



Polytechnic Institute of Viana do Castelo

Center for Research and Development
in Agrifood Systems and Sustainability

PLAN OF ACTIVITIES 2023

Approved by the Scientific Council on the 7th of December 2022

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SUMMARY

The purpose of this document is to systematize the set of activities to be carried out by CISAS during the year 2023 considering the contents specified in the financing application proposal submitted to the Foundation for Science and Technology (FCT) in 2018, adjusted to project financial budget approved in March 2020, including base (UIDB/05937/2020) and programmatic (UIDP/05937/2020) funding, and to the financial execution that took place in year 2022 and the expected outputs for 2023.

1. Introduction

CISAS Research Unit's Activity Plan for the year 2023 to be presented should be aligned with the contents specified in the financing application proposal submitted to the Foundation for Science and Technology (FCT) on the 9th of February 2018, adjusted to the 2020-2023 funding approval in December 2019, comprising a base funding of 198,400.00 € (UIDB/05937/2020) and programmatic funding of 355,000.00€ (UIDP/05937/2020), whose pluriannual distribution was approved in the contract signed in 3rd of March 2020, and to the financial execution and budget distribution approved so far.

In the aforementioned original proposal, it is mentioned that CISAS implementation program foresees 3 distinct stages, however complementary, where internationalization is an important goal, reinforcing the strategy to promote mobility programs, increase the participation in projects, societies and publications and the involvement in doctoral programs. It is important to reinforce that FCT financial approval took place in March 2020, precisely at the begin of the pandemic conjuncture, and the stages pointed in the original proposal two years before, in 2018, were forced to be adjusted.

By the adjusted calendar it is now considered that in 2023 CISAS is in the last stage of "Excellence", intending to increase the number of researchers and undergraduates, the coordination and integration between the work areas, the definition of PhD Programs and the integration in international research networks reinforcing the quality of scientific publications, patents, and knowledge transfer and, moreover, to apply to selected Horizon 2030 calls and other international programs. However, Covid pandemic did impact on reaching this patamar and in some points it can be considered that some of the activities of the second stage - Affirmation (2021-22), are keep going. i) Stimulate scientific publications; ii) increase the number of HR financing (post)doctoral grants, scholarships to support R&D activities in parallel with the leverage protocols, and contracts for specialized services; iii) increase the number of researchers and undergraduates to stimulate coordination and integration between the work areas; iv) increase the number of publications in terms of quantity and quality of the output in peer-reviewed journals. Scientific events (seminars, lectures, exhibitions, workshops) will be also promoted.

Thus, to accomplish the activities predicted for 2023 under the "excellence" stage and completing the "affirmation" stage, CISAS aims for 2023 are presented in the following chapter.

2. Objectives for 2023

The year 2023 correspond to the 4th year of implementation of the 2020-2023 pluriannual financing program. Despite of the COVID-19 impacts most of the activities predicted for the "organization" and "affirmation" stages have been fully implemented during 2020-2022. In this context, to end the implementation of the "affirmation" stage, and simultaneously to accomplish with what was expected for the "excellence" stage, the following objectives are foreseen for 2023 year:

1. To increase the number of researchers and undergraduates
2. To establish the coordination and integration between the work areas

3. To integrate international research networks, reinforcing scientific work, national and international scientific publications and patents
4. To apply to selected Horizon Europe calls and other international programs
5. To organize international scientific events
6. Overall, to assure the conditions for the UID to evaluation process, that will take place in 2023

It is important to mention that one of the expected outcomes for 2023 year, posted in the original submission for FCT funding, was the definition of PhD Programs. As the definition of PhD Programs is dependent on external decisions, CISAS cannot be committed to this accomplishment.

3. CISAS Activities 2023

To pursue the aforementioned objectives the following activities will take place:

1: To increase the number of researchers and undergraduates will keep going during 2023 as a result of ongoing research activities within CISAS' main research lines and R&D projects funding.

2: The coordination and integration between the work areas, defined in 2022, will be formalized in the first quarter of 2023.

3. and 4: The integration in international consortia, reinforcing scientific work, national and international scientific publications and patents will keep going in 2023, also resulting from 2022 applications/consortia for national and international project funding opportunities.

Merit criteria established in 2021 and upgraded in 2022, by attributing and distributing budgets to CISAS members, according to individual achievements.

Moreover, participation in missions for dissemination of the data and results of ongoing activities and projects and, sequentially, communications in congresses, seminars and colloquia, publications in refereed journals and technical journals will be promoted in 2021.

5. Organization at least of 2 scientific events, being 1 international will be pursued

6. The elaboration of the Strategic Plan for 2024-2027 as well as the 5-year CISAS report (2018-2022) is challenging and it will require several tasks/efforts such as:

- The urgent development of a Platform for the Systematization of Information of CISAS and its members for dissemination purposes.
- The placement of the individual information on schedule;
- The treatment of the stakeholder's information for projection of lines of applied research and contracted services and possible patents.
- To improve CISAS internationalization, such as international projects participation, publications in collaboration with international R&D units, international patents, researchers' mobility and seminars organization.

3. FCT pluriannual budget 2020-2023

The accounting balance of FCT base and programmatic budgets, regarding to consulting, missions, acquisition of goods and services and other expenses that took place in 2020 to 2022 years and the predicted for 2023, the distribution of the budget was adjusted as shown in Tables 1 and 2. The plan of activities, according to CISAS regulation, must be presented yearly until the end of November but the financial information to be given by IPVC Project's Managing and Financing services about 2022 executed expenses still uncomplete at the end of November. Thus, the distribution of the budgets placed is not the definitive once it depends on the real expenditures of 2022 that were not placed due to difficulties of getting the necessary information from UGP until the date of presentation of the Plan of Activities. The final accounting balance of 2022 FCT base and programmatic funding will be presented in CISAS 2022 report on January 2023.

Thus, the accounting balance of FCT base and programmatic funds placed in 2022 year presented in Table 1 corresponds to the expenses sent and approved by FCT in 2021 and the expenses sent at the end of November 2022 still waiting for FCT final approval but includes the remnant expenses non-accountable yet. This will also be conditioning the 2023 budget.

TABLE 1. FCT pluriannual funding 2020-23 - Base (UIDB/05937/2020)

Current expenses		2020	2021	2022	2023	Total
Recursos Humanos (RH)	62 276,04 €	6 098,43 €	12 109,90 €	27 481,03 €	16 586,68 €	62 276,04 €
Missões no país e estrangeiro (M)	17 000,00 €	795,26 €	353,45 €	537,19 €	15 314,10 €	17 000,00 €
Consultores nacionais ou estrangeiros (C)	13 563,59 €				13 563,59 €	13 563,59 €
Aquisição de bens e serviços (AQ)	47 880,37 €	3 169,17 €	2 007,03 €		42 704,17 €	47 880,37 €
Registo nacional e no estrangeiro de patentes (P)	3 000,00 €				3 000,00 €	3 000,00 €
Adaptação de edifícios e outras instalações (AE)	- €				- €	- €
Encargos Gerais (EG)	39 680,00 €	2 557,01 €	4 789,03 €	7 464,91 €	24 869,05 €	39 680,00 €
Demonstração, Promoção e Divulgação (DPD)	15 000,00 €	165,18 €	4 685,75 €	1 841,43 €	8 307,64 €	15 000,00 €
Outras despesas correntes					- €	- €
Equipamento (E)					- €	- €
TOTAL	198 400,00 €	12 785,05 €	23 945,16 €	37 324,56 €	124 345,23 €	198 400,00 €

In RH budget for 2022 base funding (Table 1) were included the 12 months of the post-doc grant, the 5-month master grant associated to CISAS activity "Pulsed Field applications on Foods" and 1-month of the master grant associated to the activity "Productive performance, meat quality and animal welfare in the Portuguese breed *Galinha Branca*". One master student grant predicted for 2022 within the activity "Identification of microorganisms that suppress crop root diseases in composting vitiviniculture residues" did not start yet due to difficulties to recruit master students. Thus, this activity will be ended in 2023 dependent on the success of the recruitment.

As it can be seen, the budget for RH in 2023 it is not enough to accomplish the post-doc grant and a request to FCT will be done moving the lack amount from Acquisitions of goods and services (AQ) to Human Resources (RH).

In Missions (M) are already included the representation of CISAS director in FCT and other official organized events. In Demonstration, Promotion and Divulgation (DPD) budget are presented the registrations fees of several conferences as well as the publication fees in international journals. In the programmatic funding (Table 2) 2022 RH budget considered the 12 months of salary of the PhD contract that will run too in 2023. As it can be seen delays on the recruitment predicted for the end of 2020 will result in an over budget for 2023 that cannot be used.

TABLE 2. FCT pluriannual funding 2020-23- Programmatic (UIDP/05937/2020)						
Current expenses		2020	2021	2022	2023	Total
Recursos Humanos (RH)	121 895,00 €		27 821,17 €	36 775,46 €	57 298,37 €	121 895,00 €
Missões no país e estrangeiro (M)	5 000,01 €			- €	5 000,01 €	5 000,01 €
Demonstração, Promoção e Divulgação (DPD)	- €			- €	- €	- €
Aquisição de bens e serviços (AQ)	54 105,00 €	7 988,73 €	7 781,85 €	8 871,28 €	29 463,14 €	54 105,00 €
Outras despesas correntes	3 999,99 €			- €	3 999,99 €	3 999,99 €
Equipamento (E)	170 000,00 €			68 573,08 €	101 426,92 €	170 000,00 €
TOTAL	355 000,00 €	7 988,73 €	35 603,02 €	114 219,82 €	197 188,43 €	355 000,00 €

A request to move 70 thousand euros from Acquisitions of goods and services (AQ) budget to the Equipment budget of Programmatic funding was approved in 2022, making the total pluriannual budget (Base and Programmatic funding) for Equipment 170 000,00 €. VAT is not considered now, once VAT restitution for equipment applied in R&D activities was approved by General State Budgets 2021 and 2022. ESA laboratories did not have conditions to setup the ICP-MS in 2022, but this acquisition will take place in 2023.

Three sensors for analyzing soil characteristics (humidity, salinity and texture) were also acquired in 2022 (a sensor to measure the rate of water infiltration was already bought in 2021). The equipment to accomplish the research activities plan of the post-doc recruitment, namely an inverted light microscope, a cell culture chamber and a FTIR spectroscope, was acquired on the second semester of 2022.

In both funding, the AQ budget includes the raw materials and reagents used in the several research activities and in the Programmatic fund this budget also includes the 2021 and 2022 Associations fees of Colab4food and ISEKI, as well as the fees predicted for 2023.

However, as mentioned before, the distribution of the budgets within the Base and Programmatic funds not spent in 2022 moved to 2023, including the 2022 purchases which are only accountable in 2023. It also includes the previous executed expenses not approved that are going to be resubmitted, as well the expenses of equipment repair and maintenance that the recent FCT rules, for UID financial expenditures, consider now that can be paid retroactively from January 2020.

4. R&D Projects funding in 2023

The ongoing projects in 2023, will involve at least an IPVC budget of 2 806 997,57 € (Table 3). In 2022, 23 projects proposals were submitted for funding (Table 3). Four proposals were already approved and 8 are still waiting for decision.

TABLE 3- CISAS-IPVC 2023 R&D ongoing projects	Period	Funding (€) IPVC-CISAS	Funding Entity	National/ International
TECCCo+Lab - Rumo a um laboratório de testes COVID19 mais eficiente, abrangente e colaborativo	2020-2023	364 346,44 €	NORTE2020	national
S4Agro- Soluções Sustentáveis para o Setor Agroindustrial	2020-2023	142 576,80 €	POCI_FEDER	national
BIOMA- Soluções integradas de Bioeconomia para a Mobilização da cadeia Agroalimentar	2020-2023	390 741,07 €	POCI_FEDER	national
TECH- Technology, Environment, Creativity and Health - Line of Research 2	2020-2023	442 505,23 €	NORTE2020	national
GREENHEALTH - Estratégias digitais e baseadas em ativos biológicos para melhorar o bem-estar e promover a saúde verde	2020-2023	70 000,00 €	NORTE2020	national
Go GISA- Gestão Inteligente de Sistemas Agropecuários	2020-2023	32 936,15 €	Grupo operacional - Madeira	national
NUTRIR - Núcleo Tecnológico para a Sustentabilidade Agroalimentar	2021-2023	500 467,79 €	NORTE2020	national
PICAR - Functionalization of meat cured products with maritime pinebark extracts (<i>Pinus pinaster</i> subsp. <i>atlantica</i>)	2021-2023	185 899,34 €	COMPETE2020	national
Stop Suzukki	2021-2023	78 907,81 €	POCI_FEDER	national
Soil-Recon: Soil Ecosystems in the XXI Century: pressures, conservation and future scenarios	2021-2024	248 644,25 €	FCT	national
PAT.TECH- Potenciar, Aproximar e Transferir Tecnologia e Conhecimento Científico	2021-2023	48 527,64 €	04/SIAC/2021/POCI	national
Blue Project - Bioeconomy, People, Sustainability, Health	2022-2023	81 119,00 €	EEA Grants	international
BIGTECHCon – Movimento consumerista e práticas de anticonsumo em contextos de poder de mercado significativo por parte das grandes empresas de base tecnológica	2022-2023	5 000,00 €	Instituto Politécnico de Lisboa	national
Small Scale Autochthonous Chicken Productions - The Salmonella Myth - Salmyth para projetos de investigação	2022-2023	5 000,00 €	Concurso GI2-CESPU-2022	national
FEAST - Food systems that support transitions to healthy	2022-2027	194 900,00 €	Horizon Europa	international
Upgrading fruit wastes for microbial protein production	2023-2024	not defined yet by UM	FCT Exploratory	national
Plano Nacional para a Alimentação Equilibrada e Sustentável (PNAES) AL4 Alto Minho	2023-2024	15 426,05 €	PDR	national
TOTAL BUDGET IPVC		2 806 997,57 €		

TABLE 4 - CISAS-IPVC- SUBMITTED PROJECT PROPOSALS TO R&D FUNDING CALLS IN 2022	Funding	Status
Title	Funding	Status
SAMI – Armadilhas inteligentes para captura de insetos	PRR- PROJETOS I&D+I . AGRICULTURA 4.0	Not approved
Accept	AVISO Nº 05/COS-i03 – IE 6 - Territórios sustentáveis	Waiting for decision
PathoSURVEY _ Towards a genomics epidemiology surveillance of plant pathogens by third generation sequencing technology	FCT Scientific Research and Technological Development Projects	Not approved
BioCONTROL-KBC: Breakthrough on Three Biological Strategies to Control the Kiwifruit Bacterial Canker Rumo à sustentabilidade: explorando o potencial da Camarinha (<i>Corema album</i>) como aditivo alimentar fitogénico para melhorar a saúde e a resistência ao stress da truta arco-íris (<i>Oncorhynchus mykiss</i>).	FCT Scientific Research and Technological Development Projects	Not approved
Upgrading fruit wastes for microbial protein production -2022.01705.PTDC	FCT Exploratory Research Projects	Approved
Castas com Norte - Preservação e Valorização das Castas da Região Norte	PRR	Not approved
Development of a cost-effective, semi-automatic, reproducible and high-throughput Microsatellite High Resolution Melting Analysis methodology for the characterization and discrimination of apple cultivars	FCT - 5ª Edição do Concurso Estímulo ao Emprego Científico	Not approved
Plano Nacional para a Alimentação Equilibrada e Sustentável (PNAES) Alto-Minho	PDR	Approved
Ternary Augmented Meta Experiences (TagME)	Horizon Europa	Not approved
Sustentabilidade dos sistemas socio-ecológicos de montanha: o conhecimento dos recursos endógenos na promoção de soluções inovadoras lideradas localmente (SUSTER).	PRR- Territórios Sustentáveis	Not approved
Fresh2NewFresh - Conversão de alimentos locais em produtos com maior valor do que os produtos originais	Pojetos I&D+I – Promoção dos Produtos Agroalimentares	Waiting for decision
BIGTECHCon – Movimento consumerista e práticas de anticonsumo em contextos de poder de mercado significativo por parte das grandes empresas de base tecnológica	Instituto Politécnico de Lisboa	Approved
Small Scale Autochthonous Chicken Productions - The Salmonella Myth - Salmyth para projetos de investigação	Concurso GI2-CESPU-2022	Approved
Mediterranean Food Heritage and Entrepreneurship	Erasmus+	Waiting for decision
COVE - Greening-Food	Erasmus+	Waiting for decision
NUTRIR(+) Laboratório para a promoção e restauro da biodiversidade e dos agroecossistemas do Alto Minho	Fundação Belmiro de Azevedo	Not approved
Non-cow milk chain: From agricultural heritage to high value end products	COST Action	Waiting for decision
BioFago - Novas estratégias no controlo do fogo bacteriano	PRR- Projetos de I&D- Uma só saúde	Waiting for decision
RUMTick - Produção extensiva de ruminantes em zonas serranas: amplificadores silenciosos de doenças infecciosas emergentes transmitidas por carraças	PRR- Projetos de I&D- Uma só saúde	Waiting for decision
Interior +, Comunidades Rurais do Interior e de Montanha	PRR- Projetos de I&D – Revitalização das zonas rurais	Waiting for decision
VITAL - advisory services and grants to SMEs for green and digital Transition and sustainability in the industry	Horizon Europe	Not approved
InfiniTech - Pacto de Inovação Portugal Blue Food	Agendas verdes Aviso n.º 01/C05-i01/2021	Not approved

Within some of 2023 running projects, recruitment of PhD graduated researchers already took place in 2021 and 2022 and will be ongoing in 2023:

1 PhD - TECH – Technology, Environment, Creativity and Health – Line of Research 2: 1 PhD researcher (1 PhD student plus 3 MSc Student’ grants);

3 PhD - NUTRIR - Núcleo Tecnológico para a Sustentabilidade Agroalimentar, 2 already recruited and 2021 and 1 recruited in 2022;

1 Post-doc – One associated to the FCT funded project Soil-Recon: Soil Ecosystems in the XXI Century: pressures, conservation and future scenarios recruited in 2021 (4 BII grants were associated to this project in 2022);

1 Post-doc the associated to FEAST- Food systems that support transitions to healthy and sustainable diets, Horizon Europe approval in 2022 that will run during 2023.

Within the STOP-Suzukii project 2 BII were running during 2022 and 3 BI grants are continuing during 2023.

Within BIOMA 1 BI grant is running during 2023.

Within two contracts for specialized services 2 grants, one BI and other BII, were running in 2022 and 5 more are expected for 2023.

The research activities carried out by CISAS researchers within all these projects, will increase the number of participations in scientific conferences, either externally or internally organized, as well as the number of publications in 2023 and following years.

5. Stimulating scientific productivity- Credits and criteria

The IPVC annual funding is of 25.000€ and it will be distributed to be applied in research activities and respective outputs of CISAS' members.

One fifth of the 2022 IPVC budget, 5.000€, is going to be distributed in 2023 to collaborators and integrated members, according to the same criteria established in CISAS Financing Regulation approved in 14th of July 2022 (Article 11.º).

In 2023 based on 2022 individual integrated members reports, credits related to scientific productivity will be attributed and 4/5 of the IPVC budget (20.000€) will be distributed to those that accomplished the merit criteria (Article 12.º and Annex 1 of CISAS Financing Regulation, approved in 14th July 2022). The merit criteria were adjusted to improve the quality of the publications with impact in 2023.

6. CISAS predicted outputs - 2023

The outputs predicted for 2023 are present in Table 5. Comparing to Activity Plan of 2022, some output numbers were maintained (Articles in international indexed journals, poster presentation in congresses, national congresses organization, PhD contracts); some were below 2022 outputs (Books and Book chapters, articles in national journals and technical journals, oral presentations in congresses, new national projects, MSc. thesis completed); and some were above 2022 established outputs (new international projects, international congresses/seminars organization, contracts for specialized services, MSc, BSc. and PhD. student grants).

TABLE 5 - CISAS previewed OUTPUTS for 2023	
INDICATORS	OUTPUTS
Publications	
Books/book chapter	10
Articles in international indexed journals	40
Articles in national journals and technical journals	20
Communications in congresses/seminars	
Oral presentation	
International congresses	20
National congresses	20
Poster presentation	
International congresses	30
National congresses	30
Congresses/seminars organization:	
Nationals	5
International	2
R&D new running projects	
National	5
International	2
Contracts for specialized services	7
Master's thesis (completed)	15
Grants	
Bsc. Students	5
MSc. Students	5
PhD. students	6
Post doc	3
PhD contracts	5