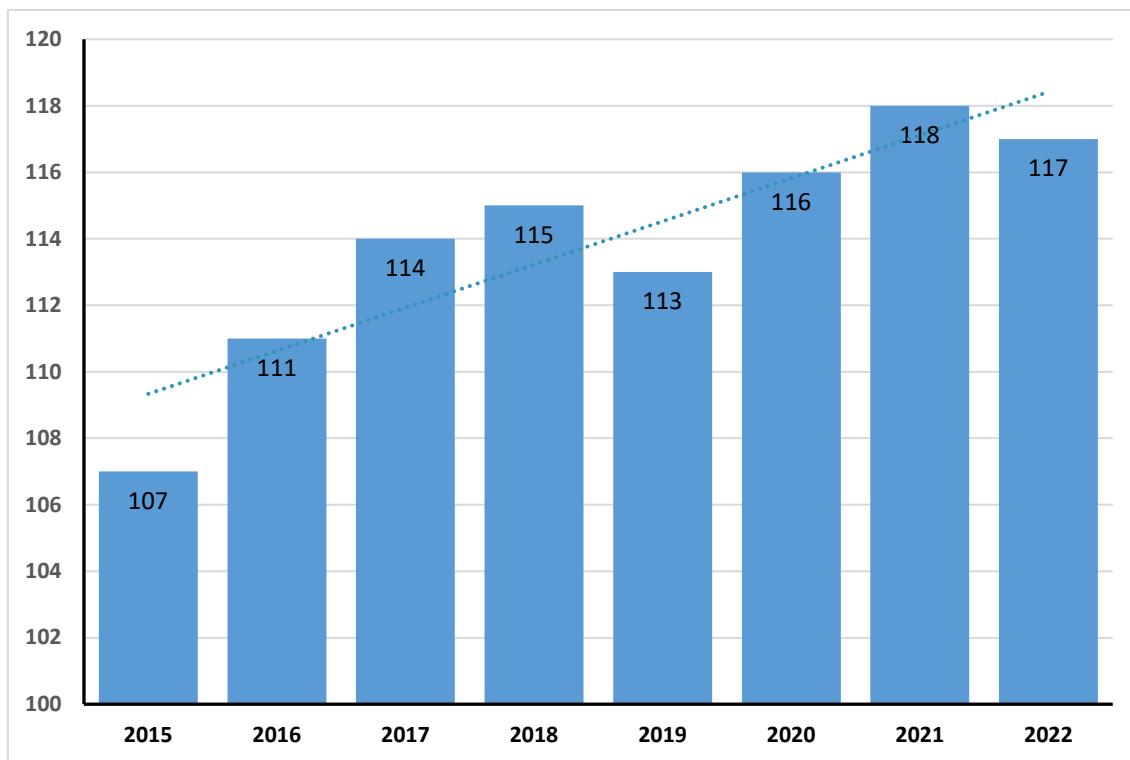
The research structure of the ULPGC is formed of **Recognized Research Groups (RRG), R&D Centers and University Research Institutes (URI)**. The RRGs are the fundamental research units formed by TRS and collaborating personnel, who in a coordinated manner carry out research tasks in a series of common, related or complementary lines.

Institutes are more complex and competitive operational organizations formed from aggregations of researchers and resources. For this reason, for an adequate analysis of the research structure, it is necessary to study in depth the evolution of the groups over a series of consecutive years. These data provide us with elements of analysis to show the potential and deficiencies of the research structure.

3.2.1.1. RECOGNIZED RESEARCH GROUPS

The Figure 36 shows the evolution of the number of research groups in the period 2015-2022.

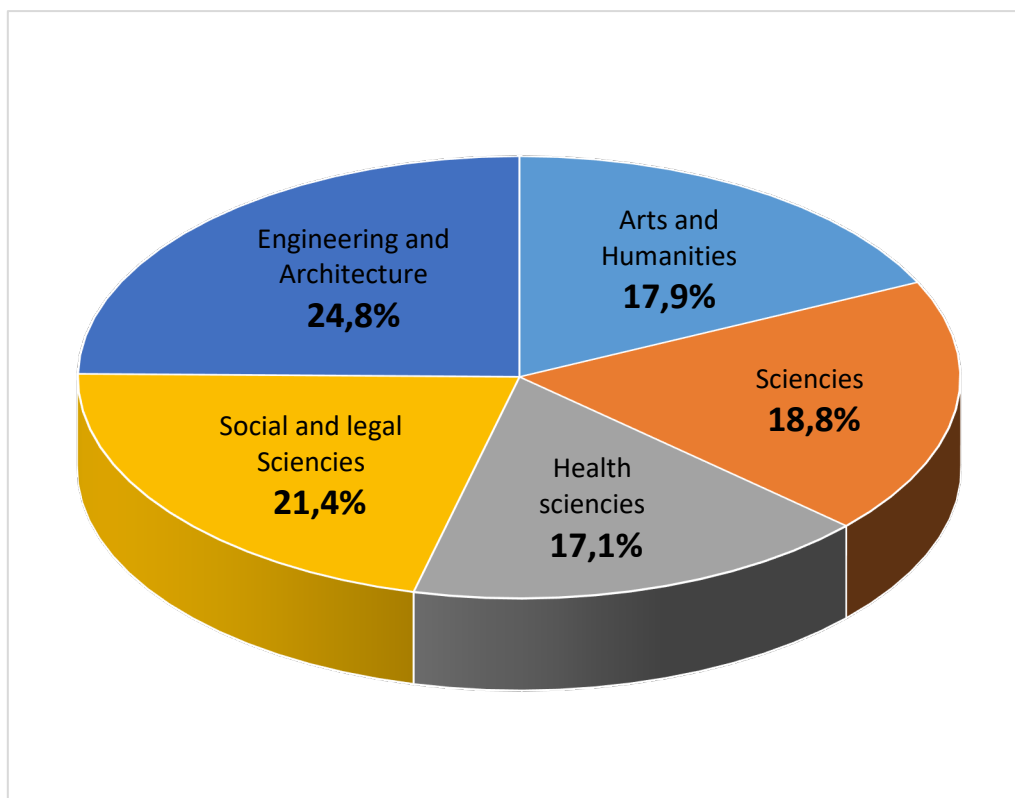
Figure 36. Annual evolution of the number of RRG



3.2.1.1.1. RESEARCH GROUPS BY BRANCH OF KNOWLEDGE

The Figure 37 shows the percentage of RRG by branch of knowledge at the University of Las Palmas de Gran Canaria - Arts and Humanities, Sciences, Health Sciences, Social and Legal Sciences, and Engineering and Architecture -.



Figure 37. Percentage of RRG by branch of knowledge (2022)



Although the highest percentage of RRGs is in Engineering and Architecture, the number of research groups per branch of knowledge is balanced, allowing the five branches to have a similar representation in ULPGC.

3.2.1.1.2. COMPOSITION OF THE RRG: PERSONNEL IN THE RESEARCH TEAM AND IN THE WORKING TEAM (2017-2022)

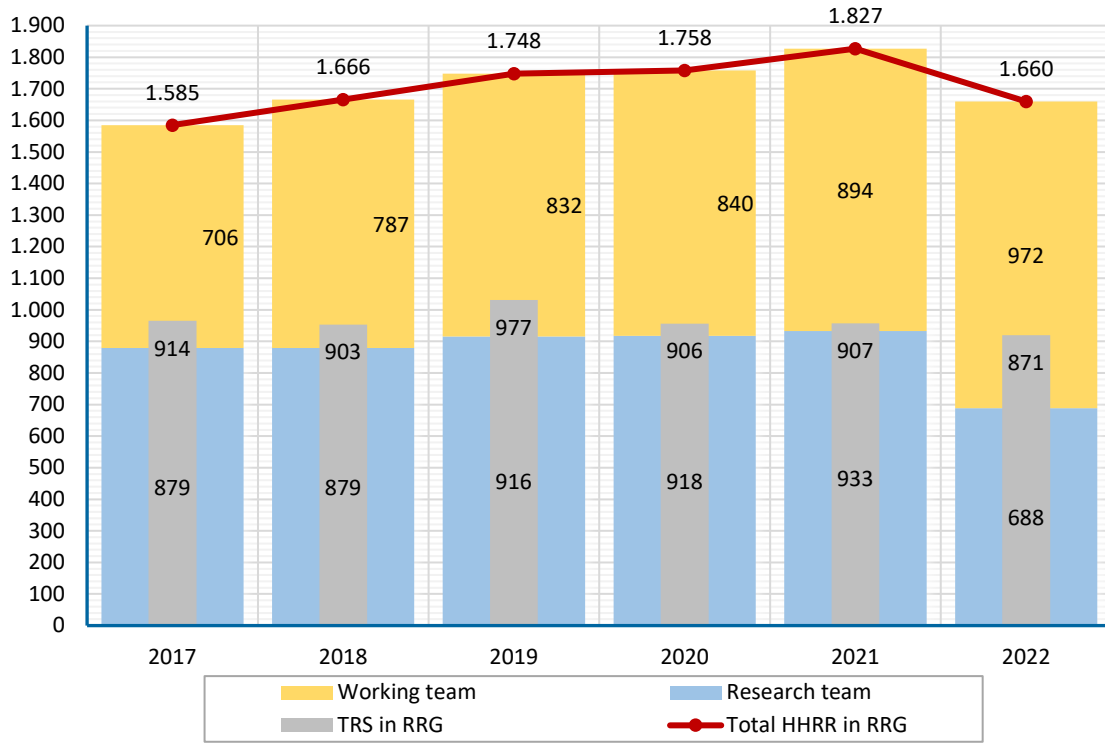
The research groups are composed of research personnel and collaborating personnel, who constitute the research team and the work team respectively, as detailed below:

-  The research team is formed by professors and researchers from each of the figures and categories contemplated in the current legislation that are explicitly listed when creating the RRG, the research personnel hired through competitive public calls, those hired under research projects and contracts for a minimum period of one year.
-  The work team is composed of professors and researchers from the ULPGC, mainly TRS without six-year periods, professors and researchers from other institutions, research support technicians, students who are new to research, pre-doctoral and postdoctoral students who continue to be integrated in the research

tasks of the RRG, and other researchers or technicians for the activities of the RRG.

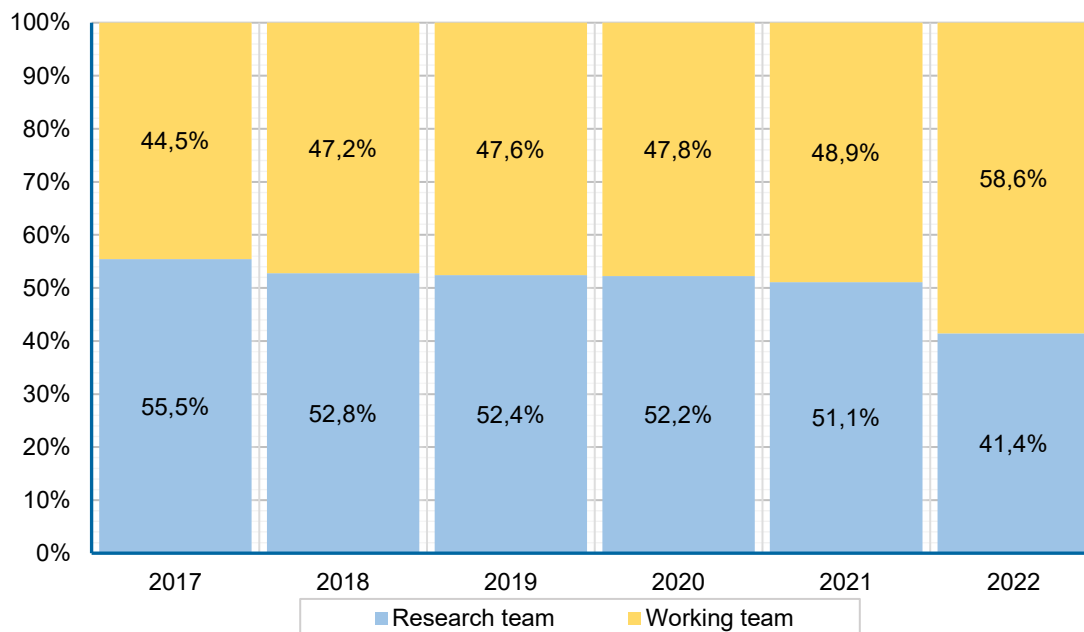
According to the analysis carried out, in the RRG 2022, 52.5% is TRS.

Figure 38. Research and work team assigned to the RRG (2017-22)



The following figure shows a higher percentage of the research team, except in the year 2022, where the percentage of the working team was higher than the research team.

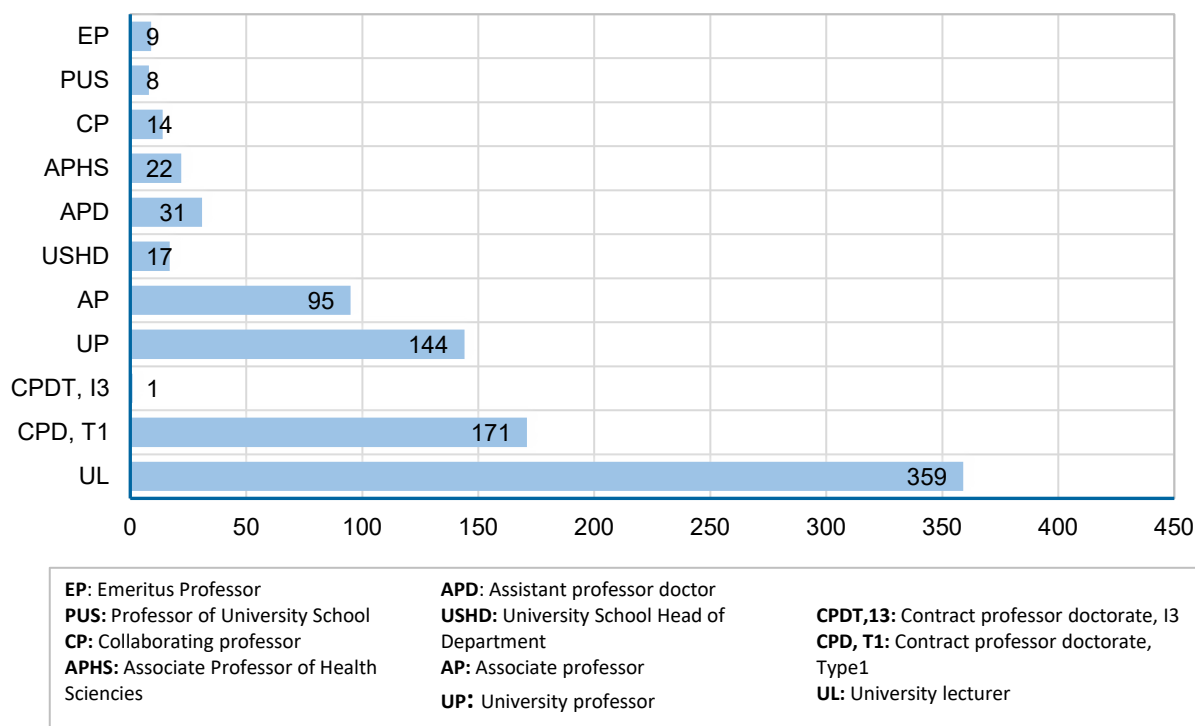
Figure 39. Composition of the HR assigned to the RRG of the ULPGC (2017-2022)



3.2.1.1.3. COMPOSITION OF THE RRG: CLASSIFICATION OF THE TRS

Taking into account the importance of research groups in the research structure of the University, an analysis has been made of the categories of the TRS that participate in them (see Figure 40).

Figure 40. Category of the TRS in the research groups



From this analysis, a greater number of university lecturers of the TRS in the groups is shown.

3.2.1.2. UNIVERSITY RESEARCH INSTITUTES

The trend in recent years has been the organization of research around university institutes, which shows a structuring criterion based on improving competitiveness and research efficiency.

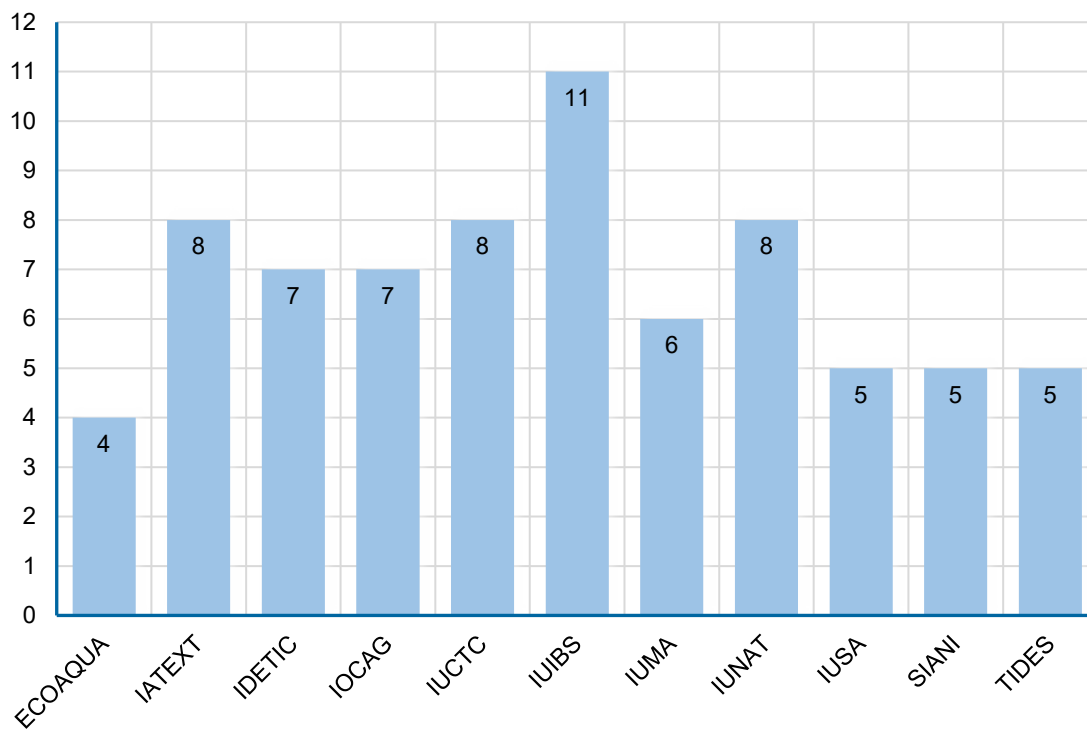
Currently, the university has eleven institutes:

- [!\[\]\(b1b781be830eb908d845c527ab08d5f8_img.jpg\) University Institute of Textual Analysis and Applications \(IATEXT\)](#)
- [!\[\]\(2176a4ba510fa27404d783166e891577_img.jpg\) University Institute of Cybernetic Sciences and Technologies \(IUCTC\)](#)
- [!\[\]\(a3b1c8d49688274496e55f2751cb8993_img.jpg\) University Institute of Environmental Studies and Natural Resources \(IUNAT\)](#)
- [!\[\]\(428d7e9195be7f8a26074c24b6c91839_img.jpg\) University Institute for Research in Sustainable Aquaculture and Marine Ecosystems \(ECOQUA\)](#)
- [!\[\]\(ed97b77223b22ee5f7630fce8232c643_img.jpg\) University Institute of Biomedical and Health Research \(IUIBS\)](#)
- [!\[\]\(09fbf882b1c74e1d905570cb87137f75_img.jpg\) University Institute of Applied Microelectronics \(IUMA\)](#)
- [!\[\]\(38a5711a91e51bcf581270eb937dfb8f_img.jpg\) University Institute of Oceanography and Global Change \(IOGAG\)](#)
- [!\[\]\(77ca010aba4da5e8432b17ebfa836139_img.jpg\) University Institute of Animal Health and Food Safety \(IUSA\)](#)
- [!\[\]\(487663b347e68df8fff3380f58dc0cc7_img.jpg\) University Institute of Intelligent Systems and Numerical Applications in Engineering \(SIANI\)](#)
- [!\[\]\(ba6309ee69e3329bacc81ec8acea4b7a_img.jpg\) University Institute of Tourism and Sustainable Economic Development \(TIDES\)](#)

 University Institute for Technological Development and Innovation in Communications (IDETIC).

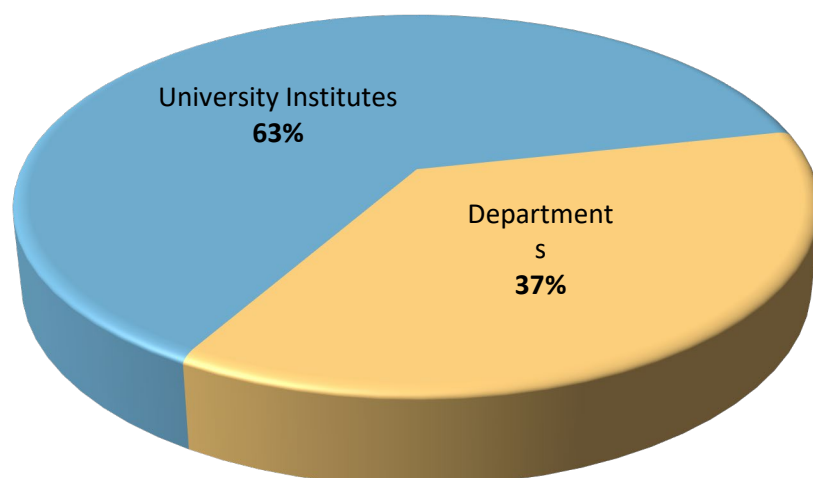
A high percentage of the RRGs are integrated in the university institutes. The following figure shows the number of RRGs for each of the institutes in 2022.

Figure 41. Number of RRGs in the University Institutes (2022)



Of the total 117 Research Groups, 74 are attached to university institutes and 43 are attached to university departments, representing 63% of the RRGs in institutes and 37% in departments.

Figure 42. RRG membership in institutes and departments



3.2.2. ULPGC SUPPORTING STRUCTURES IN RESEARCH

3.2.2.1. RESEARCH SERVICE

The structure of the **Research Service** consists of a directorate and two sub-directorates. These sub-directorates manage two distinct areas, the Sub-directorate of Research Projects and the Sub-directorate of Human Resources for Research, which constitute the reference service in the management of research at the ULPGC. The service manages, charged to the budgets of the University of Las Palmas de Gran Canaria, grants to members of the university community, aimed at contributing to the expenses incurred by research-related activities, among others:

1. Call for aids for the consolidation of the research activity of the research personnel of the University of Las Palmas de Gran Canaria.
2. Postgraduate contracts of the MEC, Government of the Canary Islands, ULPGC, CIE (calls, processing, deadlines, etc.).
3. Research projects and scientific and technical infrastructure.

3.2.2.2. OTHER MANAGEMENT-RELATED UNIVERSITY SERVICES

ULPGC has other structural services that, in a complementary way, intervene in the research management process, among them: the **Economic and Financial Service**,

the **Patrimony and Contracting Service**, the **Personnel Service** and the **Legal Services**.

The **ULPGC Management** is the agent that supervises and coordinates all these support services, and whose purpose is to provide the necessary resources to carry out research management in coordination with the ULPGC Vice-Rectorate for Research, Innovation and Transfer.

3.2.2.3. RESEARCH SUPPORT UNITS

The **Knowledge Management Unit (KMU)** is a support unit attached to the Vice-Rectorate for Research and Transfer. This unit provides technical support in the presentation of applications in calls for proposals, fills in statistics from different public bodies, manages the Recognized Research Groups (RRG), responds to queries from the curriculum editor MiCV, and works in the ULPGC [accedaCRIS portal](#). It also manages, processes and provides the research data requested to facilitate decision making.

The **Bibliometric Unit (BU)** was established in 2013 at the ULPGC, as a support unit attached to the Vice-Rectorate for Research and Transfer. This unit is composed of own staff of the ULPGC, belonging to different academic branches, and supported by the staff of the University Library and the KMU. The **ULPGC Library** is a resource center for learning, teaching, research and activities related to the operation and management of the ULPGC. For its part, the Research Support Unit is a unit dependent on the ULPGC Library, being responsible for coordinating the work carried out by the University Library in accedaCRIS: planning, participation and supervision of the work carried out from the Library, as well as the establishment of guidelines and standardisation that improve the final result of the documentation collected in this repository, among other tasks.

One of the objectives of the BU is to contribute to the improvement of the evaluation of scientific activity, based on the elaboration of bibliometric indicators, since they have currently acquired great influence in scientific policy. Support is given to researchers to improve the visibility and impact of their scientific production in bibliometric databases such as WoS, Scopus and Google Scholar.

Likewise, support is offered in updating researchers' profiles and their publications in *accedaCRIS*.

3.2.2.4. THE ULPGC SCIENCE AND TECHNOLOGY PARK FOUNDATION

The Science and Technology Park Foundation (FPCT) of the ULPGC is an instrumental entity to support research at the ULPGC. Its functions include the administrative and economic management of European Research Projects H2020, agreements and contracts between companies and the ULPGC and the management of spaces attached to the Science and Technology Park of the ULPGC. It also provides services to the

university community in the field of Industrial and Intellectual Property and participates in the dissemination of R&D&i.

Specifically, there are two FPCT units that are closely related to ULPGC Research: The European Projects Office (OPE) and the Research Results Transfer Office (OTRI).

It is relevant to highlight the line of support obtained with the signing of two agreements with the Spanish Ministry of Science, Innovation and Universities, in which the ULPGC assumes the execution of a line of strengthening management and support services through the Scientific and Technological Park.

3.2.2.4.1. EUROPEAN PROJECT OFFICE (OPE)



The European Projects Office (OPE) aims to promote the participation of ULPGC research groups in European R&D&i funding calls, mainly within the Horizon Europe Program (2021-2027) and thus improve the success and return rate with respect to the H2020 Program (2014-2021).

The following table lists the funded projects where ULPGC research groups have participated, as beneficiaries, Third Party, and/or through management entities (FCPCT) in previous Framework Programs and other EC Directorates General:

Table 16. Total number of projects and their amount in FP7, H2020 and other DGs programs

	FP7/DGs (2007-2013)	H2020/DGs (2014-2021)
Number of projects	23	44
Total amount (€)	7.628.096,0	11.703.451,4

The ULPGC's strategy oriented to European funding has allowed obtaining a good rate of results, a strategy that is currently supported with two programs that support the ULPGC's OPE:

-  [The BIOASIS Gran Canaria program](#), led by the Cabildo de Gran Canaria.
-  [The Research and Transfer Plan 2018-2020 of the ULPGC](#), through a line of support and strengthening of services.

In this way, these programs provide specialized human resources to promote the improvement in quantity and quality of the project proposals of ULPGC researchers.

Undoubtedly, our country and our region have become a European pole of research and innovation thanks to the [EU Funding Program for Research and Innovation 2014-2020 \(H2020\)](#).

During 2021, the OPE has developed the following activities:

-  **Dynamization work for the participation of Research Groups in European projects:**

OPE continues to provide training modules on internationalization and European fundraising in the framework of the Continuing Education Plan for the TRS and the Doctoral School of the ULPGC.

The work of dynamization is completed with the timely sending of information of interest to the TRS on European projects (calls, regulations, events and courses of interest, etc.).

Financial management of projects and other grants:

During 2021, activities around the economic management of European projects (H2020, DGs, POMAC and ERASMUS+) continue to increase significantly. The activities related to management include the following tasks:

- Invoice processing
- Recruitment of personnel
- Budget monitoring
- Periodic justifications (Reporting Periods and Declarations/Certifications)
- Audits preparation
- Requirements management

In addition, this office processes other funds from regional or national grants. Of particular note are the grants managed under the 2017 and 2018 agreements signed by the Cabildo de Gran Canaria, with the Spanish Ministry of Economy and Competitiveness, and with the participation of the SPEGC (Society for the economic promotion of Gran Canaria), for the implementation of the BIOASIS Gran Canaria Platform.

Increased visibility of ULPGC, FCPCT and OPE in various regional, national and international events and forums:

Due to the COVID-19 pandemic situation, travels to attend events and meetings has been practically nil. ULPGC and OPE closely follow the activity that takes place in regional, national and European forums on the distribution of funds and new budgetary schemes dedicated to R&D&I. In addition to the OTRI Network, the ULPGC continues to be an active member of the **RedOE (Network of European Offices of the CRUE)**, in which OPE actively participates as part of 2 working subgroups (WS): WS Promotion of European Projects and WS Management of European Projects. The visibility of the ULPGC and the capabilities of its research groups are as important as the networking that develops between the community of managers and managers who develop their activity in research centers and universities nationwide. It encourages and enables collaborations and synergies with other entities, the exchange of good practices and/or the resolution of common doubts in promotion and management of European projects in a daily basis.

OPE technicians training:

During 2021, and despite the pandemic situation, the capacity building of the OPE team remains essential, especially with the start and opening of the new Horizon Europe Programme. This will deepen not only the knowledge on European funding priorities, but also on new developments on justification and audits, data management (DMP), protection of results (IPR), etc. in the framework of this new multiannual funding framework.

These free online webinars have been organised by various organisations (RedOE, FECYT, CDTI, EC, EMDESK, IPR HelpDesk, etc.).

4 webinars organised by FECYT/CDTI and others: Funding opportunities for the field of Health in 2021 in terms of international R&D&I projects (23/03/2021); National Information Day of the European Cooperation Programme in Science and Technology "COST" (21/04/2021); Webinar I: Advanced Grant 2021 (11/05/2021); Webinar II: Advanced Grant 2021 (18/05/2021);

4 webinars organised by EMDESK: Quick guide for planning your Horizon Europe applications (19/02/2021); Create your Horizon Europe project budget in 6 steps (16/03/2021); Financial rules of Horizon Europe in comparison to H2020 (13/04/2021); The first and final steps in Horizon Europe proposal writing (22/10/2021);

4 webinars organised by the EC/IPR HELPDESK service: How to prepare a successful proposal in Horizon Europe (24/03/2021); A successful proposal for Horizon Europe: Scientific-technical excellence is key, but don't forget the other aspects (21/04/2021); Avoiding errors in declaring personnel costs in Horizon 2020 grants (15/05/2021); Dissemination and Exploitation (09/06/2021);

2 courses organised by RedOE-CRUE: "From H2020 to Horizon Europe: main novelties" (RedTransfer, May 2021); Horizon Europe proposal writing workshops (2 and 17/12/2021).

In addition, during 2021 and within the framework of the FORWARD project, the ULPGC has organised various courses aimed at increasing the knowledge of managers and the research community about writing European projects as well as aimed at increasing knowledge about the various funding opportunities that open up with the new Horizon Europe Programme:

- Collaborative R&D&I projects in Horizon Europe (IPLUF, 14/01/2021)
- Writing a competitive MSCA-PF-2021 proposal (INNOSCOPE, 7 and 09/09/2021)
- TWINNING projects (SATURNTECH, 21/10/2021)

Between 30 November and 2 December 2021, the OPE is present and participates in the XXV European Union R&D&I Project Advisors Seminar - Horizon Europe in Segovia.

Organised by CDTI, it is an event and meeting point where project managers from universities and national research centres, as well as National Contact Points, meet.

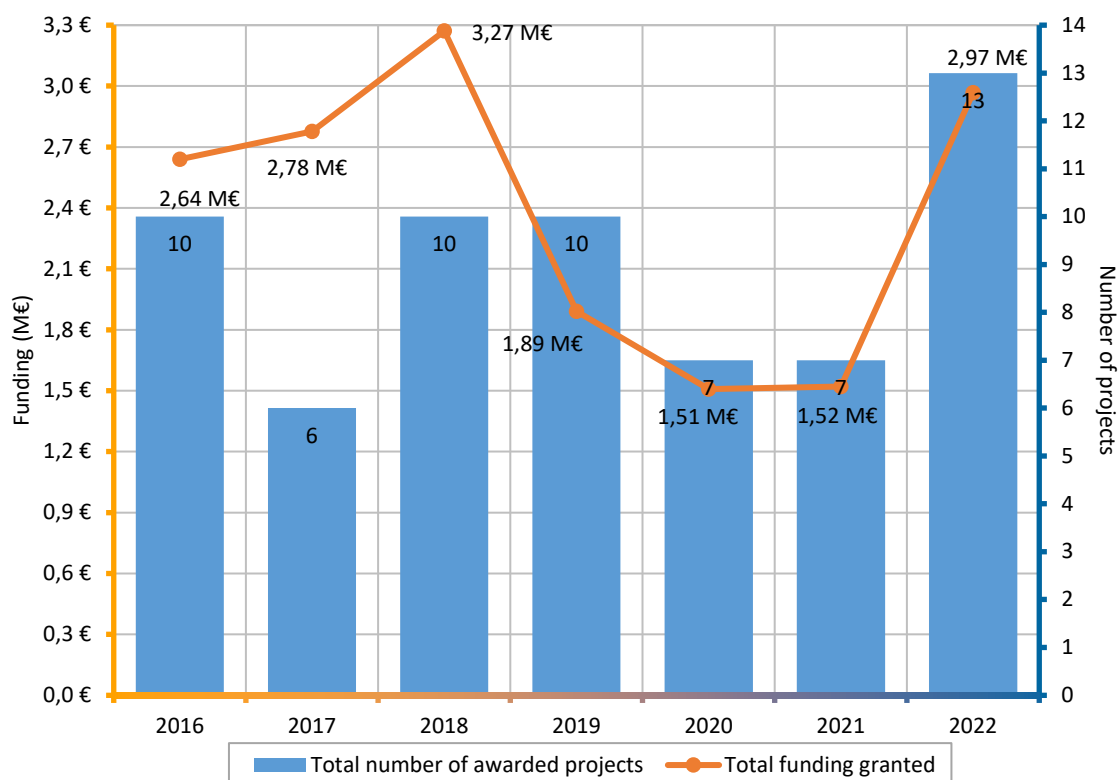
Table 17 reflects the activities and tasks of promotion and dynamization of projects carried out in the 2016-2022 period.

Table 17. Activities and indicators: project promotion and dynamization tasks

	2016	2017	2018	2019	2020	2021	2022	TOTAL in the period
Inquiries and information requests	59	84	65	24	60	106	83	481
Sending information	46	77	46	41	63	55	81	409
Evaluators and experts' info	48	3	1	2	1	1	2	58
Meetings	72	35	49	23	18	31	16	244
European projects applications (H2020/HE/DGs)	29	31	34	32	32	49	45	252
Funded European projects (H2020/HE/DGs)	9	6	10	7	5	8	9	54
Fundraising by ULPGC (H2020/HE/DGs) (€)	2.407.844	2.844.062	3.260.723	1.537.780	1.263.972	1.564.917	2.488.971	15.368.269
TOTAL	263	236	205	129	179	250	236	1.498

The annual evolution of the number of awarded projects in which the ULPGC participates is clearly shown below (see Figure 43). This is a good indicator of the competitive effort in research that is being made at the institutional level through the OPE, which provides technical assistance and preparation of proposals to ULPGC researchers.

Figure 43. Evolution of the number of European projects awarded (2016-2022)



The ULPGC participated in the application for a total of 13 H2020 proposals and other EC Directorates-General in 2021; as well as 35 proposals belonging to the new HORIZONT EUROPE Programme and other DGs, of which 19 have been requested with the coordination of the ULPGC. Pending the results of the evaluation of these proposals, the current balance of projects obtained in 2021 is 1 funded H2020 project: MACARONIGHT III.

In addition, 1 COSME project (EUROEMOTUR) was positively evaluated. This project will be managed by the ULPGC Research Service.

3.2.2.4.2. RESEARCH RESULTS TRANSFER OFFICE (OTRI)

The OTRI is responsible for the valorization of R&D, technology transfer and the offer of services of the ULPGC, whose main objective is to promote relations between university researchers and business.

This office is responsible, among other, for the following tasks:

- To establish collaboration agreements between companies and researchers
- Search for funding for R&D&i.
- Management of support services for scientific and technological research.
- Exploitation and transfer of research projects results developed in the ULPGC environment, in collaboration with the Intellectual and Industrial Property Office.
- Management of congresses, conferences, workshops and scientific dissemination activities.

Based on the developed actions, and thanks to the management over the period 2021-2022, contacts have been made to promote the creation of new collaborative projects between companies and universities.

The most noteworthy actions in 2022 were as follows:

- 114 contacts with companies and entrepreneurs
- Work with 43 research groups has been done.
- 32 contacts initiated between companies and researchers or between companies and technological companies for technological demands from companies (of which, 13 have been worked within the framework of the INNOMAC project).
- At this point, it is worth mentioning the start of the collaboration with the company Viromii, with whom four marketing campaigns have been carried out, where 16 companies have been contacted.
- The Competitive Surveillance System for ULPGC researchers and related companies has been improved, with the addition of the Telegram channel, which has 227 subscribers at the time of writing this report, and an increase in the frequency of news items, from weekly to several items per week.

Throughout the period 2021 - 2022, the following actions have also been carried out:

- The new website of the [ULPGC Research Results Transfer Office](#) has been launched. The website houses both the technology transfer management services for the research community and for external entities. The new version of the OTRI website has a new design that leads users to a quick resolution of their information requirements and particularly a technology offer section which shows, on the date of the report, 46 ULPGC technologies, categorised according to commercial terminology, such as "health", "blue economy" or "digital transformation".

- The format of the form for recruiting people with doctorates and interest in working with companies has been renewed, in order to adapt the searches to the requirements of the companies.

Special mention should be made of the work for the dynamisation of collaborative business innovation projects of INNOMAC (MSC 2014-2020 Interreg), which has complemented the work in the search for collaborations between companies and research groups.

Special mention should be made of the organisation of the SUMA 2021 event, which was organised around two virtual rooms, with a total of 36 presentations.

 Support in the communication of events and projects:

- "Conference on the use of genetic resources in the framework of the Nagoya Protocol and regulations for its application", "Online Workshop: Macaronesian Algae Blue Bioeconomy (#EMDinMyCountry)".

- Demo Day, SPIN ON by ULPGC, organised by the OTRI of the ULPGC, as part of the SPIN ON by ULPGC project "Creation and consolidation of technology-based and innovative companies based on the knowledge generated in the ULPGC" funded by the Ministry of Economy, Knowledge and Employment of the Canary Islands Government, coordinated by the Vice-Rectorate for Research and Transfer of the ULPGC.

- International Conference on Modern and Fossil Dinoflagellates (DINO12), and the VIII International Symposium on Marine Sciences (ISMS 2022), held as part of the celebration of the 40th anniversary of the Faculty of Marine Sciences of the ULPGC.

- Virtual seminar on the European Marine Biological Resource Centre, "What do we do in a European research infrastructure? The case of the European Marine Biological Resource Centre (EMBRC-ERIC) and its support for research in Marine Biology", organised by the Spanish Node of EMBRC-ERIC (EMBRC-ES); EMBRC-España (EMBRC-ES) represents the Spanish state in EMBRC, being formed by three marine research centres that offer access to its facilities and services in the fields of marine ecology and biology, as well as in biotechnology: the Estación de Ciencias Mariñas de Toralla (ECIMAT-UVIGO), belonging to the Centro de Investigación Mariña (CIM) of the Universidade de Vigo, the Estación Marina de Plentzia (PiE-UPV/EHU) of the Universidad del País Vasco (UPV/EHU), and the Banco Español de Algas (BEA) belonging to the Universidad de las Palmas de Gran Canaria and managed by the Fundación Canaria Parque Científico Tecnológico.

- Course on "training in drafting MSCA-DN projects (Pre-doctoral Recruitment Networks) of Horizon Europe, organised by the Vice-Rectorate for Research and Transfer.

- PORMAR Webinar: "The reality of electricity supply to ships", organised by the Maritime-Port Chair of the University of Las Palmas de Gran Canaria.

- Working breakfast with the Confederación Canaria de Empresarios, organised by the Vice-rectorate for Research and Transfer of the University of Las Palmas de Gran Canaria.
- Atlantic Africa Startup Forum, organised by the Regional Ministry of Economy, Knowledge and Employment of the Canary Islands Government through the Directorate General for Economic Affairs with Africa, in collaboration with the Canary Islands Association of Startups, Technology-Based Companies and Angel Investors (EMERGE).
- APTENISA Programme, an initiative promoted by the Association of Technology Parks of Spain (APTE) and the National Innovation Company, SME, SA (ENISA), and implemented in Gran Canaria by the Society for Economic Promotion of Gran Canaria (SPEGC) and the Canarian Foundation for the Scientific and Technological Park of the University of Las Palmas de Gran Canaria.
- AQUAWIND Project, a project led from the Canary Islands by ACIISI, with a consortium including ULPGC, PLOCAN, the Maritime Cluster of the Canary Islands, Canexmar S.L., Consulta Europa Projects & Innovation, as well as strategic partners in France and Portugal.
- INNOVALGA Project, whose consortium is formed by the Spanish Algae Bank (managed by FCPCT - ULPGC), the University of Cadiz (UCA), the National Association of Canned Fish Manufacturers (ANFACO), and led by the Technological Centre of Aquaculture (CTAQUA).
- WELLSTUN project, led by IRTA with the participation of the Mediterranean Institute for Advanced Studies (CSIC-IMEDEA), the Murcia Institute for Agricultural and Food Research and Development (IMIDA), the Complutense University of Madrid (UCM) and the Las Palmas de Gran Canaria University Science and Technology Park Foundation (FCPCT-ULPGC).
- European EXPER project, whose consortium is made up of the University of Las Palmas de Gran Canaria (ULPGC), Universidade dos Açores (UAC), Rostock University (DE), Università della Calabria (IT), Fundación Canaria Parque Científico Tecnológico de la Universidad de Las Palmas de Gran Canaria (FCPCT-ULPGC) and the University of Las Palmas de Gran Canaria (FCPCT-ULPGC), Sociedad de Promoción Económica de Gran Canaria (SPEGC), Asociación Canaria de Startups Empresas de Base Tecnológica (EMERGE), TERINOV - Science and Technology Park, Atrineo AG, Consulta Europa Projects and Innovations (CE), and Instituto Tecnológico de Canarias (ITC).
- Project "Development and implementation of innovative strategies for the improvement of fish welfare in critical points of aquaculture culture (PISCIBIEN)", coordinated by the Aquaculture Cluster (CETGA), with the participation of the University of Las Palmas de Gran Canaria, the University of Cadiz (UCA), the Autonomous University of Barcelona (UAB), the Complutense University of Madrid (UCM) and the Murcian Institute of Agricultural and Environmental Research and Development (IMIDA).

- Proyecto ALIZIO, coordinado por el Banco Español de Algas (FCPCT-ULPGC).

- Proyecto FORWARD, entre cuyos socios se puede encontrar a las entidades canarias Agencia Canaria de Investigación, Innovación y Sociedad de la Información (ACIISI) como coordinador, Instituto Tecnológico de Canarias (ITC), Instituto de Astrofísica de Canarias (IAC), Plataforma Oceánica de Canarias (PLOCAN), Universidad de La Laguna (ULL), Universidad de Las Palmas de Gran Canaria (ULPGC) y Consulta Europa (CE).

 Support in the organization of events:

- Co-organisation of the webinar "Support for internationalisation" to present the aid and services provided by ICEX, Proexca and the Chamber of Commerce for the international expansion of technology SMEs.

- Webinar "Cultivation of macroalgae and carbon sequestration", as part of the REBECAS seaweed project, organised by the Spanish Bank of Algae, the Bank of Algae and Cyanobacteria of the Azores (BACA) of the University of the Azores, and in collaboration with the Society for Economic Promotion of Gran Canaria (SPEGC).

- 21st Green Drinks Gran Canaria: "GESCAN: Working together for sustainable livestock farming with a future", organised by TuEcohuella, Espacio AE and Fundación Canaria Parque Científico Tecnológico de la Universidad de Las Palmas de Gran Canaria.

- First Dates I+D+I Tech, as part of the Patents Week by ULPGC 2022 event.

- Virtual visits for companies "ENTRA, INNOVA: visits for companies to research facilities" have been organised at ECOAQUA, on 15 July 2021" and at the University Institute of Applied Microelectronics, IUMA ULPGC, on 18 March 2021.

- Organisation of the event STRATEGIES FOR PARTICIPATION IN PERTE: Keys to Strategic Projects for Economic Recovery and Transformation.

- Participation in the Courses for the initiation to entrepreneurship for PhD students and for the creation of university spin-offs, organised by the Vice-rectorate for Research and Transfer, in collaboration with the Society for the Economic Promotion of Gran Canaria (SPEGC), consisting of two free courses: one for the initiation to entrepreneurship for PhD students and the second for the creation of university spin-offs. These courses were given by national and international experts in the creation of companies based on the knowledge generated in universities.

- Participation in the CIDE Network project, coordinated by the CIDE Network, to promote transfer between universities and companies, with the CIDE profile of Technological Support and Transfer.

- Participation in the APTE Technical Network, coordinated by the APTE management entity, to promote collaboration between all the entities belonging to the science and technology parks in Spain.

- Among the joint actions with APTE, it is worth mentioning the dissemination of the Spanish technology platform for disruptive technologies, DISRUPTIVE. DISRUPTIVE arises after the launching in 2019 of APTEFORMA, the online platform for training in digital technologies.

In conjunction with the ULPGC Intellectual and Industrial Property Office, the Office for the Transfer of Research Results (OTRI) of the ULPGC, has visited the Technology Park of Malaga, as part of a Canarian delegation led by the Ministry of Economy, Knowledge and Employment of the Government of the Canary Islands, and which also included the provincial employers and the Canary Islands Special Zone to know, first hand, the infrastructure, projects and actions that are being carried out from these centres to promote the growth of the digital ecosystem of this region, linked to digital innovation (AI, cybersecurity, big data, etc), attracting and retaining talent, and promoting innovative entrepreneurship.

- Under the coordination of the Vice-Rectorate for Research and Transfer of the ULPGC, the OTRI presented its services to the institutes and research groups of the ULPGC, having visited in 2022 the IUCTC/IUCES, IATEX, IUNAT, SIANI, IDETIC.

- The OTRI of the ULPGC has participated in the Transfiere forums in Malaga, the Patents4Innovation P4lexpo 2022 event in Madrid and the OECD Digital Economy Ministerial Meeting in Gran Canaria to showcase the technological offer of the ULPGC and establish new contacts.



Intellectual and industrial property

A very important area of the work performed by this office is the protection of ULPGC research results, advising on the different ways to protect results and their management. Chemical compounds, mechanical devices, synthesis procedures, pharmaceuticals, software, etc. Research results must be properly protected in order to favor their transfer.

This office is in charge of the protection and valorization, as well as the exploitation and transfer of the results of research projects developed in the ULPGC environment.

Since its creation in 2015, it has requested the same number of inventions in 6 years as in the first 25 years since the founding of the ULPGC. Furthermore, it has gone from generating €0 to an economic return, in 6 years, of € 813.045,39, through the signing of contracts with companies on the Transfer of protected technologies.

The historical activity of the ULPGC in terms of intellectual property protection is reflected in the following periods:

-  1989 - 2014 (25 years): 80 applications for inventions, with €0 economic return for Transfer of protected technologies.
-  2015 - 2022 (8 years): 117 applications for inventions and €1.081.839,50 in economic return for Transfer of protected technologies.

The most significant actions in the period 2021-2022 were:

- More than 150 meetings attending to queries from the university community.
- Study of 40% of agreements and/or agreements with companies in which the research results of the ULPGC are committed annually.
- 5 national patent applications.
- 6 utility models.
- 3 international PCT applications.
- 2 Intellectual property software registrations.
- 13 patent applications to the European Patent Office (EPO).
- 11 international patent applications: 1 USA, 2 Germany, 2 Switzerland, 2 United Kingdom, 2 France, 2 Denmark.

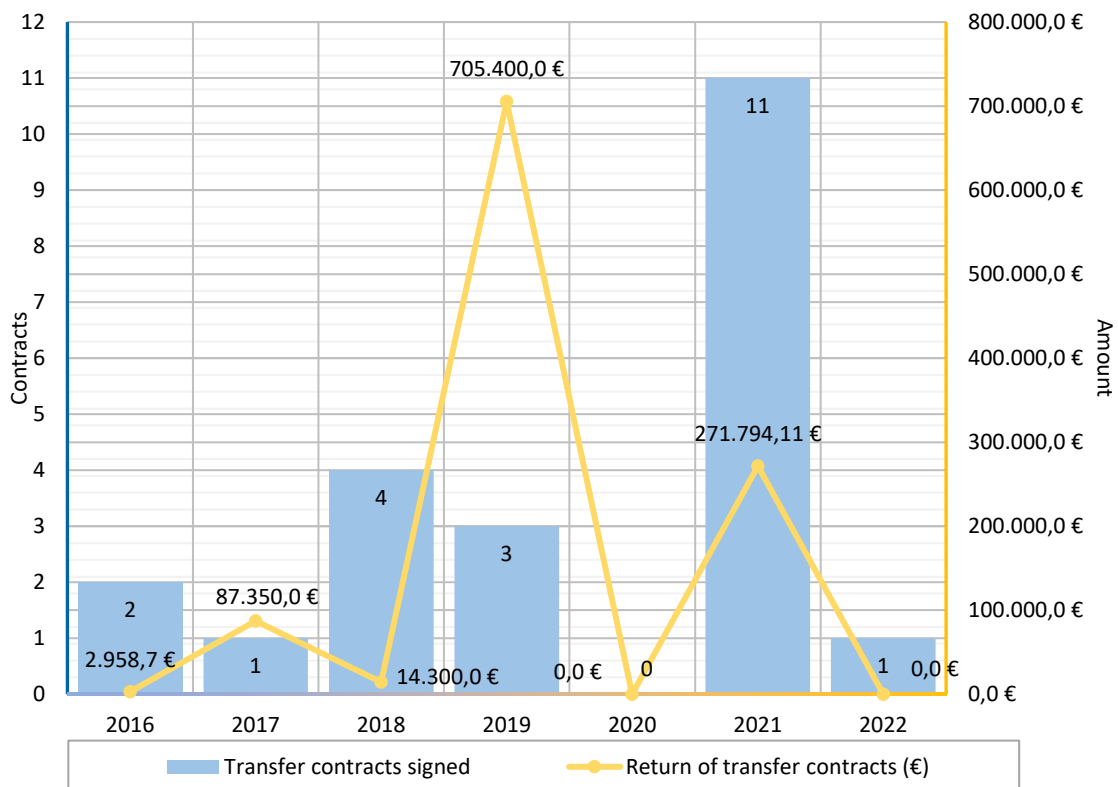
The continuous study of procedural improvements to channel the protection of ULPGC research is reaffirmed.

After the pause suffered in the period affected by the COVID-19 pandemic, the Patents Week by ULPGC event is resumed, achieving in its third edition organised in September 2022, to position itself as a reference event in the field of transfer at national level. A total of 1.273 people attended, including young people and children, adults, companies and professionals from the regional and national R&D&I ecosystem, including technical staff from the Patents and Spin Offs Working Groups of the OTRI Network of the CRUE Spanish Universities.

With the most cutting-edge patents of the ULPGC, it had a stand at the first edition of P4i "Patents for Innovation. International Summit & Expo 2022" organised in Madrid in October 2022, an event that aims to be a benchmark in Europe in the field of technology transfer.

On the other hand, it should be emphasised once again that, with the advice of the staff dedicated to Intellectual and Industrial Property, the research results of ULPGC staff who sign contracts/agreements with companies are being safeguarded, with the aim of supporting research staff and the university itself, so that they do not lose industrial and intellectual property rights when signing these documents (see Figure 44) that may represent an economic return for the ULPGC.

Figure 44. Transfer contracts made in the period 2016-2022



The Figure 45 and Figure 46 highlights the actions carried out in the period 2016-2022:

Figure 45. Intellectual and Industrial Property Actions (2016-2022)

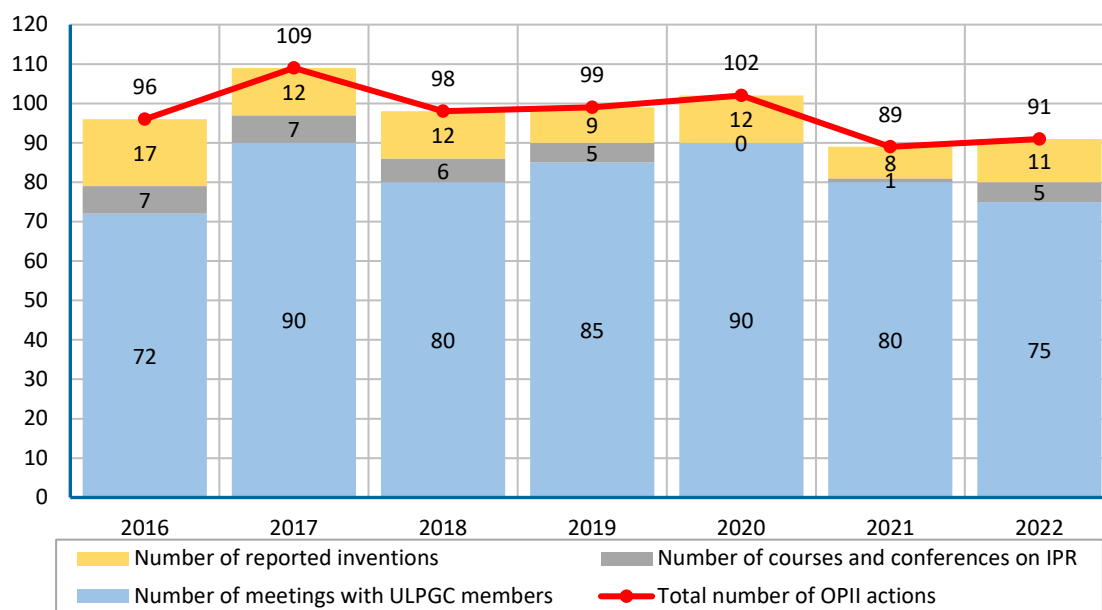
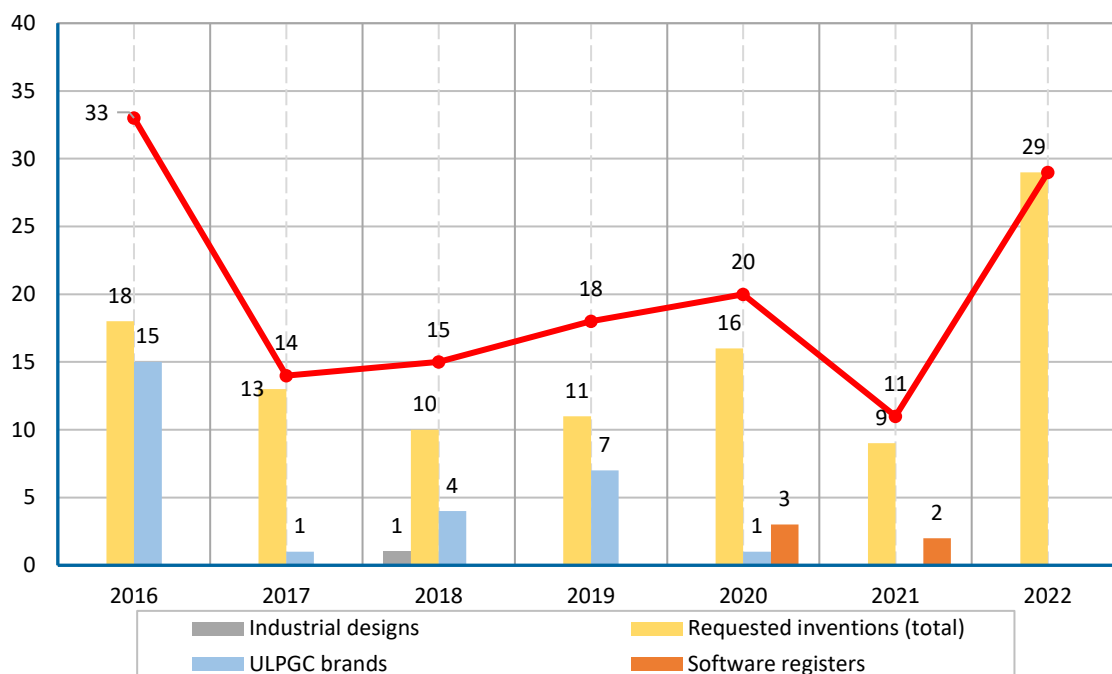


Figure 46. Requests made on Intellectual and Industrial Property (2016-2022)



3.2.3. ULPGC SPECIFIC RESEARCH AND TRANSFER PLAN 2022-2025




The [ULPGC Specific Research and Transfer Plan 2022-2025](#) is a guiding document of the ULPGC research and transfer policy that includes a series of strategic actions in the ULPGC for the improvement of research and transfer, accompanied by a source of funding in a specific period.

The beneficiaries of the plan are, on the one hand, the research groups, university institutes and their researchers and, on the other hand, the services that support research, both in the ULPGC and in the ULPGC Scientific and Technological Park Foundation (FCPCT).







The research transfer has been a priority for the ULPGC, organized in three specific units that offer their services through the ULPGC Science and Technology Park Foundation: the European Projects Office (OPE), the European, the Research Results Transfer Office (OTRI) and the Industrial and Intellectual Property Office (OPII).

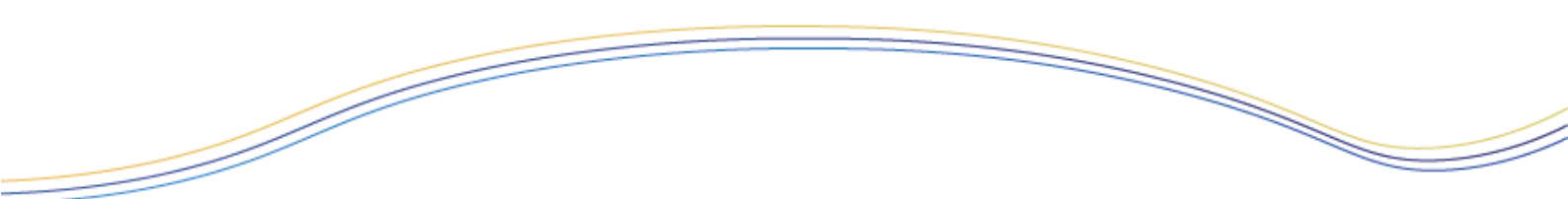
The challenge of this Plan is to increase the University's levels of excellence, to safely face the evaluation criteria of the future Law of Universities. In the medium term, it also aims to approach the indicators of the average of Spanish universities. To this end, this plan is composed of a set of explicit measures and actions, as well as economic resources that aim to strengthen Research and Transfer at the ULPGC


The plan is based on three basic strategies or pillars for the future of the ULPGC:

-  Excellent research
-  Talent consolidation
-  International presence

Based on these three pillars, a series of strategic objectives are established, among the most important of which are the following:

-  To create excellent, competitive and multidisciplinary science.
-  To increase the quality and impact of scientific production.
-  To contribute to the creation of new generations of researchers.
-  To attract and retain the best scientific talent.
-  To increase the attraction of competitive funding.
-  To optimize knowledge transfer.



 To strengthen research services and infrastructures.

 To promote collaboration with R&D&I institutions.

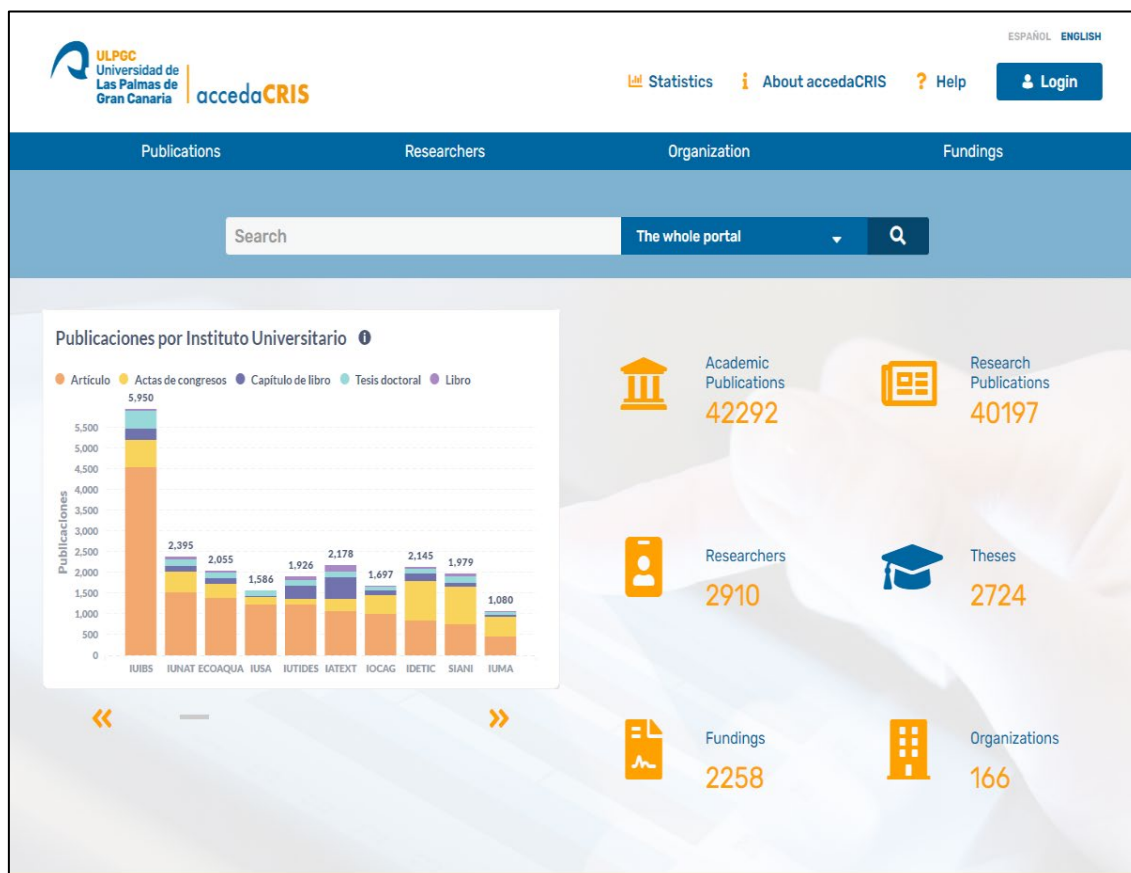
The budget for the implementation of the plan will be €16.1 million over the period 2022-2025.

3.2.4. ULPGC RESEARCH PORTAL: ULPGC ACCEDACRIS

The [ULPGC accedaCRIS portal](#) was launched on March 4, 2020. Through this portal, the ULPGC offers a new centralized service of scientific production for teaching and research staff, departments, University Institutes, research groups, students and society in general.

This project, led by the Director of Information Systems, Javier Sánchez Pérez, under the Vice-Rectorate for Research, Innovation and Transfer, is the result of collaboration among this Vice-Rectorate, the [University Library](#) and the [IT Service](#). The ULPGC accedaCRIS portal has been nourished by two previous tools such as *Acceda*, the former open institutional repository, and *MiCV*, the curriculum editor of the Standardized Curriculum Vitae, and is integrated into the corporate databases of the ULPGC. Likewise, the collaboration among the University Library, the IT Service, the [Knowledge Management Unit](#), the [Bibliometric Unit](#) and the company [NTCanarias](#) has been fundamental.

Figure 47. UPLGC AccedaCris portal home screen



This is the scientific research portal that compiles the scientific production of the UPLGC and is part of the research management information system (CRIS) of this University. It is, therefore, an information management system where data on research generated by the teaching and research staff (TRS) and doctoral students of the University of Las Palmas de Gran Canaria is stored and managed, and provides a system to control and manage their publications, papers, studies and everything related to their research activity.

The accedaCRIS platform has been designed to facilitate the search for documents of the TRS of the UPLGC and increase their productivity. For this purpose, it has been structured in four main blocks. On the one hand, all the documentary production, and on the other hand, it has been chosen to emphasize the research staff, the organization of the university itself and the projects in which the institution is participating.

All this information has been enriched with indicators and statistics that help a quick and agile analysis of the research both at the level of researcher profile and at the level of departments, RRG and projects.x

However, the most outstanding features of accedaCRIS are its stability, the constant revision of data and daily updating of the entire portal.

3.2.5. ULPGC EDUCATIONAL OFFER: DOCTORAL PROGRAMS

Doctoral studies must play a fundamental role as an intersection between the European Higher Education Area (EHEA) and the European Research Area (ERA), both fundamental pillars of the knowledge-based society. In accordance with the Spanish regulatory framework [RD 99/2011, of January 28, which regulates official doctoral education](#), Universities can create Doctoral Schools that become responsible for the organization, planning and development of doctoral programs.

The aim is to have a quality doctoral education, in which qualified students are trained, allowing the advancement of research and innovation, reinforcing diversity, creativity and mobility, following the Salzburg (2005) and Berlin (2010) Principles.

The Table 18 lists the doctoral programs offered by the university, as well as a brief description of each of them.

Table 18. Doctoral programs offered by ULPGC

Doctoral Degree	Description
<u>PhD in Linguistic and Literary Studies in their Sociocultural Contexts</u>	The PhD in Linguistic and Literary Studies in their Sociocultural Contexts (DELLCOS) will train PhD specialists in research that studies and applies the interrelationships between linguistic codes and literary discourses with their social and cultural contexts. These interrelationships will be studied without temporal, spatial or cultural limits in order to promote interdisciplinary research.
<u>PhD in Applied Research in Health Sciences</u>	The PhD program in Applied Research in Health Sciences is a proposal for quality training, interdepartmental, interuniversity and international. Through this doctoral program, students will obtain the necessary tools to gather scientific information from different periodicals and databases, as well as to be able to carry out an adequate scientific communication, both oral and written. It is mainly aimed at graduates in Health Sciences, and its purpose is to train researchers and specialists in this field.
<u>PhD in Tourism, Economics and Management</u>	This PhD program is aimed at providing training that serves as a basis for training in any sector related to tourism, economics and management and oriented to the performance of managerial activities. The Doctorate has an internationalizing vocation, since its objectives are: (1) to promote and encourage joint research and publications with researchers from other countries; (2) to have agreements with other doctoral programs; (3) to favor the mobility of students and (4) to obtain international doctoral mentions for a substantial part of its doctorates.
<u>PhD in Atlantic Islands: History, Heritage and</u>	This PhD program is the result of the sum of previous experiences in doctoral programs carried out by the

<p><u>Institutional Legal Framework.</u></p>	<p>various universities that comprise it. It will train PhD specialists in research related to the Atlantic world. Our offer is of international dimension and will be the quality reference in the future in Arts and Humanities, Social and Legal Sciences and Architecture. The profile of this program seeks to harmonize horizontally three types of doctoral students: those coming from degrees corresponding to the fields of Arts and Humanities, Social and Legal Sciences and Architecture.</p>
<p><u>PhD in Chemical, Mechanical and Manufacturing Engineering</u></p>	<p>The PhD in Chemical, Mechanical and Manufacturing Engineering aims to train PhDs in areas related to the fields of manufacturing processes, mechanical engineering, environment, chemical engineering and materials. This doctoral program investigates all processes from the most elementary level of chemistry and physics of materials, through their transformation processes, to the design of applications for both end-use products and energy production.</p>
<p><u>PhD in Oceanography and Global Change</u></p>	<p>The PhD in Oceanography and Global Change is one of the two doctoral programs in oceanography in Spain. It has its origin in the PhD in Biological Oceanography (1992) and in the period 2005-2010 obtained the Mention of Quality from the National Agency for Quality Assessment. In the period 2006-2013 it was taught, in collaboration with the Marine Sciences Institute of CSIC (Barcelona), in Barcelona and Las Palmas de Gran Canaria.</p> <p>The program aims to cover research training, both basic and applied, that deepens the doctoral student's capacity to understand any of the research lines that are part of the program: Physical Oceanography and Remote Sensing, Chemical, Biogeochemical and Geological Oceanography and Biological Oceanography, Biotechnology and Environment.</p>
<p><u>PhD in Animal Health and Food Safety</u></p>	<p>The PhD in Food Health and Safety, whose starting point was the year of 1998 with the PhD in Animal Health, has obtained in previous editions (2004-2014) the Mention of Quality of the National Agency for Quality Assessment and the Mention of Excellence (2011-2014). In 2002, the University Institute of Health and Food Safety of the ULPGC was created, in whose laboratories a large part of the doctorate is taught.</p> <p>The program is aimed at graduates in Veterinary Medicine, as well as graduates in the area of Health Sciences and Sciences, among others.</p>
<p><u>PhD in Telecommunication Technologies and Computer Engineering</u></p>	<p>The PhD in Telecommunication Technologies and Computational Engineering is born from the integration of two programs active for years at the ULPGC that have demonstrated levels of quality and excellence. (1) PhD in Telecommunication Technologies, linked to the University Institute of Applied Microelectronics (IUMA)</p>

	<p>and (2) PhD in Intelligent Systems and Numerical Applications in Engineering, attached to the University Institute of Intelligent Systems and Numerical Applications in Engineering (SIANI). The grouping of these two programs increases the capacity to develop larger projects, strengthening interdisciplinarity and increasing links with other R&D agents.</p>
<p><u>PhD in Territory and Society. Historical Evolution of a triple continental Space (Africa, America and Europe).</u></p>	<p>This doctoral program is the result of the synergy of researchers working in the fields of Geography, History, Archaeology, and Natural, Cultural and Linguistic Heritage. Many of the projects they lead or in which they participate are an example of transversal analysis typical of the context of the Humanities and Social Sciences, so that the lines of research proposed have the quality of being able to address problems and provide results from a multidisciplinary perspective in universal fields of application.</p> <p>That is the reason why it is an ideal framework for structuring these perspectives and attracting young talent. Not only from the two universities that coordinate the program, but also from the whole of the extensive geographical area it encompasses.</p>
<p><u>PhD in Sustainable Aquaculture and Marine Ecosystems</u></p>	<p>The PhD in Sustainable Aquaculture and Marine Ecosystems has as precedents several doctorates on aquaculture of the ULPGC that have obtained successive quality awards from the Ministry of Education of the Government of Spain (2004, 2005, 2007-2011). These recognitions have been an important attraction for national and international students. Aquaculture demands professionals who are capable of leading R+D+i projects within companies and it is a booming sector; in the Canary Islands alone it has grown from 2,670 tons (2003) to more than 6,000 (2012). On the other hand, the optimization of living aquatic resources for sustainable production is one of the priorities of European policies, which implies investment in research and innovation projects.</p>
<p><u>PhD in Business, Internet and Communications Technologies</u></p>	<p>The PhD in Enterprise, Internet and Communications Technologies explores the development and management of information, communications and knowledge technologies, as well as their socio-economic implications. The program investigates communications and internet technologies both in scientific-technical issues and in their implication in areas of knowledge such as medicine, business, education and architecture.</p>
<p><u>PhD in Biomedical Research</u></p>	<p>The PhD in Biomedical Research aims to train researchers and improve the employability of professionals in the areas of health sciences and biomedicine. The three main axes of the program include the different objects of study (humans and</p>

	<p>animals), the emphasis on the operative attitude (health promotion or disease avoidance) and the basic (etiology/pathogenesis/pathophysiology) or clinical (diagnosis/treatment) aspects. This program provides the researcher with the scientific and technological bases necessary for the knowledge of the mechanisms, diagnostic methods, prognostic instruments and therapeutic strategies of diseases, as well as the bases for health promotion and disease prevention.</p>
<p><u>PhD in Environmental Quality and Natural Resources</u></p>	<p>The PhD in Environmental Quality and Natural Resources offers a framework for work in the fields of Biodiversity, Earth Sciences and Global Change, Technological and Environmental Sciences, Chemical Sciences and Technologies, Energy and Transportation. It is aimed at training researchers and professionals in the areas of experimental sciences and engineering. It covers an essential training niche for regional development.</p>

4. MAPPING FOR UAC AND ULPGC IN THE FRAMEWORK OF THE EXPER PROJECT

4.1. MAPPING FOR UAC INCLUDING A LIST OF INFRASTRUCTURES

4.1.1. UNIVERSITY OF THE AZORES

The University is organized into organic units of teaching and research, research units with or without the status of organic units, and units of cultural extension. The University also has a set of management services suitable for its functioning, school social action services, and an emergency response center. In order to fulfill its mission, the University also includes a technology-based business incubator. The University is organized in such a way that its structures share human and material resources, particularly for the development of joint initiatives in teaching, research, and cultural extension, including study programs and research projects (Normative Dispatch No. 8/2022).



The UAc has its own set of facilities, including 15 buildings that house approximately 45 classrooms, 4 videoconference rooms, 7 computer rooms, 11 auditoriums and 60 laboratories in various specialized areas.

4.1.1.1. ORGANIC UNITS OF TEACHING AND RESEARCH

The organic units of teaching and research are called faculties or schools, depending on whether they belong to the University or Polytechnic subsystems of higher education, respectively. The faculties and schools are organic units structured according to specific areas of knowledge, which are reflected in the teaching activities carried out around defined scientific areas. The organic units of teaching and research are intended to promote scientific, technical, and cultural development through continuous teaching and research activities. It is also their responsibility to create conditions for the technical and scientific improvement of their teachers and researchers and for the improvement of the cultural level of their students, within the framework of a global development policy that stimulates a scientific and cultural experience conducive to the generation of ideas and intellectual debate.

The University includes the following faculties:






a) FCAA - School of Agricultural and Environmental Sciences

-  Department of Agricultural Sciences
-  Department of Environmental Sciences and Engineering

The School of Agricultural and Environmental Sciences is an organic unit of the University of the Azores (FCAA), located in Angra do Heroísmo (Terceira, Azores), and

aims to provide pre and post-graduate education in its areas of intervention (Agriculture, Livestock, Veterinary Medicine, Pharmacy, Food Technology, and Environment), reinforcing the impact of these activities on productive, environmental, and economic sustainability, as well as their connections with the health and well-being of the population. Its teaching activities are associated with research carried out at the Research Centers and Institutes of the University of the Azores. The FCAA's mission is to promote education, culture, science, and technology primarily in the fields of Agricultural and Environmental Sciences, as well as related areas, by promoting: human, cultural, scientific, and technical training; training at the pre and post-graduate levels; lifelong learning; research and development; provision of services to the community in order to promote harmonious and consistent development of the stakeholders; promotion of scientific, technical, and cultural exchange with national and international counterpart institutions.



The main objectives of FCAA are:





-  Promote scientific, technical, and cultural development in its areas of intervention through continuous training and research activities;
-  Create conditions for the technical and scientific improvement of its teaching/research staff;
-  Create conditions that promote the improvement of the cultural, scientific, and professional level of its students;
-  Stimulate a scientific and cultural experience that encompasses not only the academic community but also civil society;
-  Promote the generation of ideas and intellectual debate.

The FCAA has 12 classrooms, 1 videoconference room, 1 computer lab, and 11 laboratories in the following areas of specialization:

- ✓ Biotechnology Laboratory
- ✓ Physics and Mechanics Laboratory
- ✓ Microbiology Laboratory
- ✓ Animal Nutrition Laboratory
- ✓ Organic Chemistry Laboratory
- ✓ Didactic Chemistry Laboratory
- ✓ Physical Chemistry and Atmosphere Laboratory
- ✓ Anatomy, Histology, and General Pathology Laboratory
- ✓ Phytochemistry Laboratory
- ✓ Regional Veterinary Laboratory
- ✓ Anatomy Laboratory

b) FCT - School of Sciences and Technology

-  Department of Biology
-  Department of Physics, Chemistry, and Engineering Sciences

-  Department of Geosciences
-  Department of Informatics
-  Department of Mathematics and Statistics
-  Department of Oceanography and Fisheries

The School of Sciences and Technology (FCT) is an organic unit of the University of the Azores, endowed with administrative autonomy, dedicated to teaching, research, and cultural extension in the fields of Life Sciences, Earth Sciences, Marine Sciences, Mathematics, Computer Science, Physics, Chemistry, and Engineering. With 75 career professors and researchers, all holding doctoral degrees, FCT is structured into 6 departments: Biology, Geosciences, Mathematics and Statistics, Physics, Chemistry and Engineering Sciences, Informatics, and Oceanography and Fisheries. This multidisciplinary environment generates a stimulating environment for faculty and students, allowing for a transdisciplinary approach to teaching and learning that proves vital for an educational formation suited to the demands and challenges of today's society. FCT's educational offerings include 18 study cycles across all 3 levels of higher education. The quality of FCT's educational offerings is rooted in high research activity, with the majority of its faculty associated with accredited research centers of excellence at the national and regional levels. FCT's scientific activity, developed in a unique geographical context (a natural laboratory for Earth and Life Sciences), has contributed to its growing internationalization, manifested in various partnerships with national and international institutions in the scope of teaching and research projects.

FCT's mission is to provide education supported by excellent research and guided by knowledge, in order to fully educate individuals committed to the development of science, technology, and innovation for the sake of prosperous and sustainable societal growth.






FCT's main objectives are as follows:

-  Provide higher education in the areas of Biological Sciences, Earth Sciences, Marine Sciences, Engineering Sciences, and Computer Science.
-  Pursue quality education anchored in excellent research, aiming to enhance merit and innovation.
-  Contribute to the internationalization of the University of the Azores through international partnerships in teaching and research.
-  Foster an environment of creativity and innovation, encouraging the production and dissemination of scientific and technological knowledge at the national and international levels.
-  Generate knowledge and train high-level professionals who contribute to the definition and evaluation of public policies, as well as the identification of regional and national priorities and needs.
-  Promote the dissemination of teaching and research activities to society.

FCT has 9 classrooms, 3 computer labs, 6 auditoriums and 10 laboratories in the following areas of specialization:

- ✓ Histology Laboratory
- ✓ General Chemistry I Laboratory
- ✓ Biochemistry I Laboratory
- ✓ Common Use I Laboratory
- ✓ Common Use II Laboratory
- ✓ Physics I Laboratory
- ✓ Biotechnology and Biomedicine Laboratory
- ✓ Plant Biology and Physiology Laboratory
- ✓ Ecology and Environment I Laboratory
- ✓ Marine Biology I Laboratory

c) FCSH - School of Social Sciences and Humanities

-  Department of Education;
-  Department of Languages, Literatures, and Cultures;
-  Department of History, Philosophy, and Arts;
-  Department of Psychology;
-  Department of Sociology.

The Faculty of Social Sciences and Humanities (FCSH) is an organic unit of the University of the Azores, with administrative autonomy, dedicated to teaching, research, and cultural extension in the scientific areas of Arts, Political Science, Culture, Demography, Education, Language Studies, Literary Studies, Philosophy and Ethics, History, Psychology, Social Work, and Sociology.

Operating at the Ponta Delgada campus, on the island of São Miguel, FCSH comprises five departments: Education, Languages, Literatures, and Cultures, History, Philosophy and Arts, Psychology, and Sociology.








This Faculty offers a range of undergraduate, postgraduate, master's, and doctoral courses within its scientific areas. Guided by principles of quality and the pursuit of excellence, FCSH is primarily composed of doctoral-level faculty members with extensive experience in teaching and research.

FCSH develops research projects in its various scientific areas, both independently and in partnership with other Portuguese and foreign higher education institutions, forming a national and international network of partners. It also has a significant activity in cultural extension and service provision, which is carried out through regular partnerships and participations.

The mission of FCSH is to produce and disseminate culture and knowledge in its scientific areas, contributing to higher education. Based on respect for freedom of

thought and humanistic values, it encourages creativity and innovation, as well as cooperation with the community.

The main objectives of FCSH are:

-  Provide higher education in the field of Social Sciences and Humanities;
-  Contribute to scientific development by conducting research in its scientific areas;
-  Develop scientific and cultural activities in partnership with other entities at the regional, national, and international levels, in a spirit of active and participatory cooperation;
-  Contribute to the projection of the University of the Azores by establishing partnerships with other higher education institutions, as well as national and international science and research networks;
-  Promote cultural extension activities within its areas of teaching and research;
-  Contribute to the cultural, social, and economic development of the Autonomous Region of the Azores, as well as the country and the world, through teaching, research, and community service;
-  Foster the exercise of active and responsible citizenship.

FCSH has 12 classrooms, 2 computer labs, 3 auditoriums, and 3 laboratories in the following areas of specialization:

- ✓ Psychology Laboratory
- ✓ Didactic Laboratory - Music
- ✓ Didactic Laboratory - Arts/Workshops.

d) FEG - School of Business and Economics

-  Department of Economics and Law
-  Department of Management

The Faculty of Economics and Management (FEG) of the University of the Azores is an organic unit of teaching and research, with scientific, pedagogical, and administrative autonomy, encompassing the Department of Economics and Law and the Department of Management.

FEG provides degree-granting education in the scientific fields of economics, management, and tourism, offering undergraduate programs in Economics, Management, and Tourism, master's programs in Economic Sciences and Business Management (MBA), and a doctoral program in Economic Sciences and Business. FEG also offers non-degree training through short courses and postgraduate programs in the scientific fields of economics, management, tourism, and law. Overall, FEG has approximately 600 students.







Research at FEG is mainly conducted within the scope of the Center for Applied Economics Studies of the Atlantic - Azores (CEEApIA), in the fields of economics, management, tourism, and law.

In addition to teaching and research, FEG regularly engages in service activities in close collaboration with the general community, businesses, and public entities.

Currently, FEG has eighteen tenure-track faculty members and sixteen invited faculty members. The tenure-track faculty includes three full professors and two associate professors, while the remaining are assistant professors. The technical staff of the Faculty consists of two administrative assistants.

The mission of FEG is to develop research and undergraduate and postgraduate education in the fields of economics, management, tourism, and law, contributing to the economic growth and sustainable development of the Autonomous Region of the Azores and the country.



The main objectives of FEG are:

-  Organize and provide first-cycle education in the fields of economics, management, tourism, and law;
-  Organize and promote postgraduate training in economics, management, tourism, and law;
-  Contribute to the improvement of citizens' qualifications in the fields of economics, management, tourism, and law;
-  Promote excellent scientific research and actively participate in international scientific dissemination networks;
-  Establish cooperation with the business sector and other public and private entities through partnerships in training, consulting, and research;
-  Actively participate in defining and evaluating public policies at the regional and national levels.

The FEG has one classroom and one video conference room.

The University also includes the following schools:

a) ESS - School of Health









-  Department of Nursing, Family and Community Health;
-  Department of Nursing, Mental Health, and Gerontology.

The School of Health (ESS) is an organic unit of teaching and research of a polytechnic nature at the University of the Azores, governed by its own statutes and possessing administrative autonomy.

ESS develops and contributes to knowledge in the health field in an innovative and pluralistic manner, integrating diverse knowledge and seeking sustainable responses to the challenges of Higher Education in Portugal and the European Space.

The School of Health is oriented towards the creation, transmission, and dissemination of professional culture and knowledge through the integration of teaching, research, and experimental development, contributing to the improvement of the population's health level.

The main objectives of ESS are:

-  Train healthcare professionals with high competence and excellence in scientific, technical, and human aspects at the national and international levels;
-  Ensure the quality of teaching, research, and community services, adapting the educational offer to the demands and needs of the labor market in the Azores Autonomous Region (RAA) and society in general;
-  Participate in projects supporting and providing services to the community;
-  Promote the implementation of study cycles leading to academic degrees as provided by law, postgraduate training courses, both degree-conferring and non-degree-conferring, and other courses as allowed by law, aiming at scientific, cultural, humanistic, and technological training in the health and related areas;
-  Promote the qualification and updating of teaching and non-teaching staff, as well as non-researchers;
-  Promote national and international mobility of teaching staff, non-teaching staff, and students, as well as exchange programs with similar institutions;
-  Promote continuing education and lifelong learning opportunities;
-  Conduct targeted research and experimental development in specific areas of activity, activities for knowledge dissemination, and participation or cooperation with scientific units.

ESS has 4 classrooms, 1 video conference room, 1 computer room, 1 auditorium, and 2 laboratories in the following areas of specialization:

- ✓ Laboratory for developing skills in nursing care for children and adolescents, self-care activities, and nursing techniques.
- ✓ Laboratory for developing communication skills.

b) ESTA - School of Technologies and Administration

The School of Technology and Administration (ESTA) is an organic unit of teaching and research within the polytechnic subsystem of higher education at the University of the Azores. It was initially established as the School of Technology (EST) by Normative Dispatch No. 4594/2015, from May 6, published in the Portuguese official journal, 2nd

series, No. 87. Through Normative Order No. 8/2022, published in the Portuguese official journal, 2nd series, No. 106, from June 1, it is now designated as the School of Technology and Administration (ESTA), expanding its range of interventions.

Since 2015, it has been in the installation phase, with an installation commission in place.







ESTA began its activities in the year of its establishment by preparing and registering with the General-Directorate for Higher Education (DGES) three Higher Professional Technical Courses (CTeSP) in Web Application Development, Cattle Farming, and Agroindustries, immediately offering the first two mentioned CTeSP programs. In 2016, it expanded its range of courses by registering with the DGES the CTeSP programs in Marine Resources and Activities and Horticulture and Fruit Farming.

In 2023, the CTeSP program in Viticulture and Wine Tourism was created.

It aims to establish itself as a reference school, a catalyst for regional development, positioning itself in key areas through the provision of excellent higher education with high standards of demand, rigor, and quality, as well as through research, innovation, and development in the field of technology and administration.

ESTA's mission is to promote technical-scientific development in the field of technology and administration through teaching, research, experimental development, scientific and technological dissemination, economic and social valorization of knowledge, cultural creation, and extension, aiming for economic development and social well-being of citizens.

The main objectives of ESTA are:

-  Promote the qualification of human resources in the field of technology and administration through teaching and research;
-  Promote the development of its students in technical-scientific, human, and cultural aspects, preparing them to respond to the needs of the labor market with high professional competence;
-  Create conditions for the technical/scientific and pedagogical improvement of the teaching staff;
-  Promote research-oriented and experimental development, as well as its dissemination, by fostering cooperation with other educational institutions, companies, and other regional, national, and international entities;
-  Contribute to the economic and social development and sustainability of the Azores Autonomous Region;
-  Participate in the definition and evaluation of public policies and in the identification of national and regional priorities and needs.

ESTA has its own infrastructure and 3 classrooms.

4.1.1.2. INTEGRATED RESEARCH UNITS

The organic units of teaching and research include the necessary services for their operation, as defined in their respective regulations and in coordination with the university services. The research units are called groups, centers, laboratories, or institutes and are constituted as research and development units (R&D) or specialized research and development nuclei (SR&D).

Research units are developed around a specific scientific area and/or a specific research focus and can have a multidisciplinary nature. The research units are intended for the development of scientific and technological research, the provision of research services, as well as supporting teaching and promoting specialization courses and advanced training.

The organic research units are research and development units (R&D) based at the university, accredited in the National Scientific and Technological System and positively evaluated, and comprise a minimum of 9 full-time faculty or researchers with an employment contract with the university, including those who temporarily do not hold positions at the university, namely due to being on secondment.

The university includes the following organic research units:

a) IITAA - Institute of Agricultural Technologies and Environment

IITAA is very much engaged and has the know how to pursue studies on agriculture and animal production, making it more efficient, competitive and sustainable; searching for new bioactive compounds and microorganisms in traditional Azorean foods for improving food quality and innovative value-added products; and research on insular climate characterization/prediction and effects of global change on communities from the open ocean to the highest altitudes on the islands.

The vision of IITAA is to promote an efficient and sustainable utilization of resources and food production, more specifically by investigating options that enable mitigation of global change (e.g. reduction of greenhouse gases production by determining animal's greenhouse gases production under different sources of nutrition or primary producers feed-back to climate under the predicted future conditions), increase animal production efficiency (e.g. improving freezing conditions of embryos used in artificial fertilization), promote the value of food and search molecules of biotechnological interest.

IITAA investigate natural resources, such as traditional cheeses, as they remain the best sources of useful microbial strains for the food industry. Increasing information on the natural microbial population present in traditional dairy foods can help prevent the loss of microbial biodiversity in those typical foods. These studies could either be the basis for the selection of new strains to improve the consistency, quality and safety of




traditional foods, or for isolation of new strains and bioactive molecules to incorporate into functional foods. These lines of research have regional and global interest by producing novel dairy products with enhanced nutritional and dietetic properties, contributing to improve the health status and to increase the life expectancy of the population.

In addition, IITAA is in a privilege position to access extreme and volcanic-specific environments (e.g. caves, lava tubes and fumaroles), with exploratory studies revealing their great potential in terms of isolation of bioactive secondary metabolites. Managing natural resources for future generations is a very demanding and important task for our society. The complexity inherent to this task can only be resolved by investing in science and innovation. IITAA is an important player on this path, by being positioned in an island and therefore, in a natural laboratory, and by having an interconnected and complementary team.

Societies will also have to adjust to a rapid changing world. Occurring and expected changes in carbon dioxide concentrations, temperature and extreme events influence biota distribution, biodiversity and potential feedbacks to climate as well as animal and agricultural production. With this respect, it is important to unravel the consequences of global change to primary producers, both terrestrial and marine. IITAA has been developing a small-scale model that has been and can be used to determine the effects of global change on insular populations as well as on agronomy practices and in the management of the Natural Parks. Moreover, global change predictions on small scales have been and will continue to be crucial in defining strategies to adjust to global change. In summary, well in accordance with societal challenges, IITAA is focused on sustainability of natural and food resources, food innovation and climate and global change, as well as its effects, with particular interest on insular/oceanic particularities.

The IITAA's mission is to research, experiment, and disseminate knowledge in the scientific areas within its domain. The IITAA is highly involved and possesses the necessary know-how to lead studies in the fields of agriculture, animal production, environment, and sustainability. This includes physical-mathematical modeling, island hydrogeology, climate change and its impacts, as well as research on compounds with pharmacological, medicinal, and food interest.

The main objectives of the IITAA are:

-  Characterization/prediction of climate and the effects of global climate change on open ocean communities and island territories.
-  Modernization of agriculture and animal production, making them more efficient, competitive, sustainable, and environmentally and animal welfare-friendly.
-  Improvement of food quality, promotion of innovation, adding value to food products by assessing and investigating, for example, the potential of microorganisms, algae, and plants as sources of antimicrobial, anticancer, antihypertensive, and anti-inflammatory compounds.

- 🌍 Understanding microbial ecology and the potential of Azorean extreme environments to promote their sustainable exploitation and application in the food and pharmaceutical industries.
- 🌍 Assessment of water resources availability and quality in islands, as well as the measurement of the extent of impacts of global climate change on the hydrological cycle of the Azores.

The IITAA has 16 laboratories in the following areas of expertise:

- ✓ 3x Nutrition Laboratory (equipped with fermenter)
- ✓ Soil Preparation Laboratory (equipped with Moisture Constants machineries)
- ✓ Crop Science and Environmental Quality Laboratory (equipped with Microscope with Photography and Greenhouse)
- ✓ 3x Soil Laboratory (equipped with Atomic Absorption)
- ✓ 2x Nutrition Laboratory (equipped with Kjeltex for automated protein analysis)
- ✓ Animal Reproduction Laboratory (equipped with Flow Cytometry)
- ✓ Microbiology Laboratory (equipped with Laminar Flow Cabinet)
- ✓ Molecular Biology Laboratory (equipped with RT-qPCR and HPLC)
- ✓ Biochemistry Laboratory (equipped with Flash and ELISA)
- ✓ Ocean Laboratory (equipped with Climatic Chamber)
- ✓ Ocean Chemistry Laboratory (equipped with titration system)

b) IVAR - Institute of Volcanology and Risk Assessment

The geodynamic framework of the Azores, dominated by the interaction of the American, Eurasian, and African lithospheric plates, and the Atlantic location of the archipelago, often responsible for adverse weather conditions, make this Portuguese region an extraordinary Natural Laboratory for the development and promotion of Earth and Space Sciences. In this context, the Institute of Volcanology and Risk Assessment (IVAR) of the University of the Azores is established as an integrated research unit of the University of the Azores, created with the publication of the new Statutes of the University of the Azores through Normative Dispatch no. 8/2016, dated from August 11, 2016.

The Institute of Volcanology and Risk Assessment (IVAR) replaced the former Center for Volcanology and Geological Risk Assessment (CVARG), which had been statutorily established in 1997 as an autonomous non-personified nucleus of the Department of Geosciences of the University of the Azores.

The IVAR is part of both the National Scientific and Technological System, recognized by the Foundation for Science and Technology (FCT), and the Regional Scientific and Technological System, created by the Government of the Azores in 2005.









In terms of research, the IVAR is part of various national and international networks and consortia and maintains close institutional relationships with other centers involved in the

study of Volcanology and Natural Risks, particularly from Germany, Spain, France, Greece, Iceland, Italy, the United Kingdom, the United States of America, among others.

In the field of seismic-volcanic monitoring and surveillance, the IVAR is a member of the World Organization of Volcano Observatories (WOVO) and, in this context, serves as the operational unit of the Azores Seismic-Volcanic Information and Monitoring Center (CIVISA), a non-profit private association created in 2008 by the University of the Azores and the Azores Regional Government dedicated to scientific and technological activities.

The IVAR aims to develop and promote Science, Technology, and Innovation in the field of Earth and Space Sciences, with a particular focus on a multidisciplinary approach centered on volcanoes as objects of study in all their dimensions and, in particular on the assessment of directly or indirectly associated risks.

The main objectives of the IVAR are as follows:

-  Ensure scientific research and experimental development within an international framework.
-  Promote and ensure the qualification of human resources through high-level academic and professional training.
-  Contribute to the dissemination of scientific culture as a means to promote social well-being and citizen empowerment.
-  Promote the conservation and protection of geological heritage and volcanic landscapes.
-  Design, develop, apply, and manage systems for monitoring natural phenomena to support decision-making in the field of Civil Protection.
-  Study and monitor the development of natural phenomena and assess their impact in various aspects.
-  Foster technical and scientific cooperation, technology transfer, and innovation with other public or private entities.
-  Provide services and technical and scientific advice to other public or private entities.
-  Promote the discussion and dissemination of research results.

The IVAR has 1 classroom, 1 videoconference room, and 6 laboratories in the following areas of expertise:

- ✓ Physical Volcanology Laboratory (equipped with Petrographic Microscopes, Benchtop Electron Microscope, Lyncam system, Camsizer, sieve column for granulometry, rock powder preparation system, thin section sample preparation system).
- ✓ Gas Geochemistry Laboratory (equipped with an automatic titration system, ion chromatograph, gas chromatograph, water purification system).
- ✓ Hydrogeology Laboratory (equipped with atomic absorption spectrophotometer).








- ✓ Geodesy Laboratory (equipped with a network of fixed GNSS stations, campaign GNSS stations).
- ✓ Infrasound Laboratory (equipped with an infrasound monitoring station).
- ✓ Soil Mechanics Laboratory (equipped with a front-loaded oedometer, direct shear machine, sand table, vacuum chamber, Richards' permeameters, universal automatic Proctor compactor).

c) OKEANOS - Institute of Marine Sciences.

From a legal standpoint, with the publication of the new Statutes of the University of the Azores, approved and attached to Normative Dispatch No. 8/2022, of April 22, published in the Portuguese official journal, 2nd series, No. 106, from June 1, the Institute of Research in Marine Sciences - OKEANOS (IICMar - OKEANOS) has acquired the status of an organizational unit with scientific and administrative autonomy. Following the aforementioned statutory changes, the new Statute of IICMar - OKEANOS has been developed and already published.

OKEANOS, as a Research and Development Unit (UI&D) with administrative and scientific autonomy, has the mission of producing, facilitating, and promoting scientific and technological research, contributing to advanced training of human resources, knowledge innovation, and dissemination, as well as policy development in the fields of marine sciences and technologies, emphasizing a multidisciplinary approach.

OKEANOS has the following main objectives:

-  Ensure and promote scientific research in the marine domain within a national and international framework;
-  Promote and ensure the qualification of human resources through excellent academic and professional training;
-  Contribute to the dissemination of scientific culture as a means to promote marine environmental awareness and consequently enhance citizen empowerment and citizenship;
-  Promote the conservation and protection of the marine environmental heritage;
-  Contribute to the integrated management of marine natural resources, aiming to maintain ecosystem balance and ensure the appropriate use of its resources for the benefit of present and future generations;
-  Design, develop, apply, and manage observation and data acquisition systems for the understanding, monitoring, and utilization of the sea;
-  Foster technical and scientific cooperation in the marine domain, technology transfer, and innovation with public or private entities, both national and international;

- 🌐 Support the definition of public policies in the areas of protection, exploitation, and use of living and non-living marine resources, as well as planning and management of human activities and uses in the marine environment;
- 🌐 Provide technical and scientific advisory services in the marine domain to public entities, private organizations, non-governmental associations, and other non-profit associative entities;
- 🌐 Represent the University of the Azores in external scientific research units of a similar nature or related to its mission and objectives;
- 🌐 Promote the discussion and dissemination of scientific research results.

OKEANOS has 1 classroom, 1 auditorium and 12 laboratories in the following areas of specialization:

- ✓ Microbiology and Molecular Diagnostics Laboratory (equipped with a Laminar Flow Cabinet (biosafety level II), PCR Station, Real-time Thermocyclers, refrigerated centrifuge, automatic DNA, RNA, and protein extractors).
- ✓ Analytical Instruments Laboratory (equipped with a Rotary Evaporator, refrigerated and non-refrigerated centrifuges, muffle furnace, plate spectrofluorometer, protein purifier, Kjeldahl Digestor, benchtop homogenizer, vacuum pump, demineralizer, ice machine, PURELAB water purification system, shaker incubator).
- ✓ Genetics and Molecular Biology Laboratory (equipped with Thermocyclers (PCR station), RNA/DNA electrophoresis, Spectrophotometers, refrigerated centrifuges, automatic DNA, RNA, and protein extractors, Qubit 4 fluorometer, FastPrep-24™ 5G Homogenizer, Orbital Rotary Incubator, electrophoresis tanks).
- ✓ Ecotoxicology and Analytical Chemistry Laboratory (equipped with Mercury Analyzer for Solids, plate UV/VIS spectrophotometer, gas chromatograph, precision balances, orbital shaker with speed and temperature control, pH meter for liquids and solids, HPLC, -86°C Ultra-Low Freezer).
- ✓ Decontamination rooms, drying ovens, baths (Drying ovens, lyophilizer, demineralizer, distiller, evaporator (speedvac)).
- ✓ Wet Biological Sampling Laboratory (equipped with stainless steel sampling bench with drainage and washing tank, 3 drying ovens, 2 binocular magnifiers, 1 optical microscope, 1 freezer, fume hood).
- ✓ Histology and Sclerochronology Laboratory (equipped with 2 drying ovens, microtome, hot baths systems, automatic tissue processor (histology), fume hood, 2 vacuum ovens, hard material cutting saw, hard material grinder (sclerochronology/otoliths)).
- ✓ Oceanographic Instrumentation Laboratory (equipped with various electronic maintenance and repair equipment).
- ✓ Optical Microscopy Office I (equipped with 2 inverted optical microscopes with imaging system (video and photography) and 1 binocular magnifier).






- ✓ Optical Microscopy Office II (equipped with 1 binocular magnifier and 2 optical microscopes).
- ✓ Deep-Sea Lab (equipped with a cold chamber (temperature: minimum 12°C), independent aquarium systems with refrigeration (5): 1 system with 2 aquariums, 200 liters each; 2 systems with 8 experimental aquariums, 35 liters, and a 170-liter sump; 2 systems with 2 experimental aquariums, 25 liters, and a 170-liter sump; temperature controllers; temperature and pH control: profilux system and CO2 manipulation; portable meters for dissolved oxygen, pH, and salinity; high-precision modular fiber optic oxygen meter (respiration rate); precision balance for underwater weighing. Supply: open continuous flow system (oceanic, oligotrophic water pumped at a depth of 5 meters, salinity approx. 36ppm); water filter and UV sterilizer; 410-liter storage tank (with cooling and thermostat); 100-liter tanks with dosing pumps for suspension/distribution of sediments or particles at different concentrations; IPOCAMP hyperbaric chamber (4000 meters depth)).
- ✓ AquaLab (equipped with a climate-controlled breeding room: 2 independent systems with 4 tanks of 130 liters in an open circuit. 350-liter reservoir with a refrigerator, UV sterilizer, and water filter. Climate-controlled settlement room: 2 independent systems with 9 tanks of 50 liters in an open circuit. 350-liter reservoir with a refrigerator, UV sterilizer, and water filter. Climate-controlled pre-fattening room: 2 independent systems with 4 tanks of 130 liters in an open circuit. 350-liter reservoir with a refrigerator, UV sterilizer, and water filter. Climate-controlled microalgae cultivation room: Shelves with air circulation. Beckers up to 5 liters; cultivation bags up to 75 liters. Climate-controlled macroalgae cultivation room: 3 systems with 4 tanks of 130 liters in an open circuit, with modular lighting. 350-liter reservoir with a refrigerator, UV sterilizer, and water filter. Climate-controlled optical microscopy laboratory: 2 Zeiss binocular magnifiers (1 with articulated support); 2 microscopes with digital cameras (high-definition photography and video). Outdoor space for macroalgae (uncovered): 9 circular tanks of 60 liters and 6 tanks of 500 liters in an open circuit. Possibility of connection to internal systems. Outdoor space for macroalgae (covered): 9 circular tanks of 60 liters and 6 tanks of 500 liters in an open circuit. Possibility of connection to internal systems).

4.1.1.3. UNITS OF CULTURAL EXTENSION

The University incorporates units of cultural extension, whose mission is to promote and support activities of its organic structures, the university community, and society at large.

The units of cultural extension enjoy cultural, artistic, scientific, and pedagogical autonomy, while respecting the guidelines of the university's governing bodies. The units of cultural extension are governed by their own regulations approved by the rector, which establish their responsibilities, organization, and model of institutional articulation.

The University includes the following units of cultural extension:

-  Library, Archive, and Museum;
-  Senior Academy;
-  Junior Academy;
-  Arts Academy;
-  Center for Complementary Education

4.1.2. SCIENTIFIC RESEARCH SUPPORT INFRASTRUCTURES

Technological Infrastructures are essential pillars of the National Innovation System (NIS), and their growing importance for innovation dynamics lies primarily in their role in knowledge and technology valorization, circulation, and transfer, as well as their ability to generate economic and social value and impact. Whether from the perspective of public agents, aiming to improve the quality of national and regional innovation policies, or from that of private agents, who rely on technical and scientific support services to meet their needs, it becomes increasingly necessary to deepen our understanding of their reality.

The concept of Technological Infrastructure encompasses two distinct aspects: Technological Centers and Interfaces, which include Technological Centers, Technology Valorization and Transfer Centers and Other R&D Valorization Infrastructures; and the Infrastructure for Hosting and Valorization of R&D Activities, which encompasses Science and Technology Parks and Technology-Based Incubators (ANI, 2020).

4.1.2.1. INFRASTRUCTURES FOR HOSTING AND VALORIZATION OF R&D ACTIVITIES

Infrastructures for Hosting and Valorization of R&D Activities are typically associated with management and business incubation infrastructures, as well as technological capacity building and economic and social valorization of R&D results.

These infrastructures can take the form of Science and Technology Parks and Technology-Based Incubators.

4.1.2.1.1. SCIENCE AND TECHNOLOGY PARKS IN THE AZORES

Science and Technology Parks promote collaboration between the public, business, and university sectors. They act as catalysts for innovation and creativity, fostering cooperation, partnerships, and synergies essential to technology transfer processes, business incubation, spin-offs, the development of an innovation and entrepreneurship ecosystem, and the promotion of a globally competitive posture.

These parks have the following objectives:

-  Foster an entrepreneurial spirit for innovation;
-  Promote R&D in collaboration with regional research institutions, local and external companies;
-  Create conditions for effective technology transfer;
-  Contribute to the development and strengthening of the region's competitiveness;
-  Foster a culture of R&D in partnership with the University, research centers, and companies.

The Azores Autonomous Region has two technology parks - one located on the island of São Miguel (Nonagon) and another on the island of Terceira (Terinov).

Nonagon - São Miguel Science and Technology Park

Nonagon is the first Science and Technology Park in the Azores Autonomous Region. It is located in the city of Lagoa, on the island of São Miguel. Currently, it has a fully operational building that houses more than 200 employees from 38 companies (SMEs and startups), mainly in the digital and tourism sectors. This important innovation hub in São Miguel Island will have its capacity reinforced upon the completion of the new building, called Lot 32. In addition to increasing the available incubation spaces, this new building will bring previously nonexistent capabilities to the Azores Autonomous Region. These include a high-performance computer, a state-of-the-art fab lab, and a data visualization room.

Nonagon aims to be a central hub in providing specialized services and technical support, aimed at promoting knowledge transfer to businesses and incubating technology-based companies. It fosters the emergence of start-ups and spin-offs, which in turn has a positive impact on the creation of qualified employment and the development of new high-value products and services.

Terinov - Terceira Science and Technology Park

Terinov is located in Angra do Heroísmo, on the island of Terceira. It is specifically dedicated to acting as an interface entity in the fields of agroindustry and cultural and creative industries. Its goal is to be a decisive agent of business innovation in the Azores, through the valorization of human resources, technology and knowledge transfer, and training. As enabling and available technology & machinery we can highlight that TERINOV provides two wards of research and development laboratories for the agro-food industry and biotechnology, and a laboratory for innovation in dairy products. A support service that invest in agriculture innovation in the area, joining private sector with research, supporting simultaneously one of the Smart Specialization Strategies (RIS3) areas signalized in the region by the Azores Government.

TERINOV's business incubation and development programs are designed to accelerate the successful development of entrepreneurial projects and companies through an array

of business support resources and services, such as Co-Work, Incubation Programs and Business Development Programs.







InUAC – Technology-Based Incubator of the University of the Azores

In 2020, University of the Azores launched its technological incubator, InUAc, filling one of its mission: creation of value. In addition to teaching and research, it is intended, in the university context, to transform the potential for academic innovation into economic and social value. The InUAc mission intends to promote and implement activities that stimulate the academic community for the technology transfer processes, for entrepreneurship and for the creation of companies, in close connection with the regional business ecosystem and the general society. InUAc set of services are available aiming at the knowledge valorisation and innovation produced at the University of the Azores, through activities which support innovation and technology-based entrepreneurship, specifically in the areas of: intellectual property, creation of Startups and Spinoffs, organization of ideation or acceleration programs and, training aimed at entrepreneurship and innovation. The objective is to promote dynamics that create value based of knowledge produced at the University, transforming the research outputs in social and economic value.

Currently InUAc have 7 incubated projects with approximately 1 year of support and mentoring related activities. Additionally, InUAc can support the continuous promotion of entrepreneurship and creating economic and social value based on the knowledge produced at the University.

4.1.2.2. TECHNOLOGY VALORIZATION AND TRANSFER CENTERS







These are multifunctional or thematic infrastructures that promote the connection between "Science-Market" and aim to support companies, acting in particular to:

-  Boost Research & Development (R&D) and Innovation activities;
-  Facilitate the flow of knowledge and technology between entities producing advanced knowledge and companies;
-  Drive the integration of scientific and technological knowledge, their valorization, and transfer to the market;
-  Stimulate the demand, dissemination, and demonstration of new technologies and innovative solutions;
-  Foster the training of highly qualified human resources, including master's and doctoral degrees;
-  Provide specialized services.

INOVA - Institute of Technological Innovation of the Azores

INOVA is a Research and Technology Organization association, with public participation, in the area of agriculture. INOVA targets public the private sector and it's support services are focused in technological development, technology transfer, the provision of specialized services and quality support to the regional industry and promoting applied research. It's a technological infrastructure of reference in the regional context, with increased strategic importance and necessary to the development of the Azorean business fabric and economy. Once again the support services area focused on Smart Specialization areas defined by the region.

INOVA has the following facilities:

-  The Administration building, with a total area of 1.120 m², houses administrative support services (management, secretarial, accounting, and filing), work offices, and social areas (including a bar and cafeteria).
-  Integrated in the same building, with a useful area of approximately 470 m², is the IPI - INOVA Industrial Pilot Installation, a technology-based infrastructure specially focused on technological demonstration and technology transfer in the dairy, meat, and fish sectors.
-  The Analysis Laboratory, with a total area of 700 m², corresponds to the first building on the INOVA campus and houses its laboratory facilities and support services, including a product warehouse and sample reception services.
-  The Metrology Laboratory operates in a building specifically constructed for this purpose, with an area of 850 m² and equipped with facilities suitable for metrological control.
-  The building housing ENTA - School of New Technologies of the Azores, with a total area of approximately 2.000 m², is part of the INOVA's real estate assets and includes classrooms, laboratories, and other facilities that ensure the training provided in this important educational infrastructure of the Azores Autonomous Region.
-  The Ribeira Grande Experimental Field, located in that city Industrial Park, covers an area of approximately 4.500 m² and includes a complex of greenhouses equipped with a geothermal effluent heating system. This campus is specifically dedicated to technological development and the promotion of new technologies in the agro-industrial sector of the region, including traditional crops.

INOVA has relevant equipment and technical resources in the regional laboratory context, both in the area of physical-chemical and microbiological analysis and control (such as ion chromatograph, atomic absorption spectrophotometers - flame, graphite furnace, and cold vapor, molecular absorption spectrophotometers - infrared and visible,




and high-pressure liquid chromatography equipment - HPLC), as well as in the field of metrological verification and calibration (including standard weights, mass comparators, probes, thermocouples, and baths). In addition, there are equipment and other resources that are part of the Industrial Pilot Plant (properly equipped for the development of R&D projects and actions in cheese and dairy products production, as well as meat and fish processing) and the greenhouse and hydroponic systems with drip irrigation installed at the Experimental Field in Ribeira Grande.

4.1.2.3. OTHER RESEARCH AND DEVELOPMENT VALORIZATION INFRASTRUCTURES

These are other infrastructures that, whether or not they engage in their own R&D activities, carry out activities related to technological capacity building and economic and social valorization of R&D results, but do not fit into the two typologies described above.

Included in this typology are infrastructures integrated within higher education institutions that do not have legal or fiscal autonomy but operate in a similar manner to the Centers for Valorization and Technology Transfer, technology and knowledge transfer units, whether they have an autonomous structure or are integrated within another institution, and finally, entities that do not fit into any of the other categories, such as an infrastructure dedicated to promoting R&D and education activities.

Given the characteristics of the infrastructures included in this typology, they can be divided into three subcategories:

-  Infrastructures Integrated within Higher Education Institutions (HEIs);
-  Technology and Knowledge Transfer Units;
-  R&D and Education Infrastructures.

LREC - Regional Laboratory of Civil Engineering

The LREC is a Public entity, the Regional Laboratory of Civil Engineering is a public institution that provides services in various areas of Civil engineering. Among the services provided are the studies, opinions and essays. LREC has a laboratory of materials, chemistry and is also equipped with all the technology that allows to gauge, measure and correct all parts that are part of any engineering work and contributes to guarantees that the materials that constitute it have the necessary quality contributing to the longevity of any construction. LREC has a annual trainings plan, that includes trainings in several innovative areas, such as passive houses, energy efficiency in general, as well as renewable energy applied to engineering, on financed projects and meteorological instrumentation. LREC also implements partnerships, supports publications and thesis in the context of innovation and technologies in Engineering.

LREC includes 6 Laboratory Units, divided into two Service Directorates, as follows:

- 🌐 Structures and Construction Materials Service
 - Structures and Seismic Laboratory Unit (ULES)
 - Construction Materials Laboratory Unit (ULMC)
 - Metrology Laboratory Unit (ULM)
- 🌐 Geotechnics, Sustainability, and Prospecting Service
 - Geotechnics Laboratory Unit (ULG)
 - Bituminous Materials Laboratory Unit (ULMB)
 - Prospecting Laboratory Unit (ULP)

LRV - Regional Veterinary Laboratory

The Regional Veterinary Laboratory (LRV) is a division of the Veterinary Services Directorate (DSV) of the Regional Directorate of Agriculture, under the Regional Secretariat for Agriculture (DRAg), as defined in the Regional Regulatory Decree No. 11/2013/A, from August 2nd. It holds the status of a Regional Laboratory. The DRAg is part of the Regional Secretariat for Agriculture and Forestry.

The mission of the Regional Veterinary Laboratory is to contribute to food safety and animal health in the Azores Autonomous Region. It performs analyses in the areas of anatomopathology, histopathology, parasitology, bacteriology, mycology, virology, immunology, chemistry/toxicology, molecular biology, and genetics in the field of animal health. It also conducts activities in the fields of chemistry, physical chemistry, toxicology, and hygiene of food products (bacteriology and mycology), researching chemical contaminants, microbiological agents, and toxic compounds that may pose a risk to the health of consumers and animals, within the scope of veterinary public hygiene.

The Regional Veterinary Laboratory carries out its activities based on three main guiding principles:

- 🌐 Compliance with legislation regarding mandatory disease eradication plans;
- 🌐 Compliance with legislation regarding mandatory surveillance plans and maintenance of the health status of animals and livestock in the region, as well as compliance with legislation related to human public health;
- 🌐 Diagnostic services.











LRE - Regional Enology Laboratory

The Regional Enology Laboratory is a reference laboratory for the viticulture sector in the Azores Autonomous Region. Operating since 1993, it is now housed in modern facilities inaugurated in 2011. Its objective is to contribute to the development and quality assurance of wines produced in the Azores. It carries out various analyses and tests related to enology, including chemical analysis of musts and wines, microbiological analysis, sensory analysis, and physical-chemical analysis. The laboratory also provides technical assistance and consultancy services to winemakers, promoting the

improvement of production techniques and the overall quality of Azorean wines, from vineyard establishment to the marketing of wines. It plays a vital role in supporting the wine industry in the Azores by ensuring compliance with quality standards, providing technical expertise, and promoting the reputation of Azorean wines both locally and internationally.



The Regional Enology Laboratory is part of the structure of the Directorate of Agriculture Services, under the Regional Directorate of Agriculture, within the Regional Secretariat for Agriculture and Forestry. It operates as a regional laboratory in accordance with Regional Regulatory Decree No. 26/2009/A. Located in Madalena, Pico island, it was recognized by IPAC on July 19, 2016, as an accredited entity according to the NP EN ISO/IEC 17025 standard.














The mission of the LRE is as follows:

-  Perform the necessary laboratory work to carry out activities in the field of enology, including the physical-chemical and sensory analysis of products from the viticulture sector;
-  Conduct studies in the area of enological chemistry applied to the analysis of grapes and wines;
-  Collaborate with production units and certification bodies for viticultural products;
-  Collaborate with supervisory entities by analyzing viticultural products intended for consumption;
-  Provide technical support in the field of viticulture and enology;
-  Coordinate and guide, in technical terms, the collection of samples of viticultural products from the various islands;
-  Establish networks of technical-scientific collaboration in its areas of activity and liaise with similar organizations at the national and international levels;
-  Support research and development activities in the viticulture sector;
-  Contribute to the dissemination of the viticulture sector;
-  Carry out any other tasks assigned to it by higher authorities;

RAEGE-Az - Atlantic Network of Geodynamic and Spatial Stations

The RAEGE-Azores Association is a private non-profit scientific, technological, and training association established on 20/07/2017, between the Regional Government of the Azores and SATA Air Azores, to manage the scientific and technical activities associated with the fundamental geodetic stations of Santa Maria and Flores. It has the following objectives:

-  Manage, administer, and coordinate all scientific and technical activities to be developed at the fundamental geodetic stations of the ATLANTIC NETWORK OF GEODYNAMIC AND SPATIAL STATIONS installed in the Autonomous Region of the Azores and their respective base centers.
-  Conduct scientific research leading to the acquisition of new knowledge, products, processes, and services in the fields of its intervention.

-  Promote and support research and development (R&D) activities in its areas of operation.
-  Strengthen collaboration and connections among its members and between them and the scientific community, business sector, and socio-economic sector.
-  Stimulate cooperation with other entities, establishing national or international partnerships around common objectives aimed at the development of scientific and technological hubs in its field of operation.
-  Coordinate, promote, and participate in scientific and technological studies, projects, and programs.
-  Support innovation, creation, and development of companies that produce goods and provide services in its areas of intervention.
-  Promote and coordinate training courses and programs aimed at the improvement and specialization of national and foreign scientific and technical personnel.
-  Support local institutions in the pursuit and promotion of science and technology policies.
-  Provide services to individuals and legal entities, public or private, in its areas of intervention.
-  Promote the registration of patents and their exploitation.
-  Participate in national and international competitions within the scope of its activities.
-  Identify and select sources of funding for the scientific and technical activities of its members.
-  Exchange and disseminate technical and scientific information.
-  Management, administration, and coordination of infrastructure that can contribute to the promotion of research and development activities in the field of space technologies or others integrated within its areas of intervention.

The first RAEGE Station in the Azores is located in Piquinhos, on the island of Santa Maria. It is equipped with a radio telescope and is the result of a memorandum of understanding between the Government of Spain and the Government of the Azores for the construction, installation, and operation of four Fundamental Geodetic Stations. Two of these stations are located in Spain (Yebes and Gran Canaria) and two in the Azores (Santa Maria and Flores). They are intended for conducting studies in the fields of astronomy, geodesy, geophysics, and their corresponding applications for public service.

The Santa Maria RAEGE Station also has other equipment, such as a seismograph, a gravimeter, an accelerometer, a hydrogen maser, two permanent GNSS stations, and a weather station. Since 2021, RAEGE has also been an Associated Science Communication Center of RECCA - Azores Science Centers Network.

4.2. MAPPING FOR ULPGC INCLUDING A LIST OF INFRASTRUCTURES

This section is divided into two main parts. The first one includes the infrastructures of the ULPGC ecosystem in terms of innovation and entrepreneurship; a second part presents and describes the centres that constitute and promote the R+D+I capacities of the ULPGC.

4.2.1. SPACES FOR INNOVATION AND ENTREPRENEURSHIP

Organization	Technology Park of Gran Canaria – University campus of Tafira
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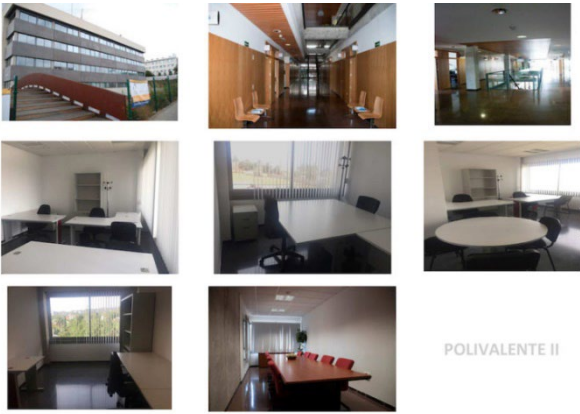
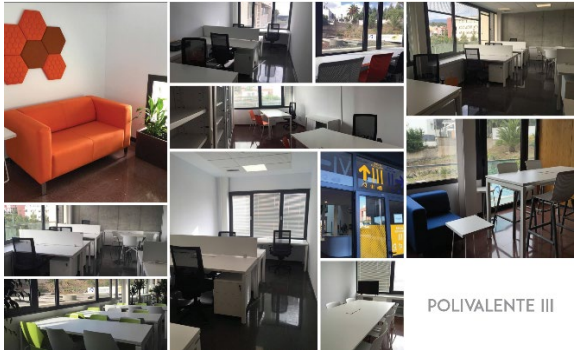







Description

Located in Practicante Ignacio Rodríguez, s/n, on the Tafira University campus in Las Palmas de Gran Canaria, and managed by the ULPGC Science and Technology Park (FCPCT), it offers space and services to entrepreneurs and companies in different stages of growth and maturity, with priority given to those that are developing technological or innovative projects that are intensive in terms of the creation of skilled jobs and that can benefit from the synergies with the research centres of the University of Las Palmas de Gran Canaria, creating a dynamic of collaboration.



The enclave is made up of 3 buildings that house the incubation and accommodation areas for the companies, as well as various basic services of a general nature, such as reception and access control, cleaning services for the common areas, security and maintenance services, surveillance, car park or work and meeting rooms, rest areas, etc.

Buildings

<p>1. Polivalente II building: Offices are available in both furnished and unfurnished configurations, ranging in size from 14 m² to 50 m².</p>	 <p>POLIVALENTE II</p>
<p>2. Polivalente III building: Offices are available in both furnished and unfurnished configurations, ranging in size from 19 m² to 60 m².</p>	 <p>POLIVALENTE III</p>
<p>3. Polivalente IV building: Offices are available in both furnished and unfurnished configurations, ranging in size from 13 m² to 50 m².</p>	 <p>POLIVALENTE IV</p>
<p>Developed activity information</p>	
<p>Hosted companies</p>	<p>73</p>
<p>Provided services</p>	<ul style="list-style-type: none">  Management and promotion of European R&D&I projects.  Management of collaboration agreements between ULPGC research groups and companies or public bodies.  Management of intellectual and industrial property for researchers.  Search for funding for R&D&I projects.  Organisation of congresses, conferences and seminars.  Scientific and technological services in support of research.
<p>Contact details</p>	

FCPCT: Phone: +34 928 459 920 / 928 459 943
E-mail: upe@fpct.ulpgc.es
Web: <https://www.fpct.ulpgc.es>

Organization	Technology Park of Gran Canaria – Exhibition centre of the Canary Islands
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Description

Located in the Canary Islands Trade Fair Centre (INFECAR), Avenida de La Feria, 1, in Las Palmas de Gran Canaria, and managed by the Sociedad de Promoción Económica de Gran Canaria, S.A.U. (SPEGC), it offers spaces and services aimed primarily at companies with creative and/or audiovisual projects, at different stages of growth and maturity, which use digital tools to develop their activities.

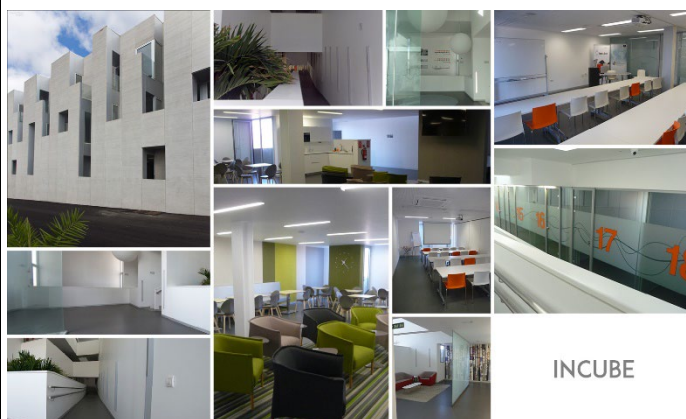


The enclave is made up of 4 buildings that house the incubation and accommodation areas for the companies and provide various basic services of a general nature, such as 24-hour reception and access control, cleaning services for the common areas, security and maintenance services, parking, work and meeting rooms, among others.

Buldings

1. Incube building:

It offers offices with a minimum floor space of approximately 14/18 m², both furnished and unfurnished, preferably for companies with ICTs projects applied to tourism and leisure.



INCUBE

2. Pasarela building:

It offers offices with a minimum floor space of approximately 25 m², both furnished and unfurnished, preferably for companies with digital content ICT projects.



PASARELA

3. Hall B: Coworking

It offers approximately 885 m² of open plan workspace with individual workstations, meeting rooms, breakout areas and a presentation area.









4. Demonstration centre ICT-Tourism: Coworking

It offers 770 m² of floor space in a single showroom, a training room, a shared workroom, a meeting room and an office.



Developed activity information

Hosted companies	Not applicable
Provided services	<ul style="list-style-type: none">  Funding advice.  Advice on R&D&I funding.  Legal and tax advice.  Soft landing services  Assistance with the development and localisation of audiovisual productions.  Assistance in identifying local talent.

Datos de contacto

SPEGC: Phone: +34 928 42 46 00

E-mail: espaciosptgc@spegc.org

Web: Technology Park of Gran Canaria - SPEGC




Organization	Technology Park of Gran Canaria – Taliarte Scientific and Technological Marine Enclave
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Description

Located in the Port of Taliarte, in Telde, and managed by the Fundación Canaria Parque Científico Tecnológico de la Universidad de Las Palmas de Gran Canaria (FCPCT), it is dedicated to research activities in aquaculture and oceanography, and is a unique structure of excellence in research, recognised by the European Network of Research Infrastructures of Excellence in Aquaculture and the MERIL Network of European Research Infrastructures of Excellence.



Buldings

<p>1. Main building: It has offices for the research and administrative staff of the University Institutes of Sustainable Aquaculture and Marine Ecosystems (ECOQUA) and "Oceanography and Global Change" (IOGAG) of the ULPGC. It also has broodstock and selection stations, feed formulation and production rooms, and freezers for storage.</p>	
<p>2. Complementary module 1: It offers offices with a minimum floor space of approximately 25 m², both furnished and unfurnished, preferably for companies with digital content ICT projects.</p>	
<p>3. Aquaculture and Highly Specialised Biotechnology Service (SABE) building: It has chromatography, biochemistry, histology, quality, cell culture, molecular biology and image analysis laboratories, as well as microscopy, freezing and centrifugation facilities.</p>	

Developed activity information

Hosted companies	Not applicable
Provided services	-

Contact details

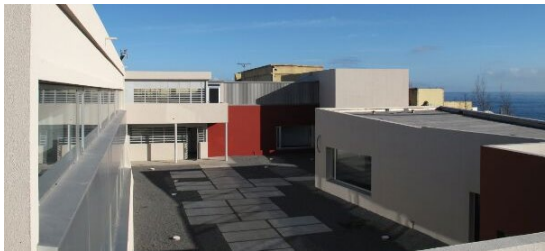


FCPCT: Phone: +34 928 459 920 / 928 459 943
E-mail: info@e-circularcanarias.es
Web: <https://www.fpct.ulpgc.es>

Organization	Technology Park of Gran Canaria – Enclave of Gáldar
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Description

The Circular Economy Experimental Zone, located in Punta de Gáldar and managed by the Mancomunidad de Ayuntamientos del Norte de Gran Canaria, is aimed at experimental projects, companies and start-ups dedicated to activities related to the circular economy, including: green economy and sustainability, low-carbon economy, industrial development and energy efficiency, eco-innovation, agriculture, fisheries and environmental protection.

Buildings

<p>1. Main building: It has offices, laboratories, a training room, an assembly hall and an office on two floors with a total floor area of 2,500 m²</p>	
<p>2. Coworking building: It has 20 workstations, three meeting rooms, a reception area, an office and a multipurpose room for events, spread over two floors of 300 m².</p>	
<p>3. A plot of 11,000 m² available for testing and experimentation for innovative and research companies in green and blue economy projects.</p>	

Developed activity information

Provided services	-
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Contact details

Mancomunidad:	Phone: +34 928 627 462 E-mail: info@e-circularcanarias.es Web: https://e-circularcanarias.es
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4.2.2. R+D+I CAPACITIES OF THE ULPGC

Organization	University Institute of Intelligent Systems and Numerical Applications in Engineering (SIANI) - ULPGC
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Description

Multidisciplinary centre specialising in the field of numerical techniques and intelligent systems technology, the application of computational systems in the solution of physical problems in Engineering and Science, including tools and techniques based on the use of Artificial Intelligence.

Research divisions

-  Computational Modelling and Simulation
-  Evolutionary Computing and Applications
-  Artificial Intelligence, Neural Networks, Machine Learning and Data Engineering.

Contact details





Adress: Peripheral Buildings and Support to University Research Institutes. Campus de Tafira, Science and Technology Park Building. Las Palmas de Gran Canaria
 Phone: +34 928 45 72 10 / +34 928 45 73 10
 Email: info@siani.es
 Web: SIANI

Organization	University Institute of Tourism and Sustainable Economic Development (IUTIDES) - ULPGC
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Description

A multidisciplinary centre made up of social and engineering researchers, created in 2010 and specialising in various fields related to the tourism, economic, social and environmental development of destinations.

Research divisions

-  Entrepreneurship, Digital Enterprise and Innovation.
-  Research in Tourism and Transport.
-  Bayesian statistical and decision techniques in economics and business.
-  Economics, environment, sustainability and tourism.

Advanced Technical Services

- REIS Platform: networking and exchange space with experts on climate change and blue growth in island regions. It offers a tool to support adaptation to the impact of climate change in 12 European archipelagos and islands (physical, commercial and non-commercial effects), as well as its macroeconomic implications.
- EMOTUR Lab aimed at the application of neuromarketing techniques in tourism, with special emphasis on the digital environment and the analysis of the tourist experience.

Contact details

Address: Calle Saulo Torón, 4, Módulo E, Planta 0, Derecha. Campus Universitario de Tafira. Las Palmas de Gran Canaria

Phone: +34 928 454 960

Email: tides@ulpgc.es

Web: [Portal Principal - Instituto Universitario de Turismo y Desarrollo Económico Sostenible \(ulpgc.es\)](http://Portal Principal - Instituto Universitario de Turismo y Desarrollo Económico Sostenible (ulpgc.es))

Organization	University Institute of Animal Health and Food Safety (IUSA) - ULPGC
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Description

The centre was created in 2002 and specialises in the fields of animal health and food safety. Its lines of research include:

- Experimental models in minimally invasive metabolic surgery and tracheal transplantation; study and treatment of post-surgical metastasis in spontaneous malignant neoplasms; experimental cardiovascular surgery, biotechnology and implantation of biomedical devices; genetics and polytrauma; pathology and immunopathology of mycoplasmosis; pig health; animal health and food safety.
- Pathology and immunopathology of mycoplasmosis; swine health; animal and comparative oncology; pathology of stranded cetaceans
- Mycoplasmas-Mycoplasmosis; Porcine Enzootic Pneumonia; Contagious Agalaxia; Epidemiology; Traumatology; Bacterial Resistances
- Mycology-Mycoses; Herpetology; Fish diseases; Fish diseases
- Conservation of endangered breeds; development of reproductive techniques in small ruminants; seminal technology in canine species, artificial insemination, seminal freezing and fertility; reproductive pathology.

Research divisions

- Animal Reproduction.
- Experimental and comparative surgery, oncology and radiology.
- Epidemiology and Preventive Medicine.
- Animal Histology and Pathology.
- Infectious Diseases and Ichthyopathology.

Contact details

Adress:	Peripheral Buildings and Support to University Research Institutes. Carretera de Trasmontaña, s/n. Arucas
Phone:	+34 928 459 711
Email:	direccion_iusa@ulpgc.es
Web:	www.iusa.eu

Organization	University Institute for Environmental Studies and Natural Resources (IUNAT) - ULPGC
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Description

A multidisciplinary centre made up of research teams from the fields of chemistry, physics, biology, geology and engineering.

Authorized by the Government of the Canary Islands in 2016, its fundamental mission focuses on integrating and promoting research into the environment and natural resources in areas such as: the physics of the natural environment and sustainable energy; the chemistry of the natural environment; geological and hydrological natural resources; plant and animal natural resources; environmental education and training.

Research divisions

- Environmental Chemical Analysis.
- Integrative Biology and Biological Resources.
- Control Analytical of Environmental Sources.
- Applied Marine Ecology and Fisheries.
- Photocatalysis and Spectroscopy for Environmental Applications. Associated with the CSIC.
- Marine Physics and Applied Remote Sensing.
- Geology of Volcanic Lands.
- Radiation-Matter Interaction.

Contact details













Adress:	Polivalente I building, Science and Technology Park, Campus Universitario de Tafira. Las Palmas de Gran Canaria
Phone:	+34 928 459 819
Email:	iunat@ulpgc.es
Web:	<u>IUNAT Instituto Universitario de Estudios Ambientales y Recursos Naturales (ulpgc.es)</u>

Organization University Institute of Applied Microelectronics (IUMA) - ULPGC








Description

Centre for research, development and innovation in the field of Information and Communication Technologies, covering disciplines such as electronics, computer science, mathematics and computing, or telematics, whose applications are mainly oriented towards the fields of electronics, telecommunications, information systems and industry 4.0.

The research lines cover the following areas:

-  Photonic sensors and laser remote sensing.
-  IoT and M2M networks
-  Embedded systems for Multimedia
-  Grid Generation and Refinement Algorithms
-  Computational Geometry and Geometric Design
-  Generalised Fibonacci sequences
-  Engineering Graphics, Modelling and CAD
-  Geodetic Engineering and Geospatial Applications
-  Nano and Micro Electromechanical Systems
-  Design Methods for Embedded Systems on Chip and Industrial Embedded Systems
-  Information Technology
-  Radio Frequency Integrated Circuits (RFIC) and Microwave Monolithic Integrated Circuits (MMIC)

Research divisions

-  Communication Equipment and Systems
-  Integrated Systems Design
-  Mathematics, Graphics and Computing
-  Microelectronics and Microsystems
-  Industrial Systems and CAD
-  Information Technology
-  Microelectronics Technology

Contact details

Address: Peripheral Buildings and Support to University Research Institutes. Campus de Tafira, Edificio Parque Científico Tecnológico. Las Palmas de Gran Canaria

Phone: +34 928 451 086

Email: iuma@iuma.ulpgc.es

Web: [Instituto Universitario de Microelectrónica Aplicada \(ulpgc.es\)](http://Instituto Universitario de Microelectrónica Aplicada (ulpgc.es))

Organization	University Institute for Biomedical and Health Research (IUIBS) - ULPGC
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Description

A multidisciplinary centre of the ULPGC that brings together university research groups, hospital research groups, research units of public centres and collaborating researchers from the biomedical, biotechnological, hospital and social and health areas.



The main lines of research activity cover fields such as public health and healthy habits; physical activity and sport; clinical care research; biomedical technology; genetics; toxicology; oncology and neuroscience.

It participates in the UNITWIN/UNESCO Chairs Network Programme, which brings together more than 850 institutions from 117 countries.










Research divisions

-  Diabetes and Endocrinology
-  Environment and Health
-  Medical Pathology
-  Medical and Audiovisual Technology
-  Human Performance, Physical Exercise and Health
-  Molecular and Translational Pharmacology - Biopharm ULPGC
-  Pharmacological Biochemistry
-  Veterinary Medicine and Therapeutics Research
-  Nutrition
-  Infectious, Nutritional and Inflammatory Diseases in Hospital Patients
-  Trypanosomosis, Antibiotic Resistance and Animal Medicine.

Advanced Technical Services

-  Research Service in Advanced Confocal and Electron Microscopy (SIMACE), which allows the study of biological samples of animals and plants, as well as the ultrastructure of minerals, and the acquisition of images and data analysis using "state of the art software".
-  Preclinical Pharmacology - Drug Discovery Service, which uses high-medium performance equipment that allows efficient and dynamic analysis of phenotypes and genotypes in animal and human models in vitro and ex vivo.

It also has laboratories and a variety of specialised instruments:

-  Cell and tissue cultures
-  Molecular biology: genomics, gene expression, proteomics
-  Flow cytometry
-  Chromatography
-  Cryopreservation of biological samples: -20°C, -80°, Nitrogen
-  Liquid (dry ice: periodic service)
-  Centrifuges and ultracentrifuges
-  Genotheque
-  Cell line service (catalogue)

Contact details

Adress:	Health Sciencies building. Paseo Blas Cabrera Felipe "Físico" (s/n). Las Palmas de Gran Canaria
Phone:	-
Email:	info.iuibs@ulpgc.es
Web:	ULPGC IUIBS

Organization	University Institute of Cybernetics, Business and Society (IUCES) - ULPGC
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Description

An interdisciplinary centre with an international vocation, specialising in computer science and technology, systems theory, cognitive sciences, artificial perception, computational biomedicine, computational neuroscience, computational economics, information technologies and robotics.

It was created in 1999 as a transformation of the International Centre for Research in Computer Science of the ULPGC.

Research divisions

- Computational Neuroscience.
- Image Processing and Computer Graphics.
- Mobile Information Systems.
- Perception and Robotics.
- Data Structure and Computational Linguistics.
- Enterprise, Technology, Behaviour and Sustainability.
- Architecture and Concurrency.
- Strategy and International Business.
- Marketing Management, CSR and Family Business.
- Innovation Centre for the Information Society.

Contact details









Adress:	Peripheral Buildings and Support for University Research Institutes Science and Technology Park, Campus Universitario de Tafira
Phone:	+34 928 45 71 00
Email:	ciber@ciber.ulpgc.es
Web:	IUCES – Instituto Universitario de Cibernética, Empresa y Sociedad (ulpgc.es)

Organization	University Institute of Oceanography and Global Change (IOCAG) - ULPGC
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Description

Interdisciplinary research centre specialising in marine sciences and technologies, and particularly in the role of the oceans in climate change and how this change affects marine and coastal ecosystems.

Research divisions

-  Applied Algology.
-  Physical Geography and Environment.
-  Applied and Regional Geology.
-  Biological Oceanography.
-  Biological Oceanography and Global Change.
-  Physical Oceanography.
-  Image Processing and Remote Sensing.
-  Marine Chemistry.

Advanced Technical Services

- Environmental assessment: measurement of physical, chemical and biological parameters (identification of organisms). Environmental impact.
- Measurements of sea currents in strategic locations for the development of offshore aquaculture.
- Environmental characterisation at the location of aquaculture facilities.
- Integrated monitoring of oceanographic parameters for the optimisation of production systems.
- Development of remote monitoring systems for aquaculture facilities.
- Marine environmental monitoring in emergencies. Measurements of dissolved gases and emitted compounds.
- Measurements of CO2 and ocean alkalinity.
- Content of polyphenols, saccharides and organic substances in natural samples.
- Basic studies of the natural environment in the coastal and marine environment and environmental inventory.
- Analysis of environmental parameters.
- Environmental and natural risk diagnosis.
- Planning and management. Environmental assessment.
- Development of Geographic Information Systems (GIS).

Contact details

Adress: Taliarte Marine Science and Technology Park, s/n. Telde
 Phone: +34 928 454 520
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Organization	University Institute for Technological Development and Innovation in Communications (IDETIC) - ULPGC
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Description











Multidisciplinary centre, created in 2010, specialising in areas related to signal processing, communications systems, both in the development of networks and in the design and implementation of transmitters and receivers, as well as in the implementation of IoT (internet of things) technologies: optical, radiofrequency and microwave.

It has a wide range of products and services developed in the following areas: Security and Surveillance, Tourism and Leisure, Energy and Environment, Aeronautics and Space, Mobility and Transport, Health and Wellbeing.

Research divisions

-  Communications Engineering Division.
-  Division of Thermal Engineering and Instrumentation.
-  Division of Organisations, People and Knowledge.
-  Digital Signal Processing Division.
-  Division of Networks and Telematics Services.
-  Division of Photonics Technology and Communications.
-  Division of Emerging Technologies Applied to Language and Literature.

Advanced Technical Services

-  Communication systems in hospital environments;
-  Communication systems for home automation;
-  RFID application design and development;
-  Optical character recognition system;
-  Integral control and data acquisition systems;
-  Design and development of RF circuits;
-  Design and development and assembly of RADAR systems;
-  Wireless sensor network communication systems;
-  Enhancement of wireless communications;
-  Telematic services in VoIP applications, IPTV, Video Streaming, Security, QoS, development of applications on mobile terminals, etc.

Contact details

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Organization	University Institute for Textual Analysis and Applications (IATEXT) - ULPGC
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Description

Multidisciplinary centre in the field of the so-called "Digital Humanities", in which researchers from different areas of knowledge converge: philology, history specialising in documentation and textual sources and computer engineering specialising in computational linguistics and computer applications.

Authorised by the Government of the Canary Islands in 2014, it focuses its activity on the edition and analysis of different types of texts from linguistic, literary, historical and computational perspectives.

Among the activities it carries out, related to innovation and knowledge transfer, are: the development of tools and applications in areas of computational linguistics and technologies for education; the performance of bibliometric studies of scientific publications in the area of Humanities; or the performance of studies of documents of a historical nature, in different media and chronological contexts, among others.

Research divisions

- Cognition, Texts and Contexts.
- Documentation, Heritage and Atlantic History.
- Text Editing and Textual Analysis.
- Corpus Studies and Applied Linguistics.
- Computational Linguistics and Computer Applications.
- Documentary Heritage and Bibliometry.
- Rhetoric, Humanism and Classical Tradition.
- Atlantic Societies and Spaces: Discourses and Cartography.
- Linguistic Variation and Change.
- Cognition, Texts, Linguistics and Information Processing.

Advances technical services

- IA search engine: web application developed with Artificial Intelligence that allows the search for academic and scientific content in articles published on The Conversation website through the use of linguistic resources.
- Web Tagger: web application for automatic word recognition that allows a syntactic analysis of the words in a text.
- TIP Phrases: web application that allows you to search for phrases with a selected range of words, in a corpus of more than twelve million different phrases.
- TIP Stylometry: web application that allows the analysis of text structures based on their morphological and syntactic characteristics and facilitates the comparison between different texts.
- TIP Flexer: web application for natural language processing for the Spanish language that allows to obtain all the inflections for a given word.

Contact details

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Organization	University Institute for Research in Sustainable Aquaculture and Marine Ecosystems (ECOQUA) - ULPGC
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Description

A multidisciplinary scientific centre of excellence in blue growth policies and the circular economy, bringing together specialists from different areas of knowledge: zoologists, botanists, physiologists, veterinarians, oceanographers, jurists, pathologists, palaeontologists, agronomists, economists, etc.

It develops its research activity in different lines around the planning and integrated management of the marine environment, both from the point of view of its natural resources, and in the sustainable development of aquaculture production, activities linked to ecotourism and artisanal fishing from an ecosystemic approach.

Research divisions

- Aquaculture Research Group.
- Biodiversity and Conservation Group.
- Marine Organisms Ecophysiology Group.
- Tourism, Territorial Planning and Environment Research Group.

Advanced technical services

- Design of genetic selection programmes in aquaculture in marine species (fish, crustaceans and molluscs).
- Design of multiplexes for pathogen detection in marine organisms.
- Design of multiplex of microsatellite markers for paternity diagnosis and genetic variability studies in marine organisms.
- System for automatic counting and classification of microplastics.
- System for locating the most suitable areas for the development of economic activity in marine areas of Macaronesia.

Contact details

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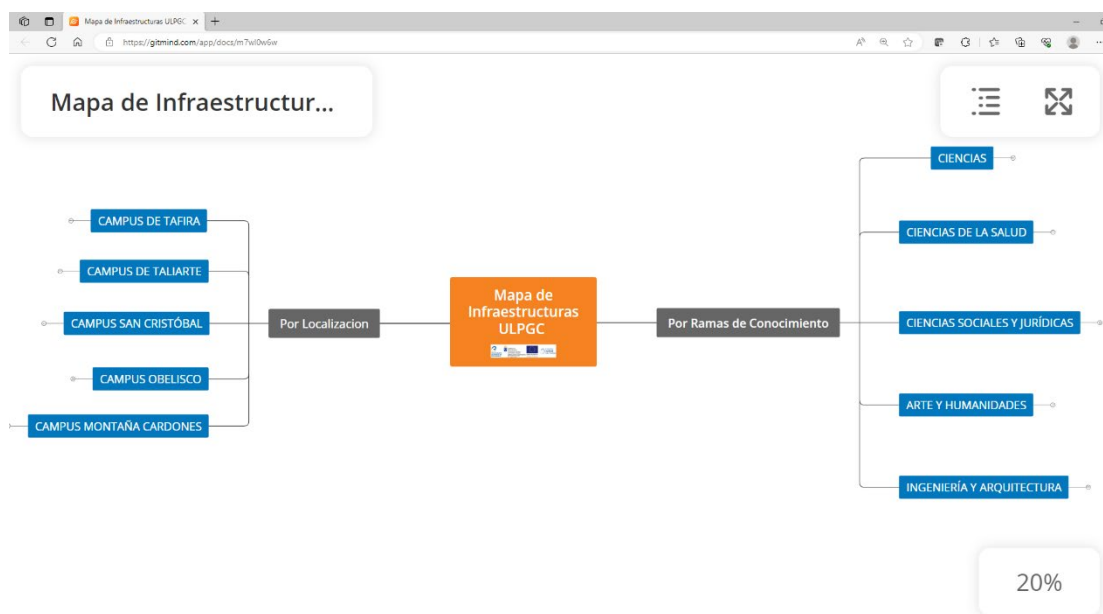
4.2.3. LIST OF INFRASTRUCTURES

In order to promote the shared use of scientific equipment, and also to reinforce university-business collaboration as a key initiative to boost R&D&I in the Canary Islands, the ULPGC has a map of scientific infrastructures. This is a virtual and interactive catalogue that brings together information and a catalogue of a total of 490 scientific equipment located in the different laboratories of the research groups and university institutes of the institution. Of these, 205 instruments are located in centres and departments in the Science area; 170 instruments are located in Health Sciences; 10 instruments in Art and Humanities; another 10 instruments in Social and Legal Sciences and 95 in Engineering and Architecture.

This tool aims to promote synergies between the university's own research groups, increasing the visibility of its scientific-technological equipment, but also to promote the shared use and provision of services to other university institutions around the world, and to public and private companies.

This initiative will soon be available on the ULPGC website, in virtual book format and also as an interactive map.

Figure 48. Online general view of the ULPGC map of infrastructures.



5. INTERNAL STAKEHOLDERS' REPORTS: SELF-ASSESSMENT RESULTS FOR EACH ECOSYSTEM.

5.1. ASSESSMENT OVERVIEW

Harnessing insights from internal members helps to better comprehend an organization's strengths, weaknesses, and operations. This process facilitates performance evaluation, and understanding operations across different aspects of university excellence. In addition, by involving all relevant participants in self-assessment questionnaires, a culture of accountability and transparency is fostered. This engagement also aids in threat identification by accurately pinpointing current organizational challenges.

The collected information supports data-driven decision-making, combining knowledge about performance and threats to create an action plan. Completing this self-assessment allows both UAC and ULPGC to integrate data from various sources, providing a comprehensive overview of the institution's excellence status.

The used data collection method, the self-assessment questionnaire, is an important tool that evaluates three fundamental components of university excellence: research excellence, talent acquisition and retention, and knowledge and technology transfer.

Excellence in Research is realized through creating influential scientific knowledge, with the help of a diverse group of high-caliber researchers in a well-equipped, interactive environment. Universities play a vital role in creating public sector knowledge that powers economic and technological growth. To foster research excellence, universities should focus on institutional objectives, strategies, frameworks, educational capacities, and advanced research production. This part encompasses institutional objectives, strategies and frameworks, educational capacities, and advanced research production.

Talent acquisition and retention are crucial for a university's reputation. Attracting and retaining exceptional researchers involves creating a positive work environment, promoting a healthy culture, and providing opportunities for career advancement. The self-assessment questionnaire addresses five major themes to enhance talent acquisition and retention: recruitment of new talent, career development opportunities, workplace balance and wellbeing, the culture of innovation, and ethical excellence.

In addition, Knowledge and Technology Transfer (KTT) is an essential component of university excellence, involving the dissemination of scientific and technological research findings, techniques, and methods to both the commercial sector and broader society. This multifaceted process is not merely about conducting exemplary research but requires a comprehensive strategy managed by personnel adept at KTT. This section explores KTT strategies and organizations, structures and processes towards patent and IP activities, partnership developments, and start-up support and incubation.

Finally, the key findings of this study are summarized in the final subchapter for each organization, providing a concise overview of the most relevant issues explored.

5.2. METHODOLOGY

The data presented was collected through a self-assessment completed by qualified personnel. A comprehensive self-assessment guide was provided to a selection of scientific and technical personnel, which contained a series of key questions designed to evaluate excellence.

The self-assessment method has been proven effective in practice, producing two crucial insights. Firstly, it uncovers the current state and future objectives of each academic unit from an internal perspective. Secondly, it identifies and accounts for the challenges and opportunities faced by individuals within these organizations.

An added advantage of the self-assessment method is that it scrutinizes informal communication channels, aspects often overlooked in published sources. This offers a more comprehensive view of transfer activities. Also, it provides participants with an opportunity to reflect on their strengths and weaknesses, and identify areas they wish to improve. Additionally, they can determine where expert support is needed. As a result, an increase in participant motivation and engagement in excellence activities is often observed, due to their enhanced involvement in the transformation process.

Regarding UAC's internal assessment, the survey received a total of 51 responses, with participants holding diverse roles within their organizations: 26 Professors/Investigators, 10 PhD or Post-doc students, 8 directors of research units, 4 members of the rectorate team, and 3 from the faculty presidency. These respondents represented a wide range of scientific branches, including Science and Technology, Health, Agricultural and Environmental Sciences, Social and Human Sciences, and Economics and Management.

As for UPLGC's internal assessment, a total of 39 participants provided their inputs in the self-assessment. Of these, 24 are teaching and research staff members (11 with managing positions), 8 administrative and technical staff members, 6 students (of which 2 are post-doc students and 4 are pre-doc students), and 1 member of the social council. The participants stem from different branches of science, including Arts and Humanities, Health Sciences, Exact Sciences, Social and Law Sciences, and Engineering and Architecture.

To synthesize and interpret the information collected, a multitude of questions in this self-assessment invites the participant to evaluate elements on a scale of 1 to 5, with 1 being the lowest and 5 the highest. This data, once collated and analyzed to discern the mean values, is categorized into five distinct tiers. These divisions mirror the rating scale, representing a spectrum from lowest to highest, as follows: 'insufficient' (1.0 – 1.8), 'inadequate' (1.9 – 2.6), 'satisfactory' (2.7 – 3.4), 'good' (3.5 – 4.2) and 'excellent' (4.3 – 5.0).

5.3. UAC INTERNAL ASSESSMENT

5.3.1. EXCELLENCE IN RESEARCH

5.3.1.1. INSTITUTIONAL OBJECTIVES, STRATEGIES AND FRAMEWORKS

Organizational arrangements and managerial strategies are intangible assets that pertain to management techniques within an establishment. The organizational arrangement encompasses the systems within an institution that dictate how specific activities are executed to attain a particular objective. These internal systems include regulations, roles, and responsibilities within the organization, and they play a crucial role in managing the flow of information and processes, as well as the distribution of power and responsibilities.

In addition, managerial strategies and frameworks involve multiple procedures employed to manage resources and implement actions aimed at achieving specific objectives. These strategies help streamline functional steps within a series of processes and are often manifested in established techniques, regulations, and protocols that govern specific actions. While organizational arrangements primarily focus on information flow, hierarchy definition, and organizational goals, managerial strategies aim to optimize approaches to achieve these goals.

5.3.1.1.1. INSTITUTIONAL OBJECTIVES

In the self-assessment questionnaire, it was received general answers regarding the overall objectives of the institution, the strategy employed to achieve those objectives, the institution's development framework, mission, vision, and values statement, followed by an evaluation of the current performance of the strategies and frameworks in place to attain the institution's objectives.

Given the survey responses, it was possible to observe a variety of perspectives on the overall objectives of the institution of higher education, each reflecting the individual's role and area of focus. However, certain themes and objectives reappear, forming a larger, shared view of the goals of such institutions. The following patterns have been summarized:

1. **Providing High-Quality Education and Training:** A strong trend among responses is the emphasis on offering high-quality education and training to students. This sentiment was echoed by different participants who underscored the importance of preparing students for their chosen career paths, fomenting critical thinking, and promoting a sense of critique.
2. **Conducting and Promoting Research:** Another prevalent objective of higher education institutions that is cited by many respondents revolves around

research. Many received replies highlight this aspect, advocating for universities to conduct research that advances the boundaries of knowledge in various fields and encourages innovation.

3. **Expand Innovation and Entrepreneurial Segments:** Different responses underscored the significance of innovation and entrepreneurship in their roles at the university. Some key mentions with innovation and entrepreneurship include opportunities to connect with research projects, expand collaboration networks, incentivize innovation, and integrate innovation teachings with the existing curricula.
4. **Community Engagement and Service:** Several respondents emphasized the role of higher education institutions in serving and interacting with their communities. This includes the important role of universities in advising policies, contributing to the well-being of the community, the economic and social sustainability of the Autonomous Region of the Azores, and providing community services.
5. **Promotion of Interdisciplinarity and Holistic Training:** The respondents highlighted the importance of holistic training and the integration of complementary sciences. They noted the importance of diverse scientific perspectives in training. It is also observed the desire to promote excellent scientific research and actively participate in international scientific dissemination networks.
6. **Institutional Growth and Internationalization:** There is a perceivable interest in increasing the number of students and creating educational programs in English to grow foreign students' attendance. This indicates a trend toward institutional growth and internationalization.
7. **Promoting Sustainable Development:** Several respondents emphasize the role of universities in promoting sustainable development, both in an environmental sense and a societal one. They see the institution as a major contributor to addressing environmental, social, and economic challenges within the region.

Nonetheless, interesting patterns emerge when the replies are grouped by the role/position of the participant in the University. Each group views the objectives of the institution of higher education through their specific lenses: professors emphasize the educational and knowledge creation aspects, administrators focus on larger institutional goals and sustainable development, and research directors focus on research goals and their alignment with larger objectives.

5.3.1.1.2. STRATEGIES AND FRAMEWORKS

The received responses regarding employed strategies and functional frameworks were much more diverse when compared to those regarding institutional objectives. While not all the participants explicitly describe their strategies, their responses do offer a glimpse into their approaches. These include developing strong research fields, providing access to cutting-edge knowledge and state-of-the-art facilities, promoting inclusion, diversity,

and public engagement, offering hands-on learning experiences, and emphasizing teaching quality. Some responses also hinted at the importance of interdisciplinarity, suggesting an approach that ties different disciplines together using real-world examples.

It is assumed that the general discrepancy in strategies and frameworks occurs due to participants offering insights regarding their area of expertise or strategies related to their respective departments, instead of approaches geared toward the university as a whole. Nonetheless, this does not seem to influence the generally positive view of the participants regarding their strategies of achieve their objectives. The overall perceived performance of the established strategies is **good** (3.42), according to the participants.

In summary, the institutional objectives of the university are diverse and nuanced, seen through varied lenses of the stakeholders involved. Professors prioritize high-quality education and knowledge creation, administrators focus on overarching institutional goals like sustainable development, and research directors concentrate on expanding research. Institutional goals include conducting meaningful research, expanding innovation and entrepreneurship, engaging with local communities, and promoting interdisciplinary and holistic education.

However, these goals are approached differently across the organization, with strategies reflecting each stakeholder's unique role and area of expertise. Common strategies include developing robust research fields, ensuring access to top-tier knowledge and resources, promoting diversity and inclusion, offering experiential learning, and emphasizing the quality of teaching. This data shows that, despite diverse roles within the organization, there's a shared commitment to achieving core objectives and continually refining strategies to meet these goals.

5.3.1.2. EDUCATIONAL CAPACITIES

The educational capacities of a university are crucial in providing a wide range of educational opportunities and resources to students. Universities serve as knowledge hubs, disseminating valuable information and fostering critical thinking skills through lectures, seminars, and research publications. They offer diverse academic programs that equip students with specialized knowledge and practical skills needed for their chosen fields.

The expertise of faculty members plays a significant role in the educational capacities of a university. Highly qualified professors serve as mentors, guiding students on their educational journeys and inspiring them to excel. Faculty members' subject expertise and dedication to teaching are crucial in imparting knowledge and fostering a love for learning among students.

The initial point of investigation in this sphere concerns the field of excellence the University of Azores presents, and if there exists a consensus in opinion across different departments about the points of excellence in educational areas.

The results show a clear pattern in this regard. These results are presented in their respective order of importance:

- **Marine and Environmental Sciences:** The field appears to be highly mentioned across the board. For instance, an administrator from the Faculty Presidency highlighted marine sciences, marine ecology, and oceanography. Similarly, a member of the Rectory Team also pointed out marine studies and a Research Unit Directorship member stated marine sciences as a strong field.
- **Geology/Volcanology/Earth Sciences:** These areas are also frequently mentioned by the respondents. The volcanic origins of the Azores archipelago seem to strongly influence the emphasis on geology, volcanology, and earth sciences, as stated by a Faculty Presidency representative.
- **Biology and Biodiversity:** Biology and studies related to biodiversity are also frequently cited.
- **Social and Human Sciences:** These fields were identified as strengths by respondents from different branches.
- **Economics, Business, and Management:** A few respondents noted strengths in these areas.

In the follow-up questions, it is presented the strategies that the university and its different departments are using to exploit these fields of excellence. Currently, four actions are mostly used to leverage educational potential:

- **Research Focus on Fields of Excellence:** highlighted by multiple participants, there have been established different research centers or units dedicated to specific fields like Marine Biology, Biotechnology, Earth Sciences, Oceanography, Fisheries, Volcanology and Geological Risks, and Biodiversity and Genetic Resources.
- **Offering Advanced Degrees and Research Programs:** this includes the offering of doctoral and master's programs, that aim to cultivate professionals capable of contributing to their respective fields through research, innovation, and knowledge dissemination.
- **Establishing International Collaborations and Networks:** seeking to build international collaborations and expanding the number of European projects in consortia. These efforts aim to boost the university's global visibility and attract talented researchers and students.
- **Promoting Publication and Visibility:** Encouraging publication and internationalization is noted, as well as aiming to publish research in internationally recognized journals. These efforts are geared towards enhancing the university's international reputation.

As the core strategies for exploiting the educational capacities of the University of Azores are clear, the next inquired point during the self-assessment was about the major obstacles that the execution of these strategies faces.

One of the prominent issues that emerged from the survey data was that of resource limitations. The participants expressed a concern that the institution is faced with an absence of sufficient resources, impacting its effectiveness. This resource constraint is not merely a financial matter but also extends to infrastructural needs, such as facilities and equipment. The perception of inadequate resources could potentially hinder the progress of the institution and its constituents, as resources play a pivotal role in supporting various academic and administrative activities.

In close relation to the resource issue, staffing concerns were another significant complaint voiced by the survey participants. They highlighted various staffing problems, such as a shortage of both teaching and non-teaching staff, a high workload burden on the existing staff, and a perceived need for an increased presence of career researchers and internationally recognized researchers. Another issue that resonated in the responses was communication and collaboration. The survey participants indicated that they feel there is insufficient internal communication within the institution. This sentiment was coupled with a perceived lack of collaboration which, according to the respondents, prompts a competitive environment rather than fostering a cooperative ethos.

The survey also suggested dissatisfaction with the level of promotion of research excellence. The responses implied that the achievements of certain research groups were not being adequately publicized. This lack of promotion could limit the visibility of the institution's research achievements and potentially affect its reputation and appeal to prospective students and faculty.

Despite the numerous challenges faced, when questioned about the alignment of educational quality with the university's objectives, a significant majority of respondents answered positively or mostly positively. Furthermore, the average rating regarding the variety of subjects available is good (3.89). It is noteworthy that the institution actively conducts regular surveys to evaluate the quality of education, a practice perceived as highly valuable. This approach enables the gathering of valuable insights and information pertaining to both positive and negative aspects.

The university could propose to tackle these challenges by enacting the following changes:

- **Resource Limitations:** The scarcity of resources can be tackled through strategic planning and budgeting, prioritizing the most critical areas first. The institution could also explore alternative funding sources, such as grants, partnerships, philanthropy, endowments, and industry partnerships. Additionally, investing in maintaining and upgrading infrastructure can ensure resources are used most effectively.
- **Staffing Concerns:** Concerns about staffing could be mitigated by implementing a comprehensive hiring plan that aligns with the institution's strategic objectives. This could involve targeted recruitment to attract talented teaching and non-teaching staff. Consideration could be given to reducing faculty workload by delegating certain tasks to administrative or support staff or even employing technology where feasible to automate routine tasks.

- **Communication and Collaboration:** Enhancing communication and collaboration can be achieved by promoting a transparent and inclusive culture. Regular meetings, newsletters, and an internal communication platform could be established to keep staff updated and to celebrate accomplishments. Encouraging interdisciplinary work and providing opportunities for collaboration can help foster a more cooperative and less competitive environment.
- **Promotion of Excellence Research Activities:** To better promote research excellence, the institution could establish a dedicated public relations or communications team responsible for showcasing research achievements, both internally and externally. This could involve regular updates on the institution's website, newsletters, and active engagement on academic and social media platforms.

5.3.1.3. ADVANCED RESEARCH PRODUCTION

Advanced research production is pivotal for universities as it fuels innovation and contributes significantly to the body of knowledge across a multitude of disciplines. It stimulates economic growth as universities can drive industry creation, attracting investment and job creation in the process. Moreover, it presents an excellent avenue for skills development, equipping students and staff with critical competencies such as problem-solving, project management, and communication.

A university's reputation and global ranking are also intimately tied to its research output, with quality research attracting top-tier students and staff. Beyond this, the societal impact of university research cannot be understated, often leading to key breakthroughs in areas like health, environment, technology, and social justice.

Advanced research production typically materializes through several channels. Publications in academic journals represent the cornerstone of this, allowing for the widespread dissemination of research findings. Additionally, when research yields a novel invention or process, patents might be filed, safeguarding intellectual property and potentially leading to commercialization. Academic conferences and seminars offer researchers the platform to present their work, fostering collaborative and feedback opportunities.

Universities can also engage with industry partners for joint research projects, creating internships and facilitating the direct application of business research. Furthermore, research is shared with the community through public lectures, press releases, and exhibitions, promoting a culture of learning beyond the academic sphere. Finally, the formation of spin-off companies and technology transfer underscores the practical, commercial value of university research.

When it comes to tracking performance metrics for research production done by UAC, the survey indicated that various departments adopt different strategies. However, it appears to be a common practice to monitor publications, H-index, funding, patents,

collaborations, and publications in influential journals. Notably, it was observed that no department provided a comprehensive response encompassing all the aforementioned aspects. Instead, they mentioned only a few elements, and some participants expressed being unaware of performance-tracking metrics, or which criteria were used in this venture. This suggests a potential problem whereby a lack of standardized methods for performance tracking hampers the collection of valuable information about researchers' activities.

Nonetheless, interesting patterns emerged around major challenges that are slowing down advanced scientific production. These problems appear consistently across different departments and branches of science, highlighting a common issue in the university setting.

- **Insufficient funding:** Many research projects suffer from inadequate funding. This shortage of resources makes it hard to carry out complex research and stalls more advanced projects.
- **Limited Research Time:** It was noticed that there isn't enough time set aside specifically for research. It's proving to be a challenge to balance teaching hours with research hours.
- **Inadequate equipment:** The use of outdated scientific equipment, especially those needed for advanced research, is a significant barrier in some fields of scientific study.
- **Lack of partnerships with external enterprises:** There is a latent issue regarding external cooperation with private companies and other international research partners. This lack of cooperation limits opportunities for joint research projects and the chance to gain additional funding.
- **Low student engagement:** More student involvement in research support was suggested as a way to help with the shortage of manpower. This could also give students practical experience in their field of study. However, student participation in advanced research currently seems to be quite low.
- **Challenges with interdisciplinarity:** Current advanced research activities remain restricted to traditional divisions in the branch of sciences. Expanding this scope to enhance interdisciplinarity could significantly open margins for new project opportunities.
- **Insufficient technical and supporting staff:** Some departments are struggling to find trained technical staff to operate certain equipment, and there's a shortage of administrative support. These problems can be traced back to the Azores region's isolation, which makes it difficult to bring in staff from outside, and the lack of funding available for administrative staff, which puts extra pressure on the researchers themselves.

The majority of participants observed a lack of any comprehensive strategy by the university to address these challenges. Despite this, the satisfaction level with the technical staff in research settings was deemed **satisfactory** (average score of 3.22), and the overall quality of academic research produced was rated as **good** (average score of 3.63).

The level of interdisciplinary research was noted as **satisfactory** (average score 3.05), even though obstacles persist, particularly the difficulties in coordinating different fields of science and speaking the same "scientific language". These obstacles stem from diverse methodologies employed by different departments, which can complicate inter-departmental interaction. Overcoming these challenges requires researchers to acquire new skills and step outside their comfort zones.

Interestingly, some research centers that house specialists from various scientific fields have seen interdisciplinary research thrive. However, these instances are the exception rather than the norm.

Perception regarding the current level of scientific equipment was also deemed **satisfactory** (average score: 3.27). Meanwhile, the level of international participation in academic networks is seen as adequate for the time being but presents considerable room for improvement. One reason suggested for this status is a general lack of awareness among researchers about the opportunities available for joining such networks. Consequently, it was proposed that the university could enhance its dissemination of information about these networks to potentially interested departments and personnel.

A crucial point to consider about funding is that the bulk of financial resources come from public entities, at regional, federal, or European levels. Exploring the potential of joint programs with private entities, to co-finance initiatives of mutual interest, could be a promising avenue to pursue.

In conclusion, this chapter elucidates the crucial role of advanced research in universities but also spotlights several challenges hindering its full potential at UAC. These include insufficient funding, limited research time, inadequate equipment, lack of external partnerships, low student engagement, difficulties with interdisciplinarity, and a shortage of technical and supporting staff. Although researchers express satisfaction with the quality of research output and technical staff, they perceive room for improvement in interdisciplinary research and international collaboration. The university's approach to addressing these challenges currently lacks comprehensiveness, indicating a crucial area of focus to bolster research production.

It is paramount that UAC addresses the identified obstacles to fully harness the benefits of advanced research. To achieve this, a comprehensive strategy could include enhancing funding avenues, fostering partnerships, promoting student engagement, encouraging interdisciplinarity, and bolstering staff numbers and capabilities. Additionally, creating greater awareness and opportunities for international collaboration could further augment research quality and output. These concerted efforts would ultimately position UAC at the forefront of research innovation and societal impact.

5.3.2. TALENT ACQUISITION AND RETENTION

5.3.2.1. RECRUITMENT OF NEW TALENT

The recruitment of new talent is of utmost importance for a University of Excellence, fundamentally shaping its future direction and reputation. By attracting high-quality academics, researchers, and students, the institution can advance its knowledge base, promote innovation, and nurture an environment conducive to the development of ideas. These individuals' talents and skills propel the university's endeavors forward, contributing to high-quality teaching, impactful research, and the cultivation of meaningful partnerships across academia and industry.

Furthermore, the recruitment of new talent allows a university to ensure it remains at the forefront of academic progress, fostering a diverse and inclusive environment. This diversity is fundamental to the richness of ideas, perspectives, and approaches that are integral to an excellent university's mission. By actively seeking out a wide range of talent, the institution can boost its intellectual vibrancy, augment its cultural richness, and reinforce its commitment to equality and inclusivity.

The results from this part of the self-assessment questionnaire provided a comprehensive exploration of talent acquisition, retention, and turnover practices. They delved into aspects such as the institution's competitiveness in its compensation and funding offerings, its self-perception in attracting new personnel, and the composition and turnover of its staff. The questions further probe into challenges that the institution faces in terms of personnel shortage and obstacles in attracting new talent, offering a holistic view of the institution's human resource strategies and issues in the context of scientific research.

The self-assessment results have confirmed a pivotal challenge: UAC is facing a serious threat regarding the recruitment of new talent. Participants have identified this area as needing improvement, giving it a rating of **inadequate** performance (average score of 2.32 on a scale of 1 (lowest) to 5 (highest)). This situation becomes even more concerning given the current low recruitment numbers, compounded by a significant portion of the workforce approaching retirement age.

The issue of attracting new talent is particularly pressing for teaching personnel than researchers. However, the evaluation participants still rated the recruitment of new talent as barely **satisfactory**, scoring it a 2.61 average. This rating hardly crosses the threshold of satisfactory (2.6), and scores below this are considered inadequate or insufficient. Some explanations emerge when participants were inquired about the causes of these problems. One of the most significant and recurrent issues is the lack of adequate funding. This can be further elaborated into two key points: fair remuneration for professionals and research funding.

Both areas were rated as **inadequate**, with average scores of 2.16 and 2.32 respectively. Competitive salaries are a reflection of an institution's valuation of its employees' work.

They not only help attract the brightest minds but are also crucial for retaining them. The risk of not providing competitive remuneration is a potential "brain drain," where highly skilled individuals seek better opportunities elsewhere, often in the private sector or at larger, more distinguished institutions. This situation could lead to a significant loss of expertise, impacting the research capabilities and reputation. Moreover, below-par salaries might demotivate the current workforce, resulting in lower productivity and job satisfaction.

Equally important is the availability of ample research funding. This funding is vital to enable high-quality and impactful research, facilitating the purchase of necessary equipment and materials, hiring of research staff, and sharing findings through publications and conferences. Without adequate funding, the scope and feasibility of research projects may be compromised, potentially stifling innovation. Furthermore, generous funding can lure top-tier scientists and aspiring young researchers who are in search of an institution where their research dreams can be achieved.

Participants also spotlighted the hurdles related to competitiveness. These ranged from vying with larger or more renowned institutions to securing high-level international projects. The private sector is also seen as a formidable competitor, often due to potentially higher salaries and more appealing benefits packages. The geographical location of institutions also plays a part in their competitiveness. Institutions in remote or peripheral regions might find it more challenging to attract the desired talent.

In conclusion, the self-assessment elucidates the University's key challenges in talent acquisition and retention: noncompetitive salaries, inadequate research funding, and competition from more prominent institutions.

To address these, the University needs to embark on a multi-faceted strategy:

- Firstly, improving remuneration packages should be a priority. The University could explore reallocating resources or securing additional funding through methods such as governmental lobbying, fundraising initiatives, or industry partnerships.
- Secondly, the University could enhance its research funding by fostering a grant-application-friendly environment. This could involve organizing grant-writing workshops or creating a dedicated office to support faculty members in their grant applications.
- Finally, the University should strive to improve competitiveness by focusing resources on specific disciplines in which UAC excels and present a competitive advantage. By doing so, the University could boost its reputation, attracting prospective academics and researchers interested in those areas. Strengthening ties with international institutions and networks could also enable more collaborative projects and exchange programs, enhancing global visibility.

Despite the challenges, this introspection provides a critical opportunity for the University to recalibrate its strategies. With effective use of its human resources, the University can

continue to contribute significantly to scientific research and education, pursuing its ambition of becoming a University of Excellence.

5.3.2.2. CAREER DEVELOPMENT OPPORTUNITIES

At the heart of every University of Excellence, the dynamism and creativity of its research staff fuel academic and scientific breakthroughs. Therefore, the importance of career development opportunities cannot be overstated. Fostering the professional growth and career trajectory of research staff is not just beneficial for the individual, but it is a strategic necessity for the institution as a whole.

In the fast-paced, competitive world of academic research, the most accomplished researchers continually strive to expand their knowledge and skills, staying on the cutting edge of their fields. Career development opportunities, such as training in advanced research methodologies, workshops on new technologies, or mentorship programs, allow them to do so. This continual learning propels their personal career advancement but also amplifies the impact and reputation of the university.

Moreover, these opportunities play a crucial role in talent retention and motivation. Providing clear pathways for growth and development signals to the staff that their contributions are valued, and their professional aspirations are supported. This not only enhances job satisfaction and commitment but also promotes a positive and productive work environment.

The conducted self-assessment study revealed surprising data regarding professional development opportunities and the career advancement framework within academic institutions, with a particular focus on the awareness and perceptions of the academic personnel.

A significant portion of the respondents demonstrated **satisfactory** ratings for both professional development opportunities and complementary skills training, with respective average scores of 3.00 and 2.78. However, a notable concern raised by the survey was a widespread lack of awareness about career advancement strategies amongst academic personnel, especially PhD students and post-doctoral fellows. Interestingly, administrative staff painted a different picture, highlighting strategies such as job openings, tenure systems, professional development programs, and mentoring. This contrast suggests a communication gap between different groups within the institution.

Moreover, a considerable proportion of respondents indicated a perceived scarcity of career advancement opportunities. Some respondents suggested that career progression appears to be replacement-based, largely hinging on the retirement of existing faculty members. Furthermore, the frequent mention of temporary contracts tied to specific projects or services heightened worries about job security and long-term career prospects.

Another area of concern relates to further training opportunities extended to faculty professionals. Regrettably, the survey responses indicated less than suitable circumstances, with respondents revealing varied experiences and awareness levels concerning additional training programs or workshops. A considerable number of respondents, spanning from faculty members to administrative personnel, expressed a striking lack of knowledge or information about such training opportunities. This persistent unawareness may suggest transparency issues within these institutions. Conversely, a handful of respondents did acknowledge the existence of sporadic training opportunities, albeit often focused on software skills. This patchy provision of training could partially explain the limited awareness about these resources.

Most concerning, many participants claimed that there were no additional training opportunities at their respective institutions. This raises alarms about support for continuous professional development within these establishments. The self-assessment also brought to light a common practice where training is individually arranged by each researcher. While offering flexibility, this approach may result in uneven access to training opportunities.

In matters of tracking the performance of career development workshops and initiatives, the overwhelming majority of participants responded that the university either does not track any performance metrics or is unaware of such tracking. The same pattern emerges when the participants were inquired about the implementation of periodic reviews towards career progression milestones. The overwhelming majority replied that they are either not aware of such milestones, or that such progression milestones do not exist. A university administration without a method for tracking the career progression milestones of its researchers and staff may grapple with numerous problems.

A primary concern centers around transparency, or rather, the lack thereof. Staff and researchers might be oblivious to their own progression towards career objectives and potential growth opportunities within the institution. This absence of clear advancement pathways can breed dissatisfaction and disengagement, ultimately leading to higher attrition rates. Without visibility into their career journey, employees may feel undervalued, unacknowledged, or stagnant, prompting them to seek greener pastures.

Moreover, this lack of structure in tracking career progression can precipitate retention problems. Talented individuals who perceive that their efforts and accomplishments are not recognized may be more inclined to explore opportunities outside the institution. High turnover not only results in the loss of critical expertise and institutional knowledge but also incurs significant costs related to the hiring and training of new staff.

In addition to the above, the absence of a tracking system can foster inequitable opportunities. When there's no consistency in the promotion process or in providing development opportunities, it can lead to a perception or actuality of unfairness. This can not only hurt staff morale but can potentially culminate in legal repercussions if it results in systemic bias.

To summarize, not tracking career progression can cause a variety of issues ranging from lack of transparency to retention problems, and even harm to reputation. Therefore, universities need to establish and communicate clear paths for career progression.

Overcoming these challenges requires a strategic, thoughtful approach that places a strong emphasis on clear communication, fair practices, and proactive career development. Here are some potential solutions:

- **Implement a Career Progression Tracking System:** The first step is to establish a formal system for tracking the career progression of researchers and staff. This could include digital tools that monitor key milestones, achievements, training completed, etc. It can help provide a clear picture of each individual's career path and their progress along it.
- **Transparent Communication:** Administrators should ensure that career progression policies, expectations, and opportunities are communicated clearly and regularly to all staff. This includes providing feedback, conducting performance reviews, and openly discussing career objectives and paths.
- **Career Development Opportunities:** Offer opportunities for professional growth such as training, workshops, or further education. Encourage and support participation in these activities. This not only aids in career progression but also demonstrates the institution's investment in its employees' growth.
- **Fair and Consistent Promotion Practices:** Establish clear, objective criteria for promotions and ensure these are applied consistently across the board. This can help to alleviate perceptions of unfairness or bias.
- **Employee Recognition:** Recognize and celebrate achievements, contributions, and milestones. This can boost morale, enhance job satisfaction, and strengthen staff retention.
- **Feedback Mechanisms:** Implement channels for employees to share their feedback, concerns, and suggestions. This could be in the form of surveys, suggestion boxes, or regular meetings. This can help identify areas for improvement and make employees feel heard and valued.

By implementing these strategies, universities can effectively track career progression, address staff concerns, and create a more positive, productive work environment that encourages staff retention and growth.

5.3.2.3. WORKPLACE BALANCE AND WELLBEING

Workplace balance and wellbeing are essential components for universities striving for excellence. This includes all staff and researchers whose efforts contribute to the university's success. Achieving this balance contributes to a more productive and creative environment, reducing stress levels and absenteeism, and increasing overall engagement. By considering personal needs alongside work demands, an institution can create a supportive culture that nurtures academic progress and service excellence, ensuring continued growth and success.

The self-assessment results revealed several critical elements that contribute to workplace balance and well-being, as reported by the participants. These included the availability of research funds, adequate employment compensation, flexible working hours, and the option for a hybrid work setup - alternating between office-based and remote work.

Addressing the challenges to cultivating a positive work environment, self-assessment respondents identified several key issues. Overwork and inadequate compensation emerged as significant concerns, particularly amongst those in investigative or professorial roles. These respondents expressed dissatisfaction with the heavy workload and intense demands of their jobs, feeling that rewards such as salaries and opportunities for career advancement were disproportionate to their responsibilities and efforts.

Effective communication was another theme that resonated across the responses. Participants across various roles emphasized the necessity of open, robust communication channels. The importance of fostering dialogue among colleagues, with decision-makers, and across different roles was underscored. Respondents tied their ability to express concerns, share ideas, and provide feedback to this vital issue of communication. A failure in this area could result in frustration, miscommunication, and a drop in morale.

Respondents also highlighted issues related to management practices and recognition of merit. Some voiced concerns that the prevailing management style might be inhibiting innovation and not providing sufficient recognition for merit, consequently hampering freedom of development. The respondents expressed a desire for a less bureaucratic approach and more empathetic decisions, especially in the case of high-ranking professors and researchers, to enhance the working environment.

The last theme that emerged from the responses related to working conditions and organizational culture. Respondents stressed the importance of stable contracts and opportunities for career progression. They also mentioned the need to address personal conflicts and suggested the use of social and informal activities to foster a more cohesive community. While some respondents acknowledged that competition is inherent in a university setting, they also conceded that the existing conditions might be as favorable as could be realistically expected.

The participants in the self-assessment rated the University's efforts to create a positive work environment as **satisfactory**, with a score of 3.00. However, when questioned about the existence of any strategies or frameworks to accomplish this, the majority of respondents were unaware of any such procedures or methods in place.

This pattern of unawareness also applied to strategies aimed at ensuring a work-life balance. Most respondents either did not know or denied the existence of such strategies. Similarly, when asked about any procedures in place to mitigate psychological stress, only a few respondents pointed out the availability of a university psychologist as a supportive measure.

Despite these gaps, the respondents did hold a positive view of communication with their superiors and managers across various university sectors. This aspect received an average rating of **good** (3.67). Yet, like in previous responses, most participants were unaware of whether this communication quality was regularly assessed for performance evaluations.

In terms of recognition for academic achievement, the perception was also rated as **satisfactory**, with a score of 3.17. Similarly, the university's flexible work arrangements received a **satisfactory** rating of 3.05. Respondents acknowledged the existence of flexible work options like remote work and home-office availability in many instances. However, they pointed out that there seemed to be a lack of standard guidelines regulating these practices.

The self-assessment respondents rated their satisfaction regarding autonomy and decision-making as **satisfactory**, with a score of 2.94. However, they identified several impediments that may be preventing higher satisfaction rates in these areas. Bureaucracy was a prominent issue raised by participants across different roles, suggesting a need for the university to streamline its administrative processes to boost operational efficiency. In addition, the problem of poor communication was underscored, with a faculty presidency member and others noting that it could lead to dissatisfaction. This feedback suggests that the university might need to implement more effective communication strategies.

When discussing workload, the participants brought attention to the burden of heavy teaching loads and management responsibilities, which limited their time for research. This feedback signals a need for better work distribution to allow more time for research activities. A member from the Research Unit Directorship highlighted morale and job satisfaction concerns, noting a perceived lack of institutional interest in employee satisfaction. This observation suggests the need for a more inclusive decision-making process.

Finally, some respondents pointed out confusion regarding roles and responsibilities within the institution. This feedback indicates a need for clearer role definition and better communication of responsibilities. To improve research personnel satisfaction, the institution may need to address several challenges. These include reducing bureaucracy, enhancing communication, better-balancing workload, showing more interest in personnel satisfaction, and clarifying roles and responsibilities. Despite these challenges, most participants reported being unaware of any specific plans or strategies in place to overcome these hurdles.

Finally, participants rated the diversity in the workforce as **satisfactory**, with a score of 3.06. However, it appears that the participants themselves have limited awareness of the university's efforts towards diversity and inclusion. Their responses to questions on this topic varied significantly, with approximately half of the participants stating that they were unaware of any initiatives in this area. The other half provided diverse responses, mentioning regulations for Portuguese and European authorities, integration programs

for Erasmus students, gender equality policies, and specific work codes, among others. This lack of consensus and the multitude of replies indicate a general lack of awareness among participants regarding this theme.

Despite the disparity in responses, there was unanimity when participants were asked about the availability of workshops or training programs related to diversity. All but one participant stated that they were not aware of any such offerings. This indicates that while the participants rated the diversity in the workforce as satisfactory, their awareness of the university's efforts in this regard seems to be limited. The participants provided a range of responses, indicating a lack of cohesive understanding of the initiatives implemented. Additionally, the majority of participants expressed unawareness of any workshop or training programs focused on diversity.

In conclusion about workplace balance and wellbeing in UAC, the self-assessment responses indicate that the major challenges to creating a positive work environment in their settings revolve around managing workload and compensation, improving communication, evolving management practices to recognize merit and foster cooperation, promoting interdisciplinary work and cooperation, and improving working conditions. These findings provide valuable insights into the complexities of creating a positive work environment in an academic and research setting.

To overcome the aforementioned challenges, some strategies can be employed. These include:

- **Revisit Compensation and Workload Policies:** Organizations could conduct regular reviews of workload and compensation policies to ensure fairness and prevent overworking. This could involve implementing policies that recognize and compensate for overtime work, ensuring reasonable job responsibilities, and providing opportunities for career progression based on merit.
- **Enhance Communication Channels:** Create open and robust channels for communication within the organization. This might involve regular meetings at various levels (departmental, faculty, and university-wide) to discuss ongoing issues and ideas, implement feedback mechanisms, and encourage open dialogue between different roles and branches. This could also involve developing a transparent system where everyone is aware of the decision-making process.
- **Foster Recognition and Merit-Based Systems:** Encourage a culture that values and recognizes individual and team achievements. This could involve creating an appraisal system that recognizes not just the quantity but also the quality of work done. This system should also encourage the sharing of best practices across the organization, promoting a culture of learning and improvement.
- **Promote Interdisciplinary and Collaborative Work:** Implement policies that encourage collaboration and teamwork across different branches and disciplines. This could include organizing interdisciplinary research projects or events that bring together faculty from different branches to exchange ideas and work

towards common goals. This would also foster a more inclusive and cooperative culture.

- **Improve Working Conditions:** Review and improve the working conditions, including addressing personal conflicts, providing contractual stability, and fostering opportunities for career progression. This might also involve providing spaces for informal and social activities to build camaraderie among staff members. Lastly, maintaining an open dialogue about mental health and stress management can help address issues related to burnout and stress, common in high-pressure environments like universities.

The adoption of these suggestions could improve the university's standing and the opinion of staff regarding workplace balance and wellbeing.

5.3.2.4. CULTURE OF INNOVATION

A culture of innovation is vital for any university striving to achieve excellence. As the academic landscape continues to evolve rapidly, universities must adapt and embrace new ideas, methodologies, and technologies to remain at the forefront of knowledge creation and dissemination. This culture encourages an environment where creativity, collaboration, and forward-thinking are nurtured and celebrated. It fosters a mindset that embraces change, enabling universities to tackle complex problems, drive groundbreaking research, and prepare students for the ever-changing demands of the future.

The rating found in the self-assessment for the establishment of a culture of innovation stands as **satisfactory** at 3.05, as reported by participants. Inquiring about the presence of initiatives that foster such a culture yielded a mix of positive and negative responses. A similar pattern emerged when evaluating the degree of freedom to innovate and navigate bureaucratic processes, with a **satisfactory** rating of 2.83.

On a positive note, noteworthy efforts towards cultivating a culture of innovation include the establishment of startup incubators and collaborative projects with national and international institutions focused on research. However, when it comes to the perceived openness of the university environment to criticism and new ideas, there is a striking contrast among responses, even among participants from the same department or with similar roles. This suggests a significant discrepancy in how members of the university perceive its own culture of innovation.

The assessment points to several key areas that need improvement for a culture of innovation to thrive. Here are a few strategies that could help address the challenges:

- **Leadership Endorsement and Involvement:** Leadership plays a vital role in fostering a culture of innovation. They should actively champion innovative ideas and initiatives and involve themselves in their execution. Their endorsement could go a long way in ensuring widespread acceptance and adoption.

- **Establish a Safe Environment for Experimentation:** The university should emphasize a fail-fast, learn-fast culture where mistakes during innovative pursuits are viewed as learning opportunities rather than failures. This approach will foster an environment that is open to risks and more accepting of new ideas.
- **Feedback Mechanisms:** Implement feedback systems to monitor progress, gather opinions, and adjust policies or practices accordingly. This can help ensure that changes are effective and allow for continuous improvement in the culture of innovation.

These strategies are merely a starting point, and they must be adapted to the unique needs and context of the university. The process of cultivating a culture of innovation is ongoing and requires consistent effort and commitment from all members of the university community.

5.3.2.5. ETHICAL EXCELLENCE

In an educational institution striving for excellence, the pursuit of ethical excellence holds paramount significance. While academic prowess and intellectual accomplishments are crucial components of a distinguished institution, they must be underpinned by a strong ethical foundation. Ethical excellence encompasses a range of values and principles, including integrity, honesty, respect, and accountability. By emphasizing ethical conduct and cultivating a culture of ethical excellence, a university not only ensures the holistic development of its students but also establishes a lasting legacy of integrity and social responsibility. It is through the integration of ethical excellence into every aspect of university life that a true institution of excellence emerges, fostering not only the advancement of knowledge but also the betterment of society as a whole.

The self-assessment results reveal an overwhelmingly positive sentiment towards the university's commitment to diversity, with participants rating it as **excellent**, an endorsement reflected in the high average score of 4.32.

Moreover, the majority of participants confirmed that the university abides by a standard code of ethics. This testament includes supplementary information indicating the presence and function of an Ethics Committee. It is worth noting, however, that not all participants were able to provide a comprehensive understanding of the ethical guidelines and the Ethics Committee. This discrepancy could suggest that the university community might not be adequately informed about the existence and purpose of these ethical resources.

When queried about the clarity and accessibility of the code of ethics, most respondents agreed that these standards are transparent and readily available. However, some participants expressed difficulty locating these guidelines and questioned the transparency of the Ethics Committee's operations and gatherings. Curiously, this positive feedback was largely from the University's administrative body, with members from other sectors expressing some doubt or uncertainty.

An intriguing aspect that was uncovered pertains to the system for submitting anonymous complaints. Although such a mechanism is in place, most survey respondents were not aware of its existence. This lack of awareness could, in turn, hamper the ability of community members to comprehend current issues and grievances, potentially hindering the administration's capacity to identify and rectify weaknesses. An analogous situation arises concerning systems to ensure due academic credit is accorded to its rightful authors. While such a system exists, the majority of participants reported being uninformed about it.

Regrettably, the survey also uncovers a gap in the provision of regular training or workshops on good ethical practices. A noteworthy revelation is the lack of proactive measures or committees tasked with ensuring that scientific members adhere to established ethical standards. This could be particularly problematic, considering the absence of an active system to monitor potential breaches of ethical conduct.

However, it's important to acknowledge that the existing code of ethics incorporates best practices on research ethics and third-party data management, showcasing the university's broader commitment to maintaining a responsible academic environment.

In summary, while the university receives high praise for its open-minded approach to diversity, the self-assessment uncovers several areas requiring attention. Although the university abides by a code of ethics and even hosts an Ethics Committee, the full scope of these resources isn't widely known or understood among members. Similarly, systems to process anonymous complaints and ensure due academic credit are in place, yet most participants are unaware of them.

Furthermore, there's an urgent need for regular ethical training and proactive measures to monitor adherence to ethical standards, particularly among scientific members. Despite these areas for improvement, the university's existing code of ethics admirably encompasses best practices for research ethics and third-party data management. This mixed picture underscores the need for increased communication and education on ethical practices within the university community.

To overcome these obstacles, a set of measurements can be potentially implemented:

- **Enhance Ethical Awareness and Understanding:** To cultivate a comprehensive understanding of the university's ethical guidelines and the function of the Ethics Committee, the institution should emphasize regular communication, such as through periodic newsletters, emails, or updates regarding ethical policies and committee activities. Alongside this, the university can organize regular information sessions or workshops that offer practical examples and case studies, reinforcing understanding of these ethical principles. The visibility of ethical guidelines and the committee's work should also be improved, with prominent displays on the university's website and relevant internal platforms.
- **Improve Access to Anonymous Complaints System and Due Credit Systems:** For the anonymous complaints and due credit systems to be

effectively utilized, it is essential that the university communicates about these systems and provides instructions on their use through regular channels, workshops, and information sessions. These systems should be user-friendly and easily accessible, with clear visibility on the university's website and internal platforms. Moreover, there should be a provision for regularly reviewing these systems to ensure they are effectively serving the university community.

- **Implement Regular Ethical Training:** To ensure adherence to ethical guidelines, mandatory regular training or workshops on good ethical practices should be organized for all university members. These workshops should cover all aspects of the university's ethical guidelines, employing practical and interactive teaching methods such as case studies, role plays, and discussions. Importantly, these training programs should be regularly updated to accommodate any changes or updates in the ethical guidelines.
- **Implement Proactive Ethical Monitoring:** In addition to proactive communication and training, the university should adopt measures for proactive ethical monitoring, particularly among scientific members. This can take the form of regular audits or checks of research projects for compliance with ethical guidelines. The appointment of an ethics mentor or advisor could provide guidance and support to researchers, and the implementation of a reward system might incentivize adherence to ethical guidelines and best practices.
- **Regular Feedback Mechanism:** Establishing regular feedback mechanisms will help the university identify any gaps in knowledge or concerns regarding ethical practices. This can be achieved through regular surveys or open forums, providing members of the university with an opportunity to express their views or concerns. Such mechanisms will not only ensure that the members' voices are heard but will also aid in the continuous improvement of the university's ethical practices.

5.3.3. KNOWLEDGE AND TECHNOLOGY TRANSFER

5.3.3.1. KTT STRATEGIES AND ORGANIZATIONS

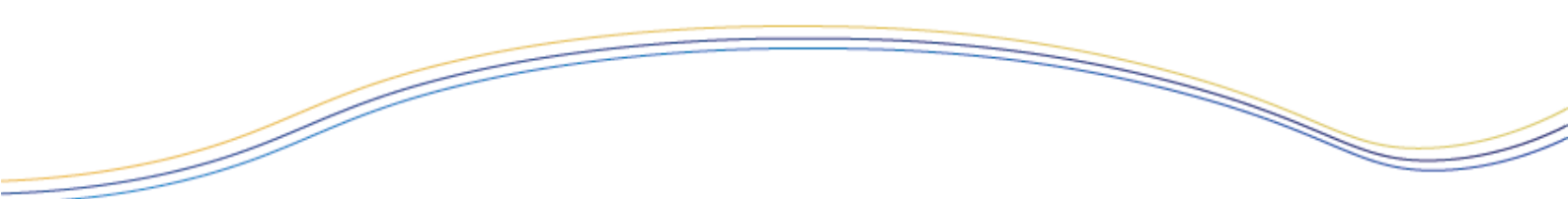
Knowledge and Technology Transfer (KTT) holds critical importance in a University of Excellence, serving as a crucial catalyst for fostering innovation, stimulating economic development, and driving societal progression. Acting as a vibrant bridge between academic research and practical industrial applications, KTT facilitates the swift integration of revolutionary ideas, products, and methodologies into various sectors. The mechanism not only bolsters the university's global academic standing but also underscores its role as a significant contributor to societal enhancement and the development of a knowledge-based economy. By offering invaluable resources and spawning commercial opportunities, KTT constructs a symbiotic ecosystem that magnifies the university's influence and reach, transcending the traditional boundaries of academia.

A comprehensive analysis of the feedback received from participants indicates a significant degree of uncertainty about KTT amongst the respondents, with noticeable apprehension from individuals associated with the science and technology branch. This discovery infers the presence of potential communication gaps, and possibly a demand for more comprehensive education on KTT within these subsets of the institution.

The survey illuminates several areas where the institution could potentially enhance its performance. One such aspect is more explicit education and training about KTT. To augment understanding and engagement among staff members, the institution could also focus on the development of clear communication channels and protocols about KTT processes. Given the positive impact such programs have reportedly made, as acknowledged by multiple respondents, the continuous support and fortification of existing KTT initiatives are highly recommended. Regular updates and reviews on the state of KTT within the institution could be instrumental in facilitating ongoing improvements and adopting proactive responses to changing needs and opportunities.

Furthermore, respondents mentioned the need to bridge the gap between the Science-Technology sector and the Private sector, underlining the significance of external collaborations. Therefore, while uncertainty about KTT's goals lingers, a collective focus on societal engagement, resource provision, and strengthening external partnerships has emerged.

A review of survey responses uncovers a few key stakeholders' KTT activities that have been repeatedly mentioned across different fields. Private enterprises and government entities were frequently identified, suggesting their roles in the application and commercialization of research, and providing regulatory and funding functions, respectively. Local or regional organizations, including companies and administrations, were brought up by multiple respondents, indicating academia's role in local development.



The self-assessment responses also offer significant insights into the various challenges faced within academic and research institutions. Key themes that resonated through the responses included resource insufficiency, communication hurdles, systemic and cultural impediments, and a shortfall in understanding KTT.

A prominent concern voiced by respondents revolves around the paucity of funding and skilled personnel, underscoring the necessity for increased resources and better resource management. Furthermore, there is a need to cultivate a more collaborative environment within institutions to mitigate the evident communication gaps within research groups and between academia and society. The findings also bring to the fore systemic and cultural complications such as ambiguous policies, inappropriate intellectual property regulations, and a deficiency in market-oriented research, all of which seem to impede KTT's progression. Intriguingly, some respondents were unable to identify specific challenges, hinting at a possible lack of KTT awareness amongst staff.

Consequently, these revelations unveil multi-dimensional challenges to KTT development, advocating efforts in resource allocation, communication refinement, policy overhauling, and improving KTT literacy. As per the survey responses, several key strategies were suggested to enhance KTT across diverse scientific branches. The emphasis was laid on improving communication and networking, reflecting a consistent trend amongst the respondents. The need for bolstering connections with the private sector also came up, with participants recommending the formation of partnerships with companies, organizing research showcasing events, and aligning research with the needs of the private sector. These proposals underscore the potential of academia-industry collaborations for fostering innovation and technology transfer.

Additionally, the need for institutional change was discernible from the survey responses. Suggestions included the need for a more transparent regulatory system and a fairer scheme for sharing benefits between institutions and researchers. Lastly, capacity building was deemed crucial for improving KTT. Proposals centered around training researchers, enhancing the capabilities of institutional bodies, and promoting courses dedicated to KTT.

In essence, improved networking, closer alliances with the private sector, institutional reforms, and capacity building emerged as the pivotal starting points for enhancing KTT in academic institutions. The survey results underline a significant lack of awareness or comprehension surrounding knowledge and technology transfer KTT across various roles and branches, with numerous respondents admitting, "I don't know."

In conclusion, the comprehensive feedback analysis has shed light on the prevalent ambiguity surrounding the concept and goals of Knowledge and Technology Transfer (KTT) within academic and research institutions, particularly within certain branches and roles. It's clear that there's a pressing need for the enhancement of communication channels, increased KTT literacy, and the bolstering of resource allocation. Encouragingly, common objectives have been identified, with an emphasis on societal

engagement, provision of resources, and external collaboration, demonstrating a shared vision for KTT despite the existing uncertainties.

As institutions strive to address these issues, the suggestions of respondents offer a roadmap for improvement, highlighting the necessity of academic-commercial partnerships, improved networking, a shift towards a more business-oriented culture, and an investment in training and education. Implementing these suggestions will require considerable effort and institutional change, but the potential rewards of a more efficient, collaborative, and innovative system of knowledge and technology transfer are undoubtedly substantial.

It was observed that certain actions can be taken to mitigate the presented questions:

- **Strengthen KTT Literacy:** Implement training programs, seminars, and workshops for staff members and researchers. This will help build a comprehensive understanding of KTT processes, importance, and benefits. A well-informed staff can more effectively engage in and support KTT initiatives.
- **Establish Clear Communication Channels:** Ensure open, transparent, and frequent communication within the institution about KTT. Regular updates and reviews on KTT progress should be communicated across all levels of the institution. This will help build trust, mitigate communication gaps, and foster a sense of shared ownership and responsibility.
- **Resource Allocation and Management:** Identify the resource needs of KTT and strive to meet them. This might include securing additional funding, hiring or training skilled personnel, and efficiently utilizing existing resources. Seek out public, private, and governmental funding opportunities, grants, and partnerships.
- **Regulatory and Systemic Reforms:** Review existing policies and procedures relating to KTT. Clear, fair, and supportive policies will facilitate KTT. Intellectual property regulations should be reviewed to ensure they are conducive to KTT, while still protecting the rights of the researchers and the institution.
- **Strengthen the Role of the KTT Office:** The KTT office should be empowered to coordinate, support, and promote KTT activities across the institution. This office can also serve as a centralized point for resources, advice, and support for KTT activities.

These measures aim to build a supportive environment for KTT, fostering a culture of innovation and collaboration. They are designed to improve understanding, engagement, and capacity in KTT, and to enhance connections between academia, industry, and society. Each institution will need to adapt these measures to its unique circumstances and needs. It's important to regularly evaluate and adjust these strategies to ensure they are effective and meet the evolving needs of KTT.

5.3.3.2. STRUCTURES AND PROCESSES TOWARDS PATENT AND IP ACTIVITIES

At a leading University of Excellence, a strong foundation in structures and processes plays a pivotal role in streamlining patent and Intellectual Property (IP) activities. These structures and procedures serve as the backbone of innovation management, ensuring that intellectual creations are properly documented, legally protected, and successfully commercialized. Understanding and applying this framework is vital in fostering a culture of innovation and entrepreneurship.

Not only do these strategies safeguard the fruits of academic labor, but they also maximize their societal and economic impact, while preserving the institution's reputation as a global innovation hub. Hence, the establishment and adherence to effective structures and processes for patent and IP activities are integral components of the University's commitment to advancing knowledge, fueling economic growth, and creating societal benefits.

The self-assessment survey has unveiled a lack of awareness or even negative perceptions among the majority of participants regarding the university's support for invention disclosure activities. This was equally the case when it came to training researchers in the process of invention disclosure.

In the domain of patent registration, the university seemed to garner some positive sentiments. Participants have voiced that the institution can undertake fundamental patent registration activities. However, when it comes to patent internationalization activities, it appears the university struggles somewhat. The study also highlighted a lack of clarity surrounding whether the university partners with patent lawyers for these patent-registration tasks. This indicates a potential area for improved communication and transparency.

The survey feedback indicates significant challenges when it came to the development and management of the existing patent portfolio. The university seems to be lacking the necessary capacity to effectively promote and manage the commercialization of patents under its purview. Participants, unfortunately, couldn't provide further insights into this particular aspect.

In summary, the prevalent lack of awareness and negative perceptions concerning support for invention disclosure activities and training stands as a stark indicator of gaps in communication and institutional support. The struggles in patent internationalization and shortcomings in patent portfolio management suggest deficiencies in both capability and strategy. These issues not only hinder the efficient exploitation of the university's intellectual assets, but they could also stifle innovation and discourage potential research talent. Addressing these challenges is crucial to strengthening the university's standing as a robust hub of innovation and research, and to harnessing the full potential of its intellectual resources for societal benefit.

The following set of actions can be employed to relieve the perceived deficits:

- **Boosting Awareness & Perception on Invention Disclosure:** To elevate awareness and perception of the university's support for invention disclosure, regular information sessions could be held, and successful patent applications could be publicized. Instituting a reward system for consistent invention disclosure could also encourage greater participation from faculty.
- **Enhancing Capabilities for Patent Internationalization:** Improving the university's patent internationalization capability can be achieved by seeking external advice from global IP experts and providing workshops on international patents.
- **Improving Patent Portfolio Management and Commercialization:** Issues of patent portfolio management and commercialization can be addressed by establishing a dedicated IP Management team and offering workshops on commercialization strategies. Forming strategic alliances with industry partners could also provide necessary resources for commercialization.

These strategies will enable the university to efficiently manage its intellectual property, foster innovation, and fortify its reputation as a global innovation hub.

5.3.3.3. PARTNERSHIP DEVELOPMENT

The development of robust partnerships with external stakeholders is key to the advancement and success of a university of excellence. It facilitates the confluence of ideas, resources, and capabilities that transcend the boundaries of the institution. These alliances, which may involve industries, academic institutions, government entities, and the broader community, not only serve to enhance the university's curriculum, research, and societal contributions but also help to drive innovation and foster an environment that nurtures intellectual growth.

As the world grows more interconnected and complex, the significance of such collaborations increases, fueling a knowledge-driven economy and addressing the pressing challenges of our time. It is through these external partnerships that a university can truly elevate its position as a beacon of knowledge, leadership, and societal transformation.

Participants in the self-assessment rated the level of cooperation between the university and its external partners as **satisfactory**, scoring it at 3.17. However, there seems to be some ambiguity about the university's commitment to expanding and strengthening these external partnerships and fostering new growth opportunities.

Despite the university's occasional involvement in industry-related projects, the feedback from external stakeholders suggests they are not entirely satisfied. Moreover, while the university facilities are occasionally available for external use under certain conditions, access to these resources is considered challenging by external stakeholders.

In terms of cooperation with industry and commercial entities, the participants rated it as satisfactory with a score of 3.39. Nevertheless, when asked about future enhancements in this area, many highlighted the need for improved communication as a primary area of focus. The suggestions ranged from direct contact and networking at conferences and workshops, to sharing access to research resources and facilities. However, it's worth noting a degree of uncertainty among participants regarding how such improvements could be implemented. This hints at a potential challenge – the lack of a unified vision or strategic approach.

Interestingly, received mixed feedback about the university's awareness of current and emerging market trends in their respective scientific fields was also received. Although this view contrasts with external perceptions that the university is generally out of step with modern market demands. Responses were nearly evenly divided between positive, negative, and uncertain.

Despite these mixed views, there's a consensus among participants that the current strategy for communicating such information to researchers is less than ideal and could benefit from enhancement.

In conclusion, while the self-assessment indicates that participants find the level of cooperation between the university and external stakeholders satisfactory, there is clear evidence of room for improvement. Key challenges include the need for more active engagement with external partners, enhanced communication strategies, and share access to facilities.

It is important to note that this vision directly clashes with the results obtained from the external assessment made with potential partners in the surrounding ecosystem, as these were certainly not satisfied with the current level of external cooperation with the university.

There is also a prevalent uncertainty among participants about how to enact such improvements, indicative of a lack of unified vision or strategy. Furthermore, feedback points to a disconnect between the university's perceived awareness of market trends and the external view of the university as being out of step with contemporary demands. Addressing these challenges should be a priority to ensure the university remains relevant and continues to cultivate beneficial partnerships with industry and commercial stakeholders.

The following possibilities to overcome the presented pain points can be suggested:

- **Develop a Clear Strategy for Partnerships:** A formal, well-articulated strategy for developing and managing external partnerships will help remove ambiguity and foster trust among stakeholders. This strategy should highlight the benefits and roles of partners and provide a roadmap for improving and expanding partnerships over time.
- **Improve Communication:** Frequent and transparent communication with partners is essential to maintaining strong relationships. This can be achieved

through regular meetings, updates, newsletters, or a dedicated portal that provides access to relevant information.

- **Facilitate Access to Facilities:** To encourage collaboration and demonstrate the value the university places on partnerships, it could make its facilities more readily available to partners. This may require reviewing current policies and procedures to identify and address any barriers to access.
- **Enhance Industry Engagement:** Actively involve industry and commercial entities in curriculum development and research projects, so that students and faculty are working on relevant, real-world issues. Host industry events, guest lectures, and seminars to expose the university community to market trends and the latest industry developments.
- **Foster a Culture of Partnership:** Leadership should encourage faculty, staff, and students to actively seek and participate in partnership opportunities. This could be promoted through training, recognition of successful partnerships, and incentives.
- **Regularly Evaluate and Improve Partnerships:** Incorporate feedback from partners and stakeholders to continually improve relationships and collaborations. Regularly review and update the partnership strategy, ensuring it remains effective and relevant.

Addressing these challenges requires ongoing effort and the commitment of the university's leadership. By focusing on these areas, the university can strengthen its relationships with external stakeholders, better meet their needs, and continue to elevate its standing as a leading institution of learning and innovation.

5.3.3.4. START-UP SUPPORT AND INCUBATION

Universities of excellence are not just hubs of learning and research; they are also seedbeds for innovation, creativity, and entrepreneurial endeavors. A robust start-up support and incubation framework within the university ecosystem is an essential element to foster these entrepreneurial aspirations. This support provides a safe environment for nurturing nascent business ideas and innovative projects of students, faculty, and alumni, offering necessary resources, mentorship, and networking opportunities. It creates a vibrant entrepreneurial culture on campus that is conducive to the development of start-ups that can potentially transform industries and solve pressing societal challenges.

Not only does this bolster the university's standing as a catalyst for economic development, but it also equips its constituents with the practical skills and experiences needed in today's dynamic and competitive business world.

The university's performance in providing start-up support and incubation has been largely deemed **inadequate**, with an average rating of 2.56, according to a majority of those surveyed. There seems to be a pressing need for enhanced communication as a

significant proportion of participants struggled to answer questions pertaining to start-up and incubation support.

A myriad of questions was left unanswered by the majority, including those concerning the principal barriers to successful start-up and spin-off creation, the collection of data and feedback for improvement, and perhaps most tellingly, the acknowledgment of the absence of a start-up incubator at the University of Azores.

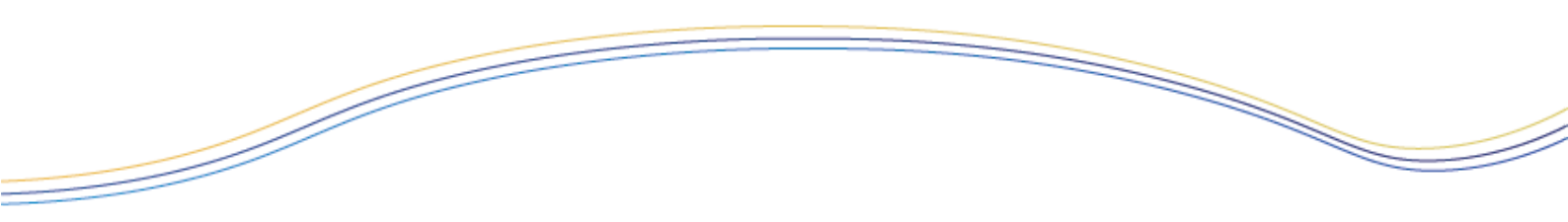
This evidence suggests a communication gap between the university, its affiliated departments, and the broader university community. The departments tasked with start-up support and incubation, it would seem, have not effectively conveyed the scope and availability of their services, or indeed, their very existence.

In conclusion, the University of Azores faces significant challenges in both the provision and communication of its start-up support and incubation services. A prevailing lack of awareness within the university community hampers the potential for successful start-ups and spin-offs.

The clear communication gap suggests that not only is there room for improvement in the university's support mechanisms, but there is also an urgent necessity to enhance the dissemination of information regarding these services. The university must address these hurdles promptly and effectively to foster an environment that is conducive to the growth and success of entrepreneurial endeavors.

Finally, some solutions can be implemented towards solving these issues:

- **Improved Communication Channels:** The university needs to enhance its communication about the existence and benefits of its start-up support services. This could be achieved through a dedicated website, regular newsletters, social media platforms, and presentations at various university events. It's also critical to communicate success stories from the incubation program, which can inspire others and demonstrate the program's effectiveness.
- **Awareness Campaigns:** Organizing awareness campaigns, workshops, and seminars on entrepreneurship and the benefits of start-up support can be beneficial. Guest lectures from successful entrepreneurs and start-up founders could further motivate and inspire budding entrepreneurs.
- **Start-up Competitions and Events:** The university could host regular start-up competitions and entrepreneurial events. These events can create excitement around entrepreneurship, provide networking opportunities, and can showcase the university's commitment to fostering an entrepreneurial culture.
- **Training and Workshops:** Offering entrepreneurship training and workshops would help to equip students, faculty, and alumni with the necessary skills for business start-up and development. These could cover areas such as business plan development, marketing, financial management, and legal aspects of starting a business.
- **Collaboration with External Stakeholders:** Collaborating with external business incubators, accelerators, venture capitalists, and industry partners could provide much-needed external support and resources for the university's



start-ups. This could also create opportunities for internships, job placements, and potential funding.

By addressing these issues, the University of Azores can make strides towards creating a thriving entrepreneurial ecosystem that not only fosters innovation but also enhances the university's reputation as a hub for entrepreneurship and economic development.

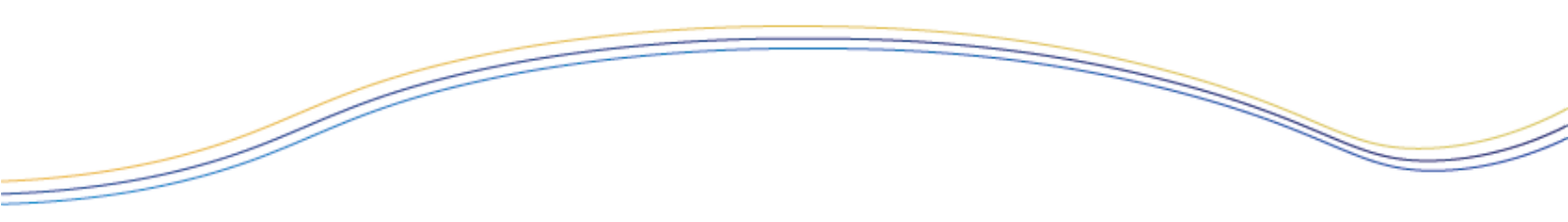


5.3.4. FINDINGS

This study highlights several interconnected challenges and opportunities across different realms. It starts with the understanding of how roles within the university, from professors to administrators and research directors, prioritize different objectives, thus crafting their unique strategies. Although these strategies have proven to be effective individually, the university faces the dilemma of distinct and often isolated approaches. This lack of a unified strategy could potentially hinder the institution's optimal efficiency and effectiveness in achieving common goals, such as conducting meaningful research, fostering innovation and entrepreneurship, engaging with local communities, and promoting interdisciplinary and holistic education.

The major obstacles, as identified in the integrated text, are as follows:

- 🌐 **Lack of a Unified Strategy:** Various stakeholders within the university each prioritize different objectives and, therefore, employ distinct strategies. This leads to a siloed approach, potentially hindering efficiency and effectiveness in achieving common goals.
- 🌐 **Resource Scarcity:** This includes financial, infrastructural, and staffing needs. This scarcity could impact the university's ability to carry out various academic and administrative activities effectively.
- 🌐 **Staffing Challenges:** There are issues related to a shortage of staff, high workload burdens, and a need for more career researchers.
- 🌐 **Inadequate Internal Communication:** There's a perceived lack of internal communication within the institution that hinders fostering collaboration.
- 🌐 **Staff Recruitment and Retention:** Noncompetitive salaries, limited research funding, and competition from more prominent institutions are significant obstacles to attracting and keeping talented staff.
- 🌐 **Career Development Transparency:** There's a lack of communicated career progression paths, leading to retention problems and inequitable opportunities.
- 🌐 **Workplace Wellbeing:** Managing workload and compensation, improving communication, and fostering a positive, cooperative environment present significant challenges.
- 🌐 **Innovation Culture and Ethical Standards:** While the university has made commendable efforts, there's a need for a unified approach to innovation and a broader understanding and awareness of ethical practices.
- 🌐 **Knowledge and Technology Transfer (KTT):** There's ambiguity in the understanding and objectives of KTT, which points to a need for improved communication, literacy, and resource allocation in this field.
- 🌐 **Engagement with External Stakeholders:** External partners express dissatisfaction with the level of active engagement, communication strategies, and access to facilities.
- 🌐 **Start-up Support and Incubation Services:** A pervasive lack of awareness within the university community hampers the potential for successful start-ups and spin-offs.



In conclusion, the university faces obstacles on various fronts. Addressing these challenges and seizing the highlighted opportunities is crucial for the university's future progress. It would not only enhance its standing as a leading institution in the academic and research landscape but also further its mission of creating an equitable, innovative, and nurturing environment for all members of the community.

5.4. ULPGC INTERNAL ASSESSMENT

5.4.1. EXCELLENCE IN RESEARCH

5.4.1.1. INSTITUTIONAL OBJECTIVES, STRATEGIES AND FRAMEWORKS

Organizational arrangements and managerial strategies are vital components of effective management practices within an institution. Organizational arrangements refer to the intangible assets encompassing the systems and structures that govern the execution of activities to accomplish specific objectives. These internal systems consist of regulations, roles, and responsibilities that establish the framework for managing information flow, processes, and the distribution of power and responsibilities within the organization.

On the other hand, managerial strategies and frameworks involve a variety of procedures utilized to efficiently manage resources and implement actions to achieve desired goals. These strategies facilitate the streamlining of functional steps across various processes and are typically expressed through established techniques, regulations, and protocols that govern specific actions. While organizational arrangements primarily focus on aspects such as information flow, defining hierarchy, and organizational goals, managerial strategies aim to optimize approaches to successfully attain these objectives.

5.4.1.1.1. INSTITUTIONAL OBJECTIVES

Through the self-assessment survey, it was acquired general responses related to the overall objectives of the institution, the strategy employed to achieve them, as well as the institution's development framework, followed by an evaluation of the current performance of the strategies and frameworks in place to attain the institution's objectives.

The survey's outcomes allowed us to see a range of viewpoints concerning the overarching objectives of the educational institution, each reflecting the respondent's position and specific focus area.

The recurring patterns have been collected into the following key takeaways:

- **Education:** Providing knowledge and developing the personal capabilities of students. A higher education institution is expected to provide a holistic education to students, which prepares them not only as professionals but also as individuals capable of facing various life challenges.
- **Research:** Generating new knowledge in various disciplines and striving for excellence in research are fundamental tasks for these institutions. The goal is not only to create new knowledge but also to stimulate innovation.

- **Knowledge Transfer:** The knowledge generated through research and education isn't confined within the institution's walls. Higher education institutions aim to transfer this knowledge to society, including industries, to foster economic development and job creation.
- **Social Impact:** Higher education institutions are expected to contribute actively to the social, cultural, and economic development of the society they are part of. This involves fostering values, equipping individuals to better tackle their present and future challenges, and establishing synergies with the communities they serve.
- **Professional Development:** The formation of professionals capable of contributing to society's development is another key objective of higher education institutions.
- **Transformation of Society:** Lastly, these institutions seek to transform society for the better and promote its economic and human development.

In summary, participants indicate that the objectives of ULPGC aim to foster holistic student development, generate innovative research, facilitate knowledge transfer for economic and job growth, create a positive social impact, enhance professional development, and work towards societal transformation and advancement.

5.4.1.1.2. STRATEGIES AND FRAMEWORKS

The received responses were fairly broad in nature, lacking specific details about the approaches utilized to accomplish the institutional objectives. While it is valuable to grasp the overall picture of how various elements interact, being too general can mask potential shortcomings and difficulties in executing these strategies. It would be beneficial to include more specific steps that outline the necessary actions to achieve the desired outcomes.

Nonetheless, a diverse set of answers were provided regarding the utilized strategies and frameworks the university employs. Among these, a selection of highlights was:

- **Education:** ULPGC consistently works on refining its educational objectives. The institution aims to keep updating its curriculum, ensuring its alignment with societal needs. Collaboration with industrial, governmental, and non-profit sectors enhances this adaptability. Significant investment in faculty development is indicated as a priority, with continuous training in contemporary teaching methods and technologies. Ethical conduct in teaching and research is highly valued and underpinned by explicit policies and procedures.
- **Research and Knowledge Transfer:** A strong research culture is encouraged at ULPGC. Multiple research centers have been established, and participation in both international and local projects is actively encouraged. A technology transfer office has been set up to transform research findings into practical applications. This office assists researchers in patenting their innovations and establishing connections with industry partners for commercialization.

- **Social Impact:** ULPGC seeks to maintain beneficial relationships with the wider community. It has formed partnerships with local businesses and organizations, and it encourages regular participation in knowledge transfer activities. Students are also motivated to engage in internships and service-learning opportunities, enabling the practical application of their knowledge. These efforts contribute towards the goal of creating an informed, competitive, and innovative society.
- **Resource Management:** ULPGC attempts to place a high priority on efficient resource management. The institution has implemented agile administrative procedures that undergo regular improvement-focused reviews. Resource allocation, both human and financial, is approached with prudence, with regular reassessment of budget allocations to ensure they align with strategic objectives.

Nonetheless, the overall perception of participants regarding the quality of strategies and frameworks employed is **satisfactory** (2.8). This indicates that even though ULPGC does have general guidelines to enable changes, challenges are preventing the full implementation of these measures.

In summary, ULPGC's self-perceived strategy combines effective educational practices, strong research initiatives, community engagement, and prudent resource management to deliver high-quality education. Its adaptable curriculum, support for practical research application, partnerships with local entities, and efficient allocation of resources form a comprehensive strategy aiming to foster an informed, competitive, and innovative society.

5.4.1.2. EDUCATIONAL CAPACITIES

Universities serve as crucial educational powerhouses, providing students with an extensive array of learning opportunities and resources. They stand as pillars of knowledge, diffusing invaluable information and nurturing vital critical thinking abilities through seminars, lectures, and academic publications. With a vast selection of academic programs, universities prepare students with the specialized knowledge and practical skills required to excel in their chosen disciplines.

The proficiency of faculty members is an integral component of a university's educational prowess. Esteemed professors act as mentors, guiding students throughout their academic journey and inspiring them to reach their full potential. Their subject expertise and dedication to teaching are instrumental in disseminating knowledge and sparking a passion for learning among students.

The majority of participants concur that the existing educational provisions align well with the institution's objectives. Those who expressed uncertainty mostly attributed this to limited financial resources, which they saw as a key barrier to fully aligning the educational offerings with the institution's goals. However, opinions were split when asked if the university is taking appropriate measures to overcome these obstacles; some participants expressed approval, while others were more skeptical.

Participants have given an average rating of **good** (4.00) to the quality of educational programs offered, reflecting a generally positive outlook on this matter. Furthermore, it is noteworthy that no participant rated the quality of education below 3.00. The university's commitment to regular quality surveys is another commendable practice, as it helps glean deeper insights into the strengths and areas for improvement of the institution's educational offerings.

Regarding fields or departments where the university excels, diverse answers were received that included tourism, computer engineering, animal medicine, aquaculture, ocean sciences, data analytics, and engineering. However, it emerged that many participants were unaware of any specific strategies being implemented to amplify the strengths these fields provide. One participant highlighted the importance of collaborations with external companies and participation in Spanish and European international calls, but others were unaware of similar initiatives. This suggests that either these participants' respective fields are not engaged in such endeavors, representing a missed opportunity, or that the participants are simply unaware of these strategies.

When asked about the existence of potential obstacles that might impede the leveraging of the university's areas of excellence, mixed responses were received. While some believed no significant challenges exist, others expressed a different perspective.

To overcome the perceived challenges in this subchapter, the university could draw its attention to the following actions:

- **Resource Allocation:** Implement effective resource management strategies to ensure funds are distributed efficiently, targeting the areas in need to align the educational offerings with the institution's objectives.
- **Communication Strategies:** Develop comprehensive communication strategies to keep faculty and students informed about the university's initiatives, particularly those geared towards overcoming obstacles.
- **Collaborations and Partnerships:** Foster partnerships with external companies and participate more in international collaborations, extending the range of opportunities available for students and faculty alike.
- **Strengthen Interdepartmental Cooperation:** Encourage interaction and cooperation between different departments, allowing them to learn from each other's best practices and address common challenges.

In conclusion, the faculty's expertise and dedication are instrumental in driving the educational prowess of these institutions. While there are obstacles such as limited financial resources and lack of awareness about strategic initiatives, there are feasible solutions, including effective resource management, improved communication, and fostering collaborations. Participants' overall positive outlook on the quality of education offered is a testament to the efforts already in place. Regular quality surveys reflect the institution's commitment to continual improvement, and the diverse areas of excellence present numerous opportunities. Addressing the identified challenges will only serve to further enhance these centers of learning, providing students with an even richer, more beneficial educational experience.

5.4.1.3. ADVANCED RESEARCH PRODUCTION

Universities serve as a nexus for advanced research production, playing an indispensable role in the expansion of knowledge across myriad disciplines. Their contributions ignite innovation, stimulate economic growth through industry creation, and attract investment and employment opportunities. Importantly, they also foster skills development, instilling essential competencies such as problem-solving, project management, and communication within students and staff. This subchapter further delves into questions related to performance tracking, research funding, qualified personnel standing, facility management, and other operational aspects.

The survey reveals that the methods of tracking research professionals' performance showed a variety of outcomes. Some participants indicated that *Sexenios* reports, the count of transfer projects, publications, and doctoral theses were the primary means of tracking. Conversely, other participants were unaware of these performance metrics. It's essential to highlight that the big picture of research production doesn't solely rely on quantitative data. Qualitative tracking methods equally contribute to a more comprehensive understanding. A significant complaint registered was the inclination towards quantitative data acquisition, disregarding the value of qualitative data.

When it comes to challenges that affect the quality of research, participants cited financial constraints, subpar competitiveness among academic staff, an insufficient workforce, and certain individuals' and groups' unfair self-promotion practices. While the university has made attempts to address research understaffing by attracting young talent, the participants did not identify any significant actions tackling the remaining challenges.

A notable problem that was often mentioned is that specialized equipment and facilities lack the qualified technical staff to operate them correctly. This problem arises from inadequate training and poor resource allocation by the university or department's upper management. Interestingly, despite these issues, participants expressed their satisfaction as **good** (3.6) with the technical staff.

The participants deemed the overall quality of academic research as **satisfactory** (3.37). Interdisciplinary academic research also received a **satisfactory** rating (3.37). However, participants were uncertain about any future strategies or plan the university might have to enhance such cooperation.

Regarding the university's participation in academic networks, the participants rated it as **inadequate** (2.4). However, it was acknowledged that efforts are underway to expand the university's international academic networks.

Research and equipment facilities received a rating of **inadequacy** (2.18) from participants. Many were unaware of any corrective measures being taken to overcome these issues. The majority of complaints were tied to insufficient funding, outdated

equipment, perceived preferential treatment of certain departments, inefficient resource allocation, and overall management issues with procurement.

Given these challenges, a list of potential solutions can be proposed:

- **Enhancing Interdisciplinary Collaboration and Expanding Academic Networks:** Universities could stimulate interdisciplinary research by creating interdisciplinary research centers, offering incentives for cross-department collaboration, and fostering an organizational culture that values such cooperation. In addition, continued efforts should be made to build academic networks by participating in international conferences, collaborative research projects, and student exchange programs.
- **Improving Research and Equipment Facilities and Equipment Management:** To overcome issues related to insufficient funding, outdated equipment, and inefficient resource allocation, universities need to undertake a comprehensive review of their procurement and resource allocation processes. Furthermore, universities should consider investing in ongoing training programs for technical staff to enhance their operational skills.
- **Improving Performance Tracking Methods:** Establishing an effective mix of both quantitative and qualitative performance-tracking methods would be advantageous.
- **Enhancing Transparency:** Lastly, to address concerns about preferential treatment and lack of awareness about corrective measures, universities should enhance transparency in their operations. Regular communication updates and open forums could serve as effective platforms for disseminating such information and addressing concerns.

Universities serve as a powerful catalyst for advancing knowledge, fostering innovation, and contributing significantly to economic growth and societal well-being. Despite these potential benefits, the survey responses highlight a range of challenges that can impede optimal research production. These challenges include issues with performance tracking, insufficient funding, lack of qualified personnel, inadequate facility management, and suboptimal transparency in operations.

Yet, the identification of these obstacles provides a path for improvement. By prioritizing enhanced interdisciplinary collaboration and network expansion, investing in research facilities and equipment management, improving performance-tracking methods, and increasing transparency, universities can surmount these challenges. Implementing such strategies can effectively streamline operations, optimize resource utilization, and ultimately augment research quality and output, thereby elevating the university's standing in the global academic arena and magnifying its societal impact.

5.4.2. TALENT ACQUISITION AND RETENTION

5.4.2.1. RECRUITMENT OF NEW TALENT

Recruiting top-tier academics, researchers, and students is pivotal for a university's future direction and prestige, driving innovation and idea development. Their expertise fuels teaching quality, significant research, and valuable academia-industry partnerships. Such recruitment keeps the institution academically relevant and cultivates a diverse, inclusive environment, essential for a wealth of ideas and perspectives.

This thorough examination of talent acquisition examines recruitment performance, salary compensation, provision of research funding, onboarding programs, and other aspects.

Participants have deemed the recruitment of new talent to be **inadequate**, reflected by a rating of 2.60, with the predominant intake of new members being local nationals. Aspects such as professional remuneration and the availability of resources for research are regarded more favorably, achieving ratings of 2.70 and 2.80 respectively, falling into the **satisfactory** bracket. A principal challenge recognized by participants is the geographical seclusion of the Canary Islands from the rest of mainland Europe, an issue that was anticipated. By integrating these insights with the earlier ratings, it is highlighted that the primary hindrance does not stem from non-competitive salaries or a shortage of research funding, but rather the hesitation of emerging talent to relocate to the Canaries. Nonetheless, it is crucial to highlight that there exists scope for enhancements regarding professional compensation and further research funding.

The survey also points out the lack of a structured welcoming program for new staff members, an issue that poses a significant hurdle. The absence of an effective onboarding system for incoming university researchers and professors could lead to unfamiliarity with the institution's culture and norms, insufficient knowledge about administrative procedures, reduced productivity, and performance, missed opportunities for networking, limited awareness of available resources and support services, increased stress and the possibility of burnout. This, in turn, could negatively impact the retention and overall success of faculty members. Implementing a thorough onboarding program is essential for facilitating a smooth transition, fostering integration, and ensuring the success of new faculty members, as it provides the necessary support and resources they need to succeed in their roles.

Nonetheless, even though most challenges are somehow budget-bound, alternative strategies can be promoted to surpass recruitment difficulties, such as:

- **Establish an Onboarding Program:** To ensure new staff members are integrated into the institution efficiently, it is crucial to establish a comprehensive onboarding program. This should include an orientation to familiarize new staff with the institution's culture, norms, administrative processes, and available

resources and support services. The program ideally should also include networking opportunities and mentorship programs.

- **Attractive Compensation Packages:** While salaries are rated as satisfactory, offering competitive benefits packages could also be a major draw for potential employees. This might include housing assistance, travel allowances, or relocation packages for those moving to the Canary Islands.
- **Improvement in Research Funding:** Despite the satisfactory rating, it's crucial to continuously seek more funding opportunities for research. More funding not only attracts potential candidates but also provides them with the resources they need to conduct high-level research.

In conclusion, the findings emphasize the need for enhanced recruitment strategies, specifically focusing on comprehensive onboarding, attractive compensation, and continuous improvement in research funding. Addressing these issues will better equip the institution to attract and integrate top-tier talent, fostering an environment that supports institutional growth, innovation, and prestige. These improvements will ensure the institution remains an appealing choice for academics and researchers, despite geographical challenges.

5.4.2.2. CAREER DEVELOPMENT OPPORTUNITIES

The dynamism and creativity of the research staff are the driving forces behind academic and scientific breakthroughs at any university of excellence. Consequently, the significance of career development opportunities cannot be emphasized enough. Nurturing the professional growth and career paths of research staff is not only advantageous for the individuals themselves, but it is also an essential strategic requirement for the institution as a whole.

In the fast-paced and competitive realm of academic research, highly accomplished researchers consistently strive to expand their knowledge and skills, ensuring they remain at the forefront of their respective fields. Career development opportunities, such as advanced research methodology training, workshops on emerging technologies, and mentorship programs, enable them to achieve this goal. This continuous learning not only drives their personal career progression but also amplifies the impact and reputation of the university.

Furthermore, these opportunities play a crucial role in retaining talent and fostering motivation. By offering clear pathways for growth and development, the university demonstrates its appreciation for the contributions of its staff and its support for their professional aspirations. This not only enhances job satisfaction and commitment but also cultivates a positive and productive work environment.

This self-assessment allows for the acquisition of enhanced insights regarding career development prospects by analyzing satisfaction rates in career development and

complementary education, in special the career progression framework and feedback surveys.

Participants rate the university's support towards career development as **satisfactory** (2.93), but rate both the development of complementary competencies and the communication with university administration as **inadequate** (respectively 2.60 and 2.40).

Participants expressed a range of frustrations regarding the establishment of fair and meaningful career progression systems. There seems to be no clear system in place, with many citing a lack of incentives geared towards research activities. Furthermore, there have been complaints that indiscriminate policies that penalize high-performing researchers based on the performance of their less productive counterparts were seen as a deterrent.

On the subject of supplementary training, numerous courses, both in-person and online, are readily available. However, the low scores attributed to the development of complementary competencies remain puzzling. One explanation offered by a participant was that the training courses are typically brief and detached from a comprehensive program. Instead, they are often presented as short, standalone courses on specific topics.

This fragmentary approach to course offerings can hinder a comprehensive skill acquisition process. While each course might be beneficial, the lack of connection and continuity between them prevents students from progressively developing a broad range of complementary skills. A structured, cumulative learning pathway is missing, leading to potential knowledge gaps that might undermine the overall effectiveness of the training.

Additionally, in the absence of an overarching program framework, students could struggle to understand how each course contributes to their overall career development. This could be especially problematic for students who are uncertain about their career path and rely on the university for guidance.

In another topic, it was concerning to learn that none of the participants knew if the university conducts surveys to gauge satisfaction with career progression. This oversight could potentially neglect the experiences and concerns of students. Without such feedback, the university risks missing out on early signs of ineffective program implementation, risking student dissatisfaction, reduced enrolment, and reputational harm. Furthermore, none of the surveyed participants were aware of a specific mentoring program for novice researchers to learn from their more experienced counterparts. This suggests that either such a program does not exist, or it is not readily accessible.

In general, given the perceived obstacles, a series of possible solutions could be implemented:

- **Career Progression Systems:** Create a transparent, performance-based system that rewards high-performing researchers with recognitions, grants, or opportunities. For less productive researchers, implement a mentorship system to improve their productivity and enhance the research culture within the university.
- **Development of Complementary Competencies:** Replace standalone courses with interconnected, comprehensive skill-building programs. Develop courses with a common theme, allowing students to progressively build their skills. Introduce a competency-based learning system to ensure students have mastered the necessary skills before advancing.
- **Feedback Mechanism:** Conduct regular satisfaction surveys involving students to continuously improve the quality of education and services. Share the outcomes publicly to demonstrate transparency and responsiveness to student needs.

In summary, some areas require further development and improvement when it comes to career development opportunities. Central to these is the establishment of transparent career progression systems, the enhancement of comprehensive skill-building programs, and a formal feedback mechanism. Implementing these solutions will ensure that the university nurtures and retains its talent, thereby cultivating a thriving academic and research environment. It will enhance the professional growth of researchers, ultimately contributing to their career success and the broader institutional reputation.

5.4.2.3. WORKPLACE BALANCE AND WELLBEING

Workplace balance and well-being are foundational to universities striving for excellence. These components not only contribute to a more productive and creative environment, reducing stress levels and absenteeism but also increase overall engagement. When an institution considers personal needs alongside work demands, it fosters a supportive culture that nurtures academic progress and service excellence, thus ensuring continued growth and success.

The self-assessment results highlighted several factors that contribute to workplace balance and well-being. Participants acknowledged the significance of the availability of research funds, adequate compensation, flexible working hours, and the option for a hybrid work setup, which allows for alternating between office-based and remote work.

In terms of flexibility and opportunities for remote work, participants observe a **satisfactory** rating of (2.70), though responses were not unified. Similarly, the provision of a desirable work location received a **satisfactory** rating (3.40). The university's endeavors to create a positive work environment also yielded a **satisfactory** rating (3.00). However, the lack of unified strategies for improving this standard was noted, with diverse actions scattered across different departments and institutions.

To overcome these challenges, participants suggested the provision of additional resources for research, reduction of administrative work, and improvement in work stability, particularly for contract workers. Another proposal was to ensure an equal

distribution of workload among professionals in the same work environment to reduce stress and overwork.

On the subject of academic recognition, participants perceived their content as **satisfactory** (3.00). However, they rated communication with the university's management as **inadequate**, with a score of 2.40. They also indicated that the university does not perform any sort of data collection or opinion survey regarding these themes.

The diverse research workforce was perceived as **satisfactory**, with a score of 3.20, but participants were unaware of any specific programs to incentivize and support workforce diversity. This also applies to strategies regarding work-life balance and official channels for the requisition of new equipment. The lack of established frameworks for both these processes was highlighted.

When discussing autonomy in decision-making processes related to their roles, the overall perception was **satisfactory**, with a score of 2.80. The primary reasons cited for this score were overwhelming bureaucratic procedures and a lack of participant interest and drive.

In the final point of discussion, all participants agreed that the university does not seem to offer any resources to mitigate the psychological stress endured by its personnel. This is perceived as a key challenge in mitigating negative effects stemming from work stress and preventing burnout syndrome among university personnel.

Given the presented issues, it is possible to suggest actions to mitigate these challenges:

- **Promoting Work Stability and Balanced Workload:** For contract workers, there should be strategies to promote job security. This might include moving toward more long-term contracts or creating a clearer path toward permanent employment. To ensure equal distribution of workload, mechanisms should be put in place to regularly assess and balance workloads.
- **Improving Communication with Management:** To increase satisfaction in communication with university management, it could be beneficial to implement more transparent and frequent communication strategies.
- **Expanding Data Collection and Surveys:** It seems important to establish a regular process for data collection or opinion surveys to keep track of staff sentiment and needs. These could focus on various aspects of workplace balance and well-being, and their results should be made accessible and actionable.
- **Diversity and Inclusion Initiatives:** Establish specific programs to incentivize and support workforce diversity. This could include things like training, hiring practices, or community-building initiatives.
- **Mental Health Support:** Given the concerns about stress and burnout, the university should consider providing resources to mitigate psychological stress. This could include things like access to counseling services, stress management workshops, mental health days, and training for managers on how to support their teams' mental health.

The overall workplace balance and well-being at universities significantly impact their pursuit of excellence. It has been identified that adequate compensation, flexible working arrangements, research funds, and an inclusive environment contribute to overall

satisfaction. However, gaps persist in effective communication with management, equal workload distribution, stability for contract workers, mental health support, and a unified strategy to maintain a positive work environment.

Therefore, a holistic and integrated approach is recommended that focuses on promoting job security, improving communication transparency, regular employee feedback and data collection, establishing diversity initiatives, and providing mental health resources. Such an approach will facilitate a healthy work-life balance, thereby cultivating a productive, supportive, and successful academic environment.

5.4.2.4. CULTURE OF INNOVATION

An environment of innovation is important for any university aiming for excellence. As academia continues to change quickly, universities must stay flexible and open to new ideas, methods, and technologies to remain leading contributors to knowledge and learning. This kind of culture nurtures creativity, teamwork, and forward thinking. It promotes an attitude that sees change as an opportunity, helping universities to solve difficult problems, advance meaningful research, and prepare students for the ever-changing future.

The survey indicates that participants find the university's success in creating a culture of innovation **good** (3.70). Participants also agree that generally, the university is open to new ideas and criticisms, at least in the realm of scientific production, and that there are well-established practices, in the organizational culture sense, that promote openness to new ideas and ventures. This points towards an overall positive outlook in this criterion.

In general university's receptivity to fresh ideas and constructive criticism, particularly in scientific pursuits, is a testament to its progressive ethos. The presence of ingrained organizational practices that promote openness to novel ideas and ventures further enhances this dynamic landscape. Thus, the university's commitment to cultivating an atmosphere of innovation, creativity, and forward-thinking positions it as an adept navigator of academic change and a leader in shaping the future of education.

5.4.2.5. ETHICAL EXCELLENCE

In a learning institution that aims for excellence, the quest for ethical virtue is of utmost importance. While it's essential to recognize the role of scholarly skill and intellectual achievements, they must be rooted in a robust ethical groundwork. Ethical virtue encapsulates a variety of values and tenets such as honesty, integrity, respect, and accountability. By underlining the importance of ethical behavior and nurturing an environment that encourages ethical virtue, a university not only promotes the

comprehensive development of its students but also sets a lasting precedent of integrity and social responsibility.

The survey's results indicate that the university employs systems in which members can make anonymous complaints regarding problems of human interactions, although not all survey participants seem to be aware of that. The perception of the university's handling of cultural diversity and tolerance is **excellent** (4.25), indicating that ULPGC is very positive when it comes to fostering an open environment for diversity among its personnel.

The collected data also points out that there is no standard code of ethics that the university uses for its academic activities. As this seems unlikely, it is most plausible that participants are simply unaware of its existence. Likely, it appears that this code of ethics is not very accessible or easily found, as well as there are inconsistencies in training and preparing research staff to the highest ethical standards.

In continuation, mixed answers have been received regarding the existence of systems or procedures to adequately distribute academic credit in publications and other published works between authors. Some participants indicate that yes, while others inform that although there isn't any established framework, the resolution of these problems is mostly made through informal channels.

Based on these challenges, it is possible to indicate key solutions for these issues:

- **Increase Awareness and Accessibility of Ethical Standards:** It is crucial to ensure that all members of the institution are aware of and can easily access the existing code of ethics. The university should consider making this information more readily available, such as posting it on its website or including it in new staff and student orientation materials.
- **Ethics Training Programs:** It would be beneficial to develop regular training programs on ethical standards for both research staff and students. This can help to ensure that all members of the institution are adequately prepared to uphold these standards in their academic activities. The training can include real-life scenarios and discussions about ethical dilemmas in academia, promoting a culture of open dialogue about ethics.

Finally, the quest for ethical virtue within a university setting encompasses both institutional policies and individual behaviors. While the university, in this case, demonstrates strong cultural diversity and tolerance, gaps in the awareness and application of ethical standards persist. Addressing these gaps through increased accessibility of the ethical code, consistent ethical training for staff and students, and transparent procedures for credit distribution in academic works can lead to a more holistic approach to ethical conduct. Ultimately, these initiatives foster a robust ethical culture that complements intellectual development, nurturing not only the academic achievements of individuals but also their capacity for integrity, accountability, and social responsibility.

5.4.3. KNOWLEDGE AND TECHNOLOGY TRANSFER

5.4.3.1. KTT STRATEGIES AND ORGANIZATIONS

Knowledge and Technology Transfer (KTT) plays an integral role in a university of excellence, acting as a pivotal conduit for propelling innovation, catalyzing economic growth, and influencing societal advancement. KTT bridges the gap between academic research and real-world industrial applications, enabling the seamless integration of ground-breaking concepts, products, and methodologies into a myriad of sectors. The process not only boosts the university's international academic standing but also amplifies its contribution to societal improvement and the cultivation of a knowledge-based economy. By providing essential resources and generating commercial prospects, KTT fosters a reciprocal ecosystem, which extends the university's influence and scope beyond traditional academic limits.

An in-depth analysis of participant feedback uncovers substantial uncertainty about KTT, with pronounced reservations among individuals affiliated with the science and technology sectors. This finding suggests the existence of potential communication lacunas and a need for broader KTT education within these university subgroups.

Participants generally acknowledge that KTT pertains to the transference of university-produced knowledge and technology to various societal spheres, including public goods enhancement and individual solutions driven by private stakeholders. They recognize that KTT can materialize in numerous forms, such as spin-offs, licensing agreements, intellectual property, and new products and services, among others. Furthermore, the participants rated the clarity of the university's KTT objectives as **good** (3.70).

Overall, the data suggests the university has been successful in educating research and staff personnel about KTT's significance and its primary functions. Many participants also reported the university maintains a robust network of potential industry partners for prospective KTT collaborations.

Regarding future strategies to fortify KTT within the university, participants expressed their desire for more support towards the creation of knowledge-based start-ups. They also identified perceived hurdles hindering this progress, including a lack of knowledge on developing a start-up, high financial costs for market entry, substantial bureaucratic obstacles, and the absence of a direct incentive system for researchers to launch their ventures.

Considering these challenges, it is feasible to propose resolutions for these problems:

- **KTT Education and Training Programs:** Invest in the creation of comprehensive yet concise workshops, seminars, or webinars. These should focus on imparting a clear understanding of KTT processes, their benefits, and crucial aspects of start-up development. Ideally, these initiatives should be open

to all faculty, staff, and students, promoting a culture of entrepreneurship and innovation.

- **Streamlining Bureaucratic Procedures:** A detailed review and audit of the existing bureaucratic processes are required. Identify the bottlenecks that slow down the KTT process and make it daunting for participants. Subsequent actions should be taken to streamline these procedures, making them more user-friendly and accessible, thus promoting smoother technology licensing or start-up formations.

In conclusion, the Knowledge and Technology Transfer (KTT) serves a crucial function in the University of Excellence, bridging academic findings with practical industry solutions, and promoting economic and societal growth. The university has achieved notable success in imparting the importance and mechanics of KTT to its research and staff personnel. However, the study highlights areas of improvement, including the necessity for more comprehensive KTT educational initiatives, the promotion of knowledge-based start-ups, and the streamlining of bureaucratic processes. Addressing these identified shortcomings through tailored solutions such as KTT workshops, and increased support for start-up creations will undoubtedly fortify the KTT ecosystem within the university.

5.4.3.2. STRUCTURES AND PROCESSES TOWARDS PATENT AND IP ACTIVITIES

A robust understanding of systems and mechanisms serves as a crucial cog in the fine-tuning of patent and Intellectual Property (IP) activities. These organizational methodologies form the sturdy framework of innovation management, guaranteeing that intellectual endeavors are appropriately archived, legally safeguarded, and effectively commercialized. The ability to grasp and implement this framework is central to cultivating a thriving environment of invention and entrepreneurship.

Such strategies do more than simply protect the yield of scholarly efforts. They significantly enhance their societal and economic impacts, while also nurturing the institution's global standing as a hub of innovation. Hence, the formulation and compliance with effectual systems for patent and IP activities are fundamental parts of the University's dedication to advancing knowledge, igniting economic progress, and crafting societal advantages.

From the survey, it was only possible to conclude that the university is dedicated to assisting researchers in their invention disclosure activities. It orchestrates patent application processes between researchers and patent lawyers, predominantly via the *Oficina de Propiedad Industrial e Intelectual (OPII)*, a facility hosted by FCPCT.

Unfortunately, a sub-optimal number of participants in this section of the self-assessment report have been received. As such, this hinders the ability to draw a significant conclusion or offer additional input in this area.

5.4.3.3. PARTNERSHIP DEVELOPMENT

The establishment of robust external partnerships is a crucial factor in fostering the growth and success of an excellent university. Such partnerships present an opportunity for the exchange of ideas, resources, and capabilities that surpass the confines of the institution itself. These alliances could include interactions with industries, other academic institutions, government entities, and the broader community. They not only augment the university's curriculum, research, and societal contributions but also catalyze innovation and create a conducive atmosphere for intellectual growth.

It was surveyed that the university exhibits effective communication with potentially relevant partners in the industrial sector. The same also partially applies to prior innovation researchers who were affiliated with the university. Participants evaluated the operations of these activities very positively, rating them as **excellent** (4.40).

However, the university's participation in identifying opportunities for research funding from industrial stakeholders or potential strategic partnerships has received mixed responses. There is similar ambiguity regarding the university's involvement in joint programs with industrial companies.

Perception of the university collaborating with external partners stands as **satisfactory** (3.40). Participants suggested potential areas for improvement, such as enhancing ongoing collaboration and forming new cooperative relationships. Key hindrances preventing this path include a shortage of management professionals devoted to the task, ineffective decision-making, inefficient establishment of new partnerships, a challenging culture regarding the university's role as a scientific and technological partner with profit-driven institutions, and a conventional research design that overlooks practical application of research.

Furthermore, there are differing views about the university's efficiency in keeping up with emerging technological trends and disseminating this information to the research staff. This gap could potentially result in research staff investing their time and resources into scientific projects that may not align with current market demands.

To tackle these challenges, a few strategic initiatives could be considered:

- **Hiring or Training Management Professionals:** Prioritize investment in hiring or training dedicated personnel who can manage partnerships effectively.
- **Flexible Research Design:** Promote a more application-oriented approach to research design by implementing programs where researchers work closely with industry professionals.
- **Improving Internal Communication:** Set up an internal communication channel for disseminating information about emerging technological trends to the research staff.

- **Encouraging Open Feedback:** Create an environment that encourages feedback from students, staff, and external partners to provide insights on how the university can improve its collaborations and research objectives.

Fostering dynamic external partnerships is pivotal to the sustained growth and innovative capacity of a university, particularly in the rapidly evolving global context. While the university in question has made commendable strides, there are evident opportunities for enhancement, particularly concerning funding from industrial stakeholders, joint programs with companies, and aligning research pursuits with current market trends. Proposed solutions include investing in management professionals adept at nurturing partnerships, implementing a more application-focused research design, and improving communication mechanisms within the institution. By embracing a culture of feedback, the university can better align its strategies with the needs and expectations of both its internal and external stakeholders.

5.4.3.4. START-UP SUPPORT AND INCUBATION

Universities distinguished by their excellence serve as more than just epicenters of learning and research. They also act as fertile grounds for innovation, creativity, and entrepreneurial pursuits. The presence of a robust framework supporting start-ups and incubation within the university ecosystem is indispensable for nurturing these entrepreneurial ambitions.

Such a supportive environment offers a safe harbor for the blossoming of innovative projects and business ideas originating from students, faculty, and alumni. By providing essential resources, mentorship, and networking opportunities, it fosters the growth of a vibrant entrepreneurial culture within the campus. This culture is instrumental in facilitating the development of start-ups that hold the potential to revolutionize industries and address critical societal issues.










The only data that was possible to derive from the self-assessment was that satisfaction regarding start-up supporting activities, participants rate the university's overall performance as **good** (3.80).

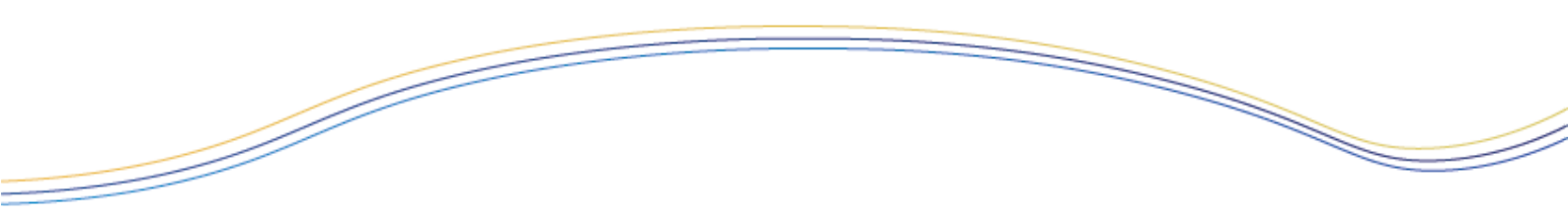
Unfortunately, similar to the subchapter on *structures and processes towards patent and IP activities*, not enough sufficient data was gathered to conclude any meaningful results regarding critical points and improvement opportunities for start-up supporting activities. Nonetheless, complementary information can potentially be found under the *external stakeholder's report* section.

5.4.4. FINDINGS

The examination of the different facets of ULPGC's operations and practices revealed a web of interconnected challenges and opportunities. It was observed that roles within the university, from faculty members to administrators, pursued distinct objectives, crafting strategies uniquely suited to their needs. While individually effective, the lack of a harmonized strategy exposes a risk of diluting the institution's efficiency and effectiveness in meeting collective goals such as advancing impactful research, boosting innovation and entrepreneurship, engaging with local communities, and delivering interdisciplinary and holistic education.

The crucial challenges identified across the university include:

-  **Inefficient Communication Systems:** Throughout the report, inefficient internal communication systems were identified as a recurring theme. This hinders inter-departmental collaboration and aligning institutional goals, consequently causing overlaps in roles and responsibilities.
-  **Insufficient Financial Resources:** There is a clear call for increased funding to support research, digital transformation, and infrastructural developments, and to maintain a competent faculty, as per the findings in multiple sections.
-  **Challenges in Talent Management:** The report repeatedly emphasizes issues related to faculty recruitment, retention, and development. Limited competitive advantages in attracting talent, unclear career progression paths, and workload issues make talent management a significant challenge.
-  **Lack of Collaborative Culture:** A need for fostering a culture that promotes collaboration and innovation, and places a greater emphasis on research activities was noted. This is also connected to the need for clearer, more effective knowledge and technology transfer protocols.
-  **Ambiguity in Role Clarity and Goal Alignment:** The lack of clarity in roles and misalignment of objectives across various university stakeholders pose a considerable challenge to the institution's cohesive functioning, as identified in numerous sections of the report.
-  **Engagement with Local Community:** The necessity for improved engagement with the local community, and ensuring that the university's contributions to the region are effectively communicated and understood, is highlighted.
-  **Quality Assurance Processes:** The need for strengthening quality assurance processes, ensuring that both academic and administrative functions adhere to high standards of performance and accountability, is stressed.
-  **Challenges in Industry Partnerships:** The need for more robust, mutually beneficial relationships with industry partners is emphasized. Currently, the processes for establishing, maintaining, and evaluating these partnerships are not consistent or clear, leading to missed opportunities.
-  **Startup Support and Incubation:** The current support system for startups and spin-offs lacks sufficient visibility and resources. Creating an environment that actively nurtures entrepreneurship and innovation needs more institutional focus and resources.



In conclusion, ULPGC is navigating a complex landscape of challenges that span across its various functions. Addressing these challenges, while simultaneously capitalizing on the inherent opportunities, is critical for the university's future evolution. This would not only bolster its reputation as an academically and research-oriented institution but also deepen its commitment to creating an inclusive, innovative, and nurturing environment for all its stakeholders.

6. EXTERNAL STAKEHOLDERS' REPORTS: INTERVIEWS AND RESULTS FOR EACH ECOSYSTEM.

6.1. INTERVIEW OBJECTIVES

In today's rapidly evolving landscape, universities are increasingly recognized as key players in driving regional development. Collaborating with regional stakeholders is crucial for universities to effectively contribute to the economic and social progress of a region. This section presents an in-depth exploration of stakeholder perspectives and opportunities for cooperation between universities and regional entities, as well as the challenges that arise in this context.

The principal aim of these interviews was to understand and articulate the role these regional stakeholders envisage universities playing in driving regional development and to explore the concrete possibilities for future cooperation. The interviews also aimed to identify opportunities and obstacles for the development of cooperative activities from these stakeholders' perspectives, providing us with crucial insights that could be used to cultivate partnerships and tackle cooperation challenges.

The key obstacles identified through the interviews are presented in the findings section, providing an analytical overview of the challenges that must be addressed to facilitate successful university-stakeholder cooperation. By summarizing and analysing these findings, this chapter offers insights that can inform strategies and initiatives aimed at overcoming barriers and fostering effective partnerships.

By examining stakeholder perspectives, opportunities for cooperation, and the challenges encountered, this chapter aims to contribute to the advancement of regional development efforts. Understanding the envisioned role of universities and addressing the identified obstacles will facilitate collaborative initiatives that can drive sustainable economic and social progress within the region.

6.2. METHODOLOGY

6.2.1. DATA COLLECTION



Our data collection methodology was predominantly qualitative, using semi-structured interviews as our primary tool. This approach allows us to gain in-depth insights into the perspectives of the various stakeholders and provides the flexibility to explore different paths during the conversation based on the participants' responses.

The interviews were conducted either by telephone or via video conference, depending on the participant's preference and availability. We began each interview by providing an overview of the EXPER project and its objectives, ensuring that all participants understood the purpose and potential benefits of their involvement. Following this introduction, we posed a series of open-ended questions designed to delve into their perceptions of the University of Azores and the ULPGC, opportunities for partnership, and any challenges they see impeding such collaboration.





Once the interviews were concluded, we thoroughly analysed and categorised the data, identifying patterns, common themes, divergences, and unique insights. The result was a wealth of qualitative data that provided a detailed understanding of stakeholder perspectives, forming the backbone of our analysis and future recommendations.

6.2.2. STAKEHOLDER GROUPS

Interviews were conducted with six key entities: business companies, government departments, non-governmental organisations (NGOs), business associations, research centres and start-up incubators. Each of these entities holds a significant position within the socio-economic structure of the Azores and Canarian region, and their insights contributed to a more comprehensive understanding of the topic at hand.

-  **Business Companies:** Business companies are a pivotal element of the economy. They span from small businesses and startups to substantial corporations, with their primary objectives being revenue generation, product or service innovation, and market presence expansion. Our interviews with these entities aimed to explore potential collaboration and partnership opportunities with the University of Azores (UAC) and the ULPGC. These discussions encompassed the role and impact of these HEI within the commercial or industrial sector, potential areas of collaboration such as joint research initiatives, tailored educational programs, and community engagement opportunities.
-  **Government Departments:** Government departments encompass public agencies, regulatory bodies, and other public institutions that perform various managerial or regulatory actions. These entities are instrumental in policy implementation and public service provision, influencing the functioning of other sectors. The interviews with government departments provided valuable insights

into their operations, interactions with UAC/ULPGC, and perceptions regarding the university's role and impact. Additionally, we explored current professional demands for a qualified workforce within these departments and the broader Azores and Canarian regions. These discussions highlighted the potential for greater collaboration between both universities and these public institutions, particularly in terms of workforce development and meeting the region's specific employment needs.

-  **Non-Governmental Organisations (NGOs):** NGOs typically focus on social, environmental, or humanitarian issues, operating outside government control. These independent entities include charities, advocacy groups, foundations, and other voluntary organisations. The objective of interviewing NGOs was to explore potential collaborations and partnerships, including the role and impact of the HEIs within the non-profit sector, potential collaborative areas such as projects, partnerships, strategic networking opportunities, and prospects to raise awareness of the organisation's work and its importance to the region's social and economic well-being.
-  **Business Associations:** Business associations, including chambers of commerce, trade groups, professional organisations, and industry-focused networks, are critical in fostering business growth and development. Our goal was to enhance the industry's performance and achieve its objectives, with a focus on identifying HEIs role and impact in the industry/business sector and exploring potential areas of collaboration, such as joint research programs, tailored educational programs, and community engagement opportunities.
-  **Research Centres:** Research centres constitute a core pillar of scientific progress and innovation, often acting as the driving force behind regional development. These entities, ranging from independent institutes to university-affiliated labs, play an essential role in advancing knowledge and fostering innovation through rigorous research practices and collaboration. Our dialogue with these organisations sought to gain insight into their expectations of the HEIs in the regional research ecosystem, and their perceived opportunities for mutual collaboration.
-  **Start-up Incubators:** Start-up incubators represent a vibrant component of the entrepreneurial ecosystem. These entities provide emerging businesses with crucial support services, mentorship, and resources to help them develop, innovate, and grow. Incubators play a pivotal role in nurturing entrepreneurial talent, accelerating the growth of start-ups, and fostering innovation within the local economy.

6.2.3. CHALLENGES

Conducting interviews for data collection presented us with a unique set of challenges. Scheduling was often difficult as some contacts did not respond to our initial outreach, and others, despite showing interest, had scheduling conflicts that delayed the interviews.

One of the inherent aspects of our approach was the conversational style of the interviews. This method was preferred because it encourages better responses and insights from participants, as they often feel more comfortable and open when there is a sense of proximity with the interviewer. However, this also meant that the conversation could diverge from the main topic, or participants might not fully grasp the purpose of a question, even after explanations. To retain the conversational flow and respect time constraints, it was not always possible to pose all questions to participants. Additionally, to fit the unique nature of each participant, we often had to adapt or add new questions that were not part of our original set.

The focus of these interviews was not to provide a word-to-word transcription, but rather to understand the core challenges and improvement points discussed. Therefore, the interviews reflect the essence of the conversations and the key takeaways, rather than a verbatim account.

Another significant task was the transcription and translation of the interviews. Initially, we took hand-written notes in the form of key word phrases. These notes were then expanded and translated into English post-interview, which may have led to minor discrepancies in translation or interpretation.

Finally, it is crucial to understand that the interviewed subjects often spoke with confidence about various topics, even those technically outside their direct sphere of expertise. These opinions reflect the perspectives of the participants, not absolute facts. While we assume the participants spoke in good faith and to the best of their knowledge, there is always the possibility of mistakes or misunderstandings. To avoid mistakes based on outlier inputs, all generated conclusions are drawn from predominant and reoccurring opinions.

6.3. UAC ECOSYSTEM

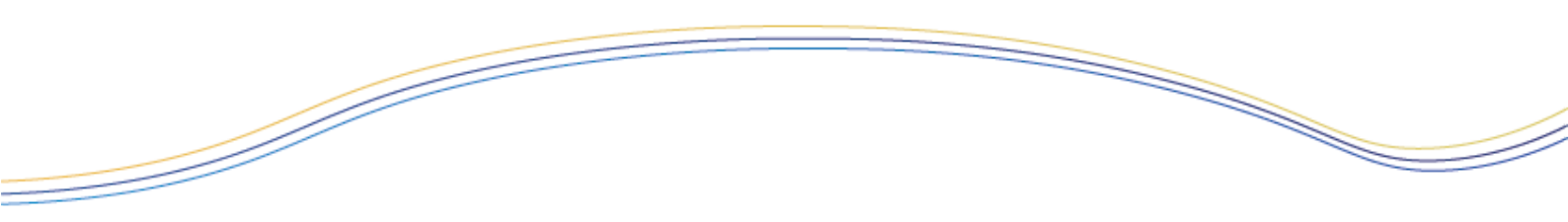
6.3.1. OVERVIEW OF INTERVIEWS FOR UAC

We conducted a plethora of rich discussions held with different stakeholder groups. The first subchapter explores the perspectives of Business Companies, including Grupo Marques, Finançor, seaExpert, Algicel, and Futurismo. The second subchapter focuses on the viewpoints expressed by Government Authorities, such as the Regional Directorate for Science and Technology, Regional Directorate for Entrepreneurship and Competitiveness, Regional Civil Engineering Laboratory, and the Regional Directorate for Planning and Structural Funds. The third and fourth subchapters focus on the perspectives of the NGO Amigos dos Açores, and business association Angra do Heroísmo Chamber of Commerce, respectively.

After the careful examination of 11 insightful interviews, seven crucial areas of concern has come to light, each underlining a unique aspect of UAc's operations and its links with industry collaborators, government authorities, NGO partners and the greater society.

These challenges are, in order of importance, the following:

1. **Collaboration and Communication:** Stakeholders urge UAc to enhance collaboration efforts, streamline communication, reduce bureaucratic hurdles, and demonstrate a stronger interest in partnerships.
2. **Practical Application of Research:** Stakeholders highlight the importance of translating academic research into practical, market-ready applications and emphasise the role of applied sciences.
3. **Community Relationships and Networking:** The need for UAc to foster stronger relationships with local enterprises, promote networking, and enhance community integration is emphasised.
4. **Entrepreneurship and Innovation:** UAc is encouraged to foster a culture of entrepreneurship and innovation, improve its engagement with start-up incubators, and prioritise recruitment of new talent in applied sciences.
5. **Bureaucratic and Management Challenges:** UAc is urged to address issues of bureaucracy and management that currently hinder efficient collaboration and partnership formation.
6. **Skills and Knowledge Gap:** There's an urgent need for UAc to align its academic offerings with market demand, particularly in upcoming scientific fields and specialities such as engineering, IT, and artificial intelligence.

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7. **Leveraging Unique Features:** Stakeholders see potential in UAc exploiting the unique geographical and ecological characteristics of the Azores for advanced research.






Overcoming these challenges would enhance cooperation prospects and foster stronger relationships between the University of Azores and the surrounding ecosystem stakeholders of the Azores region.

6.3.2. INTERVIEWS

6.3.2.1. BUSINESS COMPANIES

In the upcoming chapter, the document will delve into the insights provided by the interviewees representing different business companies. Each interviewee will share their perspectives on collaboration with the University of Azores, including the challenges they face, potential areas of collaboration, and their recommendations for improvement.

Here is a brief overview of the interviewees and their respective companies:

-  **Grupo Marques:** Grupo Marques is a diversified business company involved in civil construction, industrial activities, healthcare, and other sectors.
-  **Finançor:** The company provided insights into their primary business areas. It was discussed the potential for collaboration with UAc and the challenges that need to be addressed.
-  **seaExpert:** seaExpert focuses on biosystem algae and solutions for the blue economy. The interview will shed light on their cooperation possibilities with UAc, potential research areas, and challenges faced.
-  **Algicel:** During our conversation, it was explored the biotechnological applications of algae and Algicel's interaction with UAc. The interview will explore potential areas of partnerships, changes in UAc's educational programs, and mutual benefits.
-  **Futurismo:** We acquired insights into Futurismo's connection with tourism, science, and education. The interview will cover their collaboration with UAc, challenges faced, and recommendations for improvement.

For each interviewee, their perspectives and experiences will offer valuable insights into the dynamics between business companies and UAc, highlighting potential areas of collaboration, challenges to be addressed, and suggestions for fostering better cooperation.

5.3.2.1.1. INTERVIEW WITH GRUPO MARQUES

General Information

Company/Institution: Grupo Marques

Category: Business Company

Interviewer: Thor Rodrigues

Date: 04/05/23

Interview Mode: Online Call

Questions & Answers

Could you provide an overview of Grupo Marques' origin and its growth into various sectors?

Grupo Marques originated from the construction company Marques Lda. in 1979. As the company secured new contracts and expanded over the years, we found it necessary to diversify our economic activities beyond civil construction, leading to the creation of Grupo Marques.

Today, we're not just a construction company. We have diversified into various sectors. Our companies are involved in civil construction both in the Azores islands and mainland Portugal and in other industrial activities like mineral extraction, wood extraction and processing, healthcare, non-metallic mineral extraction, and metalworking.

What are the upcoming plans for Grupo Marques? Any new areas of focus?

In 2021, we launched Marques Inovação e Ambiente, a company dedicated to becoming a leading reference in the fields of Innovation, Research and Development in the Azores region. We're focusing on endogenous products and promoting Circular Economy and Bioeconomy alongside external marketing efforts.

How has UAc contributed to your company's growth and what are the challenges in this interaction?

UAc has played a significant role as one of our sources of qualified workforce. We have also collaborated in the past to explore commercial activities stemming from research. However, we believe there is a knowledge gap between the current market demands in terms of qualified workforce, especially in upcoming scientific and specialisation fields.

Could you elaborate more on the difficulties you face due to the gap in qualified personnel? Is there anything UAc to mitigate these difficulties?

The main challenge we face is the time it takes to train personnel in high-demand fields. It often results in a significant gap in opportunity. Additionally, we feel that UAc could put more effort into supporting upcoming scientific fields, even if they are not in a mature stage yet. We believe there is a knowledge gap between the current market demands in terms of qualified workforce, in special regarding upcoming scientific and specialisation fields, and UAc could play an important role in mitigating these challenges.

What are the specific qualifications you are looking for in your workforce?

We don't believe that new programs or degrees are required. Our biggest challenge is the lack of personnel in already established degrees, such as industrial engineering, biology, and IT-related degrees. We also face difficulties finding professionals for specialisation courses focused on translating qualified workforce from a non-relevant field to a relevant one.

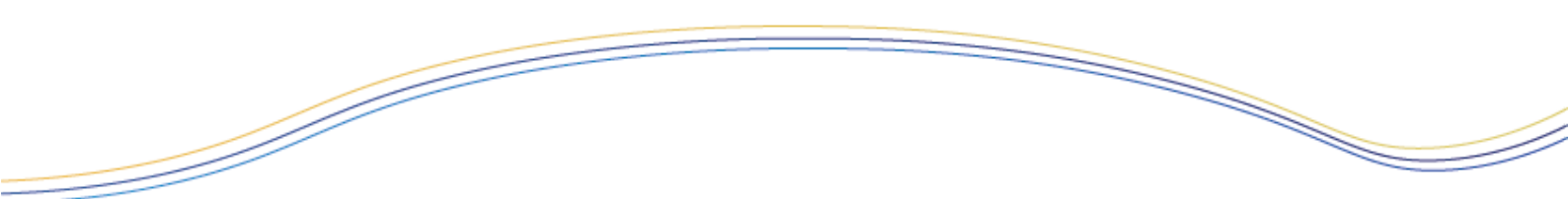
Additionally, we also perceive the timing as being less optimal, as it takes years to train qualified personnel in fields that are in high demand today, allowing for a significant opportunity gap. Moreover, we also believe that it would be interesting in adding more effort to support upcoming scientific fields that are not in a mature stage but are expected to become in the following years, such as segments in technological fields.

What are the specific research opportunities from UAc that could enhance your company's performance?

We're particularly interested in new research opportunities that stem from scientific discoveries, especially in biological science fields. Our research lab for innovations in biological spheres is in the final stages of construction, and we're always looking for opportunities for scientific developments that can be converted into market applications.

We maintain regular communication with UAc and its incubation office, TERinov, to explore new development opportunities. However, thus far, we have encountered limited options in this regard. We understand that the goals of academic stakeholders, who prioritise pushing the boundaries of scientific knowledge, may not always align perfectly with those of business stakeholders like us, who are primarily focused on introducing successful products and innovations to gain a competitive edge. Nevertheless, we believe that fostering a greater convergence of objectives during research endeavours would be mutually advantageous for both parties involved.

Are there any current or potential research areas where collaboration between your company and UAc could lead to significant advancements or improvements in your industry?








Yes, as mentioned before, we are invested in technological innovation that could translate into market products and solutions, mostly focused on biological scientific fields. We have accomplished several works in the biological sciences field such as material research with special fibres, pineapple protein research, and natural oils.

What kind of joint research initiatives can be undertaken with UAc for the benefit of both parties?

We see potential in engineering, IT, and biological fields. Jointly developing research projects for commercial applications would be beneficial as long as the research innovations are of practical use and are not dependent on government funding to keep existing.

Key Takeaways

-  Grupo Marques faces a knowledge gap in the market demands for qualified personnel, particularly in upcoming scientific and specialisation fields.
-  UAc could play a more significant role in supporting emerging scientific fields, reducing training time, and offering specialised courses.
-  Limited research opportunities aligned with practical market applications are a challenge that hinders further collaboration projects.
-  UAc's support in bridging the gap between academic research and practical market needs would be mutually beneficial.
-  UAc could contribute to the surrounding community by addressing the shortage of skilled personnel and fostering the growth of upcoming scientific fields.

5.3.2.1.2. INTERVIEW WITH FINANÇOR

General Information

Company: Finançor

Category: Business Company

Interviewer: Thor Rodrigues

Date: 05/05/23

Method: Online Call

Questions & Answers

Can you provide an overview of Finançor's primary business areas and ongoing projects?

Finançor Agro-Alimentar is a key player in the food and agriculture sector. Our primary focus lies in three business domains: animal feed, swine production, and food distribution. Additionally, we're participating in various sustainability projects, supporting local agriculture, and contributing to the economic development of the Azores Islands.

What potential do you see for collaboration between Finançor and UAc, and what challenges need to be addressed to facilitate this collaboration?

Our vision is to fortify our connection with UAc as they can be an excellent source of innovation and project development. However, there seems to be a misalignment between academia and commercial stakeholders, such as us. Naturally, these are two distinct categories of organisations, with distinct duties and objectives, but we still wish that a higher overlap existed. We think UAc barely takes into consideration the applicability potential when planning upcoming research projects.

What specific educational programs would help to prepare students better for careers in your sector?

The most relevant educational backgrounds for our operations are in biological sciences, biotechnology, aquaculture, veterinary medicine, and management. However, we observe a significant gap in cutting-edge professional qualifications like engineering, IT-related professions, and artificial intelligence.

How could UAc bridge the gap between academia and the commercial sector, especially in terms of effective communication and resource sharing?

We recognise that there is certainly ample room for the improvement of communication with external stakeholders, as we don't often perceive new invitations coming from their behalf on this matter. For example, we cannot remember any instance in which we were approached by the university with an offer for the use of their equipment and resources. We don't even believe that it is possible to request or find information on this matter, even if we actively looked for it.

What are the challenges Finançor faces in terms of workforce development, and how could UAc support addressing these issues?

One significant challenge we observe is the lack of digital literacy within the Azorean workforce. Unfortunately, UAc seems to struggle with the same issue. The University appears to lack the ability to train IT workers effectively. This situation could be mitigated by offering professional development courses on digital literacy, especially for individuals already in the workforce. These programs should consider the demands of this segment, such as flexible learning hours and practicality-oriented content.

What role can UAc play in fostering networking and information sharing between your company, its employees, and related stakeholders?

We currently don't have the impression that UAc could act as an efficient actor for networking and information sharing between our company and the surrounding community.

What could UAc do to help nurture start-ups or innovative projects that could contribute to Finançor's growth and success?

We believe that start-up incubators should change their approach towards communication with existing companies in the ecosystem. There seems to be a "lack of willingness to engage in communication and interaction". This change would foster a better environment for innovation and mutual growth.

Any final observations on challenges you perceive that UAc could mitigate?

In general, we note that there is a great mismatch between the programs the university offers and the demand from business groups. UAc itself does not seem to take into consideration the role of real-world application in many of its research initiatives.

This issue, combined with an old program curriculum that does not reflect current-world needs, leads to graduates without in-demand skills and knowledge, poor communication

with external stakeholders and incapacity to provide solutions to current issues the market faces.

Key Takeaways

- 🌐 Finançor is open to establishing future partnerships with UAc to promote innovation projects but is concerned with the current lack of focus on projects regarding practical use.
- 🌐 The increasing demand for advanced qualifications in engineering, IT, and artificial intelligence is highlighted by Finançor.
- 🌐 UAc needs to enhance its communication and resource sharing with external stakeholders to ease collaboration and allow for the practical application of research projects.
- 🌐 To address the digital skills deficit in the Azorean workforce, UAc can provide digital literacy training and flexible professional development courses.
- 🌐 UAc's start-up incubators need to improve engagement and communication with existing companies, creating a supportive environment for shared growth and innovation.

5.3.2.1.3. INTERVIEW WITH SEAEXPERT

General Information

Company: seaExpert (Consulting and Innovation Company)

Category: Business Company

Interviewer: Thor Rodrigues

Date: 05/05/23

Method: Online Call

Questions & Answers

Could you provide an overview of seaExpert, and explain the nature of the services your company provides?

seaExpert is a marine biology-focused consulting and innovation firm operating in the Azores region. We primarily offer consulting services regarding biosystem algae and solutions for the blue economy. Our main clients are public entities like local and mainland Portuguese governmental departments, EU authorities, and universities. We also offer innovation services, with a strong focus on algae research. This involves studying and developing solutions applicable to cosmetics, nutraceuticals, and other innovative sectors.

What has been your experience in collaborating with the Universidade dos Açores (UAc)?

Our past collaborations with UAc, especially with their Faiol unit, have been tainted by substantial cooperation and communication obstacles. These challenges have prevented us from achieving our collaborative goals. Unfortunately, complex bureaucracy, insufficient budgets for external cooperation, and long waiting times for communication have further complicated the situation.

Could you shed some light on the potential for research collaboration with UAc in your industry?

There is always potential for collaboration in areas like deep ocean exploration research. However, the main barrier is the poor management decisions at UAc, such as perceived personal conflicts between different university departments, inefficient upper management, and a lack of a structure that rewards innovation. Despite these challenges, we have observed some minor improvements recently, although they aren't significantly impactful at the moment.

Could you further elaborate on the issues related to UAc's management and its effects on potential collaborations?

UAc's management, unfortunately, displays a lack of interest in establishing cooperative projects and suffers from inefficient management practices. There seems to be an inadequate system of rewards and punishments that often incentivises self-serving management structures, leaving no room for external reform. This, coupled with a lack of self-evaluating systems within the public education sphere and often inadequate and outdated educational offerings, has led to a significant hindrance to cooperation or progress.





How can UAc improve its communication and collaboration with commercial entities like seaExpert?

Improving communication and demonstrating a willingness to collaborate with external stakeholders would be beneficial. There is a significant challenge with UAc in terms of its apparent inability to coordinate both internally and externally. Addressing this issue would enhance cooperation with external entities like us.

What are some potential opportunities for joint research programs with UAc that would benefit both parties?

While potential opportunities for joint research and initiatives do exist, the lack of interest and coordination from UAc poses a significant barrier to these ventures. Overcoming these challenges could open up new avenues for collaborative research and innovation. However, given the current state of affairs, achieving this would require substantial improvements in management and communication practices at UAc.

Key Takeaways

-  The possibility of collaboration between UAc and business entities is hampered by significant bureaucratic hurdles, budget limitations, and inefficient communication, which prevents the achievement of further partnerships and mutual goals.
-  UAc's management has been criticised for a lack of interest in external collaborations, inefficient practices, and inadequate rewarding systems that do not foster innovation and internal reform.
-  seaExpert suggests that UAc could improve collaboration by enhancing its communication processes and demonstrating a willingness to cooperate with external stakeholders.
-  Despite the current challenges, seaExpert acknowledges potential opportunities for joint research and initiatives, provided UAc improves its management, and communication, and shows an increased interest in external collaborations.

5.3.2.1.4 INTERVIEW WITH ALGICEL

General Information

Company: Algicel

Category: Business Company

Interviewer: Thor Rodrigues

Date: 11/05/23

Method: Phone Call

Questions & Answers

Could you tell us about Algicel and the role that Universidade dos Açores (UAc) plays in your operations?

Algicel is a company focused on biotechnological applications of algae, particularly in the medical, nutritional, and cosmetics industries. While we have established some agreements with UAc for facility use and research activities, direct cooperation is not common. There is certainly room for improvement in this segment.

What are the areas where UAc could collaborate with your company to enhance its performance and achieve its objectives?

For current operations, there aren't any critical points that require addressing. However, for future operations, it would be beneficial to have more joint projects. Currently, we're sceptical about UAc's capacity to keep up with market trends and demands. We perceive a gap between what the university offers and the economic and practical reality. This manifests in several ways, including poor resource management, high operational overhead costs, and a low focus on applied sciences.

In addition, principal investigators seem to not take into consideration possible applications when designing their research projects. There is certainly a balance to be achieved between theoretical and applied research, but some aspect of practical application needs to exist at the end of the project if we are expected to invest time and resources in it.

We have also heard of some episodes of poor management and past mistakes that we observe as easily avoidable. This contributed to the erosion of our trust in UAc regarding certain aspects and increased our scepticism in intensifying future cooperation.

What changes in UAc's educational programs or degrees could better prepare students for careers in your sector?

While we think the current degree offerings are sufficient, we recommend more emphasis on application knowledge as well as theory. The university can improve by incentivising a culture of entrepreneurship, management, and engineering, as these are critical when converting pure knowledge into business applications.

Could you identify potential research areas where collaboration between Algicel and UAc could lead to significant advancements in your industry?

The research focused on biotechnology, particularly medical, nutritional, and cosmetics applications of algae, is our organisation's primary focus.

How can UAc assist in bridging the gap between academia and the commercial sector, to facilitate better communication and collaboration for Algicel?

UAc could play a role in spreading information and awareness about possible research and innovation applications surrounding algae and other marine species unique to the Azorean biosphere.

Are there any opportunities for joint research programs or initiatives between Algicel and UAc that would be mutually beneficial?

While there are potential opportunities for joint research and initiatives, we believe UAc is not currently adequately prepared for this task, possibly due to a lack of qualification among university personnel.

What role can UAc play in fostering networking and information sharing between Algicel, its employees, and related stakeholders?

There is a significant lack of interdisciplinary activity within UAc. It seems that a challenging bureaucracy or a lack of institutional cooperation has led to a critical lack of integration among different departments. This fixation on single areas of knowledge limits innovative endeavours that require the exploration of multiple categories of science simultaneously.

How can UAc help Algicel stay up to date with cutting-edge technologies and emerging trends relevant to your industry?

At this point, we don't see a role for UAc in helping us stay up to date with emerging trends and technologies.

Key Takeaways

- 🌐 Algicel is a biotechnology company focused on algae applications in the medical, nutritional, and cosmetics industries. Current collaboration with the University of Azores (UAc) is limited, and there is room for improvement in joint projects.
- 🌐 Algicel perceives a gap between UAc's offerings and market trends, citing poor resource management, high operational overhead costs, and a low focus on applied sciences.
- 🌐 UAc could enhance its educational programs by emphasising application knowledge, entrepreneurship, management, and engineering to better prepare students for careers in Algicel's sector.
- 🌐 UAc can assist in spreading information and awareness about research and innovation applications related to algae and unique marine species in the Azorean biosphere, but it is not currently adequately prepared for joint research programs due to a lack of qualifications among personnel.

5.3.2.1.5 INTERVIEW WITH FUTURISMO

General Information

Company/Institution: Futurismo Azores Adventure

Category: Business Company

Interviewer: Thor Rodrigues

Date: 11/05/23

Interview Mode: Online Call

Questions & Answers

Could you provide an overview of Futurismo's origin and its growth?

Futurismo is a company that connects tourism with science and education, aiming to contribute to a more balanced lifestyle where society and travellers are more aware of their surrounding nature. The core of our business rotates around responsible tourism in the form of observation tours for whales, dolphins, and other cetaceans, but we are also engaged in promoting science and research through the collection of cetacean data, and educational and awareness efforts of these creatures and its environment to tourists and locals alike.

How does Futurismo interact with the University of the Azores (UAc)?

Our cooperation with UAc mainly involves hosting research principals and providing primary data we collect to scientific personnel. We are currently hosting 10 maritime biologists performing research activities, and we have worked with countless others in the past. This cooperation has led to several PhD and Master's theses, published articles, and studies on cetaceans, sustainability, conservation, sea studies, and marine biology.

We also collect and share data on cetaceans with various universities and scientific organisations, including UAc. This includes location tracking and identification of different cetaceans.

Finally, although not directly related to UAc, but to education itself, we are also the organisers of Futurismo ConnAction, a science communication event that brings together our professional marine biologists and environmental science team to present their work regarding conservation projects on land and at the sea to locals and visitors.

What are some challenges Futurismo faces when collaborating with UAc?

We believe there are multiple opportunities for cooperation with the university, but some issues prevent us from advancing further. The university's approach to enterprises in the surrounding ecosystem is slow and shy. There is a lack of coordination in establishing partnerships, and we feel that the academic recognition of our efforts and impact is insufficient. We also perceive an unequal relationship between the commercial and scientific sectors, with an assumption that we are exclusively interested in profit-oriented activities, which is not the case. Additionally, we think that UAc's internal culture regarding cooperation may not be fully developed, leading to a lack of proper cooperation channels or qualified staff to create connections between the university and enterprises.

What do you think UAc could do to better prepare students for careers in your specific sector?

The main challenges we see are not in the educational courses themselves but in the lack of emphasis on applicability and entrepreneurship. We believe that these aspects should be better integrated into UAc's educational programs, leading to qualified personnel who are more likely to start their ventures or collaborate with companies like ours.

Are there any current or potential research areas where collaboration between your company and UAc could lead to significant advancements or improvements in your industry?

Yes, the most relevant areas for us are centred around sea sciences, such as marine biodiversity. However, there are existing challenges that prevent further cooperation, including excessive bureaucracy in establishing joint projects and long waiting times, which are not compatible with the nature of business operations.

In what ways can UAc play a role in fostering networking and information sharing between your company, and the university and local communities?

We believe UAc can serve as a centre for scientific and entrepreneurial knowledge diffusion among the community and visiting stakeholders. By promoting local companies and initiatives and fostering an environment of entrepreneurship, the university can act as a "mentor of incubation" in the region. This, combined with other practices, could lead to the emergence of an environment of entrepreneurship.






What changes in mindset or approach at UAc would improve cooperation between the university and Futurismo?

We believe that a shift in mindset is required at UAc, focusing more on practical applications and fostering a culture of innovation, disruption, and creation. This would help spark creative mindsets within the region and lead to better cooperation. Not only does this create qualified personnel that is more prone to starting their own ventures, but also collaborating more with us.

How does Futurismo perceive the current effort and impact of research principals and university staff in cooperative activities?





Futurismo feels that research principals and university staff may not be putting enough effort into cooperative activities. We would like to see more cooperation and joint ventures but feel that the current system and mindset at UAc are not favourable to achieve these goals.

Key Takeaways

-  Futurismo and the University of Azores (UAc) collaborate mainly through hosting researchers and sharing collected cetacean data for scientific studies, contributing to numerous published works and academic theses.
-  Challenges in their collaboration include the university's slow approach to partnerships, inadequate recognition of Futurismo's efforts and impact, perceived bias towards commercial enterprises, and potential lack of internal culture at UAc to foster cooperation.
-  Futurismo suggests that UAc could better prepare students for their sector by emphasising applicability and entrepreneurship in educational programs.
-  Although there is potential for significant advancements in areas like marine biodiversity, excessive bureaucracy and long waiting times hinder the establishment of joint projects.
-  Futurismo suggests that UAc can foster better networking and information sharing by promoting local enterprises and cultivating an environment of entrepreneurship, thus acting as a "mentor of incubation" in the region.

6.3.2.2. GOVERNMENT DEPARTMENTS

The next part of this report presents interviews with representatives from various government departments in the Azores region. These interviews shed light on the collaboration and interaction between these departments and the University of the Azores (UAc), as well as the challenges and opportunities they face. Here is an overview of the interviewees and their respective departments:

-  **Regional Directorate for Science and Technology (DRCT):** The DRCT is responsible for promoting a knowledge-based society in the Azores, focusing on scientific research, innovation, and digital transformation. The interview provides insights into the mission and responsibilities of DRCT and its collaboration with UAc.
-  **Regional Directorate for Entrepreneurship and Competitiveness (DREC):** DREC's primary objective is to foster private investment and manage funds received from the Portuguese government and the EU. The interview discusses the collaboration between DREC and UAc, challenges in the application of scientific research, and recommendations for modifying educational programs.
-  **Regional Civil Engineering Laboratory (LREC):** LREC plays a crucial role in providing technical support relating to civil engineering projects. The interview touches upon the interaction between LREC and UAc, potential collaborations, challenges in the educational system, and suggestions for UAc to address them.
-  **Regional Directorate for Planning and Structural Funds (DRPFE):** DRPFE focuses on planning and managing structural plans to support development in applied science projects. The interview explores the challenges faced by DRPFE and the Azorean ecosystem, ways UAc can enhance collaboration, the implications of low demand for specialised jobs, and the roles UAc can play in enhancing DRPFE's performance.

These interviews provide valuable insights into the collaboration between government departments and UAc, challenges in the educational system, opportunities for joint initiatives, and recommendations for improvement.

5.3.2.2.1. INTERVIEW WITH THE REGIONAL DIRECTORATE FOR SCIENCE AND TECHNOLOGY (DRCT)

General Information

Company/Institution: Regional Directorate for Science and Technology

Category: Government Authority

Interviewer: Thor Rodrigues

Date: 10/05/23

Interview Mode: Online Call

Questions and Answers

Could you provide an overview of the Regional Directorate for Science and Technology's mission and responsibilities?

The Regional Directorate for Science and Technology is the public entity responsible for ensuring the achievement of legal and technical requirements for the promotion of Azores as a knowledge-based society, leveraging the foundations of basic and applied scientific research, innovation, and digital transformation. Our duties encompass policies relating to science and technology endeavours, financing and budgeting, external cooperation and research activities, management of research funds and special programs, and the dissemination of scientific culture, among other related activities.

How does the University of the Azores (Uac) interact with your institution?

Uac is the most relevant scientific stakeholder in the Azores region, engaged in core activities in public education, qualification of personnel, and advanced research production. Our objective is to best support Uac in these activities.

Are there any areas of skill shortages in the Azores that Uac could address through its educational programs or degrees?

There's a lack of qualified personnel in the Azores, especially regarding engineering sciences. Although we are aware of this challenge, there's a delay between forwarding this information to Uac and the time it takes for changes to be made, and for students to graduate and close this gap in the skilled workforce. In previous university administrations, there was a mismatch between the offer of educational programs and actual demand, from both students and market players. We perceive that this challenge is being addressed, but we are still in the early stages of it.

Can Uac play any role in bridging the gap between government and industry, facilitating better communication and collaboration?

Uac does partially bridge this gap. However, current performance is not considered satisfactory due to several reasons. There is a cultural challenge in shifting the population's mindset towards an entrepreneurial and innovative landscape. We still lack sufficiently-developed bureaucratic mechanisms to efficiently manage supporting activities regarding 244 tilize 244 aliz, financing, management, and application of advanced research. Additionally, the culture of innovation within academic settings is not as mature as it could be compared to other regions.

Are there any opportunities for joint research programs or initiatives between your government sector and Uac that would be mutually beneficial?

The Azores islands hold unique features that can only be leveraged here, providing a uniqueness and a certain competitive edge, compared to similar locations. We hold a singular position to exploit research related to climate change and climate phenomena, archipelago fauna and flora, natural biopharmaceuticals, ocean studies focused on Atlantic species, and especially, algae. Moreover, we offer special tax regulations that can translate into a competitive advantage when compared to other European regions.

What challenges does Uac face in managing and commercialising scientific programs?

We perceive that due to the lack of adequate human resources and pre-established procedures and protocols, there is significant mismanagement when it comes to the commercialisation of scientific programs. We believe there is a lack of synergy in further utilizing existing research resources, which leads to poor performance optimisation. Even though Uac itself is part of certain international networks for scientific cooperation, we believe there is much room for improvement.

What can Uac do to address the lack of a qualified workforce in the Azores?

Enacting visible and impactful change is a long process that involves changes not only in the educational offering of the island but also in a cultural shift within the local population. There have been significant challenges regarding outdated study programs being offered, and we are currently addressing these challenges. We consider this lack of critical mass the highest current challenge that the Azores faces regarding scientific and innovation endeavours.

Key Takeaways

- 🌐 The University of Azores (Uac) is considered a crucial scientific and educational partner for the Regional Directorate for Science and Technology, given its central role in public education, personnel training, and advanced research.
- 🌐 There is a shortage of qualified personnel, particularly in engineering sciences, in the Azores. The university could help address this issue, but there is a time lag from recognising the need, changing the curriculum, and producing graduates.
- 🌐 Uac could play a stronger role in bridging the gap between government and industry, but it currently faces obstacles such as cultural resistance to entrepreneurial thinking and inadequately developed bureaucratic mechanisms.
- 🌐 The unique geographical and ecological characteristics of the Azores could serve as an advantageous feature for research in areas such as climate studies, biodiversity, and ocean studies focused on Atlantic species, potentially offering a competitive edge.
- 🌐 The main challenge faced by Uac is the lack of adequate human resources and pre-established procedures, resulting in significant mismanagement in the commercialisation of scientific programs. Improvement is needed to better utilize existing research resources and international networks for scientific cooperation.

5.3.2.2.2. INTERVIEW WITH THE REGIONAL DIRECTORATE FOR ENTREPRENEURSHIP AND COMPETITIVENESS (DREC)

General Information

Company/Institution: Regional Directorate for Entrepreneurship and Competitiveness

Category: Government Authority

Interviewer: Thor Rodrigues

Date: 11/05/23

Interview Mode: Phone Call

Questions and Answers

Could you provide a brief overview of the Regional Directorate for Entrepreneurship and Competitiveness (DREC) and its mission?

DREC's key responsibility is to implement policies that foster private investment. We're also entrusted with the task of managing and allocating funds we receive from the Portuguese government and the EU to facilitate private initiatives.

How does DREC collaborate with the University of the Azores (UAc)?

Our collaboration with UAc primarily revolves around supporting the university's various incubation networks. This entails being actively involved in redirecting financial resources to these organisations. At present, this remains our sole point of contact with UAc, and we're pleased to say that the university is performing satisfactorily and achieving its goals.

Could you elucidate the challenges UAc encounters concerning the application of scientific research and the cultivation of a talented workforce?

Indeed, two of the most significant obstacles we've identified for UAc are a shortage of skilled labour and a deficit in the transfer of scientific research to practical applications.

Regarding scientific research, there seems to be an imbalance in how research projects are designed, with a notable lack of emphasis on practical application. Moreover, even when researchers wish to innovate and generate new products or solutions, they often lack the necessary business and management skills to get their projects off the ground.

Regarding the talent deficit, this largely stems from the migration of young people from the Azores to the continent and other regions. This exodus is driven by a search for educational opportunities not offered here, as well as better salaries and employment prospects that align with their academic qualifications.

In what ways can UAc modify its educational programs to better respond to these challenges?

UAc could focus on introducing new courses or educational programs that cater to the current educational demand, particularly those programs that are popular among students who opt to study abroad. This approach should also incorporate courses in demand by present and future students and include relevant business and management skills that complement their main study area.





Can you shed light on the specific challenges your sector faces in terms of workforce availability?

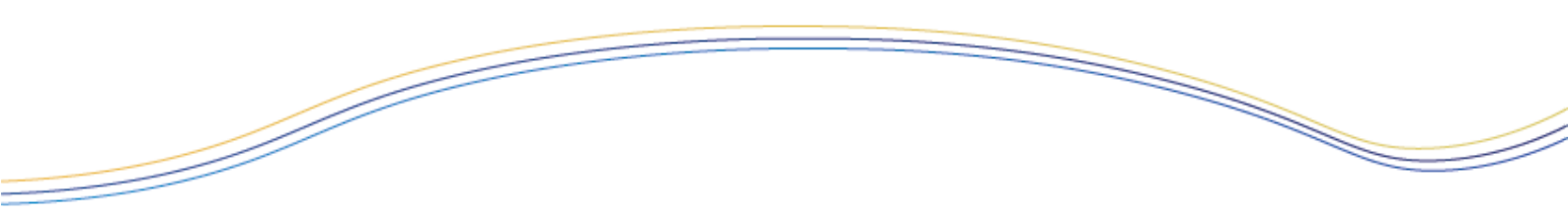
Our sector is currently grappling with a shortage of professionals to fill certain specialised positions within our department. This is primarily because potential employees tend to favour the private sector over public office positions.

What is the principal objective UAc should concentrate on to aid your organisation and the local economy?

In a nutshell, we believe that UAc should prioritise the recruitment of new talent, ideally, those inclined towards applied science. It would be heartening to witness the emergence of new businesses with high-added value and innovative initiatives, such as novel products and services geared towards market use.

Key Takeaways

-  The Regional Directorate for Entrepreneurship and Competitiveness (DREC) and the University of the Azores (UAc) are collaborating to support the university's various incubation networks, redirecting financial resources to these organisations.
-  UAc faces two primary challenges: a shortage of skilled labour due to the migration of young people seeking educational opportunities and better salaries elsewhere, and an imbalance in scientific research projects, which often lack a practical application and business aspect.
-  To address these challenges, UAc could ideally introduce new courses or educational programs that respond to current educational demands. These should include the addition of relevant business and management skills to complement the main study areas.
-  DREC faces a workforce availability issue, with a shortage of professionals for specialised positions within their department, as potential employees often prefer the private sector over the public office.

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- 🌐 The DREC suggests that UAc should prioritise the recruitment of new talent, ideally, those focused on applied science, to stimulate the emergence of innovative businesses, products, and services geared towards market use.

5.3.2.2.3. INTERVIEW WITH THE REGIONAL CIVIL ENGINEERING LABORATORY (LREC)

General Information

Company/Institution: Regional Civil Engineering Laboratory (LREC)

Category: Government Authority

Interviewer: Thor Rodrigues

Date: 11/05/23

Interview Mode: Online Call

Questions and Answers

Could you provide a brief overview of the Regional Civil Engineering Laboratory (LREC) and its primary functions and objectives?

LREC, established in 1980, operates within the realms of Geotechnical, Structural, Materials, Seismic, Road, and Engineering Geology. Our fundamental mission is to stimulate scientific research tailored to regional needs and encourage technological advancement in civil engineering. We also extend technical support to civil engineering projects, oversee construction material quality, and propagate scientific and technical knowledge in our domain. In essence, through our varied laboratory services, we strive for excellence, safety, and sustainability in construction.

What kind of interaction or impact does the University of the Azores (UAc) have on your organisation?

Our interaction with UAc is quite limited, primarily revolving around the university promoting some of our events.

How do you envision a future collaboration with UAc that might enhance LREC's performance and achieve its objectives?

We foresee the potential for fruitful collaboration in the future, especially in projects that require highly specialised professionals. UAc's support could prove valuable in our research and operational projects concerning volcanology and environmental monitoring. Moreover, we currently face a specialisation problem within our ecosystem - there's a scarcity of professionals with specific expertise in specialised engineering segments. Initiatives to attract such experts from abroad or to cultivate these skills domestically would be of immense interest to us.

What challenges does the current educational system present, and how could UAc address them?

We've noted that some of the educational offerings, including certain programs, are somewhat outdated compared to the current market demand. This might be due to the internal system's design, which seems to lack both incentives for progression and penalties for poor performance. By modifying this system, we might foster an environment where improvement and evolution are incentivised. We've also observed a bias favouring pure scientific research over applied science projects. While we understand the importance of both, we believe that a better balance between the two would enhance integration opportunities with external stakeholders like us.

Moreover, we suggest that UAc emphasise programs focusing on the Azores region's unique offerings, such as sea sciences, sustainability, and volcanology. This approach should be combined with a more significant internationalisation effort to attract external students and prepare UAc students for the global market. Furthermore, UAc should consider redefining its strategy for integration with regional business and societal actors. We're keen on enhancing our relationships with them, but we're unsure how to proceed.

What measures could UAc take to facilitate more robust relationships with stakeholders, both from civil society and the commercial sector?

While we don't have a concrete answer to this question, we firmly believe that it would be beneficial for UAc to play a more active role in bridging the gap between academia and the industrial sector, promoting cooperation, and facilitating dialogue. This would not only be advantageous for civil society but also for the commercial sector.

Key Takeaways

- 🌐 LREC's interaction with UAc is currently limited, with the university occasionally promoting some of LREC's events.
- 🌐 Future collaboration could involve UAc's support in research and operational projects related to volcanology and environmental monitoring, as well as initiatives to attract or cultivate domestic engineering specialists.
- 🌐 LREC suggests that UAc should update its educational offerings to match market demand, create a balance between pure and applied scientific research, and focus on unique areas of excellence in the Azores region.

5.3.2.2.4. INTERVIEW WITH THE REGIONAL DIRECTORATE FOR PLANNING AND STRUCTURAL FUNDS (DRPFE)

General Information

Company/Institution: Regional Directorate for Planning and Structural Funds

Category: Government Authority

Interviewer: Thor Rodrigues

Date: 11/05/23

Interview Mode: Online Call

Questions and Answers

Could you provide a brief description of your institution and its primary functions?

The Regional Directorate for Planning and Structural Funds (DRPFE) is tasked with planning and managing structural plans that support development in applied science projects. We evaluate proposals and candidates seeking resources for innovation, technology, and applied science, both from the Portuguese government and the EU. Our institution collaborates with various scientific development institutes, including UAc and the TERinov incubator. We assess the applicability, relevance, and market potential of each project, providing funds for promising ones. DRPFE also monitors these funded projects.

What are the challenges faced by DRPFE and the Azorean ecosystem?

The greatest challenges we encounter are related to securing funding for further project development. Bureaucratic constraints limit the investment funds that can be directed towards applied science by the Portuguese government. This challenge also limits the sectors in which funds can be directly invested. Additionally, the small size of the local market and its relative lack of complexity limit opportunities for innovation and market growth. Logistical issues related to the region's isolation, high transportation costs, and long waiting times make it challenging to develop an industrial base in the region. Overall, these factors result in smaller companies being limited by the local market's size, thus offering less room for innovation and entrepreneurship.

How could the University of the Azores (UAc) enhance its collaboration with DRPFE?

Improving the direct contact between UAc and regional companies could enable the exploration of innovation and research opportunities. Additionally, securing better funding sources for larger-scale applied science projects could significantly increase the conversion rate of projects into market-ready products. Increasing integration with

external networks for joint research and investment outside the regional system would also enhance cooperation within the region.






What implications does the low demand for highly specialised jobs have on the region and its interaction with UAc?

The limited demand for jobs requiring a highly specialised workforce discourages those with advanced degrees from remaining in the region, leading to emigration to areas where their expertise can be utilised more effectively. As such, UAc's role in helping mitigate this issue is crucial for the region's development.

What roles could UAc play in enhancing your institution's performance and in meeting its objectives?

UAc can serve as a valuable partner in various ways. It could foster networking and information sharing among companies, employees, and stakeholders in the region. Moreover, it could play an active role in developing and maintaining strategic partnerships with local, regional, and national organisations relevant to our institution's objectives. The university could also help nurture and incubate startups or innovative projects contributing to our institution's growth and success.

Key Takeaways

-  DRPFE faces challenges in securing funding for project development due to bureaucratic constraints and the small size and complexity of the local market.
-  Better direct contact between UAc and regional companies could provide new opportunities for innovation and research.
-  Securing improved funding sources for larger-scale applied science projects could significantly boost project-to-market conversion rates.
-  The limited demand for jobs requiring a highly specialised workforce has resulted in the emigration of talents from the region.
-  UAc can enhance DRPFE's performance by fostering networking and information sharing, developing strategic partnerships, and helping incubate startups and innovative projects.

6.3.2.3. NON-GOVERNMENTAL ORGANISATIONS

In this part of the document, we had a conversation with Amigos dos Açores, a non-governmental organisation (NGO) focused on environmental conservation in the Azores region. The interview provides insights into the objectives and activities of Amigos dos Açores, as well as its interaction with the University of the Azores (UAc). Here is an overview of the interview:

Amigos dos Açores: An NGO dedicated to environmental conservation in the Azores. The organisation engages in activities such as consulting, public awareness campaigns, research, and advocacy. The interview highlights the specific activities of the NGO, including recreation, education, research, and advocacy.

During the interviews conducted, Amigos dos Açores was the only non-governmental organisation (NGO) represented, providing valuable insights into their objectives, activities, and collaboration opportunities with the University of the Azores (UAc) in the context of environmental conservation and sustainability in the Azores.

General Information

Company/Institution: Amigo dos Açores

Category: Non-governmental organisation

Interviewer: Thor Rodrigues

Date: 11/05/23

Interview Mode: Online Call

Questions and Answers

Could you give a brief introduction about Amigos dos Açores and its primary objectives?

Amigos dos Açores is an NGO engaged in activities related to environmental conservation. Our main tasks include consulting and support towards public policies in this segment and raising public awareness about conservation in the Açores region. We operate regionally and participate significantly in referendums and public auditions about environmental policies and conservation. We also propose policies for these segments.

Can you elaborate on the specific activities Amigos dos Açores engage in?

We are active in four key areas: recreation, education, research, and advocacy. Our recreational activities include arranging monthly hikes for our members and the wider community, serving dual purposes: assessing the environment first-hand and gathering data for creating nature exploration itineraries and hiking routes. We've also produced 16 guidebooks detailing hiking routes, mainly in São Miguel Island and Santa Maria Island.

What is the role of Amigos dos Açores in the educational and research spheres?

In the educational sphere, we offer support to schools through field trip coordination and the provision of teaching materials. We also conduct awareness campaigns covering diverse topics like natural heritage preservation, protected area management, and solid waste issues. On the research side, we undertake several initiatives, including studying birds of prey, researching the crested newt species, documenting wetlands on São Miguel Island, and conducting photographic and topographic surveys of caves and sinkholes.

How does Amigos dos Açores engage in advocacy?

We actively engage in advocacy and denouncement by submitting petitions and memorandums to national, regional, and local authorities. We raise awareness through media channels and propose the classification of protected areas. We've made significant efforts regarding the Carvão Cave, Ponta da Ferraria, and Congro and Nenúfares Lagoons. We also dedicate efforts to engaging young people, organising tailored initiatives, collaborating with youth associations, curating thematic exhibitions, and conducting awareness-raising activities.

What interactions does Amigos dos Açores have with the University of the Azores (UAc)?

Our interactions mostly involve supporting UAc and other research personnel in activities that involve the collection of primary data in the biosystem. This includes technical support for data collection for research related to ecology, nature conservation, and diverse specific subcategories related to wildlife and flora. In the past, we have supported UAc and the CiBio initiative, and we're always open to potential cooperation with UAc and scientific stakeholders.

How can UAc collaborate with Amigos dos Açores to enhance its performance and achieve its objectives?

We believe that as a public actor, UAc could act more as a source for the dissemination of verified knowledge within the surrounding ecosystem. The issue we face is not the volume of information but the lack of truthful and verified content. Additionally, our organisation's collaborators consist mostly of volunteers passionate about biodiversity, nature, and conservation. We think that UAc could help share our work and projects to those with a natural inclination towards these subjects and also inform others who may not be aware of our work.

Could you elaborate on the potential for educational opportunities related to biodiversity and ecology at UAc?

In this current age, we think it would be beneficial for UAc to offer educational opportunities related to our fields of work, such as online courses on biodiversity and ecology. These courses could be available for local students and also for the international community, which could help us reach a larger audience and spread awareness about our work.

What are your thoughts on UAc fostering start-up initiatives?

We suggest that UAc could increase its support towards incubating start-up initiatives concerning solutions that biodiversity studies could offer, in a sustainable fashion. The university could ideally act as a network environment and coordinator for similar activities and initiatives. This could also create new job roles associated with scientific knowledge, which we believe UAc should support.

What changes in UAc's approach could improve collaboration between the university and Amigos dos Açores?

Our most important suggestion for UAc would be to act as a community centre for the promotion and awareness of ecological biodiversity and sustainability. This includes emphasising the practical application of scientific knowledge and the importance of truthful and verified information. We also believe UAc could take a leading role in incubating initiatives related to biodiversity and ecology, fostering a network environment, and promoting our work within the community and among its students.

Key Takeaways

- 🌍 Amigos dos Açores collaborates with the University of Azores (UAc) mainly by providing support in collecting primary data for research related to ecology, nature conservation, wildlife, and flora.
- 🌍 The NGO sees potential in UAc to help enhance its performance by disseminating verified knowledge in the field of ecology and biodiversity, thus addressing the challenge of spreading truthful and reliable information in the community.
- 🌍 Amigos dos Açores suggests that UAc could help in creating greater awareness about the NGO's work by sharing their projects and activities with people inclined towards biodiversity and conservation, and those unaware of their work.
- 🌍 UAc could boost its role in environmental education by offering online courses related to biodiversity and ecology, as suggested by Amigos dos Açores. This would broaden the reach and impact of such education and the work of the NGO.
- 🌍 Finally, Amigos dos Açores sees an opportunity for UAc to foster start-up initiatives focused on sustainable solutions derived from biodiversity studies, potentially creating new jobs associated with scientific knowledge and promoting a more active network environment in the field.

6.3.2.4. BUSINESS ASSOCIATIONS

Business associations, including chambers of commerce, trade groups, professional organisations, and industry-focused networks, are critical in fostering business growth and development. As part of our research, we sought to explore potential collaboration and partnership opportunities between these entities and the University of the Azores (UAc) by conducting a series of interviews. The goal was to enhance the industry's performance and achieve its objectives, with a focus on identifying UAc's role and impact in the industry/business sector and exploring potential areas of collaboration, such as joint research programs, tailored educational programs, and community engagement opportunities.

In the upcoming section, we present an interview with the Angra do Heroísmo Chamber of Commerce. This detailed conversation delves into the chamber's mission, its role in the local business community, and its relationship with UAc. It was shared with us its views on UAc's current level of integration with the surrounding community and commercial stakeholders, its educational offerings, internationalisation, and communication practices. It also highlighted areas where UAc could improve to better meet the needs of the business community, including staying updated with cutting-edge technologies and emerging trends relevant to the industry.

6.3.2.4.1. INTERVIEW WITH THE ANGRA DO HEROÍSMO CHAMBER OF COMMERCE

General Information

Company/Institution: Angra do Heroísmo Chamber of Commerce (Câmara do Comércio de Angra do Heroísmo)

Category: Chamber of Commerce

Interviewer: Thor Rodrigues

Date: 16/05/23

Interview Mode: Online Call

Questions and Answers

Could you briefly tell us about the Angra do Heroísmo Chamber of Commerce and its mission?

The Angra do Heroísmo Chamber of Commerce is committed to the continuous monitoring of the labour market, institutional climate, and political scenario of the Azorean region. Our primary objective is to uncompromisingly defend the common interests of the businesses we represent, promoting initiatives and developing activities that contribute to the competitiveness of companies within our geo-economic space.

Our strategy lies in projecting a strong capacity to anticipate the challenges that companies and the regional economy face, identifying threats and opportunities, and promoting sustained development. We aim to position the Chamber of Commerce as a true centre of skills, accelerating responses to globalisation and the challenges of the information society.

What has been the role or impact of the University of the Azores (UAc) in your organisation? Is there any interaction between your institution and the university?

As of now, there are no direct activities with UAc. However, in the past, we attempted to implement a joint project related to the economic impact of the Covid-19 pandemic, together with the Department of Economy. Unfortunately, that was our only recent cooperation with UAc.

In the Chamber's opinion, how could UAc enhance its integration with the surrounding community and commercial stakeholders?

We think that the University is not well integrated with the demands of the surrounding community, much less with commercial stakeholders. For instance, even though UAc has a start-up incubator, we faced significant challenges trying to get support for one of

our start-up projects. High costs, inflexibility, and poor relationships with other enterprises hindered us. In general, there is a critical issue with UAc's cooperation with the business sector. We believe the university remains closed to "outsider visions" and lacks proper orientation towards knowledge and technology transfer activities.

Are there any aspects related to UAc's education offerings that you would like to see improved?

Yes, UAc's current educational offerings are incompatible with modern market demands. We believe that UAc should focus more on core courses such as agriculture and animal husbandry, IT and computer science, sea-oriented sciences, and tourism. This focus would be more in tune with the most relevant economic activities in the Azores.





How does your institution view UAc's level of internationalisation and its communication with the surrounding community?

The level of internationalisation of the university and its activities remains low. This is negative for preparing internal students for the outside market and attracting new talents to the island. Poor communication with the surrounding community further hinders integration and participation, increasing the isolation of the university.

Is there any way UAc could help your institution stay updated with cutting-edge technologies and emerging trends relevant to your industry?

We do not believe UAc could act as a good provider of knowledge regarding technological and market tendencies, as they seem to lack this knowledge. Improving on this aspect would undoubtedly benefit us.

Key Takeaways

-  The Angra do Heroísmo Chamber of Commerce perceives a lack of integration and cooperation between UAc and the surrounding community, including commercial stakeholders.
-  Challenges include high costs and inflexibility in UAc's start-up incubator, poor relationships with enterprises, and an educational offering that is incompatible with modern and market demands.
-  To improve, UAc should focus more on courses related to the core market competencies of the Azores islands, such as agriculture and animal husbandry, IT and computer science, sea-oriented sciences, and tourism.
-  There is a perceived lack of internationalisation and poor communication with the surrounding community at UAc.

6.3.3. FINDINGS

After thoroughly reviewing the interviews conducted with numerous organisations and companies, a collection of prominent issues and recommendations have been identified. These findings represent the most common complaints and suggestions that we have identified, coming from multiple different stakeholders.

We have also ranked them in order of importance, from highest to lowest priority, although it's often the case that improving one element might have a positive marginal effect on others. Nonetheless, as complex operations often exist holistically, it is recommended that adequate importance should be given to all these issues.

Key identified challenges are:

- 1. Improving Collaboration and Communication:** A recurring concern from organisations like Grupo Marques, Finançor, seaExpert, Futurismo, and Algicel revolves around the current state of collaboration and communication with UAc. These organisations have voiced their concerns about the challenges they face due to bureaucratic hurdles, budgetary limitations, inefficient communication, and a perceived lack of interest from UAc in establishing partnerships. To overcome these barriers, it's recommended that UAc should strive to enhance its communication processes, display a greater willingness to cooperate, and actively recognise and appreciate the efforts and contributions of its partners. Moreover, reducing bureaucratic roadblocks could facilitate smoother and more efficient collaborations.
- 2. Enhancing Practical Application of Research:** The practical application of academic research was a key point raised by organisations such as Finançor, seaExpert, Algicel, Futurismo, and DREC. These stakeholders emphasised the disconnect between the theoretical research produced by UAc and the practical needs of the market. They suggested that UAc should place more emphasis on applied sciences and focus on ensuring the practical application of its research projects. DREC, for instance, noted the imbalance in scientific research projects, which often lack a practical application and business aspect. By addressing these concerns, UAc could increase the value and impact of its research, enhancing its relevance to the industry and society.
- 3. Strengthening Community Relationships and Networking:** The importance of networking and community integration was highlighted by Futurismo, Amigos dos Açores, and the Angra do Heroísmo Chamber of Commerce. These organisations urged UAc to foster better networking, promote local enterprises, and increase its integration and cooperation with the surrounding community. For instance, Amigos dos Açores suggested that UAc could play a crucial role in creating awareness about their work by sharing their projects and activities with those interested in biodiversity and conservation.

4. **Cultivating a Culture of Entrepreneurship and Innovation:** Many organisations, including Finançor, Algicel, Futurismo, DREC, and the Angra do Heroísmo Chamber of Commerce, underscored the need for UAc to foster a culture of entrepreneurship and innovation. They advised UAc to improve its engagement with start-up incubators, encourage entrepreneurship among its students, and prioritise the recruitment of new talent geared towards applied science. This approach could stimulate the emergence of innovative businesses, products, and services that are highly suited for market use.
5. **Addressing Bureaucratic and Management Challenges:** Several organisations, namely seaExpert, Futurismo, and DRPFE, expressed their concerns about UAc's bureaucratic and management issues. They pointed to various factors that hinder collaboration, including UAc's slow approach to partnerships, an inadequate rewarding system, high operational overhead costs, and difficulties securing funding for project development. Addressing these issues could help UAc become a more agile, efficient, and effective partner for various organisations.
6. **Addressing the Knowledge and Skill Gap:** One of the most persistent issues across several organisations, including Grupo Marques, Finançor, Algicel, DRCT, DREC, and LREC, is the recognised gap in the demand and supply of qualified personnel. This is particularly true for emerging scientific fields and areas such as engineering, IT, and artificial intelligence. UAc is urged to take an active role in addressing this issue by expanding its educational offerings and introducing specialised courses. For example, Finançor highlighted the need for advanced qualifications in IT and artificial intelligence, while Algicel emphasised application knowledge, entrepreneurship, management, and engineering in preparation for careers in its sector. By broadening its curriculum and adapting to the market's needs, UAc could become a vital resource in equipping the Azorean workforce with the needed skills.
7. **Leveraging Unique Geographical and Ecological Features:** The unique geographical and ecological attributes of the Azores were highlighted as a potential advantage for research by DRCT and Amigos dos Açores. These organisations suggested that UAc could utilise this unique aspect for studies in fields such as climate science, biodiversity, ocean studies, and conservation, providing valuable insight into these critical areas.

In summary, these interviews indicate a strong demand for UAc to make changes that could greatly benefit both the university itself and its external stakeholders. By aligning its curriculum and research focus more closely with market demands, improving its engagement with external partners, streamlining administrative processes, and creating a more supportive environment for entrepreneurship and innovation, UAc has the potential to significantly improve its value and impact within the Azores and beyond.

6.4. ULPGC ECOSYSTEM

6.4.1. OVERVIEW OF INTERVIEWS FOR ULPGC

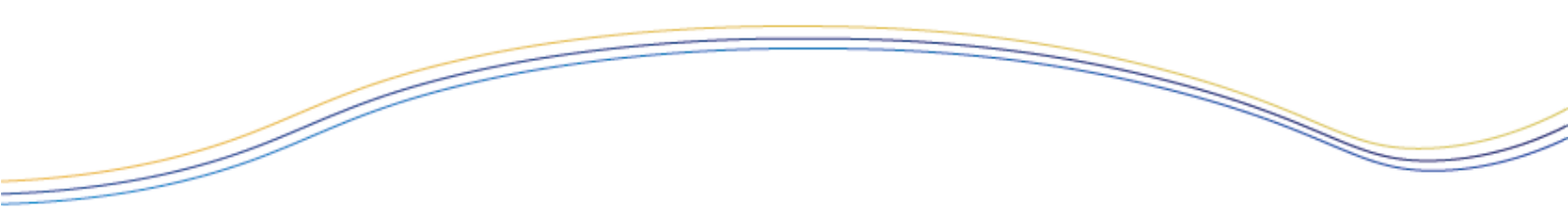
Regarding ULPGC, the chapter provides detailed insight into the perceptions, expectations, and potential opportunities for collaboration between ULPGC and five key stakeholder groups within the Canarian landscape: business companies, government departments, business associations, research centres, and start-up incubators. The rich, qualitative data generated through these interviews provide a comprehensive view of the current state of university-stakeholder relationships and the potential for their enhancement and evolution in the future.

Based on our findings, five key areas of concern have emerged, each highlighting a specific aspect of ULPGC's operation and its relationship with students, industry partners, and the broader society.

These challenges are, in order of importance, the following:

1. **Alignment of Educational Programs and Internships with Industry Needs:** Educational programs require better alignment with contemporary business needs. Improving the practicality of these programs and extending the duration of internships could lead to more meaningful student experiences and valuable business outcomes.
2. **Skill Gaps in the Workforce:** Stakeholders identified a significant skills gap among graduates, who, despite strong academic grounding, often lack industry-specific practical skills. This gap signals a need for the university to bolster its focus on applied learning.
3. **Need for More Collaborative Research Programs:** More joint research programs could fortify the relationship between academia and industry. Greater emphasis on industry-relevant research can stimulate innovation and regional economic growth.
4. **Communication and Collaboration Issues:** The study found communication and collaboration between ULPGC and industry partners to be insufficient. Enhanced engagement strategies could strengthen partnerships and foster a more collaborative culture.
5. **Administrative Hurdles and Slow Response Times:** Bureaucratic processes and slow administrative response times at ULPGC have been perceived as significant obstacles, inhibiting the initiation of collaborative projects, and potentially discouraging future partnerships.

These challenges, while independently significant, are also interconnected, implying that progress in one area could induce improvements in others. However, due to the inherent complexity of university operations, it is recommended that each issue be addressed with equal attention.



By tackling these concerns head-on, ULPGC has the opportunity to reinforce its role as an effective educational institution and a trusted partner for industry collaborations, ultimately contributing to the region's socio-economic development.






6.4.2. INTERVIEWS

6.4.2.1. BUSINESS COMPANIES

In the upcoming chapter, the document will examine the insights provided by the interviewees representing different business companies. Each interviewee will share their perspectives on collaboration with the University of Las Palmas de Gran Canaria, including the challenges they face, potential areas of collaboration, and their recommendations for improvement.

Here is a brief overview of the interviewees and their respective companies:

-  **Sensorlab:** Founded in 2011, specializes in creating precise environmental instruments primarily for oceanographic research. The company provides products such as pH sensors and spectrophotometric LED light sources, while also accommodating specific customer needs. Expanding into the electronics market, Sensorlab has diversified its offerings across multiple sectors, leveraging collaborations with the University of Las Palmas de Gran Canaria.
-  **Ecos, Estudios Ambientales y Oceanografía:** The consulting company established in 2007 is specialised in environmental and marine ecosystem studies. They provide services like inspection, and environmental impact assessments, and utilise advanced modelling tools for coastal management and resource planning.
-  **Elittoral:** The environmental consulting firm is focused on coastal and marine ecosystems. They assess marine environments and forecast changes, providing insights to promote sustainability. Their services include hydrodynamic marine acoustic modelling, water inspection, and environmental assessment.

For each interviewee, their perspectives and experiences will offer valuable insights into the dynamics between business companies and ULPGC, highlighting potential areas of collaboration, challenges to be addressed, and suggestions for fostering better cooperation.

5.4.2.1.1. INTERVIEW WITH SENSORLAB

General Information

Company/Institution: Sensorlab

Category: Business Company

Interviewer: Vikesh Chugani

Date: 08/05/23

Questions and Answers

Tell us a bit about your institution. What are the specific tasks, functions, or duties that your institution performs? If possible, tell us what your main objective is.

We are a young and small company established in 2011. We develop high-accuracy environmental instruments with a special focus on oceanographic research. Our product line includes high-accuracy pH sensors and low-power, high-stability spectrophotometric LED light sources. We also work on customised products for specific customer requirements.

Our pH sensors are the fruit of many years of development in collaboration with Dr Melchor González-Dávila at the University of Las Palmas de Gran Canaria.

The first sensor prototypes were developed in 2007 and they are still being used today. The SP100-SM was released in 2011 being the first official Sensorlab submarine pH sensor. This sensor was the precursor of the current SP101-SM released in 2013 featuring several improvements over the SP100-SM such as smaller size, lower power consumption, increased corrosion resistance and enhanced firmware.

In recent years, we have turned into the electronics market niche, commercialising sensors, and hardware technologies for a wide range of applications: industry, environmental quality control, photonics, among others.

If any, what is the role or impact that ULPGC have in your organisation/company? Is there any interaction between your organisation/company and the university?

In the early stages of our company, we collaborated closely with the ULPGC. This partnership provided valuable resources and support that helped us grow as a company. However, as time has progressed, our relationship with ULPGC has become less prominent. While we still engage in occasional small-scale projects with the university, the overall impact and level of interaction have decreased. Nevertheless, we appreciate the foundation ULPGC helped establish for our company and continue to recognise their significance to our beginnings.

How can ULPGC collaborate with your company, to enhance its performance and achieve its objectives?

To improve collaboration and enhance our company's performance, the ULPGC can address some of the challenges we have faced in the past. Bureaucracy and slow response times have hindered our ability to work effectively together, as our fast-paced business environment demands agility and responsiveness.

To overcome these obstacles, we suggest establishing a dedicated liaison within ULPGC who can better understand the needs and priorities of our company. This individual could facilitate more productive communication between our organization and the university, helping to bridge the gap between academic research and industry objectives.

While we understand that researchers may have different aims and purposes, fostering a mutual understanding and aligning our goals could prove beneficial for both parties. By providing support and resources tailored to the needs of small companies like ours, collaboration with a larger institution like ULPGC can become a more valuable and enriching experience. This would ultimately enable us to maximize the potential of our partnership and achieve our shared objectives.

What educational programs or degrees could be developed or tailored by ULPGC to better prepare students for careers in your specific commercial or industrial sector?

To better prepare students for careers in our commercial sector, ULPGC could enhance or develop educational programmes focusing on electronics and telecommunications. These tailored programmes would emphasise skill development and practical experience in areas such as circuit design, digital signal processing, embedded systems, wireless communication, and network engineering.

Incorporating hands-on projects, internships, and industry partnerships into the curriculum would provide students with valuable real-world experience that bridges the gap between theoretical knowledge and practical application. These initiatives would also allow students to be more attuned to the latest industry trends and technological advancements, making them more competitive and employable in the job market.

However, we have observed that ULPGC appears to compete with companies in our sector for talented candidates. In recent years, we have advertised internship opportunities but received no applications, only to discover that potential candidates were working in ULPGC labs instead.

To address this issue, ULPGC could work towards fostering stronger relationships with industry partners and creating a more balanced approach to talent acquisition. By offering a variety of internships and job opportunities across both academic and industry settings, students would have a broader range of options to choose from, enabling them

to gain experience in different environments. This approach would not only benefit the students but also help meet the needs of local businesses, promoting a more collaborative and mutually beneficial relationship between ULPGC and the private sector.

How can ULPGC support your company in addressing key challenges, skill shortages, or workforce development needs?

ULPGC can support our company by actively seeking and attracting large-scale research projects to the Canary Islands and inviting local companies, like ours, to participate. The Canary Islands currently lack a rich ecosystem of large and medium-sized companies that create commercial opportunities for small local businesses. By playing a proactive role in bringing new opportunities to the region, ULPGC can help small businesses grow and become more competitive.

Are there any commercial projects or partnerships in which ULPGC could be involved to support your company's objectives and growth?

ULPGC can support our company's objectives and growth by collaborating on commercial projects and partnerships in the following areas:

-  **Environmental Control:** Partnering with us on R&D projects to apply and enhance our sensor technology for environmental monitoring applications. This collaboration could involve the development of new sensors, data analysis methods, and integrated monitoring systems that can address pressing environmental concerns and expand our product offerings.
-  **Photonics and Laser Instruments:** Working together to develop cutting-edge laser instruments for photonics applications, ULPGC's expertise in the field could complement our technical know-how and open new avenues for innovation. This partnership can lead to the creation of novel solutions for industries that rely on precise and reliable laser technology, such as manufacturing, healthcare, and communications.
-  **Physical and Chemical Ocean Monitoring Hardware:** Collaborating with ULPGC on developing advanced hardware for ocean monitoring would enable us to capitalize on their expertise in marine science and engineering. By combining our sensor technology with their knowledge of oceanographic processes and monitoring systems, we can create innovative tools for research institutions, government agencies, and businesses involved in maritime and environmental operations.

Key Takeaways

- 🌐 Current issues hindering collaboration include bureaucratic challenges and slow response times from ULPGC. Suggested solutions include the appointment of a dedicated liaison within the university who can efficiently navigate these barriers, and better align academic research with industry needs.
- 🌐 Sensorlab believes that ULPGC could tailor its educational programs to better equip students for the electronics and telecommunications sector. Hands-on projects, internships, and industry partnerships are recommended to bridge the gap between theoretical knowledge and practical application.
- 🌐 The company faces competition from ULPGC in the acquisition of talented candidates for internships. To balance talent acquisition, the university could foster stronger relationships with industry partners, and offer a variety of opportunities across both academic and industry settings.
- 🌐 Sensorlab suggests that ULPGC could support its growth and address key challenges by inviting the company to participate in large-scale research projects brought to the Canary Islands. Potential areas of collaboration include environmental control, photonics and laser instruments, and physical and chemical ocean monitoring hardware.

5.4.2.1.2. INTERVIEW WITH ECOS

General Information

Company/Institution: Ecos, Estudios Ambientales y Oceanografía

Category: Business Company

Interviewer: Vikesh Chugani




Date: 09/05/23

Questions and Answers

Tell us a bit about your institution. What are the specific tasks, functions, or duties that your institution performs? If possible, tell us what your main objective is.

Ecos was founded in 2007 as an independent consultancy firm to work for and with the environment, seeking a balance between the development and the conservation of marine ecosystems.

Our main technical areas involve:

-  **Inspection Area:** we are a Collaborating Entity with the Administration in the field of Spill Control, accredited by ENAC with the ISO EN UNE 17020 (497/EI746).
-  **Environmental Assessment:** Specialized in two areas, onshore and offshore. The onshore area is focused on the environmental processing of terrestrial projects, specialising in the elaboration of environmental impact studies and environmental monitoring of infrastructures. We have many specialists in environmental impact assessment, geographic information systems, ornithology, and botany, among others. Our specialization in the marine environment has allowed us to create a specific area for the development of environmental projects in the marine environment, with specialists in data acquisition, geophysics, hydrography, marine ecology, cetaceans, among others. A multidisciplinary team expedites the process of preparing environmental impact studies for offshore industries.
-  **Oceanography and Climate Change Department:** the use of numerical models to simulate future scenarios is one of the key tools for coastal management and natural resource planning. We are specialists in the use of software for the calculation of hydrodynamic models, wave, agitation, or dispersion studies, as well as their interaction with the environment.

**If any, what is the role or impact that ULPGC have in your organisation/company?
Is there any interaction between your organisation/company and the university?**

We have been invited to contribute to the Marine Renewable Energy master's degree programme by offering students practical insights based on our extensive field experience. In addition, we engage in occasional collaborations with ULPGC to support different aspects of ocean monitoring. Sometimes, we offer our services free of charge, providing human resources and time without incurring costs for the university.

We have not been directly involved with ULPGC in R&D developments recently, we typically collaborate with technology centres that possess a deeper understanding of the needs and requirements of companies.

How can ULPGC collaborate with your company, to enhance its performance and achieve its objectives?

ULPGC can play a crucial role in advancing lower TRL developments related to ocean and marine monitoring, helping to discover innovative solutions. Our company can then take these findings and commercialise new products and services. Such collaboration would not only benefit our organization but also contribute positively to the local economy. The Canary Islands hold great potential for becoming an international leader in the field of offshore energy. By working together, we can capitalize on this potential and foster growth in the industry.

What educational programs or degrees could be developed or tailored by ULPGC to better prepare students for careers in your specific commercial or industrial sector?

The Canary Islands have significant potential to become a major player in the blue economy sectors. While ULPGC has been updating its educational program portfolio, it is essential to continue adapting and expanding to address emerging sectors that will generate valuable opportunities for the local economy. To better prepare students for careers in our specific industry, ULPGC could consider developing programs or degrees focused on climate change and ocean resilience, marine biotechnology and bioinformatics or marine renewable energy technologies, among others.

In general, educational programmes should be better tailored to the needs of companies to help them address real problems and challenges.



How can ULPGC support your company in addressing key challenges, skill shortages, or workforce development needs?

By encouraging students to pursue internships lasting at least six months within our company. Short-term internships of 2-3 weeks often fail to create a meaningful impact for both students and the company. Longer internships allow students to gain valuable experience, while also providing the company an opportunity to better assess potential hires.



On the other hand, we have received some students from foreign universities such as the University of Montpellier and other universities in the United States. The ULPGC could generate agreements with foreign companies so that their students can have work experience abroad and return with an open mind and an experience that will be beneficial for local companies like us.

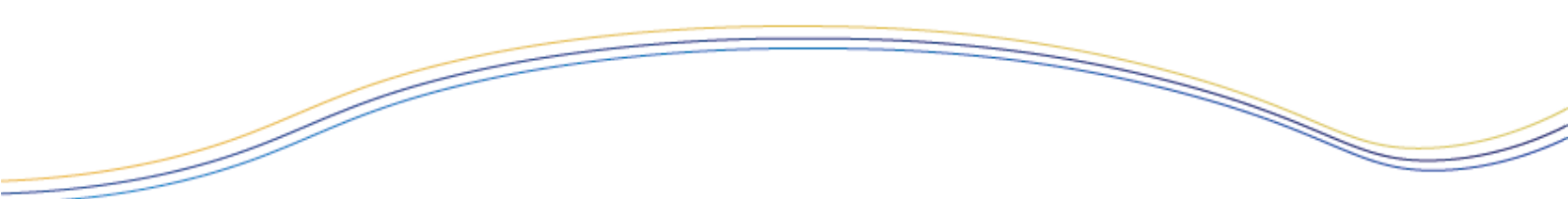
Are there any commercial projects or partnerships in which ULPGC could be involved to support your company's objectives and growth?

Offshore monitoring is expensive, we would be grateful if we could jointly work at enhancing offshore monitoring efficiency and reducing costs. Specifically, we would appreciate joint efforts in the following areas:

-  **Remote monitoring and control:** Develop technologies and methodologies for remotely monitoring and controlling physical and chemical ocean variables. This would involve researching new sensors, platforms, and communication systems to gather accurate and timely data from offshore environments.
-  **Data integration and analysis platform:** Work together to create a platform that allows for seamless data integration and analysis, enabling more efficient decision-making and a better understanding of ocean conditions. This could involve developing software and data management systems that facilitate information sharing and processing across multiple sources and stakeholders.

Key Takeaways

-  There is a potential for more productive collaboration between Ecos and ULPGC. Ecos believes that ULPGC can enhance lower Technology Readiness Level (TRL) developments related to ocean and marine monitoring and help develop innovative solutions which can be commercialised by the company.
-  To further prepare students for a career in the specific industry that Ecos operates in, ULPGC is suggested to develop programs or degrees focused on climate change and ocean resilience, marine biotechnology and bioinformatics, and marine renewable energy technologies.

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- 🌍 Ecos suggests that UPLGC could encourage students to pursue internships lasting at least six months within the company. Longer internships are considered more beneficial for both the company and students.
 - 🌍 Ecos suggests potential commercial projects or partnerships where UPLGC could assist in achieving its objectives. This includes enhancing offshore monitoring efficiency and reducing costs by developing technologies for remote monitoring and control and creating a platform that allows for seamless data integration and analysis.

5.4.2.1.3. INTERVIEW WITH ELITTORAL

General Information

Company/Institution: Elittoral

Category: Business Company

Interviewer: Vikesh Chugani

Date: 09/05/23

Questions and Answers

Tell us a bit about your institution. What are the specific tasks, functions, or duties that your institution performs? If possible, tell us what your main objective is.

Elittoral is a leading environmental consulting firm specialising in the coastal and marine environment. Our primary mission is to assess the current state of the marine ecosystem and forecast its future evolution, providing essential insights to promote sustainable development and environmental protection.

Our organization distinguishes itself by seamlessly integrating academic knowledge and cutting-edge methodologies with practical, real-world problem-solving approaches. We pride ourselves on being pioneers in harmonizing process transfer methodologies, bridging the gap between the academic and corporate worlds to deliver actionable solutions.

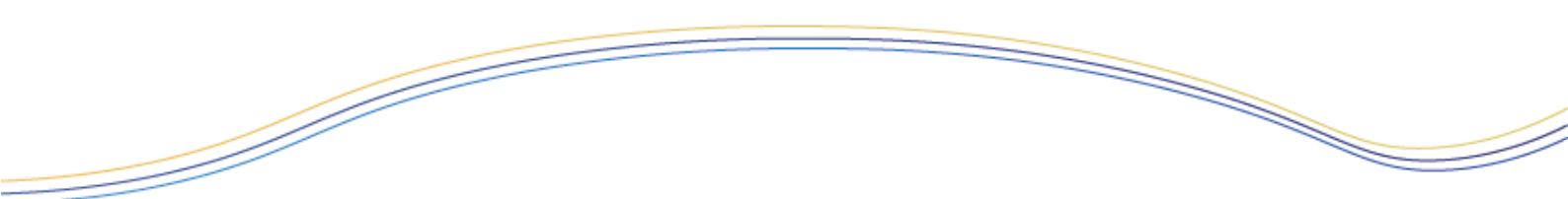
The core services offered by Elittoral encompass a wide range of studies, including modelling hydrodynamic marine acoustics, water inspection, environmental assessment, and remote sensing marine environmental, among others.

Elittoral boasts a highly skilled team of 25 experts with extensive knowledge of the marine environment. Our interdisciplinary staff, which includes marine biologists, environmental engineers, and geographers, collaborates closely on every project to ensure the most effective interventions are developed and implemented. By combining our diverse skill sets and expertise, we strive to create a positive impact on the environment and the communities we serve.

If any, what is the role or impact that ULPGC have in your organisation/company? Is there any interaction between your organisation/company and the university?

ULPGC has played a pivotal role in the inception and ongoing development of Elittoral. Our organization was founded by professionals from the university, and we have continued to maintain a strong relationship with ULPGC over the years.

This partnership facilitates a productive exchange of knowledge, resources, and expertise between our organization and the university. We actively collaborate on



research and development projects at both national and international levels, enabling us to stay at the forefront of environmental innovation and scientific advancements.

The interaction with ULPGC also provides Elittoral access to the latest academic research, cutting-edge technologies, and a pool of highly skilled graduates who can contribute to our mission of promoting sustainable development and environmental protection. In turn, our organization offers valuable hands-on experience and real-world learning opportunities to the university's students and researchers, fostering a mutually beneficial relationship that drives continued growth and success for both parties.

How can ULPGC collaborate with your company, to enhance its performance and achieve its objectives?

ULPGC can play a vital role in helping Elittoral enhance its performance and achieve its objectives, particularly in the rapidly expanding field of remote sensing. As we continue to grow in the teledetection sector, we require a skilled workforce with expertise in telecommunications and geography. ULPGC can help us identify and recruit talented graduates who possess the necessary skills and knowledge to address market challenges and deliver efficient services to our clients. This collaboration can include internships, job placements, and joint training programs to prepare students for careers in the remote sensing industry.

What educational programs or degrees could be developed or tailored by ULPGC to better prepare students for careers in your specific commercial or industrial sector?

ULPGC could develop or tailor educational programs and degrees to better prepare students for careers in the environmental consultancy sector, particularly within our specific commercial and industrial context. By focusing on integrating practical applications and addressing real-world challenges, these programs would be designed to bridge the gap between academic knowledge and the needs of companies like ours. Introducing industry-focused modules within existing degrees covering topics such as environmental impact assessment, coastal zone management, and habitat restoration, would emphasize real-world case studies and hands-on experiences to help students develop practical problem-solving skills.

How can ULPGC support your company in addressing key challenges, skill shortages, or workforce development needs?

To ensure mutual benefits for both the students and our company, ULPGC could consider extending the duration of internships, offering placements that last 3 to 6 months or even up to a year. Longer internships allow students to gain deeper insights

into the environmental consultancy sector while providing us with a more stable and committed workforce to support our projects.

When collaborating on R&D projects, ULPGC must align its response times with the needs of our company. By adopting a more agile approach to communication and decision-making, the university can help us ensure that projects progress efficiently and deliver timely results. Maybe the technology transfer office could act as a liaison between researchers and us, ensuring streamlined communication and follow-up of commitments.

ULPGC can support our workforce development needs by offering customized training programs tailored to the specific skills and knowledge required for success in our sector. These programs can be designed in collaboration with our company, ensuring that the training content is relevant and immediately applicable to our employees' roles.

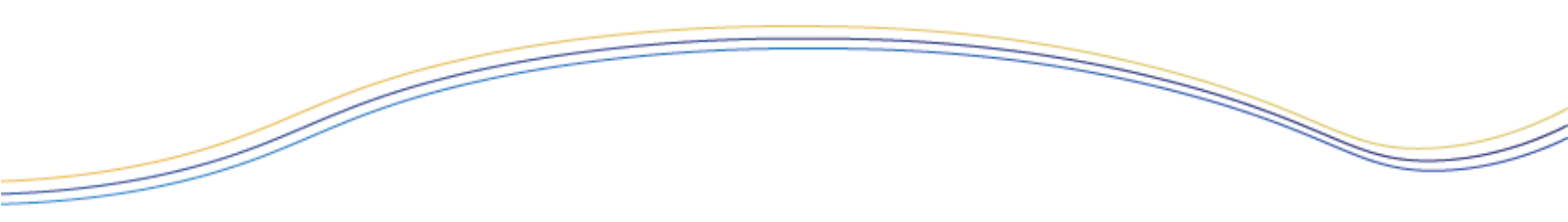
Are there any commercial projects or partnerships in which ULPGC could be involved to support your company's objectives and growth?

Establishing a partnership between Elittoral and ULPGC to develop advanced image processing algorithms and techniques for processing maps and drone images. This collaboration could involve joint research projects, shared resources, and access to the university's expertise in remote sensing, GIS, and computer vision, ultimately enhancing the efficiency of our environmental monitoring efforts.

Also, collaborating with ULPGC to explore the application of artificial intelligence (AI) and machine learning (ML) technologies for environmental monitoring. This could involve developing predictive models, automating data analysis, and implementing advanced classification algorithms to improve the accuracy and efficiency of our monitoring services.

Key Takeaways

- 🌐 Elittoral is keen to expand its capabilities in the remote sensing sector and seeks collaboration with ULPGC in identifying and recruiting talented graduates with expertise in telecommunications and geography.
- 🌐 ULPGC can enhance its curriculum by focusing on real-world applications and challenges, particularly within environmental consultancy. Potential areas for focus include environmental impact assessment, coastal zone management, and habitat restoration.
- 🌐 Addressing Elittoral's challenges, ULPGC could extend the duration of internships, offer more streamlined and agile communication during collaborative R&D projects, and provide customised training programmes designed in collaboration with Elittoral to meet specific industry skills and knowledge requirements.

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- 🌐 Commercial projects and partnerships where ULPGC could support Elittoral include developing advanced image processing techniques for navigation and drone imaging and exploring the application of AI and ML technologies for environmental monitoring.

6.4.2.2. GOVERNMENT DEPARTMENTS

The next part of this report presents interviews with representatives from various government departments in the Caranian region. These interviews shed light on the collaboration and interaction between these departments and ULPGC, as well as the challenges and opportunities they face.

Here is an overview of the interviewees and their respective departments:

-  **The Sociedad de Promoción Económica de Gran Canaria (SPEGC):** A government body focused on stimulating Gran Canaria's economic growth. They promote business creation, innovation, and competitiveness while collaborating with ULPGC on educational and research initiatives to meet industry needs.
-  **PROEXCA:** The government department is affiliated with the Canary Islands Regional Council of Economy, Knowledge, and Employment. Its main objective is to facilitate the global expansion of businesses based in the Canary Islands and attract foreign investments to stimulate the local economy and promote sustainable development.
-  **Zona Especial Canaria (ZEC):** A government department in the Canary Islands that operates as a low-tax zone established under the Canary Islands Economic and Tax Regime. Their main objective is to promote economic and social development, diversify the production structure, and stimulate business investment in the region.

These interviews provide valuable insights into the collaboration between government departments and ULPGC, challenges in the educational system, opportunities for joint initiatives, and recommendations for improvement.

5.4.2.2.1. INTERVIEW WITH THE SOCIEDAD DE PROMOCIÓN ECONÓMICA DE GRAN CANARIA (SPEGC)

General Information

Company/Institution: Sociedad de Promoción Económica de Gran Canaria (SPEGC)

Category: Government Department

Interviewer: Vikesh Chugani

Date: 03/05/23

Questions and Answers

Tell us a bit about your institution. What are the specific tasks, functions, or duties that your institution performs? If possible, tell us what your main objective is.

SPEGC's primary goal is to stimulate Gran Canaria's economic growth by encouraging investment for business creation. Our mission involves promoting economic and business activities that contribute to Gran Canaria's development and expansion. We focus on supporting business creation and consolidation initiatives, fostering innovation and competitiveness, attracting external companies and investors, and providing economic and business information.

If any, what is the role or impact that ULPGC have in your organisation? Is there any interaction between your organisation and the university?

We collaborate with ULPGC in several ways, including through the IAT Bioasis, a high-tech incubator for blue biotechnology and aquaculture involving ULPGC's ECOAQUA research institute. Both SPEGC and ULPGC participate in the Las Palmas Science and Technology Park, where different workspaces are available to entrepreneurs and companies with innovative business projects and/or based on Information and Communication Technologies (ICT).

In addition to the EXPER project, we collaborate on other projects under the Interreg programme such as Datalab or Smartdest.

How do you think that ULPGC can collaborate with your institution to enhance its performance and achieve its objectives?

We are currently on the right track, as we consistently launch specific programmes together. We recently introduced a Health Entrepreneurship Programme to promote health sector entrepreneurship, in collaboration with the Canary health service. SPEGC has also contributed to ULPGC's SPIN ON programme, which aims to transfer university research to society through spin-off creation and consolidation. Together, we promote

the APTENISA accelerator programme, with the first edition being highly successful as the Las Palmas Scientific Park delivered the highest number of applications nationwide.

Regarding educational offers and workforce preparation, what educational programs or degrees could be developed or tailored by ULPGC to better prepare students for careers in your sector of the government?

ULPGC could tailor master's programmes to better align with the industrial sector's current needs, focusing on areas such as aquaculture technologies, renewable energy, and water desalination. The Canary Islands should be promoted as a blue economy reference region, with the university playing a significant role. Additionally, I recommend enhancing the branding of educational degrees to make them more appealing to new generations of students. For example, the names of the current education programmes do not seem to match the global challenges the society is facing these days, such as climate change, and food security, among others. The overall education portfolio should be aligned to the current needs of the society.

Does the ULPGC perform any role in bridging the gap between government and industry, facilitating better communication and collaboration?

ULPGC has not yet addressed the gap between itself and the industry. The industrial sector does not view the university as a partner, while I suggest that ULPGC's research groups adapt their services to local companies' needs similarly to how private technology centres commercialize their technological portfolios. On the other hand, ULPGC maintains strong ties with the public administration, which perceive them as a valuable asset for attracting investment and new business implementation. This relationship fosters a collaborative environment where the university can provide research, expertise, and innovative solutions that contribute to the region's economic growth and sustainable development.

Can you identify any opportunities for joint research programs or initiatives between your government sector and ULPGC that would be mutually beneficial?

We are currently offering non-degree training courses in digitalization and blue economy technologies, which could be further enhanced through collaboration with ULPGC.

How can the ULPGC support your institution in addressing key challenges or skill shortages in your sector?

By identifying specific market niches where services provided by SPEGC to the entrepreneurial community can be promoted, ULPGC can help create a more targeted approach to meeting industry needs and fostering innovation, ultimately driving economic growth and job creation in the region.

Are there any commercial projects or partnerships in which the ULPGC could be involved to support the government's objectives in your sector?



The ULPGC could be involved in several commercial projects or partnerships to support the government's objectives in the blue economy, including renewable energy development, sustainable tourism, algae production, and marine conservation.

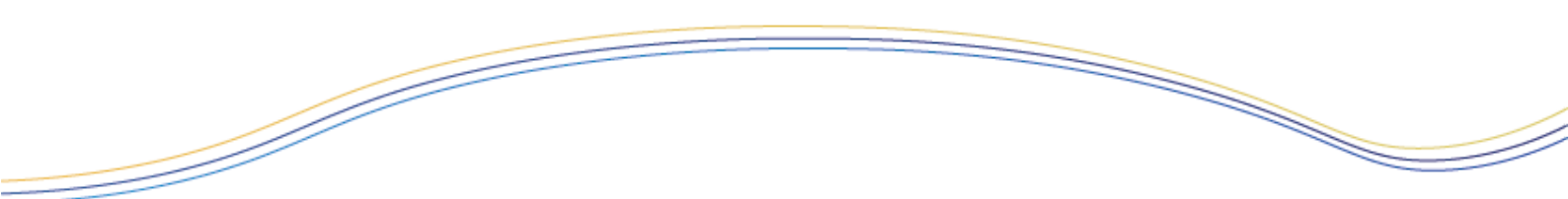
In what ways can the ULPGC engage with the local community to promote awareness and understanding of the government's work in your sector?

For example, by promoting the capability of the transfer of technology office through the Patents Week to be held in October 2023, ULPGC can actively demonstrate its commitment to fostering innovation and collaboration between academia, government, and industry.

Additionally, the university could organize workshops, seminars, and public lectures on relevant topics, showcasing research projects and their impact on the local economy. By partnering with local schools, businesses, and media outlets, ULPGC can further disseminate information and encourage community involvement in the government's initiatives within the sector.

Key Takeaways

-  Current challenges include a disconnect between ULPGC and the industry, with the university not being perceived as a partner by the industrial sector. ULPGC also needs to tailor its education programmes to better align with the needs of industry and society, focusing on areas like aquaculture technologies, renewable energy, and water desalination.
-  Potential solutions for these challenges include ULPGC modifying its research groups' services to be more appealing to local companies, akin to how private technology centres market their technological portfolios. ULPGC could also engage more with the local community to raise awareness of government initiatives within the sector.

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- 🌍 Opportunities exist for ULPGC to contribute to the government's objectives in the blue economy sector, including involvement in commercial projects or partnerships focusing on renewable energy, sustainable tourism, algae production, and marine conservation.
 - 🌍 Through a more targeted approach to meeting industry needs, such as identifying specific market niches, ULPGC can support SPEGC in driving economic growth and job creation in the region. This can be achieved by promoting SPEGC's services to the entrepreneurial community and fostering innovation.

5.4.2.2.2. INTERVIEW WITH PROEXCA

General Information

Company/Institution: PROEXCA

Category: Government Department

Interviewer: Vikesh Chugani

Date: 04/05/23

Questions and Answers

Tell us a bit about your institution. What are the specific tasks, functions, or duties that your institution performs? If possible, tell us what your main objective is.

PROEXCA is a public organization affiliated with the Canary Islands Regional Council of Economy, Knowledge, and Employment. Its primary mission is to facilitate the global expansion of Canary Island-based businesses and to attract foreign investments, which in turn will stimulate the local economy and foster sustainable development. Specific tasks, functions, and duties carried out by PROEXCA include providing support and resources for local enterprises to enter international markets, fostering strategic partnerships, and showcasing the Canary Islands as a favourable destination for foreign investors.

If any, what is the role or impact that ULPGC have in your organisation? Is there any interaction between your organisation and the university?

ULPGC and PROEXCA share a strong relationship, with representatives from both organizations maintaining frequent communication channels. This interaction includes regular meetings with the head of the Transfer and Technology Office at ULPGC. PROEXCA actively supports ULPGC's major events, such as Patent Week, by attracting international speakers and companies to participate.

ULPGC plays a pivotal role in advancing PROEXCA's objective to attract national and international businesses to the Canary Islands. These enterprises necessitate a skilled labour force, making it vital for ULPGC to provide top-tier degree programmes and training opportunities that cultivate the required talent. Consequently, ULPGC contributes to the development of a robust labour market that benefits both local companies and those contemplating relocation to the Canary Islands. The success of PROEXCA's mission is heavily reliant on universities like ULPGC and their ability to produce highly skilled professionals; without such capabilities, PROEXCA's efforts would face significant challenges.

How do you think that ULPGC can collaborate with your institution to enhance its performance and achieve its objectives?

ULPGC can collaborate with PROEXCA to enhance its performance and achieve its objectives by addressing the existing gap in the Canary Islands' junior skilled workforce and catering to the unmet needs of specific industries, such as the video game sector. Together, ULPGC and PROEXCA can develop joint programmes that aim to boost the international competitiveness of Canary Islands-based companies by equipping younger generations with up-to-date knowledge and skills required by emerging industries. These programmes can include specialised training courses, workshops, or seminars that focus on specific industry needs and foster innovation.

To ensure a timely response to the rapidly changing market demands, both ULPGC and PROEXCA should work on streamlining processes to quickly identify the private sector's requirements. By working closely together, we could more efficiently pinpoint skill gaps in the local labour market and adapt academic programmes to fulfil these needs. This collaborative approach will ultimately contribute to the development of a skilled workforce that is better prepared to drive economic growth and innovation in the Canary Islands.

Regarding educational offers and workforce preparation, what educational programs or degrees could be developed or tailored by ULPGC to better prepare students for careers in your sector of the government?

Based on the needs I observe in the private sector, I think that digitalization and emerging technologies topics should be further promoted (e.g., artificial intelligence, big data, cybersecurity, and blockchain). Also, there is a rich ecosystem for the video game industry in the islands, ULPGC could establish a specialized programme or degree in video game development and design that encompasses areas such as game programming, computer graphics, animation, storyboarding, and sound design. As these technologies become more prevalent in various industries, including government, ULPGC could develop courses or degree programmes that focus on virtual and augmented reality development, applications, and integration.

Does the ULPGC perform any role in bridging the gap between government and industry, facilitating better communication and collaboration?

I see that ULPGC maintains a close relationship with companies affiliated with the Scientific and Technological Park of Las Palmas, which serves as a positive example for attracting foreign companies. This connection demonstrates ULPGC's ability to collaborate with the private sector, although it is worth noting that there may be room for improvement when it comes to extending these relationships to companies not directly associated with the Scientific Park.

ULPGC has also established strong connections with public administration, which is crucial for fostering communication and collaboration between the government and the university.

Can you identify any opportunities for joint research programs or initiatives between your government sector and ULPGC that would be mutually beneficial?

PROEXCA is presently offering internships for young students to gain international experience. Strengthening collaboration with ULPGC could significantly enhance the impact of these internships.

Key Takeaways

- 🌐 There is a gap in the Canary Islands' junior skilled workforce, especially in specific industries such as the video game sector. Joint programs with ULPGC could address this by developing specialised training courses, workshops, and seminars that focus on the needs of emerging industries.
- 🌐 To maintain pace with changing market demands, ULPGC and PROEXCA should streamline their processes to quickly identify the private sector's needs, ensuring academic programs are adaptable to fill these skill gaps.
- 🌐 The ULPGC could enhance its offering by developing new degree programs or courses focusing on digitalisation and emerging technologies, such as artificial intelligence, big data, cybersecurity, blockchain, and video game development.
- 🌐 Joint research programs or initiatives could be mutually beneficial for PROEXCA and ULPGC, such as the internships offered by PROEXCA that provide students with international experience.

5.4.2.2.3. INTERVIEW WITH ZONA ESPECIAL CANARIA

General Information

Company/Institution: Zona Especial Canaria (ZEC)

Category: Government Department

Interviewer: Vikesh Chugani

Date: 18/05/23

Questions and Answers

Tell us a bit about your institution. What are the specific tasks, functions, or duties that your institution performs? If possible, tell us what your main objective is.

The Canary Islands Special Zone (ZEC) is a low-tax zone established under the Canary Islands Economic and Tax Regime (REF) to promote the economic and social development of the Islands, as well as to diversify their production structure. This initiative, authorized by the European Commission in January 2000 and regulated by Law number 19/94 of July 6th, 1994, represents a commitment to incentivize economic growth and stimulate business investment in the region.

Our specific tasks and functions revolve around implementing and managing this special tax regime, providing tax benefits to companies that meet certain requirements and promoting job creation in the Canary Islands. We also work towards attracting foreign investment and enhancing the business environment in the region. Our main objective is to foster sustainable economic growth, boost job creation, and diversify the economic activities of the Canary Islands.

If any, what is the role or impact that ULPGC have in your organisation? Is there any interaction between your organisation and the university?

ULPGC plays a crucial role in our operations, particularly as we strive to attract foreign companies to establish a presence in the Canary Islands and benefit from the low taxation offered by the ZEC. The talent pool developed by ULPGC is a significant asset when it comes to enticing these businesses.

Our interactions with the university come into play most prominently during talent acquisition processes. Ensuring that ULPGC's educational portfolio remains current and responds to the evolving needs and trends of the private sector is crucial in this respect. This constant updating of skills and knowledge prepares students to meet the demands of companies looking to establish operations in the Canaries.

However, we have observed a talent generation gap in several sectors. The demand for new talent appears to be outstripping the supply, with existing talent quickly absorbed by new companies. The rate at which new talent is being developed needs to be accelerated

to meet the rising demand. This is an area where further collaboration with ULPGC could be significantly beneficial.

How do you think that ULPGC can collaborate with your institution to enhance its performance and achieve its objectives?

Collaboration with ULPGC can be instrumental in enhancing our performance and achieving our objectives. One key area of potential collaboration could be with active research groups at ULPGC, especially those involved in the creation of spin-offs. When a spin-off becomes a part of the ZEC, it stands to gain numerous benefits.

For instance, if such a spin-off secures funding from a foreign investor, this investment would be subject to the low taxation regime of the ZEC. This makes the spin-off more competitive. Additionally, administrative procedures are simplified for ZEC spin-offs, making it an appealing prospect for startups.

We believe that it would be beneficial for us to establish a connection with the technology transfer office of ULPGC to explore these opportunities further. This would facilitate the process of spin-off creation and ensure they are well-prepared to leverage the advantages offered by the ZEC.

Regarding educational offers and workforce preparation, what educational programs or degrees could be developed or tailored by ULPGC to better prepare students for careers in your sector of the government?

In terms of educational offerings and workforce preparation, we have observed that sectors like aquaculture and audio-visual communications tend to be most represented among the companies we work with. Therefore, educational programs related to these sectors at ULPGC should be updated and tailored to meet the actual needs of the industry.

At present, it appears that Dual Vocational Education Training (VET) and private universities have taken the lead in adapting their educational programs to align more closely with the requirements of the private sector. ULPGC could consider this trend and ensure that its courses and degree programs remain relevant, practical, and beneficial for students planning to pursue careers in these sectors. This will better prepare students for the demands of the job market and equip them with the necessary skills to excel in their respective fields.

Does the ULPGC perform any role in bridging the gap between government and industry, facilitating better communication and collaboration?

Indeed, ULPGC plays a significant role in bridging the gap between government and industry, thereby facilitating improved communication and collaboration. We have numerous examples of successful collaborations between ULPGC and companies associated with ZEC. In these cases, we establish contact with the Fundación Universidad de Las Palmas, which then manages the relationships between the companies and research groups. An excellent example of this is the Institute of Applied Microelectronics (IUMA), which has cultivated strong collaborative ties with the private sector. Such collaborations are vital in fostering a conducive environment for knowledge exchange and mutual growth.


How can the ULPGC support your institution in addressing key challenges or skill shortages in your sector?

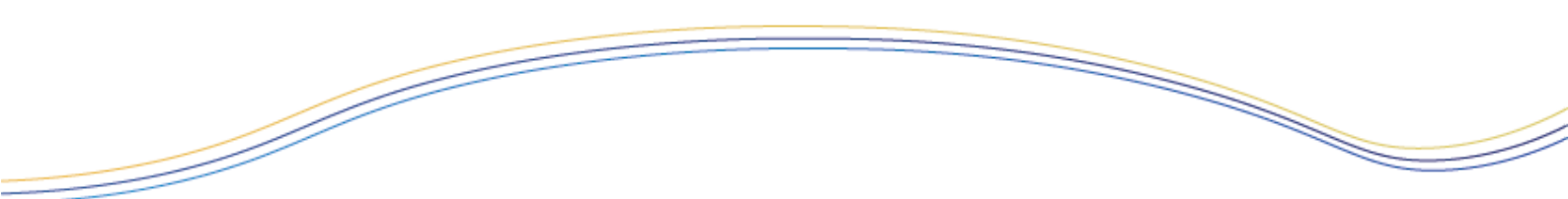
Firstly, enhancing language skills across all degrees is critical for success in our multinational business environment. We deal with foreign companies, often from countries such as Norway where the offshore industry is prominent. Despite the abundance of highly compensated job opportunities in these sectors, a significant language barrier persists. Therefore, ULPGC must emphasize and incorporate comprehensive language training into its curriculum to better equip students with the communication skills necessary for these opportunities.

Secondly, the university can tailor their educational programs to meet the evolving needs of our industry. This could involve integrating specialized courses into existing degree programs or even developing new degrees altogether. For instance, considering the trends in our industry, there could be more focus on sectors such as offshore technology, logistics, and sustainable energy among others.

Finally, the university can help address our skill shortages through the establishment of internships and practical training programs. Such initiatives not only offer students invaluable real-world experience but also provide our sector with a stream of capable and trained professionals. This would mean that students are job-ready upon graduation, reducing the time and resources our sector needs to invest in training.

Key Takeaways

-  Zona Especial Canaria (ZEC) and the University of Las Palmas de Gran Canaria (ULPGC) are closely collaborating, particularly in talent acquisition, to attract foreign companies to the Canary Islands' low tax zone.

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- 🌐 A current issue is the talent generation gap in several sectors where the demand for new skills is outstripping the supply. Enhanced collaboration with ULPGC in developing this talent is a potential solution.
 - 🌐 ZEC sees potential for further collaboration with active research groups at ULPGC, particularly those creating spin-offs, as this could bring numerous benefits such as lower taxation and simplified administrative procedures.
 - 🌐 In terms of education, sectors like aquaculture and audio-visual communications are most represented among the companies ZEC works with. Hence, there's a need for ULPGC to update and tailor educational programs related to these sectors to meet industry needs.
 - 🌐 To address key challenges or skill shortages in ZEC's sector, ULPGC can enhance language skills across all degrees, tailor educational programs to meet the evolving needs of the industry and establish internships and practical training programs to prepare students for job opportunities in the sector.

6.4.2.3. BUSINESS ASSOCIATIONS

In the following chapter, we will reveal insights from two business associations. Each respondent will express their perspectives on partnership with the University of Las Palmas de Gran Canaria, detailing the hurdles they confront, potential sectors for cooperation, and their proposals for enhancements.

-  **Cluster Canarias Excelencia Tecnológica:** A business association established in 2008 that focuses on promoting and advancing the Information and Communication Technologies (ICT) sector in the Canary Islands. The association engages in various activities, including networking events, professional development programs, and advocacy work, collaborating with entities from both the private and public sectors.
-  **Cluster Marítimo de Canarias (CMC):** The non-profit business association is focused on promoting the development and international competitiveness of the Maritime Sector of the Canary Islands. Their main objective is to raise the business, economic, and social fabric of the Canary Islands by integrating, strengthening, and sustaining companies and institutions within the maritime marine sector.

Each association will delve into their respective interactions with the University of Las Palmas de Gran Canaria. The discussion will encompass the challenges encountered, the potential areas for collaboration in both the ICT and Maritime sectors and their suggestions for improving these partnerships.

5.4.2.3.1. INTERVIEW WITH CLUSTER CANARIAS EXCELENCIA TECNOLÓGICA

General Information

Company/Institution: Cluster Canarias Excelencia Tecnológica

Category: Business Association

Interviewer: Vikesh Chugani

Date: 16/05/23

Questions and Answers

Tell us a bit about your institution. What are the specific tasks, functions, or duties that your institution performs? If possible, tell us what your main objective is.

Canarias Excelencia Tecnológica, established in 2008, is an association of Information and Communication Technologies (ICT) companies committed to promoting and disseminating the importance of ICT as a crucial driver of economic and social progress in the Canary Islands.

Our main objective is to foster a robust ICT sector that contributes to the development and competitiveness of the Canary Islands. We strive to create an environment conducive to innovation, digital transformation, and the adoption of new technologies that can enhance the productivity and growth of various sectors.

Our specific tasks encompass a wide range of activities, including networking events, professional development programs, and advocacy work. We typically engage with 100-120 entities, spanning both the private and public sectors. These collaborations aim to drive initiatives that strengthen the ICT infrastructure, promote digital literacy, and encourage the integration of ICT in various aspects of the society and economy.

If any, what is the role or impact that ULPGC have in your organisation? Is there any interaction between your organisation and the university?

Both the ULPGC and the University of La Laguna play significant roles in our organisation as members of the Cluster Board. This means they are integral to our strategic decision-making process and contribute to shaping the overall strategy of our cluster. Their academic insight and expertise are valuable in helping us identify and address the evolving needs of the ICT sector.

In addition, our association is part of the Canarian Science and Technology Park Foundation, which further enhances our link with the ULPGC.

How do you think that ULPGC can collaborate with your institution to enhance its performance and achieve its objectives?

We already maintain an excellent collaborative relationship with ULPGC and frequently undertake joint activities. For instance, we organise forums to inspire younger generations to pursue technology-oriented degrees and to equip recent graduates with the skills necessary to launch their professional careers.

Moving forward, there's potential to further expand this cooperation. The ULPGC could support us in developing specialized curriculums that align with the evolving needs of the ICT sector. This could include incorporating more real-world applications and industry projects into their course offerings to provide students with practical experiences.

Furthermore, we could explore joint research initiatives to advance technological innovations, or even incubation programs to support technology startups. Collaboration in these areas would help us to further promote and strengthen the ICT sector in the Canary Islands.

Regarding educational offers and workforce preparation, what educational programs or degrees could be developed or tailored by ULPGC to better prepare students for careers in your sector of the government?

Given the rapid pace of change in the technology sector, ULPGC could focus on offering short courses and Masterclasses to equip students and professionals with the most recent technological skills and trends. Topics of interest may include PHP, .net, cybersecurity, blockchain, Big Data, Large Language Models like ChatGPT, and more. The companies of our Cluster can participate in those types of courses. For instance, we are currently offering a brief course on Blockchain due to the significant interest from both companies and professionals.

In addition to these technical skills, ULPGC should also incorporate soft skills such as project management, leadership, and communication into their curriculum. These are crucial transversal skills that can enhance students' employability and effectiveness in the workforce.

Looking towards the future, with the upcoming implementation of compulsory dual vocational education training in 2025, there will be an increased emphasis on practical learning in real-world environments. This will make vocational institutions get closer to private companies, as the practical learning shall be provided in a real environment and application. We are in close contact with these types of institutions as they are approaching us to understand the real needs of private companies. I guess that dual vocational education training will be a taught competitor for universities as they will become more attractive to younger generations. Universities like ULPGC need to recognise this shift and find ways to bridge the gap between theoretical and practical learning.

In the ICT sector, we find that companies aren't overly concerned with formal qualifications (in Spain we call it "titulitis"), but value practical experience and knowledge. Therefore, a stronger focus on hands-on experience and real-world application of skills in the educational curriculum could make university degrees more appealing and relevant to both students and employers. This shift could also enhance collaborations between educational institutions and private companies, driving innovation and growth in the ICT sector.

Does the ULPGC perform any role in bridging the gap between government and industry, facilitating better communication and collaboration?

While the ULPGC has made some efforts to bridge the gap between academia, government, and industry, there remain certain challenges. One significant issue is the slow pace of administrative processes in the university, which can lead to delays in signing agreements and getting projects off the ground. This has resulted in many companies opting to collaborate with other national or European universities, as they are more agile in bureaucratic processes.

Another challenge is the perceived disconnect between the university and the needs of the private sector. Often, when collaboration opportunities arise, researchers may be more focused on securing resources for their own work, rather than fully understanding and addressing the real-world potential of the proposed product or service. This is likely due to the instability of research contracts, which puts pressure on principal investigators to secure resources to maintain their research activities.

To improve the situation, it would be beneficial for the ULPGC to reconsider its administrative processes to be more responsive and efficient. Additionally, the university could work on providing more stability for research contracts, which could allow principal investigators to focus more on the impact and relevance of their research to the private sector. This could lead to more meaningful and impactful collaborations with industry.





Can you identify any opportunities for joint research programs or initiatives between your government sector and ULPGC that would be mutually beneficial?

Indeed, there is significant potential for joint research programmes between our sector and the ULPGC. However, a key issue is that companies often aren't aware of the research lines being pursued by the ULPGC. While there are some forums and events meant to facilitate this communication, they don't seem to be sufficient.

To address this gap in the short term, our Cluster could develop a quarterly newsletter that highlights ongoing research at ULPGC, possible industrial partners, current development stages, and other relevant information. This would promote technology transfer and better inform companies about potential opportunities for collaboration.

In the long term, promoting the mobility of researchers to private companies could be a mutually beneficial initiative. This would require providing some stability for researchers who make this move so that it would result in a meaningful impact. It would be ideal to facilitate the mobility of principal investigators to companies, though this may be more challenging due to their time constraints and responsibilities. However, such a scheme could significantly enhance the direct application of research in the industry and foster stronger ties between the ULPGC and the private sector.

Key Takeaways

-  The Cluster sees potential in the university supporting the development of specialized curriculums to meet evolving ICT sector needs, incorporating more real-world applications and industry projects, and jointly undertaking research initiatives to advance technological innovations.
-  Regarding workforce preparation, the Cluster encourages ULPGC to offer short courses and Masterclasses on recent technological trends. It also advocates for the integration of soft skills into their curriculum. With the upcoming dual vocational education training, the university is encouraged to bridge the gap between theoretical and practical learning.
-  Some problems have been identified in the collaboration, including the slow pace of administrative processes in the university and a perceived disconnect between university research and the needs of the private sector. To mitigate these, ULPGC should aim to become more responsive, efficient, and focused on real-world application of research.
-  The Cluster also plans to propose a scheme promoting the mobility of researchers to private companies, thereby enhancing the direct application of research in the industry and fostering stronger ties between the ULPGC and the private sector.

5.4.2.3.2. INTERVIEW WITH CLUSTER MARÍTIMO DE CANARIAS

General Information

Company/Institution: Cluster Marítimo de Canarias (CMC)

Category: Business Association

Interviewer: Vikesh Chugani

Date: 17/05/23

Questions and Answers

Tell us a bit about your institution. What are the specific tasks, functions, or duties that your institution performs? If possible, tell us what your main objective is.

The Maritime Cluster of the Canary Islands is a non-profit association with a regional scope whose main objective is to promote the development and international competitiveness of the Maritime Sector of the Canary Islands, in turn raising the business, economic and social fabric of the Canary Islands. This is done through the integration, creation, strengthening and sustainability of the companies and institutions that are within the value chain of the maritime sector, promoting its international presence and raising the technological and innovative standards of all the agents involved, aligned with policy development and social demands. The strategy to achieve this goal is based on values such as cooperation, commitment, communication, and competitiveness.

If any, what is the role or impact that ULPGC have in your organisation? Is there any interaction between your organisation and the university?

ULPGC plays a significant role in our organization as a member of the CMC and holds a seat in the Executive Committee. One of our key collaborations with ULPGC is the joint promotion of the master's degree in Naval Repair. This programme, which we run in partnership with ASTICAN, is a good result of interaction and collaboration between our organization and the university. The relationship with ULPGC should allow us to ensure that academic offerings align with industry needs, thereby creating a trained workforce ready to contribute effectively to the maritime sector.

How do you think that ULPGC can collaborate with your institution to enhance its performance and achieve its objectives?

We have a very good relationship, and we normally receive internships that help us focus on the industry's needs. However, there is an area of concern that needs to be addressed for the benefit of both the institution and the maritime sector. We've observed a decline in the enrolment numbers for the Naval Engineering degree at ULPGC, which is quite concerning given the robust nature of the maritime sector in the Canary Islands.

We believe that the University can play a critical role in promoting this degree, emphasising the significant opportunities that the maritime sector presents – in terms of secure employment, attractive economic conditions, and long-term career progression. Given that salaries in our sector are generally higher than the regional average, this could serve as a strong incentive for prospective students.

Furthermore, ULPGC can enhance its collaboration with our institution by actively participating in industry discussions and initiatives, aligning academic offerings with real-world needs, and fostering a deeper understanding of the maritime sector among its student body. This will not only contribute to our organisational objectives but also strengthen the maritime sector in the Canary Islands, as a whole.

Regarding educational offers and workforce preparation, what educational programs or degrees could be developed or tailored by ULPGC to better prepare students for careers in your sector of the government?

Apart from revitalizing and strengthening the Naval Engineering degree, we believe that ULPGC can play a significant role in aligning vocational education and tertiary education. Collaborating with vocational centres to create comprehensive career roadmaps for students could open new avenues for learning and professional development, particularly for those who start with dual Vocational Education Training (VET) and wish to further enhance their skills.

Public centres have been slow to take the step of incorporating VET degrees. The University of Malaga has been the first to do so, in the current academic year 2022-2023 and after more than three years trying to obtain the homologation to teach these programmes. The achievement of this objective has been influenced by the entry into force of the new Vocational Training Law, which aims to build bridges between VET and the university, turning them into communicating vessels and allowing students to move in both directions.

Taking a cue from the University of Malaga's recent initiatives and the new Vocational Training Law, ULPGC can also consider incorporating VET degrees into their academic offerings. This would create a more fluid educational landscape where students can transition between vocational and university education based on their career goals and learning needs.

In addition, considering the specific needs of the Canarian naval industry, which is primarily focused on repair and maintenance rather than shipbuilding, ULPGC can tailor its programmes to cater to this particular aspect. This could involve introducing new courses or modifying existing ones to cover specific certifications needed for professionals working on ships.

Lastly, with the increasing importance of digitalization in the maritime sector, it would be beneficial for ULPGC to offer education and training in areas like digital twins,

cybersecurity, and other ICT skills relevant to the industry. This would not only equip students with the necessary skills to thrive in a digitalized maritime sector but also boost the overall performance of the Canarian naval industry.

Are there any current or potential research areas where collaboration between the government and ULPGC that could lead to significant advancements or improvements in your sector?

Indeed, the algae sector holds significant potential for the future of the Canarian economy. Our close association with the Spanish Algae Bank (BEA) and involvement in various R&D projects are aimed at diversifying and strengthening our economic sectors. In this regard, collaboration with ULPGC, particularly with research groups like ECOAQUA, can yield significant advancements. ECOAQUA's long-standing collaboration with the private sector and their deep understanding of industry needs make them an ideal partner in driving research and innovation in our sector.

Other research groups and researchers at ULPGC, such as IDETIC, Julieta Schallenberg, and Lourdes Trujillo, also have a keen interest in working with industry partners to address specific needs. Their expertise and commitment could greatly contribute to the development of research areas that are crucial for our sector.

Potential areas for collaboration could include the development of sustainable and efficient algae cultivation techniques, the exploration of algae-based biofuels, and the study of algae's potential in carbon capture and other environmental applications. Furthermore, advancements in digital technologies and their application in the maritime sector, such as the use of AI and machine learning for predictive maintenance in naval industries, could also be promising areas of research.

Can you identify any opportunities for joint research programs or initiatives between your government sector and ULPGC that would be mutually beneficial?

There are numerous opportunities for joint initiatives between our sector and ULPGC. One of the most promising areas involves thesis or graduation projects. By focusing these projects on addressing specific sector challenges, students could significantly benefit from collaborative work with both ULPGC and private companies.

For example, these projects could explore new methodologies in naval repair and maintenance, innovative applications of ICT in maritime industries, or the development of sustainable practices in marine resource management. In turn, this could lead to the creation of more tailored educational programmes, fostering a deeper understanding of our sector among students and equipping them with the skills necessary for a successful career in the industry.

Moreover, the establishment of more joint research programmes could potentially strengthen the ties between academia and industry. This would ensure that the research conducted is relevant and applicable to industry needs, fostering innovation and driving economic growth in the region.

Key Takeaways

- 🌐 Current issues include a decline in enrolment numbers for the Naval Engineering degree at ULPGC. The CMC suggests the University should better promote the degree and the career prospects in the maritime sector, potentially using the sector's higher-than-average salaries as an incentive.
- 🌐 To better prepare students for the maritime sector, ULPGC could consider aligning vocational education with tertiary education, perhaps by following the example of the University of Malaga and incorporating Vocational Education Training (VET) degrees. It's also suggested that ULPGC should tailor programmes to the specific needs of the Canarian naval industry, focusing on repair and maintenance, and offer training in areas such as digital twins and cybersecurity.
- 🌐 Potential research collaboration areas between the government, CMC, and ULPGC include the algae sector, with a focus on sustainable cultivation techniques, biofuels, carbon capture, and other environmental applications. Advances in digital technologies, like AI and machine learning for predictive maintenance in naval industries, are also promising research areas.
- 🌐 Opportunities for joint research initiatives could include thesis or graduation projects that address specific sector challenges, such as new methodologies in naval repair and maintenance or the development of sustainable practices in marine resource management. This would not only equip students with the necessary skills but also ensure the relevancy of academic research to industry needs.

6.4.2.4. RESEARCH CENTRES

In the next chapter, there will be presented perceptions provided by the respondents representing two research centres. Each respondent will share their perspectives on cooperation with the ULPGC, outlining the obstacles they encounter, potential fields of synergy, and their suggestions for enhancement.

-  **Banco Español de Algas (BEA):** The research institution under the ULPGC is focused on the study and development of microalgae and cyanobacteria. As a part of various global scientific organizations, they contribute to global algae research and promote the advancement of marine biotechnology education.
-  **The Plataforma Oceánica de Canarias (PLOCAN):** A state-of-the-art facility and a significant joint initiative between the Spanish and Canary Islands governments. Located off Gran Canaria's northeastern coast, PLOCAN merges offshore and onshore research facilities with advanced laboratories. The institution's primary aim is to promote and support scientific research, technological development, and innovation in the marine sectors.

The received feedback will focus on both centres' distinctive fields of expertise, with BEA shedding light on algae research and marine biotechnology, while PLOCAN provides a unique viewpoint from a facility adept in offshore and onshore research with a focus on marine and maritime sectors.

5.4.2.4.1. INTERVIEW WITH THE BANCO ESPAÑOL DE ALGAS

General Information

Company/Institution: Banco Español de Algas (BEA)

Category: Research Centre

Interviewer: Vikesh Chugani

Date: 11/05/23

Questions and Answers

Tell us a bit about your institution. What are the specific tasks, functions, or duties that your institution performs? If possible, tell us what your main objective is.

The Spanish Bank of Algae (BEA) is an infrastructure of the ULPGC managed by the Canarian Science and Technology Park Foundation (FCPCT). Its basic objectives are the isolation, characterization, conservation, supply and development of cultivation techniques and applications of microalgae and cyanobacteria from a scientific-technological point of view.

The BEA is a member of the European Culture Collections' Organisation (ECCO), of the World Federation for Culture Collections (WFCC) and is included in the World Data Centre for Microorganisms (WFCC-MIRCEN), being accredited before the Government of Spain as the international authority for the deposit of microorganisms, in accordance with the provisions established in the Budapest Treaty.

If any, what is the role or impact that ULPGC have in your organisation? Is there any interaction between your organisation and the university?

BEA is part of the ULPGC and is administratively managed by the FCPCT, which helps streamline much of the bureaucracy and paperwork. However, it also imposes some constraints, particularly in managing and coordinating our research personnel.

We would greatly appreciate support in liaising with the public administration, especially regarding regulatory aspects that impede the development of the algae sector. For instance, the current PROAC only addresses animal aquaculture, not algae aquaculture.

How do you think that ULPGC can collaborate with your institution to enhance its performance and achieve its objectives?

ULPGC can significantly contribute to the BEA by supporting our endeavours to secure a consistent budget for R&D activities, ensuring we remain at the forefront of marine research. This would foster the necessary ecosystem to elevate the Canaries as a powerhouse in the blue economy.

One critical aspect is the stability of our research workforce. ULPGC can assist us in advocating for policies that ensure continuity and long-term contracts for our researchers, enabling us to maintain the high level of expertise needed in our field.

Moreover, our direct affiliations with national and European scientific platforms and associations often involve membership fees. While we typically manage these costs from our resources, it places a financial strain on our research budget. If ULPGC could help subsidize these expenses, it would allow us to concentrate our resources on cutting-edge research, advancing the Canaries' reputation as a leading scientific hub for algae and blue economy research.

Regarding educational offers and workforce preparation, what educational programs or degrees could be developed or tailored by ULPGC to better prepare students for careers in your sector of the government?

Indeed, the topic of algae and marine cultures should be more deeply incorporated into educational programs, particularly in degrees like Marine Sciences. At present, this degree is the only marine-centric offering in ULPGC's portfolio, so there is an opportunity to expand this.

New degree programs or specializations could be developed to cater to the emerging needs of our sector. For instance, a degree in Marine Biotechnology with an emphasis on industrial applications could help prepare students for the evolving challenges and opportunities within our field.






Additionally, interdisciplinary programs that combine marine biology with business, law, or policy could also provide students with a broader set of skills and knowledge, enabling them to navigate the complex landscape of marine biotechnology and its associated sectors. Ultimately, these educational developments would ensure a steady stream of qualified professionals ready to contribute to our sector.

How can the ULPGC support your institution in addressing key challenges or skill shortages in your sector?

The ULPGC could significantly support our institution by designing and implementing educational programs that specifically address the skills needed in our sector. As mentioned earlier, courses in marine biotechnology and its industrial applications could prove incredibly beneficial. In addition to this, the university could offer professional development or continuing education programs aimed at enhancing the skills of our current workforce. These programs could focus on emerging trends and technologies in the marine biotechnology sector.

Lastly, the ULPGC could use its influence to advocate for policy changes that address the challenges we face in our sector, such as more stable funding for R&D activities and improved regulations for algae aquaculture.

Key Takeaways

-  The Banco Español de Algas (BEA) and the University of Las Palmas de Gran Canaria (ULPGC) are currently collaborating, with ULPGC providing administrative support and aiding in streamlining processes. There are challenges regarding the management and coordination of research personnel.
-  One significant issue faced by the BEA is the lack of inclusion of algae aquaculture in current regulatory frameworks, which hinders the development of the algae sector. The BEA seeks ULPGC's support in liaising with public administration to address this.
-  The BEA needs ULPGC's support to secure a consistent R&D budget, ensure leading marine research, and for continuity and long-term contracts for their researchers to maintain high expertise level. Furthermore, BEA is under financial strain due to membership fees for scientific platforms and associations; assistance from ULPGC in subsidising these costs would be beneficial.
-  There's a need to integrate more about algae and marine cultures in ULPGC's educational programs, particularly Marine Sciences. There's potential to develop new programs that cater to the needs of the sector, such as a degree in Marine Biotechnology with an emphasis on industrial applications, and interdisciplinary programs combining marine biology with business, law, or policy.
-  To address skills shortages, the ULPGC could design educational programs that meet the sector's needs. The university could offer professional development programs focusing on emerging trends in marine biotechnology and use its influence to advocate for policy changes that address the challenges faced in the sector.

5.4.2.4.2. INTERVIEW WITH THE PLATAFORMA OCEÁNICA DE CANARIAS

General Information

Company/Institution: Plataforma Oceánica de Canarias (PLOCAN)

Category: Research Centre

Interviewer: Vikesh Chugani

Date: 24/05/23

Questions and Answers

Tell us a bit about your institution. What are the specific tasks, functions, or duties that your institution performs? If possible, tell us what your main objective is.

The Oceanic Platform of the Canary Islands (PLOCAN) is a unique, cutting-edge facility and an important joint initiative established by the Spanish and Canary Islands governments. Located off the north-eastern coast of Gran Canaria, PLOCAN merges expansive offshore and onshore research facilities with high-tech laboratories. Our primary objective is to provide a comprehensive set of services, including both offshore and onshore experimental facilities, to promote and support scientific research, technological development, and innovation in the marine sectors.

PLOCAN is deeply committed to advancing the long-term observation and sustainability of our oceans. We strive to offer an economically efficient suite of services, incorporating underwater observatories, test sites, a base for autonomous underwater vehicles, training, and an innovation hub.

Among PLOCAN's distinctive attributes is our large-scale test site. This area serves as an authorized proving ground for prototype devices, particularly those designed for the extraction of wave energy and operation of offshore wind devices. By offering such a platform, we continue to facilitate and catalyse cutting-edge research and development in the marine and maritime sectors.

If any, what is the role or impact that ULPGC have in your organisation? Is there any interaction between your organisation and the university?

ULPGC plays an instrumental role in our organization, with numerous partnership agreements in place that testify to our close collaboration. ULPGC actively contributes to a majority of our initiatives, including our current slate of 37 active European projects, lending its significant academic and research expertise to our efforts.

PLOCAN aspires to be a global leader as a test bed, accelerating the development of technologies and knowledge for the efficient and sustainable use, conservation, and regeneration of renewable resources. Our mission encompasses fostering equitable prosperity for our users while ensuring the effective protection of our environment. Our

singular services are designed to attract top-tier national and international users of marine and maritime science and technology.

To address the R&D challenges of the marine and maritime sector, and to position the Canary Islands, Spain, and the EU at the cutting edge of this field, continued collaboration with institutions like ULPGC is crucial. Their academic rigour and research proficiency are invaluable assets in furthering our objectives and driving innovation in our sector.

How do you think that ULPGC can collaborate with your institution to enhance its performance and achieve its objectives?

ULPGC already plays an instrumental role in our institution, and we believe there's more potential to be tapped. We are currently exploring various collaborative opportunities that could benefit both organizations. The vice dean for postgraduate studies and internationalisation of the faculty of marine sciences is leading this effort. To facilitate this process, he spends one day each week at PLOCAN to strengthen our relationship and identify areas where we can enhance our collective performance.

Potential collaborations could involve shared research projects, joint grant applications, shared facilities, student internships, staff exchanges, and joint academic programmes. Such initiatives could leverage the academic strength of ULPGC and the practical, on-the-ground experience of PLOCAN to create synergy, enhancing the performance and output of both entities.

Moreover, joint initiatives could also help us better achieve our objectives by combining our resources and expertise, resulting in improved research, higher-quality education, and more impactful technological innovation in the marine and maritime sectors.

Regarding educational offers and workforce preparation, what educational programs or degrees could be developed or tailored by ULPGC to better prepare students for careers in your sector of the government?

PLOCAN currently faces a shortfall in the availability of human resources trained in both theoretical and practical skills related to underwater vehicles, including gliders. This is a rapidly growing area at PLOCAN, and we see a great opportunity for the ULPGC to assist in addressing this gap.

Every year, PLOCAN organises the Glider School, a leading training institution in marine glider technology. While the School provides both theoretical and practical instruction on various glider technologies and their applications, we believe there is a need for a more formalised educational programme to ensure a consistent supply of adequately trained personnel in this field.

We propose that ULPGC could develop an extension course dedicated to this specialised area of marine technology, perhaps initially as part of its ongoing courses. Upon successful implementation and demand, this could be promoted to a full-fledged proprietary degree offered by the University. Such a programme would provide the theoretical foundation and practical skills needed by the next generation of professionals in our sector and could be a significant contribution to our industry's growth and development.

How can the ULPGC support your institution in addressing key challenges or skill shortages in your sector?




To address key challenges or skill shortages in our sector, ULPGC can help PLOCAN by establishing a Joint Unit, similar to the collaboration between the Mediterranean Institute for Advanced Studies (IMEDEA) and the Coastal Observation System of the Balearic Islands (SOCIB).

This Joint Unit would serve as a platform for enhanced collaboration, coordination, and synergy between ULPGC and PLOCAN. This collaborative entity would mutually benefit both organisations, creating a virtuous cycle of resource sharing and talent development.

For ULPGC, this would provide an opportunity to better utilise PLOCAN's infrastructure, further enhance the University's scientific research output and publications, and offer practical training grounds for its students.

For PLOCAN, we could leverage the academic talent and expertise nurtured at ULPGC, facilitating the development of the skills needed in our sector and fostering a well-prepared workforce for our growing field. This could lead to increased innovation and progress within the marine and maritime sciences sector, contributing to our broader goals of sustainable oceanic development and conservation.

Key Takeaways

-  PLOCAN identifies a skills shortage in theoretical and practical skills related to underwater vehicles, particularly gliders, and proposes ULPGC develop an extension course or degree programme to address this gap.
-  PLOCAN suggests the creation of a Joint Unit with ULPGC, similar to the collaboration between the Mediterranean Institute for Advanced Studies and the Coastal Observation System of the Balearic Islands, as a platform for increased collaboration and resource sharing.
-  This Joint Unit would provide PLOCAN with access to academic talent and expertise from ULPGC, while offering ULPGC's students a practical training ground, thus supporting the development of skills needed in the marine and maritime sector.

6.4.2.5. START-UP INCUBATOR

Finally, we will delve into the insights gathered from our conversation with a particular startup incubator, EMERGE. This interview allowed us to shed light on the hurdles they encounter, promising areas of collaboration, and their suggestions for enhancing this symbiotic relationship.

EMERGE, or the Canary Islands Association of Startups, Technology-Based Companies, and Angel Investors, is a non-profit organisation focused on cultivating innovative, technology-based startups. EMERGE provides support to ambitious entrepreneurs with a global perspective, aiding in validating their business ideas and securing private investment for their growth and development. Through fostering talent and capitalising on the opportunities of a knowledge-based economy, EMERGE aims to establish the Canary Islands as a thriving hub for technological innovation and startup growth.

Our discussion will explore the advantages of a knowledge-based economy, with the ultimate goal of establishing the Canary Islands as a key hub for tech innovation and startup growth.

5.4.2.5.1. INTERVIEW WITH THE EMERGE

General Information

Company/Institution: Asociación Canaria de Startups, Empresas de Base Tecnológica e Inversores Ángeles (EMERGE)

Category: Business Association

Interviewer: Vikesh Chugani

Date: 25/05/23

Questions and Answers

Tell us a bit about your institution. What are the specific tasks, functions, or duties that your institution performs? If possible, tell us what your main objective is.

The Canary Islands Association of Startups, Technology-Based Companies, and Angel Investors (EMERGE) is a non-profit organization that is primarily focused on fostering the growth of innovative, high-potential technology-based companies, also known as startups. Our main role involves assisting ambitious, disruptive entrepreneurs who possess a global perspective in validating their business ideas and facilitating their access to the private investment they may require for the development and scalability of their business ideas.

Within the entrepreneurial and innovation ecosystem of the Canary Islands, EMERGE acts as a catalyst, driving a sustainable and inclusive economic development model, which is hinged on the utilization of talent, diversification of resources, and capitalization of the opportunities provided by the knowledge-based economy.

To support these entrepreneurs, EMERGE offers two physical co-working spaces – Marine Park and Paletexpress-Cajasieta. These spaces are designed to foster a community for innovators and provide them with easy and immediate access to necessary material or logistical resources. Our vision is to make the Canary Islands a thriving hub for technological innovation and startup growth.

If any, what is the role or impact that ULPGC have in your organisation? Is there any interaction between your organisation and the university?

ULPGC holds a significant role in our organization's operations. We routinely advise established companies on identifying innovative products, processes, or services that can enhance their competitiveness and efficiency. We assist in addressing the challenges they encounter and collaborate with their departments to identify potential projects. We also facilitate open innovation activities, where innovative solutions are derived collaboratively. In this context, ULPGC plays an integral part, as many of the

challenges identified can be tackled through collaborative efforts between ULPGC researchers and these established companies.

Furthermore, we are a part of the Canary Islands Network of Innovation and Business Development Centres (CIDE). This initiative, by the Ministry of Economy, Knowledge, and Employment of the Canary Islands Government, is promoted through the Canary Islands Agency for Research, Innovation, and Information Society (ACIISI). It is co-funded by the European Regional Development Fund, with a co-financing rate of 85% under the Canary Islands ERDF Operational Programme for 2014-2020. Through this network, we enhance the support services we offer to technology-based projects, companies, and entrepreneurs. Our affiliation with CIDE also strengthens our connection with the Scientific Park of ULPGC, which is a fellow member of the network.

How do you think that ULPGC can collaborate with your institution to enhance its performance and achieve its objectives?

ULPGC has become an increasingly significant collaborator with EMERGE over the last year. This growing partnership is due to ULPGC's focus on generating new spin-offs, a strategy that aligns with EMERGE's vision.

To enhance our performance and achieve our objectives, we should further strengthen our collaboration with ULPGC by facilitating effective interactions between companies and researchers. Often, these dialogues take excessive time to materialize, or they don't reach a conclusive point due to disagreements between researchers and companies. Streamlining this communication and negotiation process could lead to more successful collaborations and higher productivity.

We could explore collaborative initiatives, such as joint workshops or seminars, that encourage direct, focused conversations on shared interests and potential projects. Further, providing resources and guidance to navigate these collaborations could also be beneficial. Such efforts can help expedite discussions, bridge gaps between academia and industry, and ultimately, drive innovation in our sector.

Regarding educational offers and workforce preparation, what educational programs or degrees could be developed or tailored by ULPGC to better prepare students for careers in your sector of the government?

In terms of educational offerings and workforce preparation, there are two primary areas that ULPGC could potentially focus on to better equip students for careers in our sector.

First, there is a notable need for advanced training for intermediaries like us who bridge the gap between companies and researchers. We often find ourselves lacking the necessary tools and knowledge to effectively facilitate these discussions and guide them towards a fruitful agreement. For instance, there are ongoing conversations between

researchers of ULPGC and SME since October of last year that has yet to materialize into a final agreement due to a lack of mutual understanding. Specific courses or modules on negotiation, technology transfer, and bridging the academic-industry divide could be particularly useful in this regard.

Secondly, we believe that the promotion and development of programs in emerging sectors like biotechnology, offshore-adapted robotics, gaming, and artificial intelligence could greatly benefit the local economy. These are rapidly growing fields with substantial potential for innovation and development. Specialized degrees or certifications in these areas, combined with practical internships or project-based learning opportunities, could significantly improve the preparedness of graduates for careers in these sectors.



Does the ULPGC perform any role in bridging the gap between government and industry, facilitating better communication and collaboration?

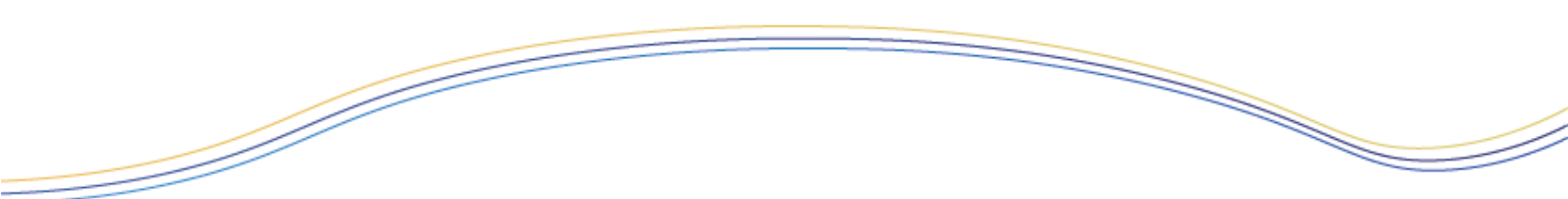
Yes, ULPGC indeed plays a crucial role in bridging the gap between government and industry, facilitating improved communication and collaboration.

One of the key areas where ULPGC could contribute is by enhancing the visibility of innovative local companies. For instance, there is a local microchip technology company which may not currently receive the recognition they deserve due to limited reach and exposure. ULPGC, being a reputed educational institution, could help these companies gain wider recognition by showcasing their work and achievements to its vast network of students, faculty, and partners.

Furthermore, ULPGC can facilitate industry and government collaboration through the provision of infrastructure for prototyping and innovation. The university's facilities, resources, and expertise can significantly support startups and companies in the research and development phase, helping them transform their ideas into tangible products or solutions.

Key Takeaways

-  EMERGE maintains a significant relationship with ULPGC, with ongoing collaboration that involves addressing the challenges of established companies, facilitating open innovation activities, and enhancing the services offered to tech-based projects and entrepreneurs.
-  There's a need to streamline the interaction between companies and ULPGC researchers, as the current dialogue often takes too long or fails to reach a conclusion due to disagreements. Joint workshops or seminars and providing resources and guidance for navigating these collaborations could be effective in mitigating this issue.

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- 🌐 ULPGC could better prepare students for careers in EMERGE's sector by developing training for intermediaries who bridge the gap between companies and researchers, focusing on negotiation, technology transfer, and bridging the academic-industry divide.
 - 🌐 The university should also focus on developing programmes in emerging sectors such as biotechnology, offshore-adapted robotics, gaming, and artificial intelligence. This would significantly improve the preparedness of graduates for careers in these sectors.
 - 🌐 ULPGC can facilitate better communication and collaboration between government and industry. This includes raising the visibility of innovative local companies and providing infrastructure for prototyping and innovation, significantly supporting startups and companies in the research and development phase.

6.4.3. FINDINGS

In a comprehensive analysis conducted through interviews with several stakeholders, multiple challenges facing the University of Las Palmas de Gran Canaria (ULPGC) have been identified. These recurring challenges relate to various critical aspects of the university's operations and role in serving its students, the industry, and society.

These issues cover the areas of educational program alignment with industry needs, skill gaps in the workforce, the need for collaborative research programs, communication and collaboration issues, and administrative hurdles. Addressing these challenges is vital for ULPGC to enhance its role as an effective educational institution and a reliable partner for industry collaborations.

The key challenges are outlined below, arranged in descending order of priority from the most critical to the least. However, it is frequently observed that enhancing one aspect may result in incremental improvements in others. Despite this, considering the complex nature of most operations, which often function in an integrated manner, it is recommended to allocate proper attention to all these concerns.

The crucial challenges identified are:

1. **Alignment of Educational Programs and Internships with Industry Needs:** According to Sensorlab, Ecos, Elittoral, SPECG, PROEXCA, ZEC, CMC, BEA, PLOCAN, and EMERGE, the educational programs at ULPGC need to be better aligned with the real-world needs of businesses. This involves redesigning programs to address practical industry challenges and ensuring that students acquire both theoretical knowledge and applicable skills. Additionally, the duration of internships is a significant concern, with the current short-term internships often failing to provide substantial benefits to both students and companies. Longer internships are preferred, as they offer students more in-depth experience and allow companies to evaluate potential hires more thoroughly.
2. **Skill Gaps in the Workforce:** Many interview participants pointed to the existence of a significant skill gap in the workforce. Students often graduate with solid academic knowledge, but they lack the practical skills required in the industry. This gap hinders graduates' performance in their initial roles, creating a steep learning curve. The interviewees called for the university to focus more on applied learning to better prepare students for the workforce.
3. **Need for More Collaborative Research Programs:** There is a strong call for more joint research programs to strengthen the ties between academia and industry. Research conducted should be industry-relevant, fostering innovation and driving economic growth in the region. However, researchers often prioritize securing resources for their own work, leading to a disconnect between the university and the needs of the private sector.
4. **Communication and Collaboration Issues:** Another recurring challenge is related to communication and collaboration between the university and

industry partners. A perceived lack of mutual understanding and engagement was highlighted as an obstacle to forming effective partnerships. This issue underscores the need for the university to enhance its communication strategies and foster a more collaborative approach.

5. **Administrative Hurdles and Slow Response Times:** One of the critical issues pointed out by Sensorlab and echoed by other participants was the bureaucratic hurdles and slow response times from ULPGC. Navigating through red tape and facing slow reactions can impede the progress of research and collaborative projects. This issue can potentially dissuade future collaborations and limit opportunities for innovation and development. For ULPGC, it will be crucial to streamline administrative processes and improve responsiveness to ensure a conducive environment for collaboration and innovation.

The University of Las Palmas de Gran Canaria finds itself at a crucial juncture, confronting challenges that demand immediate attention and action. The recurring concerns identified by several stakeholders, ranging from the alignment of educational programs and internships to industry needs, skill gaps in the workforce, the necessity for more collaborative research programs, communication and collaboration hurdles, and administrative bottlenecks, all signify areas that require significant improvement.

Overcoming these challenges will require concerted efforts, strategic initiatives, and a steadfast commitment to change. Doing so will allow ULPGC not only to foster a stronger relationship with the industry and improve its academic offerings but also to better serve its students and the wider community. By taking these necessary steps, ULPGC will be well-positioned to become a vital nexus of education, innovation, and industry collaboration, ultimately contributing to the broader socioeconomic development of the region.

7. GENERAL CONCLUSIONS

In order to improve the capabilities of the Widening universities, the main areas of work of the EXPER project are the attraction and retention of talent, the promotion of excellent research based on social, environmental (in terms of blue and circular economy), and economic responsibility, and finally the knowledge transfer and the connection with businesses in the environment in which these universities develop their activity.

In this sense, this deliverable has been intended to be the reference document that allows us to know what the current capabilities and potential of both universities with respect to the aforementioned target vectors are. Firstly, through the description of the research, development and innovation frameworks of the two archipelagos, the Azores and the Canary Islands, both through a general and overall vision. Secondly, through a more endogamic perspective of the two universities, considering its own capacities and resources, and including a list of their available infrastructures to be shared in a potential alliance of universities.

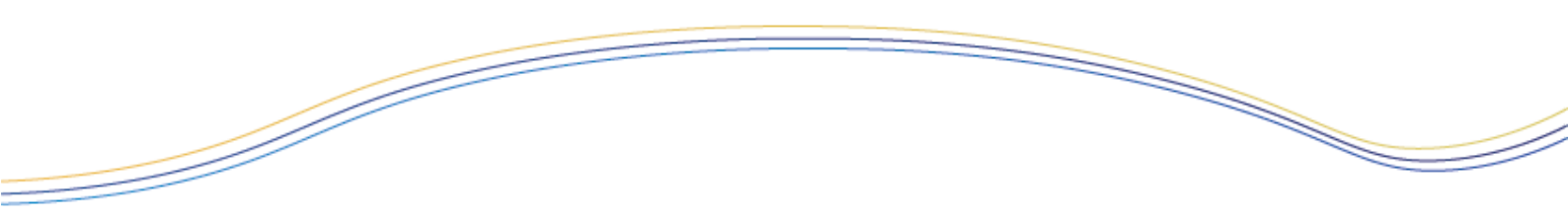
In addition, the internal self-assessment of both universities has allowed us to collect valuable information, which will ultimately be of paramount importance for decision-making, especially for the elaboration of the individual strategies, the joint strategy and, finally, the corresponding action plans. All these tasks will be developed in later stages of the project and in the framework of tasks *2.3 Developing a joint strategy*, and *2.4 Developing action plans* of the project.

In general terms, this analysis highlights the lack of a unified strategy aimed at optimising the resources of the institution and its environment in order to reach common objectives such as advancing impactful research, fostering innovation and entrepreneurship or engaging with local communities. The analysis also highlights a general lack of effective internal communication systems, which hampers cooperation between departments and the alignment of actions undertaken with the institution's objectives.


On the other hand, the lack of financial resources is another of the difficulties identified in both institutions, so that an improvement in the available resources would favour the support of research, digital transformation and infrastructure development.

It is also worth highlighting the difficulty that both the UAC and the ULPGC have in recruiting and attracting talent, a difficulty that is mainly linked to the lack of conditions for staff career development, uncompetitive salaries or competition with other prominent universities.

Finally, it is worth remembering that one of the main strategies of the EXPER project is to develop a community-based approach to outline a modernization strategy of the Widening Universities which involves representatives of the surrounding ecosystem. For this purpose, a series of interviews with diverse stakeholders in both archipelagos, the Azores and the Canary Islands, have been carried out: business companies, government departments, business associations, research centres, start-up incubators, etc.




The main conclusions, suggestions and challenges drawn from these interviews were as follows:

 Both universities share the need to improve collaboration and communication with stakeholders in their respective ecosystems, and also to work on the optimization of bureaucratic procedures and general management issues.

 In relation to the University of the Azores, the following points stand out:

- Improving practical application of research
- Enhancing a culture of entrepreneurship and innovation
- Addressing the knowledge and skill gap
- Leveraging unique geographical and ecological features

 Regarding the University of Las Palmas de Gran Canaria, the following issues should be addressed:

- Alignment of educational programs and internships with industry needs
- Skill gaps in the workforce (practical and real industry-aligned skills for students).
- Need for more collaborative research programs (between University and industry)

By following this strategy, the scientific excellence and innovation capacity of the Widening universities and their role as drivers of economic and social transformation in their territories will be stepped up and stimulated.

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