



## **LIFE14 NAT/PT/001081 Progress Report<sup>1</sup>** **Covering the project activities from 01/08/2015 to 29/02/2016**

Reporting Date  
**30/03/2016**

LIFE PROJECT NAME or Acronym  
**LIFE LINES - Linear Infrastructure Networks with Ecological Solutions**

### Data Project

<b>Project location:</b>	Alentejo (Évora, Montemor-o-Novo, Arraiolos, Estremoz, Vendas Novas) - Portugal
<b>Project start date:</b>	01/08/2015
<b>Project end date:</b>	31/07/2020
<b>Total budget:</b>	5,540,485 €
<b>EU contribution:</b>	3,324,303€
<b>(%) of eligible costs:</b>	60%

### Data Beneficiary

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<sup>1</sup> Progress Report without any payment request

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## 2. List of key-words and abbreviations

AB – Beneficiário Associado (Associated Beneficiary)  
ANSR – Autoridade Nacional de Segurança Rodoviária  
CA – Comissão de Acompanhamento (Scientific Monitoring Committee)  
CB – Beneficiário Coordenador (Coordinating Beneficiary)  
CCDRA – Comissão de Coordenação e Desenvolvimento da Região Alentejo  
CG – Comissão de Gestão (Management Committee )  
CIMAC – Comunidade Intermunicipal do Alentejo Central  
CME – Câmara Municipal de Évora (Municipality of Évora)  
CMMN – Câmara Municipal de Montemor-o-Novo (Municipality of Montemor-o-Novo)  
CP – Coordenação do Projeto (Project Coordination)  
CTAG – Comissão Técnica de Apoio à Gestão (Technical Committee to Support Project Management)  
EASME – Agência de Execução para as Pequenas e Médias Empresas (Executive Agency for Medium-sized Enterprises)  
EC – Comissão Europeia (European Commission)  
EDP-Distribuição – Energias de Portugal, SA - Distribuição  
EGSP – Energia e Sistemas de Potência, Lda  
FCUL – Faculdade de Ciências da Universidade de Lisboa  
FCUP – Universidade do Porto - Faculdade de Ciências (University of Oporto - Faculty of Sciences)  
GA – Contrato de Subvenção (LIFE Grant Agreement)  
GESAMB - Gestão Ambiental e de Resíduos, E.E.I.M.  
IA – Área de Intervenção (Intervention Area)  
ICNF – Instituto da Conservação da Natureza e das Florestas  
IGeoE - Instituto Geográfico do Exército  
IP – Infraestruturas de Portugal, SA (Infrastructures of Portugal, SA)  
LINES – (Redes de Infraestruturas Lineares com Soluções Ecológicas (Linear Infrastructure Networks with Ecological Solutions)  
LPN – Liga para a Proteção da Natureza  
MARCA – Marca, Associação de Desenvolvimento Local (Marca, Local Development Association)  
NIA – Núcleo de Interpretação Ambiental de Montemor-o-Novo  
PA – Acordo de Parceria (Partnership Agreement)  
pAIE – Programa “Adota um Estrada”.  
QUERCUS – QUERCUS, Associação Nacional de Conservação da Natureza  
REN - Redes Energéticas Nacionais  
SA – Área de estudo (Study Area)  
UA – Universidade de Aveiro (University of Aveiro)  
UEVORA – Universidade de Évora (University of Évora)

**KEYWORDS:** Green infrastructure, Roads, Powerlines, Deactivated railways, Invasive plants control, Biodiversity refuges, Fauna database

### 3. Executive summary

#### 3.1. General progress

LIFE LINES started on 1<sup>st</sup> of August 2015 as proposed on the LIFE Application form. A preparatory non-official meeting with the presence of all the beneficiaries took place, on 30<sup>th</sup> July at UEVORA, before the official starting date. The aim was to update the approval status of the project and prepare the LINES kick-off, taking into account that, predictably, many project members would take leave (holidays) in August. All of the six preparatory actions (A.1 to A.6) scheduled to begin on 2015 were initiated and, globally, the main goals and tasks associated with actions A.1, A.2, A.3, A.4 and A.5 are being fulfilled.

Action A.6 was paused, after EGSP left the project (annex I, see below), till the necessary adjustments due to this unexpected situation are defined. Previously, on 9<sup>th</sup> October 2015, in the framework of action A.6, a meeting involving UEVORA, EGSP and GESAMB took place at GESAMB installations (a location with unusually high medium-sized bird's activity due to the availability of garbage, as food) to discuss the authorizations to install the prototypes. This meeting was followed by a visit to the property where the locations for prototypes were defined in accordance with the GESAMB team.

Action A.4, although has started, is delayed due to the necessity of opening a second grant call to perform specialized work in the improvement of the recognition software because the grant-holder awarded by FCUP has left the project due to personal reasons. A new grant call is now underway.

Concrete conservation actions C.3, C.4, C.6 and C.8 have started as scheduled on the LIFE LINES proposal. Preliminary topographic work of action C.7 has also been done on October 2015, prior to the scheduled date. Action D.1 has started as predicted. A preliminary list of socioeconomic indicators has already been sent to all the AB's (annex II), but needs further discussion before being submitted for approval at a CG meeting.

Website of the project (action E.1) is online and is being updated as scheduled. Other public awareness and dissemination of the results actions (E.2, E.9 and E.10) are running as planned. Work aiming to define the "The LIFE LINES Communication Plan" (action E.4) has begun as originally scheduled but the Plan itself is still in development due to the necessity of assuring that all the strategic issues, dates and target audiences are covered and to the slow and complex administrative procedure aiming to contract specialized services, which are being difficult to hire in the region. Provisional support to the project communication has been done by the Communication office of UEVORA and by an invited post-doc grant-holder (Joaquim Pedro Ferreira) from UA, specialized in communicating science to the general public.

The project management and monitoring of progression actions F1, F2 and F3, were initiated as proposed and the main tasks associated with them are being fulfilled. However, the predicted dates for the first meetings of the CP, CTAG, CG and CA (and the milestones associated with them) had to be rescheduled because August is the most typical month to summer holidays of many project team members and representatives from other entities expected to integrate the CA. Moreover, for the CA in particular, the more pronounced rescheduled date for the first meeting is due to the large number of entities to be invited, time needed for the responses (some of them depending from superior authorization) and the need to find available coincident dates for most of the members to be present in the meeting.

Besides EGSP, all the other PA's between UEVORA and each other AB have already been signed by both parts (annexes III to VIII) and the proposed work is progressing as planned.

Some AB's proposed adjustments to the project's team (annex IX) and allocation times, due to internal reorganization of the services, unpredicted tasks to perform or changes in working group composition None of these changes affected the normal progress of the project neither its targets, goals or global budget.

### 3.2. Assessment as to whether the project objectives and work plan are still viable

Despite the necessary arrangements concerning the substitution of EGSP (see below); the constraints associated with administrative procedures aiming to hire technicians or acquire goods and services; the adjustments made in the team; and corrections in specific tasks, all the main goals and deliverables of the project hold one hundred percent true and will be fulfilled. Till now, the biggest change in the project is the withdrawal of EGSP, which core contribution was to test (action A.6) and, after that, operate (action C.5), prototypes aiming deter bird landing in medium voltage powerlines poles, thus reducing bird-mortality on these infrastructures. This same final goal, although in a broader sense, of reducing bird mortality on medium voltage powerlines due to electrocution and collision, will be achieved by other means, using different designs and devices if an amendment in preparation and to be sent to the EASME/Commission in the next weeks will be accepted. Also important to note is the fact that any other relevant tasks of preparatory or concrete conservation actions of the LIFE LINES are interdependent with actions A.6 or C.5.

### 3.3. Identified deviations, problems and corrective actions taken in the period

One Associated Beneficiary (EGSP) informed the CB on 20th of October (at the moment of the PA signature), that had to leave the project due financial reasons (annexe I). This was unexpected because, to our knowledge, no doubts or problems have been previously identified with EGSP (annexe X). An amendment proposal, including the integration of a new AB, substituting EGSP, and the adjustment of the actions where EGSP was involved is being prepared and will be submitted soon to the EASME/Commission.

After the EGSP have withdrawal from the LIFE LINES, a process of adaptation of the project to the new reality was started. Contacts were made with other entities to take the role EGSP and possibly being partners of the project. The main guidelines for this process were to keep the new adjusted goals as close as possible to the original ones and to find partners with experience/responsibilities in mitigation of bird mortality in medium voltage powerlines. Priority was also given to entities/organizations with previous work and knowledge of the problem in the IA of LIFE LINES. Because none of the other AB's has previous significant experience on this issues and to our knowledge only EDP – Distribuição, and QUERCUS had previous large data sets on bird mortality in medium voltage powerlines, including identification of problematic locations, at the IA, these were the organizations that were firstly contacted to evaluate their interest in joining LIFE LINES. We analysed with these entities the need for testing and/or implementing solutions to reduce the impact of powerlines on birds, including using new installation designs and devices not previously or still poorly used in Portugal. EDP – Distribuição direct participation was dependent on the results of applications to other projects that, predictably should be known only in summer. QUERCUS revealed immediately a high interest and availability to integrate LIFE LINES as AB and this possibility has been already officially approved by its Administration Board. Thus, an amendment proposal for the LIFE LINES, including QUERCUS as AB, is now being prepared to be sent for EASME/Commission for appreciation and approval.

Concerning action A.5, the infrastructure and land where it was predicted to be installed the plant nursery is no longer available because in the period that mediated project proposal and approval the site was designated for other purposes by its owner. In order to attain the objectives and targets initially proposed, other alternatives were assessed. After several other institutional contacts with local partner's a new location has been found at the property of Casa João Cidade (a local association working with disabled



people) (annex XI). The referred land parcel will be made available to MARCA with the purpose of installing the Plant Nursery, beginning in April 2016. For this reason there was a need to allocate some time of the MARCA's project coordinator work under action A.5, although that wasn't predicted in the application. Also, for this reason, the contracting of the "Nursery Plant Worker" and the sub-contracting of its technical supervisor did not take place until this moment. However, all procedures for selection of these internal/external staff members have been undertaken, people are identified and the works are ready to start.

A major difficulty for the normal progress of the project is the highly restrictive legislation recently approved for public bodies concerning hiring personal or acquiring goods and services. Laws stipulates new procedures and terms with the need for previous use and consultation of National Public Platforms before most of the contracts can be authorized. These have delayed for more than 3 months some contracts including the hiring of a project manager and of services for informatics, GIS and database development. Moreover, the new laws have barred the conclusion of the vehicle acquisition by UEVORA. In fact, according to the legislation in force in Portugal at the current date, any purchase or renting of vehicles requires the slaughter of two other vehicles. Still, in the case of LIFE LINES, the UEVORA requested exception to this rule to the entity that manages the public car park, since UEVORA has no vehicles for slaughter. The entire exception to the slaughter was not accepted, but exceptionally the slaughter of only one vehicle for each renting was allowed. Thus, UEVORA was faced with the need to find (in the entire ministry where it is integrated) two cars for slaughter in order to accomplish the needs to rent the both cars predicted for the LIFE LINES. At the current date these two vehicles were found and the process will again be submitted to the Head of the Ministry. Meanwhile, to overcome this limitations and avoid delays, two old university cars has been temporarily affected to the project and in a few occasions, private cars have been used. Till now none of the project actions have been stopped or modified by this cause.

Following the recommendations of the kick off LIFE 14 Meeting held in Murcia, a full time person aiming to support Project Management is being hired for the LIFE LINES. Instead of the service acquisition proposed in the LIFE proposal, this technician was hired through an open public call (annex XII), as enforced by the Portuguese law for contracts exceeding 75000 €. Another advantage of this procedure is that this technician will be 100% dedicated to the project, a situation that was difficult to achieve via service acquisition. This manager will also give support to part of project communication and awareness actions. To account for these changes, about 93500 Euro were moved from "Service Acquisition" to "Personal Costs". However, this doesn't imply any change in overall project budget.

The price of the robust tablets to be acquired by UEVORA and CMMN is about 50% higher than predicted in the proposal. New and different models with lower prices, have been tested but till now none fulfil all the requirements needed. A new machine, with more processing power and screen contrast was sent recently to UEVORA for tests and will be evaluated to decide about the acquisition.

New GPS collars with higher precision, higher battery capacity, data transmission directly via GSM without the need to remotely download the data and lower price have been developed since the LINES proposal and are being used in the genets instead of the originally proposed collars. Since January these collars have been used in captive and in wild genets to test for animal behaviour, signal transmission and evaluate settings that maximize the data gathering while saving battery power.

Some abnormal weather conditions, with few mild and rainy nights delayed amphibian surveys (and characterization) at the IA. However, it was possible to get enough data on amphibians on roads to propose the location of the conservation actions aiming to reduce amphibian roadkills (annexes XIII and XIV).

At the moment a few actions for the reasons explained above may be slightly behind the schedule. On the contrary preliminary work on other actions (e.g. C.1 and C.7) which were scheduled to start only on April 2016 has already begun. Overall, we expect that the main goals, deliverables and milestones defined in the

proposal will be fully accomplished, despite the necessity for adjustments and compromises that projects such large as this always imply.

#### 4. Administrative part

A first unofficial meeting among all the beneficiaries took place on 30th of July at UEVORA, to discuss general rules concerning duties and rights of the beneficiaries, define operational ways of communication and cooperation among team members, inform about LIFE administrative procedures, including expense validation and fill of time sheets and affectation statements.

Figure 1 presents an updated organogram of the project management structure including the composition of the CP, CTAG, CG and CA.

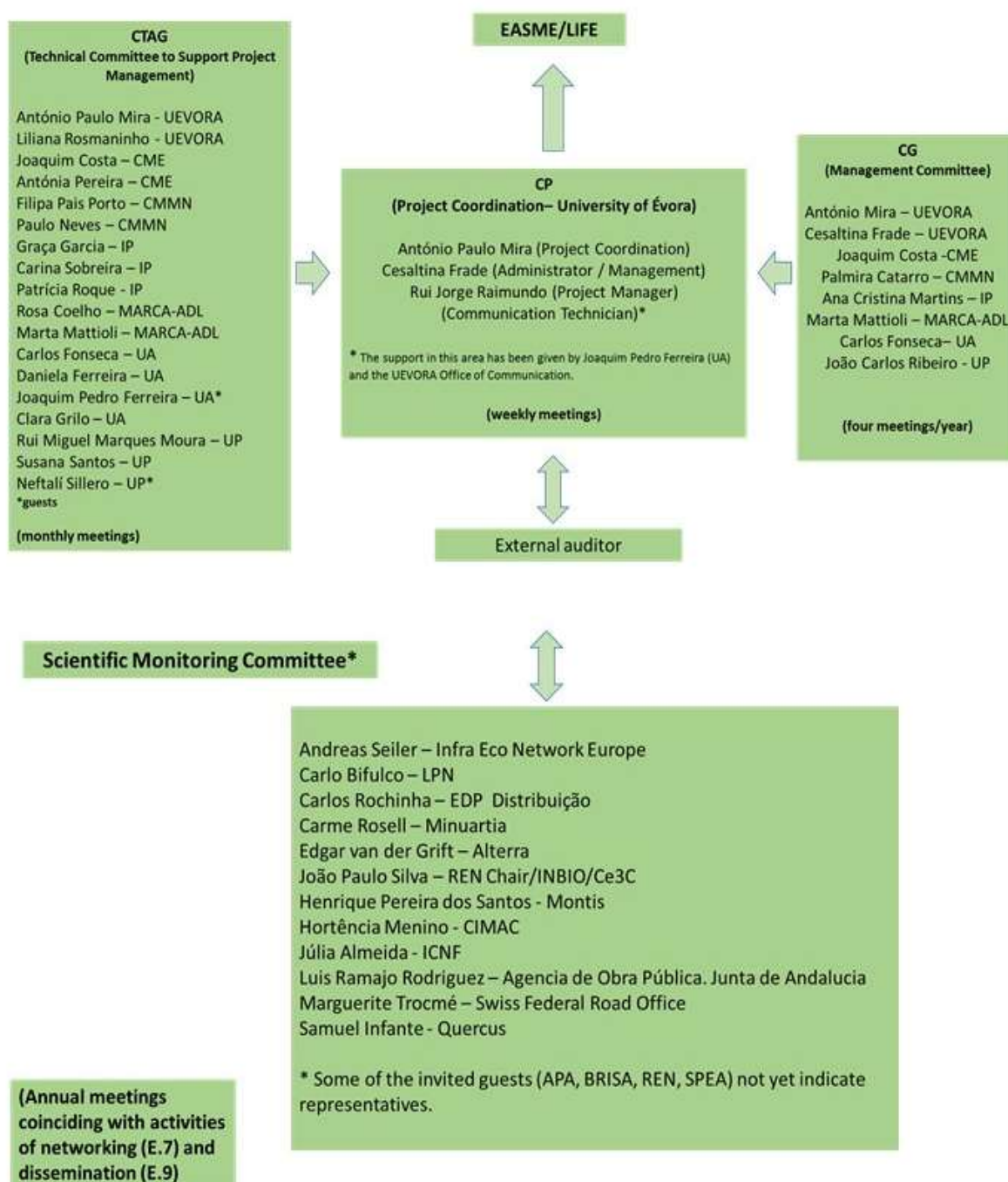


Figure 1. Organigram of the project Management Structure.



After the official starting date of the project, 20 meetings of the CP and four official meetings of the CTAG aiming to organize tasks, analyse the project progress and discuss possible adjustments took place between September 2015 and February 2016. Another CTAG and one CG Meetings are scheduled to 2<sup>nd</sup> March and 24<sup>th</sup> March 2016, respectively. The visit and first meeting of the Scientific Monitoring Committee is planned for the 2<sup>nd</sup> and 3<sup>rd</sup> of June.

Moreover, at least 15 partial meetings involving two or three beneficiaries took place on the last 6 months to plan and organize work of specific actions and/or to clarify procedures and duties of each partner.

UEVORA have awarded, through public calls, the four full time technician/researcher grants predicted in the project proposal. The post-doc grant in connectivity didn't have any applicants and thus was converted, through a new call, in a Masters grant. It is expected that at least one of these grants besides accomplishing the project goals, can simultaneously support a PhD, without any additional cost for the project. FCUP has already open a grant call to support action A.4; another grant to support remote sensing (Action A.1) is ongoing.

Most of the personal hiring, contracts and equipment and service acquisition have been done or initiated during the report period. Thus the main delays associated with them are already incorporated in the new deadline proposed for the milestones (see table I). The cars rental process, which only have been superiorly authorized in February, still involves complex processes of consultation and acquisition through the Public Platform and may need at least more three months to be completed. However the use of university and private vehicles till this process is complete will assure the regular running of the project activities during the next few months.

The majority of the conservation actions will take place on areas or infrastructures belonging or managed by project AB's, thus most of authorizations to their implementation are facilitated and are progressing as scheduled. Other authorizations depending on other entities (amphibian traffic awareness signal – ANSR; micro reserves under very high voltage powerlines poles - REN) have been initiated. In at least two cases, interventions on road (Action C.8) should extent a few meters to surrounding private fields. The identification and contacts of the land owners to ask for their permission is already in progress.

## 5. Technical part

### 5.1. Progress per action

The next sections report only on actions that were scheduled to begin before 29<sup>th</sup> February 2016 and actions that although predicted to start later have been anticipated. Actions that although not being covered by the previous conditions that had, for any reason, to be adjusted/modified are also informed. For each action, only milestones and progress indicators that were expected to be achievable during the reporting period or others that were adjusted/modified are reported. Table I compares the original with new proposed deadlines for the milestones and deliverables of the project, for the reporting period. Table III presents a Gantt chart where the foreseen and actual project progress are compared.

Table I. Original and newly proposed deadlines for the Milestones predicted for the reporting period.

Action number	Action name	Milestone Name	Original deadline	New deadline
A.1	Completing and updating of baseline characterization	Conclusion of the integration of pre-existing SIG data	Dec. 2015	Dec. 2015
A.3	Project implementation, licensing, procurement of permits and contracting procedures necessary to actions C	First administrative procedure of Licensing / Opinion / Authorization or communication accomplished	Feb. 2016	Feb. 2016
		1 <sup>st</sup> execution project accomplished	Jan. 2016	Dec. 2015
D.1	Monitoring / evaluation of socio-economic impacts of the project	List of analysis / evaluation indicators approved	Dec. 2015	Sep. 2016
		Procedures to adopt internally by each partner for the collection / delivery of information approved	Dec. 2015	Sep. 2016
E.1	Communication Plan - Project Website	1 <sup>st</sup> quarterly content updating	Dec. 2015	Dec. 2015
		Website operational and "on-line"	Oct. 2015	Oct. 2015
E.2	Communication Plan - Placards/Outdoors in intervention areas	Outdoor graphical image and placard standard structure in the intervention area approved	Dec. 2015	Dec. 2015
E.3	Communication Plan - Public disclosure sessions and contacts with the media	Project Communication Plan approved in CG	Dec. 2015	Sep. 2016
E.4	Communication Plan - Complementary works and materials	1 <sup>st</sup> thematic video with specialized media for visitors available	Jan. 2016	Jan. 2016
		1 <sup>st</sup> Project teaser "on-line"	Dec. 2015	Dec. 2015
E.10	"Adopt a road", environmental educational/awareness program with local schools	Implementation of the Education and Awareness Programme in Montemor-o-Novo started	Sep. 2015	Sep. 2015
F.1	Project management	Presence of 2 CP representatives in the European kick-off meeting	Dec. 2015	Nov. 2015
		1 <sup>st</sup> CG meeting and appointment of CTAG representatives	Aug. 2015	Mar. 2016
		1 <sup>st</sup> CP meeting	Aug. 2015	Aug. 2015
		1 <sup>st</sup> CTAG meeting	Aug. 2015	Sep. 2015
		1 <sup>st</sup> CA meeting	Oct. 2015	Jun. 2016
F.2	Structuring and compilation of project development indicators	1 <sup>st</sup> biannual update of project developments indicators posted online	Feb. 2016	Jun. 2016
F.3	External audit	Adjudication of project external auditor services to a certificated ROC	Dec. 2015	Mar. 2016

*Action A.1 – in progress*

Foreseen start date: 01/08/2015

Actual start date: 01/08/2015

Foreseen end date: 30/09/2016

**Anticipated end date: 30/06/2017**

UEVORA team is monitoring daily roadkills of all terrestrial vertebrates since 1<sup>st</sup> of August 2016 on 102 km of roads EN114, EN4 and EN18. Till 29<sup>th</sup> of February, 4654 vertebrates were registered including 902 mammals, 1783 birds, 148 reptiles and 1821 amphibians (annex XV). On other main roads of the IA, medium and large size vertebrate roadkills monitoring have been made on a weekly or biweekly basis by IP.

Additionally, between 10<sup>th</sup> November 2015 and 7<sup>th</sup> January 2016, on mild and rainy nights UEVORA did twelve road cruises along 14.2 km of the road EM535 (CMMN), for which previous compiled roadkilled data was scarcer. On these surveys 674 amphibians were registered crossing the road. From a total of 11 species, the most common ones were the natterjack toad *Epidalea calamita* (39 %), fire salamander *Salamandra salamandra* (17 %), common toad *Bufo (bufo) spinosus* (14 %) and pygmy newt *Triturus pygmaeus* (9.5 %). 675 amphibian road crossings were mapped.

UEVORA also analysed its own road kill database (MOVE – 2005-2013) along 9.2 km of the road EM529 (CME) to seek the main species of amphibians that cross it. We had registered 1518 amphibians killed on this road. From a total of 11 species, the most common ones were the fire salamander *Salamandra salamandra* (44 %), ribbed newt *Pleurodeles waltl* (21 %), spadefoot toad *Pelobates cultripes* (19 %) and natterjack toad *Epidalea calamita* (7 %).

Despite the delay due to administrative procedures in closing the process for hiring database management and SIG supporting services, all geographic data and fauna occurrences that were available for the coordinating beneficiary were integrated into a database. The database compiling the geographic information for the study area information already contains 49 geographic data layers. Concerning fauna occurrences, the compilation of data was done over the past three decades. So far a total of 89318 records have been uploaded to the LIFE LINES database (annex XVI), about 60% of which are identified to the species level. The vast majority of the records correspond to mammals, followed by birds, amphibians and reptiles. These data were collected throughout several different projects namely master's and PhD theses, research projects and scientific consultancy work. A detailed work of validation of some records is still ongoing.

Concerning the data on species occurrences collected already under the LIFE LINES project (linear transects for presence signs and photo-trapping for mammals; answering calls for owls; linear transects on paths and roads and trawls with shrimping nets on water bodies for amphibians) the database of the first 6 months of work already includes 1224 records, corresponding 55% to amphibians, 26% to mammals and 19% to owls. At this phase, LIFE LINES surveys are giving priority to cover areas or species on which, previously existent information was scarcer. More intensive sampling of small mammals, nesting birds and butterflies will take place in spring 2016 (beginning on 15<sup>th</sup> of March).

Regarding owls (Strigiformes), one of the most sensitive groups to the effects of linear infrastructures, we have achieved the goal of completing an owl census from November 2015 to February 2016. We did 229 point counts with playback of owl calls, which covered the whole study area. We already prepared abundance maps using this information (annex XVII). To understand owl movements near roads, we began the tawny owls capture attempts, which included preparatory actions (data-logger programming, material acquisition, capture rehearsal). We have done five attempts to trap tawny owl near roads, although without success until now. We have ringed one tawny owl far from roads.

Genets started to be captured to be followed by GPS/GSM in the beginning of February after getting the authorizations from ICNF and the protocol with UEVORA veterinary hospital have been signed (annex XVIII). With an effort of 100 trap/nights (10 traps x 10 nights) we captured 2 genets, 5 Egyptian mongooses and 1 domestic cat. Genets were analysed for global health condition at the veterinary Hospital, fitted with GPS/GSM collars and release at capture place. Their movement was followed online through the rd.fleetronic.net page (example in annex XIX) Due to legal and ethical reasons, genet captures will be interrupted during breeding season (between 15 March and 31 August 2016).

Owls and genets capture and GPS telemetry are delayed due to the administrative processes needed, difficulties in capturing owls and the need improve the adjustment of GPS devices for the genets. Thus an extended period, (till 28 February 2017) for capturing and following through GPS owls and more genets is expected to be needed. Moreover because these data will be used to update the landscape connectivity maps, we anticipate that the A.1 action may finished only on 30<sup>th</sup> Jun 2017.

Despite the information on genet movement is still not complete, a preliminary landscape connectivity map for this species for the SA was already produced (annex XX). We used a patch-based model approach to evaluate connectivity. Suitable habitat patches and raster cost maps were defined based on species occurrence data through the Maximum-Entropy algorithm. Permeability routes between patches were evaluated using a circuit theory approach.

The compilation about culvert location, including IP databases and field work as progressed more than predicted in the proposal. Three hundred and three culverts located in roads to be intervened are already mapped and a Masters thesis is being done, without any additional costs for LIFE, to monitor in a larger extent than predicted the use of culverts by fauna, particularly carnivores, taking into account their flooding period (annex XXI).

The reorganisation of the FCUP team was more extensive and time consuming than originally planned due to reorganizations of internal services and the need to fulfil requirements of FCUP administration board. Only after clarification of some LIFE rules and inclusion of the FCUP Administration suggestions in the activities allocated to the FCUP team the activities were fully reassumed. Thus, the administrative processes related with launching of the grant call to support mapping of exotic invasive flora, although on ongoing is still not concluded.

However, in order to not affect other related sub-tasks, some progress has been made. The FCUP team has decided which remote sensing methodologies will be applied and proceeded with the organisation and evaluation of the available aerial photography information. Based on the preliminary results of this evaluation, an aerial flight, with high spatial resolution may needed and, if necessary, will take place in April/May in accordance with the flowering period of invasive species. By that time, the grant holder should be already hired.

Taking into account the delays associated with the invasive plant mapping through remote sensing, FCUP will be able to have all results probably only in October 2016. However, in order to assure that conservation actions aiming invasive plant control can start as scheduled, mapping of target invasive plants based on ground evaluation (which will act as control for the aerial surveys) by UEVORA has already started in cooperation with MARCA, CME, CMMN and IP.

#### *Action A.2 – in progress*

Foreseen start date: 01/10/2015

Actual start date: 01/10/2015

Foreseen end date: 31/12/2016

Anticipated end date: 31/12/2016

At the national level the integration of data regarding roadkills previously available at IP and UEVORA is ongoing and will be finished in March 2016. By the end of the reporting period 33410 records, 45% of which were identified to the species level were already in the database. Contacts with other entities that

may have data additional data have been started. However because availability and ownership of data are sensitive issues, that in some instances need to be further discussed and clarified, and because the talks need to be done in a trustful and positive way, the progress in this talks is being slower than expected. However it is important to note that, despite this doesn't imply any delay or changes on the other project actions.

Moreover, several meetings between IP and UEVORA have taken place in 5<sup>th</sup> and 12<sup>th</sup> of September and a new one is foreseen to 2<sup>nd</sup> March to define the interoperability between the two beneficiaries and clarify the main tasks that each will develop.

#### *Action A.3 – in progress*

Foreseen start date: 01/08/2015

Actual start date: 01/08/2015

Foreseen end date: 30/09/2016

**Anticipated end date: 30/06/2017**

IP have concluded five projects of construction and implementation of fauna dry passages on five culverts at EN4, EN114 and IP2 (annex XXII).

CME started the topographic on road EM529 on December 2015, aiming to support the lifting of the road verges in order to allow implementation of the barriers and tunnels for the amphibians. The engineering project is in an advanced phase.

Possible locations for installing amphibian barriers and tunnels have also already been proposed by UEVORA to CME and CMMN. Advantages and constrains of each possibility are now being discussed before starting the execution projects and respective authorization procedures

Design of amphibian passage warning signal have been concluded (annex XXIII) and internally approved at IP. Other documents (e.g. examples in other countries, etc.) to support the license request to ANSR are being prepared. Road signals homologation may take longer than initially predicted. This is the reason why we anticipate that the end date of the action may be changed.

The administrative procedures aiming to launch the public call for the intervention at NIA (CMMN) in order to prepare it to support action E.10, have already been initiated by CMMN. However the original proposal for intervention at NIA is still being reevaluated due to deterioration since the time of proposal.

#### *Action A.4 – started*

Foreseen start date: 01/08/2015

Actual start date: 01/08/2015

Foreseen end date: 30/06/2018

Actual end date: 30/06/2018

For the same reasons mentioned in action A.1 for FCUP and the need to open a second grant call, the process of awarding a grant to perform some tasks associated with this action is still ongoing. Despite this, the FCUP team has made multiple tests under controlled situations with an automatic roadkill amphibian identification prototype already developed using plastic models of roadkilled and alive specimens. The team is currently working in an improved version of the algorithms to achieve better classification results. The low number of rainy days with mild temperatures delayed the use of the prototype in real field situations due to poor amphibian activity.

Despite the constrains previously identified, we expect that the end date predicted for this action will be accomplished.



#### *Action A.5 - started*

Foreseen start date: 01/08/2015  
Foreseen end date: 31/12/2016

Actual start date: 01/08/2015  
Actual end date: 31/12/2016

As described at point 3.3 the project coordinator had to dedicate some of its work to find alternative solutions in what regards the Plant Nursery site.

The Nursery Plant Worker has already been selected and is going to start working in April 2016. He will continue implementing this action until December 2016, in accordance with the established time schedule.

#### *Action A.6 – in reformulation*

**Delayed due to AB (EGSP) withdrawal from the project. Amendment to project proposal is being prepared and will be to send do EASME/Commission in the next weeks. See section 3.3 for details.**

Foreseen start date: 01/08/2015  
Foreseen end date: 30/06/2016

**Anticipated start date: 01/07/2016**  
**Anticipated end date: 30/06/2017**

#### *Action C.3 – in progress*

Foreseen start date: 01/10/2015  
Foreseen end date: 31/03/2017

Actual start date: 01/10/2015  
**Anticipated end date: 21/12/2017**

The design for the warning signal of amphibian crossing is already approved by the CTAG. Submission to ANSR, for approval is being prepared. However, the project team was recently alerted that the official authorization of a new road signal, is a very long and time consuming process. To account for this, a new end date, later than the originally foreseen is now proposed.

#### *Action C.4 – started*

Foreseen start date: 01/10/2015  
Foreseen end date: 31/07/2020

Actual start date: 01/10/2015  
Actual end date: 31/07/2020

Several meetings among IP and UVEVORA team, including informatics specialized technicians began on September 2015. A preliminary proposal for the workflow of the app development is already available (annex XXIV) for analysis and discussion at the CTAG.

The android application is one of the project goals and deliverables that have raised most interest during the public presentations of the project. We anticipated that the app will be ready for use before January 2018.

#### *Action C.5 – in reformulation*

**Probably delayed due to AB (EGSP) withdrawal from the project. Amendment to project proposal is being prepared and will be to send do EASME/Commission in the next weeks. See section 3.3 for details.**

Foreseen start date: 01/07/2016  
Foreseen end date: 31/12/2018

**Actual start date: 01/07/2017**  
**Actual end date: 31/12/2019**

*Action C.6 – in progress*

Foreseen start date: 01//01/2016

**Actual start date: 01/09/2015**

Foreseen end date: 31/12/2019

**Actual end date: 31/12/2019**

Several tasks associated with this action are already running, including:

- (i) Determination of the species referenced in literature as being present at the SA and registration of the most abundant species in the surroundings of linear infrastructures predicted to be intervened (September to December 2015);
- (ii) Compilation of a database of ecological information of the plant species expected to occur on the SA in a total of 1064 species (September to December 2015);
- (iii) Identification and selection of plant species that occur at the SA and that are appropriate for the promotion of project's target butterflies (January and February 2016);
- (iv) Preliminary selection of plant species that can be used in the biodiverse seed mixtures (since January 2016);
- (v) Start of seed harvest of plant species that may be used in the biodiverse seed mixture. These seeds will be used to perform experiments aimed at further selecting these species (since February 2016).

*Action C.7 – started*

Foreseen start date: 01//04/2016

**Actual start date: 01/10/2015**

Foreseen end date: 30/06/2018

**Actual end date: 30/06/2018**

The starting date of this action was slightly anticipated. Technical meetings between UEVORA vegetation team and Arq. Alexandra Raimundo (CME) have taken place on the first half of February, with the aim of selecting the locations along the disabled railway Évora-Mora (Ecotrail of Évora) to be intervened for invasive plants control and promotion of autochthonous biodiversity (particularly plants and butterflies). It was agreed that, whenever possible, interventions should be done in the public domain, where they are easier to carry out.

Several visits were made to the ecotrail to pre-select intervention sites, followed by a cadastral evaluation of land owners aiming to assess operability conditions on each of the pre-selected sites.

UEVORA analysed the amphibian roadkill data from action A.1 and defined with CME the priority locations of the 5 new amphibian tunnels and barriers on EM529. Additionally, a suggestion for adapting existing culverts coupled with barriers in another EM529 road section is now being evaluated between both beneficiaries.

*Action C.8 – in progress*

Foreseen start date: 01//08/2015

**Actual start date: 01/08/2015**

Foreseen end date: 30/06/2018

**Actual end date: 30/06/2018**

UEVORA based on the amphibian crossing data and preliminary evaluation of occurrence of small mammals on the EM535 verges prepared a preliminary document considering, in a hierarchical way, possible sections for intervention and also possible types of barriers (from low cost materials to more specialized solutions) to be used (annex XIII). This document is a first draft, much enlarged, compared to the intervention that is predicted in the proposal. It aims only to be used as a starting point to the discussion of what can be done/adjusted taking into account the tasks, materials and budget foreseen in the original LIFE proposal.

Several meetings between UEVORA and CMMN have taken place since January 2015 specifically to analyse this issue and choose the final possible solution, taking into account the original LIFE goals and tasks.

A preliminary visit was made to the Montemor-o-Novo ecotrail to pre-select intervention sites, in cooperation with MARCA.

*Action C.10 – started*

Foreseen start date: 01/07/2016

Actual start date: 01/07/2016

Foreseen end date: 31/12/2018

Actual end date: 31/12/2018

A Meeting with REN environmental office to discuss possible collaborations and ask for authorization to install experimental plots under high voltage powerlines poles took place on 20<sup>th</sup> January 2016. Despite of the interest of this office, a final decision about this possible partnership waits for an answer from REN Main Administration Board.

*Action D.1 – started*

Foreseen start date: 01/08/2015

**Actual start date: 01/01/2016**

Foreseen end date: 31/07/2020

Actual end date: 31/07/2020

A list of 27 proposed socioeconomic indicators was sent to all beneficiaries but still needs further discussion before approval (annex II).

The starting of the action is slightly delayed due to the need have the support of the Project Manager (for which the contract is in progress) and the advice from a specialized technician on socioeconomic indicators with whom the first contacts have been initiated. Taking this into account we expect that the internal procedures to be adopted by each partner to gather and send the information (original milestone: 12/2015) will only be approved on 30<sup>th</sup> September 2016 with a similar delay in the distribution of the grid for the evaluation of the socioeconomic effects of the project.

However, despite these changes, at the end, the action will be fulfilled and probably even behind what is foreseen in the proposal, as an attempt is being made to include a broader socioeconomic evaluation with no additional costs for the project.

*Action E.1 – in progress*

Foreseen start date: 01/08/2015

Actual start date: 01/08/2015

Foreseen end date: 31/07/2020

Actual end date: 31/07/2020

A preliminary version of the website was online on October 2015 (<https://mapserver.uevora.pt/lifelines>, a page that is now disabled), and a first small update of this page was made on December 2015, as predicted in the proposal. A larger update of the website, with a different internet address and web design and a new concept integrating the new graphic image of the project was online on February 2016 (<https://lifelines.uevora.pt/?lang=en>) in both English and Portuguese languages. The new page also includes a link to the LIFE LINES Facebook account. Since then, small adaptations to the page design have been made taking into the feedback of people visiting the page. Overall the LIFE LINES webpage, till now, have been updated four times.

*Action E.2 – in progress*

Foreseen start date: 01/10/2015

Actual start date: 01/10/2015

Foreseen end date: 31/07/2020

Actual end date: 31/07/2020

The project logo was approved on the 22<sup>nd</sup> October 2015 Meeting of the CTAG (annex XXV). A global proposal for the project graphic image including the design of the outdoors and the presentation templates is also already available (annex XXVI).

*Action E.3 – started*

Foreseen start date: 01/08/2015

**Actual start date: 01/02/2015**

Foreseen end date: 31/07/2020

**Actual end date: 31/07/2020**

This action is delayed because, besides specialized work with professional communication teams, it will be partially supported by the Project Manager for whom the contract, due to legal administrative procedures and deadlines that must be respected, will only be concluded in March. However, contacts are already being made with professional communicators asking for proposals for a Project Communication Plan that should at least include (i) explanation of the LIFE LINES framework; (ii) identification of goals of communication and of the target audiences; (iii) definition of the message to communicate at different circumstances; (iv) strategy to communicate online, in the social networks and offline; (v) plan to contact with the media including support to press releases; (vi) analysis and identification of key moments associated with larger communication events; and (vii) specific support to the key moments identified in the previous point.

*Action E.4 – in progress*

Foreseen start date: 01/08/2015

**Actual start date: 01/08/2015**

Foreseen end date: 31/07/2020

**Actual end date: 31/07/2020**

A first notice about LIFE LINES including an interview with the project coordinator have been published in a local newspaper (“Folha de Montemor”) (annex XXVII). The project has been presented in talks included in the Masters in (i) Conservation Biology (UEVORA) and ii) Applied Ecology (FCUL), and in the disciplines of (i) Iberian Fauna and (ii) Environmental Impact Assessment of the Bachelors in Biology of these universities.

The first teaser introducing the LIFE LINES project was finished by 31<sup>st</sup> December 2015 and can be viewed at the project website.

The first project thematic video targeting to support visits with specialized media was completed on January 2016 and can be accessed on the following web address:

<https://mapserver.uevora.pt/owncloud/index.php/s/YlhUiUiax0O2aNn>

The LIFE LINES will be presented, through and oral presentation, at the National Congress of Environmental Assessment 2016 (CNAI’16) that will take place in Évora between 19 and 21 of May.

The project coordinator is predicted to give a talk (including partially the LIFE LINES project) on the 1<sup>st</sup> Ibero-American Congress on Biodiversity and Road Infrastructure” that will take place in Lavras (Brasil) between 17-19 October 2016.

*Action E.7 – started*

Foreseen start date: 01/04/2016

**Actual start date: 01/02/2016**

Foreseen end date: 31/03/2020

**Actual end date: 31/03/2020**

This action began before predicted taking advantage of partnerships with other ongoing projects at IP and UEVORA. On the 24<sup>th</sup> February 2016 part of the team of the LIFE LINES project conducted a field trip to Toledo, Spain in order to visit the study area where the “LIFE Impacto Cero” project (Development and demonstration of an anti-bird strike tubular screen for High Speed Rail lines - LIFE12 BIO/ES/0000660) is taking place. The main goal was to promote the sharing of experience and knowledge between both LIFE projects teams on the design of measures to mitigate the negative impacts of linear infrastructures on birds, as well as on the methodologies used to assess their effectiveness.

*Action E.8 – in progress*

Foreseen start date: 01/04/2016

Foreseen end date: 31/07/2020

**Actual start date: 01/10/2015****Actual end date: 31/07/2020**

The integration between partners has started before predicted, as it benefitted from former contacts and works among MARCA and other stakeholders. A working plan method with the flora team from UEVORA has already been established, including the definition of potential intervention sites for voluntary actions and associated control plots. Together with CMMN three voluntary actions to be developed until the end of 2016 have been scheduled, that will be integrated with other CMMN activities to be undertaken within the LIFE LINES project: May 2016 with youth volunteers; October 2016 with local associations; November 2016 with both youth, associations and other institutions. Contacts with IP were initiated in order implement one voluntary action with IP workers until the end of this year, as predicted.

*Action E.10 – in progress*

Foreseen start date: 1/08/2015

Foreseen end date: 30/07/2020

**Actual start date: 1/09/2015****Actual end date: 30/07/2020**

The action started one month later than predicted.

A first three day holidays camp and awareness-raising session at NIA is scheduled to take place between 20 and 22 of March 2016 (annex XXVIII), coinciding with the camp, held since 2008 by the Centro Juvenil (CMMN) on Easter holidays. Oriented to an audience aged 15 to 21, the camp will allow 20 young people to direct contact with project goals and biodiversity as a whole.

Contacts and arrangements with the Schools of Vertical Grouping of Montemor-o-Novo have already took place and so far two LIFE LINES awareness sessions have been made for about 40 students of 11<sup>th</sup> and 10<sup>th</sup> year equivalent, on 13<sup>th</sup> and 21<sup>st</sup> of January (annex XXIX). Students have shown high interest, which is a fundamental first step to attract volunteers for action E.8, which will take place in partnership with MARCA.

Some of the 10<sup>th</sup> year equivalent students (course 3 vocational tourism) started work aiming project dissemination including research on key concepts/ideas, and the preparation of scripts for interviews to local people and environmental education for students of different degrees. For the 11<sup>th</sup> grade students, bearing in mind that it is a motivated group on issues of land and crop protection, a trip is scheduled to the Mitra Pole of the University of Évora, on 7<sup>th</sup> of March. After a classroom session evidencing important biodiversity values at the LIFE LINES SA, a field visit supervised by a LIFE LINES fauna expert, aiming the direct observation of landscape characteristics and animal specimens, is planned.

The only milestone predicted to be concluded before 29<sup>th</sup> February 2016 (Starting of the Education and Awareness Program in Montemor-o-Novo), although delayed one month, was already accomplished.

*Action F.1 – in progress*

Foreseen start date: 01/08/2015

Foreseen end date: 31/07/2020

**Actual start date: 01/08/2015****Actual end date: 31/07/2020**

This action was initiated as initially proposed.

Management structure including the CP, CTAG, CG, and CA are already implemented (annex XXX). The CP, still lacks a regular technician specialized in communication and a project Manager, situation that we believe will be repaired till May 2016. However, when needed, advice from Joaquim Pedro Ferreira (an invited post-doc from UA specialized in science communication that have attended some of the CP meetings), from UEVORA Communication Office and from the Head of the Administration of UEVORA have been provided. The composition of the CTAG and CG have been submitted to adjustments due to



reorganization of the departments and/or teams of some of the beneficiaries. The predicted dates for the first meetings of the, CTAG, CG and CA had to be rescheduled (see sections 3.1 and 4 for more details). These adjustments will not compromise the main achievements of the project

All the procedures concerning grant awards by UEVORA are concluded. The hired technician to support Project Management will start working on 1<sup>st</sup> April 2016. Most of the main services and material acquisitions by UEVORA despite the highly complex procedures associated with the recent legislation are concluded or expected to be concluded in the next three months, except for the cars (see section 3.3) and the green house, for which it is being difficult to find a provider with the necessary requirements. Calls for FCUP grants are delayed (see section 5.1 – Actions A.1 and A.4) but are already running.

The coordinator and the operational administrative supervisor of the LIFE LINES have been present on the LIFE14 Kick-off Meeting that took place on 4<sup>th</sup> November 2015 in Murcia and presented the project to the LIFE External Monitoring teams, EASME/Commission and other LIFE 14 beneficiaries.

#### *Action F.2 – started*

Foreseen start date: 01/08/2015

Actual start date: 01/08/2015

Foreseen end date: 31/07/2020

Actual end date: 31/07/2020

The original LIFE LINES proposal already included, for each action, a list of indicators to be achieved along the project development. These are the main indicators to be incorporated and used in Action F.2. Table II summarizes, for each action already in progress, the foreseen and the actual status of each proposed indicator.

#### *Action F.3 – in progress*

Foreseen start date: 01/08/2015

Actual start date: 01/09/2015

Foreseen end date: 31/07/2020

Actual (or anticipated) end date: 31/07/2020

The administrative process of contracting an external auditory team have started on September 2015 and will be finished till the end of March 2016 (it is already concluded at the date of the writing of the present report).

Table II. Foreseen and executed indicators per project action.

Action	Indicator	Quantity	Executed
<b>A. Preparatory actions, elaboration of management plans and/or of action plans</b>			
<b>A.1 - Completing and updating of baseline characterization</b>	Data information layers integrated into GIS database	No., N=79	49
	Occurrence records integrated into GIS database	No., N=25.000	88000
	Species covered by wildlife database	No., N=7 amphibians, 8 reptiles, 25 mammals and 80 birds	13 amphibians, 14 reptiles, 44 mammals and 116 bird
	Connectivity maps generated	No., N=2	1
	Fraction of intervention sites covered by detailed data / maps in GIS database	%, Target=100	
	Animals tracked with GPS/GSM system	No., N=12	2
	Number of wildlife crossings and culverts mapped	No., N=50	303
<b>A.2 - Compilation, structuring and implementation of national database and multi-user web platform</b>	Number of persons / organizations that contributed with GIS data information layers	No., N=16	2
	Roadkill data incorporated into GIS database	No., N=50.000	42000
	Species incorporated into GIS database	No., N=120	190
<b>A.3 - Project implementation, licensing, procurement of permits and contracting procedures necessary to actions C</b>	Execution projects (Forestry and civil engineering / Landscaping) produced	No., N=12	5
	Authorizations, licensing and procurement of permits necessary to actions C obtained	%, Target=100	
<b>A.4 - Development, testing and evaluation of automated systems of monitoring and / or deterrence</b>	No. of monitoring prototypes developed	No., N=2	1
<b>A.5 - Installation of autochthonous plant nursery for conservation actions</b>	No. of created nurseries	No., N=1	0
<b>C. Concrete conservation actions</b>			
<b>C.3 - Development and installation of vertical road traffic signs</b>	Vertical signals created	No., N=1	1
<b>E. Public awareness and dissemination of results (obligatory)</b>			
<b>E.1 - Communication Plan - Project Website</b>	Content update frequency	No. of updates, N=20	4
<b>E.3 - Communication Plan - Public disclosure sessions and contacts with the media</b>	Press releases/schedule emitted or written throughout the project	No., N=30	0
<b>E.4 - Communication Plan - Complementary works and materials</b>	Short teasers (about 1 minute) produced and distributed on the Internet throughout the project	No., N=20	1
	Thematic videos of medium duration with audiovisual supporting content for specialized media visits	No., N=20	1
<b>E.10 - "Adopt a road", environmental educational/awareness program with local schools</b>	Young people involved by municipality in vacation camps	No./year, N=9	20
	Total of young people involved by municipality in vacation camps	No., N=72	20
<b>F. Project management and monitoring of project progress (obligatory)</b>			
<b>F.1 – Project management</b>	CP team members present in the kick-off meeting	No., N=2	2
	CG meetings accomplished	No., N=20	0
	CTAG meetings accomplished	No., N=60	4
	CP meetings accomplished	No., N=240	20
	CA meetings accomplished	No., N=6	0
	CA members present in meetings	%, Target=90	

## 5.2. Envisaged progress until next report

The next progress report will be sent to EASME/Commission till 30<sup>th</sup> August 2017 (reporting activities from 1<sup>st</sup> March 2016 to 31<sup>st</sup> July 2017). All the milestones of actions A.1, A.2, A.3, A.4, A.5, C.3 and E.7 foreseen in the proposal will predictable be achieved during the next reporting period. Because we are having problems in capturing Tawny owls near the roads, may be a need to invest more in the monitoring of Barn owl movements instead Tawny owl. Both owls are among the middle sized birds with higher numbers of roadkills at the IA.

An approved list of socioeconomic indicators and adoption of procedures to collect and send information among beneficiaries (D.1), approval of the Project Communication Plan (E.3) and the update of the indicators of project progress (F.2), which were milestones to be already accomplished were postponed, as explained above, for the next reporting period.

All the milestones of actions C.6, C.7, D.1, E.1, E.4, E.8, E.9, E.10, F.1 and F.3 forecasted to be accomplished in the next reporting period will predictably fulfilled. Nevertheless, in some instances milestones may be one or two months delayed comparing with the initially proposed deadline, despite being predictably achieved during the reporting period.

Actions A.6 and C.5 are being subjected to an amendment which is still being discussed/negotiated and new milestones will be proposed for this action in the framework of the amendment process.

**Table III.** Gantt table. Summary of the foreseen (grey) and actual (brown) progress for each action. Red thick line shows actual project time\* means action in reformulation that depend on amendment approval by EASME/Commission; X - Progress report; O - Midterm/Final Report.

Action			2015		2016				2017				2018				2019				2020				
Action number	Name of the action		3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	
Overall project Schedule		Proposed			X						X			O				X						O	
		Actual			X						X			O				X						O	
A. Preparatory actions, elaboration of management plans and/or of action plans																									
A.1	Completing and updating of baseline characterization	Proposed																							
		Actual																							
A.2	Compilation, structuring and implementation of national database and multi-user web platform	Proposed																							
		Actual																							
A.3	Project implementation, licensing, procurement of permits and contracting procedures necessary to actions C	Proposed																							
		Actual																							
A.4	Development, testing and evaluation of automated systems of monitoring and / or deterrence	Proposed																							
		Actual																							
A.5	Installation of autochthonous plant nursery for conservation actions	Proposed																							
		Actual																							
A.6*	Development of prototypes for avifauna deterrence in medium voltage power lines	Proposed																							
		Actual					*	*	*	*															
A.7	Development and adoption of internal guidelines to support the management in post-project	Proposed																							
		Actual																							
C. Concrete conservation actions																									
C.1	Integrated mitigation of connectivity reduction and landscape permeability by national roads and other main roads	Proposed																							
		Actual																							
C.2	Potentiation of verges and other road marginal patches as shelter, food and / or corridors	Proposed																							
		Actual																							
C.3	Development and installation of vertical road traffic signs	Proposed																							
		Actual																							

Action			2015		2016				2017				2018				2019				2020				
Action number	Name of the action		3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	
C.4	Mobile app to promote roadkill data collection	Proposed																							
		Actual																							
C.5*	Test of devices for deterring bird landing in medium voltage power lines	Proposed																							
		Actual									*	*	*	*	*	*	*	*	*	*	*				
C.6	Development, testing and application of biodiverse seed mixtures to promote plant biodiversity in the surroundings of linear infrastructures	Proposed																							
		Actual																							
C.7	Mitigation and potentiation measures in Évora municipality routes	Proposed																							
		Actual																							
C.8	Mitigation and potentiation measures in Montemor-o-Novo municipality routes	Proposed																							
		Actual																							
C.9	Plant nursery operation for conservation actions	Proposed																							
		Actual																							
C.10	Promotion of biodiversity "islands" along powerlines paths	Proposed																							
		Actual																							
D. Monitoring of the impact of the project actions																									
D.1	Monitoring / evaluation of socio-economic impacts of the project	Proposed																							
		Actual																							
D.2	Monitoring / evaluation of the project impacts on ecosystem functioning	Proposed																							
		Actual																							
D.3	Monitoring / evaluation of project conservation actions effects / impacts	Proposed																							
		Actual																							
E. Public awareness and dissemination of results																									
E.1	Communication Plan - Project Website	Proposed																							
		Actual																							



Action			2015		2016				2017				2018				2019				2020				
Action number	Name of the action		3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	
E.2	Communication Plan - Placards/Outdoors in intervention areas	Proposed																							
		Actual																							
E.3	Communication Plan - Public disclosure sessions and contacts with the media	Proposed																							
		Actual																							
E.4	Communication Plan - Complementary works and materials	Proposed																							
		Actual																							
E.5	Awareness and integration of the academic community in data/information collection	Proposed																							
		Actual																							
E.6	Training / dissemination among stakeholders	Proposed																							
		Actual																							
E.7	Networking with other LIFE and non-LIFE projects	Proposed																							
		Actual																							
E.8	Young and institutional volunteer program	Proposed																							
		Actual																							
E.9	Technical seminars for presentation of project developments and results	Proposed																							
		Actual																							
E.10	"Adopt a road", environmental educational/awareness program with local schools	Proposed																							
		Actual																							
E.11	Layman report	Proposed																							
		Actual																							
F. Project management and monitoring of project progress																									
F.1	Project management	Proposed																							
		Actual																							
F.2	Structuring and compilation of project development indicators	Proposed																							
		Actual																							

Action			2015		2016				2017				2018				2019				2020			
Action number	Name of the action		3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T
F.3	External audit	Proposed																						
		Actual																						
F.4	Post-LIFE conservation and communication plan	Proposed																						
		Actual																						

### 5.3. Impact

This is a LIFE Biodiversity project and thus do not target specifically Natura 2000 sites or conservation of only threaten species according to Birds or Habitats directives.

The main input of the project is the mitigation of negative effects from transport/energy infrastructures in wild fauna and creation, along them, of a demonstrative Green Infrastructure, based in corridors and stepping stones that can increment connectivity and improve conservation of local/regional biodiversity. In short, LIFE LINES aims to solve a set of biodiversity conservation problems induced by transport/energy infrastructures, through the implementation of cost-efficient methods that will support the creation of a Green Infrastructure.”

The project will contribute to the following targets of the “EU Biodiversity Strategy to 2020”:

2. Maintain and restore ecosystems and their services (those depending on landscape connectivity)
5. Combat Invasive Alien Species
6. Help avert global biodiversity loss

Moreover, it will promote the achievements of the “Portuguese National Strategy for Nature and Biodiversity Conservation” in the following goals:

1. Promote knowledge on and monitoring of biodiversity
5. Develop conservation actions
6. Integrate conservation politics in territory management and planning
7. Increase cooperation among national, regional and local administrations
- 8 and 9. Promote education and awareness about biodiversity loss and conservation
10. Intensify international cooperation

### 5.4. Outside LIFE

UEVORA and IP, previously to the beginning of LIFE LINES, signed a protocol aiming the Ecological Monitoring, according to the Environmental Impact Declaration, of the High Velocity Train between Évora and Elvas/Caia, to be built in the next years. Some of the aims are to evaluate, propose or adapt mitigation and compensation measures for fauna in the railway corridor to be built. In a small area where the two projects overlap, this is a unique opportunity to strategically integrate and intensify this measures with the conservation measures proposed in the framework of LIFE LINES for the other linear infrastructures already in place.

### 6. Financial part

#### 6.1. Costs incurred

Tables IV and V inform about the expenses for the first seven months of the project, corresponding to about 11.5% of its predicted duration. For the reasons explained in previous sections, particularly those concerned with the new, complex and slow, administrative procedures required by law to hire people and acquire goods and services, despite the efforts to speed them up, have been the main forces preventing a higher budget implementation. For instance, large expenses such as vehicle renting, contracts with informatics and communication teams and expenses for hiring the Project Manager are not included yet in the costs incurred. However, predictably this will happen in the next few months. Despite these, 5% of budget have already been spent. Most of the incurred costs correspond to personal (grants and AB’s staff), external assistance (for smaller contracts), travel and equipment fulfilling the basic needs (despite the abnormal situation with

the vehicles) for the implementation of the projects actions scheduled to be running. Till now, no project task or action have been stopped or delayed due to budget reasons. The big problem has been the bureaucracy.

Taking in account that the main problems related with conclusion of some of major acquisitions and contracts are predicted to be solved in the next few months and that the start or full speed implementation of some of the most costly conservation actions (e.g. C.1, C.7 and C.8) is scheduled to happen in the next 16 months, we expect that about 100% of the first pre-financing payment will be absorbed until July 2017.

**Table IV.** Project budget summary by category of expenditure, indicating the amounts spent until 29/02/2016 and the respective percentage in terms of the total costs predicted by category.

Budget breakdown categories	Budgeted costs in €*	Costs incurred from the start date to 29/02/2016 in €	% of Budget**
<b>1. Personnel</b>	2.061.181,00	161.009,26	8%
<b>2. Travel and subsistence</b>	270.821,00	836,07	0%
<b>3. External assistance</b>	1.309.611,00	80.634,97	6%
<b>4. Durable goods</b>			
<b>Infrastructure</b>	852.485,00		0%
<b>Equipment</b>	165.612,00	11.709,38	7%
<b>Prototype</b>	56.606,00		0%
<b>5. Land purchase / long-term lease</b>			
<b>6. Consumables</b>	371.551,00	340,25	0%
<b>7. Other Costs</b>	106.740,00		0%
<b>8. Overheads</b>	345.878,00	17.817,10	5%
<b>TOTAL</b>	<b>5.540.485,00</b>	<b>272.347,02</b>	<b>5%</b>

**Table V.** Summary of budget implementation by project action, including the budgeted costs and hours and proportions of them that have already been spent.

Action number and name	Budgeted costs	Budgeted days	% of Budget spent	% of hours spent
A.1 - Completing and updating of baseline characterization	373.043,00	1803	26%	41%
A.2 - Compilation, structuring and implementation of national database and multi-user web platform	89.310,00	419	9%	12%
A.3 - Project implementation, licensing, procurement of permits and contracting procedures necessary to actions C	174.075,00	830	14%	16%
A.4 - Development, testing and evaluation of automated systems of monitoring and / or deterrence	85.535,00	584	4%	1%
A.5 - Installation of autochthonous plant nursery for conservation actions	51.693,00	240	1%	4%

Action number and name	Budgeted costs	Budgeted days	% of Budget spent	% of hours spent
A.6 - Development of prototypes for avifauna deterrence in medium voltage power lines	31.780,00	200	0%	0%
A.7 - Development and adoption of internal guidelines to support the management in post-project	13.839,00	63	0%	0%
C.1 - Integrated mitigation of connectivity reduction and landscape permeability by national roads and other main roads	660.090,00	444	0%	0%
C.2 - Potentiation of verges and other road marginal patches as shelter, food and / or corridors	517.746,00	472	0%	0%
C.3 - Development and installation of vertical road traffic signs	5.678,00	19	14%	5%
C.4 - Mobile app to promote roadkill data collection	59.472,00	315	1%	0%
C.5 - Test of devices for deterring bird landing in medium voltage power lines	115.372,00	612	0%	0%
C.6 - Development, testing and application of biodiverse seed mixtures to promote plant biodiversity in the surroundings of linear infrastructures	259.299,00	934	0%	0%
C.7 - Mitigation and potentiation measures in Évora municipality routes	680.578,00	1247	0%	1%
C.8 - Mitigation and potentiation measures in Montemor-o-Novo municipality routes	522.014,00	626	1%	6%
C.9 - Plant nursery operation for conservation actions	66.031,00	1014	0%	0%
C.10 - Promotion of biodiversity "islands" along powerlines paths	71.047,00	354	0%	0%
D.1 - Monitoring / evaluation of socio-economic impacts of the project	25.400,00	180	0%	0%
D.2 - Monitoring / evaluation of the project impacts on ecosystem functioning	26.520,00	180	0%	0%
D.3 - Monitoring / evaluation of project conservation actions effects / impacts	548.571,00	3379	0%	0%
E.1 - Communication Plan - Project Website	19.132,00		61%	
E.2 - Communication Plan - Placards/Outdoors in intervention areas	21.483,00		11%	
E.3 - Communication Plan - Public disclosure sessions and contacts with the media	49.856,00		83%	
E.4 - Communication Plan - Complementary works and materials	16.337,00		65%	
E.5 - Awareness and integration of the academic community in data/information collection	5.331,00	10	0%	0%
E.6 - Training / dissemination among stakeholders	31.537,00		36%	
E.7 - Networking with other LIFE and non-LIFE projects	15.600,00		0%	
E.8 - Young and institutional volunteer program	131.904,00	205	0%	1%
E.9 - Technical seminars for presentation of project developments and results	49.454,00		0%	
E.10 - "Adopt a road", environmental educational/awareness program with local schools	132.672,00	685	6%	8%
E.11 - Layman report	5.000,00		0%	



Action number and name	Budgeted costs	Budgeted days	% of Budget spent	% of hours spent
F.1 - Project management	288.480,00	900	9%	14%
F.2 - Structuring and compilation of project development indicators	10.248,00	60	0%	0%
F.3 - External audit	28.158,00	90	0%	0%
F.4 - Post-LIFE conservation and communication plan	12.322,00	18	0%	0%
Overheads	345.878,00		5%	
<b>TOTAL</b>	<b>5.540.485,00</b>	<b>15.883,00</b>		