Ref. Ares(2024)3264307 - 03/05/2024

BIOPOLIS

WP 10

3rd Implementation Report

cibio

Porto Business School

D10.3

3rd Implementation Report

Lead beneficiary **BIOPOLIS**
Submission date **3rd May 2024**

BIOPOLIS

Deliverable 10.3 (D10.3)

3rd Implementation Report

(Period Covered: 01/10/2022 to 31/03/2024)

Project acronym:	BIOPOLIS
Project name:	Teaming to Upgrade to Excellence in Environmental Biology Ecosystem Research and Agrobiodiversity
Work Programme Topics Addressed:	H2020-WIDESPREAD-2018-01 (TEAMING)
Grant agreement:	857251
Project duration (extended):	01/10/2019 – 30/09/2027 (96 months)
Coordinator:	Associação BIOPOLIS
Delivery date from Annex I:	M54 (March 2024)
Delivery date:	M56 (May 2024)
version:	1
Lead beneficiary:	Associação BIOPOLIS
Project's coordinator:	Nuno Ferrand

Dissemination Level		
PU	Public	
PP	Restricted to other programme participants (including the Commission Services)	X
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Table of Contents

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 857251

All intellectual property rights are owned by the BIOPOLIS consortium members and protected by the applicable laws. Except where otherwise specified, all document contents are: "© BIOPOLIS Project". This document is published in open access and distributed under the terms of the Creative Commons Attribution License 3.0 (CC-BY), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

1. Key aspects of the implementation of the project

1.1. Autonomy, Decision making

1.1.1. Autonomy

The full autonomy of Associação BIOPOLIS was attained in the previous reporting periods, as described in detail in the first (Deliverable 10.1) and second (D10.2) Implementation Reports. Briefly, Associação BIOPOLIS was established, on 31/07/2020, under the Portuguese law, as an independent legal entity, with autonomy for taking its own legal, administrative, financial, operational, personnel and academic decisions (see D1.1). Then, all funding, human resources (HR), protocols, contracts of services rendered, external supplies and services, equipment, and other assets were progressively transferred from ICETA (Instituto de Ciências Tecnologias e Agroambiente da Universidade do Porto), to Associação BIOPOLIS. This transference was agreed through a Demerger Contract signed between ICETA and Associação BIOPOLIS on 01/06/2021, with the latter formally taking the full management of CIBIO on 17/12/2021. From that date onwards, all new contracts (e.g., projects, services) and the hiring of HR were done through Associação BIOPOLIS. At the end of the 2nd Reporting Period (RP2) the transference had been concluded, including the transference of the Teaming project (1st of July 2022) (see D10.2). During the 3rd Reporting Period (RP3) Associação BIOPOLIS was thus fully autonomous, with no changes occurring in relation to what was reported in D10.2.

1.1.2. Governance and decision-making

The governance and decision-making processes of Associação BIOPOLIS remaind similar to those described in the second Implementation Report (D10.2). However, there were changes in the composition of some governing bodies, and work has been undertaken to improve the operationality of the Science Council and the International Advisory Board. These changes have resulted from discussions with the Project Officer (PO) and the Panel of External Experts during the review meeting on 20/01/2023 and the ad hoc review meeting on 14/11/2023, and they are aligned with the recommendations of the corresponding review reports received on 31/03/2023 and 07/02/2024, respectively. A summary of the operation and changes to the governing bodies of Associação BIOPOLIS are described below:

- Board of Directors (BoD) – The composition of this governance body remained unchanged, including Nuno Ferrand as President of the BoD, and Pedro Beja, Gabriel Marais and Nuno Folhadela as Associate Directors.
- General Assembly (GA) – The GA during RP3 operated with the four promoter founding associates (University of Porto, University of Montpellier, ICETA and PBS). The annual meeting was held on 07/06/2023, when the Management Report and Accounts for the year 2022 were approved. During that meeting, the GA also approved the integration of six new associates (see Section 1.1.3), which have thus become members of the GA. The new annual meeting of the GA is scheduled for 17/05/2024, at the beginning of the 4th Reporting Period (RP4), with

the agenda involving the discussion and deliberation on the Management Report and Accounts for the year 2023, the approval of new associates, and changes to the by-laws (see below). The GA will also elect three new members of the Supervisory Board, thereby completing the membership of this governing body.

- Supervisory Board (SB) – The SA during RP3 operated with representatives of the four promoter founding associates: chair – Luís Filipe Reis (PBS), vice-chair – Pedro Rodrigues (University of Porto), François Pierrot (University of Montpellier), and Baltazar Romão de Castro (ICETA). The SB during RP3 met five times: 25/11/2022, 27/03/2023, 06/06/2023, 09/10/2023, and 14/12/2023. The first meeting of 2024 had to be postponed due to agenda constraints and occurred only at the beginning of RP4 (12/04/2024). The SB meetings involved the participation of BoD members, and included updates on BIOPOLIS activities, the approval of annual activity plans and budgets for 2023 and 2023, the analysis of the management report and accounts for 2023, approval of BIOPOLIS participation in other organisations, and the approval of new members of the International Advisory Board, among others.
- Science Council (SC) – The SC was formally established according to the current by-laws of Associação BIOPOLIS at the beginning of RP3, on the 9th meeting of the SB (25/11/2022). The initial composition included five members: the Director of BIOPOLIS as chairman, two BIOPOLIS researchers, and two researchers from the University of Montpellier. However, this configuration was found to be insufficiently representative of the BIOPOLIS research community and it was not aligned with national legal requirements for scientific institutions (Article 23 a) of DL no. 63/2019, of 16th May). Specifically, the SC should include all researchers with a PhD (Article 25), with the possibility of creating also a Coordination Committee of the SC to make the body operational in the case of large institutions such as BIOPOLIS. The implementation of this new configuration was discussed and approved in the ad hoc review meeting of 14/11/2023, as indicated in the review report received on 07/02/2024. Accordingly, a revision of the by-laws was produced, to be revised by the legal departments of BIOPOLIS associates, and to be submitted for discussion and eventual approval on the GA scheduled for 17/05/2024. After that, the SC with the new configuration will become operational.
- International Advisory Board (IAB) – The IAB was formally established according to the current by-laws of Associação BIOPOLIS at the beginning of RP3, on the 9th meeting of the SB (25/11/2022). It included two components, the International Scientific Advisory Board (ISAB), with four members (Scott Edwards, Harvard University; Jeremy Searle, Cornell University; Luigi Boitani, University of Rome – La Sapienza; and Craig Moritz, The Australian National University), and the International Industry Advisory Board (IIAB), with six members (Cláudia Azevedo, SONAE; Rombout Swanborn, HyET group; Fernando Freire de Sousa, University of Porto; Paul Symington, Symington Family Estates; Jorge Moreira da Silva, Platform for Sustainable Growth; and João Nuno Palma, Millenium BCP). Following the recommendations

of the Review Report of RP2 (received on 31/03/2023), the membership of the IAB was increased and gender balance improved, with the approval by the SB (06/06/2023) of two new members of the ISAB (Peggy Oti-Boateng, African Academy of Sciences; Maria Manuel Mota, Instituto de Medicina Molecular) and two new members of the IIAB (Tatiana Kourotchkina, Quo Artis; Rosalia Vargas, Ciência Viva). During RP3 the IABs had an important advisory role, with activities including visits of some of its members to BIOPOLIS (February and November 2023, and March 2024), participation in HR recruitment, providing inputs on organisation and operation, meetings with BoD members, researchers and staff, and production of written opinions on BIOPOLIS operation. Despite these positive contributions, it was considered important to improve the configuration and operation of the IAB, namely by aligning it with the requirements of national legal requirements for scientific institutions (Article 23 a) of DL no. 63/2019, of 16th May). Specifically, it was considered important to enhance the independence of the IAB in relation to other governing bodies of Associação BIOPOLIS, namely by excluding the Director of BIOPOLIS from IAB and electing the chair among its members. This change was discussed and agreed upon in a meeting of the ISAB on 17/03/2023 and discussed and approved by the PO and the External Panel of Experts on the ad hoc meeting of 14/11/2023, as indicated in the review report received on 07/02/2024. Accordingly, a revision of the by-laws was produced and is being prepared for approval during the meeting of the GA scheduled for 17/05/2024, as described above for the SC.

1.1.3. Membership of Associação BIOPOLIS

The initial membership of Associação BIOPOLIS included only the four promoter founding associates, namely ICETA, the Universities of Porto and Montpellier, and the Porto Business School. The membership was enlarged during RP3, with the members of the GA on the annual meeting held on 07/06/2023 accepting unanimously the integration of six new members: (1) REN – Redes Energéticas Nacionais[1], (2) SONAE[2], (3) Fundação Belmiro de Azevedo (FBA)[3], (4) EDIA[4] - Empresa de Desenvolvimento e Infraestruturas do Alqueva, S.A., (5) Vila do Conde[5] Municipality, and (6) Mértola Municipality[6]. Since then, invitations have been made to several other organisation to join Associação BIOPOLIS as founding associates, including business corporations, private foundations, research institutions, NGOs, and departments from the public administration, among others. Several of these invitations have already been accepted, with formal acceptance letters received. The integration of these new associates will be delivered by the GA scheduled for 17/05/2024. Once the integration of these new associates is approved, the GA will elect the three new members of the SB, to complete the membership of this important governance body.

[1] https://www.ren.pt/en-GB
[2] https://www.sonae.pt/en/
[3] https://fundacaobelmirodeazevedo.pt/
[4] https://www.edia.pt/pt/
[5] https://cm-viladoconde.pt
[6] https://www.cm-mertola.pt

1.1.4. Management and technical support units

Associação BIOPOLIS has established three management and technical support units responsible for BIOPOLIS implementation and operation since RP1, as detailed in previous implementation (D10.1 and D10.2) and progress reports: Administration and Finances (AF&U), Technical Support (TSU), and Communication, Advancement & Engagement (CA&E). The core of these units was established with very experienced staff transferred from ICETA to BIOPOLIS, as described in the Progress Report of RP2. During RP3, the composition and operation of these units were strongly reinforced, namely through an improved definition of the organisational chart of BIOPOLIS, with a clearer identification of the hierarchies and responsibilities of the different offices. Moreover, the HR of several offices was significantly increased, thereby greatly upgrading their operation. Hiring of staff for these Units always followed open, independent recruitment processes. Below we describe the main improvements to the structure and operation of the management and technical units of BIOPOLIS.

Administration and Finances Unit

The A&FU is composed of four Offices, which are key for the operation of BIOPOLIS:

- Finance Office. This office is key to BIOPOLIS, and its operation follows the Administration and Finance strategy previously produced (D1.3). It prepares the annual budget and the annual management report and accounts, oversees the preparation of project's budgets and produces project's financial reports, processes the payments of staff and suppliers, and manages the treasury and bank accounts, among many other tasks. During RP3, the Office was upgraded through the hiring of Junior Accountant, Marta Pereira, and through the transfer of one officer (Susana Rocha) from the Administration Support Office. Finally, activities related to procurement were upgraded through the allocation to this task of a dedicated officer (Sara João).

- Human Resources (HR) Office. This office started operating in RP3, with the mission of implementing the HR Strategic Plan (D2.1). This Office is responsible for all matters related to HR management, including recruitment, preparation of contracts, preparation and implementation of the Code of Conduct and the Gender, Equality, Diversity and Inclusion Plan, coordination of the Committee for the Quality of Life at Work and Social Action (QoL), Occupational Health, among other tasks (details in Section 1.5). To set up this Office, the Head of the Office was hired at the end of RP2 (Ana Campos), and she started working in BIOPOLIS at the beginning of RP3 (01/10/2022). In addition, one assistant account (Laura Guerra), recently qualified as a solicitor, was transferred from the Finance to the HR Office, also supporting the Legal Office.

- Legal Office. This office started operating in RP3, coordinating all aspects related to the compliance of BIOPOLIS with legal requirements, as well as articulating with law firms when needed to obtain specialized external support. The main roles of this office include reviewing the institutional governing documents with the BoD, organising service agreements/contracts

with companies and other public bodies, preparing all mandatory public procurement procedures in collaboration with the Projects Office, and implementing procedures to simplify these procedures for researchers and approval by funding agencies. Moreover, the Legal Office support other departments and research groups, in aspects such as data protection, fiscal affairs, as well as ethics and conflict of interest, and prevention of harassment and corruption. To set up this Office, a Legal Officer was hired during RP3 and started working at BIOPOLIS at the beginning of 2023.

- Administration Support Office. This Office supports the general activity of BIOPOLIS, including for instance the booking of meeting rooms, the reservation of flights and accommodation, among others. The Office had no significant changes during RP3.

Technical Support Unit

This Unit provides technical support to the operation of BIOPOLIS, including research, and it is composed of four Offices.

- Research Operations Office. This Office is responsible for the technical support of research at BIOPOLIS. IT includes the technicians working at the common lab facilities of BIOPOLIS, which provide both internal and external services (i.e., support to internal research projects and provision of external services. The office also includes field technicians, which support researchers in the routine acquisition of data in the field. During RP3, a total of 50 field and lab technicians were hired (details in section 1.5), of which 13 ended their working contract in the same period.
- IT and Bioinformatics Office. This Office was set up and started operating in RP3, having the responsibility of coordinating all activities related to the IT infrastructure of BIOPOLIS, including the HPLC cluster, storage, Wi-Fi network, as well as providing IT support to researchers. It has also the responsibility of providing bioinformatic support to researchers, creating a structure that will later evolve into an independent Office. To achieve these goals, BIOPOLIS hired during RP2 a Coordinator Research to head the IT and Bioinformatics Unit (Nuno Fonseca). Nuno Fonseca started working at BIOPOLIS at the beginning of RP3 (January 2023) and accumulates technical functions with the role of senior researcher, creating a new Research Group on Computational Biology. In addition, recruitment processes were launched at the beginning of RP3 for three technicians, who started working at BIOPOLIS between March and May 2023: Senior System and Network Administrator (Paulo Rodrigues); Junior System and Network Administrator (João Monteiro); and Helpdesk Technician (Rustan Varinda). An in-house bioinformatician (Antonio Muñoz) was also allocated to support this Office.
- Project Support Office. This Office aims to support researchers in the preparation of project proposals and in the management of the technical component of the projects. During RP3, there were no changes to the composition of this Office, but project managers engaged in a number of training actions to enhance their performance.

- Infrastructure Office. This Office is responsible for the daily operation of BIOPOLIS common infrastructures at Campus de Vairão, including maintenance, cleaning and transport of students and staff. It was reinforced during RP3, with the hiring of two new technical assistants that started working on 01/01/2023, including a driver (Vasco Freitas), and a maintenance officer (Fernando Cunha).

Communication, Advancement and Engagement Unit

This Unit is mainly in charge of coordinating and implementing the interactions between BIOPOLIS and external stakeholders and students. It is composed of four Offices:

- Communication Office. This Office is in charge of coordinating all communication and dissemination activities of BIOPOLIS, following the specifications of the Internal Communication Plan (D6.1) and the Communication, Dissemination and Exploitation Plan (D6.2). Responsibilities include the maintenance and update of websites, production of the weekly internal newsletter, interactions with the media, internal communication with staff and researchers, among others. At the end of RP3, this Office was reinforced with the hiring of a new officer (Katharina D'Avis), who will be mainly dedicated to support the ERA Chair TROPIBIO, but who will also support BIOPOLIS Communication Office.
- Education and Training Office. This Office is in charge of coordinating BIOPOLIS advanced training, including the organization of Advanced Courses and the Seminars in Biodiversity & Evolution, the MSc in Biodiversity, Genetics and Evolution, and the Doctoral Programme BIODIV. During RP3 there were no changes to this Office.
- Knowledge Transfer Office. This Office coordinates all aspects related to the transfer of knowledge and technology produced by BIOPOLIS to the society. The responsibilities include the negotiation and nurturing of new partnerships and collaborating research programmes with the public and private sectors, the establishment with new Invited Chairs, the negotiation of service provision contracts, and the protection of Intellectual Property. During RP3 there were no changes to this Office.
- International Relations Office. This Office is responsible for coordinating the international relations of BIOPOLIS, namely its TwinLab flagship initiative, involving partnerships with academic and research institutions in Lusophone Africa and other less developed countries. During RP3, this Office was reinforced through the hiring of a new officer (Marion Tafani, previously at BirdLife International in São Tomé e Principe), mainly dedicated to the TwinLab initiative. In addition, BIOPOLIS hired a Director for the Equatorial Guinea Biodiversity Programme, David Montgomery (previously at Drexel University, Philadelphia, USA), who started working on 01/11/2023 to coordinate the important collaboration with the National University of Guinea Equatorial, involving the creation of a new TwinLab, and a range of research, outreach, and fundraising activities David Montgomery will also be involved in the new BIOPOLIS research initiative for the entire Gulf of Guinea.

Besides the three units described above, BIOPOLIS started to set up a **Strategic Projects and Innovation Laboratory (SPIn Lab)**, which will work directly with the BoD to activate, pilot, and carry out strategic projects at the intersection of academia, business, and civil society, including strengthening the communication and dissemination capacity of BIOPOLIS and creating partnerships with national and international organisations, while maximising BIOPOLIS' network and infrastructure. The set up of the SPIn Lab started through the recruitment of Senior Organizational Strategy Officer on a part-time basis (José Pedro Reis), who started working on 01/01/2023. The recruitment of the Head of SPIn was conducted at the end of RP3, with the person selected (Joel Alves, previously at the University of Oxford) starting the contract at CIBIO on 01/05/2024.

1.1.5. Research

During RP3, there were considerable advances in the implementation of the research strategy of BIOPOLIS, following the development of strong efforts to bring together the ambitious plan defined in the DoA with the culture, experience and expectations of CIBIO researchers. This has involved a lengthy discussion with the PO and the External Panel of Experts on the best research strategy to be implemented at BIOPOLIS. Briefly, the first version of the the Strategic Research Plan was submitted as D4.1 on 21/06/2021, during RP2, and a request for revision was received on 09/12/2021 (Ref. Ares(2021)7615831). A much improved version was then submitted on 27/06/2022, and feedback from REA was received on 29/03/2023 (Ref. Ares(2023)2272146), with detailed comments provided in the review report of RP2 (Ref. Ares(2023)2351592). Specifically, there was a request from REA for further revision the document, based on considerations related to the need for further justification on the changes introduced to the Strategy in relation to the DoA. Following the reception of these comments, the director and one associate director of BIOPOLIS discussed this issue at length with the PO, during meetings carried out on 26/04/2023, 27/04/2023 and 01/06/2023, providing detailed justification for the strategy submitted. As a result, it was agreed that a new version with an improved justification of the Strategy should be submitted for informal feedback of the PO, which was done on 19/06/2023. After this initial submission, a request was received on 19/09/2023 to submit a new version of D4.1 with additional clarifications, which was done on 06/10/2023. Further discussion of the strategy was made at the ad hoc review meeting on 14/11/2023. Approval of the strategy was finally received on 07/02/2024, with comments provided in the report of the ad hoc review meeting (Ref. Ares(2024)932963). Following this approval, BIOPOLIS requested through mail on 06/03/2024 the extension of the deadline to submit D4.2 (1st Review of the Strategic Research Programme) to month 74 (30/07/2025), which was accepted by the PO through mail received on 19/03/2024. This was justified by the need to implement the version of the Research Strategy recently approved, before it can be evaluated meaningfully.

The changes to the research strategy are presented and justified at length in the 3rd version of D4.1, but it is worth mentioning here some key, given their consequences for the implementation of the BIOPOLIS Teaming project. Briefly, the changes proposed were designed considering the new challenges and opportunities faced by BIOPOLIS, as well as the need to promote a more virtuous

integration of the best elements of previous CIBIO research structure with the new ambition and upscaling of research emerging from BIOPOLIS. Therefore, a new research structure was adopted, involving a reduction from six to three "Research Units", each matching one of the three broad Thematic Lines (TLs) adopted at CIBIO since 2018 (Evolution, Genetics & Genomics; Biodiversity, Ecology & Conservation; and Sustainability, Ecosystems & Environment). This was considered a satisfactory solution for adequately covering the breadth of research themes addressed by BIOPOLIS-CIBIO, and to reflect the interests and research questions addressed by its researchers. However, to guarantee that the Strategic Pillars of BIOPOLIS are adequately covered under this structure, each priority Research Lines envisaged in the Teaming project has been duly allocated to TLs. The adjustments have also involved the replacement of the name "Research Units" by "Thematic Lines", though the concept in terms of organisational structure remains largely unchanged. This was necessary because the use of "Research Units" in the context of BIOPOLIS has proven to be a source of misunderstanding, as the same name is used by FCT to designate research centres (i.e., BIOPOLIS-CIBIO is in itself a Research Unit). Moreover, evaluations of performance by FCT have asked specifically for organising the Research Groups (RGs) in TLs, so it was found preferable to use an organisational structure that matched the requirements of both the BIOPOLIS Teaming project and FCT. Finally, to streamline the implementation of the strategy we have increase the coordination of each Thematic Line from one to two Senior Researchers (one coordinator and one deputy). Another significant improvement to the research structure described in the DoA is the prominence given to RGs in the organisational structure, privileging a largely flat structure. Indeed, RGs are seen as the basic structural units of CIBIO-BIOPOLIS research organisation, following the practice of CIBIO, and reflecting the strong commitment to privilege bottom-up approaches and to support the intellectual freedom of researchers. Each Research Group is allocated to a Thematic Line, but its activity crosscuts different Strategic Pillars and priority Research Lines of the Teaming project, thereby promoting transdisciplinarity and cross-fertilization across research fields.

This organisation in TLs and RGs was used by BIOPOLIS in the context of the 2023-2024 process of evaluation of Research Units by FCT[7], which was carried out at the end of RP3 and beginning of RP4 (deadline to submit applications, 17/04/2024). During this evaluation, all integrated researchers and collaborators of BIOPOLIS were registered in the FCT platform, and assigned to Research groups, which were then allocated to the three TLs described above. In total there were 40 research groups, with 11 to 16 RGs per TL. Most research groups are the same listed in D4.1, though a few were closed due to the PIs moving to other institutions, while several new groups were created. Creation of groups followed a largely bottom up process, with putative PIs of new RGs submitting expressions of interest after a call made by the director of BIOPOLIS on a general meeting of researchers on 15/01/2024. The application to FCT, including the list of RGs (and their PIs, achievements and plans), was revised and had a positive appreciation by members of the International Scientific Advisory Board.

[7] https://www.fct.pt/en/avaliacao-das-unidades-de-id-2023-2024/

Table 1. Research Groups (RG) of BIOPOLIS considered in the 2023-2024 evaluation of Research Units by FCT. For each RG we indicate its acronym, the name, the Principal Investigator (PI) and the allocation to one of the three TLs: Evolution, Genetics & Genomics (EG&G); Biodiversity, Ecology & Conservation (BE&C); and Sustainability, Ecosystems & Environment (SE&E).

Acronym	RG name	PI	TL
AGRIGENOMICS	Domestic Species Genomics for Food Security and Sustainability	Albano Beja Pereira	EG&G
AGRODIV	Biodiversity in agricultural and Forest ecosystems	Francisco Moreira	SE&E
ANGOBIO	Biodiversity and Evolution in Angola and South-Central Africa	Pedro Vaz Pinto	BE&C
AP	Applied Phylogenetics	James Harris	EG&G
APPLECOL	Applied Population and Community Ecology	Pedro Beja	SE&E
AquaGenPhy	Aquatic Genetics and Physiology	Ana Veríssimo	EG&G
BE	Behavioural Ecology	Paulo Gama Mota	BE&C
BEPE	Biogeography and Evolution of Plants and Ecosystems	Carlos Vila-Viçosa	BE&C
BIODESERTS	Biodiversity of Deserts and Arid Regions	José Carlos Brito	BE&C
BIOEVOL	Biogeography and Evolution	Angelica Crottini	BE&C
BIOISLE	Biodiversity and Islands	Ana Cristina da Costa	BE&C
COASTALWARMING	Marine Ecology, Diversity and Change	Fernando Pádua Lima	SE&E
COMPBIO	Computational Biology Group	Nuno Fonseca	EG&G
CONGEN	Conservation Genetics and Wildlife Management	Paulo Célio Alves	BE&C
ECOCHANGE	Predicting and managing ecological change	João Honrado	SE&E
ECOGEN	Ecological Genomics	Raquel Godinho	EG&G
ECOINFRA	Infrastructure Ecology	Clara Grilo	SE&E
EnvArch	Environmental Archaeology	João Tereso	SE&E
EVOCHANGE	Genomics of Evolutionary Change	José Melo Ferreira	EG&G
EVOLGEN	Evolutionary Genetics and Genomics	Miguel Carneiro	EG&G
FBIO	Functional Biodiversity	Miguel A. Carretero	BE&C
FRESHCODE	FRESHwater COnservation, Diversity and Evolution	Manuel Lima	SE&E
GlobalECO	Global Ecological Challenges under Socio-Environmental Change	Luís Reino	SE&E
HUMANEVOL	Evolutionary Perspectives on Human Genetic and Cultural Diversity	Anne Maria Fehn	EG&G
IMED	Immunity and Emerging Diseases	Pedro Esteves	EG&G
InvasionS	Invasion Science	Joana Vicente	SE&E
LPDM	Landscape Planning, Design and Management	Cláudia Fernandes	SE&E
MOVE	Movement Ecology	Nuno Queiroz	BE&C
NATHIST	Natural History, Collections and Taxonomy	Luis M. P. Ceríaco	BE&C
PlantBio	Plant Biology	Herlander Azevedo	EG&G
PlantEvol	Plant Evolution	Raquel Tavares	EG&G
PlantN	Plant Nitrogen	Helena Carvalho	BE&C
PopECo	Population Ecology and Conservation	Inês Catry	BE&C

Acronym	RG name	PI	TL
RAINFORESTS	Ecology and Conservation of Tropical Rainforests	Luke L. Powell	BE&C
ROCKinBIO	Ecology for the conservation of Cultural Heritage	Joana Marques	SE&E
SEAGEN	Seascape Genomics & Speciation	Rui Faria	EG&G
SOCIALITY	Animal Sociality	Rita Covas	EG&G
THEOECO	Theoretical Ecology and Biodiversity Group	Henrique Pereira	BE&C
TRACE	Ecological monitoring and conservation	João Paulo Silva	BE&C
WILDEcol	Wildlife Conservation Ecology	Pedro Monterroso	BE&C

Together with the strategic and organisational aspects, there were also other important developments regarding BIOPOLIS research during RP3. Highlights include the upgrade of facilities and equipment, which are thoroughly describe in Section 1.6. Also important was the strengthening of the administration and technical components, as described in Section 1.1.4, which is essential to support the research activities. This involves the recruitment of several new administration staff and technicians, as described in 1.1.4 and 1.6. Highlights include the set up and operation of the new IT Office, involving the recruitment of a Head of Office and three IT technicians. Also, the research workforce of BIOPOLIS was strongly reinforced, with the hiring of researchers at different career stages (from R1 to R4), supported by multiple funding sources, as described in Section 1.6.

Along with the components described above, during RP3 BIOPOLIS continued to carry out excellent research with high scientific impact. The work has encompassed the three strategic pillars defined in the DoA of BIOPOLIS: (1) Ecology Assessment & Monitoring; (2) Ecosystem Function, Services & Restoration; and (3) Agrobiodiversity and Sustainable Food Systems. It also ranged in scope from genes to ecosystems, and from more fundamental to more applied science. The excellence of the research carried out is underscored by the significant scientific output, with the publication of 508 papers in 2022, 452 in 2023, and 56 in the first months of 2024. Among these papers, there were 72 published in journals with impact factor >10, including high-impact multidisciplinary journals such as Nature (2), Science (8), and PNAS (7).

1.1.6. Relations with the University of Montpellier

During the 2nd semester of 2022, the UM Management, Communication & Accounting Office (MC&AO) was attached to the Direction of large structing projects (DPS, “Direction des Projets Structurants”) of UM, which set up optimal articulation of the Teaming project with the central management services of UM. A fully dedicated project manager was recruited by UM late 2022 to assist the French coordinator and assistant coordinator (WP2). The MC&AO works in close collaboration with the Associate Director of BIOPOLIS association in charge of the relationships with UM, and it communicates with the 11 UM Joint Research Units involved thanks to a network of local contact points within these JRUs (WP10). UM has also been participating to the Association BIOPOLIS SB and plenary during RP2 (WP1, see above). UM has given some feedback on the HRS4R application of BIOPOLIS association (see Section 1.5).

In 2022-2023, UM has created several instruments to support BIOPOLIS activities involving UM:

- A call for PhDs and postdocs to be trained in the frame of collaborative research projects, with co-supervisions by BIOPOLIS-CIBIO and UM investigators, thus ensuring a capacity building component (WP4,5). Two calls took place in 2022 and 2023 using Teaming funds available at UM. Ten such projects have been funded so far, and more will be funded through a similar call launched in April 2024.
- A call for Education, Research & Outreach (ERO call, WP4,5,6) opened in August 2023 for 1 year. 10 projects have been funded so far, involving short visits, PhD co-supervision through cotutelle, training courses, meetings, outreach activities, among others. One more project has been submitted at the end of the RP and is currently being evaluated. The call should be prolongated in 2024, until the end of the Teaming project, depending on remaining funds. During RP3, we supported and co-organized) 2 TIBE meetings, 1 international meeting for students and young researchers in Montpellier, 2 training courses in Montpellier, 1 international spring school, 1 CIBIO-UM workshop, and 2 online training courses by UM instructors.
- A database for PhD research project was launched late 2023 to trigger co-supervision of PhDs from the University of Porto doctoral schools by BIOPOLIS-CIBIO and UM investigators. These theses (if funded by FCT after competitive application) will be eligible for Teaming support through the ERO call (WP5, see above).
- The BIOPOLIS monthly seminars, in which CIBIO welcomes once a month a speaker from one of the 11 UM Research Units involved in the Teaming, was initiated late 2023 (WP4,5). We are planning to welcome the first speakers in 2024. Speakers from CIBIO can present their work at UM under the Seminars of Ecology and Evolution of Montpellier (SEEM) framework, which has happened once during RP2.

Highlight on major achievements implying UM resources and teaming funding, including beyond the above calls:

- Currently 10 PhDs and 7 young postdocs are co-supervised by CIBIO and UM researchers in the frame of the Teaming project. They received support from UM either through the above mentioned calls or through dedicated UM human resources.
- the TIBE 2022 and 2023, co-organized with UM, one named “The Biology of Colour”[8] and the other “Invaders on the HORIZON”[9], respectively, which attracted hundreds of participants, many of which from abroad.
- A training course to upgrade the skills of the CIBIO technicians organized by INRAE and CIRAD, which was a success and was advertised on both UM and CIBIO’s websites.

[8] https://cibio.up.pt/en/events/tibe-2022-the-biology-of-colour/
[9] https://cibio.up.pt/en/events/tibe-2023-invaders-on-the-horizon-advancing-invasion-science-from-genes-to-ecosystems-to-society/

Finally, a now accepted amendment to the Grant Agreement was requested on Nov 20, 2023, to update the list of UM Joint Research Units and linked third parties participating in the project. Most importantly, JRU LEPSE (Laboratory of Ecophysiology of Plants under Environmental Stress) and its supervising organisation Institut Agro Montpellier were newly included because of their potential to contribute significantly to one of the strategic axes of development of BIOPOLIS, plant biology, especially cultivated plants.

1.2. Complementary funding

1.2.1. Complementary structural funds

The complementary matching funding to the BIOPOLIS Teaming project was awarded by Comissão de Coordenação e Desenvolvimento da Região Norte (CCDR-N), totalling 15 million euros supported by structural funds (NORTE2020). As described in the 2nd Implementation Report (D10.2), these funds were awarded through two projects. The first project (NORTE-01-0246-FEDER-000063) had a total budget awarded by CCDR-N of 8,271,733.14€, and it was directed at supporting capacity building and the research and innovation activities of BIOPOLIS, including the hiring of human resources, purchase of consumables, support of travel (e.g., field work), and participation in congresses and other events, among other activities. The second project (NORTE-01-0246-FEDER-000071), had a total budget awarded by CCDR-N of 6,728,266.88, and it was directed at enhancing BIOPOLIS infrastructure and equipment, including the rehabilitation of Quinta do Crasto to create new office and lab facilities, upgrade of the Fito-labs building, deployment of a state-of-the art lab for the analysis of ancient and degraded DNA, and the purchase of equipment to upgrade the Animal, Computational, Ecology, Omics, Plant & Microbiology and Storage platforms. Both projects were implemented throughout RP3, with expenses accepted by CCDR-N until 30/11/2023. This limit was due to the funds awarded being associated with the structural programme 2014-2020 (FP8), which required implementation at most until the end of 2023.

The association of the structural matching funds with FP8 was considered inconvenient to the implementation of BIOPOLIS, as the Teaming project will be implemented until 30/09/2027. To solve this problem, the BoD of BIOPOLIS negotiated throughout 2023 with the Portuguese government the possibility of transferring part of funds awarded through NORTE2020 to the new framework programme (FP9; 2021-2027) through NORTE2030. These negotiations were eventually successful, with the approval in 22/09/2023 of the annual plan of calls under PORTUGAL2030, which included a total of 4.9 million euros to be awarded to the second phase of the BIOPOLIS project. This call was initially expected to open in December 2023, but it has been repeatedly delayed, due to the transition to a new government in Portugal, which only took office in March 2024. However, the commitment of CCDR-N to this funding has been maintained, and a preliminary call text has already been published[10].

[10] https://portugal2030.pt/wp-content/uploads/sites/3/2024/01/Ficha-de-Aviso-FA0532_2023-V3-08012024_192448.pdf

This project will support human resources, consumables, missions, training, dissemination, and related activities.

1.2.2. Other regional structural funds

As described in D10.2, CCDR-N also awarded complementary structural funds through NORTE2020, to the ERA Chair TROPIBIO (2019-2025), currently managed by BIOPOLIS. This project (NORTE-01-0145-FEDER-000046) had a total budget of 2 million euros, and it was directed at supporting research and innovation activities of BIOPOLIS related to the TwinLab network in Africa, including the hiring of human resources, purchase of consumables, support of travel (e.g., field work), and participation in congresses and other events, among other activities. This additional support has also been relevant to the Teaming project, as it has strengthening the TwinLab network among its objectives (SO7), KPIs (II4.1), and tasks described in the Description of Action (3.1, 3.3, 4.3 and 4.4). As for the BIOPOLIS matching funds (Section 1.2.1), this project was implemented throughout RP3, with expenses accepted by CCDR-N until 30/11/2023, due to the funds awarded being associated with the structural programme 2014-2020 (FP8). Therefore, negotiations were also undertaken by the BoD of BIOPOLIS with the Portuguese government to allow the transition of part of the funds to the new regional structural funds programme (NORTE2030). This was formally achieved with the approval in 22/09/2023 of the annual plan of calls under PORTUGAL2030, which included a total of 0.8 million euros to be awarded to the second phase of the TROPIBIO project. The preliminary call text has already been published[11], and the call is expected to open until June 2024.

1.3. Sustainability of BIOPOLIS

1.3.1. Overview

During RP3, BIOPOLIS continued to implement its sustainability strategy, which is focused on reducing the dependency on national funds provided by FCT, and achieving a diversification of public and private funding sources, at national and international levels. This strategy aims to increase the resilience of BIOPOLIS to the vagaries of the public funding of science in Portugal and providing higher flexibility and agility to BIOPOLIS´ management and investment decisions. This strategy is paying off, with a large amount of revenue obtained from various funding sources. Some of these are greatly exceeding the forecasts based on the previous track record of CIBIO, and they are a direct consequence of the increased visibility and capacity of BIOPOLIS. Highlights include a substantial increase in the performance of BIOPOLIS researchers in European and FCT projects, considering the number of projects obtained, the budget secured, and the leading role taken in the project's implementation (see Deliverable 8.1). Likewise, there were major increases with revenues associated with the provision of services at national and international levels, with highlights including contracts with institutions from the Kingdom of Saudi Arabia totalling around 10 million euros. These successes result from the work of BIOPOLIS along five main axes, each corresponding to one task of the Teaming project: (i) Promoting

[11] https://portugal2030.pt/wp-content/uploads/sites/3/2024/01/Ficha-de-Aviso-FA0532_2023-V3-08012024_192448.pdf

successful application to research funding (T8.1); (ii) Promoting partnerships with stakeholders through problem-solving research (T8.2); (iii) Intellectual Property Rights and Licensing of BIOPOLIS Innovation (T8.3); (iv) Consultancy and services provision (T8.4); and (v) New businesses and spin-offs (T8.5).

1.3.2. Promoting successful application to research funding

Attracting project-based funding is one of the key components of the strategy for assuring the long-term sustainability of BIOPOLIS. To achieve this goal, during RP3, the Project Support Office continued to support researchers in the application to competitive research funding, including the organisation of training sessions for research and administration staff (preparation of proposals and project management), advertisement of calls and other funding opportunities, and assistance in the preparation of proposals. Highlights during the period include 11 training sessions on project management provided by the Research and Innovation Community Platform and PERIN , the organisation of a training session (June 2023) by the consultant Innovayt on "How to prepare a successful RIA/IA proposal in Horizon Europe" that was attended by 27 researchers, and the dissemination by mail of a weekly newsletter of 23 Horizon Europe calls for proposals potentially interesting to BIOPOLIS researchers (name of the call, deadline, budget, scope, and expected outcomes).

During RP3, BIOPOLIS started the participation in three Horizon Europe RIA projects (ANERIS, wildE, and REDUCE), one MSCA project (Isladapt), and two Life projects (Safeline4Birds, Wild Wolf), with an overall budget of 2.24M€. A new proposal was approved (REDUCE), with a budget for BIOPOLIS of 400k€, which will start on 01/09/2024. Submission of new proposals for funding in 2023 by Horizon Europe (2023-24 Work Programme) included 2 Twinning with an overall budget of 3M€, two Research and Innovation Actions (RIA), one ERC Advanced Grant, and three Marie Curie proposals. Early this year (February/March 2024), BIOPOLIS submitted another 11 proposals to Horizon Europe calls. We highlight the participation of BIOPOLIS researchers as coordinators of four large proposals (36%), which happened for the first time since the creation of CIBIO about 20 years ago, and it underscores the transformative impact of the Teaming project.

Regarding research projects funded nationally, during RP3 FCT approved 19 proposals in the call open in 2022 in all scientific fields, with an overall budget for BIOPOLIS of 2.2M€. Implementation of these projects started in the period covered by the current report or will start within the next few months. An additional project (250k€) was awarded in the scope of a new programme targeted at researchers reaching the final phase but not obtaining ERC grants. A new call for projects in all scientific areas opened at the end of 2023, with BIOPOLIS researchers submitting proposals for 28 Exploratory projects (budget up to 50k€) and 47 full projects (budget up to 250k€). Finally, FCT has funded the national component of three Biodiversa+ projects involving BIOPOLIS researchers (total 240k€), and another two are under evaluation. Regarding individual contracts, BIOPOLIS obtained support from FCT to hire 10 researchers (5 Junior, 1 Assistant and 4 Principal Researchers). There were also 3 new employment contracts (about 1M€) awarded under the FCT Institutional Call to Scientific Employment for Associate

Laboratories scope, which will be developed during the next 3-6 years. In addition to the research projects and contracts, FCT awarded BIOPOLIS a total of 17 PhD grants, totalizing more than 1M€. Finally, 76 researchers submitted proposals for individual contracts to work at BIOPOLIS for the next 6 years, of which 10 were granted (5 Junior, 1 Assistant and 4 Principal researchers' contracts).

1.3.3. Promoting partnerships with stakeholders through problem-solving research

This component involves developing innovation-led, problem-solving research with the public administration, business corporations, and other stakeholders, providing a mechanism to diversify funding sources and contribute to BIOPOLIS's sustainability. A key component of this strategy involves the the establishment of Invited Chairs co-funded by business corporations or other stakeholders and by FCT. Specifically, the BIOPOLIS business plan estimated that 4 Invited Chairs would be active in the project's first years, raising progressively up to 10 chairs at the end of the project. During RP3, one Invited Chair was concluded successfully (REN), while two approved during RP2 started to be implemented (FBA, EDIA). Two new Invited Chairs applications were submitted to FCT, one funded by Fundação Belmiro de Azevedo (Invited Chair on Rewilding) and the other by a consortium including Brava S.A., Bondalti, Sociedade Agrícola do Vale de Perditos S.A., ANPC – Associação Nacional de Proprietários Rurais (Invited Chair on Hunting and Biodiversity). The two projects total 1.1M€. Negotiations are on-going with LIPOR, EDP, SONAE MC and the Municipality of Oeiras for other Invited Chair projects.

To advance partnerships with the public and private sectors beyond the FCT Invited Chairs initiative, BIOPOLIS has also been establishing collaborative research programmes with, and responding to contracted research challenges set by, a range of stakeholders. During RP3, a total of 11 collaborative and contracted research contracts have been signed with 6 different entities (Junta da Extremadura, DRRF – Azores, Fundación Ecoánime, ACHLI, WWF Spain, and Royal Commission of AlUla). Highlights include the collaboration with Junta de Extremadura, a branch of the regional government in Spain, that has funded a collaborative project in the previous reporting period and has now signed 2 additional contracts, for 224k€. These projects on biodiversity monitoring in the region of Extremadura make use of both molecular techniques and tracking devices in order to assess the presence and distribution of mammal and bird species in that geographical area. Also, the regional government of Azores, in particular the Direcção Regional dos Recursos Florestais (DRRF) collaborates with BIOPOLIS-CIBIO and partially funds (~143k€) a research program on game species, that aims to develop a monitoring program for Viral Haemorrhagic Disease in wild rabbit populations; evaluate the genetic structure of Azores Quail and Red Partridge populations; evaluate the effect of changes to the agroforestry landscape, and determine the current state of the nesting populations. Also, we have reviewed the activity indicators concerning corporate partnerships and include now the Contracted R&D agreements since they contribute to problem-solving and, therefore are a mechanism to increase impact and overall allow us to accomplish several of the research objectives of the BIOPOLIS project, including the production of many scientific publications, even if the outputs of the project are the property of the funding partner. In this category, it included research commissioned by ACHLI on

Iberian wolfs and windfarms (4 contracts, 77.2k€), as well as two large, contracted research projects that were signed with the Royal Commission of AlUla (KSA), on predator-prey interactions (~2.2M€) and on birds of prey (1.1M€) and one other small contract for an ONG client. Scientifically, these projects allow BIOPOLIS to strengthen its results in the domain of biology and ecology of several fauna groups, such as birds (steppe birds, game species, and birds of prey) and mammals, in particular the Iberian wolf both in Portugal and Spain, but also large mammals in desert areas (AlUla County in KSA).

Finally, the strategy involves the establishment of an Affiliates Programme (WP7), with its planning concluded during the previous reporting period and revised in RP3 (D7.2). Overall, the activity in this domain has resulted in 4.9M€ of income in this reporting period.

1.3.4. Intellectual Property Rights and Licensing of BIOPOLIS Innovation

Overall, protection and commercialization of IP is an activity that is key to increase the impact of research by facilitating the introduction of new products and services in society and creating new jobs, particularly when a spin-off company is involved in the process. Also, it is considered an activity that can provide additional revenues through licensing agreements. Therefore, the long-term sustainability of BIOPOLIS is also dependent on the returns produced by this activity. To this end, the efforts initiated in the previous reporting period have been continued, with two editions of an intensive, 3-days training session in Intellectual Property and Knowledge Transfer, the “Innovation Value” course, for which external IP consultants were hired, and that took place at the premises in Vairão in winter 2022 and spring 2023. Altogether, these activities allowed a total of 43 researchers from 21 groups (including 16 PIs), 1 CTM technician, and 5 members of the BIOPOLIS staff.

To improve the gathering of information on research results worth protecting and valorising, an invention disclosure form for Associação BIOPOLIS has been prepared. Through this document, a researcher can provide a detailed description of an invention, including information on how it works, its purpose, potential applications or industries where the invention could be used, and any unique or innovative features as well as advantages and benefits when compared to existing solutions or technologies. During this period, Associação BIOPOLIS has submitted the first two patents from its researchers, which are the first ever since the creation of CIBIO about two decades ago. One patent was submitted on 16/12/2022 (invention domain: halogen regulation in plants), and the other on 27/06/2023 (invention domain: animal tracking). Two other inventions have been disclosed to the Knowledge Transfer Officer (KTO) and are currently under evaluation, one in the domain of coffee genomics and another in the domain of bird colour determination. Finally, the portfolio of IP assets has been increased by registering the trademark “Life Everywhere” at the national and the European level in January 2024, which will be key for the expansion strategy of BIOPOLIS.

Also, work has been pursued concerning drafting an improved IP policy for BIOPOLIS, building on the outline previously produced and included in the Knowledge Management System (D6.3). A revision of the current policy considers the Portuguese legislation and international best practices, as well as preliminary exchanges with the research community of BIOPOLIS, the board of directors, and several

staff members. The most urgent topics identified are: (i) the ownership of IP rights, in particular taking into account the diversity of work contracts and other mechanisms of affiliation of a researcher to Associação BIOPOLIS; (ii) obligations and rights of different types of collaborators (researchers, students,…); (iii) the establishment of internal procedures for IP protection and management, including when collaborating with third-parties; (iv) incentives to the researchers to disclose inventions and the revenue share on licensing benefits that the inventor is entitled to; and (v) confidentiality and conflict of interests. Once the draft of this improved IP policy is produced (in RP4), it will be submitted for approval to the Supervisory Board and General Assembly of Associação BIOPOLIS. Once clearly defined, the IP policy will be decisive for establishing the terms of access to IP by the stakeholders engaged in the Affiliates Programme.

1.3.5. Consultancy and services provision

As detailed in the DoA of the GA, the provision of specialised services and consultancy is one of the cornerstones of BIOPOLIS sustainability strategy. This strategy has been anchored in the enhanced capacities and visibility of BIOPOLIS driven by the Teaming project, which are contributing to attract an ever-increasing range of potential customers. Overall, this activity allowed for a total income of 6.7M€ in new contracts (33 different clients) and an additional 490k€ of revenues from the molecular analysis activities performed at CTM (49 different clients).

Two of the highlights in the previous reporting period were confirmed by the signature of the agreements in RP3 (the Inventory of Fauna service for the Royal Commission of AlUla [RCU] and the EEA tender for the European Topic Centre on Biodiversity and Ecosystems partnership). It is noteworthy that additional contracts have been secured in the same line of activities. On the one hand, two additional services in the Kingdom of Saudi Arabia, one with RCU and another one with a new client, Red Sea Global, another government agency that manages a different geographical site. Overall, service provision in KSA has allowed to secure a total of 5.7M€ of income, accounting for most of the revenues acquired through consultancy and services provision (see details in Box 1).

Also noteworthy are contracts awarded by European agencies following the submission of proposals to tenders by 3 consortia where BIOPOLIS is participating and that have applied to provide services to the European Environment Agency (EEA), the European Investment Bank (EIB), and the European Food Security Authority (EFSA). These are excellent opportunities to increase the visibility of BIOPOLIS while contributing to the European Agenda. One of these was the consortium led by the Norwegian Institute for Water Research (NIVA) that applied to the Open call for proposals with reference OCP/EEA/NCE/21/001-ETC-BE for the Framework Partnership Agreement for the period 2023-2026 of the European Topic Centre Biodiversity and Ecosystems (maximum value of 15.5M€ in 4 years). The other was the consortium led by IBF consulting that applied to the Framework Agreement to Support EIB Advisory Services Activities Inside and Outside EU-27, Lot 1 (environment) with the Reference number TA20210614 R0 FWA (maximum value of 20M€ in 4 years), and that was one of the 5 consortia selected in this procedure. The third was the consortium led by the University of Turin that applied to the Framework Service Contract on Wildlife and One Health: Wildlife Ecology, Health Surveillance and

Interaction with Livestock, Human Population and Environment, under the call with Reference number: OC/EFSA/BIOHAW/2022/01 (maximum value of 4.2M€ in 6 years). The value that will be earned by BIOPOLIS-CIBIO on the provision of these services and consultancy will depend on the specific agreements that will be established under these frameworks, and it will be reported in future documents. Finally, a total of 9 contracts with energy producers, accounting for 597.5k€, have been signed (Movhera, Cabeólica, EDP Renováveis, Lightsource bp, and Naturgy). Other services have been provided to a range of other end-users, private companies such as Sonae, but also several public entities such as municipalities and academic institutions.

Finally, it is worth underscoring the activity of CTM - Molecular Analysis Centre, an internal unit of BIOPOLIS, in the provision of laboratory analysis services, that include parentage analysis in domestic species (cattle, horses, donkeys, sheep, pigs, goats and dogs), assessment of the occurrence of hybridization in game species for repopulation purposes (rabbit, partridge and quail), molecular sex determination in birds and mammals, development and analysis of SNPs and Microsatellites and Sanger sequencing, and NGS services such as gene expression, metagenomics, and eDNA. Overall, during RP3 CTM developed a total of 87 services to 49 clients, of which 24 have contracted BIOPOLIS' services for the first time, and an income of 490k€.

It is expected that the expansion of consultancy and services provision activities will continue. We will leverage on the increased critical mass of highly qualified research and technical staff, the expansion of technical facilities and buildings (in particular the creation of an ancient DNA laboratory in Quinta do Crasto), the higher visibility and prestige of the centre, the close contact with stakeholders, and the support from UM and PBS on numerous areas. It is expected that this support will improve the attraction of new clients and enhance the quality, efficiency and cost-effectiveness of service provision by CTM and GEPE. Furthermore, it will enable the definition of a policy for service provision and consultancy activities, particularly concerning the definition of prices, and of the human resources that can participate in these activities to avoid conflicts of interest. There will also be a revision of the strategy regarding consultancy and services, with an increasing focus on large, high-profile projects like those being provided to Saudi clients and European agencies.

BOX 1. Consultancy services of BIOPOLIS to the Kingdom of Saudi Arabia

BIOPOLIS has signed during RP3 a total of 3 large contracts with 2 different government agencies in the Kingdom of Saudi Arabia (one other bid reported in RP2 has not been awarded). The first contract was awarded in June 2022 by the Royal Commission of AlUla, and therefore was already mentioned in the previous reporting period, but it was only formally signed in November 2022. A second contract with this client was signed in April 2023. These 2 service provision agreements account for a total amount of 3.22M€. These contracts not only hold great significance in themselves but also provided a valuable opportunity to enhance our internal processes, especially in terms of proposal preparation. This improvement was notable in areas such as budgeting for the work to be undertaken, as previously mentioned, as well as in the realm of project execution. BIOPOLIS-CIBIO's

BOX 1. Consultancy services of BIOPOLIS to the Kingdom of Saudi Arabia

research group BIODESERTS is in the front line of these 2 proposals and the team has been contacted by another client in that country, Red Sea Global, and a new service provision was signed in January 2024 for the amount of 2.5M€. Also, the relationship with the Royal Commission of AlUla has evolved with the award of contracted research projects, and the extension of the initial Fauna Inventory service for an extra 6 months and 312k€. The 3 services being developed are the following:

- Fauna Inventory (Royal Commission of AlUla) - involves the inventory and study of desert fauna, with tasks including: 1) Inventory: provide baseline information on the fauna; 2) Reporting: develop a set of resources that can be used for the long-term conservation, rehabilitation and management of faunal diversity; 3) Training: increase the knowledge and capacity building in field studies, species identification and monitoring, and species and habitat mapping; and 4) Outreach: provide complete field guides for birds, reptiles and invertebrates to be used for monitoring, research and tourism purposes. The contract has been extended to produce a field guide for mammals and other small additional tasks until end of October 2024.
- Acacia Trees Dieback (Royal Commission of AlUla) - this project aims to: 1) provide baseline information on the extent and possible causes of Acacia trees dieback; 2) provide possible direct and indirect causes of infection, list predator species that may control dieback-related insect and reduce the impact on trees; 3) provide potential control approaches based on bibliographical search on acacia and other species; 4) provide experimental design for practical and applicable controlling experiments and guidelines on how to select the best approach; and 5) provide methodology and plan for observing and monitoring the Acacia dieback extent. The service will be developed over 17 months.
- Terrestrial Habitats assessment (Red Sea Global) - this service involves a detailed assessment of the habitats in the Red Sea Zone (RSZ) with the following activities: 1) Analysis of RSZ ecological and biological current situation including a gap analysis and roadmap; 2) Habitats detailed baseline assessment for flora and fauna attributes; 3) Evaluating key terrestrial biodiversity areas; 4) Terrestrial Protected Areas Proposal and Stakeholder Engagement, 5) Develop IUCN's terrestrial protected areas management categories and plans; 6) Guidelines for potential wildlife reintroduction; 7) TERE Strategy and Detailed Implementation Plans and 8) Increase the knowledge, capacity, and contribution of local communities in conservation of biodiversity and natural resources. The service will be developed over 2 years.

Under its Vision 2030 program, KSA is performing a significant investment in establishing and fostering a set of heritage sites and natural parks, with the aim of diversifying its oil-based economy and developing its tourism activities. As described above, BIOPOLIS-CIBIO worldwide reputation in desert ecology has enabled the opportunity of securing several contracts and establish a strong pipeline of potential new business and research in the region. Discussions are ongoing concerning a

BOX 1. Consultancy services of BIOPOLIS to the Kingdom of Saudi Arabia

new project funded by the King Salman bin Abdulaziz Royal Natural Reserve, and another one for the Nelover Centre. Considering the large volume of contracts, and the resources being mobilised, BIOPOLIS is studying the possibility of establishing a subsidiary in that country. Also, the possibility of scientific publication of the results has been negotiated in each of these contracts and as the relationship with these clients evolve, there is the potential for the development of new lines of research at BIOPOLIS-CIBIO.

1.3.6. New business and spin-offs

The creation of new businesses and spin-offs is an important component of BIOPOLIS strategy towards achieving long-term sustainability. The work towards supporting new businesses and spin-offs has been developed since the beginning of the BIOPOLIS project, with the continuous support to BIOPOLIS-CIBIO's existing spin-off, ElectricBlue, leading to an increase in the portfolio of devices and services provided by the company, and its participation to a Porto Business School (PBS) organized event for capturing Venture Capital, the Biocapital Investors Summit[12]. Three projects for establishing a new business are under consideration at the moment: **the establishment of a Joint Venture with a French company**, **the establishment of a subsidiary of BIOPOLIS in Saudi Arabia**, and a very recent opportunity for a new **spin-off company** out of research outputs from another BIOPOIS-CIBIO group, and that will be dedicated to bird genotyping to predict colour phenotypes.

The subsidiary in Saudi Arabia is considered a priority because the number of clients and services in this country is increasing, and Saudi institutions prefer to acquire services from local businesses. The feasibility of this project has been evaluated closely on the financial (production of a business plan) and legal (assessment of requirements) components, and the results have been submitted for approval to the Supervisory Board. Also, this might be one of the first of a cluster of BIOPOLIS subsidiaries in different countries under the brand "Life Everywhere" for which a trademark registration has been filed. Initial contacts have been made with potential investors, and working visits to partners by the director of BIOPOLIS were made to KSA in June 2023 (together with BIOPOLIS CFO), the island of Príncipe in September 2023, and Macau (China) in October 2023. Also, a Trademark, "Life Everywhere," has been registered in Portugal and in Europe. Concerning the Joint Venture that will be dedicated to environmental monitoring based on novel molecular methods, the conversation is presently on hold, and alternative business models to exploit the capacities of BIOPOLIS to provide services of eDNA monitoring are also being evaluated, considering the new lab facilities to be deployed at Quinta do Crasto in early 2024.

The entrepreneurship mindset has also been stimulated in the BIOPOLIS-CIBIO research community by running specific training programs, particularly the Ignition Programme. Organised by PBS, in

[12] https://corporatestartuppbs.pt/biocapital-investors-summit/

collaboration with the University of California, Berkeley Innovation Group, the program was run during the 1st semester of 2023, to foster entrepreneurship of the BIOPOLIS community and beyond, and included 112 hours of teaching, organised in 4 modules. A total of 56 participants followed the program, including 2 BIOPOLIS-CIBIO researchers. Other initiatives of this kind will be promoted in the future. Finally, a better definition of the scope of support for future spin-offs and the incentive to entrepreneurship is under study, and will be discussed by the governance instances of Associação BIOPOLIS in the following months.

1.4. Impacts

1.4.1. Overview

At the end of RP3, the BIOPOLIS Teaming project is already producing very significant impacts, with strong implications at regional, national and international levels. The most relevant impacts at this stage of BIOPOLIS implementation stage are described below, in relation to those foreseen in Table 2.1a of Annex 1 – Description of Action.

“upgrading the facilities already available at Campus de Vairão into a hub for excellent research and innovation in the biological sciences”

This expected impact of BIOPOLIS had major developments during RP3, as detailed in Section 1.6. Significant progress has been made towards rehabilitating and adapting buildings at the Quinta do Crasto complex for scientific research. In the coming months, this year, the rehabilitation work will end, and the facilities will be progressively occupied by BIOPOLIS staff. The facilities will include the new laboratory for the analysis of ancient and environmental DNA, the most modern of its kind in the Iberian Peninsula, which has been designed in a collaboration with the University of Oxford. The laboratory was designed, the equipment purchased, and the deployment nearly completed during RP3. The final installation and testing of the equipment will be made at the beginning of RP4, with the lab becoming fully operational towards the end of 2024. In parallel, interventions were made in the Fito-labs building, which improved thermal insulation and improved conditions for research. Improvements were also made at the molecular labs located in the main building of BIOPOLIS at Campus de Vairão. Another important component during RP3 involved the upgrade of the IP infrastructure, which will be fully operational during 2024. This has involved purchasing and installing IT equipment such as rack servers, switches, firewalls, Wi-Fi controllers, and wireless antennas. Additionally, individual acoustic phone booths and audio-visual equipment for the meeting room and auditorium in the main building were acquired.

Beyond the Campus de Vairão, there were also important developments to create new facilities necessary to carry out excellent research and innovation in the biological sciences. The rehabilitation and adaptation for scientific research to establish the Biological Station of Mértola is progressing well, with the work expected to be concluded towards the end of 2024. Field and IT equipment have been acquired, and the procurement of laboratory equipment and furniture is also nearing completion.

Regarding the field Station of Branda Científica, the contracting process for the Preliminary Design, Execution Project, and technical assistance for the construction of the General Architectural Project and Landscape Architecture/Exterior Arrangements Project of the Branda Field Station is currently underway. Negotiations with CCDRN are ongoing to secure financial support for the next phase through structural funds (Norte2030).

"consolidation and expansion of education and training activities, particularly the doctoral and post-doctoral programmes"

One of the strongest impacts of BIOPOLIS is clearly related to its education and training programmes, which have greatly progressed during RP3. In the scholar years of 2022/23 and 2023/24, corresponding to RP3, there were 26 and 29 PhD students, respectively, enrolled in BIOPOLIS doctoral programme (BIODIV)[13], of which 45.4% were foreigners. During the same period, 27 students submitted their PhD thesis. There were also 32 students enrolled in the MSc course on Biodiversity, Genetics and Evolution, managed by BIOPOLIS. Also noteworthy were the 64 training opportunities offered to to students, early-career researchers and staff, including 15 advanced courses, 3 workshops, 2 conferences, and 44 seminars/webinars.

"**the development of innovative concepts, tools, and approaches for nation-wide research"**

BIOPOLIS has developed innovative concepts, tools, and approaches. These continue to be used by researchers and stakeholders nationally and internationally. Highlights include (i) biologging, (ii) animal tracking technology, and (iii) tools and approaches based on genomics and metagenomics. The innovative tool - biologging - is in great demand nationally and internationally. It was recently highlighted at the FCT Annual Meeting (Aveiro, 5-7 July 2023)[14]. The BIOPOLIS stand raised high interest by participants (scientists, schools, media outlets, and the general public), receiving the visit of the Prime Minister of Portugal and featuring in the nationwide TV channel "CMTV." and in the prestigious journal Science (2 November 2023). At the international level, the Science journal dedicated news online about the demonstration event and its applicability to track how ocean warming affects coastal ecosystems[15]. The technology for animal tracking developed in collaboration with BIOPOLIS researchers has recently been submitted as a patent (invention domain: animal tracking). Finally, several tools and approaches based on genomics and metagenomics are in use, especially those on the way to application by several stakeholders.

"creating capacities and facilitating research in Africa, particularly in Portuguese-speaking African countries"

Collaborative research and capacity building in Africa progressed considerably during RP3, recovering from the downturn in previous years due to the the heavy restrictions on travel to African countries due to COVID-19. This has resulted in positive developments in the consolidation and expansion of

[13] https://www.biodiv.pt/en/

[14] https://www.encontrociencia.pt/2023/en

[15] https://www.science.org/content/article/atlantic-ringed-tiny-sensors-ambitious-effort-track-climate-change

BIOPOLIS TwinLab network in Africa, with interactions with stakeholders and research projects carried out in Angola, Benim, Botswana, Guinea Bisau, Mozambique, Namibia, and São Tomé and Príncipe, among others. Of particular note is the signing of protocols with Wilmax International (03/12/2023) to finance (6 M€) the establishment of the Gulf of Guinea Research Program, including the creation of two new field stations on Príncipe Island (São Tomé and Príncipe) and in the Cabinda enclave (Angola). Following the creation of research capacity and facilities in the region, equipment, and technical support in Equatorial Guinea, protocols were signed with the Afro-American University of Central Africa (AAUCA) and the National University of Equatorial Guinea. Another important protocol was signed with African Parks, to analyze the application of water environmental DNA (eDNA) methodologies within protected areas across Africa managed by this private conservation organization[16]. Important outputs resulting from these collaborations include the publication online open and in print of the textbooks "Strategic Opportunism: What Works in Africa, Twelve Fundamentals for Conservation Success"[17,18], and "Ecology of Angola: Terrestrial Biomes and Ecoregions"[19], authored by a BIOPOLIS researcher. There were also important articles in high-impact scientific journals, such as a paper highlighting the importance of Afromontane Forests in Angola, published in Nature Ecology and Evolution[20], and a paper on human population genomics in the Angolan Namib Desert, ublished in Science Advances[21]. Finally, it is also worth noting the training of 8 PhD students from Lusophone African countries, most of which supported through the CEBiCNa program[22].

"providing a benchmark that can be used by other institutions to achieve excellence"

The example of BIOPOLIS has contributed to the recent success of Portugal in the Teaming programme, with the award of 3 new Teaming projects in 2023 (GeneT, NIMSB, iMM-CARE)[23]. In fact, researchers from BIOPOLIS have provided advice on the preparation of Teaming proposals, which have certainly contributed to increase their chances of approval. Furthermore, the experience from BIOPOLIS is being used in the early implementation phase of these new projects. Finally, BIOPOLIS has had a leading role in the organisation of a Club Teaming Portugal, which had its first meeting in Coimbra on 23/02/2024, and will work towards increasing the visibility and prominence of the Teaming projects in the country.

"the development of innovation-led, problem-solving research together with business corporations"

Major progresses regarding this expected impact are detailed in Section 1.3.3, involving the establishment of Invited Chairs co-funded by the Portuguese Science and Technology Foundation

[16] https://www.africanparks.org/
[17] https://link.springer.com/book/10.1007/978-3-031-24880-1
[18] https://cibio.up.pt/en/media/lancamento-de-livro-que-traz-nova-esperanca-a-conservacao-em-africa/
[19] https://link.springer.com/book/10.1007/978-3-031-18923-4
[20] https://www.nature.com/articles/s41559-023-02025-9
[21] https://www.science.org/doi/10.1126/sciadv.adh3822
[22] https://www.ciencialp.pt/en/consortia/
[23] https://www.fct.pt/en/horizonte-europa-portugal-capta-mais-36-milhoes-de-euros-em-projetos/

(FCT), and the development of collaborative research programmes with business corporations and other stakeholders. Highlights include the successful conclusion of one invited chair (REN), the start of two chairs approved in RP2 (FBA, EDIA), and the submission to FCT of two new Chairs (FBA, a consortium of several companies). This involves research in a number of areas, including the impacts of power lines and agricultural intensification on biodiversity, the joint management of hunting and biodiversity, and the restoration of ecosystems through rewilding. Negotiations have started with a number of other partners to start new Chairs, including LIPOR, EDP, SONAE MC and the Municipality of Oeiras. Also important has been the development of research through collaborative programmes on the interactions between wolves and wind farms commissioned by ACHLI (a consortium of wind farm companies), and on wildlife in deserts, contracted by the Royal Commission of AlUla (Saudi Arabia).

"the development of innovations for the conservation, management, and sustainable use of biodiversity and ecosystem services"

BIOPOLIS is having an impact in this area, through the development of novel approaches to the management and conservation of biodiversity and ecosystems. Highlights include, for instance, the strong involvement of BIOPOLIS researchers in EUROPABON, which is developing a monitoring system for Europe, in NaturaConnect, which is designing and developing a blueprint for a truly coherent Trans-European Nature Network (TEN-N) of conserved areas that protect at least 30% of land in the European Union, and in wildE, which is researching climate-smart rewilding as a solution to the twin threats of climate change and biodiversity loss. All these projects are key for meeting major EU commitments related to the Green Deal and the Biodiversity Strategy to 2030. Also important, is the strong involvement of BIOPOLIS in the development of new biodiversity and ecosystem health monitoring techniques based on environmental DNA and DNA barcoding and metabarcoding, mainly through European projects such as BGE, ANERIS, DNAquaIMG, and DNAqua-Plan. Besides these projects, BIOPOLIS is strongly involved in the management and mitigation of the impacts of infrastructures, which has led to the recent creation of a research group specifically focusing on these issues (EcoInfra; see Table 1). BIOPOLIS researchers interested in these topics often work in close collaboration with private corporations, associations and governmental departments to develop innovative solutions, with current projects involving for instance wind farms (ACHLI), photovoltaic power stations (LightSource BP, Junta de Extremadura), floating solar panels (EDP), energy distribution networks (REN), and food retail (Sonae MC), among others. Finally, BIOPOLIS is providing consultancy and advice to the management of protected areas and the restoration of ecosystems, in Portugal and beyond involving for instance in RP3 the process for creating the Protected Area of Serra da Aboboreira[24].

[24] https://www.cm-baiao.pt/2023/04/03/serra-da-aboboreira-formalizada-como-paisagem-protegida-regional/

"the development of innovations regarding the sustainability of food production systems and the use of agrobiodiversity to develop new products and processes"

BIOPOLIS has had a significant impact on the development of research related to food production systems and agrobiodiversity, having currently five research groups dealing specifically with these topics (See Table 1; AgriGenomics, AgroDiv, PlantBio, PlanRvol, PlanN). This is having positive impacts on the quality and quantity of research developed in these fields. Highlights include some important papers in high-profile journals, such as papers on grapevine varieties, published in Science Advances[25], on the contribution of Portuguese researchers to the identification and spread worldwide of coffee plant varieties resistant to leaf rust, published in Trends in Plant Sciences[26], and on biocontrol potential by complex bird communities, published in Molecular Ecology[27], among many others. These efforts led to the submission of a petent on 16/12/2022, with an invention related to halogen regulation in plants, which was the first ever produced by BIOPOLIS researchers. Another potential patent is currently under evaluation by the Knowledge Transfer Office, this time on coffee genomics.

"more efficient approaches for innovation management and knowledge transfer adapted to the Portuguese reality"

Progress in this expected impact is being achieved by finding and implementing in articulation with the Porto Business School (PBS), more efficient approaches to innovation management and knowledge transfer requires a strategy that addresses the specific needs and challenges of the local innovation ecosystem. Highlights during RP3 included the organisation of a training program (IGNITION PROGRAMME) by PBS in collaboration with UC Berkeley Innovation Group, to foster entrepreneurship of the BIOPOLIS community and beyond, which was attended by 56 participants. Also relevant is the increasing awareness and training of BIOPOLIS researchers on IP Rights, which has been enhanced through the Innovation Value program. This has involved several information sessions and two editions of a training program in Intellectual Property, which were attended by 43 researchers from 21 groups. The impact of these initiatives is underscored by the submission during RP3 of the first two patents from BIOPOLIS researchers.

"improve their chances to seek competitive funding in international fora"

BIOPOLIS has greatly increased its ability to access competitive international funding, namely through Horizon Europe, has thoroughly described in Section 1.3.2. The organization's growing involvement in consortia with European excellence centres exemplifies this impact, with participation in projects such as BGE, ANERIS, WildE, and SELINA. These projects span crucial areas such as Biodiversity, Ecology & Conservation, Ecosystems & the Environment, and Biodiversity, Ecology & Conservation, reflecting BIOPOLIS's commitment to addressing pressing environmental challenges. Importantly, BIOPOLIS

[25] https://www.science.org/doi/full/10.1126/sciadv.abi8584

[26] https://www.cell.com/trends/plant-science/fulltext/S1360-1385(23)00059-6

[27] https://www.cell.com/trends/plant-science/fulltext/S1360-1385(23)00059-6

greatly increased the submissions to Horizon Europe funding during RP3, totalling 19 proposals. It is also worth emphasizing that BIOPOLIS researchers coordinated the consortia producing four large proposals, , which happened for the first time since the creation of CIBIO about 20 years ago, and it underscores the transformative impact of the Teaming project. Although the outcome of these submissions will only be known during RP4, this growing involvement and progressively more important roles taken in large European consortia, clearly underscore the increased scientific visibility of BIOPOLIS and its researchers, and thus their capacity to attract competitive funding internationally.

"over the medium to long term achieve a measurable and significant improvement in terms of research and innovation culture"

This overarching impact of the project is being achieved through multiple activities, involving in particular the ambitious programme of communication, dissemination and exploitation (WP6), which is allowing BIOPOLIS to reach out to a very wide range of targeted audiences. Particularly relevant in this respect during RP3 is the continued partnerships with the national newspaper "Público", which involves the special section "Azul" on environmental themes (Details in Deliverable 10.2) and other collaborations, and it will be further developed in RP4 through "The Diary of a Scientist[28] project (see Section 2.2). This is part of a consistent strategy of BIOPOLIS to feature regularly in the national and international media, which involves the regular production of press releases as well on special events and high-profile scientific papers. Also important for the communication and dissemination strategy has also continued to be the regular publication of books through the BIOPOLIS Publishing House "Arte e Ciência", which besides the Portuguese versions of scientific books by BIOPOLIS researchers, is publishing key international dissemination books. An example during RP3 includes "Uma Ténue Luz na Escuridão", by Richard Dawkins. These and related activities are allowing BIOPOLIS to reach the general public, as well as more specialised audiences, contributing to enhance the visibility of biodiversity research, conservation, and sustainable use in the public agenda.

Impacts on research and innovation culture are also being achieved through actions related to the education and training programme (WP5), which have been detailed in Deliverable 5.2. Besides the activities already reported, it is noteworthy during RP3 the creation and accreditation by Portuguese and Angolan governmental agencies of a Transnational MSc Course (double degree), to be developed jointly by the University of Porto and University Mandume Ya Ndemufayo (Angola) under the coordination of BIOPOLIS. The course will start in RP4 and will be taught in Portuguese, mainly by BIOPOLIS researchers, and it is expected to have a strong impact in terms of capacity building and the training of a new generation of biodiversity researchers and practitioners in Angola. Other important activities include relevant for these impacts is the strong engagement of BIOPOLIS in Living Science (Ciência Viva) centres[29], mainly related to the participation as associate and member of the directive board in the Living Science Centre of Vila do Conde[30]. There continued to be positiveimpacts on

[28] https://cibio.up.pt/en/media/biopolis-cibio-launches-the-project-the-diary-of-a-scientist/
[29] https://www.cienciaviva.pt/en/
[30] https://viladoconde.cienciaviva.pt/

children and their teachers, involving partnerships with schools from municipalities close to BIOPOLIS regarding the development of educational activities that will allow to improve environmental awareness and help the engagement of civil society in biodiversity conservation from the very beginning.

Finally, positive impacts on research and innovation culture have continued to be achieved through the partnerships established with corporations and other stakeholders, namely through the Affiliates Programme (WP7) and the development of collaborative research projects (WP8). This is particularly important in a country like Portugal, where corporations, the public administration and other stakeholders often have a small incorporation of research and innovation developments in their activity. In this context, the partnerships established with BIOPOLIS are demonstrating to corporate professionals the value of investing scientific research in the domains of biodiversity and ecosystems, which lead to the development of innovations for cost-effective monitoring, minimisation and mitigation of impacts.

"*reinforce the potential impact of the new/upgraded Centre of Excellence in terms of sustained excellence*"

BIOPOLIS is having major impacts in terms of sustained excellence, as illustrated by the indicators detailed in section 1.4.2. Among the numerous performance indicators, it is worth noting the publication by BIOPOLIS researchers of >700 scientific papers, including regular publications in high-impact multidisciplinary journals (SCI impact factor >10) and highly cited articles. These papers not only corroborate the high and increasing scientific performance of researchers, but also contribute to enhance the dissemination of BIOPOLIS research to a wider audience. Additionally, BIOPOLIS's involvement with key roles in prominent international projects, such as ANERIS[31], BGE[32], NaturaConnect[33], and WildE[34], among many others, also highlight the impact in terms of sustained excellence. This indicates the increasing participation in international consortia, and thus the establishment of strong partnerships and networks, as well as a regular flow of research funding, which are key for achieving sustained excellence.

"*benefits for the internationally leading scientific institutions*"

The project is having several impacts on the partner from the advanced country, the University of Montpellier, which mostly involve the development of new collaborations, networking, training programs, and funding for contracting and supporting the work of PhD students and post-doctoral researchers. The highlights for RP3 are described in 1.1.6 and are briefly summarised here: (i) award of PhD students and post-docs through the Teaming funding, with joint supervision of BIOPOLIS and UM researchers; (ii) participation in 10 projects for Education, Research & Outreach, selected through

[31] https://aneris.eu/partners

[32] https://biodiversitygenomics.eu/

[33] https://naturaconnect.eu/

[34] https://www.wilde-project.eu/about

open calls and jointly funded by UM and BIOPOLIS; (iii) creation of a database to trigger co-supervision by UM and BIOPOLIS researchers of PhD students to be supported by FCT; (iv) co-organization and participation at two TiBE congresses at Campus de Vairão.

1.4.2. Key Performance Indicators

As in the previous reporting periods, the implementation of BIOPOLIS has been regularly monitored and evaluated, based on key performance indicators (KPIs). According to the DoA of the revised GA, the KPIs previously defined were revised at the end of RP3 and reported in D9.4. During this revision, most KPIs remained unchanged or underwent minor clarifications, and a few were modified to better reflect the activity of BIOPOLIS. There were also two KPIs eliminated because they were found redundant, while another two were added to indicate important aspects of BIOPOLIS activity that were missing. Targets for the new and revised KPIs were defined for the short-, medium- and long-term, using the periods adjusted to account for the one-year extension of project's implementation, already reported in D10.2: short term – Years 1 to 3 (01/10/2019 to 30/09/2022); Medium term – Years 4 to 7 (01/10/2022 to 30/09/2026); and Long Term – Years 8 to 10 (01/10/2026 to 30/09/2029).

Table 2. Final set of KPIs and results obtained for 2 periods of the project. Results obtained for Medium-term are accounted for until March 31st 2024, and represent therefore the results obtained in 1.5 years.

<table>
<tr><th rowspan="2">KPI</th><th rowspan="2">Baseline</th><th colspan="2">Short-Term Performance (Y1-3)</th><th colspan="2">Medium-Term Performance (Y4-7)</th></tr>
<tr><th>Target</th><th>Achieved</th><th>Target (4 years)</th><th>Achieved 31st March 2024 (1.5 years)</th></tr>
<tr><td colspan="6">I. EXCELLENCE TOWARDS INNOVATION</td></tr>
<tr><td colspan="6">(i) Tap into Portugal´s potential in Research and Innovation</td></tr>
<tr><td>I1.1. Financial self-sufficiency (balance between revenues and costs)</td><td>n.a.</td><td>Nearly neutral</td><td>Positive</td><td>Positive</td><td>Positive</td></tr>
<tr><td rowspan="2">I1.2. No. of projects, and amount funded, by a foreign agency (non-UE) or private entity
(previously: Annual No. of projects funded by a foreign agency (non-UE) or private entity)</td><td rowspan="2">3</td><td>4</td><td>2
(previously 7)</td><td rowspan="2">5
0.45M€</td><td rowspan="2">7
0.2M€</td></tr>
<tr><td colspan="2">0.15M€ (baseline)</td></tr>
<tr><td>I1.3. Percentage of funding for research obtained from EU programmes</td><td>5%</td><td>20%</td><td>13%</td><td>30%</td><td>27%</td></tr>
<tr><td rowspan="2">I1.4. No. of Invited Chairs and other collaborations, and amount funded
(previously: No. of Invited Chairs funded by business corporations)</td><td rowspan="2">5</td><td>10</td><td>9
(previously 5)</td><td rowspan="2">12
4M€</td><td rowspan="2">6
1.48M€</td></tr>
<tr><td colspan="2">2.72M€ (baseline)</td></tr>
</table>

KPI	Baseline	Short-Term Performance (Y1-3)		Medium-Term Performance (Y4-7)	
		Target	Achieved	Target (4 years)	Achieved 31st March 2024 (1.5 years)
I1.5. Total amount of services and consultancy revenue	**New KPI**	2.45M€		9.5M€	**3.2M€**
(ii) Build up Human and logistic capacities					
I2.1. No. of users of platform facilities *(previously: Annual No. of private or public academic and business using the platform facilities)*	5	8	**31** *(previously 22)*	12	**22**
I2.2. No. of courses for technology and knowledge updating *(previously: Annual No. of courses for technology and knowledge updating)*	1	4	**24** *(previously 5)*	4	**31**
(iii) Tackle cutting-edge research problems in the frontiers of current knowledge					
I3.1. No. of research projects nationally funded *(previously: Annual No. of projects in fundamental research nationally funded)*	5	10	**28**	12	**24**
I3.2. No. of research projects internationally funded *(previously: Annual No. of projects in fundamental research internationally funded)*	1	2	**4**	3	**4**
I3.3. No. of international scientific meetings organized by BIOPOLIS' researchers *(previously: Annual No. of international scientific meetings organized by CoE researchers)*	1	2	**2**	3	**3**
I3.4. No. of scientific publications in top ranked journals (SCI impact factor >10)	5	8	**45**	15	**13**
I3.5. No. of seminars in Biodiversity and Evolution	**New KPI**	**109**		160	**64**
II. EMPOWER ECONOMY AND SUSTAINABILITY FOR A BETTER SOCIETY					
(iv) Develop Solutions to Societal Challenges					
II4.1. No. of TwinLabs established in low- and middle-income countries	5	5	**7**	7	**7**
II4.2. No. of students from low- and middle-income countries enrolled in post-graduation	4	5	**8**	16	**13**

KPI	Baseline	Short-Term Performance (Y1-3)		Medium-Term Performance (Y4-7)	
		Target	Achieved	Target (4 years)	Achieved 31st March 2024 (1.5 years)
II4.3 No. of contracts with the public administration *(previously: No. of contracts with the public administration regarding biodiversity and ecosystems)*	2	4	**10** *(previously 4)*	8	**5**
II4.4 No. of contracts with actors in the agrifood sector and with SMEs *(previously: No. of contracts with key actors in the agrifood sector and with SMEs for the exploitation of results)*	0	1	**3** *(previously 0)*	3	**0**
II4.5 No. number of innovative solutions developed to address environmental challenges	1	2	**2**	4	**This KPI was removed**
(v) Enhance appreciation of science, biodiversity and ecosystems by the society					
II5.1. No. of articles on news outlets about BIOPOLIS activities	1	3	**22**	6	**15**
II5.2. No. of scientific dissemination publications edited or authored by BIOPOLIS	1	3	**4**	6	**6**
II5.3. No. of non-academic people involved in scientific outreach activities or enrolled in exchange training programmes with business, administration, and other non-academic entities *(previously: No. of non-academic people involved in scientific outreach activities or enrolled in exchange training programmes with business and industry)*	8	15	**1** *(previously 4)*	20	**1**
II5.4. No. of joint activities with regional and local authorities on societal issues	2	4	**5**	10	**1**
II5.5. No. of outreaching events organised for the general public and number of participants	2/2000	4/6000	**6/6682** *(previously 2/6600)*	5/8000	**5/5500**
(vi) Promote specialised jobs, economic growth and investment					

KPI	Baseline	Short-Term Performance (Y1-3)		Medium-Term Performance (Y4-7)	
		Target	Achieved	Target (4 years)	Achieved 31st March 2024 (1.5 years)
II6.1. No. of patents, open innovative solutions, and other research outputs that are exploited *(previously: No. of patents, open innovative solutions, technical guidelines, and manuals derived from BIOPOLIS research)*	1	2	**0** *(previously 4)*	5	**4**
II6.2. No. of stakeholders enrolled in BIOPOLIS' Affiliates Programme *(previously: No. of stakeholders enrolled in the CoE's Affiliates Programme)*	3	10	**0**	18	**0**
II6.3. No. of innovative and marketable outputs *(previously: No. of innovative and marketable outputs of partnerships with business corporations)*	2	6	**4** *(previously 0)*	15	**17**
II6.4. No. of new businesses (start-ups and spinoffs) *(previously: No. of new businesses, start-ups and spinoffs initiated)*	2	4	**1**	8	**1**
II6.5. No. of Invited Chair established by private corporations	3	4	**5**	8	**This KPI was removed**
III. INTERNATIONALIZATION IN RESEARCH AND TRAINING					
(vii) Raise Critical Mass and international visibility					
III7.1. No. of new top-ranked researchers attracted	2	5	**4**	8	**4**
III7.2. Percentage of employees from aboard *(previously: Percentage of permanent staff from abroad)*	10%	15%	**10%**	20%	**18%**
III7.3. Percentage of BIOPOLIS' collaborators enrolled in mobility programs *(previously: Percentage of the staff enrolled in mobility programs)*	1%	2%	**1%**	5%	**4%**
(viii) Improve international experience and networking capacities					
III8.1. No. of collaborations with foreign top ranked institutions	1	3	**10**	6	**6**
III8.2. No. of international consortia leaded by BIOPOLIS	1	1	**1**	2	**4**

KPI	Baseline	Short-Term Performance (Y1-3)		Medium-Term Performance (Y4-7)	
		Target	Achieved	Target (4 years)	Achieved 31st March 2024 (1.5 years)
III8.3. % of post-graduation students from other nationalities	10%	15%	**25%**	25%	**48%**
(ix) Train a new generation of Highly Skilled Researchers					
III9.1. No. of new students enrolled in BIOPOLIS' post-graduation programmes *(previously: No. of students annually enrolled in the CoE's post-graduation programmes)*	24	35	**114** *(previously 20)*	60	**87**
III9.2. No. of doctoral thesis submitted *(previously: No. of doctoral thesis submitted per year)*	12	14	**10**	20	**14**
III9.3. No. of employees from national or international organizations trained at BIOPOLIS	6	12	**26**	20	**25**

An attentive analysis of the results presented above leads to the conclusion that BIOPOLIS is performing well in the vast majority of areas that are being monitored.

For Pillar I, Excellence Towards Innovation, where the impact for 3 strategic objectives is being monitored by a total of 12 KPIs (of which 2 are new), one can observe that the vast majority presents a result for the first period (short-term) that is higher than the target that was established initially. Concerning the current period, the results obtained so far are either above the target, or well-proportioned when the current achievement is compared to the target for a total of 4 years taking into account that only 1.5 years have elapsed. Targets that have not been fully achieved in the first period (I1.2, I1.3 and I1.4), some of which because the activities were highly impacted by the difficulty of engaging with stakeholders during the COVID-19 pandemic are also currently well on track to reach the target at the end of the current period.

On Pillar II, Empower Economy and Sustainability for a Better Economy, the impact for 3 other strategic objectives is now being monitored by 13 KPIs, and not 15, because 2 were found to be redundant and were removed. The same general conclusions as for the KPIs of Pillar I can be drawn, with a few exceptions. KPI II5.3 is performing below the expected, and efforts will be needed to involve more non-academic people in outreach activities. The Affiliates Programme is not at full speed yet (discussed in Deliverable 7.2 -1st Review of the Affiliates Programme), and that is why KPI II6.2 results have not reached the targets. Since the Affiliates Programme will be creating a positive feedback loop on several KPIs (II6.1, II6.3, II6.4 and even II5.3 and II5.4), many of these show results below the expectations. This low performance is expected to be caught up in the following years.

Last but not least, on Pillar III, Internationalization in Research and Training, a total of 9 KPIs is being monitored to measure impact on 3 strategic objectives. All KPIs in this group are performing quite well: a majority of them has reached or is above the expected target (KPIs III8.1, III8.2, III8.3, III9.1 and III9.3) and the others present results that are again well-proportioned at this stage of the current period.

1.5. Human Resources Strategy of BIOPOLIS

The Human Resources Strategy (HR) for BIOPOLIS was produced during RP1 and implemented thereafter. However, during RP3 there were major improvements in the management of HR, to the benefit of researchers and other staff, due to the upgrade and restructuring of the HR Office (see Section 1.1.4). This was leveraged by the hiring of the Head of the Human Resources (HR) Office (Ana Campos), who started working at BIOPOLIS on 01/10/2022. Highlights during the period included the review and enforcement of compliance with HR legal obligations and the requirements of funding entities, such as the production and implementation of the Code of Conduct to prevent and combat harassments, the production and implementation of the Gender, Equality, Diversity and Inclusion Plan, and the generalization of Occupational Health. Work was also undertaken for obtaining the HRS4R award, with support from the University of Montpellier, and the process submitted to the certification agency at the very beginning of RP4 (05/04/2024). A Committee for the Quality of Life at Work and Social Action (QoL) was established and started operating, involving members of the staff elected through secret poll, representing different professional categories (including staff, researchers at different career levels and PhD students). An online survey to the staff and collaborators of BIOPOLIS was conducted, focusing on working and research conditions (December 2022), steered by a group of researchers in articulation with the HR Office. The results of the survey have been used by the QoL to produce an Action Plan, which was submitted as part of the HRS4R award.

The HR Strategy also included the support early-career researchers, through the post-doctoral training programme established and implemented in the scope of T5.3 (WP5), which was designed to provide training and development, coaching and mentoring opportunities. During RP3, the programme included the organisation of regular training courses, with a total of ## advanced courses, workshops and summer schools offered in 2018-23. The programme also involved the integration of early-career researchers in research groups under the mentorship of a more senior scientist, where they received support to develop their post-doctoral scientific career towards independence. They were also provided with opportunities for attending congresses and other scientific events, networking, lab and field training, among others. Early-career researchers were also supported by more senior researchers in the preparation of research proposals, namely the small exploratory projects funded by FCT. Partnership with the University of Montpellier in the scope of the BIOPOLIS Teaming programme also enhance the opportunities to early-career researchers, through two calls (2022,2023) for post-docs supported by UM, and a call for small grants dedicated to Education, Research and Outreach.

BIOPOLIS has also continued to promote researcher career development and the integration of researchers into permanent positions, while accounting for the limitations and unpredictability of

research funding from public sources in Portugal. The objective has been to address precarity in scientific employment and facilitate career progression within a merit-based framework, aiming at promoting a progressive transition from temporary to permanent contracts, and thus establishing a dedicated and highly motivated research workforce. A primary axis to promote this strategy has been concentrated in the increase and diversification of funding sources, in particular through the of large projects funded by the European Commission, the establishment of invited chairs and problem-solving research programmes with the private sector, and the provision of services (details in Sections 1.2 and 1.3). As described above, this strategy has proved highly successful in increasing the financial sustainability of BIOPOLIS and thus their capacity to progressively provide permanent contracts to researchers. Based on this, BIOPOLIS expects to increase the number of permanent research positions in RP4 from their relatively low number at present, benefiting from the three positions awarded by FCT in the scope of the Associate Laboratory funding (CEEC LA), the new FCT Tenure Track Programme (8 positions submitted in the 2024 call and a minimum of 3 planned for the 2025 call), and the additional funding obtained from different sources.

Finally, during RP3 BIOPOLIS underwent a major increase in its staff, reaching a total of 226 employees. From these, 132 are researchers, 60 technicians and 34 support staff. This has resulted from a continued effort of BIOPOLIS to reinforce its work force, with a strong attention given to enhance its administration and technical support staff (see Section 1.1.4). This was needed due to the strong increase in BIOPOLIS activity during this period, which required the hiring of 62 staff members (Table 3). There were also many work contracts celebrated with researchers at diverse career stages (from R1 to R4), either through recruitment processes conducted directly by BIOPOLIS or through external recruitment associated with FCT funding programmes (details in Table 4). From the 78 researchers contracted, a total of 15 had no previous link with the institution, while another four were former researchers that returned after >5 years away from the institution. It should be noted that part of the contracts were obtained through FCT's CEEC individual contracts programme, in which BIOPOLIS supports applications and is the hosting institution of candidates, but the selection process is made by an international panel established by FCT. The successful candidates then celebrate 6-year work contracts with BIOPOLIS, which are funded through a framework programme established between BIOPOLIS and FCT. Additional funding to research contracts was provided by FCT through the CEEC Institutional and CEEC LA programmes, but in those cases the recruitment was conducted directly by BIOPOLIS. Recruitment processes at BIOPOLIS follow all requirements of applicable legal frameworks and involve open, transparent, and merit-based selection processes. Advertisement follows the best international practice and Portuguese legislation for the recruitment of Researchers, and the evaluation follows the (European) Code of Conduct for the Recruitment of Researchers. During RP3 BIOPOLIS also awarded 23 fellowships through open independent calls, including 6 to MSc students, 11 to PhD students, and 6 to post-docs.

Table 3. Administration and Technical Support staff contracted by BIOPOLIS during the 3rd reporting period. For each staff member, we indicate the funding source, the dates of contract (beginning and end, if in RP3), and the professional category.

Name	Funding source	Date of contract	Category
Ana Campos	BIOPOLIS TEAMING	1st October 2022	HR Officer
Tatiana Coelho	BIOPOLIS TEAMING	6th October 2022	Project Support Officer
José Reis	BIOPOLIS TEAMING	1st January 2023	Senior Organizational Strategy Officer (20%)
Joana Alves	BIOPOLIS TEAMING	1st January 2023	Legal Officer
Vasco Freitas	Overheads funds	1st January 2023	Driver
Fernando Cunha	Overheads funds	1st January 2023	Maintenance technician
José Paulo Rodrigues	FUI FCT	1st March 2023	Network Adm.
Paula Costa	EBM RP	1st April 2023	Project manager (60%)
Rustan Varinda	BIOPOLIS TEAMING	11th April 2023	Helpdesk
Marta Pereira	BIOPOLIS TEAMING	1st May 2023	Junior Accountant
João Monteiro	BIOPOLIS TEAMING	1st May 2023	Junior System & Network Adm.
Miguel Iglesias	Serra da Aboboreira RP	1st October 2022 to 30th April 2023	Field technician
Jaime Sousa	Fauna Inventory RP	1st November 2022	Field technician
Sofia Granja	FUI BASE	15st November 2022	Lab technician
Sophia Rosa	Fauna Inventory RP	1st December 2022 to 31st May 2023	Field technician
Martina Panisi	Fauna Inventory RP	1st December 2022	Field technician
Yuri Simone	Fauna Inventory RP	1st January 2023	Field technician
Juliana Alves	HybridChange – PTDC FCT	1st January 2023 to 31st March 2023	Lab technician
Angelina Gonçalves	Complementary funding: TROPIBIO	1st January 2023 to 16th January 2023	Field technician
Maria João Magalhães	Invcontinuum & ANTROPOPHIBIAN – PTDC FCT	1st February 2023	Lab technician
Manuel Rebelo	URBiNAT EU	1st February 2023 to 31st March 2024	Research technician
Diogo Ferreira	Fauna Inventory RP	1st February 2023	Field technician
Fernando Silva	Complementary funding: TROPIBIO	1st February 2023 to 31st August 2023	Lab technician
André Liz	Fauna Inventory RP	1st March 2023	Field technician
Ana Coelho	Fauna Inventory RP	1st April 2023	Field Technician
Vasco Fernandes	Complementary funding: TROPIBIO	1st April 2023 to 30th November 2023	Field technician
Laura Bosco	Complementary funding: TROPIBIO	1st September 2023 to 30th September 2023	Field technician
Fábio Amaral	Complementary funding: TROPIBIO	1st September 2023 to 30th September 2023	Field technician

Name	Funding source	Date of contract	Category
Carlos Pacheco	Convenio Junta Estremadura	1st May 2023	Field technician
Pedro Oliveira	AGROLIZARDS+ PTDC FCT	1st May 2023 to 30th September 2023	Field technician
Anastasios Limnios	AGROLIZARDS+ PTDC FCT	17th May 2023 to 16th October 2023	Field technician
Mar Caballero	ANERIS EU	1st June 2023	Lab technician
Catarina da Silva	ClimateMedia PTDC FCT	1st June 2023	Field technician
Daniel Gaspar	ARIES PTDC FCT	1st June 2023	Field technician
Luís Venâncio	Convenio Junta Estremadura	1st July 2023	Field technician
Nina Serén	Acacia RP	1st July 2023	Lab technician
Mariana Almeida	CTM RP	1st August 2023 to 31st January 2024	Lab technician assistant
Fátima Santos	CTM RP	1st August 2023	Lab technician assistant
Joel Neves	UNRAVEL-PTDC FCT	1st August 2023 to 31st January 2024	Lab technician
Joana Pinto	BGE EU	1st September 2023	Lab technician
Marta Oliveira	LWW_Life Wild Wolf	1st October 2023	Field technician
Cátia Chaves	BGE EU project	1st October 2023	Lab technician
Ntsay Zacarias	OceanLog – PTDC FCT	1st November 2023	Software Developer
Nuno Pereira	LWW_Life Wild Wolf	1st November 2023	Field technician
Ana Ramos	AGROLIZARDS+ PTDC- FCT	1st November 2023	Lab technician
Sílvia Pina	BGE EU project	1st November 2023	Lab technician
Rui Andrade	BGE EU project	1st November 2023	Field technician
Ana Luísa Mano	LifeWatch ERIC	1st December 2023	Lab technician
Nicole Pedro	FUI FCT	1st January 2024	Lab technician
Nadine Pires	Lightsourcebp RP	1st January 2024	Field technician
Gabriela Rodrigues	BIOINTERACT PTDC	1st January 2024	Field technician
Raquel Oliveira	RSG - Terrestrial Habitats RP	1st January 2024	Field technician
João Falé	RSG - Terrestrial Habitats RP	1st January 2024	Field technician
Joana Marcelino	SONAE MC RP	1st January 2024	Research technician
Carlos Vila-Viçosa	NAVIGATOR RP	1st January 2024 to 28th February 2024	Field technician
Siavash Ghoddousi	Predator-Prey Model RP	1st January 2024	Field technician
Mariana Almeida	CTM RP	1st February 2024	Lab technician
Ana Teresa Pinto	wildE EU project	1st February 2024	Field technician
Jóni Vieira	wildE EU project	1st February 2024	Field technician
Marcello Bilancioni	RSG - Terrestrial Habitats RP	1st February 2024	Field technician
João Pedro Martins Nunes	NAVIGATOR RP	1st February 2024	Lab technician
Bruno Herlander Martins	KSA RP	1st March 2024	Field Technician

Table 4. Researchers contracted by BIOPOLIS during the 3rd reporting period. For each researcher, we indicate the funding source, the dates of contract (beginning and end, if in RP3), the professional category, and whether the researcher is considered a new member of the staff or not (New Staff). New staff members (Yes) are those that have never been contracted by BIOPOLIS (or ICETA) or that have been away for >5 years).

Name	Funding source	Date of contract	Category	New staff
Inês Catry	CEEC FCT 2021	1st October 2022	Assistant researcher	No
Pierre Barry	Invcontinuum PTDC – FCT project	1st October 2022	Junior researcher	Yes
João Pimenta	BGE EU project	1st November 2022	Junior researcher	No
João Luís Queirós	Complementary funding: CCDRN	1st November 2022	Junior researcher	No
Fulvio Licata	Fauna Inventory RP	1st November 2022	Junior researcher	No
Marco Basile	Fauna Inventory RP	1st November 2022 to 31st December 2022	Junior researcher	Yes
Leili Khalatbari	Fauna Inventory RP	1st November 2022 to 30th April 2023	Junior researcher	No
Bárbara Santos	Fauna Inventory RP	1st November 2022 to 30th April 2023	Junior researcher	No
Gholam Yusefi	Fauna Inventory RP	1st November 2022 to 31st July 2023	Junior researcher	No
Marisa Vedor	CEEC FCT 2021	10th November 2022	Junior researcher	No
Filipe Dias	Complementary funding: CCDRN	1st January 2023	Junior researcher	No
Nuno Fonseca	BIOPOLIS Teaming	1st January 2023	Coordinator researcher	Yes (let in 2020)
Ricardo Ceia	Forest Biodiversity Lab RP	1st January 2023	Junior researcher	Yes
Hugo Rebelo	Complementary funding: CCDRN	1st February 2023 to 31st August 2023	Assistant researcher (20%)	No
Giulia Simbula	AGROLIZARDS+ PTDC – FCT project	1st February 2023	Junior researcher	Yes
Laura Cortazar	BGE EU project	1st February 2023	Junior researcher	Yes
Nuno Monteiro	Complementary funding: CCDRN	1st March 2023	Assistant researcher	No
João Pedro Marques	BGE EU project	1st March 2023	Junior researcher	No
Ana Maria Pinhão	Complementary funding: CCDRN	1st March 2023	Junior researcher	No
Marta Marmelo	Cooperative partner ERC EU	1st March 2023	PhD student	Yes
Helena Hespanhol	FUI FCT	1st April 2023	Junior researcher	No
José Gonçalo Curveira-Santos	Complementary funding: TROPIBIO	1st April 2023	Junior researcher	Yes

Name	Funding source	Date of contract	Category	New staff
Marion Tafani	Complementary funding: TROPIBIO	1st April 2023	Junior researcher	Yes
Rocío Vilela	ANERIS EU project	1st May 2023	Junior researcher	Yes
Manuel Curto	FUI FCT	1st May 2023	Junior researcher	Yes (left in 2014)
Alexandra Tyers	FUI FCT	1st May 2023	Junior researcher	Yes
Liliana Silva	FUI FCT	1st May 2023	Junior researcher	No
Ana Rita Seabra	FUI FCT	1st May 2023	Junior researcher	No
Leili Khalatbari	Acacia RP	1st May 2023	Assistant researcher	No
Bárbara Santos	Acacia RP	1st May 2023	Assistant researcher	No
Nuno Santos	Complementary funding: CCDRN	1st June 2023	Assistant researcher	No
Clara Grilo	CEEC FCT 2022	1st June 2023	Assistant researcher	Yes
Gonzalo Sandoval	O2Shark – PTDC FCT project	1st July 2023	Junior researcher	No
Diana Lobo	BIODIVERSA FCT project	1st July 2023	Junior researcher	No
Ana Assunção	CEEC_Inst 2nd edition FCT	1st July 2023	Assistant researcher	Yes (left in 2014)
Cátia Monteiro	ANERIS EU	1st August 2023	Junior Researcher	No
Ana Veríssimo	CEEC FCT 2022	1st August 2023	Assistant researcher	No
Sílvia Carvalho	CEEC FCT 2022	1st August 2023	Assistant researcher	No
Rita Rocha	CEEC FCT 2022	1st August 2023	Assistant researcher	No
Joana Ribeiro	CEEC FCT 2022	1st August 2023	Junior researcher	No
Sandra Trigo	CEEC FCT 2022	1st August 2023	Assistant Researcher	No
Fabiana Neves	CEEC FCT 2022	1st August 2023	Junior researcher	No
Maria Raquel Godinho	CEEC FCT 2022	1st August 2023	Principal researcher	No
Gonçalo Cardoso	CEEC FCT 2022	1st August 2023	Principal researcher	No
Gholam Yusefi	CEEC FCT 2022	1st August 2023	Junior researcher	No
Carlos Gois Marques	CEEC FCT 2022	1st August 2023	Junior researcher	Yes
Tereza Almeida	ZoonoMed – PTDC FCT	1st September 2023	Junior researcher	No

Name	Funding source	Date of contract	Category	New staff
Raquel Iglesia	MS-CA EU	1st September 2023	Junior researcher	No
Cândia Vale	ROCKinBIO - PTDC FCT	1st September 2023	Junior researcher	Yes (left in 2017)
Ana Paula Senra Portela	BryoMicroClim PTDC FCT	1st October 2023	Junior researcher	No
Luís Ceríaco	BIOPOLIS TEAMING	9th October 2023	Assistant Researcher	No
Diogo Pavão	Azores Protocol – regional funds	1st November 2023	Junior researcher	No
João Gameiro	Convenio Junta Estremadura	1st December 2023	Junior researcher	No
Francesco Valerio	Convenio Junta Estremadura	1st December 2023	Junior researcher	No
Ana Ceia-Hasse	Natura Cooect EU project	1st December 2023	Junior researcher	No
Jorge Campa	ERC EU project	1st January 2024	Junior researcher	Yes
Ricardo Martins	REN – invited Chair	1st January 2024	Junior researcher	No
Paulo Pereira	IRIS PTDC FCT	1st March 2024	Junior researcher	No
Catarina Teixeira	ARBORETO – invited Chair	1st March 2024	Assistant researcher	Yes
Max Tercel	ERA CHAIR TROPIBIO	1st March 2024	Assistant researcher	Yes
Carlos Vila-Viçosa	FUI FCT	1st March 2024	Junior researcher	No
Javier Lobon Rovira	FUI FCT	1st March 2024	Junior researcher	No

Table 5. Fellowships awarded by BIOPOLIS during the 3rd reporting period. For each person, we indicate the funding source, the dates of fellowship (beginning and end, if in RP3), and the type of fellowship.

Name	Funding source	Date of contract	Fellowship
Telma Nunes	EXPL FCT	1st October 2022	Master student grant
Maria Luísa Rodrigues	CONGEN research group budget	1st April 2023 to 30 June 2023	Master student grant
Tatiana Maia Silva	CONGEN research group budget	1st June 2023	Master student grant
Barbara Ribeiro	Future4MAKOS PTDC FCT	1st February 2024	Master student grant
Maria Eduarda Vieira	Future4MAKOS PTDC FCT	1st February 2024	Master student grant
Leandro Pires	TelSUMORE – PTDC FCT	1st March 2023 to 29th February 2024	Master student grant
Joana Veríssimo	Complementary funding: CCDRN	15th November 2022 to 30th November 2023	PhD grant
Mariana Mota	Complementary funding: CCDRN	1st December 2022 to 30th November 2023	PhD grant

Name	Funding source	Date of contract	Fellowship
Ana Medeiros	Complementary funding: CCDRN	1st January 2023 to 30th November 2023	PhD grant
Ângelo Sil	SELINA EU	1st January 2023	PhD grant
Luís Pereira	OceanLog – PTDC FCT	1st June 2023 to 31st January 2024	PhD grant
Cristiana Alves	SEVERUS.PT – PTDC FCT	1st July 2023	PhD grant
Marco Dinis	ReNAT PTDC FCT	1st October 2023	PhD grant
Inês Miranda	Colour4change FCT	1st December 2023	PhD grant
Joana Veríssimo	GEPE RP	1st December 2023	PhD grant
Luís Pereira	Future4MAKOS PTDC FCT	1st February 2024	PhD grant
Mariana Mota	FUI FCT	1st February 2024	PhD grant
Ana Afonso	Complementary funding: CCDRN	1st January 2023 to 30th September 2023	Pos-doc grant
Tomé Neves	FUI FCT	1st July 2023	Pos-doc grant
Matheuw Moreira	PLACES PTDC FCT	1st December 2023	Pos-doc grant
Admire Phiri	Khointact PTDC FCT	1st March 2024	Pos-doc grant
Irfana Mqsad	Acacia Dieback RP	1st January 2024	Research grant
Lorena Rodrigues	CTM RP	1st January 2024	Research grant

Upon recruitment, strong attention and care have been placed to ensure the full integration of new BIOPOLIS workers, especially those from abroad. In particular, the best efforts have been made in order to make the new staff acquainted with all aspects of BIOPOLIS operation, including administrative and financial procedures, working conditions, lab facilities, rules, and guidelines, while ensuring the necessary counselling and assistance regarding all aspects required to work in Portugal (e.g., housing, schools, health, tax information, among other aspects).

1.6. Infrastructure and equipment

1.6.1. Overview

During RP3, there were significant developments regarding the implementation of the infrastructure and equipment components of the BIOPOLIS project (WP3). The work was developed according to strategies and plans previously approved, namely the “Management Plan of Infrastructures (including IT) and Equipment” (D3.1) and the “Plan of infrastructures upgrade and re-equipment” (D3.2). According to the DoA, the work involved several components, including the establishment and management of protocols with several institutions regarding the use and operation of research facilities (3.1), the management and monitoring of infrastructures and equipment (T3.2), the management of the IT infrastructure (T3.3), and the upgrade of infrastructures and re-equipment (T3.4). The main highlights during RP3 are related to the management of the IT infrastructure and the upgrade of infrastructure and equipment, which are briefly described below.

1.6.2. Management of the IT Infrastructure

During RP3 the IT Office was established, with one head of Office and three IT technicians (see Section 1.1.4), giving a major boost to this component of BIOPOLIS operation. The IT Roadmap was produced in the first quarter of 2023, and then the IT Office started working with the IT Committee previously established to oversee and guide the development of IT policies and procedures within BIOPOLIS, which have been produced and subsequently approved by BIOPOLIS governing bodies (e.g., Policy on policies, Account policy, password policy, asset management policy, storage space and use policy, acquisition policy, among others). An important step was the creation and implementation of an online helpdesk ticket system, which has responded to the needs of BIOPOLIS researchers and other staff. It is also relevant the support provided to a variety of needs resulting from the activity of BIOPOLIS, including the online survey/election system, online transmission of events, acquisition processes and setup of audiovisual and IT equipment, human resources management, mailing lists, collaborators database, intranet/CMS system, Google workspace, IT asset management system, monitoring of network and servers, data centre reorganisation, network services reimplementation, network (re)organisation, installation of new phones, and the ITU Information Portal. There were also important developments in the IT Infrastructure and Service deployments, including: operationalisation of the computational cluster (HPC); migration of administrative email accounts to Google Workspace; implementation of the IT Asset Management Policy; continuous development of the ITU information portal; Implementation of the storage use policy and other policies; and development and deployment of a PAD system (authorisation expense request). Importantly, a survey to the community was conducted on the use and needs of software, to guide the purchase policy of BIOPOLIS and improve TI support.

1.6.3. Infrastructure upgrade and management

Campus de Vairão

The upgrade of infrastructure was one of the key activities of BIOPOLIS during RP3, requiring a strong attention from the BoD members and the allocation of significant financial resources, as well as the time of administration and technical staff. Significant progress has been made in the work developed towards the rehabilitation and adaptation of scientific research of buildings at the complex of Quinta do Crasto, with the support of the BIOPOLIS structural matching funds (NORTE-01-0246-FEDER-000071). The work was carried out during 2022 and, mainly 2023, with its conclusion and start of operation expected during the first semester of 2024. The administration and technical support services of BIOPOLIS, together with some researchers and lab technicians, will progressively move into the new facilities at the beginning of the second semester of 2024. The work involved also the deployment of a state-of-the art lab for the analysis of ancient and environmental DNA, the most modern of its kind in the Iberian Peninsula, which will be fully operational in the second semester of 2024. There were also interventions in the Fito-labs building of Quinta do Crasto, to improve thermal conditions and thus improve operation and reduce energy costs.

Interventions were also made to improve the conditions and operation of the main building of CIBIO at Quinta do Crasto. External engineering services were contracted to evaluate the intervention needs and their costs, producing the report “Rehabilitation Project for the Roofs above the Library and the Access Staircase of the CIBIO Building”. Some of the interventions recommended were implemented to correct minor debilities related to infiltrations caused by the harsh winter of 2022/23, while more in-depth interventions will be made only in later 2024 or 2025. In addition, there was the regular maintenance of the common administration and support facilities and equipment, benefiting from the setup of the Infrastructure Office and the hiring of a new assistant technician (see Section 1.1.4). Highlights include the maintenance, overhaul, and/or replacement of all the equipment in the canteen so that it is now fully operational.

Significant investments have also been made at Campus de Vairão during RP3 to improve the molecular and genetics laboratory facilities in response to community feedback gathered particularly during the 2022 Equipment Needs Assessment. These strategic initiatives reflect our commitment to operational excellence, ensuring the highest standards of laboratory practice, and ultimately to advancing scientific research. A primary focus has been on enhancing DNA/RNA extraction, recognized as a key step for the quality of molecular and genomics data. Efforts were made to create a more sterile environment for microbial RNA/DNA processing, namely through the establishment of a dedicated room for microbial DNA extraction and by improving working conditions in the RNA laboratory. The installation of the new biosafety chambers will reduce contamination from external sources and enhance operator safety when handling microorganisms. Moreover, to mitigate extrinsic contamination risks to non-invasive and environmental samples, both DNA extraction and PCR preparation rooms have been equipped with environmentally controlled workstations, containing HEPA filters, UV air recirculation, and adjustable laminar airflow.

Field Stations

Investment on the Field Station of Mértola (EBM) progressed as expected during the current reporting period, with the rehabilitation works of EBM estimated to be concluded in the second half of 2024. The architectural and masonry components have been completed, and the specialties phase (electricity installation, telecommunications, water and sewage network, HVAC, ...) is now well underway. Field and IT equipment were acquired. The acquisition of laboratory equipment and furniture is also being concluded. The intervention involves an investment of 4.4 million euros, which is co-funded by CCDR-Alentejo through structural funds (ALT20-03-0246-FEDER-000042), and by the municipality of Mértola.

Regarding the Field Station of Branda Científica, a Master Plan was already prepared during RP2. The Contracting process is ongoing for the Preliminary Design and execution Project and technical assistance for the construction of the General Architectural Project and the Landscape Architecture/Exterior Arrangements Project. Structural funds and the municipality of Arcos de Valdevez will support the investment.

1.6.3. Equipment upgrades and management

The work towards the re-equipment of BIOPOLIS has focused on seven research platforms that are key to the development of its activities: (i) Computational platform; (ii) Omics platform; (iii) Plant and Microbiology Platform; (iv) Animal Platform; (v) Environmental and Ancient Genomics Platform; (vi) Ecology platform; and (vii) Storage platform. Purchases during this period involved nearly one million euros, and they were mostly directed at the acquiring the equipment needed to the ancient and environmental DNA lab. In addition, significant investments were made to modernise the molecular and genetic labs at the main building of BIOPOLIS, including the acquisition of automated DNA extraction and purification systems for a wide range of samples, such as KingFisher robots, and the upgrade of qualitative and quantitative instruments, such as a microplate reader, gel imaging systems and a real-time PCR thermal cycler (see also Section 1.6.2). To assure the safety and quality of samples at low temperatures, as well as to provide intervention mechanisms in the event of malfunctions, a system of data loggers for -20ºC and -80ºC freezers has recently been acquired. This is a wireless data transmission and logging system (Wi-Fi), powered by a battery, which monitors the condition of cold equipment over time and sends alerts to the responsible person. The re-equipment of BIOPOLIS during RP3 also involved the purchase and installation of IT equipment (rack servers; switches; firewalls; Wi-fi controller and wireless antennas); individual acoustic phonebooths and audio-visual equipment for the meeting room and auditorium in the main building.

2. Key aspects of the implementation for the coming period

2.1. Strategy for the upcoming period

During the fourth reporting period (RP4; 01/04/2024 to 30/09/2025), BIOPOLIS will continue implementing the Teaming project according to the specifications of the DoA of the GA, while introducing the adjustments required by the challenges and opportunities raised by ever changing national and international contexts. Moreover, BIOPOLIS will continue to implement the different strategies that have been produced since the beginning of the Teaming project and that have been submitted as deliverables to the services of the European Research Executive Agency (REA). Particularly relevant in this respect is the implementation of the Strategic Research Program, which was only approved in its final format on 07/02/2024 (Ref. Ares(2024)932963), after multiple interactions with the Project Officer (PO) and the External Panel of Experts (see Section 1.1.5). Also important are some changes to the deadlines of the deliverables due during RP4, which have been approved by the PO on 19/03/2024. Given these changes, the due dates for the deliverables scheduled for RP4 are as follow:

- D4.2 - 1st Review of the Strategic Research Programme (30/07/2025)
- D4.6 - Monitoring Report of the Ethics and Animal Welfare Guidelines (30/09/2025)
- D5.3 - 2nd Report of the Education and Training Activities (30/08/2025)
- D5.6 - Review of the Education and Training Strategy (30/09/2025)
- D7.3 - 2nd Review of the Affiliates Programme (30/09/2025)
- D8.2 - 2nd Research Funding Review (30/09/2025)
- D8.5 - 2nd Business Relations & Knowledge Transfer Activities Review (30/09/2025)
- D10.4 - 4th Implementation Report (30/09/2025)
- D10.8 - 1st Report of the external evaluation panel (30/09/2024)

All the strategies will be evaluated during implementation, and changes will be introduced if needed. Eventual modifications will be described in the next Implementation Report (30-09-2025; D10.4). The Progress Report of RP4 is due on 30/11/2025, and the corresponding review meeting will likely occur on either December 2025 or January 2026. Considering the timeline of actions in the DoA, and the different strategies and plans outlined above, the implementation strategy for each of the 11 WPs of the Teaming project is presented below:

- **WP1 - BIOPOLIS CoE Management**. Most tasks of WP1 have been totally or partly concluded (T1.1 to T1.6), or they involve mainly routine activities related to the daily administrative and financial management of BIOPOLIS (T1.7 to T1.9). However, important actions will be undertaken to improve the governance and management of BIOPOLIS, and to ensure compliance with the recommendations of the External Evaluation Panel received on 07/02/2024 (Ref. Ares(2024)932963). Highlights, include the revision of the by-laws of BIOPOLIS, to improve the

representativity, inclusiveness and operation of the Science Council (SC) and the International Advisory Boards (IABs), while aligning the governance structure with the national legal requirements for scientific institutions (Article 23.º a) of DL no. 63/2019, of 16th May). Following these changes, the SC will become fully established and operational, and the activity of the IABs is expected to expand. The approval of the revised by-laws is planned to happen during the General Assembly (GA) scheduled for 17/05/2024. The agenda of this GA also includes the election of the three missing members of the BIOPOLIS Supervisory Board, which in this way will increase from the current four to seven members, thereby becoming complete. Work will also be developed to expand the memberships of BIOPOLIS and thus increase the representativity of different sectors of the society. The approval of new founding associates is already scheduled for the next GA. Regarding the administration and financial management, the work will follow the strategy previously approved (D1.3). Important planned actions include the preparation of the budget and activity plan for 2025 and 2026, to be approved by the Supervisory Board, and the annual report and accounts for 2024 and 2025, to be approved by the General Assembly (T1.6-T1.8). Given the growth of BIOPOLIS activity, mainly at the international level, the organizational structure of BIOPOLIS will be monitored and improved as needed to meet the administrative and financial challenges. Particularly attention will be given to treasury management and to enforce stronger processes of management control and planning over various time scales (T1.7).

- **WP2 - Recruitment and Management of Human Resources**. Under the coordination of the Head of the HR Office, the human resources strategy (D2.1) (T2.1) will continue guiding the management of HR during RP4 (T2.5). The HR Officer will closely monitor and evaluate the need for additional recruitment of administration (T2.2) and technical (T2.3) staff. The need for a health & safety technician and eventually to increase the HR and Legal team is already on the table (T2.2). Hiring of HR will continue to be supported with funds from the Teaming project and also by a range of additional funding sources (FCT, HORIZON, among others). One of the pillars of the HR Strategic plan is to attract and retain excellent researchers (T2.4). To achieve these objectives, several actions have already been implemented (T2.5) and others are planned: (a) starting the implementation of the HRS4R action plan even before the formal approval – process submitted March 2024; (b) implementation of priority actions proposed by the Committee of the Quality of Life to the BoD that includes the revision of the GEP and its action plan; (c) to set up an international welcome office, as well as regular onboarding sessions and a handbook (T2); (d) development of a new tool of job opportunities improving attractiveness of job adverts and an upgrade of the evaluation of applicants, as well as finishing the web-based tools for people management (T6). in collaboration with IT) and HR procedures; (e) definition of benefits, bonus and allowances scheme for researchers (T5); (f) regular health & safety training sessions (T4i); (g) Internal Fellow's regulation that allows us to have more flexibility beyond FCT rules; (h) Establishment of an appraisal system for researchers; (i) Code of Conduct to prevent corruption and promote ethical behaviour at work and a Whistleblower Channel. Funding opportunities will continue to be sought to attract and retain top-level researchers to BIOPOLIS (T2.4). In addition,

work will be undertaken to foster a progressive transition of researchers from temporary to permanent contracts, thereby reducing precarity in scientific employment. This includes the application of BIOPOLIS to the 2nd call of the FCT Tenure programme funding permanent contracts, as well as the opening of new permanent positions through the CEEC LA programme and other funding instruments. A new online survey to the staff and collaborators of BIOPOLIS will be conducted at the beginning of RP4, and the results will be used to further improve working and research conditions.

- **WP3 - Infrastructures and equipment management**. Following up on the major advances achieved in this component in previous years, during RP4 BIOPOLIS will consolidate and further improve the upgrade and management of its infrastructures and equipment, according to the pans previously approved (D3.1 and D3.2). An important component will be the revision and expansion of protocols related to the management of Campus the Vairão and its integration in the wider region, involving the University of Porto, other institutions operating within or close to the Campus (FCUP, ICBAS, INIAV, DRAP-Norte), and the municipality of Vila do Conde (T3.1). Regarding the upgrade of facilities (T3.4), the new offices and labs at Quinta do Crasto will become fully operational during the second semester of 2024, greatly boosting the capacity of BIOPOLIS. With the completion of the Quinta do Crasto process, the attention will be given to the rehabilitation of the main building of CIBIO, involving mostly the planning (architecture and engineering plans) and fund raising phases during RP4. The field station of Mértola will also become operational towards the end of 2024, while it is expected that the field station of Branda Científica will start to be rehabilitated in late 2024 or early 2025, becoming operational in early RP6, conditional on the award of funding by the NORTE 2030 programme. The re-equipment effort will continue following the needs identified through an enquiry to the community carried out in 2022 (T3.4), with the updates provided by the managers of the different labs. This led to the definition of investment priorities in each of the seven research platforms, which amount to about 4 million euros. Part of this budget has already been secured while the rest will be attracted through future projects (e.g., regional structural funds) and using resources from service provisioning. A strong attention will continue to be given to the upgrade and management of the IT infrastructure, under the coordination of the IT Office, following the roadmap produced in 2023 (T3.3).
- **WP4 - Operationalisation of the Research Programme.** The Strategic Research Program approved on 07/02/2024 will be fully implemented in RP4, starting with the election of the coordinators of Thematic Lines (T4.1). This implementation will build on the recent reorganisation of BIOPOLIS Research Groups, which have now reached 40, of which some are new and coordinated by young PIs. It is also worth noting that the Strategy has already been used to produce BIOPOLIS Activity Plan for 2025-2029, to be submitted in early RP4 to FCT in the scope of the 2023-2024 Evaluation of Research Units. This application will be evaluated in 2024 and activities will start to be implemented in 2025, with funding requested for hiring researchers, supporting early career researchers, internationalisation, upgrading infrastructures and equipment, launching internal calls for small research projects, and support advanced training programmes. Along with its

implementation, the Strategic Research Programme will be continuously monitored to evaluate outputs and adopt corrective measures where needed (T4.2). A revision of the Programme will be made towards the end of RP4 and provided as D4.5 (30/07/2025; revised deadline). The internationalisation strategy (D4.4) will continue to be implemented, with plans involving the formal set up of an International Relations Office (T4.3). The Office will be in charge of coordinating key initiatives that are on-going or planned such as leveraging the potential of collaborative networks with top institutions; reinforcing participation in networking projects such as Cost Actions; reinforcing participation in formal European Research Infrastructures and Networks. InBIO will further expand its participation in European Research Infrastructures and Networks, namely LifeWatch ERIC eLTER RI, iBOL Europe, ERGA, GBIF, EMPHASIS and GENMEDA among others; supporting bottom-up networking initiatives by researchers; and consolidate and expand the TwinLab network. There will also be a strong effort to advance the recently established Gulf of Guinea Research Programme, involving multiple partnerships with institutions from countries across the region. The ethics and animal welfare guidelines will also continue to be implemented according to the plan approved, and under the coordination of the recently reorganised of ethics and animal welfare composition (ORBEA) (T4.4). Highlights will also include the improvement in animal housing facilities, in articulation with the National Institute of Agrarian and Veterinary Research. All activities related to ethics and animal welfare will be monitored and reported as D4.7 at the end of RP4. Data management and open access activities will be enhanced through the implementation of the Plan recently submitted as D4.9, which foresees among other activities the creation of a Data Management and Open Access Committee (DM&OAC) (T4.5).

- **WP5 - Education and Training**. During RP4, BIOPOLIS will continue implementing the Education and Training Programme previously approved (D4.1) (T5.1). The programme will also be monitored and evaluated during this period, with results of the exercise reported and a review of the programme produced until the end of RP4 (D5.6; 30/09/2025) (T5.5). Given the success and growth of this programme, an increase in the staff of the Advanced Training Office will be considered. The successful BIODIV Doctoral Programme will continue to be implemented, with a focus on increasing internationalisation (T5.2). Efforts will also be devoted to further attract and support students from less developed countries, mainly through the CEBiCNa programme. The co-tutelle plan with Montpellier will be continued and reinforced as much as possible, while further expanding the co-supervision of students with top-level research institutions elsewhere. The postdoctoral training programme will also continue to be implemented (T5.3), with a minimum of 12 advanced courses to be organised during RP4, some of which organised together with the university of Montpellier. Following the two previous calls (see Section 1.1.6), a new call for post-doc proposals will open at the beginning of RP4[35], aiming to hire 3-5 young researchers Teaming project funds managed by the UM. These post-docs will be able to train in Montpellier (supervised by one or more UM researchers), within the framework of projects co-constructed with one or more BIOPOLIS-CIBIO researchers (co-supervision). As in previous periods, all young researchers

[35] https://www.umontpellier.fr/en/articles/appel-a-projets-biopolis-2024-projet-europeen-teaming

contracted by BIOPOLIS will be assigned to RGs, where they will be mentored by a more senior researcher. Still within the scope of WP5, advanced training and continuous development programme will be further strengthened during RP4 (T5.4), with particular attention to organizing more external events, such as summer schools and high-level workshops. With internal and external training features, there will be a follow-up to the strong reinforcement of training opportunities offered to internal administration and technical staff; the organization of new training events for companies, schools and other stakeholders and the reinforcement of the involvement of the Living Science Centres and other initiatives for the general public (e.g. Bioblitz). Finally, the monitoring of the satisfaction and impact of these activities will be strengthened, through surveys aimed at participants and monitors.

- **WP6 - Communication, Dissemination and Exploitation**. The activities foreseen in this WP will continue to be implemented according to the "Internal Communication Plan of the CoE" (D6.1) (T6.1) and the "Communication, Dissemination & Exploitation Plan" (D6.2) (T6.1), previously approved. The implementation of communication (T6.3), dissemination (D6.4) and exploitation (D6.5) activities will be greatly strengthened during RP4, building on the newly created SPIn Lab (see Section 1.1.4), working together with a reinforced Communication & Dissemination Office. Highlights of the planned activities are provided in section 2.2.
- **WP7 - BIOPOLIS CoE Affiliates Programme**. Following the evaluation and revision undertaken in RP3 and submitted as D7.2, the BIOPOLIS Affiliates Programme is expected to become fully operational in RP4. This will greatly benefit from the expansion of BIOPOLIS membership, which now includes large corporations that are closely collaborating in the development of research (SONAE, REN, EDIA). The work will involve strengthening interaction with stakeholders and attracting new partners to support the Invited Chair and other collaborative research programs. Moreover, the inauguration of the new BIOPOLIS hub at Quinta do Casto will represent the opening of a space to bring stakeholder representatives closer together on a temporary basis. It is hoped that these actions will result in an improvement in the implementation of the program in the next reporting period.
- **WP8 – BIOPOLIS CoE Sustainability**. BIOPOLIS will continue to implement and expand its sustainability strategy, which is key for its long-term persistence beyond the end of the Teaming project. Building on the successes of the previous reporting periods, BIOPOLIS will continue to promote the application to research funding (T8.1), at national (mainly FCT) and international (mainly Horizon Europe) levels. The Project Support Office (Section 1.1.4) will continue to have a key role to achieve this goal, by identifying and disseminating calls potentially interesting for BIOPOLIS researchers, and the providing to produce competitive proposals. The Office will also provide support to link researchers with key contact points for FCT and Horizon calls. Another key component of the work involves training with new initiatives to train administrative staff and in-house training sessions for researchers in preparing proposals and managing projects. Also important in RP4 will be the consolidation and expansion of partnerships with corporations to develop problem-solving research, either through invited chairs or collaborative programmes

(T8.2). Building on initial contacts during RP3, two new chairs are expected to start at the beginning of RP4, one on Rewilding and other on Hunting & Biodiversity. Following initial contacts, an important target during RP4 will also be the negotiation of partnerships with companies in the agrifood (e.g., SOGRAPE), forestry (ALTRI, Navigator) and energy (GALP) sectors, among others. Also, work will be done to expand the partnerships to corporations based in France, building on the network of contacts by research institutions based in Montpellier. Additional partnerships will also be sought in other countries where BIOPOLIS is already highly active, including Spain and the Kingdom of Saudi Arabia. Regarding Intellectual Property Rights and BIOPOLIS Innovation Licensing, the work will focus on raising awareness and training researchers in the exploitation of research results. Another key objective is to finalise the evaluation and possible production of patent applications relating to the two inventions on coffee genomics and poultry colour determination, as well as selection of other research results with high potential for valorisation. It is also planned to finalise the improved IP policy for BIOPOLIS, involving consultation with researchers and relevant stakeholders. Another key activity during RP4 will the the reorganisation and increase of capacity for the provision of consultancy and other service, given the major increase in these activities during RP3. This will involve the strengthening of administration and financial procedures to deal with service provision in the Kingdom of Saudi Africa (RCU, Red Sea Global) and other countries, as well as reinforcing the technical staff engaged in such services. Finally, regarding new businesses and spin-offs (T8.5), BIOPOLIS will continue to support Electric Blue's activity to promote its growth and expansion of activities. The model for providing services on the analysis of environmental and ancient DNA will be revised, given the beginning of operation of the new labs in the second half of 2024, and because the negotiations with SpyGen to create a joint venture have stalled. To expand the provision of services at the international level, a new company (BIOPOLIS Services, Ltd) will be created in Portugal at the beginning of RP4. This company will be able to own subsidiaries in other countries, with the first planned to be created in KSA during RP4. This subsidiary is needed to expand the scope of collaborations and services in the region. This is part of a wider strategy to ensure sustainability, entailing the creation of a global network of subsidiaries, Life Everywhere, strategically selected for key locations worldwide to attract significant resources for research, innovation, and service provision. Implementation of this plan has seen significant success in Saudi Arabia (€10 million in contracts and collaborative research projects during RP3), with negotiations ongoing or set to commence in Macau (China), Goa (India), Angola, Gulf of Guinea (São Tomé e Príncipe, Equatorial Guinea, Benin), and Brazil.

- **WP9 - Quality Assurance, Monitoring and Evaluation**. The Quality Assurance System previously approved will continue to be implemented during RP4 (D9.1), with a strong focus on the quality of lab operations and procedures, which are essential for both research and service provision. This is particularly important given the start of operation during the second half of 2024 of the new lab for the analysis of ancient and environmental DNA, which require very stringent quality assurance processes to minimise contamination risks and thus ensure the reliability and trustworthiness of results. Therefore, the work will focus on developing and refining management procedures,

including those related to service and project management, client management, staff responsibility mapping, accounting and maintenance procedures, and data management. Furthermore, we will prioritise the continual enhancement of operational procedures, involving updated laboratory documentation and operational plans pertaining to quality assurance, and safety, hygiene, and health aspects. Additionally, we will develop a comprehensive communication plan to ensure transparent and efficient information dissemination. Quality assurance will also involve a strong component of training of all those involved in lab and field operations, with the analysis of training needs and the development of an updated training plan involving adjustments to current research needs, namely focusing on the topics covered, training frequency, selection of trainers, and evaluation criteria. The work will also involve the monitoring of KPIs, based on the revise list and methods of computation presented in D9.4 (T9.2). This will be done in articulation with the IT Office, to automatise as much as possible the collection and analysis of the data needed for producing the KPIs. Finally, risks will continue to be assessed and managed according to the plan previously approved (D9.3), with mitigation measures implemented as needed (T9.3).

- **WP10 - BIOPOLIS Teaming Project Management and Coordination**. The project will continue to be managed as planned (T10.1), with special attention to the implementation of the recommendations from the ad hoc review meeting received on 07/02/2024. Regular communication with the PO and other REA staff will be maintained to ensure the smooth implementation of the project and early detection discussion and mitigation of risks or any other problems. The nine deliverables planned for this RP will be produced and submitted on schedule. Consortium communication will be further implemented according to the plan approved (D10.6) (T10.2). The project will continue to be monitored and quality controlled according to the Quality Plan (D10.7), guaranteeing that the project is developed “on track” and “on schedule” and that it attained the expected results in RP4 (Task 10.3). Finally, the interim external evaluation process will be conducted, with the collaboration of IAB in the identification of the external experts to be involved and the drafting of the terms of reference (T10.4).
- **WP11 - Ethics requirements**. As in the previous reporting periods, BIOPOLIS will continue to monitor closely all activities with potential ethical implications. During RP4, the composition of the Animal Welfare Ethics and Review Body at BIOPOLIS (ORBEA) will be further expanded, to deal with the growing burden of licensing requests for research involving animals, due to the increasing activity of BIOPOLIS. The accreditation and training of researchers will be further promoted to enhance competences on animal welfare. Negotiation with the National Institute for Agrarian and Veterinary Research (INIAV) will be continued in the scope of the master plan for the Campus, for the use by BIOPOLIS of its animal housing facilities. Work will be developed to streamline the procedures for obtaining the authorizations required to comply with Requirements 3 and 4, particularly due to the increasing activity of BIOPOLIS researchers in low and lower-middle income countries. Particular attention will be given to ensure compliance with the CITES and the Nagoya protocol in countries where the research activity of BIOPOLIS is growing, namely Guinea Bissau, Namibia, Equatorial Guinea, Sao Tomé e Príncipe, and Angola, among others. Particularly relevant

will be the developed to ensure compliance with legal requirements and ethical standards associated with the use of GMO in research, by deploying a specialised lab at the new facilities of Quinta do Crasto, obtaining the necessary authorisations, and implementing all the guidelines and recommendations by national and international organisations. Finally, Work will be developed by the HR Officer, Legal Officer and the IT Unit to improve the management of personal data in compliance with GDPR.

2.2. Communication activities for the upcoming period

Internal and external communication of BIOPOLIS during the next reporting period will be implemented according to the corresponding strategic plans (D6.1 and D6.2), but with a strong reinforcement of the organisational structure, and significant expansion of the scope and intensity of the activities. This will be leveraged by the recently created **Strategic Projects and Innovation Laboratory (SPIn Lab)**, which aims to activate, pilot, and carry out strategic projects at the intersection of academia, business, and civil society, including strengthening the communication and dissemination capacity of BIOPOLIS and creating partnerships with national and international organisations. In this context, the SPIn Lab will work closely with the Communication & Dissemination Office (C&D) to reach out to a wider audience, through impactful and highly innovative initiatives. To accommodate these new projects and strengthen its capacity, the plans also involve reinforcing the C&D Office with the hiring of additional HR. Profiles that under consideration for hiring throughout 2024 and 2025 to reinforce this Office are described below:

- **Education and outreach officer**: responsible for devising and implementing outreach strategies with the general public, including students at different levels. This includes development outreach materials. This person will also assist researchers in developing outreach initiatives and projects based on their research. This person should have a background in science communication or education and strong interpersonal skills.
- **Communications and press officer**: responsible for designing and handling the internal and external non-scientific communications of BIOPOLIS – internal newsletter/digest, seminars, message forwarding, and improving internal communication channels. This person will handle relationships with the press – crafting and sending official press releases and maintaining contacts with reporters. Brief members of the BIOPOLIS community in advance of interviews, seminars or engagement with key external organisations. This will be the first point of contact between BIOPOLIS and all external entities. This person should have a background in communication and strong oral and written communication skills.
- **Research communication officer**: Responsible for coordinating contents and materials across research groups in BIOPOLIS and for translating and communicating the research outputs of BIOPOLIS to the general public. It will assist in writing scientific press releases and the BIOPOLIS scientific community in the process of scientific communication and grant writing. This person should be the first point of contact between researchers and the communication office. This

person should have a scientific background, ideally a PhD and a good understanding of the academic environment, and strong written communication competencies.

- **Digital contents officer**: responsible for handling the digital activities of CIBIO – website redesign and updating, coordinating social media presence on multiple platforms (Facebook, Twitter, Instagram, TikTok, YouTube, LinkedIn), helping update Wikipedia pages, managing photo banks. Assist in the graphic designing and technical development of communication content. Create and edit visual content, including website design, infographics, image, and document templates. This person should have a background in web and/or graphical design and demonstrate the ability to manage social media communications.

Besides maintaining the CD&E activities carried out in previous reporting periods (e.g., websites, newsletter, press releases), the SPIn and the C&D Offices will organise a number of events and initiates, which are outlined below:

- **Inauguration of new BIOPOLIS facilities**. Two key events during RP4 are the inauguration of the new BIOPOLIS facilities at Quinta do Crasto and the facilities of the Biological Station of Mértola, which are planned for the second half of 2024. The target is to have high-level participation from the European Commission, the Portuguese government, and a range of public and private stakeholders (including partners involved in the Affiliates Programme).
- **"Diary of a Scientist" and other media partnerships**. Starting at the beginning of RP4, BIOPOLIS will develop in partnership with the national newspaper Público, with the initiative "The diary of a scientist" [36]. This will involve the publication in August 2024 of a daily story on BIOPOLIS research and researchers. The stories to be published will be selected by the journalists, following an open call to all researchers and PhD students of BIOPOLIS[37]. It is planned that a similar initiative will be done in 2025, together with several other activities targeted at promoting interactions between BIOPOLIS researchers and journalists. This important initiative will involve both internal and external communication, as well as communication and dissemination of BIOPOLIS and its activities.
- **Development of innovative science communication materials** (including podcasts, documentaries, infographics, etc.), by building inhouse production capacity and/or through partnerships with external organisations.
- **Reinforcement of the online visibility of BIOPOLIS**, with a particular focus on social media presence on multiple platforms (Facebook, Twitter, Instagram, TikTok, YouTube, LinkedIn), but also in Wikipedia pages and other platforms. The websites of BIOPOLIS and CIBIO will also be improved and updated.
- **Publication of new brochures and leaflets** for the communication of BIOPOLIS and its initiatives, including the Field Stations and the TwinLabs in Africa.

[36] https://www.publico.pt/2024/04/12/azul/noticia/diario-cientista-projecto-investigadores-mostrarem-bastidores-ciencia-2086839
[37] https://cibio.up.pt/en/

- **Reinforcing the communication with stakeholders** in the context of the Affiliates Programme and other collaboration initiatives, involving the development of an online collaborative platform for stakeholders.
- **Publication of books in "Arte & Ciência".** Following the plan previously drafted, during RP4 BIOPOLIS will publish several books that are already in advanced stage of preparation. These include the Portuguese versions of books already published in Springer, including "Ecologia de Angola: Biomassa e Ecorregiões terrestres" and "Biodiversidade do Golfo da Guiné." Other important books include "Serpentes Venenosas de Moçambique," an important public health resource regarding the venomous snakes of Mozambique, the second volume of "Borboletas de Angola, and "Sob Mares Frágeis", a book on the importance of conserving marine biodiversity.

BIOPOLIS

This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under the Grant Agreement Number 857251.