LIFE16 NAT/PT/000754

2 º Mid-term Report

Covering the project activities from 01/10/2017 to 31/08/2021

Reporting Date

31/10/2021

LIFE NAT/PT/000754

Data Project

Project location:	Portugal (Serra da Estrela, Mata da Margaraça and Monchique)
Project start date:	01/10/2017
Project end date:	30/09/2022
Total budget:	1,654,899 €
EU contribution:	1,219,078 €
(%) of eligible costs:	73.66 %

Data Beneficiary

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2. List of key-words and abbreviations

ADRUSE - Associação de Desenvolvimento Rural da Serra da Estrela
APA - Agência Portuguesa do Ambiente
CICYTEX - Centro de Investigaciones Científicas Y Tecnológicas de Extremadura
CMSeia – Município de Seia
CMMon – Município de Monchique
GEOTA - Grupo de Estudos de Ordenamento do Território e Ambiente.
ICNF - Instituto da Conservação da Natureza e das Florestas
IGOT - Instituto de Geografia e Ordenamento do Território
ISA – Instituto Superior de Agronomia
OP – Operational Plan (A2 action)
SPECO - Sociedade Portuguesa de Ecologia
UAlg – Universidade do Algarve
UÉVORA – Universidade de Évora

3. Executive Summary (maximum 2 pages)

LIFE-RELICT main goal is to improve the conservation status of the priority habitat 5230* in Portuguese Natura 2000 Network, targeting two rare and unique communities of Portuguese-laurel (*Prunus lusitanica*) and Rhododendron (*Rhododendron ponticum subsp. baeticum*). The intervention areas are located in PTCON0014 – Serra da Estrela, PTCON0051 – Complexo do Açor and PTCON0037- Monchique. Due to several threats, especially fire and land use, these paleotropical relicts are currently in a very poor condition in Portugal (Unfavourable-Bad), requiring urgent management measures for its preservation and survival in continental Europe.

The specific goals of this project are: **[1] Improve 5230* structure** and its ecological function in Portuguese Nature 2000 network in at least 11 ha; **[2]** I**ncrease habitat area** in 20.5 ha; **[3] Reduce invasive alien species** occupancy within 4 ha; **[4] Decrease risk of fire** in 104 ha controlling the helophyte shrubs and creating adjacent native forests (habitats 9230 and 9240) in 11.4 ha; **[5] Test the effectiveness** of all management techniques and methods used, and ensure its transference and replication in at least 2 different territories; **[6] Increase awareness, motivation, skills and cooperation** of local people and regional authorities for this habitat, contacting at least 20 local authorities and 50 national organizations, as well as at least 1 000 students; **[7] Increased local nature-based tourism** with the establishment of two pedestrian pathways and support material; **[8] Increase local economy** by financial import and job creation.

In December 2019, **all works foreseen in actions "A" were completed,** with an exception in A1: following EASME suggestion (letter from 2018-12-18), we are now establishing a new agreement with the landowners of Seia intervention areas (referring specifically 20 years of agreement), missing the signatures of 10 landowners who do not live in this territory. Therefore, **main goals were achieved**: **A1.** Territory characterization was done; **A2.** Operational Plan was concluded; and **A3.** *Rhododendron* study on natural regeneration was finnished. All A1, A2 and A3 results have shown to be very important for other actions, especially for the ones related to plant production and conservation management.

Regarding **actions "C"**, **in C1** we **finished the fourth recollection campaign in 2020** and collected propagation material for all target species and 5 more, meanwhile considered important for the target habitat. In Project beginning we had several problems with the propagation of some species, including with Portuguese-laurel and Rhododendron. However, we were able to find solutions and so far **most of the issues were overcome**. The major problem we faced was the **low growth rate of Rhododendron** specimens produced seminally. For this reason, in order to have bigger plants faster, in 2019 we started to invest in the vegetative propagation of this species, with success. However, **we highlight, that in 2020, CICYTEX was able to improve the protocol of Rhododendron production from seminal origin**. Thanks to this new protocol, we now have bigger and better plants of seminal origin, comparable with the ones that come from vegetative. Until May 2021, **34316 plants were already delivered** to project Municipalities (**98% of the plants foreseen**). In **C2 "levada" was completely recovered in the 1.2 km** foreseen in the project. Also, in **100% of *Prunus lusitanica* areas, selective vegetation control** was already executed (in Margaraça and Estrela). Plantations were also executed in all the foreseen C2. In **C3** Selective control was carried out in the foreseen 3 hectares of Rhododendron (**100% executed**). Plantations were made in 1.9ha (63% executed) but with other characteristic than Rhododendron because last winter/spring the plants were too small to be planted. **C4** was executed in Estrela-Cabeça, with the vegetation selective control and Control of non-invasive alien species (**100% of C4 is executed**). **C5** was not started yet once Rhododendron plants still too small to be planted. In **C6** *Hakea sericea* was cut and burned in all the foreseen area (**phase I executed in 100% of the area**). The area is now under maintenance. In *Acacea dealbata* area, two different interventions were carried out: debark in the core with larger specimens and cut in the core with smaller plants, not suitable for debarking. For this species **100%** of the existent clusters were executed with many difficulties enhanced by local orography (**phase I executed in 100% of the area**). The area is now under maintenance once we are having problems with vegetative regeneration post-intervention. In **C7, 2 km** of paths already existent in Estrela-Cabeça were reestablished. Selective control of vegetation was executed in all the territory **(100%).** Plantations were also done in Estrela but the area is under maintenance until Project end. In

Monchique plantations were not executed in Cruz da Foia, due to the presence of herds. The same didn´t happen in Vale Largo were all the foreseen C7 area was planted. However, in this intervention areas **11.94 ha of native trees were planted without LIFE funding** (done in areas for which no planting was planned, with LIFE supervision). **Control of non-invasive alien species was done in all the area** in Monchique and Estrela-Cabeça (completed). Also in Monchique, **100% of the Chestnut forest was improved**.

In relation to **actions "D"**, the work has been going as planned. **In D1** we are monitoring the germination and survival rates of propagated species since 2018. Also, we are monitoring the vegetation response to interventions made in actions C2 to C7, through the annual record of vegetation associated to 41 permanent transects. **In D2** 35 indicators were defined in order to understand project impact in several economic and social sectors. Also, in 2020, 159 surveys were made to web users, about Project website, and its contents. Results showed that over 55% of respondents know our website and in general are satisfied with it contends. Over 95% of the respondents recommend it to their contacts. In 2021, we also implemented 182 surveys to local population (from the 3 involved Municipalities) in order to understand their knowledge regarding the project, the habitat 5230*, and its ecosystem benefits. The results have shown a slight increase in knowledge when comparing with the first report. **In D3** we are carrying out the monitoring process to assess the Project impact on the ecological function of the habitat with some reformulations due to Covid-19 pandemic. Hence, all cultural services can only be evaluated at the begging of the project and not after due to Covid-19 bias. **In D4,** we evaluated project cost/efficiency until December 2020, but the results must be seen with caution, once the works has not yet been completed.

Regarding **actions "E",** Covid-19 pandemic has created some constrains. In **E1,** the webpage and Facebook page have been updated regularly in both Portuguese and English. All project panels are installed and the layman report has not started yet. In **E2**, the informative flyers are published in Portuguese and English, one about Portuguese-laurel communities and the other about Rhododendron communities. The itinerant exhibition from Monchique is ready and in use, whereas the exhibition from Seia is nearly finished. The interpretative trail in Monchique is completed, it has 4 informative panels, flyers in Portuguese and English, post sign on the trail for points of interest with QR Codes for the audio guide available on our website. The interpretative trail of Seia is being planned. The reports about the project have been made by the press in forms of news and articles. The event of Cabeça, Aldeia Natal has stopped due to Covid-19 pandemic. In **E3**, the environmental education activities are slowly returning after the Covid-19 lockdown and the schools contest will be implemented during the school year of 2021/22. The informative sessions and the plantations with volunteers were stopped throughout the pandemic situation. In **E4**, until August 2021, we had successfully organized two seminars and three technical workshops. Also, the UÉvora has been disseminating Project results in several scientific seminars and congresses through webinars, as well as online classes to its own students. The field guide has not started yet. In **E5**, we have contacted and were contacted by several national and international projects to establish networks, video conferences were set up and, once the pandemic allows, fieldtrips will be made. To encourage replication, more contacts were made but the covid-19 has created many constrains to successfully carry out the fieldtrips.

In relation to **actions "F"**, through **F1**, Project is being coordinated by the UÉvora under the responsibility of professor Carlos Pinto Gomes. The current project team has been defined in the beginning of the project and partnership agreements signed. In **F2**. Two meetings have been already done, as well as the first visit to project areas. The third visit is schedule to December 2021.

So far we had a set of **problems** in some actions, which are described with detail in the Technical part of this report (point 6.1 and 6.2). In the last Mid Term Report we highlight our major problems so far: **Forest Fire** in Margaraça, in October 2017 (Project's first month); Difficulties in plant propagation, especially **low growth rate of Rhododendron (however in the last months CICYTEX was able to produce better and higher plants)**; Delay in the recovery of existent trails in Estrela, already resolved; and **lack of specialized companies available** for forest works. We still currently face two other major constraints: [1]. The **existence of unauthorized herds of cattle** that eat the specimens already planted in Estrela-Cabeça and impede the plantations planned for Monchique; [two]. The **COVID-19** pandemic

situation we have been living since the beginning of 2019, with a great impact, especially in field management work (C actions) and in activities that require communication with the public (E actions). For more detailed information on COVID 19 impact in LIFE-RELICT, please see **ANNEX I. COVID 19 – Project impact**.

In the financial, our **biggest concern** has to do with **compliance with the 2% rule**, which, as a team, we are far from achieving. This situation is the result of two main situations: [1.] budgets foreseen in the project were, in some situations, above the real price and; [2]. due to the urgency of some procedures and the slowness of public contracts, the municipalities ensured the execution of these same works. The University of Évora, as Project leader, proceeded as soon as the problem was detected (problem especially visible after the payment of major interventions in 2020), immediately held meetings with partners in order to balance the accounts. This problem is especially visible in CMMonc and CICYTEX. In opposition CMSeia and UÉvora expect to compile with the rule until project end.

Globally, **from the 20 deliverables due in August 2021, all are finished** (**ANNEX II. Deliverables and Milestones achieved)**. The final version of Estrela exhibition (E2), that was behind schedule, is now provided (however is not yet printed). However, we are reformulating the long-term commitment letters from landowners, according to EASME request. Also, brochures on the Monchique route (E2), only due at the end of 2021 was finished in advance and is now sent. In relation to **milestones, all the 36 expected were completed, with one single exception, flyers in Spanish** (E2, due by Cicytex) have been translated but have not yet been published. Its publication will be made in November 2021. **Also, the 1st new Rhododendron area (C5) has been implemented, but only has an experimental area** (due to species propagation issues, detailed latter).

Overall, we can say that project is ongoing, and large part of the tasks were already executed. The major delays occur in management interventions in Monchique, especially regarding plantations in Monchique (C5 and C7 areas) and Project exposition in Estrela.

4. Introduction (maximum 2 pages)

In the Iberian Peninsula still exists some traces of tertiary vegetation, of Laurel type, which prospered in Southern Europe during the Tertiary. Due to its natural importance, this vegetation was included in a priority habitat of community interest: *habitat 5230* - Arborescent matorral with Laurus nobilis*. However, currently, the overall assessment on conservation status of this habitat in Portugal, reported on Article 17 Reports (2001-2006; 2007-2012; 2013-2019), is "Inadequate" for both Mediterranean and Atlantic Regions.

In this regard, LIFE-RELICT project appeared with the desire and need to improve the conservation status of this priority habitat in Portuguese Natura 2000 Network, targeting two rare and unique communities of Portuguese-laurel (*Prunus lusitanica*) and Rhododendron (*Rhododendron ponticum* subsp. *baeticum)*, in three Portuguese Nature 2000 Sites: PTCON0014 – Serra da Estrela; PTCON0051 – Complexo do Açor; and PTCON0037- Monchique. Currently, these two communities subsist almost exclusively in remote areas of the western Iberia, in rare climate situations (mild, humid and without frost), being in a very poor condition and requiring urgent management measures for its preservation and survival in continental Europe. Their major threats are fire, invasive species and land use changes induced by man (e.g. plantations of exotic pines and eucalyptus in their native space), all responsible for the reduction of 5230 habitats within their natural niche. In addition, climate change is also limiting dispersal ability of Rhododendron that, according with our A3 results, it seems to face a general lack of seminal dissemination.

Facing this threats, LIFE-RELICT conservation actions are based on: [1]. increasing habitat resilience: Through restoring the physical and ecological community structure (Actions C2, C3), and reducing the impact of two of the major drivers of global biodiversity loss – invasive species (Action C6) and fire

(Action C7); and [2]. Increase habitat area (Actions C3 and C5) through plantations. In parallel, this project will also benefit forest habitats 9230, 9240 and 9260.

LIFE-RELICT started in October 2017 and will finished in September 2022. It's being led by the UÉvora and executed by a team with complementary valences, combining entities with scientific knowledge and large experience implementing conservation measures (UÉvora, CICYTEX), with local managers and stakeholders (CMSeia, CMMonc, ADRUSE). The intervention areas are located in the interior of Portugal, in Seia, Arganial and Monchique municipalities. Those are territories with a declining and old population (with the consequent decrease in land use) and low levels of qualification, which results in low-skilled and low-cost labour, thus constraining market dynamics and economic initiatives.

The main LIFE-RELICT objectives are:

1. Improve 5230* structure and its ecological function in Portuguese Nature 2000 network in at least 11 ha (8 ha of Portuguese-laurel and 3 ha of Rhododendron communities);

2. I**ncrease habitat area** through the reconstruction of favourable adjacent areas, in 20.5 ha (10.5 ha of Portuguese-laurel and 10 ha of Rhododendron]. To do it, project expects to produce 35.500 native plants typical of this territory;

3. Reduce invasive alien species occupancy within 4 ha (obj. 3);

4. Decrease risk of fire in 104 ha controlling the helophyte shrubs and creating/benefit adjacent native forests (habitats 9230 and 9240 in 11.4 ha; plus, habitat 9260 in 1.8 ha);

5. Test the effectiveness of all **management techniques and methods** used, and **ensure its transference** and **replication** in at least 2 different territories;

6. Increase awareness, motivation, skills and cooperation of local people and regional authorities for this habitat, contacting at least 20 local authorities and 50 national organizations, as well as at least 1 000 students;

7 Increased local nature-based tourism, with the establishment of two pedestrian pathways and support material;

[8] Increase local economy by financial import and job creation.

5. Administrative part (maximum 1 page)

LIFE-RELICT is coordinated by the UÉvora under the responsibility of professor Carlos Pinto Gomes (scientific coordinator) and Catarina Meireles (Project Manager). The four Associated beneficiaries are: Monchique Municipality (CMMonc), Seia Municipality (CMSeia), ADRUSE and CICYTEX (this last from Spain). Each partner has its own Project leader: Carlos Pinto Gomes (UÉvora); Ana Fonseca (CMSeia), Sónia Martinho (CMMon) and Francisco Vasquez (CICYTEX). ADRUSE changed its Project Leader in mars 2020: Cristina Garcia left the association and was replaced by Ana Isabel, who was already part of project team. The main project core team was maintained since its beginning (please see **ANNEX III. Updated organogram**, with team main structure). **However, we further inform that from October 2021, the team from Monchique changed, because Sónia Martinho and Nuno Fidalgo (main team from CMMonc) leaved the municipality**. Project coordination is now making all the efforts to manage the team transition. We met with the new President of Monchique Municipality on November 9th and we have his commitment that he will do everything to continue and finalize the Project. He also informed us that the new technician who will follow the interventions of our project has already been chosen (Tiago Guerreiro). Nuno Fidalgo, left the Monchique Municipality to lead an association of forest producers with whom the Municipality of Monchique has a collaboration protocol. In this sense, the City Council of Monchique requested the collaboration of Tiago Guerreiro (who works for this forest association), for LIFE-Relict support. For this reason, Nuno Fidalgo will continue to be indirectly involved in LIFE-Relict, through the technician Tiago Guerreiro.

The administrative and financial structure from the coordinator beneficiary is set since October 2017 and is now lead by Cristina Louro (since January 2019). The UÉvora hired, so far andthrough public calls, four full time grants. In project beginning, as foreseen two grants were taken: Rui Cataño (post-Doc) and Mauro Raposo (Master). However, Rui Castaño finished is grant in May for personal reasons. To offset this situation, a new call was launched and the grant was attributed to Mariana Machado (Master). However, three-month latter she got a PhD scholarship, and had to quit the LIFE grant (although she had continued to give some voluntary support to the project in the first months). Consequently, a new call was launched, won by Cristina Baião (Master), that is in the project since September 2019.

UÉvora team keeps regular contact with all the beneficiaries. As foreseen, these contacts are mostly made by telephone or video-call. Within the UÉvora team, at least one monthly formally meeting is held to schedule works and discuss project implementation. Within the other beneficiaries, regular meetings are also taken in order to analyse and define all the tasks related to LIFE-RELICT implementation. Until the Pandemic we made regular in-face meetings with all partners: two annual meetings between steering committee and in-person meetings involving two or three beneficiaries when necessary/opportune. These circumstances changed from the beginning of 2020, after the emergence of COVID-19, since when online meetings were privileged. The technical, administrative and financial structure from the UÉvora, gives all the support asked for the other beneficiaries. All documentation is shared between partners using a two shared folders, one for the financial/administrative part, and other for the technical component.

We have a very collaborative relation with our Project monitor, Dra. Sara Barceló, that has always responded quickly to all our answers. We send her regular progress reports, when requested. In this process the Project Coordination asks all partners for a state of play, which is then compiled and sent to the Project monitor. **All partners have always been very available and collaborative in all the project.**

To present day, our Project monitor has visited the LIFE-RELICT 4 times (for technical and administrative meetings): In 2018 (January) to Seia with field trip to Margaraça target areas; In 2019 comprising two trips: to CICYTEX (Badajoz) in January 31, to check the achievements in plants propagation, and to Monchique in February 6-7, with field trip to respective target areas (Cruz da Foia and Vale Largo); In 2020, due to COVID-19 the visit was virtual targeting Seia intervention areas; and in 2021, in Seia, with field trips to Cabeça, Casal de Rei and Fontão intervention areas. All visits were preceded by a letter from EASME or CINEA (last one). The first three were answered previously. The forth visited was also followed by a letter, which answer is deliver in **ANNEX IV. Answer to CINEA letter – fourth visit**.

So far, we have delivered two Project reports to EASME: LIFE-RELICT First Progress Report sent in October 2018 and LIFE-RELICT First Midterm Report in February 2020. These reports were preceded by a letter from EASME, whose responses were presented to the Project Monitor during the technical visit. The first answer was also formally addressed to Easme in subsequent project reports.

6. Technical part (maximum 25 pages)

6.1. Technical progress, per Action

A1. Territory characterization update - Collect and complement project crucial data.

1. Status: This action was considered completed. However, as asked by EASME we are now establishing a convention of 20 years with the landowners.

Foreseen start date: **Oct 2017**	Actual start date: **Oct 2017**
Foreseen end date: **Dec 2018**	Actual (or anticipated) end date: **-**

2. Progress: The action was considered finished and all information was provided in the last report. However, In relation to the **landowner's long-term commitment letters**, we provided all the documentation in first progress report. However, later, EASME informed us that the letters provided missed the duration of the agreement. Therefore, as suggested by EASME, we prepared a new convention of 20 years with the landowners to be signed with the help of local authorities (Municipality and Parish council). The convention is a single document to be signed by all landowners. Meanwhile, due to COVID – 19, the signatures were particularly difficult to acquire. We planned to get all signatures in meetings that take place annually in Casal do Rei village, and where local families meet annually. Unfortunately, they were cancelled due to the Pandemics. To cope with this circumstance, individual protocols were made and sent by mail to the missing landowners. However, we were not able to get all owners' signatures and **presently we still miss 10 of the 51. ANNEX A1. Landowners convention – provisional document**. To solve this issue CMSeia will make a trip to Lisbon, especially to collect the missing signatures directly from the landowners.

3. Problems and delays: The main problems faced during action implementation were: identification of landowners; delays on the contracting process for external assistance; current difficulty to collect landowners' signatures, due to COVID constrains and to the fact that many of them do not live in the Municipality of Seia.

4. Next steps: Complete landowner's signatures.

A2. Operational Plan.

1. Status: Completed.

Foreseen start date: **Oct 2017**	Actual start date: **Oct 2017**
Foreseen end date: **Dec 2018**	Actual (or anticipated) end date: **Dec 2018**

2. Progress: Led by ADRUSE, the OP was finished in December 2018. All the details can be found in the first Mid-Term report.

A.3 Evaluating the propagation capacity of *Rhododendron ponticum*.

1. **Status:** Completed, executed by the UÉvora with punctually help of CICYTEX team.
2.

Foreseen start date: **Oct 2017**	Actual start date: **Oct 2017**
Foreseen end date: **Nov 2018**	Actual (or anticipated) end date: **Oct 2019**

3. **Progress:** Led by the UÉvora, the action was finished in October 2019. All the details can be found in the first Mid-Term report.

C.1. Collection and propagation of plant material.

1. Status: This action is in progress and been developed by CICYTEX, with the help of the UÉvora, CMSeia and CMMon. The overall progress within each task of C1 action is present in Table 1.

Foreseen start date: **Oct 2017**	Actual start date: **Oct 2017**
Foreseen end date: **Dec 2021**	Actual (or anticipated) end date:

Table 1. Overall progress within each task of C1 action.

TASKS (2017-2021)	Foreseen start	Actual start	Foreseen end	Actual end
Seed collection	Oct 2017	Oct 2017	Dec 2020	Dec 2020
Seed conservation	Dec 2018	Dec 2018	Oct 2021	Oct 2021
Seed germination	Dec 2017	Dec 2017	May 2021	May 2021
Stem Cuttings	Dec 2017	Dec 2017	Nov 2020	Nov 2020
Stem Cuttings rooting	Jan 2018	Feb 2018	Feb 2021	Feb 2021
Plant development	Feb 2018	Feb 2018	Sep 2021	Sep 2021
Plant achievement	Sep 2018	Sep 2018	Nov 2021	Nov 2021
Dissemination	May 2019	Dec 2018	Dec 2021	Dec 2021

2. Progress: Since project beginning the tasks performed have been: [1] Annual request of ICNF license for seed recollection in Nature2000 areas; [2] Seed collection; [3] Seed conservation; [4] Seed germination; [5] Picking of cuttings; Rooting of cuttings; [6] Development of plants; [7] Delivery of plants to partners; [8] Improving species multiplication methodology; [9] and multiplication manual writing.

The first step for C1 implementation, was to obtain ICNF licenses for recollection and detection of plant material. These are requested annually from ICNF. In **ANNEX C1.1. ICNF 2020 and 2021 licenses**, you can see the licenses concerning 2020 and 2021. Previous licenses were already sent in preceding reports. The recollection areas and used methods were defined by CICYTEX with the help of UÉvora, CMSeia and CMMon. Seed recollection was started in October 2017 and is now in its fourth campaign (2017/18; 2018/19; 2019/20; 2020/2021). Plant material is always collected as close as possible from the area where will be planted, in order to ensure the best fitness and avoid potential genetic contamination. The estimate collected seeds are found in Table 2. We collected seeds from all foreseen species, with special attention to *Rhododendron*, *Prunus* and *Quercus*, because of their structural role in habitat 5230 and surrounding natural forests. For some species, we also collected cuttings, to ensure we had plants with adequate development to install in the field and overcome some germination issues observed meanwhile. The number of cuttings collected for each species is present in Table 2. We should note that, due to initial problems with seminal regeneration and plant growth of Rhododendron, our strategy was to invest also in vegetative production of this species, with the collection of a considerable number of cuttings and the search for the best propagation methodology. However, in the past year CICYTEX was able to better define Rhododendron propagation by seed, and get better and higher plants (quit comparable with the ones obtained by vegetative propagation).

The only species referred in Project that we didn't collect was *Acer monspessulanus*. The reference to this species in the Project is a mistake, once it was foreseen for Açor areas were no plantation are planned. Complementarily, other additional species, not foreseen in Project, have been collected (*Quercus occidentalis* and *Crataegus monogyna*, *Frangula alnus, Rosa rubiginosa* and *Myrica faya*), because of their ecological role or intrinsic value (in the case of *Myrica faya* or *Rosa rubiginosa*). The collection of plant material from these species was requested and approved by the ICNF and followed the indication of our monitor Sara Barceló, in relation to the low number of plant species foreseen to be planted in Project. In the particular case of *Rosa rubiginosa*, because it is a rare and threatened species, only one cutting was collected in Seia-cabeça, from which, after the plant had taken root, multiplication was carried out (currently we have 8 plants).

Table 2. Viable seeds and cuttings collected in LIFE-RELICT until December 2020.

(included additional species not reference in approve memory*)

SPECIES	Seeds collected 2017	Seeds collected 2018	Seeds collected 2019	Seeds collected 2020	TOTAL seminal	Cuttings collected 2017	Cuttings collected 2018	Cuttings collected 2019	Cuttings collected 2020	TOTAL cuttings
Arbutus unedo	-	530	620	4480	5630	-	70	-	-	70
Crataegus monogyna*	-	-	-	-	-	-	-	60	-	60
Phyllirea angustifolia	-	210	450	2835	3495	-	60	-	-	60
Phyllirea media	-	-	380	1100	1480	-	40	-	-	40
Prunus lusitanica	1782	5600	3500	5290	16172	-	80	-	-	80
Quercus broteroana	300	1970	1100	3830	7200	-	-	-	-	0
Quercus canariensis	400	1800	1500	2510	6210	-	-	-	-	0
Quercus estremadurensis	100	32	120	465	717	-	-	-	-	0
Quercus marianica	250	750	250	480	1730	-	-	-	-	0
Quercus occidentalis*	-	1170	380	1200	2750					
Quercus pyrenaica	250	610	550	2170	3580	-	-	-	-	0
Rhododendron ponticum	3500	3400	2500	6535	15935	-	200	450	150	800
Rhamnus alaternus	-	140	320	540	1000	-	-	-	-	0
Viburnum tinus	-	530	400	800	1730	-	50	-	-	50
TOTAL	**6582**	**16742**	**12070**	**32235**	**67629**	**0**	**500**	**500**	**150**	**1160**

The number of produced plants gathered in CICYTEX facilities, over time, is present in **Table *3*Erro! A origem da referência não foi encontrada.** (please note that this numbers are largely affected by deliveries to plantation areas). Since October 2019, CICYTEX has been delivering plants to CMSeia and CMMonc for future plantations. Those are being temporarily stored in the respective municipal nurseries. So far, CICYTEX delivered **34316 plants** to Municipality partners **(98% of the plants foreseen in Project**) (Table 4,, please see also **ANNEX C1.2. Plants delivered by CICYTEX**). Also,

Table *4* 4 shows the increasing delivery trend since 2019, with a maximum in 2021, although the year is not yet over and new plant deliveries are expected until December. We expect, by the end of the year, to reach the 35 000 plants foreseen in the project.

Also, as some of these species didn't have published methodologies for their multiplication, CICYTEX used the acquired knowledge to establish the respective multiplication protocol. For example, *Rhododendron ponticum* subsp. *baeticum* doesn't have any published manual about vegetative multiplication of tall trees or stakes and the methods that are commonly used are of vegetative cultivation (for callus, organisms such as flowers) always under cultivation medium. With the LIFE experience, CICYTEX was able to develop a new methodology of vegetative multiplication, that facilitates the

obtaining of cuttings rooted in less than 3 months and, consequently, the possibility of obtaining plants for conservation purposes in (7-9)12-14 months.

Table 3. Plants present in CICYTEX along time (numbers are affected by plant distribution to Monchique and Seia).

Especies	Plants seminal Jul 2019	Plants seminal Dec 2019	Plants seminal Dec 2020	Plants cuttings Jul 2019	Plants Cuttings Dec 2019	Plants Cuttings Dec 2020
Arbutus unedo	50	20	48	15	10	0
Phyllirea angustifolia	-	-	5	75	55	0
Phyllirea media	52	25	10	90	10	0
Prunus lusitanica	4500	1000	650	45	45	0
Quercus broteroana	1850	550	320	-	-	
Quercus canariensis	1810	600	48	-	-	
Quercus estremadurensis	20	20	35	-	-	
Quercus marianica	645	10	45	-	-	
Quercus pyrenaica	448	420	80	-	-	
Rhododendron ponticum	3440	450	55	21	100	104
Rhamnus alaternus	17	17	85	6	6	0
Viburnum tinus	610	120	140	95	40	0
TOTAL	**13342**	**3232**	**1521**	**347**	**266**	**104**

Table 4. Plants Distributed from CICYTEX to Plantations origins (SEIA & MONCHIQUE).

(included additional species not reference in approve memory*)

Species	2019 Distribution		2020 Distribution		2021 Distribution		TOTAL
	Monchique	Seia	Monchique	Seia	Monchique	Seia	
Arbutus unedo			302	1035		2365	3702
Crataegus monogyna*				24			24
Phyllirea angustifolia	27		255	170		896	1348
Phyllirea media			410	332		300	1042
Prunus lusitanica		2590		2395		2688	7673
Quercus broteroana		1260		2554		2852	6666
Quercus canariensis	1126		1980				3106
Quercus estremadurensis			217				217
Quercus marianica	603		339		90		1032
Quercus occidentalis*			520	445		315	1280
Quercus pyrenaica				1601		1534	3135
Rhamnus alaternus			317			2852	3169

Rhododendron ponticum	456				120		576
Viburnum tinus		385	543			418	1346
TOTAL	**2212**	**4235**	**4883**	**8556**	**210**	**14220**	**34316**

In addition to this number, 3617 specimens requested (2246 *Prunus lusitanica*, 18 *Viburnum tinus*, 910 *Arbutus unedo* and 443 *Quercus suber*) were offered in 2020 by ICNF for Seia target-areas,

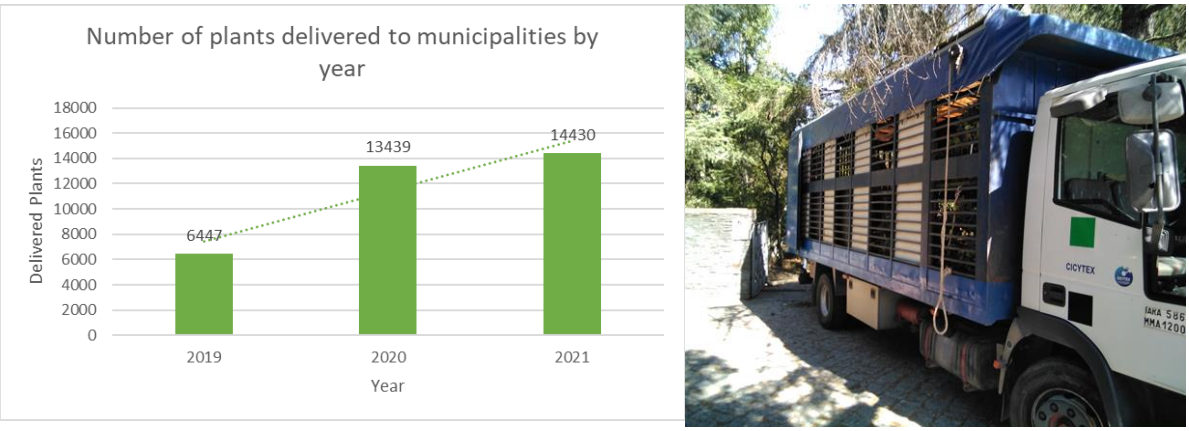

Figure 1. Plants delivered by CICYTEX to the Municipalities of Seia and Monchique.

3. Problems and delays: So far, we had a set of problems with C1 execution. As referred in previous Reports, our major p**roblems are the ones related to seed germination of *Prunus lusitanica*, *Arbutus unedo*, *Phillyrea angustifolia* and *Viburnum tinus***. However, they were all overcome. In relation to the **rooting of cuttings**, the first tests carried out in *Arbutus unedo*, *Phillyrea angustifolia* and *Viburnum tinus*, **showed a decrease in the degree of rooting in the stems with more than one year,** so that the best stakes must proceed of branches of the last year. This aspect was correct in the 2018-2019 campaign. Another important issue related to **plant production of *Rhododendron* from seeds**. However, material produced during 2020 was much better, with more than 300 plants with high survival percentage.

4. Next steps: We planned to continue the recollection campaign and transport existent plants to target areas. We expect to exceed the plant production and during the next year we will continue the constant production to complete the need for the Plantations origins: Monchique and Seia.

C.2. Improving the conservation state of *Prunus lusitanica* areas.

1. Status: *In Progress*. In execution by CMSeia with the collaboration of the UÉvora. The Overall progress within each sub-action is present in Table 5.

Foreseen start date: **Jan 2018** Actual start date: **Jan 2018**
Foreseen end date: **Mar 2022** Actual (or anticipated) end date: **Mar 2022**

Table 5. Overall progress within each sub-action of C2 action.

* we didn't mention the foreseen start of C2.1 in the project because we knew that it will depend on the weather

Sub-actions	Foreseen start	Actual start	Foreseen end	Actual end
C2.1	-*	Nov 2018	Dec 2018	Dec 2019
C2.2	Oct 2018	Jun 2018	Mar 2022	-
C2.3	Oct 2018	Jan 2020	Mar 2022	-

2. Progress:

***C2.1 - Recover the feed flows of Prunus lusitanica* areas**

Completed. In Estrela-Cabeça area, "**levada" recovery in 1.2 km was completed** on January 31, 2019. Detailed information can be found in the first Mid-Term report.

C2.2- Selective vegetation control

In Progress. Control of heliophilous shrub species was implemented in all the foreseen area (foreseen 8 ha; done 10,2 ha; **100% executed, surpass 2.2ha).** Nevertheless, this territory is under **maintenance** until Project's end. New interventions will depend on monitoring guidelines. The goal was to improve habitat structure and reduce fire risk. The list of target species was defined in the OP (Action A2). In **Margaraça**, the first 2 ha were operated in June 2018 and the last ones in the February 2021. The first intervention, after the fire, was carried out using Seia's own resources, in order to create an example that was later used as reference to the rest of the area, including for ICNF teams in Margaraça. Intervention in 2021 was made using external assistance. In **Estrela**, for reasons related to worker's availability, interventions were prioritized, starting in Estrela-Cabeça (3.3 ha), then move to Estrela-Casal do Rei (1,9 ha) and finally to Estrela-Fontão (0.3 ha). Works started here in November 2019 and, along with C4 and C7, were finished (under maintenance) in July 2021.

As foreseen in the LIFE-Relict Proposal, works in Estrela and Margaraça were mainly done by external assistance (local providers) with the coordination and supervision of CMSeia and UÉvora staff. No heavy machinery was used. Interventions were done safeguarding habitat's typical species, including trees natural regeneration. Field work was done in compliance with the National Forest Fire Defence System., respecting the machine use ban in forest areas when high fire risk is declared.

As referred in previous report**,** during the execution of actions A1 and D1, it was very clear that in Estrela C2 areas there were several non-invasive alien species (Pine and Eucalyptus) that should be removed in order to better naturalize this habitat and reduce the risk of fire. However, in most situations this was not possible to do without damaging the 5230 structure, so these tree alien species were left in place. However, in periphery areas, CMSeia proceed with some eliminations, always ensuring that the habitat was not affected. **Please see for C7 details, ANNEX C2. Recover *Prunus* habitat.**

C2.3 - Improvement of habitat structure through plantations

In Progress. To improve the habitat structure, plantations of typical species were executed in 6,2 ha (foreseen 1 ha; done 6,2 ha; **100% executed, surpass 5,2 ha**). The target areas were clearings in C2, with low coverage of typical species and/or lack of natural regeneration. Plants were produced in CICYTEX (Action C1), using local genetic material (mainly seeds). Species planted in C2.3, and respective number, were: *Prunus lusitanica* (2500); *Viburnum tinus* (160); *Arbutus unedo* (68); *Crataegus monogyna* (10). As maximum, in the more open areas, plants were planted between 4 x 4m. Works were done using local providers and started in Cabeça and execute from January to March 2020 and from January to march 2021. As foreseen in the Proposal, plantations were made exclusively in Estrela areas.

We highlight one **complementary action** with no cost for LIFE-Relict, but value and enhance respective results:

1. Margaraça: In Margaraça, ICNF planted **2 ha** of Habitat 5230 characteristic species in the LIFE-Relict C2 areas. This was executed in the Spring of 2021, after C2.2 works and with the supervision of LIFE team. These plantations were not foreseen in the Proposal. The cost was supported by ICNF.

4. Problems and delays: As referred, with more detail, in the previous Report:
C2.1 execution was delayed mainly due to the very rugged relief linked to adverse weather conditions, namely frosts and intense rainfall in the spring and autumn of 2018. Also, "levada" structure was very damaged, with many leaks/infiltrations, with fallen walls and very silted, making it necessary to transport the material resulting from the silting up with resources using manual means due to the lack of access.
C2.2 and C2.3 delays, were mainly caused by the lack of specialized companies available for forest works and also the difficulty of carrying out these type of works in a mountain area with steep slope, harsh climate and difficult to progress due to vegetation density. In relation to plantations, as referred previously, were postponed, first because of the size of the propagated plants in the winter of 2018, and then because of C2.2 delays. **Currently, our biggest issue is the existence of a small herd of goats** in the planted areas of Cabeça, that have destroyed and/or damaged many of the specimens planted. Despite all our efforts done together with the local parish council and police, the situation has not yet been resolved, the owner of the herd is unimputable (considered not responsible because of psychic disorders). Parish council contacted the family who will now make efforts to resolve the problem.

4. Next steps:
Until Project end, CMSeia will ensure the maintenance of the interventions done whenever necessary, specifically in relation to the control of heliophilous vegetation (C2.2) and the reinforcement of plantations. We will continue the efforts to avoid/minimize the effects of grazing on plantations.

C.3. Improving the conservation state of *Rhododendron ponticum* areas.

1. Status: *In progress*. Lead by CMMonc with the collaboration of UÉvora. The Overall progress within each sub-action is present in Table 6.

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Foreseen start date: **Oct 2018** Actual start date: **Oct 2018**
Foreseen end date: **Mar 2022** Actual (or anticipated) end date: **Mar 2022**

Table 6. Overall progress within each sub-action of C3 action.

Sub-actions	Foreseen start	Actual start	Foreseen end	Actual end
C3.1	Oct 2018	Oct 2018	Mar 2022	-
C3.2	Oct 2018	Fev 2021	Mar 2022	-

2. Progress: C3.1 sub-action was finished. However, due to the difficulties in the production of *Rhododendron ponticum*, C3.2 have been delayed, but will be started in the beginning of 2020.

C3.1 - Selective control of vegetation
In progress. Selective control was carried out in the foreseen 3 hectares of Rhododendron (**100% executed)**. The work started in October 2018 and was done by the CMMoc own staff. The first phase of heliophilous species removal was completed in Mars (**ANNEX C3. Recover *Rhododendron* habitat**). However, as there was a significant growth of Brambles, interventions were repeated in June in order to prevent potential fire propagation. In early 2021, the control of heliophilous vegetation was done in the area above the access road to the property.

C3.2 - Improvement of habitat structure through plantations
In progress. Plantations were executed from February to March 2021 in 1.9ha (**63% executed**) of C3.2. Species used and respective number are: *Phyllirea media* (40), *Phyllirea angustifolia* (200), *Rhamnus alaternus* (245) and *Viburnum tinus* (285) were made in C3.2 territories. Therefore, a total of **770 plants were planted.** Plants were positioned in habitat clearings in order to improve its structure. plantations made in pit, with fertilization (organic compost), using the plants propagated in Action C1. Due to all the problems related to **Rhododendron** propagation the **plantation** of this species was **not yet executed**.

3. Problems and delays: So far, our major problem was the **lack of Rhododendron plants** able to be planted. However, in 2020, as referred before, CICYTEX was able to produce better specimens from seeds, with more developed root system. In this regard **we will implement C3.2 with a better survival prospects**. Apart from this problem, we also point that in 2020 we realized the existence of some rhododendrons cut off inside C3 area, along a power line. **Clearing under power lines** is mandatory by law to reduce the risk of fire. However, CMMoc had already informed the entity responsible for managing these areas about the importance of not cutting Rhododendron plants. Despite this, in 2020, the instruction was not respected. New contacts have been made in order to make sure this will not upon again. Affected rhododendron plants didn't die but still recovering from it.

4. Next steps: Proceed with plantations (including in areas were plants had die) of characteristic specie, during next winter/spring. All the Rhododendron species will be planted until de the end of 2022 spring. Whenever possible, CMMonc will do weeding and heaping - weeding and heaping are two crucial techniques for the development of plants, and should be carried out in the first months after the installation of the forest stand. Weeding is a technique for controlling spontaneous vegetation, specifically for cleaning annual weeds around individuals when they are still young (during the first year of age). The objective is to reduce the competition between herbs for natural resources such as light, nutrients and water.

C.4. Increase *Prunus lusitanica* areas.

1. Status: *In Progress*. In execution by CMSeia with the scientific collaboration of the UÉvora. The overall progress within each sub-action is present in Table 7.

Foreseen start date: **Oct 2018** Actual start date: **Nov 2019**
Foreseen end date: **Mar 2022** Actual (or anticipated) end date: **Mar 2022**

Table 7. Overall progress within each sub-action of C2 action.

* we didn't mention the foreseen start in the project

Sub-actions	Foreseen start	Actual start	Foreseen end	Actual end
C4.1	Oct 2018	Nov 2019	Feb 2022	-
C4.2	-*	Jun 2018	Mar 2022	-
C4.3	-*	Jan 2020	-*	Jun 2020

2. Progress:

C4.1- Selective vegetation control

In Progress. Globally we have executed 11.3ha (foreseen 10,5 ha; done 11,3 ha; **100% executed, surpass 0.8 ha**). Nevertheless, this territory is **under maintenance** until Project's end. New interventions will depend on monitoring guidelines. Selective control of heliophilous species was implemented in Cabeça (8,7ha), Casal do Rei (1,9ha) and Fontão (0,7ha). The procedures were the ones specified in the OP and the same referred in C2 description. Interventions were made by external assistance with Project staff supervision. Works started on 25 November 2019, in Cabeça area, and were finished in 10 july 2020 (Cabeça), 29 june 2020 (Casal do Rei) and 03 july 2020 (Trepado/ Fontão Covo). Please see **ANNEX C4. Increase *Prunus* habitat area**.

C4.2 - Improvement of habitat structure through plantations

In Progress. plantations of typical species were executed after C4.1 and C4.3 interventions inside the C4 area of 11.3 ha (foreseen 10,5 ha; **100% executed, in maintenance, more plantations to be done).** Plantations were executed according to local needs, considering the plants already present and their

density. Plants were produced by CICYTEX (Action C1), using local genetic material (mainly seeds). All the available plants were used in Cabeça (8,7ha), Casal do Rei (1,9ha) and Fontão (0,7ha). Species, and respective number, are: *Prunus lusitanica* (4731); *Viburnum tinus* (243); *Arbutus unedo* (656); *Phillyrea angustifolia* (272); *Crataegus monogyna* (14). If possible, plantation was made between 4 x 4m. Works were done using local providers and executed from January to March 2020 and from January to march 2021.

C4.3 - Control of non-invasive alien species

Completed. In Estrela, the native areas of *Prunus lusitanica* have, in most cases, been converted to Pine forests. Hence their restoration implies, necessarily, Pine removal, as well as some dispersed eucalyptus present in this territory. These species compete with native plants, but also, largely increase fire risk and soil deterioration. This sub-action started in November 2019 and was completed in June 2020 (**100% executed, no maintenance necessary**). The procedures adopted are the ones described in LIFE-RELICT Project: the wood material with economic value was removed and given to land-owners (who in this particular case, reverted its value to the local parish council). In turn, the material with no commercial value was crushed and left in place, to increase organic matter and reduce the risk of fire and soil erosion. Since this process required the entry of machinery into the intervention areas, all necessary measures were taken in order to minimize their impact at ground level, namely through the exclusive use of existing paths and trails.

3. Problems and delays: We had the same problems and delays referred for C2. Also the removal of large trees, in a place where there is soil and some species that we want to protect, has been a great challenge. However, CMSeia together with UÉvora, have followed the work and done everything to minimize the impacts of this process. As refer in C2, currently, our biggest issue is the existence of a small herd of goats in the planted areas of Cabeça, that have destroyed and/or damaged many of the specimens planted.

4. Next steps:

Both C4.1 and C4.2 need maintenance, that will be provided whenever necessary, by the CMSeia. Specifically, this will focus the control of heliophilous vegetation (C2.2) and the reinforcement of plantations. We will continue the efforts to avoid/minimize the effects of grazing on plantations.

C.5. Increase *Rhododendron ponticum* areas

1. Status: *started.* In execution by CMSeia with the scientific collaboration of the UÉvora.

Foreseen start date: **Oct 2018**	Actual start date: **-**
Foreseen end date: **Mar 2022**	Actual (or anticipated) end date: **Mar 2022**

5. **Progress:** This action was just started and is beyond schedule. Control of heliophilic species started in January 2021 in 0.8 ha of a total of 10 ha (**8% executed**). Works were done with CMM's own resources. Plantation were made in this area. Species used and respective number are: *Phyllirea media* (40); *Phyllirea angustifolia* (55); *Rhamnus alaternus* (72) and *Viburnum tinus* (115). In total 282 plants were used. In addicion, in January 2021, we made an experimental *Rhododendron's* plantations. Individuals of seminal origin (212) and individuals of vegetative origin (42) were planted side by side (one vegetative/ +- 5 seminal). All locations were marked with sticks, numbered and georeferenced with GPS. Specimens were watered weekly during the summer of 2021, by CMMonc. For more details, please see **ANNEX C5. Increase Rhododendron habitat area - Experimental plantations**.

6. **Problems and delays:** As exposed in previous report, *Rhododendron ponticum* have a small growth and seminal plants still small to be largely planted. Because of this, C5.1 have been in

stand-by. Also, the results of the experimental plantations, are particular demotivated to plants from seminal origin: **in July 2021 only 2 plants had survived from the original 2012 but none survived the summer. However, from the original 42 plants of vegetative origin, 41 was alive in July 2021, and 12 (29%) had survived the summer and still in good shape.** Despite the losses, that are common in any plantation, this is a good indicator, because it means that if the plants are big enough, they have the chance the survive.

4. Next steps: we expect to have Rhododendron plants in better condition to be planted until the end of March 2021.

C.6. Control of invasive alien species

1. Status: *In Progress*. In execution by CMSeia with the collaboration of the UÉvora (scientific backup).

Foreseen start date: **Jan 2018** Actual start date: **Jul 2018**
Foreseen end date: **Mar 2022** Actual (or anticipated) end date: **-**

2. Progress:

***Acacia dealbata* Control:** Two different methodologies were carried out in the two main *Acacia* plots in Estrela-Cabeça: **[1].** In the plot with older and larger specimens (1.05 ha) we used the debarking technique. Works started in July 2018, but were postponed due to lack of access foreseen in C7.1. Debarking work was resumed in the end of 2019 and finished (**100% executed**) march 2020. So far, the foreseen cut of debarked trees has not been done especially because we were advised not to do it (by the major specialists in this methodology in Portugal, Hélia Marchante team, from the University of Coimbra). By March 2021, the vast majority of the aerial part of the debarked trees were already dead, contrary to what had been observed in the summer of 2020, when only the trees debarked in 2019 had died. **[2].** In the other plot (0.51 ha), with smaller plants, not suitable for debarking, physical control by cutting was carried out (**100% executed**). This area will now be subject to extensive fire to stimulate regeneration and eliminate the seed bank in the superficial layers of the soil. This will be done when the weather conditions will be suitable for its execution.

In both cases, works were executed by CMSeia own staff (Please see **ANNEX C6. Control of invasive alien species**).

***Hakea sericea* Control:** *Hakea sericea* was present in Seia-Cabeça mainly in an impenetrable formation in the undergrowth of a dense and young pine forest. The overall density of this space prevented the entry of light and the survival of native species. In a first phase *Hakea sericea* was cut, together with the pine trees (**Phase I completed**), aiming to promote the death and drying of *Hakea* plants, once their main propagation mechanism is seminal. As an opportunistic and pioneer, this species presents the seeds inside highly lignified follicles, which present dehiscence only in two situations: when the plant dries out, by cutting for example, or in case of fire. Only then, seeds are release, been able to quickly colonize the area. Then we used prescribed/controlled fire, in late spring 2020, taking advantage of the dead and dry fuel present, resulting from the cutting of both the *Hakea* and the pine trees. The prescription for the use of fire aiming to eliminate *Hakia*'s seed bank, requires a fire with medium intensity and medium to long residence time, so that the fire can eliminate species regeneration and seed bank, as well as the seeds that are still remain inside the

follicles. However, fire intensity is controlled also in order to avoid soil damage in deepest soil horizon. This methodology was developed by the team of Prof. Dr. Joaquim Sande Silva, within the scope of the "FIRE AND INVADERS" Project of the Escola Superior Agrária de Coimbra (https://inovacao.rederural.gov.pt/grupos-operacionais/13-projectos-groupos-operacionais/48-fogo-e-invasoras?cookie_4edc832c64da52717aa377e8ae55a36b=accepted). *Hakea sericea* control was executed by CMSeia on staff, especially forest fire fighter's teams. Manual rip out of the few existing seminal regeneration, was carried out in late spring, by Seia team.

7. Problems and delays: The first phase in the control of alien invasive species had as foreseen start date January of 2018 and foreseen end date June of 2018. As explained in previous report, due to constant delays related to the C7.1 sub-action, we were unable to establish a proper access to C6 area. Also, in 2019 C6 works were delayed due to the lack of CMSeia staff, who have been deployed to fight fires. In terms of constraints, we also make note of the extreme difficulty of the Acacia debarking. Typically, very time consuming, this labour is even more difficult here due to the steep slope, the characteristic climatic conditions of a mountain area and the high density of acacia trees, many of them quite small. Also, during prescribed fire intervention on *Hakea*, a fire jump to a contiguous C7 plot occurred, burning about 0.5 ha outside the treatment plot. This happened despite all the restrict protocol followed, including the time-window selection, operational and planning work carried out, and the presence and participation of Fire and Civil Protection teams. It was a small fire with low severity and was rapidly extinct. However, part of this C7 area was already planted, mainly with oak trees, so the municipality had to proceed with replanting.

4. Next steps: In the next months we will follow the evolution of the natural regeneration of *Hakea* and control it with manual removal, if necessary, and control the vegetative regeneration. The control of Acacia regeneration will be done next May.

C7 - Reducing the risk of fire

1. Status: *In progress.* Executed by CMSeia and CMMon, with the scientific support of the UÉvora. The Overall progress within each sub-action is present in Table 8. Please also see **ANNEX C7 Reducing fire risk)**, for more details.

Foreseen start date: **Jan 2018** Actual start date: **Apr 2018**
Foreseen end date: **Mar 2022** Actual (or anticipated) end date: **Mar 2022**

Table 8. Overall progress within each sub-action of C7 action.

Sub-actions	Foreseen start	Actual start	Foreseen end	Actual end
C7.1	Jan 2018	Oct 2018	Dec 2018	Oct 2019
C7.2	Oct 2018	Apr 2018	Mar 2022	-
C7.3	Oct 2018	Mar 2020	Mar 2022	-
C7.4	Oct 2018	Nov 2019	Mar 2022	Apr 20
C7.5	Oct 2018	Feb 2019	Mar 2022	-

2. Progress:

C7.1 - Recovery and cleaning of access roads in the study area

Completed. All the access roads foreseen in Project, have been restored (**executed 100%**). Specifically, 2 km of paths already existent in Estrela-Cabeça an 1km of paths from Estrela-Casal do Rei were reestablished by CMSeia workers. This recovery was essential for all the management actions executed so on (C2, C4, C6 and C7) and will be a good support structures for the future forest fires prevention/extinction. Works have been done in October 2019. For more details, please see previous report.

C7.2 - Selective control of vegetation.

In progress. This sub-action was foreseen to start just in October 2018, but it was started in April 2018 in Açor-Complexo da Margaraça. This action was foreseen for the three target territories (Estrela, Açor and Monchique) and globally has been implemented as referred below:

Estrela: In Estrela territories, foreseen works were executed in 10,65 ha (**100% executed, under maintenance**). Selective control of heliophilous species was implemented in Cabeça (8,1ha), Casal do Rei (1,8ha) and Fontão (0,75ha). The procedures were the ones specified in the OP and the same referred in C2 description (including target species). Interventions were made by external assistance with Project staff supervision. Works started in November 2019 in Estrela-Cabeça and were finished in July 2020 in Estrela-Fontão.

Complexo da Margaraça: As referred in previous report, works started in 2018, in 1.8 ha. The intervention, comprised cutting of the burnt trees and shrubs and the creation of cords according to the contour lines, with the aim of reducing erosion and protect soil. This intervention was done to promote rapid plant growth and regeneration, in order to indorse rapid forest grow (creation of native forests to protect *Prunus lusitanica* remaining areas against fire) and protect all the area from soil erosion. Please see last Progress Report for details. After fire, all the area experienced the rapid growth of heliophilous shrub vegetation, as shown by the monitoring reports. In 2021 works were done in 7,9 ha, in the first months of 2021, in close collaboration between LIFE-Relict team and the Margaraça Protected Area (ICNF). So far C7.2 was done in a total of 9.7 ha of the 15 ha (**65% concluded** in Maragaraça).

Monchique: In Monchique-Cruz da Fóia and Monchique-Vale Largo C7.2 was executed in the whole foreseen area (**100% executed**). Works started in November 2018 and were finished in the second trimester of 2021. In Vale Largo works in the additional plantations area, works were done with CMMonc own staff. In Cruz da Fóia, this service was contracted by the second trimester of 2021. As planned, a selective cut was made, with the removal of heliophilous species (only the ones not characteristics of habitats 5230 and 9230), using light machinery. However, in February 2019 heavy machinery (a tractor) was used only next to the national road, in places without characteristic spices and whenever the slope allowed (in about 0.55 ha). This was done with urgency due to legal imposition, for the passage of an important bicycle race (Algarve Tour, stage Almodovar/Alto da Foia, 21/02/2019).

As mentioned in previous report, we highlight a **complementary action**: in Açor-Complexo da Margaraça, ICNF has replicated LIFE-RELICT interventions made in C7.2. Those have been done in accordance with LIFE already implemented procedures in contiguous spaces to the project intervention areas.

C7.3 - Plantations

In progress.

Estrela: Plantations were made in C7 areas in Estrela, in function of local occupancy and needs, but new plants produced by CICYTEX, will be planted in the next winter, in order to replace lost individuals and densify other areas (**100% executed, under maintenance**). Plantations were implemented in Cabeça (8,1ha), Casal do Rei (1,8ha) and Fontão (0,75ha), in function of their occupation found and its previous density. They were made by external assistance. Plants were produced by CICYTEX (Action C1), using local genetic material (mainly seeds. Species, and respective estimate number, are: *Quercus broteroana* (3814); *Quercus pyrenaica* (1601); *Quercus suber* (1203), *Arbutus unedo* (2131) and *Phillyrea angustifolia*

(60). Where possible, plantation was made respecting 4 x 4m spacing. Works were done using local providers and executed from January to March 2020 and from January to march 2021.

Monchique: In Vale Largo, plantations were carried out in 2.4 ha (0.56 ha planned and 1.84 ha additional, see complementary actions above). In the 0.56 ha foreseen in Project, 240 *Q. canariensis* and 90 *Q. estremadurensis* were planted in the spring of 2021. At Cruz da Foia, plantations have not yet been carried out in the 3.5 ha planned, but in 10 ha done by volunteers, with no cost to Life-Relict. The main reason for this delay is the existence of unauthorized grazing within the target area (which is propriety of CMMoc). As plantations made by volunteer in 2019 were completely destroyed by cattle (the same not happened in Vale Largo) we can't make more plantation without overcoming this huge problem. To cope with it, Monchique municipality made several complaints to GNR (National Gard) with no practical result, so far. Cattle (cows, sheep and horses) continue to graze in this area. For that reason, CMMonc is now going to put a fence around their land. We expect to see this problem solve until the end of the present year and be able to start plantations in next winter.

We highlight two **complementary actions** had no cost for LIFE-Relict, but value and enhance respective results:

8. Monchique: as referred in the previous report, in areas where plantations were not planned in LIFE-RELICT, CMMon made an effort to find entities to sponsor new plantations. Therefore, in November 2019 offered plants were planted in 1.84 ha in Monchique-Vale Largo and 10.10 ha in Monchique-Cruz da Foia (**executed 11.94 ha**). Plantation were carried out by volunteers, with the support of municipal teams. This intervention had no cost to LIFE, but value and enhance respective results. Please see previous report for more detailed information.
9. Margaraça: In Margaraça, ICNF planted **2,3 ha** of native species in the LIFE-Relict target areas. This was made after C7.2 executions and with the supervision of LIFE team, not foreseen in the Proposal. The cost was supported by ICNF.

C7.4 - Control of non-invasive alien species
Completed.

In Estrela, the surrounding areas of *Prunus lusitanica* were, in most cases, converted to Pine forests, which greatly increases the risk of fire throughout this intervention territory. In this sense, Pine and Eucalyptus (much less than Pine) were removed from Estrela areas, as explained in C2. Its implementation was carried out by CMSeia through a contracted company. Works started in November 2019 and were finished in April 2020 total of 10,65 ha; **100%**, reducing the probability of an external occurring fire will enter and damage the C2 and C4 areas.

In Monchique, in C7 areas the presence of Eucalyptus forests greatly increased the risk of fire in the entire LIFE area. Therefore, has foreseen, in December 2019, the cutting of non-invasive alien species had already been carried out in the entire C7 area (**100% executed**). To prevent regeneration by eucalyptus stump, the use of an adze was planned, which will break the stump into several fragments (avoiding the use of chemicals).

C7.5 - Chestnut forest improvement
In progress.

In Monchique, in the existing chestnut forest, (Monchique-Cruz da Foia), selective management of the vegetation cover was carried out to improve the structure of this Habitat, in order to increase the resilience to forest fires. This sub-action was made by CMMonc, using its own means and external assistance, in close articulation with the UÉvora. As foreseen, a total of 1.8 ha was executed (**100% executed, under maintenance**).

3. Problems and delays: The recovery and cleaning of trails in **Estrela** (sub-action C7.1) had as foreseen start date January of 2018 and foreseen end date December of 2018. However, as explained in detail in

last progress report, due to some constraints, most of them related with legislation/rules adopted after the fires occurred in 2017, this was not possible to do. However, this intervention has started in October 2019. In Estrela, we faced a set of problems already described in detail in C2 action (lack of specialized companies available for forest works, a rugged relief linked to adverse weather conditions which limited the progress of work, lack of plants suitable for plantation in 2018/19), and specially all the work constrains caused by the COVID-19 pandemic, including sanitary fences and circulation and gathering legal limitations that limited the work pace and productivity.

Both in **Estrela and Monchique** the existence of **unauthorized grazing became one of our second big problem**. In **Estrela-Cabeça area**, a small herd of goats began herding in the planted areas of Cabeça, destroying and/or damaging many of the specimens planted. Despite all our efforts, done together with the local parish council and police, the situation has not yet been resolved, once the owner of the herd is unimputable (considered not responsible because of psychic disorders). In **Monchique** plantations made in Monchique-Cruz da Foia, by volunteers in 2019, were completely destroyed by cattle (the same not happened in Vale Largo). This situation made us realize that we could not continue to plant without overcoming this huge problem. To cope with it, Monchique municipality made several complaints to GNR (National Gard) with no practical result, so far. Cattle (cows, sheep and horses) continue to graze in this area. We emphasize that this area is owned by the municipality of Monchique and that the presence of these cattle is not authorized. Monchique Municipality is now proceeding with the installation of a fence in all the target area of Cruz da Foia and the new President of the Municipality told us that he was make all efforts to install the fence as soon as possible and make LIFE plantations a priority. Also in Monchique, in early 2021, a new electrical line was installed in project area, with the approval of ICNF and CCDR Algarve. Nobody from Project was informed. We only got to know it during our field trips in January, after the opening of the holes for line installation. The interventions are marginal to the current area of C3 and C7, being aligned with the existing road. In total only one or two rhododendrons were affected (pulled out to open one of the two existing holes). However, our biggest concern is the management of shrubs that could be carried out under the new line (mandatory fuel management) and that could greatly affect Rhododendron population. In this sense, Project team contacted immediately the CCDR and ICNF (who were also invited to the seminar held in Monchique) in order to minimize the future impacts of the new power line and avoid that these situations do not occur again.

In **Margaraça**, we highlight three issues: 1. the fact that the amount of work in this action is considerably higher than initially planned, as a consequence of the 2017 fire and the significant increase in heliophilic vegetation and the risk of fire (see D1 results for details); 2. the fact that the few companies that exist in this territory do not have the capacity to respond to all the request (lack of workers); 3. the land conditions (deep valleys), which even put the workers' lives at risk. For example, in the works done during the last winter, three workers were injured and one of them was even hospitalized. In this sense the collaboration with the few human resources from the protected area, in the execution of this action, was important in order to streamline the work (also allowed to train for selective vegetation control of these sappers during their collaboration).

4. Next steps: In Estrela, next steps are finishing the intervention in C6 area, proceed with plantations between December and February, and, if necessary, between March and June the selective vegetation control in areas C2, C4 and C7. In Monchique we will make the fence around Vale Largo, and proceed with the foreseen plantations.

D1. Monitoring Conservation Actions

1. Status: This action is in progress and has been developed as planned. For detailed information, please see **ANNEX D1. Monitoring "C" actions - DELIVERABLE**

Foreseen start date: **Jan 2018**	Actual start date: **Jan 2018**
Foreseen end date: **Jun 2022**	Actual (or anticipated) end date: **Jun 2022**

2. Progress: Action D1 is divided in 5 sections that expect to monitor the main objectives of the projected Conservation Actions. Except for one of this sections (Section I - Monitoring and evaluation of the production of plants –Action C1), the monitoring was planned to be done through the use of permanent transects installed in 2018, before the execution of the Conservation Actions.

Section I - Monitoring Action C1.

Since the beginning of the project, we have been following the seed germination rate and plant survival rate of the propagation material (seeds and cuttings) collect in C1. This work is being developed by CICYTEX, coordinated by Francisco Vasquez.

The final results of monitoring the germination success rate and the survival rate of the material propagated in action C1 are summarized in table 9 and Table 10). In the **2017/18** campaign, the germination success was high for the majority of the seeds collected However, we had problems with the germination of *Prunus lusitanica*, like explained before: a big part of the seeds was collected directly from the tree, and for those the germination percentage did not exceed 0.5%; the best results were obtained with seeds collected directly from the soil, with percentages exceeding 30%. In relation to cuttings, the success was lower. In this particular case *Viburnum tinus* was the most successful species. Rhododendron germination, that was low in the end of 2018, it was improved with a change in temperature and humidity conditions (reduced the humidity up to 75% and the temperature was maintained at 24 ° C). In fact, the experience acquired over the first year has significantly improved the germination and survival success of the target plants. Overall, **in 2019**, there was an improvement in germination, as well as in the survival rate of plants compared to the previous year. However, in genera *Arbutus* and *Phillyrea* there were still some germination problems, with rates close to 10% and 30% respectively. Most plants had germination successes above 60%. The collection of seeds at a more advanced stage of maturity contributes to this improvement (with exception of the Quercineas), with particular emphasis on *Prunus lusitanica* (60%).

In 2020, the improvement of field and nursery practices allowed to increase again the germination rates, now registering success rates for most plants above 80%, as for example in *Prunus lusitanica* (82%), *Quercus broteroana* (88%) *Quercus estremadurensis* (82%), *Quercus occidentalis* (83%) and *Viburnum tinus* (91%). Due to the initial difficulties in the growth of Rhododendron's seedlings in nurseries, cuttings were also collected in order to obtain more robust plants for planting. Thus, around 450 cuttings were collected in Monchique in 2019 and in 2020 around 150 cuttings of *Rhododendron ponticum*.
Regarding survival rates, most plants presented values in 2019 above 2018 (values above 80%), with the exception of *Arbutus unedo* (0%) and *Phillyrea angustifolia* (43%), which showed a decrease.
In 2020, the constant improvement of techniques and processes allowed all plants to present very satisfactory survivals, the vast majority above 85%. Only *Quercus marianica* (55%) and *Viburnum tinus* (50%) had unsatisfactory survival rates.
Also, the development and progress of project was need new species additions, recommended by scientific committee such as: *Frangula alnus* L. (cutting samples 36 (2018 December), survival 52% (19)); *Quercus occidentalis* Gay (seeds finally produced 965 (520+445) in 2020 and 315 in 2021); *Myrica gale* L. (collected 200 seeds 2021 October) and *Rosa rubiginosa* (cutting 1 sample in 2019, obtain 8 seedlings).

Table 9. Main results from C1 monitoring since Project beginning.

Species	Germination rate (%) Oct2018	Survival rate (%) Oct2018	Germination rate (%) Dec2018	Survival rate (%) Dec2018	Germination rate (%) Dec2019	Survival rate (%) Dec2019	Germination rate (%) Dec2020	Survival rate (%) Dec2020
Arbutus unedo	12	4	14	7	74	15	82	87
Phyllirea angustifolia	20	40	7	78	35	27	45	69
Phyllirea media	-	-	-	-	28	24	25	74
Prunus lusitanica	32	98	2	91	77	89	72	88
Quercus broteroana	82	84	82	85	79	82	81	91
Quercus canariensis	77	90	77	89	82	88	76	87

Quercus estremadurensis	65	83	4	92	80	75	81	78
Quercus marianica	84	93	74	86	90	84	74	77
Quercus pyrenaica	91	99	22	72	75	82	83	79
Rhododendron ponticum	74	97	79	5	74	95	77	62
Rhamnus alaternus	-	-	4	25	33	21	69	82
Viburnum tinus	-	-	40	65	42	68	48	74

Table 10. Main details on cuttings rooting and survival rates.

	Dec2018			Dec2019			Dec2020		
	Cuttings	**Rooting**	**Survival plants**	**Cuttings**	**Rooting**	**Survival plants**	**Cuttings**	**Rooting**	**Survival plants**
Arbutus unedo	70	14	24	20	10	30	0	0	0
Phillyrea angustifolia	60	46	37	-	24	55	0	0	0
Phillyrea media	40	26	17	28	-	35	0	0	0
Prunus lusitanica	80	45	39	-	10	45	0	0	0
Rhododendron ponticum	50	10	22	450	0	10	90	0	50
Viburnum tinus	50	55	126	124	210	160	0	0	0

Sections II, III, and V - Monitoring Actions C2, C3, C4, C5, C7

To monitor actions C2, C3, C4, C5 and C7 we, since 2018: [1]. defined monitoring protocol; [2]. installed 5 transepts, each with 1.5x24m, for action/intervention area (15 in Estrela, 10 in Açor and 15 in Monchique); [3]. implement annual monitoring protocols, with the register of all plant species cover in each transept; [4] annual data digitalization and statistical analysis; [5]. Periodic reporting. All the details about monitoring protocols and transept installation and pre-intervention state can be found in our first Mid Term report.

To monitor plantation made in Estrela and Monchique, we installed Sample plots. Plots were georeferenced using GPS. All target species with less than 50 cm were noted, differentiating between plants from vegetative regeneration and those planted by the Project. For planted individuals, the species was noted, the plant height and the length of the longest leaf. Monitoring is being done twice year, before (late spring) and after summer (October).

So far, monitoring has allowed us to better known vegetation's behavior after management and evaluate all the recovery process and interventions suitability. In the last monitoring report, present in ANNEX, we compared the annual evolution of local vegetation since the pre-intervention situation, reported in 2018, until 2020. In this document we first explain the main data analysis methodology, followed by the results obtained for all the intervention areas and respective typology of actions (C2, C3, C4, C5 and C7), always regarding the different vegetation strata. Exploratory and statistical analyzes were carried out using the "R" and Excel software; In the calculation of Floristic Diversity, Simpson's Inverse was used, which measures the probability of individuals randomly selected from a given community/parcel belong to the same species ($D=\Sigma(ni/N)2$; ni= number of organisms; N=total number of organisms). Statistical significance was obtained using the Kruskal-Wallis test, for $p < 0.05$ *; $p < 0.01$ **; $p<0.001$***; NS= not significant). This is a non-parametric test. Whenever the difference was significant between years, we used a non-parametric post-hoc (Dunn's Multiple Comparison Test), to test differences between pairs of years.

The main results show: [1] for C1, compared with the previous years, the germination has improved in 2019, as well as the survival rate of the produced plants. [2]. In Monchique, C3 interventions had the expected impact: decreased the presence of species with a higher risk of fire spread, while it had almost no impact in habitat typical species. [3]. In Margaraça, action C2 had a similar impact already observed in C3 in Monchique. However, in this territory, the C7 intervention areas, which

burned in the end of 2017 and were intervened (dead material management and erosion reduction), had a significant increase in heliophile scrub, which requires special attention in management, since it represents an increasing risk of fire. [4]. In Estrela, C2 areas show an improvement of the Portuguese Laurel habitat structure. Regarding the survival rate of *Prunus lusitanica* in October (6 months after plantation) is 73% 2020 in C3 areas and 71% in C4. In relation to C7 areas, the results are similar although the plantations have been less successful. For further details please see Monitoring report (**ANNEX D1. Monitoring "C" actions – DELIVERABLE)**

Sections IV - Monitoring C6 interventions

In relation to invasive alien species, in order to illustrate the initial situation of C6 areas, in 2018 we selected a plot with 100m2 Acacia area, were we collected: species; location (Latitude and longitude); and diameter at breast height (2 perpendicular measures). For a sample of these trees, we also measured tree height, distance to canopy and canopy diameter. For Hakea areas, as is very difficult to get inside this community, so we take the monitoring values after species was cut under action C6. Main results were reported previously. After interventions, in Acacias area we selected, randomly, 20 plots whit 1x1m2, to count and access natural regeneration of this species (seminal and vegetative regeneration). The same was done for Hakea but in 40 plots. Results showed an initial tall and dense formation were the average height of trees is 10.2 m, height to canopy = 6,17m and canopy diameter is 1,8 m. Monitoring results after debarking show that all trees targeted are dry. However, contrary to what would be expected, we observed in 2020 the presence of a large number of natural regeneration with vegetative origin. On average, there are today between 7-8 individuals per m2. Seminal regeneration, on the other hand, is low (almost two individuals per m2), being more frequent in marginal areas. To cope with this problem, we immediately contact the group of exotic specialists from the University of Coimbra, we told us that is situation was not uncommon after debarking and that we should control the vegetative regeneration with cutting. With the propose of better understand this circumstance, we also visited the Life-Bright (Bussaco´s Recovery from Invasions Generating Habitat Threats) to get some advices.

Regarding Hakea, a similar initial situation was observed, with dense formations of more than 3 meters high. After intervention (cut and burning), 40 plots whit 1x1m2 were randomly selected, inside of which we count the presence of seminal regeneration. The results show that the seminal regeneration is low and especially present in the boundaries of the target areas.

Problems and delays: Monitoring never had many problems or delays, but we highlight: [1] the topography of the territory and the type of vegetation, which made the transepts installation and monitoring very time consuming; and [2] the difficulty of locate plantations inside of the plots, when the surrounding vegetation has larger cover.

D.2. Monitoring the Socioeconomic Impact

Status: In progress. Is been executed by ADRUSE and the UÉvora. The overall progress within each task of D2 action is present in Table 11. The pre-project situation was described in a specific report.

Foreseen start date: **Jan 2018** Actual start date: **Jan 2018**
Foreseen end date: **Mar 2022** Actual (or anticipated) end date: **Mar 2022**

Table 11. Overall progress within each task of D2 action.

tasks	Foreseen start	Actual start	Foreseen end	Actual end
I	Jan 2018	Jan 2018	Set 2022	-
II	Jan 2019	Jan 2019	Set 2022	-
III	Jan 2018	Oct 2017	Set 2022	-

2. Progress:

Section I. Establishment of reference situation at the beginning of the project, through socioeconomic indicators, and evaluation of its evolution at the end of the project.

In progress. In order to monitor the socio-economic impact of the project at the local level, 35 indicators were defined by ADRUSE. Those indicators are included in the following sectors: Employment, Business Development, Training, Ecotourism, Environmental Education, Dissemination of the Project to the General Public, Awareness and Environmental Education. In the before-project assessment all indicators have been evaluated as zero. They will be evaluated again in 2022, to see the impact of project in this sectors. More details can be found in our last report.

Section II. Conduct surveys and questionnaires for web users, about the site, and its contents (E1).

In progress: Questionnaires for users of the LIFE-Relict website are provided regularly, in order to understand the opinion of readers and how the Site can improve. Until now, these questionnaires were made in 2018-19, 2020 and 2021. Here we present some of the results from the first two questionnaires, once the dada from 2021 is now been analysed. Thus, in both questionnaires most of the answer came from women and between 30-50 years old and have higher education. In 2018-19 results, about 63% of respondents did not know the LIFE website, and 62% never use it. In 2020, most of the answer were from people that already new the website (55%), but the majority of the respondents rarely use the website. Most of the visits from 2020 were for curiosity (41,5%) or work reasons (29,2%).

For the ones who answer to the following specific questions, the majority are satisfied or very satisfied with the objectivity and clarity of the content, with the ease of searching and consulting the website, with the relevance of the information and with the website design. Website design was the one with higher percentage of unsatisfied in 2020 (although less than 10%). Finally, 77% (2018) and 96% (2020) of respondents would recommend the site to their contacts. Results show an increase in the level of satisfaction of site users, which is certainly related with the investment made in the last year and a half, with the development and availability of new contents and periodic updates. For more details, please see **ANNEX D2. Socioeconomic Monitoring.**

Section III. Monitoring the knowledge of the population in the intervention territories about habitat 5230 (actions E1, E2, E3).

In progress. After the 2018 surveys, ADRUSE with the collaboration of UÉvora, applied 182 new surveys to local population of the target areas. Surveys were implemented in July and August 2021 and were very similar to the ones already applied in 2018, in order to be comparable.

During the analysis, we verified again that more than half of the respondents (66%) are over 50 years old, have lower education levels (62% are under the compulsory education) and 52% of the respondents are professionally actives in the tertiary sector: local trade and public services. Hence, the demographic structure may explain some of the difficulties to increase their awareness but the lack of Project disseminations activities due to covid-19 pandemic situation will explain the overall results.

For instance, there was a slight increase in knowledge regarding Natura 2000 Network (2018 had 20% of respondents with reasonable, good or excellent knowledge and in 2021 there was 34% of the respondents with same level of understanding). The same happen with the knowledge about the project, especially in Monchique territory, where only 2% of the respondents were aware of the project in 2018 and in 2021 the percentage increase to 18%. The knowledge about the current legislation for the preservation of species and habitats didn't change between 2018 and 2021 but the percentage of respondents that admit not to know and not to answer are still higher (51% in 2021). However, the overall respondents demonstrate that have a higher knowledge about native species (49% in 2018 to

77% in 2021) and alien species (61% in 2018 to 87% in 2021). In relation to the habitat' species (Rhododendron and Portuguese Laurel), 62% of the total responder admit that they have a reasonable, good or excellent knowledge about them. The results from the comparison between 2018 and 2021 are more relevant in Monchique, where in 2018 only 38% of respondents had some degree of knowledge and in 2021 it increased to 52%. The environmental perception of the majority of the respondents is that the habitat and it dominate species (Rhododendron and Portuguese Laurel) are rare, have value to the environment and should be protected by law, especially because it has value for tourists and it values the landscape. The results confirmed the constrains that Covid-19 brought upon the Project and new approaches are needed, especially in the territories of Margaraça and Estrela. For more details, please see **ANNEX D2. Socioeconomic Monitoring.**

3. Problems and delays: The major difficulty was the existing population to respond to the surveys: in all the intervention areas we have low population density and increasing population aging. To improve time consumption, in some cases we previously contact the parish councils asking for their help to define places and people to visit. Due to Covid-19 we were not able to implement this questionnaire annually as planned.

4. Next steps: As foreseen in LIFE Project, repeat the surveys of section II and III in 2022

D.3. Monitoring the impact of the project in ecosystem services

1. Status: In progress. Executed by UÉvora with the help of all project partners.

Foreseen start date: **Jan 2018**	Actual start date: **Feb 2018**
Foreseen end date: **Sep 2022**	Actual end date: **Sep 2022**

2. Progress: After the description of the pre-project situation (send in last report), we reflected about the methodological approach to be used in each and every ecosystem service that was selected to be monitored during the implementation of the LIFE-Relict project. This methodology is in constant change due to the unforeseen constrains encounter, such as Covid-19 world **pandemic or the lack of data sources. We anticipate that when the project finishes, a more** comprehensive methodology report can then be published in order to make available to whoever needs, our approach to this particular action.

Meanwhile, for the 14 selected ecosystem services: 1) Fire protection for people; 2) Genetic heritage; 3) pest control (includes invasive species); 4) decomposition effects on soil formation; 5) Supply of edible plants or mushrooms; 6) Supply of fibres for energy use 7) Seed supply; 8) Active Tourism, 9) passive tourism; 10) Scientific research and traditional ecological knowledge; 11) Environmental Education and training; 12) Symbolic Elements; 13) Existential value; and 14) Value for future generations, work on the assessments are ongoing as planned, however with some constrains.

3. **Problems and delays:** For some ecosystem services, such as those related with the social and cultural aspect of the goods and services benefits, were put on hold due to Covid-19 pandemic. It is though that is if tourism, for example, will be assess in the end of the project, the results may not show our efforts to improve it but will only show the impact of Covid-19. The same is expected to happen with other cultural services. Therefore, for those Cultural ecosystem services that were highly affected with Covid-19, the final report will only account for its state before the interventions.

4. **Next Steps:** Conclude the assessment until the project end.

D.4. Cost-efficiency monitoring

1. Status: In progress. Executed by UÉvora with the help of all project partners.

Foreseen start date: **Oct 2018**	Actual start date: **Jan 2019**
Foreseen end date: **Dec 2021**	Actual end date: **Set 2022**

3. **Progress:** The university of Évora continues to collect all the data among all partners in order to make a final report with the objectives and proposed methodology. We are analysing results of Cost-efficiency in an annual basis. However, as we had the opportunity to clarify previously to our monitor, since many of the management works will only be completely finished at the end of the Project, results must always be seen carefully. This was highlighted in our last monitoring visit and we suggested performing only a final assessment once all interventions are finished. The request was accepted and we are now to ensure the best possible exercise as soon as possible.

3. Problems and delays: no problems.
4. Next steps: Continue to collect data, make its analysis and report in 2022.

D.5. Monitoring project indicators

1. Status: In progress. Executed by the UÉvora with the help of all team. Indicators evaluation is present in **ANNEX D5.1. Project Indicators_Dec2020 (DELIVERABLE).**

Foreseen start date: **Jan 2018**	Actual start date: **Jan 2018**
Foreseen end date: **Set 2022**	Actual end date: **Set 2022**

2. Progress: Since the beginning of LIFE-RELICT, we have collected the necessary information to fill in Project Performance Indicators with the help of all partners. Also, following the request from EASME, we also have filled Project KPI in respective platform, according to NEEMO's orientations. We made a regular update of these indicators and report them in an annual basis.

In relation to **Project Performance Indicators**, we obtained important improvements in several areas, but we highlight the ones related to habitat improvement and biodiversity resilience, as consequence of the development in C1, C2, C3, C4, C6 and C7 to (1) decrease fire risk, (2) improve relict communities structure; and (3) decrease impact of Invasive Alien Species. Also with great improvement are the indicators linked to Communication, dissemination and awareness, as consequence of interventions made in E actions, mainly: (1) students and local population involved and (2) success of the Web and Facebook pages (measured by the number or visits and number of friends, respectively). However, we think that due to COVID this numbers are less than expected.

In relation to KPI, management interventions carried out so far have contributed to the improvement of indicators; 1.5. improvement of the conservation status of an area; 4.2.1. broad leaf forest management, 7.3. Habitat condition; and 7.5. Invasive Alien Species. On the other hand, the success of the activities carried out in E's actions, have been translated into the great improvement of a set of indicators, in particular 1.6. Humans (to be) influenced by the project and 11.1. N. º of individuals/unique visits of the webpage. In relation to this indicators, except for "Publications/Reports", goals foreseen for the end of the project were already achieved.

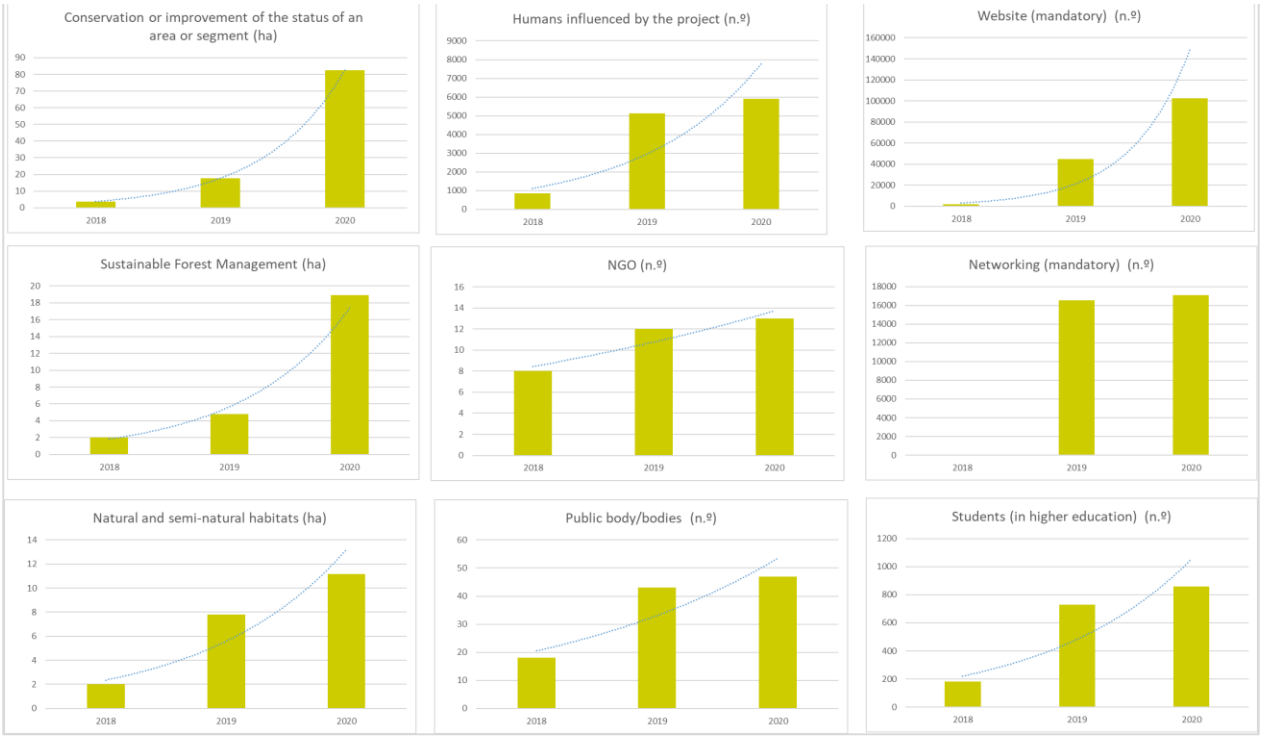

Figure 2. Some of the most important project indicators.

3. **Problems and delays:** COVID-19 largely influenced the indicators related with Networking and professional training and education. We are now trying to recover from this impact, developing new online promotional materials, mostly with UÉvora own resources. Also we have already scheduled some networking activities.

4. **Next steps:** continue monitoring.

E.1. Dissemination to the general public

1. Status: In progress. It has been implemented by all partners. The overall progress within each sub-action of E1 is present in Table 12.

Foreseen start date: **Oct 2017** Actual start date: **Jan 2018**
Foreseen end date: **Sep 2022** Actual (or anticipated) end date: **Sep 2022**

Table 12. Overall progress within each task of C1 action.

Sub-action	Foreseen start	Actual start	Foreseen end	Actual end
E1.1	Oct 2017	Jan 2018	Sep 2022	-
E1.2	Jan 2019	Jan 2019	Jun 2019	Nov 20
E1.3	Jan 2021	-	Mar 2022	-

2. Progress: As referred in previous report, at the very beginning of the project we identified and contacted many stakeholders from which we received 26 support/interest letters from Public bodies, including Municipalities that have the same habitat in their territories (11); ONG's, national and local (8);

Universities and other educational establishments, including Spanish's universities (6); and local companies (1) (please see previous report for details).

Sub-action E1.1. Production and maintenance of project website and Facebook page

Completed. The Webpage (www.liferelict.ect.uevora.pt) is online since March 2018 and it is regularly updated in both Portuguese and English. The contents of the webpage are diverse and includes news, events, information on the intervention areas, pedestrian trails, communications and photographs. Globally it has 32 articles and over 45 pages. Since its launch it reached 172 754 views and 27 884 users. The Facebook page (www.facebook.com/Life-Relict) has now 1 171 likes, but 1 238 are followers since it was launched in February 2018. For additional data please see **ANNEX E1.1. Additional information on website and Facebook progress.**

Sub-action E1.2. Installation of informative panels on the project.

Completed. All panels are in place since November 2020. Panels content and layout was conceived by the UÉvora with revision and validation from CMMonc and CMSeia. Panels were produced in order to meet national legislation inside Protected areas. Panels layout are available online in LIFE-RELICT Webpage. For additional information please see **ANNEX E1.2.** ***Installation of informative panels***

Project foresee the installation of 6 panels, one in each intervention area. However, only 4 panels were installed, namely, 2 for Estrela (not 3); 1 in Monchique (not 2) and 1 in Margaraça. The main reason was that the intervention areas are not easily accessible to general public, thus, it was considered more important to place these panels in the nearest villages or crossing points in order to become accessible to the general public. Moreover, action E2 foresees the installation of more project panels in the pedestrian trails, therefore, we do not want to overload the intervention areas with panels.

Sub-action E1.3. Execution of the Layman's Report

Not started yet**.** This action has not been initiated but is expected to be carried out according to the schedule foreseen in the application.

3. Problems and delays: As reported earlier in more detailed, we have had some slight delays due to several factors, such as external bureaucratic process related to legal procedures, receiving companies' budgets and due to internal bureaucracies regarding the selective process and purchase proceedings.
4. Next steps: Continue to improve and develop project website, promote Facebook page and start the production of the Layman's report.

E.2. Communication and nature tourism

1. Status: In Progress. The overall progress within each sub-action of E2 is present in Table 13.

Foreseen start date: **Oct 2017** Actual start date: **Jan 2018**
Foreseen end date: **Sep 2022** Actual (or anticipated) end date: **Sep 2022**

Table 13. Overall progress within each task of E1 action.

Sub-action	Foreseen start	Actual start	Foreseen end	Actual end
E2.1	Jan 2018	Jun 2018	Dec 2019	-
E2.2	Aug 2018	Oct 2018	Set 2022	-
E2.3	Jul 18	Out 19	Dec 2021	-
E2.4	Out 17	Out 2017	Set 2022	-
E2.5	Jan 2018	Dec 2017	Set 2022	-

2. Progress: This action is undergoing as foreseen.

Sub-action E2.1. informative flyers

In progress. The UÉvora produced the contents and the partners CMMon and CMSeia produced the respective design and printed it out. The informative flyers have an A5 size and are divided into two different parts: one with project main information and the other part is a postcard. This layout was selected because postcards add an extra utility to it and will reduce the chances of been thrown away after read, enhancing the dissemination. With this postcard we can potentially reach more people. The flyers in Portuguese and English have been finished and were attached in the last report. Still, the partner Cicytex has translated the content of the flyer to Spanish and is committed to print it out by November 2021.

Sub-action E2.2. Creation of itinerant exhibitions

In progress. The execution of this sub-action was divided in tasks between each partner involved, such as CMMonchique and CMSeia because they will have two different exhibitions, one about the Rhododendron and another about the Portuguese Laurel, respectively. Moreover, the scientific content was produced by UÉvora and the design was at the responsibility of each respective partner. However, the overall process was time consuming because revisions were made by all the involved partners in order to meet everyone expectations. At the moment of this report, the itinerant exhibition of CMMonchique was concluded and already used in the 2nd seminar of the project (16th of July 2021). To what concerns the itinerant exhibition of CMSeia, the design is concluded and it is expected to be printed out soon. The opening of Seia exhibition will take place on November 27th as part of the CISE Open Day. The main reason for the delay of these products is related to the need of special care that has been given to the production of this communication material in order to guarantee its utility and the information given during and after the project ends. **ANNEX E2.2. *Additional information about the itinerant exhibitions*.**

Sub-action E2.3. Implementation of interpretive trails

In progress. To what regards the Rhododendron Small Route in Monchique, UÉvora and the project partner CMMon created a partnership with Almargem Association, which is the coordinator of the Great Pedestrian Route (GR13 – Via Algarviana) and one of the biggest nature-based tourism promotors in Algarve, in Oct 2019. Thereafter, the production of the communication materials and the implementation of this small route was done in accordance with all partners involved in order to guarantee its sustainability in the after-LIFE. As such, the Rhododendron small route was included in Via Algarviana Route, in its new communication materials as a complementary small interpretative trail (info attached) and is expected to ensure the dissemination to a wider audience. At the time of this report, the Monchique Pedestrian Route was already implemented and officially inaugurated on the 16th of July 2021, after the 2nd Life-Relict Seminar. In the After-Life period, the Rhododendron small route will be maintained by the project partner CMMonchique and will have the technical support of Almargem Association. To what concerns the Portuguese Laurel interpretive small route, the project partner CMSeia is preparing its materials and is committed to implemented it until the end of December 2021. This small route will overlap the one that already exist, named *Rota dos Socalcos*, being its communication material complementary to what already exists. **ANNEX E.2.3**. **Additional information about the Implementation of interpretive trails.**

Sub-action E2.4. Implementation of reports

In progress. Since the beginning of the project that we have been making several contacts to the national, regional and local media in order to stimulate their curiosity in reporting our project progress. The results of our efforts are shown in the increasing number of articles produced and disseminated in our website (http://www.liferelict.ect.uevora.pt/index.php/imprensa/?lang=en). Meanwhile, we are collecting more images and videos throughout our fieldwork in order to produce some promotion videos and expected to disseminate them through our website and Facebook page. Moreover, in June 2019, a report in the format of a video was made by APA (Portuguese Environment Agency) about the project

action in Monchique. This report happened during the 2nd project workshop. **ANNEX E2.4. *Additional information on news about the project.***

Sub-action E2.5. Dissemination action during the event "Cabeça, Aldeia Natal"

In progress. Since the end of 2017, we have promoted LIFE-RELIT at the Christmas event called "Cabeça, Aldeia Natal", in the village of Cabeça. In fact, in 2017 we set an exhibition where visitors could learn about the Project and the importance of the Habitat conservation. By that time, the organization estimated that 15 000 persons visited "Cabeça, Aldeia Natal". In 2018 (December, 27) and 2019 (December, 14 and 27) CMSeia with the help of UÉvora organized interpretive visits to *Prunus lusitanica* forest. The activities consisted of a pedestrian walk (3km) in Cabeça surroundings and was part of event "Cabeça, Aldeia Natal" program. In the trail of 2018, it participated 12 persons and 45+12 in the two editions of 2019. Thereafter, due to the world pandemic, no more events were organized. However, if possible, next Christmas, one more event will be implemented.

3. Problems and delays: the production of the E2 communication materials has been much more laborious and time consuming then we anticipated. Particularly, when trying to convergence different opinions and contributions from team members as it is complicated to reach the equilibrium between what is scientifically correct and extremely important and, what is attractive or interesting to the general public.

4. Next steps: In the next couple of months we will finish the missing communication materials and will try to organize our 2021 participation in Cabeça, Aldeia Natal event.

E.3. Awareness and Environmental Education

1. Status: This action is ongoing as planned. The overall progress within each sub-action of E3 is present in Table 14.

Foreseen start date: **Dec 2017** Actual start date: **Dec 2017**
Foreseen end date: **Sep 2022** Actual (or anticipated) end date: **Sep 2022**

Table 14. Overall progress within each task of E3 action.

Sub-action	Foreseen start	Actual start	Foreseen end	Actual end
E3.1	Jun 2018	Jun 2018	Jul 2022	-
E3.2	Set 2019	-	Jul 2022	-
E3.3	Dec 2017	Dec 2017	Set 2022	-
E3.4	Out 2018	Dec 2019	Set 2022	-

2. Progress: This action is undergoing

Sub-action E3.1. environmental education activities in schools

In progress. So far, we involved **543 people** in environmental education activities (i.e. 495 students ranging from preschool to secondary schools and 48 teachers and assistants). The type of activities varied among the age and the curriculum specifications of each class. It was developed 21 sessions within the school facilities or in CISE (Interpretation centre of Estrela Mountain) or online session and 10 fieldtrips to the intervention areas of the project.

At the beginning of 2018, all involved partners in this sub-action (CMSeia and CMMonchique) prepared education materials to apply in the schools within their range areas.
In the school year of **2018/2019**, CMMonchique carried out environmental education activities to primary school students that visited the project intervention area of Vale Largo, learned about the importance of the project as well as the characteristics of the Rhododendron community. The project partner CMSeia also developed activities in this same school year to preschool and primary students. The contents of these activities included learning about the importance of the project as well as the characteristics of the Portuguese Laurel and some had the opportunity to visit Casal do Rei intervention area.
For the school year **2019/2020**, UÉvora develop one environmental education activity in the secondary school of Gouveia. The project partner CMSeia applied a new education plan called "from the tree to the forest" to preschools and primary students. This plan included several sessions in CISE and activities in the Casal do Rei intervention area and was carried out during the months of September, October and November. Meanwhile, all the school activities, either in Seia as in Monchique, were interrupted due to the pandemic situation.
For the school year **2020/2021**, the project partner CMSeia continue to apply the "from the tree to the forest" education plan to preschools and primary students. In this same school year, UÉvora created a new environmental education plan for the project partner CMMonchique but due to the ongoing world pandemic and school restrictions, it was not possible to implemented it. It is expected to be implemented in the next scholar year 2021/22 and to this end, the project partner CMMonchique will hire a teacher to implement this environmental activity plan. Moreover, during May and June 2021, UÉvora develop 3 sessions in a secondary school in Évora called André de Gouveia. These sessions aimed to introduce the project to students from 3 different professional courses, namely multimedia, sport and theatre. The main goal was, not only the dissemination of the project activities, explain the importance of the habitat and its threats, but also to encourage student to develop this thematic under their final coursework. By the time of this report, there was one student from the multimedia course interested in an internship with Life-Relict in order to produce audio-visual materials for their final coursework and to help us to disseminate further our project. UÉvora also developed 1 education session, this time online, to students from the Secondary School in Estremoz. This session was integrated in a broader seminar under the theme climate change and natural disasters where UÉvora presented how Life-Relict project is contributing to the mitigation of climate change in the 5230* habitat. Another 2 online education session were developed by UÉvora to students of the Secondary School of Portalegre, where the theme was native forests and in which Life-Relict was presented. For more information, please see **ANNEX E3.1. *Additional information on environmental education activities in schools***.

To what regards the **complementary action** that we mention in previous report, it was postponed due to covid-19 but is expected to be implemented in 2022. To be remember that this complementary action is related to the invitation of Diogo Pimenta about the integration of Life-Relict in a **national project called Autóctone**. This is an environmental education project, with private funds, which is currently being re-elaborated and has two distinct aspects: a physical space close to Mafra city, where there will be an exhibition on conservation projects that are being carried out in Portugal (one per municipality); and a team that will travel to schools to talk about those same projects. The Autóctone project will produce all the communication materials related to LIFE-RELICT, and UÉvora is committed to provide all the scientific support for its execution. **This project will allow us to enhance our environmental education work, free of charge, until the end of the project and in an after-LIFE phase.**

Sub-action E3.2. School contest
In progress. The school contest is about to be launched next school year (2021/22) in both areas: Seia and Monchique. The example of the regulation and application form to be applied in Seia are attached in the **ANNEX E3.2 – *detailed information on the school contest*.**

Sub-action E3.3. informative sessions
In progress. So far, we developed two informative sessions for the local population that took place in Cabeça village in the year of 2017 and 2019. The first, on 28th December 2017, the informative session involved several landowners and other interested residents. This session was implemented by the UÉvora and CMSeia project partner and more than 30 persons were present. The second informative

session was held on 27th December 2019 in the "Cabeça, Aldeia Natal" event, after the interpretative visits under sub-action E2.5, we organized a ***Magusto*** (a popular autumn reunion around a fireplace, eating roasted chestnuts) for local population and visitors and it was in collaboration with local parish council. About 35 persons participated, where we had the opportunity to talk about LIFE-RELICT project. Also, in 2019, an extra session was developed in Orvalho village, outside the intervention areas. For more information about this extra session, please visit to our website: http://www.liferelict.ect.uevora.pt/index.php/2019/05/31/orvalho-detem-importante-repositorio-da-laurissilva-continental/?lang=en . Since than (2019) no more sessions were developed due to Covid-19 but we anticipate that during the last months of 2021 and/or begging of 2022 more informative session will be made possible, if the world pandemic situation allows.

Sub-action E3.4. Plantations with volunteers

In progress. During the event "Cabeça, Aldeia Natal" in 2019, the project partner CMSeia made a symbolic plantation with volunteers, in Estrela-Cabeça C2 intervention area. It was planted 20 Portuguese-laurel produced by CICYTEX in C1. During 2020, the project partner CMMonchique made an unforeseen extra activity with volunteer to plant 11.9 ha in our C7 areas, in Monchique. This involved several local stakeholders and the plants used were offered by the local plant nursery. Thus, it didn't imply extra costs for the Life-Relict project.

3. Problems and delays: In 2018, an informative session was foreseen for Cabeça local population. However, at that time, we didn't have important management actions ongoing so we decide not to do it as we considered that could be counterproductive because the local inhabitants/owners have always been anxious with the beginning of the fieldworks. More recently, the world pandemic situation caused by Covid-19 had a great impact on the implementation of these sub-actions. Even thought, most entities try to overcome the problems associated the pandemic situation, shifting from presential to online activities, it was not possible for us. Particularly because we are trying to reconnect people with nature, therefore, fieldtrips to the habitat areas are indispensable. For instance, it is not possible to do plantation with volunteer over the internet. Moreover, neither the students nor the elderly people that are residents within our intervention areas were prepared for the online teaching/informative sessions. It must be referred that we are working in underdeveloped rural areas, where the majority of the population does not have access to a computer nor internet.

4. Next steps: If the control of pandemic situation improves, we will try to resume all activities until the end of the project period.

E4. Scientific dissemination

1. Status: This action is in progress and, in general, been developed as planned (Table 15).

Foreseen start date: **Jan 2018** Actual start date: **Out 2017**
Foreseen end date: **Sep 2022** Actual (or anticipated) end date: **Sep 2022**

Table 15 . Overall progress within each task of E4 action.

Sub-action	Foreseen start	Actual start	Foreseen end	Actual end
E4.1	Jan 2018	Nov 2018	Sep 2022	-
E4.2	Jan 2018	Jun 2018	Sep 2022	-
E4.3	Jan 2018	Out 2017	Sep 2022	-
E4.4	Jan 2018	Out 2017	Sep 2022	-

2. Progress: This action is undergoing

Sub-action E4.1 - Organization of seminars

In progress. We have done the 1st Life-Relict Seminar in Évora in the 14th and 15th of November 2018, in association with SPECO (17th National Ecology Meeting). The 15th of November was the specific day for LIFE-RELICT, and so, was free for participants. This event was published nationally since April 2018, especially in several net platforms. SPECO created the advertising material, with our help, but without extra expenses for LIFE-RELICT. UÉvora team contact sponsors and got several offers that were given to the participants: bags from "Piscinas Biológicas", pen drives from ECOMED project, pencils and folders from "Assus" insurances, coffee from "Delta Cafés" and extra food from several local stores (fruit, cheese, sausages, wine). The seminar took place in UÉvora facilities. We had 180 inscriptions and a full amphitheatre. The strategy was to focus this seminar in conservation main problems, ensuring knowledge exchange between conservationist, researchers and conservation projects. In this regard, we invited three speakers: Angel Penas (climate specialist); Tomás Diaz (specialist in invasive control in Spain), and Elizabete Marchante (specialist in invasive control in Portugal). We also invited, without extra expenses, other LIFE projects, including LIFE-PRIOLO that was done some similar management interventions in Azores islands (For E5 objectives). In total in LIFE day we had 24 oral communications (including 3 conferences). After the seminar we organized a visit to Évora heritage (led by a specialist from Évora Municipality) followed by a cocktail with Alentejo Popular songs. Both visit and cocktail were offered by the municipality of Évora.

More recently, we have done the 2nd Life-Relict Seminar that took place in Caldas de Monchique, on the 16th of July 2021. Due to the pandemic situation it was only possible to have around 20 people present in the event but the Project partner CMMonchique made the necessary arrangements to have it broadcast Live in *YouTube* (https://www.youtube.com/watch?v=8C94s1XLE4Q). At the end of August 2021, the movie had more than 380 views. The program of the 2nd Life-Relict Seminar included not only the presentations of it progress made by all project partner but also presentations of local stakeholders such as Almargem Association and Geota. In this same day, the Rhododendron pedestrian route was officially inaugurated. For more detail, please find attached the **ANNEX E4.1. 2nd Life-Relict Seminar information**.

Sub-action E4.2 - Organization of technical workshops

In progress. We have implemented three technical workshops. The **1st workshop** was led by UÉvora and took place in Margaraça. This was a real success with the attendance of 35 participants from different entities (Quercus, ICNF, Reflorestar Portugal, Cicytex, the Municipality of Oleiros, Center for Functional Ecology – University of Coimbra, and local associations members) *(See First Progress Report for more details)*. The **2nd workshop** took place in Monchique and was led by CMMonc with the theme "Valorisation and Management of Mediterranean *Rhododendron ponticum* communities". We planned this 2nd workshop for 25 participants but in the end decided to extend the number of entries to 45 in order to ensure the participation of all interested entities, such as ICNF, GEOTA, APA, ISA, IGOT, UAlg, 2bforest, Biopiscinas, and several other local associations. The **3rd workshop** was held by CICYTEX on February the 14th 2020. The main topic was the propagation of vulnerable species. The event took place at the Instituto de Investigaciones Agraria, Finca La Orden, Valdesequera, in Badajoz. Here, the 48 participants had the opportunity to get to know more closely the work that the project partner CICYTEX has been developing under Action C1 – Collection and Propagation of Vegetable Material. The opening session was attended by the Director General of CICYTEX, Carmen González Ramos, with the coordinator of Life-Relict, Prof. Dr. Carlos Pinto Gomes from the UÉvora and with the Research Coordinator of CICYTEX, responsible for the working group for the propagation of vulnerable Life-Relict species, Francisco Vasquez Pardo. Thereafter followed the presentations on the work developed at CICYTEX within the scope of Life-Relict Project and some of the results already achieved were disclosed. Then, the participants went to see the facilities where everything happens, such as the laboratory where the seeds are cleaned and the first germination tests are carried out. The visit to the greenhouses took place immediately afterwards, where it is possible to observe the development of the Rhododendron cuttings (*Rhododendron ponticum* subsp. *baeticum*), the Portuguese Laurel (*Prunus lusitanica*) and many other species, including *Quercus sp.* Once more we applied a survey to participants to understand their

perception of the 3rd workshop. When analysing the data from the 3 surveys applied in the 3 workshops, the results show that the majority of participants have already heard about the target species, recognising that they are rare and in poor conservation state. Additionally, more than 70% of the participants know the existence of the Life-Relict project and admitted that their knowledge improved significantly after the workshops. For more details, please see **Annex E4.2 Additional information on the Technical Journeys**

Sub-action E4.3 - Representation in national and international seminars and congresses

In progress. We represented Life-Relict project in **22 scientific national and international events** with **32 oral communications** and **2 posters** to an estimate **audience of 1683 people** as described as follows:

[1] 1º Congresso Luso-Extremadurense (Évora, 20-21 Oct, 2017, 1 poster, no costs for Life-Relict); **[2]** European Meeting of Phytosociology - Congresso europeu de fitossociologia, biogeografia e sintaxonomia das regiões atlânticas (Cabo Verde, 5-7/11/2017, 1 oral communication, no costs for Life-Relict); **[3]** 1º Congresso Internacional em Planeamento Sustentável e Ordenamento Territorial (Madeira Islands, 4-6 Jun, 2018, 1 oral communication, no costs for Life-Relict); **[4]** XII Séminaire international Gestion et conservation de la biodiversité (10-17 Jul, 2018, Ordino, Andorra, 3 oral presentations, with 2 register cost imputed to Life-Relict); **[5]** 2º Congresso Luso-Extremadurense (Badajoz, Spain, 18-19 Oct, 2018, 2 oral presentation); **[6]** Seminário LIFE-RELICT/Encontro Nacional de Ecologia (Évora, 15 Nov, 2018); **[7]** Seminário em Estudos Avançados em Ciências do Ambiente (Évora, 29 Nov, 2018, no costs for LIFE-RELCIT]; **[8]** 1ª Conferência Internacional Rota das Aromáticas na História da Medicina (21 Mar, 2019, 1 oral communication); **[9]** LIFE-PRIOLO Seminar (29- 30th Apr, 2019, Ponta Delgada, Azores, 1 oral communication); **[10]** XII Séminaire international Gestion et conservation de la biodiversité (Faro, 2-7 Jun, 2019, Loulé, 2 oral communication); **[11]** XI Seminário Internacional de fitossociologia (9 Sep, 2019, Faro, 2 oral communication, no costs for Life-Relict); **[12]** IV Encontro de Estudantes de Doutoramento (11-Jun, 2019, Évora, 1 oral communication, no costs for Life-Relict); **[13]** LIFE-Imperial seminar (Castro Verde, 15 Nov, 1 oral presentation); **[14]** III Congresso Luso-Extremadurense (Évora, 25-26 Nov, 2018, 1 oral communication and 1 poster, no costs to LIFE-RELCIT); **[15]** Workshop #5: Establishment Of The Basic Content Of Action Plans At Biogeographical Region Level For Habitat Types Of Community Interest (Online, 4 Nov 2020, One Oral Communication); **[16]** Workshop #3:Formulation Of Protocols For The Standardised Assessment Of The 'Structure And Function' Parameter Of Habitat Types Of Community Interest (Online, 11 Nov 2020, One Oral Communication); **[17]** Workshop #4 Formulation Of Protocols For Standardised Assessment Of The 'Threats And Pressures' Of Habitat Types Of Community Interest (Online, 12 Dec 2020, One Oral Communication); **[18]** V Phd Students Meeting In Environmental And Agriculture (Évora, 9 Dec 2020, 1 Poster); **[19]** 19º Encontro Nacional de Ecologia (online, 10 Dec 2020, 3 oral communications); **[20]** 1 Encontro Nacional sobre as Zonas Húmidas da Serra da Estrela (online, 2 Feb.2020, 1 oral communication); **[21]** Mês Internacional da Arquitetura Paisagista (online, 14 Apr 2020, 1 oral communication); **[22]** xxvii Jornadas Pedagógicas da ASPEA (Castelo de Vide, 18 Jun 2021, 2 oral communication). For detailed information on the communication presented in these events, please visit our website page on: http://www.liferelict.ect.uevora.pt/index.php/apresentacoes/?lang=en

Sub-action E4.4 - Promotion of talks

In progress. Since the begging of the project we have develop **25 talks** to an estimate audience of **372 undergraduates and graduate students** at the University of Évora. One of this talk was during a field excursion to Serra da Estrela. The students were from different courses, such as BSc in Biology, MSc in Conservation Biology, BSc in Landscape Architecture, BSc Geography, BSc Ecotourism, MSc in Landscape Architecture, BSc Environment & Ecology and in Archeology and Environment. In order to reach wider audience, in Mars 2019 we held an open class with the title "Do you now continental Laurissilva?", for the general public at the University of Évora. This class was properly disseminated through our platforms with posters placed throughout the University campus. This event was attended by 21 people, including students from the following degrees: Forestry; Environmental Architecture; Biology; Ecology and Environment; and Architecture.

Sub-action E4.5 – field Guide
Not started as foreseen.

3. Problems and delays: In the begging of project it was predicted the execution of the 1st Seminar until July 2018. However, during the first months of the project we realized that it would be better to do it later in 2018, in order to have more time to better organize it and that it would not be done very close to the 1st technical journey scheduled for June 2018. After talk to our project monitor we scheduled it for November. We now believe it was the best option because it allows us to define a different approach and have a better organized seminar. Afterwards, the progress of these sub-action was as foreseen until the world pandemic caused by covid-19 got started. It was necessary reschedules some activities and shift the format from presential to online.

4. Next steps: The 3rd Life-Relict seminar as well as the 4th workshop will be prepared and develop next year (2022) with the contribution of the project partner CMSeia. UÉvora will carry on promoting talks within the University and the field guide will be developed until the end of the project.

E5. Replication efforts and networking with other projects

1. Status: This action is in progress and been developed as planned.

Foreseen start date: **Out 2017**	Actual start date: **Out 2017**
Foreseen end date: **Sep 2022**	Actual (or anticipated) end date: **Sep 2022**

2. Progress:

Sub-action E5.1 - Establish a network of contacts with other projects
In progress. During the reporting period we had the opportunity to established several contacts with other national and international projects. In October 2017, in LIFE Kickoff meeting in Bruxels, we were able to meet several other projects, exchanging information later with three of them. In October 2017 LIFE IAS Free Habitats (LIFE16 NAT/BG/000856), from Bulgaria (through Dimitrina Boteva), asked us about information on Invasive Alien species control. We send them the information we had. The same information was also sent to LIFE ALNUS (LIFE16 NAT/ES/000768), from Spain (through Jordi Camprodon). In April we changed information about ecosystem services with LIFE IN COMMON LAND (LIFE16 NAT/ES/000707), also from Spain (through Boris Hinojo). In May 2018 we were in Fundão in the meeting "INTER LIFE PT 18" promoted by LIFE PT CAPACITY (LIFE14 CAP/PT/000004) were we were able to contact with the projects: LIFE WW4ENVIRONMENT (LIFE08 ENV/P/000237); LifeCiP (LIFE12 ENV/FR/001113); LIFE AGUEDA (LIFE16 ENV/PT/000411); LIFE Food & Biodiversity (LIFE15 GIE/DE/000737); LIFE CERSUDS (LIFE15 CCA/ES/000091); and LIFE ELCN (LIFE16 PRE/DE/000005). We also maintain regular communication with the other LIFE projects developed by the UÉvora, including LIFE CHARCOS (LIFE12 NAT/PT/000997); LIFE LINES (LIFE14 NAT/PT/001081); LIFE SARAMUGO (LIFE13 NAT/PT/000786); and LIFE MONTADO ADAPT (LIFE15 CCA/PT/000043). In December 7th, 2018 we attended to the closing event of Portuguese LIFE CAPACITATION (LIFE14 CAP / PT / 000004) were we were able to contact with the projects: "LIFE SWSS (LIFE14 ENV/PT/000508); "LIFE Food & Biodiversity (LIFE15 GIE/DE/000737); "Life-RENDER" (LIFE16 ENV/ES/000173), "LIFE DeNTreat (LIFE16 ENV/IT/000345); LIFE FLUVIAL (LIFE16 NAT/ES/000771); LIFE-Dairyclim (LIFE14 CCM/BE/001187), LIFE OPTIMELT (LIFE15 CCM/NL/000121); OPAL- (LIFE14 CCM/FI/000254); LIFE ADAPTATE (LIFE16 CCA/ES/000049); lifeBiodiscoveries (LIFE13 BIO/PT/000386); LIFE VIDALIA (LIFE17 NAT/PT/000510); LIFE WolFlux (LIFE17 NAT/PT/000554) LIFE GreenShoes4All (LIFE17 ENV/PT/000337); LIFE AGUA DE PRATA - AGUA DE PRATA (LIFE17 CCA/PT/000076 and LIFE IP AZORES NATURA (LIFE17 IPE/PT/000010). We also **received Dr. Gianni Bacchetta** from PROVIDUNE (LIFE07NAT/IT/000519) and LIFE RES MARIS (LIFE13 NAT/IT/000433) in a meeting to exchange knowledge about propagation of rare species. Those contacts are translated in experience exchanges and support.

CICYTEX also identify **LIFE PRIOLO (LIFE12 NAT/PT/000527)** as the project most important for us in this context, because they are also promoting laurissilva relicts in Azores islands, using *Prunus*. We make the contact with them and **visited** (Dr. Pedro Santos, from the UÉvora team) the project in April 2019. Another important connection was with the European project ECOMED (http://ecomedbio.eu/), a project that aims to generate a theoretical-practical sectoral program, essential for the specialization process of the Mediterranean Eco-engineering sector. We were able to bring Klaus Peklo (with no costs to the project), from ECOMED to visited the burned area of the Margarida Forest. The purpose was to help us to do our foreseen interventions in the best way possible to stop soil erosion after the fire of 2017.

In order to establish a network with other projects and local stakeholders, in October 2019 we offered **our collaboration in the project "Via Algarviana - An Praise to Nature", with the promotion of 2 training actions in the area of Botany, with visit to project areas,** targeting technicians and tourist entrepreneurs (totaling 18 people). These activities will also contribute to the objectives of action E2.

Sub-action E5.2 - Replication efforts

In progress. We have contact some municipalities from the central Portugal, were the habitat is present, offering orientation in their habitat areas. So far our replication efforts translate to: **[1]. Mação Municipality** - Estimated the population of *Prunus lusitanica* in the Municipality with georeferencing. Also, when making interventions on water lines, they already take into account the management guidelines of our project. We were asked to participate in the monitoring of some management interventions, and Professor Carlos Pinto Gomes attended it, within the LIFE-RELICT; The Municipality has already collected seed and has about 200 specimens of Prunus to plant by the end of 2021, in a process carried out with our collaboration: **[2]. Pampilhosa Municipality** - georeferenced the areas where *Prunus lusitanica* occur and are also following the LIFE guidelines. They showed interest in our collaboration in the scope of future projects to be submitted. However, no follow-up has yet been requested; **[3] Oleiros** - Although they have already prepared a letter stating that they intend to replicate LIFE-RELICT actions in practical terms only a publicity action was carried out (25-05-2019) entitled "Discovering Laurissilva". Although there are intentions to carry out concrete management actions, these have not yet materialized; **[4] Proença-a-Nova** - The Municipality, in close collaboration with LIFE-RELICT, implemented efforts to discover some areas where Habitat resettlement is possible. Despite the initial interest, we have no further developments; **[5] Pedrogão Grande** – Is a Municipality were *Prunus lusitanica* is native. Here a private owner is interested to recover Habitat 5330. He is going to make a plantation in 0,5 ha and is now in the process of plants' acquisition; **[6]. University of Santiago de Compostela (Spain)** - We are collaborating with a group from the University of Santiago de Compostela, that is working in the recovery of *Prunus lusitanica* communities in Xurés mountain. They are going to visit us next December, in order to see our interventions and replicate them.

[6] Margaraça - As referred before ICNF, in the burnt areas adjacent to the LIFE areas, similar management actions were carried out; **[7]. Monchique** - The GEOTA Group within the scope of the "Renatura Monchique" project is already following the management guidelines of LIFE-RELICT. This fact is already expressed through a protocol signed between GEOTA and UÉvora. Regarding the contacts with Leon which we referred in previous report, we didn't have positive results, given the lack of interest shown by the local entities. With the support of Professor Angel Penas (ex-rector from the University of León) we have tried several times to replicate our management actions in local ongoing projects, but we had no success.

3. Problems and delays: no problems or delays in the action.

4. Next steps: continue efforts.

F1. General coordination of the project by UÉvora

1. Status: This action is in progress and, in general, is been developed as planned leed by UÉvora.

Foreseen start date: **Oct 2017**	Actual start date: **Oct 2017**
Foreseen end date: **Sep 2022**	Actual (or anticipated) end date: **Sep 2022**

2. Progress: As foreseen Project is being coordinated by the UÉvora, led by Professor Carlos Pinto Gomes and managed by Dra. Catarina Meireles. The administrative and financial structure is currently led by Dra. Cristina Louro. As foreseen in sub-actin F.1.2 professor Carlos Pinto Gomes is coordinating the scientific component of the project. Partnerships agreements with all 4 partners were firmed in November 2017. The A Kick-Off Meeting was attended in Brussels in 18 and 19 October 2017.

Since the beginning of this project, the coordination team keeps regular contact with all the beneficiaries, including by regular meetings as foreseen in sub-action F.1.3 (**ANNEX F1. Project steering committee meetings - DELIVERABLE)**. Contacts were always mostly made by telephone or video-call, what became the rule since COVID-19.

Steering committee was defined in November 2018. We keep regular contact with Dra. Sara Barceló, our NEEMO monitor. We make regular situation points with her, and always had her quick feedback and help. We had her first visit on the 24th and 25th of January. The first day was in Seia and the second was made in Açor project area. The second visit comprised a visit to cicytex in February and a visit to Monchique. In 2020, due to COVID-19 the third visit was virtual, targeting Seia intervention areas; and in 2021 (fourth visit), in Seia, with field trips to Cabeça, Casal de Rei and Fontão intervention areas

3. Problems and delays: As mentioned before our main problem in project managmente was the large forest fire that affected Açor-Complexo da Margaraça in October 2017, and that forced us to reformulate planned interventions. COVID-19 also affects the presence meeting with partners.

4. Next steps: This action will continue to be carried out as planned.

F2. Scientific Committee

1. Status: This action is in progress and, in general, is been developed as planned lead by UÉvora.

Foreseen start date: **Oct 2017**	Actual start date: **Oct 2017**
Foreseen end date: **Sep 2022**	Actual (or anticipated) end date: **Sep 2022**

2. Progress: In November 2018, the scientific committee was already defined. This committee includes now: one representative of each partner (as refereed in First Progress Report), a representative from the central services of ICNF (Dr. Pedro Ivo Arriegas) and three representatives of Universities from the Spanish and French territories with the same target communities (Professor Sara Del Rio, Professor Eusébio Cano, Professor Jean Jaques Lazard) (please see First Progress Report for detailed information). As recommended by EASME in the first letter, three ICNF representatives from the three Natura2000 sites involved in the project, were also included in Scientific Committee (Dra. Silvia Neves from Açor, Dra. Maria José Gomes from Monchique and Dr. Jacinto Diamantino from Estrela).

The first meeting took place in Évora in November 15, 2018. The second visit took place on 11-14 September 2019 and included an office meeting (September 11) where the project and work progress were discussed. This meeting was followed by a visit to the intervention areas: Monchique (September 12); Margaraça (September 13) and Estrela (September 13).

3. Problems and delays: Due to COVID-19 the visit scheduled for 2020 has been cancelled. Also for the same reason, the 2021 visit is scheduled for next December, but will be done online. We hope to make one last visit, in person, in 2022 (probably in Spring).

4. Next steps: Prepare Project next visits.

F3. Audit

1. Status: Not started.

F4. Post-LIFE Plan

1. Status: Not started.

This action has not yet been initiated, and it is expected to be carried out according to the schedule foreseen in the application: In December 2021 steering committee will meet and start the work that will take place until the end of the Project.

a. Main deviations, problems and corrective actions implemented

So far we encountered several problems and difficulties in project implementation, but for the vast majority a solution was found. In the first Midterm Report we detailed some problems that were overcome with time: Fire in Açor_Complexo da Margaraça in October 2017, the delay in the recovery of existent trails in Estrela; the delay in some administrative procedures and the lack of specialized companies/workers available for forest works. Since then**, we faced COVID-19**, and all the impacts that we already mentioned in ANNEX I. Apart from them, the main problems we experienced since the first Midterm Report, are described below, including some that come from behind, and were already mentioned in our last report, but still challenging project team:

[1]. Low growth rate of Rhododendron plants and the lack of installation capacity of this species in its native territory, probably due to the lack of ideal humidity conditions for its root system to be able to grow and then absorb deeper water. This limitation compromises the execution of C3 and, especially, C5. The first decision we made, was to insist on "diving" as an alternative vegetative propagation method and, which has been found effective, to increase the area of occupation of the species. Since 2019, we are also investing in vegetative propagation, once the method developed by CICYTEX allow us to obtain larger plants much more quickly than by seminal. We have also decided to delay as much as possible the planting of specimens of seminal origin because results from A3 also suggest that in nature, existing seminal regeneration is restricted to particular conditions, especially in terms of shade and humidity, suggesting that plantations can have low success due to hydric limitations and so plants should have a well-developed root system. In this regard in the winter of 2021, we made an experimental plantation of seminal and vegetative plants (see C5 description). The success of this plantations were short, especially for seminal plant. As we referred previously, we consider **that this is undoubtedly the major problem we faced so far**.

[2]. The existence of **unauthorized grazing** within the target areas of Estrela-Cabeça and Monchique (both areas) **became our second big problem**. In **Estrela-Cabeça** area, a small herd of goats began herding in the planted areas of Cabeça, destroying and/or damaging many of the specimens planted. Despite all our efforts, done together with the local parish council and police, the situation has not yet been resolved, once the owner of the herd is unimputable (considered not responsible because of psychic disorders). The impact was felt in all types of areas, but was particularly important in the C7 areas. We will continue to speak with the family of the cattle owner, in order to solve this problem. In **Monchique** the situation is also challenging: plantations made in Monchique-Cruz da Foia, by volunteers in 2019, were completely destroyed by cattle (the same not happened in Vale Largo). This situation made us realize that we could not continue to plant without overcoming this huge problem. To cope with it, Monchique municipality made several complaints to GNR (National Gard) with no practical result, so far. Cattle (cows, sheep and horses) continue to graze in this area. We emphasize that this area is owned by the municipality of Monchique and that the presence of these cattle is not authorized. The solution found was to put a fence around the target area, something the Municipality of Monchique is now providing. We expect to see this problem solve in Monchique until the end of the present year and be able to start plantations next winter.

[3]. As a consequence of points 1. and 2., **the major deviation from the original project plan concerns the delays in plantation in Monchique**, with delays in habitats recovery (particularly in C5 and C7 areas), but also in terms of time for monitoring.

[4]. As referred in detail in C7, in Monchique a **new electrical line was installed in project area in 2021.** This was done with the approval of ICNF and CCDR Algarve but with the total unawareness of Project team. The interventions are marginal to the current area of C3 and C7, being aligned with the existing road. In total only one or two rhododendrons were affected (pulled out to open one of the two existing holes). However, our biggest concern is the mandatory fuel management under power lines which can greatly affect Rhododendron population. In this sense, Project team contacted immediately the CCDR and ICNF (who were also invited to the seminar held in Monchique) in order to alert to the existence of this habitat and minimize future impacts of the new power line, also avoiding future similar situations.
[5]. Another issue is the **high vegetative regeneration observed after *Acacia* debarking**. The specialist team of Invasive Alien Species, from the University of Coimbra, informed us that this is a common situation, especially in wetter areas. Following their guidelines, we should will control this regeneration with brush cutter machines (works to be done by CMSeia).

[6]. Initially we had experienced some **resistance from schools** to receive our education plan, especially due to the amount of external solicitations that they receive every year. Afterwards, the **Covid-19 pandemic** came along and schools were not accepting any extra curriculum project as they were struggling to complete their own curriculum plan at distance because schools were physical closed. At the moment of this report, schools are getting back to normal and it is expected to open as usual in the next school year 2021/22. To overcome most of the constrains mention before, we anticipate the need to develop a **consolidated environmental education plan** with other external entities that are also working in the same areas as our project. In addition, **our plan is meant to be a complementary plan** and not a plan that will compete with the curriculum. Thus, activities in our plan will highlight the overlapping contents in order to help teacher to reach their goals easier. It is expected that our strategy will facilitate the adhesion of schools to the Life-Relict project.

In relation to the financial part, in addition to the issues already mentioned in the points 8 to 12 of the previous report, we emphasise:

[7]. CICYTEX asked authorization to move the amount of 11 400 € from Travel to Personal (additional, farmer worker category). As plant multiplication activity, with all its processes, has high personnel requirements, we requested authorization to move 11400 € from Travel to Personal (additional). The reasons were: a) The need to increase the watering period in the summer months and the need to maintain a greater number of specimens, with respect to previous campaigns; b) the belief that this budget will not be spent in the remaining project period. This request was considered properly justified from the technical point of view by CINEA in July 2021.

[8] CMonc and CMSeia asked permission to hire someone for the environmental education component. Due to COVID, most of the foreseen Public Awareness actives of Life-Relict, especially the ones related to environmental education, had to be postponed. In this sense, CMMonc and CMSeia have been reorganizing these activities to be developed until the end of the project. However, due to the accumulated work and the importance of this actions in the social context, both CMMonc and CMSeia asked to contract someone to support the LIFE-RELICT team in this regard. The analysis of their own budgets indicates that part of the money under External Assistance will not be used, been able to be moved to Personal. In this regard both Municipalities kindly asked CINEA for the authorisation to move 20 000€ from "External Assistance" (where both have excess budget) to "Personnel" (additional) in both budgets. This request was considered properly justified from the technical point of view by CINEA in July 2021.

[9]. To **solve the problem with grazing in Monchique**, the only solution found was to put up a fence around the Project areas (which are owned by the municipality). The estimate budget to do it is **€45 000,** which were not initially foreseen in the Project, but which are vital for its success. This will be done with the budget of "External Assistance" that we will no longer use in other the foreseen project activities. In

this sense CMMonc **kindly ask you the authorization to implement this fence in the areas in this terms.**

[10]. In relation to CMMonc, as they have problems with the lack of proper personnel, especially of someone able to maintain the planted areas (including watering the plantations and monitoring the work carried out by the contracted companies), CMMonc requests authorization to hire a forest sapper from Dec 2021 to the end of the project. For this reason, we kindly ask you the **authorization to move the amount of 24 553,66 € from Travel (5500€, not expected to be used) and from External assistance (19 056.66€, not expected to be used) to Personal (additional).**

[11]. In relation to the **budget of the University of Évora**, we must inform you that we had a mismatch between projected salary cost of non-additional staff and the amount we actually needed. In this sense, and **in order to rigorously comply with the budget**, **since May 2020 we have stopped allocating non-additional staff hours to the Project** (although we continue to record these hours informally). On the other hand, as a result of an analysis of the available budget and the forecast for the next year (table 16), we found that, in order to keep the additional staff until the end of the year, **we need an additional transfer of 20,000 from "Travel" (where we have excess budget) to "Personnel" (additional).** This transfer is vital to keep the project manager through to the end (Dec 2022).

Table 16. UÉvora Budget details.

Beneficiary short name	Personnel		non adicional	adicional	Travel	External assistance	Infrastructure	Equipment	Prototype	Land	Consumables	Other	Overheads
	Days	Cost											
A. UÉvora - PROJECT	3761	433125	184273	248852	126480	100528		7802			4305	31304	49248
B. UÉvora - with alteration requested		488106	184273	303833	126480	45547		7802			4305	31304	49248
C. UÉvora - spend aug 2021		416117,66	180020	236098	49288	17944		5687,64			208,5	4804,96	34583
D. Available today (B-C)		17007,34	4253	67735	77192	27603	0	2114,36	0	0	4096,5	26499,04	14665
E. Estimated till project end			4253	84250	30000	25000	0	185	0	0	3075	22500	14665
F. Remain (D-E)			0	-16515	47192	2603	0	1929,36	0	0	1021,5	3999,04	0

[12]. And finally, our biggest concern now is the lack of **compliance with the 2% rule**, which we are not achieving (as a team). This situation is the result of two main circumstances: [1.] budgets foreseen in the project were, in some situations, above the real price and; [2]. due to the urgency of some procedures and the slowness of public contracts, the municipalities ensured the execution of these same works (this was particularly relevant in Monchique during COVID-19). The University of Évora, as Project leader, proceeded as soon as the problem was detected (problem especially visible after the payment of major interventions in 2020), immediately held meetings with each of the partners independently, to alert them to the need to comply with this rule. This problem is especially visible in CMMonc and CICYTEX. In opposition CMSeia and UÉvora expect to compile with the rule until project end. **We are committed to correct this situation**.

6.2. Evaluation of Project Implementation

The methodology described in LIFE-RELICT project is globally being followed despite the inevitable adjustments described above (Table 17). The progress in works in 2020 it was huge, especially within "C" actions. The only exceptions are in Monchique, in C5 (because we didn't have Rhododendron plants big enough to ensure the plantation success) and C7 (only in Cruz da Foia due to the presence of herds that compromise the plantations). Overall, management measures on the ground are immediately visible, as soon as they are carried out, as they involve impacts in local vegetation. It should be remembered that the management measures implemented, often imply the conversion of a Human-made landscape (e.g. production forest) to an autochthonous forest. In this sense, the removal of heliophile, exotic or invasive species has an immediate impact on the landscape and an immediate decrease in the fire risk. However, the greatest impact will take several years to become visible, when the planted species give way to an autochthonous forest environment. In addition, the improvement of the "levada" had also an immediate impact.

Concerning **replication**, as referred in Action E5, we have done many efforts some of them with success. Concerning **dissemination** project has been much affect by covid-19. However, with the promotional strategy and material we have now, we will make all effort to reach as many people as possible in the present years.

In relation to **policy Impacts**, LIFE-RELICT is contributing to the following policies:

- **Habitats Directive**. Through the management interventions that are being executed, Project is contributing to the full application of this Directive", especially for two of its main objectives: to favour the maintenance of biodiversity; and to achieve a favourable conservation status of habitats, ensuring that target habitats have sufficient area and quality to ensure their survival into the medium to long term, along with favourable future prospects in the face of pressures and threats.
- **EU 2020 strategy for biodiversity**. Also, the taken conservation measures are also in line with European Union biodiversity strategy, especially with regard to: Goal 1: conserve and recover nature; Goal 2: maintain and enhance ecosystems and their services; Goal 5: combat invasive alien species; and Goal 6: tackle the global biodiversity crisis.
- **National Strategy for Adaptation to Climate Change (ENAAC).** In relation to climate, the implementation of these actions will improve the resilience of target habitats, in line with the in the strategic sector of Biodiversity.
- **Portuguese national strategy for nature and biodiversity conservation**. Project contributes for several strategic targets of this national strategy, including the ones related to ensure the conservation and enhancement of the natural heritage, promote scientific research, promote the valorisation of protected areas, and promote education and training and ensure public information, awareness and participation.
- **EU strategy for forests and the forest sector**. The management interventions that are being carried out will allow the development of areas occupied by native forest, increasing their resilience and improving the services of the ecosystems associated with them, two of the priority areas of this European strategy.

In this sense, so far, the project is delivering the results foreseen in the Grant Agreement form B3 "EU ADDED VALUE OF THE PROJECT AND ITS ACTIONS".

Table 17. Evaluation of LIFE-RELICT implementation – Contrast between achieved VS expect results foreseen in the proposal

Action	Foreseen in the revised proposal	Achieved	Evaluation
A1. Territory characterization update	**Objective:** **O1.** Systematization and complement ecological and socioeconomic characterization of target territories, to inform conservation work and collect landowner's long-term commitment letters **Expected results:** **R1.** Biophysical and Socioeconomic characterization **(D)** **R2**. GIS Project **(D)** **R3**. landowner's long-term commitment letters signed **(D)**	Main goals and expected results were achieved in time. However, EASME asked us to provide new letters (with specific duration) and we are now establishing a convention of 20 years with the landowners. So far we have collected 27 signatures, missing the ones from landowners that life outside respective Municipalities.	**CONCLUDED IN TIME** (Except for a few land owners' signatures) Works have been executed in time and results have been used in Actions A2, C2, C3, C4, C5, C6, C7, D2, D3, E1, E2, E3 and E4. All deliverables ready

Action	Foreseen in the revised proposal	Achieved	Evaluation
A2. Plan.	**Objective:** **O1.** Make an OP reformulating and specifying conservation measures according to new information from A1 and D1. **Expected results:** **R1.** Operational Plan Document **(D)**	Main goals and expected results were achieved in time.	**CONCLUDED IN TIME** Results have been used in Actions C2, C3, C4, C5, C6 and C7. Cartographic information was included in GIS project (A1) All deliverables ready
A.3 Evaluating the propagation capacity of *Rhododendron ponticum*.	**Objective:** **O1.** Understand limitations on natural seed propagation of Rhododendron to promote success in C1 and future plantations. **Expected results:** **R1.** Regeneration report **(D)**	Main goals and expected results were achieved.	**CONCLUDED IN TIME** However, we have asked for an action extension in Frist Progress Report to improve results obtained in 2018. Results have been used in Actions C1, C3, C5 and E4. All deliverables ready
C.1. Collection and propagation of plant material.	**Objective:** Collect propagation material from 5230, 9230 and 9340 habitats' characteristic species and produce plants for foreseen plantations in C2, C3, C4, C5 and C7. **Expected results:** **R1.** Collect propagation material from 13 species; **R2.** Produce 35 500 plants.	Respecting **R1** we collected propagation material (seeds and/or cuts from the **16species**, 11 species foreseen (one species was ignored purposely), plus 5 more. Respecting **R2**, **98%** of foreseen plants were delivered to CMSeia and CMMon, for plantation.	**IN EXECUTION UNTIL DEZ 2021** The number of produced plants foreseen will be achieved until the end of 2021. We had several problems so far, but the vast majority of which were overcome. The only exception is the Rododendron production, that is below the expected. However great improvements have been made in the last year.
C.2. Improving the conservation state of *Prunus lusitanica* areas.	**Objective:** Recover feed flows to favour Portuguese-laurel and Improve conservation status of Portuguese-laurel habitat. **Expected results:** **R1.** Recover "levada" in 1,2 km; **R2.** Selective cut of the heliophilous vegetation in 8 ha; **R3.** Plantation of characteristic species in 1 ha;	**R1** was completed in **100%** of the foreseen length. **R2** was completed in all the habitat surface inside target areas, that is 10.2 ha, and not only in the 8 ha foreseen in Project. **100% executed but is under maintenance.** **R3** All plants available were planted in the 6.2 ha of the habitat 5230 present in Estrela and not only in the 1 ha foreseen in Project. The areas are now **Under maintenance**.	**IN EXECUTION UNTIL MAR 2022** "Levada" was completely done. This task had a delay in its execution, but the planned works are done and it is only under maintenance. Project is being able to **overcome the habitat 5230 area under management**, both in Estrela and Margaraça. In Margaraça ICNF made plantations in our target areas.
C.3. Improving the conservation state of *Rhododendron ponticum* areas.	**Objective:** Improve conservation status of Rhododendron habitat. **Expected results:** **R1.** Selective cut of the heliophilous vegetation in 3 ha; **R2.** Plantation of characteristic species in 3 ha;	**R1** was completed in **100%** of the area **R2** plantation were made in the 3 ha foreseen. However, Rododendron was not planted.	**IN EXECUTION UNTIL MAR 2022** This task is behind schedule, in relation to Rhododendron plantation (plants still too small to be planted).

Action	Foreseen in the revised proposal	Achieved	Evaluation
C.4. Increase *Prunus lusitanica* areas.	**Objective:** Increase Portuguese-laurel habitat área. **Expected results:** **R1.** Selective cut of the heliophilous vegetation in 10.5 ha; **R2.** Control of non-invasive alien species in 10.5 ha **R3.** Plantation of characteristic species in 10.5 ha;	**R1** was completed in 11.3 ha. **100% executed but is under maintenance.** **R2** Completed (**100% executed**) **R3** All plants available were planted in the 11.3 ha and not only in the 10.5 ha foreseen in Project. The areas are now **Under maintenance**.	**IN EXECUTION UNTIL MAR 2022** This task had a delay in its execution, but the planned works are done and it is only under maintenance.
C.5. Increase *Rhododendron ponticum* areas	**Objective:** Increase Rhododendron habitat área. **Expected results:** **R1.** Selective cut of the heliophilous vegetation 10 ha; **R2.** Plantation of characteristic species in in 10 ha;	**R1** was executed in 0.8% of the foreseen area. **R2** was executed in 0.8% of the foreseen area. Rododendron plantations were done only as an experiment.	**NOT STARTED** This task is behind schedule, limited by the problems with Rhododendron propagation (plants still too small to be planted).
C.6. Control of invasive alien species	**Objective:** Control invasive alien species in Estrela_Cabeça **Expected results:** **R1.** Control *Hakea sericea* in 4 ha **R2.** Control *Acacea dealbata* in 4 ha, including 2 dense species cores with 1,5 ha.	**R1** is **100%** completed but under maintenance. **R2** is **100%** completed, but under maintenance.	**IN EXECUTION UNTIL MAR 2022** This task was started behind schedule, due to an initial issues related to the lack of proper access to C6 area.
C7 - Reducing the risk of fire	**Objective:** Reduce risk of fire in Estrela, Margaraça and Monchique areas, reducing risks and increasing protection through the creation of native forest in habitat 5230 surroundings. **Expected results:** **R1.** Recovery access roads/trails in Estrela area in 3km. **R2.** Selective cut of the heliophilous vegetation in 68,5 ha; **R3.** Control of non-invasive alien species in 68,5 ha; **R4.** Plantation of characteristic species in 11,4 ha; **R5.** Chestnut forest improvement in 1.9 ha	**R1** was completed (**100% executed**) **R2** is **100 %** executed. . **R3** is **100 %** executed. **R4 still to execute** plantation in 3.5 ha foreseen for Monchique-Cruz da Foia, due to problem with the presence of herds. In the other territories plantations were done and are under maintanence. **R5** is **100%** completed.	**IN EXECUTION UNTIL MAR 2022** . Plantations were behind schedule, but currently only an area from Monchique is missing. All the areas are under maintenance. In Margaraça ICNF made plantations in our target areas.

Action	Foreseen in the revised proposal	Achieved	Evaluation
D1. Monitoring Conservation Actions	**Objective:** Evaluate the impact/efficiency of conservation actions (C1, C2, C3, C4, C5, C6 and C7) in local vegetation. **Expected results:** **R1.** Annual evaluation of seed germination rate and plant survival rate in C1; **R2**. Installation of 41 permanent transects; **R3**. Collect annual data to monitor vegetation in installed plots; **R4**. Analyse collected data and produce annual report **(D)**	Main goals and expected results are being achieved in time.	**IN EXECUTION UNTIL SET 2022** Works have been executed in time. 2018 report **(D)** was finished (deliverable ready) 2019-20 data was collected reported **(D)** (deliverable ready) Data from 2021 has been colected
D.2. Monitoring the Socioeconomic Impact	**Objective:** Evaluate the socio-economic impact of LIFE-RELICT. **Expected results:** **R1.** Define socio-economic indicators to be monitor **R2.** Conduct 100 surveys to web users, about the site, and its contents. **R3.** Monitoring knowledge of local population about Habitat, LIFE and nature2000, conducting 100 surveys. **R4.** Report results in project beginning and end **(D)**	Main goals and expected results are being achieved in time. **In R1**, 35 indicators were defined **In R2**, 100 surveys were implemented and analysed in 2018 and 2020 **In R3**, 120 surveys were implemented and analysed in 2018/19 and 2020/21. **In R4**, **first** report was finished	**IN EXECUTION UNTIL SET 2022** Works have been executed in time. 2019 report **(D)** was finished (deliverable ready)
D.3. Monitoring the impact of the project ecosystems services	**Objective:** Evaluate the effects of the project conservation actions on ecosystem functions **Expected results:** Evaluate main ecosystem services for the three territories	Main goals and expected results are being achieved in time.	**IN EXECUTION UNTIL SET 2022** First report **(D)** was finished (deliverable ready)
D.4. Cost-efficiency monitoring	**Objective:** Evaluate the cost-efficiency of LIFE-RELICT conservation actions. **Expected results:** **R1.** Report results on the beginning and project end **(D)**	Main goals and expected results are being achieved in time.	**IN EXECUTION UNTIL SET 2022** Works have been executed in time. 2018 report **(D)** was finished (deliverable ready)
D.5. Monitoring project indicators	**Objective:** Evaluate Project progress using a set of bioindicators. **Expected results:** **R1.** Report Project Performance Indicators on an annual basis **(D)** **R2.** Report KPI Indicators on an annual basis.	Main goals and expected results are being achieved in time.	**IN EXECUTION UNTIL SET 2022** Works have been executed in time. 2018, 2019, 2020 reports were finished (deliverable ready)

Action	Foreseen in the revised proposal	Achieved	Evaluation
E.1. Dissemination to the general public	**Objective:** Publicise Life-Relict, as well as habitats and RN2000, to the general public in order to induce a change in social behaviours and minimize some of the associated threats. Expected results: **R1.** Digital Layman report **(D)** **R2.** Digital informative panels **(D)** **R3.** Facebook page creation **R4.** Webpage online **R5.** Implementation of the informative panels	**R1** has not been concluded since its deadline is only in Sep. 2022. **R2**, **R3, R4** and **R5** are concluded.	**IN EXECUTION UNTIL SET 2022** The dissemination of the progress to the general public will be carry out until the end of the project through the website and Facebook page, which are regularly updated and its outreach is beyond expectations.
E.2. Communication and nature tourism	**Objective:** Increase social awareness for the importance of this habitat conservation including the historical and natural value it represents. Additionally, it aims to promote nature-based tourism by creating structures and materials that support it, which are indispensable for the sustainable socio-economic development of these inland regions. **Expected results:** **R1.** Conclusion of the informative flyers about the habitats and the project **R2.** Digital Sample the informative flyers about the habitats and the project **(D)** **R3.** Opening of the exhibition to the general public in Seia **R4:** Opening of the exhibition to the general public in Monchique **R5.** Exhibition contents in digital version **(D)** **R6.** Conclusion of the pedestrian's route implementation **R7.** Conclusion of the promotional material for the pedestrian's routes **R8.** Digital sample of the promotion leaflets about the pedestrian's routes **(D)** **R9.** Dissemination of the two video reports about the project **R10.** Digital Photo Book of the communication and tourism activities **(D)**	**R1** and **R2** are concluded in Portuguese and English. Flyers are translated to Spanish but still to be printed out. **R3** and **R5** are delayed due to internal autocracies of the project partner CMSeia but **R4** is concluded. **R6, R7** and **R8** are concluded in Monchique but not in Seia. Contacts have been made to national TV media in order to produce **R9** without success. Meanwhile, homemade product is expected to be accomplish soon. **R10** has not started but will be produced at the end of the project.	**IN EXECUTION UNTIL SET 2022** The communication materials have suffered some delays due to opinions divergence amongst project members regarding its design and contents. However, most of the divergence have been overcome. The task of producing communication material has proven to be the hardest one because it's complicated to reach the equilibrium between what is scientifically correct and extremely important and, what is attractive/interesting to the general public.
E.3. Awareness and Environmental Education	**Objective:** Guarantee the future conservation of the Relict Continental Laurissilva through awareness raising in school's community and, consequently, the local population. **Expected results:** **R1.** Scheduling of the first environmental education actions **R2.** End of the environmental education actions **R3.** Preparation and launch of the school competition **R4.** Environmental education and awareness activities report **(D)** **R5.** First planting action for the general public **R6.** first awareness and clarification action for the population of Cabeça	Regarding the environmental education actions in the school's communities. **R1** have been achieved and it is expected that it lasts until the end of the project, thus. **R2**, **R3**, **R4** will be then finished. Regarding **R5** we made first plantation in December 2019 In **R6** two awareness action were made so far	**IN EXECUTION UNTIL SET 2022** This particular action is ongoing even after the break that the world pandemic obliges.

Action	Foreseen in the revised proposal	Achieved	Evaluation
E.4. Scientific dissemination	**Objective:** Dissemination of the methodologies used and the results obtained in order to promote the scientific dissemination of the project. **Expected results:** **R1.** Project's initial seminar in Évora **R2.** Project's Intermedium seminar in Monchique **R3.** Final Project seminar in Seia **R4.** First technical workshop in Margaraca **R5.** Second technical workshop in Monchique **R6.** Third technical workshop in Badajoz **R7.** First scientific representations in seminars and congresses **R8.** First University lecture **R9.** Paleotropical relict field guide **(D)** **R10.** Report on the implementation of scientific dissemination actions **(D)**	**R1** and **R2** are concluded, **R3** will go as planned. **R4, R5** and **R6** are concluded **R7** and **R8** were concluded early in the Project. **R9** and **R10** have not started yet but are only due in the end of the project, thus ongoing as planned.	**IN EXECUTION UNTIL SET 2022** This particular action is ongoing even after the constrains that the world pandemic obliges.
E.5. Replication Efforts and Networking with Other Projects	**Objective:** Establish contacts with other national or international projects, as well as with entities that may have an interest in the replication of management measures validated during the project. **Expected results:** **R1:** Initial contacts with entities interested in replication **R2**: Initial contacts with those responsible for other projects **R3:** Sending project reports to managers of other similar projects **R4**: Implementation report on the replication efforts and network actions (**D**)	**R1** and **R2** have been achieved early in the project **R3** and **R4** are ongoing until the end of the project	**IN EXECUTION UNTIL SET 2022** Going as planned with great successes accomplishing partnerships interested in replication.
F1. General coordination of the project by UÉvora	**Objectives:** Ensure a management structure that guarantees the proper project execution **Expected results:** **R1.** Define project Manager **R2.** Define partners structure **R3.** Ensure easy communication between partners **R4.** Establishment of executive committee.	Action ongoing as predicted. Objectives and results are being achieved	**IN EXECUTION UNTIL SET 2022** Works have been executed in time.
F2. Scientific Committee	**Objectives:** Ensure an advisory board for project execution **Expected results:** **R1.** Define Scientific committee **R2.** Provide annual meeting	Action ongoing as predicted. Objectives and results are being achieved	**IN EXECUTION UNTIL SET 2022** Due to COVID-19 the visit scheduled for 2020 has been cancelled. The next visit (virtual) will be done in December 2021.
F3. Audit	**Objectives:** Verification of financial compliance with LIFE requirements. **Expected results:** **R1.** Verification of expenses eligibility		**NOT STRATED**

Action	Foreseen in the revised proposal	Achieved	Evaluation
F4. Post-LIFE Plan	**Objectives:** Establish a post life plant ensuring the continuation of important conservation measures **Expected results:** **R1.** Define Pan		**NOT STRATED**

6.3. Analysis of benefits

The major project benefits are:

1. The great benefit of the work carried out so far was the **improvement of the conservation status** of the habitat of community interest 5230*, directly benefiting this habitat in three SAC's;
2. The **risk of fire reduction**, through the management of heliophilous scrubs existing inside the habitat and in the surrounding areas, including in the surrounding habitats;
3. **Improving Ecosystem services** by improving habitat, especially soil conservation, increased resilience to forest fires, increased water infiltration and, consequently, biodiversity.
4. **Control of exotic species**, above all of an invasive character, with considerable impact on the landscape, transforming a monospecific landscape to a more biodiverse space;
5. Thanks to the existing constraints regarding the multiplication of target species, we have acquired a deep knowledge, ranging from the collection of material from the propagules, to the methods of germination and seminal and vegetative propagation. This knowledge is already being prepared to be widely disseminated in society, namely through publications on the methodologies for vegetative propagation of vulnerable species.
6. In relation to **tourism,** we should be noted that, as referred in E5, within the scope of the project, training activities have already been carried out to tourist entrepreneurs, specifically in the Serra de Monchique, were the trail "**Rota das adelfeiras**" is already open to public and all the associated information available in our webpage.

7. Key Project-level Indicators

As referred in Action D5, KPI are being monitored in a year basis. For the ones that we were able to estimate a quantitative value for Project end, the majority of them are now exceeded (Table 18)). The major tops are observed in indicators related with Project promotion, awareness and networking, for which we gave special attention since 2019 (it was one of the weaknesses that we had identified previously). Even so, we observed a stagnation in some of these indicators (ex. networking), largely due to the pandemic situation triggered by Covid-19. In relation to KPI which have not yet been achieved, we highlight the area under management, which value mainly reflect the C5 areas, in Monchique, where plantations were consecutively postponed due to the lack of suitable plants of Rhododendron. In each case we expect to reach all the identify KPI until project end, except for area of habitat 9240 managed because this habitat, that we are promoting through C7 interventions, will only be effectively a forest habitat in a few years from now.

Table 18. Evaluation of major quantified KPI in December 2020.

INDICATOR	PROGRESS dec 2020	END VALUE	Achieved (%)
1.5. Project area/length	85,55	104	82%
1.6. Humans (to be) influenced by the project	5918	1000	592%
1.6. Humans (to be) influenced by the project	38	20	190%
4.2.1. Sustainable Forest Management	50,59	31,7	160%
7.3. Natural and semi-natural habitats -9240	0	3,4	0%
7.3. Natural and semi-natural habitats-9230	8,1	8	101%
7.3. Natural and semi-natural habitats-5230	11,19	28,5	39%
7.3. Natural and semi-natural habitats-9260	1,8	1,8	100%
7.5.1. Invasive Alien Species-Acaia dealbata	4	4	100%
7.5.1. Invasive Alien Species - Hakea sericea	4	4	
10.2. Involvement of non-governmental organisations (NGOs) and other sta	13	5	260%
10.2. Involvement of non-governmental organisations (NGOs) and other sta	47	50	94%
11.1. Website (mandatory) - No. of individuals	102438	200	51219%
11.1. Website (mandatory) - No. of unique visits	11376	2000	569%
11.1. Website (mandatory) - No. Downloads	0	N.A	
11.1. Website (mandatory) - Average visit duration (minutes)	3,10min	N.A	
11.2. Print media	9	N/A	
11.2. Other media (video/broadcast)	3	2	150%
11.2.Displayed information (poster, information boards)	33	8	413%
11.2. Publications/reports	0	2	0%
11.2. Events/exhibitions	8	8	100%
12.1. Networking (mandatory) - Other	17120	500	3424%
12.1. Networking (mandatory) - Members of interest groups	642	10	6420%
12.2. Professional training or education - Professionals	303	80	379%
12.2. Professional training or education - Students (in higher education)	859	150	573%
13. Jobs	5	5	100%

8. Comments on the financial report

8.1. Summary of Costs Incurred

Table 19. Project Costs Incurred by category.

Cost category	A. Budget according to the grant agreement in €*	B. Budget with previous requested alterations	C. Costs incurred within the reporting period in €	%** (C/A; C/B)
1. **Personnel**	782 514,00	888 895,00	695 273,05	**88%; 78%**
2. **Travel and subsistence**	165 393,00	153 993,00	51 917,17	**31%; 34%**
3. **External assistance**	399 018,00	304 037,00	114 804,18	**29%; 38%**
4. **Durables goods: total non-depreciated cost**				
- Infrastructure sub-tot.				
- Equipment sub-tot.	33 646,00	33 646,00	23 004,64	**68%; 68%**
- Prototype sub-tot.				
5. **Consumables**	83 503,00	83 503,00	21 997,13	**26%; 26%**
6. **Other costs**	82 562,00	82 562,00	6 471,81	**8%; 8%**
7. **Overheads**	108 263,00	108 263,00	63 994,81	**59%; 59%**
TOTAL	**1 654 899,00**	**978 218,74**	**978 218,74**	

*) If the Agency has officially approved a budget modification through an amendment, indicate the breakdown of the revised budget. Otherwise this should be the budget in the original grant agreement.

**) Calculate the percentages by budget lines: e.g. the % of the budgeted personnel costs that were actually incurred

The values presented in the table show that in all cost categories the amount spent is clearly below the projected values. The only exception is on "personnel" expenses, which are close to the expected value. In some cases, these two situations are related, as some of the activities planned to be carried out by external assistance made by our own personnel. In the vast majority of situations, this happened because the slowness of the hiring process would impede the smooth running of the planned work and there was a need to act more quickly (ex. In the initial A3 studies or in the process of watering rhododendrons during the summer in Monchique). On the other hand, as the work progressed, we were faced with insufficient budgeting for "Personnel" category, both for non-additional and additional staff. This issue is common to all partners and, in the case of the University of Évora, was aggravated with the change over time of the pay tables for additional staff.

8.2. Accounting system

As already presented in last Mid Term report, all beneficiaries have set into practice – as obliged through the Cooperation Protocols – a set of electronic accounting systems that allow for identification/separation of the project costs from general accounts. Table below presents a summary of the applicable accounting systems codes/names.

Table 20. LIFE-RELICT applicable accounting systems

Beneficiary Name	Name of Account	Code of Account
UEVORA	LIFE RELICT	930843
ADRUSE	LIFE16 NAT/PT/000754	9425
CYCITEX	LIFE RELICT	201814301000700
CMMonchique	Projeto LIFE RELICT (ADELFA)	246202
CMSeia	Projeto Life Relict – Life16 NAT/PT/000754	041107310

8.3. Partnership arrangements (if relevant)

To support partnership and administrative management, Cooperation Protocols with all partners have been prepared and signed. The referred protocols identify clearly, for each beneficiary, the need/duty to report updated financial execution to UEVORA every semester, by using the LIFE templates on financial execution and delivering digital copies of the applicable documentation. To ensure better and easier transfer of information, a dedicated shared folder has been created, where each partner has one folder to upload the documentation. Uévora then double-checks the information (documents) versus reported expense and, once verified, uses the reliable and updated information from each beneficiary to prepare the consolidated financial statement.

8.4. Certificate on the financial statement

TOR for contracting the external audit were prepared and launched in 14/09/2018, having meanwhile been contracted. This was done within a single procedure that encompasses similar services for all ongoing LIFE projects at UÉvora. Following that, contract for external audit services has been signed in 23/10/2018 with the following firm, which has former experience in undertaking audits to other LIFE projects: Rosário, Graça & Associados, SROC, Lda, NIF 505778530. Only UEVORA will be audited

8.5.Estimation of person-days used per action

Action type	Budgeted person-days	Estimated % of person-days spent
NAT projects Action C – Concrete conservation actions		
TOTAL		

9. Envisaged progress until next report

Until next report we will:

- achieve the ten missing protocols with Estrela landowner;
- accomplish the production of 35 000 plants and surpass this value;
- maintain the intervention done in Estrela and Margaraça (vegetation management and plantations);
- maintain the control of exotic invasive species in Estrela-Cabeça;
- continue the monitoring of C interventions and report respective results
- continue to monitoring social impact through population surveys;
- develop the final report on ecosystem services;
- develop the final report on Project Cost-efficiency and make create guidelines for possible replication;
- continue to monitoring of Project indicators and KPI's;
- create the layman's report
- continue to regularly update website and Facebook page.
- print out the informative flyers in Spanish
- conclude the Portuguese Laurel exhibition
- implement the Portuguese laurel interpretative trail
- continue to stimulate reports about the project on the press media
- create another activity in Cabeça, Aldeia Natal (Dec 2021)
- increase de adhesion of Monchique schools in the environmental education plan
- implement the schools contest
- develop as much as possible session to raise awareness in the local population
- promote plantations with volunteers
- develop the third and final project seminar
- develop the fourth and final workshop
- continue to participate in national and international congresses to disseminate project results
- continue to promote university classes about the project, it´s target habitat and it ecosystem benefit
- develop the field guide about the target habitat
- continue to develop contact with other entities for networking
- continue to promote replication action