LIFE Project Number

LIFE15 NAT/ES/000802

Final Report

Covering the project activities from 15/09/2016 to 30/09/2021

Reporting Date

03/02/2022

LIFE PROJECT NAME or Acronym

LIFE Ricotí

Data Project

Project location:	Castilla-León, Spain
Project start date:	15/09/2016
Project end date:	15/02/2021 **Extension date:** 30/09/2021
Total budget:	3.347.601 €
EU contribution:	2.505.795 €
(%) of eligible costs:	74,85%

Data Beneficiary

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2. List of keywords and abbreviations

Keywords:

Dupont's lark, steppe habitat, conservation, restoration, dung sown, extensive sheep grazing, Land Stewardship Program, Ornithological Tourism Program, social awareness

UAM	Universidad Autónoma de Madrid
DGMN-JCyL	Junta de Castilla y León
DIPUTACIÓN	Diputación Provincial de Soria
FPN	Fundación Patrimonio Natural de Castilla y León
MANCOMUNI	Mancomunidad de Obras y Servicios de Corpes
AEPMA	Actividades, Estudios y Proyectos en el Medio Ambiente S.L.
ARTESA	Artesa Estudios Ambientales, S.L.
INNOMAKER	Innomaker Innovación y Desarrollo S.L.

3. Executive summary

Project Objectives

The main objectives of the LIFE Ricotí project were:

1. **Conservation and improvement** of Dupont's lark populations in southern Soria (SPAs ES0000203 Altos de Barahona and ES0000255 Páramo de Layna), which represent approximately 15% of the European population of the species.
2. **Increase habitat availability** through direct habitat restoration measures and the maintenance and promotion of livestock management in the two considered SPAs.
3. Evaluation of relationships between **habitat quality and population viability** of Dupont's lark in the framework of conservation strategies.
4. Definition of **criteria for habitat management** of the species, which will be integrated into the National and Regional Conservation Strategies for the Dupont's lark.
5. Improved level of **awareness and social valorisation** of the species in the local stakeholders.

These objectives involve the design and application of specific measures to protect the Dupont's lark and its habitat, to manage SPAs, to restore habitat and to involve local stakeholders.

Key Outputs

The results for the LIFE Ricotí project have been:

- **Restoration of 329.03 ha** of habitat currently unsuitable or of low quality for the Dupont's lark into high-quality habitat. Dupont's lark successful reproduction has been confirmed in several of these restored areas.
- Restoration areas have shown **positive population trends** during the LIFE Ricotí project, despite the negative trend of the species in its whole distribution area, especially after the catastrophic snowstorm of winter 2020 (Filomena).
- Inclusion of **3060.97 ha well-conserved into the Land Stewardship Program**, facilitating their conservation for the next 30 years and the implication of local population and stakeholders.
- This last result has allowed **maintaining of traditional livestock** by sheep activities in areas with suitable habitat for Dupont's lark.
- Sound scientific evaluation of the **relationships between traditional extensive grazing and food availability**.
- Enhancement and **improvement of the social perception** of the presence of Dupont's lark in Southern Soria.
- Integration of Dupont's lark interest areas into **bird tourism circuits**, and promotion of **ornithological tourism** in the region.
- Definition of **management measures** for the conservation of the species and its habitat in Castilla y León, approved in the Management Guidelines for the SPAs, as well to be incorporated into the National Conservation Strategy (Ministerio para la Transición Ecológica), and Re-listing of the species in the National Catalogue of Threatened Species, both under development with the participation of TEG-UAM.

The LIFE Ricotí project has included 80 deliverables. Among them, main outputs are related with:

- Populations of Dupont's lark at the beginning and the end of the project, and monitoring (deliverables nº 24, 31, 25, 44, 54, 69 and 73).
- Habitat quality and effect of conservation actions (deliverables nº 25, 41, 51, 53, 61, 70, 74).
- Guidelines for the management and restoration of Dupont's lark habitat in Altos de Barahona and Páramo de Layna SPAs (deliverables nº 16, 42, 62).
- State of art and improvement of local awareness and social valorisation of the species (deliverables nº 19, 79a and 79b).
- Implementation and development of a Land Stewardship Program, including the promotion of an Ornithological Tourism Program (deliverables nº 11, 50, 78).

Comparison planned-made

The project has been carried out in accordance with what was planned, despite some deviations from its initial schedule. At the end of the project, all the project objectives have been accomplished, even the first one (*Conservation and improvement of Dupont's lark populations in southern Soria*) considering the decreasing trend of the species in its whole distribution, and especially after catastrophic events occurred in winter 2020 (Filomena storm, which decimated Iberian populations).

Administrative

The project started on September 15th, 2016, and ended on September 30th, 2021, after the approved extension. Partnership agreements between Coordinating Beneficiary (UAM) and Associated Beneficiaries (DGMN-JCyL, DIPUTACIÓN, FPN, MANCOMUNI, AEPMA, ARTESA and INNOMAKER) were signed before the end of March 2017. Likewise, all wire transfers corresponding to the first and second payments were made to the Associated Beneficiaries in due time.

From an administrative point of view, the first problem was the delay in signing partnership agreements with the public institutional associated beneficiaries, due to the complexity in processing official documents in public bodies. Finally, the last partnership agreement was signed in March 2017. Due to a minor mistake in the format, partnership agreements were to be newly signed, which was done (see below). Similarly, the contract model for the signing of contracts between LIFE Ricotí project and public or private landowners within Land Stewardship Program was delayed. Both aspects were successfully solved during the first months of the project. Specifically, the contract model was finally accepted in June 2017.

In October 2018 (finally signed on December 2018), a significant change in the consortium was approved by EASME: withdrawal of MANCOMUNI and assuming its responsibilities mainly by UAM and by DIPUTACIÓN). Once this major modification was accepted by EASME, we proceeded to signing of new agreements and the project successfully evolved.

Finally, a significant modification was made as a consequence of COVID-19 pandemics. End of the project was scheduled by February 15, 2021, but relevant delays in carrying out field work during spring 2020 due to restricted confinements forced us to request for an extension in the final date of the project. This extension was approved by EASME in January 2021, and it moved the project end date to September 30, 2021.

Financial

Total costs incurred by the project on September 30th, 2021, are 3,224,891.68 €, representing 96.33% of the total budget.

The most important expenses correspond to the category of "Personnel", which represents a total of 57.87% of the total expenditure, followed by "External assistance", with 26,79%. Expenses of all categories has been below the initial planned cost except in the categories of personnel, other costs and overheads. These variations are explained in point 8.1 and did not prevent the project from being carried out correctly.

Technical

All **preparatory actions** were finished. They have allowed to know the state of art of populations, habitat and food availability (habitat quality) for the Dupont's lark in the study area (**A1, A2, A5**), and of socio-economic state (**A3, A4**), and to have a solid knowledge to compare with monitoring and end of the project. Participatory workshops were foreseen within the social perception study. However, we considered to change these workshops by a new series of surveys to be carry out during the last year of the project. **A2** continued until October 2018 in just one location (Retortillo de Soria), due to the delay in carrying out restoration works. All the actions related with the preparation of conservation actions have been correctly finished, selecting areas for restoration (**A6**), contacting with landowners and signing contracts (**A10**), and designing restoration projects (**A8, A9**). Finally, all preparatory actions related with both Guidelines for the Management of the SPAs, and with the Land Stewardship Program have been successfully carried out (**A7**, **A11**). The Management and Conservation Guidelines of the SPAs, which are a legal instrument for the regulation of land uses, were officially approved by Regional Government of Castilla y León (JCyL) on 22 July 2019 (Resolution of 15 July 2019).

Action **B1** was aimed at providing compensatory payment to landowners under conservation measures. Compensatory payments corresponding to first, second and third payments were made as scheduled.

Conservation actions C1-C3 (selective management and elimination of trees and shrubs, topographic restoration, and dung sowing) finished, so 326.93 ha have been successfully restored and have been monitored. Action **C4** (removal of dumps and restoration of altered soils) was completed in November 2020. As planned, 2,1 ha were restored. Action **C5** (Land Stewardship Programme) had two pieces: the Land Stewardship Programme itself (**LSP**), and the Ornithological Tourism Program (**OTP**). LSP has incorporated 3060.97 ha to the program. The following tasks related to the OTP have been carried out: writing of the guidelines for the Action Plan of the OTP (*Guidelines for the use and exploitation of the bird watching activity as a tourist resource, with special emphasis on the Dupont's lark*); publishing of the *Birdwatching in Soria* guide, and signalling of the corresponding ornithological routes; implementation of the Tourist Establishments Network associated with the OTP (>30 establishments adhering to the program); writing the Supporting Plan for Entrepreneurs; launching the Pilot Marketing Plan; carrying out environmental education aimed at primary school students; construction of three permanent and one mobile bird observatories and two 2 outdoors interpretation centres; training courses for >40 ornithological guides; and the launch of the OTP web site (http://birdwatchingsoria.dipsoria.es). Promotional meetings with tour operators, and field visits and evaluation were conducted in July 2021.

Monitoring actions started as conservation actions concluded. A few landowners were reluctant to allow field works (bird censuses and captures, field sampling, etc.) on their lands. This has not prevented the satisfactory fulfilment of the project, as no conservation or monitoring actions were carried out in these zones.

Actions **D1** and **D2** (monitoring of bird populations and habitats) allowed to evaluate the effect of direct conservation actions. The number of Dupont's lark territories increased from 9 to 26 in 2021 (+189%; to 37 territories in 2020, before Filomena storm) with confirmed reproduction. A solid scientific relationship between Dupont's lark space use and extensive sheep grazing has been established. Conservation actions allowed plant structure and floristic composition in restored areas to reach similar status than control areas.

In addition, during February 2020, a sampling campaign in Morocco was carried out to update information on distribution, population size and habitat of Dupont's lark in North Africa. Field work related to action **D3** (monitoring of food availability) has been successfully completed. The results show a high similarity in the invertebrate biomass between areas where conservation measures have been carried out and control zones. Comparison with pre-operational data suggests that conservation actions have contributed to this similarity or, at least, have prevented the differentiation between zones. Action **D4** (monitoring of socio-economic impact of the project) has been completed with a second survey and analysis during summer 2021. Results show a significant increase in knowledge and valorisation of N2000, SPAs and Dupont's lark during the time period of the project, which should be acknowledged to LIFE Ricotí project dissemination actions. Action **D5** (monitoring of the LSP) has allowed to monitor signed contracts, assessing the improvement of livestock management in relation to the works planned on the farms. The awardees of the public tenders have been informed about conditions and preventive measures provided for in the custody contracts. This action experienced a significant change in its structure due to the withdrawal of MANCOMUNI from the LIFE Ricotí Project. Therefore, UAM assumed duties and responsibilities of MANCOMUNI from September 2018, through the implementation of such change and consequently hiring the Manager of the LSP. Action **D6** (monitoring of the implementation of Sustainable Management and Conservation guidelines) was conditioned to the drafting of the Final Document of Management and Conservation Guidelines, but this action has been successfully finished in due time. Staff from the Life Ricotí Project have advised to the technicians of the Soria Territorial Service for the Environment for the correct interpretation of the Guidelines and for its application to specific requests for changes in land use in the SPAs. 13 field visits have been carried out to 10 localities to inform and resolve doubts to local municipalities and population about the application of the guidelines.

Dissemination actions have been carried out as planned, except for in-person meetings, informative talks, attendance at fairs, etc. from March 2021 onwards, most of which were cancelled due to COVID-19 pandemic. Action **E1** (Diffusion of the project) included different tasks for diffusion and dissemination of content and actions of LIFE Ricotí to target populations, both the public and, especially, to land and livestock owners on one hand, and to schools on the other. **E1** included a project website (www.lifericoti.org), which is properly working since September 2017, after a relevant delay due to an unprogrammed human resource problem in the associated beneficiary responsible for this action (FPN). This provoked a minor economic change (6,000 €) from what was initially established in the project (see below). FPN is in charge of the maintenance of the web page. Different events of interchanging information with other LIFE and No-LIFE projects have been carried out. In October 2020, UAM

was invited as speaker to the final congress organized by the project LIFE15 NAT/ES/000734 Estepas de La Mancha. Dissemination actions has allowed to reach practically the whole student population of the study areas (through in situ visits to schools), as well by the web page and other public operations. Action **E2** (Dissemination of results to regional, national and European administrations) has properly functioned during the project. The working group on the species and its habitats was established, and two workshops on the species were held in March 2019 and in July 2021 (the last in a virtual format). In addition, 5 training courses addressed to Environmental Agents of JCyL have been carried out during springs 2018 and 2019 (2020 and 2021 were cancelled due to COVID-19 pandemic, but all interested agents received proper formation). The final LIFE Ricotí congress was held in July 2021 in a virtual format with large public, technical and scientific interest. Action **E3** (Technical publications and communication) is in progress. At present, 17 scientific papers have already been published (and three more under review), in international renowned journals, as well 3 scientific non-journal publications, 2 disseminative publications, 6 plenary presentations (2 international, 4 national), and 11 presentations in International and National Congresses. Action **E4** (Dissemination of results of Land Stewardship Programme) has been successfully finished. Several information meetings and events have been held with different stakeholders and with the administration. The LIFE Ricotí project has been present at several fairs, both national and international. The guide "*Where and when to watch birds in the Southern uplands of Soria province, Spain*" was published in March 2019 (hard and digital copy; Spanish and English). In June 2017 and September 2021, the LIFE Ricotí project was present at the MadBird Fair in Madrid. Action **E5** (Dissemination of Action A7: *Guidelines for the sustainable management and conservation of the SPAs Altos de Barahona and Páramo de Layna*) has been successfully achieved by the following tasks: preparation of informative documentation on the contents of the guidelines; meetings and informative talks with the local population and municipalities. In 2020 (before COVID-19 pandemic), 35 meetings were held with the local population in 25 different places; besides, several sectorial meetings with farmers, shepherds, forestry companies, innkeepers and nature tourism companies were also held.

Besides, the LIFE Ricotí project has participated in the elaboration of the National Conservation Strategy for steppe birds (awaiting final official approval), and the officially approved relisting of the species in the National Catalogue of Threatened Species from "Vulnerable" to "Endangered".

Actions related with **project management and coordination** (Actions **F**) have been carried out as planned, and with full collaboration of all partners. Periodic coordination meetings were held (after March 2021 in an online format), besides numerous partial meetings among partners involved in different actions. The Scientific Committee (Action **F5**) met as planned, having the last meeting on September 2021.

Generally speaking, the scheduled chronogram for the project has been successfully accomplished, despite some actions have been slightly delayed. These delays have not affected global objectives to be achieved.

4. Introduction

Overall and specific objectives

Dupont's lark (*Chersophilus duponti*) is a small steppe passerine of the family *Alaudidae*, and one of the most endangered birds in Spain and Europe. Its European range is circumscribed to the Iberian Peninsula. This species is one of the most threatened and rare birds in Spain and Europe. In Spain it is in the "endangered" category of the Red Book, while the species is legally listed as "vulnerable" (Spanish Catalogue of Endangered Species, R.D. 139/2011) (but see below one of the collateral achievements of the projects, which is the relisting of the species to "endangered"). At the European level, the Dupont's lark is considered as a species to be subject of habitat conservation measures (Annex I of the Birds Directive 79/409 / EEC), and it is included in the Ornis committee list.

At the beginning of the project, the last and most reliable estimates of population size suggested the existence of about 3400-4500 males. Considering that the adult sex-ratio is biased toward males (females/males: 0.61), the Spanish population would consist of some 2200-2800 pairs. It is an extremely low population size for a small bird, aggravated by the regressive tendency that has been found in a good part of its range (-3.9% yearly).

The conservation of the Dupont's lark is compromised by several factors, being the habitat destruction one of the most important. Whether direct, by steppe destruction, or indirectly, by deterioration of habitat quality, habitat loss not only reduces the distribution area of the species, but it also increases spatial fragmentation. Local extinction, range reduction, and consequently isolation of populations are problems documented in the bibliography, which, in addition, are enhanced by the scarce dispersive capacity that seems to characterize the species.

In addition, the Dupont's lark is a relatively unknown species, and sometimes is considered an obstacle to development. Most of the best Iberian populations, such as those included in this project, are in extremely unpopulated regions (density < 3 inhab / km^2).

The main objective of the LIFE Ricotí project was, therefore, **to contribute to the conservation of the species by increasing habitat availability and improving habitat quality**. Specifically, partial objectives of the project were:

1. **Conservation and improvement** of Dupont's lark populations in southern Soria (SPAs ES0000203 Altos de Barahona y ES0000255 Páramo de Layna), which represent approximately 15% of the European population of the species.
2. **Increase habitat availability** through direct habitat restoration measures and the maintenance and promotion of livestock management in the two considered SPAs.
3. Evaluation of relationships between **habitat quality and population viability** of Dupont's lark in the framework of conservation strategies.
4. Definition of **criteria for habitat management** of the species, which will be integrated into the National and Regional Conservation Strategies for the Dupont's lark.
5. Improved level of **awareness and social valorisation** of the species in the local stakeholders.

These objectives involved the design and application of specific measures to protect the Dupont's lark and its habitat, to manage SPAs, to restore habitat and to engage local stakeholders.

Sites involved

The project has been carried out in two of the most important areas for the Dupont's lark in Spain: SPA Altos de Barahona (ES0000203) and SPA Paramo de Layna (ES0000255). These two areas host 13-16% of the Spanish population (Suarez, 2010; TEG-UAM, unpublished data). Both are plain limestone grasslands/shrublands. The first one is mainly dedicated to agriculture and livestock (46%). Around 41% is natural vegetation (low scrubland and steppe grasslands). The property is public (31.3%) and mainly private (65.6%). In the case of Paramo de Layna, the majority is natural vegetation (84%), with some cereal crops (12%). Property is basically private (84.7%).

Dominant natural and seminatural plant communities are basophilic low size-low cover shrubs and scrubs of the Sideritido-Salvion alliance. In general, the dominant shrubs are *Genista scorpius* and *G. rigidissima*, though a great plant diversity can be found, with *Thymus* sp., *Satureja intricata*, *Lithodora fruticosa*, *Salvia lavandulifolia*, *Lavandula latifolia*, etc. This plant community largely corresponds to replacement stages of the original forests (*Quercus faginea*, *Q. rotundifolia*, *Juniperus thurifera*), currently relegated to small patches, and that are at present maintained by extensive sheep grazing.

Besides the Dupont's lark, the most characteristic bird group in the study area is that of the steppe. Along with the Dupont's lark, other species coexist: Skylark *Alauda arvensis*, Short-toed lark *Calandrella brachydactyla*, Thekla lark *Galerida theklae*, Calandra lark *Melanocorypha calandra*, Tawny pipit *Anthus campestris*, Northern and Black-eared wheatears *Oenanthe oenanthe* and *O. hispanica*, Montagu's harrier *Circus pygargus*, Little bustard *Tetrax tetrax*, Stone curlew *Burhinus oedicnemus*, etc.

Main conservation issues being targeted (including threats)

Many risk factors affect the species, though the main one is habitat loss, either by direct destruction or transformation of the shrub steppe or when habitat quality decreases. Habitat losses not only diminish the area that the species can potentially occupy, but also increase spatial fragmentation and, therefore, populations isolation. In addition, isolation is increased by endogenous factors, such its low dispersive capacity.

This is especially relevant if considering the extremely selective habitat selection of the Dupont's lark, which is restricted to a specific type of low-shrub steppes in flat terrain. This habitat is shared with traditional agriculture and livestock. In fact, there seems to be a close relationship between Dupont's lark presence and traditional sheep grazing, being this coexistence explained by the structural role of sheep in modifying plant architecture and by supplying and accelerating nutrient circulation via dung deposition and increasing coprophagous abundance (Dupont's lark feeding item).

Expected long-term results

The expected results for the LIFE Ricotí project were:

- Restoration of about 325 ha of habitat currently unsuitable or of low quality for the Dupont's lark, which is equivalent to 33-81 potential territories. Considering an occupancy rate of 50% in these territories, this could mean a population increase of 15-40 reproductive pairs.

- Maintenance of traditional sheep grazing in areas with potentially suitable habitat for Dupont's lark.
- Identification and definition of agri-environmental measures aimed at improving the habitat quality for Dupont's lark and other pseudo-steppe species based on a sound scientific evaluation of the relationships between traditional extensive grazing and food availability (entomofauna).
- Enhancement and improvement of the social perception of the presence of Dupont's lark in Southern Soria.
- Integration of Dupont's lark interest areas into bird tourism circuits.
- Definition of management measures for the conservation of the species and its habitat in Castilla y León, to improve the conservation of the Dupont's lark. This kind of measures are expected to be obtained: i) habitat management at the local sale (convenience of clearings and extensive grazing); ii) habitat management at the landscape scale (ensuring connectivity among Southern Soria populations); iii) drafting regional policies for the management of protected areas (zoning by activity); etc.
- Defining management and conservation criteria to be incorporated into the National Conservation Strategy (Ministerio para la Transición Ecológica) and Conservation Plan in Castilla y León (JCyL), statutory tools under development with the participation of TEG-UAM at the beginning of the LIFE Ricotí project.

5. Administrative part

5.1. Description of the project management

The project partnership consists of:

-Coordinator beneficiary: Universidad Autónoma de Madrid (UAM).

- Seven Associated beneficiaries:

    - Junta de Castilla y León (DGMN-JCyL).
    - Diputación Provincial de Soria (DIPUTACIÓN).
    - Fundación Patrimonio Natural de Castilla y León (FPN).
    - Actividades, Estudios y Proyectos en el Medio Ambiente S.L. (AEPMA).
    - Artesa Estudios Ambientales S.L. (ARTESA).
    - Innomaker Innovación y Desarrollo, S.L. (INNOMAKER).
    - Mancomunidad de Obras y Servicios de Corpes (MANCOMUNI, which was conveniently withdrawn from the project).

All beneficiaries perform a strong role in developing the LIFE Ricotí project. Terrestrial Ecology and Conservation Research Group (TEG-UAM) is the Spanish leading team in ecology and conservation biology of steppe birds, especially the Dupont's lark. This is a large, active group with a well-established national and international reputation. The Regional Government of Castilla y León (DGMN-JCyL) is the public administration responsible for conservation and environmental management within its territorial scope, including the management of the Natura 2000 network. FPN is a public body under the Department of Development and Environment of Regional Government of Castilla y León and is responsible for the management and equipment for public services and environmental education within Castilla y León region, and specially related to protected areas. DIPUTACIÓN is a local public entity with its own legal personality. It supports its own Committee on Economic and Tourist Development for the province of Soria, a body with extensive experience in the development of tourism-related actions. AEPMA is a local private company with long experience in drafting management plans for designated Nature 2000 sites, management planes for natural resources, mapping habitats, census of flora and fauna, etc. ARTESA is a local private company with long experience in natural resources planning and management, environmental impact assessment, monitoring of vertebrates, inventory of habitats and design of rural development programmes. INNOMAKER is a private company that has participated in more than 12 European projects (R+D, training, development cooperation, etc.) and has worked for several firms specialized in fundraising. MANCOMUNI is an association of local Municipalities, lawfully established, constituted by: Alcubilla de las Peñas, Alpanseque, Barahona, Medinaceli, Miño de Medinaceli y Yelo, all of which are in the province of Soria. The role of MANCOMUNI is to manage the Land Stewardship Programme. Regrettably, MANCOMUNI had to leave the Project due to unresolved internal problems, and its functions were assumed by UAM and DIPUTACIÓN.

UAM signed partnership agreements with all seven associated beneficiaries between November 2016 and March 2017. However, because of an error in the selection of the template, these agreements did not refer to the General Conditions and had to be re-elaborated to fit all official considerations. Finally, signing of the news agreements was finished on:

- AEPMA: 15/09/2018
- ARTESA: 28/09/2018
- DIPUTACIÓN: 15/09/2018
- FPN: 5/04/2018
- INNOMAKER: 28/09/2018
- JCYL: 29/04/2020
- MANCOMUNIDAD: 24/07/2018

General coordination of the LIFE Ricotí project was assumed by UAM, in the person of a part-time project manager Professor Dr. Juan Traba, and a part-time project assistant Mr. Israel Hervás. Each beneficiary has designated their own project coordinators: Mr. David Cubero for DGMN-JCyL (who replaced Juan J. del Nido from September 2018 onwards), Mr. Alberto Abad for DIPUTACIÓN, Mr. Antonio Martín for FPN, Mr. Luis Latorre for AEPMA, Mr. Alberto Díez for ARTESA, Mr. Andrés Dochao for INNOMAKER, and Mr. Fernando Marín for MANCOMUNI (later part of the LIFE Ricotí TEG-UAM staff since MANCOMUNI withdrawal).

Administrative and financial coordinators were both UAM and INNOMAKER, while the technical coordinator was exclusively UAM (Fig. 5.1; see Organization Chart).

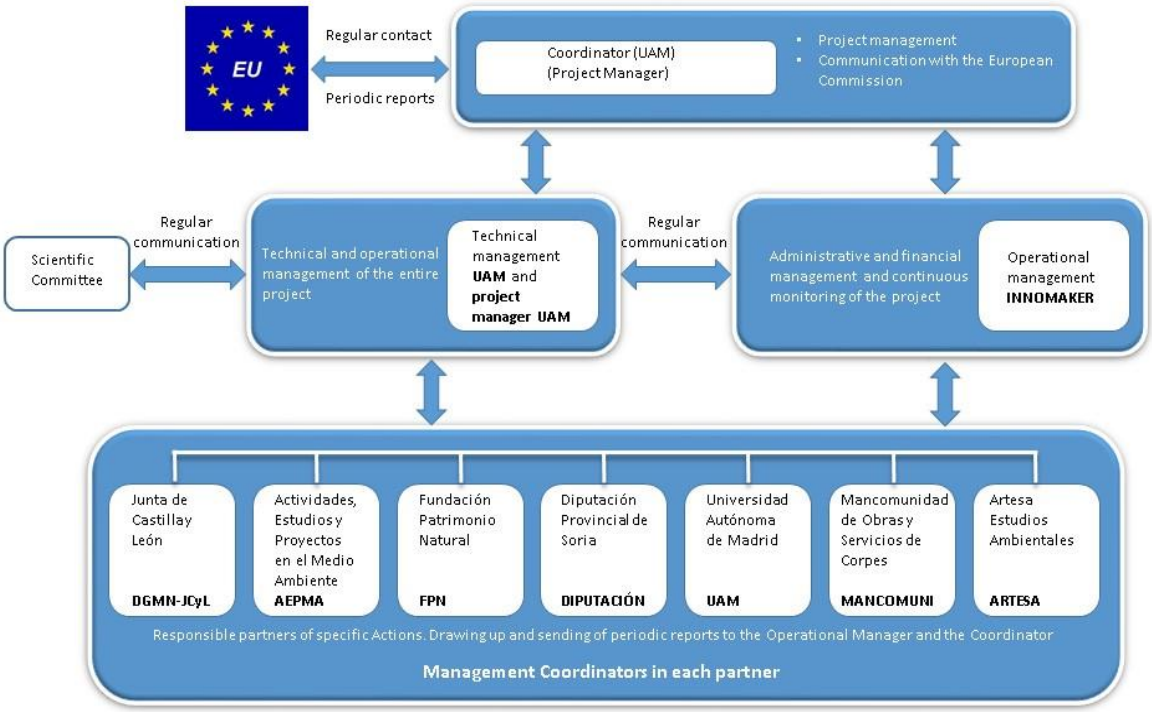


Figure 5.1. LIFE Ricotí organization chart.

Communication and information among partners were eased with a full and organized set of directories in Dropbox. The project had a common directory accessible to all associated beneficiaries, and eight private directories, one for each of the beneficiaries, but accessible to both technical and administrative and financial coordinators, due to the type of information included (payrolls, contracts, etc.).

Regarding the **administrative-financial monitoring**, INNOMAKER and UAM elaborated a specific report: *LIFE Ricotí Project economic management and monitoring guidelines*. These

were guidelines for associated beneficiaries to know management, control and reporting procedures, both for administrative and financial issues.

In summary, administrative and financial coordinator (INNOMAKER and UAM) required every three months all relevant information from each partner (bills, timesheets, contracts, payrolls, public offers and contract documentation, etc.). This information was revised, corrected if necessary (or newly required), and filed in Dropbox. Consequently, databases on expenditure executed by each partner and the project were quarterly updated, both by category of expenditure and by action, as well as by the contribution of each of the partners. Thus, the project has had a quarterly updated version of the "financialreporting.xls".

In relation to the **technical monitoring** of the project, an internal report was elaborated: *LIFE Ricotí Technical guidelines*. Here we described the deliverable noticing, submission, revision and approval procedure. Briefly, UAM gave notice twice, one month and one week in advance, to the beneficiary or beneficiaries responsible for the preparation of each deliverable and required information about level of execution until date (in percentage), and expected date of delivery of the document. Once each deliverable was submitted to the Coordinator, this was uploaded to the Dropbox file *Deliverables under revision* and revised by the Coordinator and all those beneficiaries directly involved in the topic. Once it was approved, the Coordinator uploaded the final document to the Dropbox file *Definitive Deliverables*, and informed the partners via e-mail. A file .xls with the actual state of each deliverable, located in the Dropbox, was then updated. This excel file included all the relevant information about each deliverable: order number, name, action to be linked, scheduled delivery date, partners involved, state of the document, approval date, observations and comments.

Communication between Coordinator and other partners has always been fluid and efficient. So far, quarterly meetings have been held in which all the associated beneficiaries have participated. In addition, many thematic meetings related to specific topics of the project involving several partners have also been held.

In relation to changes in the project management structure, two minor changes should be mentioned (see below for major changes). UAM, as a public university, had public elections to Rector (President or Chancellor of the University) in May 2017. The past Research Vice-rector, who was the person responsible for signing all the contracts between the EASME and UAM, and between UAM and the associated beneficiaries, won the run, being the Rector from June 2017 to June 2021. Consequently, the responsible person at UAM changed, being D. José Manuel González Sancho until July 2021. In May 2021, a new Rector won the elections, and a new Vice-rector for Scientific Policy (Daniel Jaque García) is at present the person responsible for UAM. All these changes were properly communicated to EASME (now CINEA). Second, the former coordinator for DGMN-JCyL (Juan del Nido) was replaced by David Cubero since September 2018.

5.2. Communication with EASME and Monitoring team

Main communication between Coordinator and EASME (lately CINEA) have involved the following topics:

- Request for the authorization to start a negotiation process in areas of interest to the project with owners who have a profile of local public administration. The request was sent out to the EASME in February 2017. Final approval date was May 2017.

- Communications related with the inclusion of FPN in Action C5 to reinvest those savings from the low prices in the successful bid for the outsourcing of the conservation works (Action C1), in additional actions within the Land Stewardship Program (Action C5).
- Communications related with the assessment of the Progress Reports and Mid-Term Report, and External Monitoring Team visits and CINEA Monitoring visit (December 2021).
- Amendment request for the modification of the consortium of the project. This amendment consists of the withdrawal of one of the beneficiary partners and reassignment of its functions and budget to two other project beneficiaries.
- Communications related with the changes of responsible person at UAM.
- Amendment request for the extension of the end of the project due to severe mobility restrictions related to COVID-pandemics.

In addition, Coordinator has had numerous communications with the Monitoring Team, related to different topics of the project management: administrative, financial, and technical aspects.

In her Six Monitoring Visit Report, the project monitoring referred to a number of technical and financial issues, which should be addressed in this Final Report. These issues have been all properly corrected and amended and included in each corresponding technical or financial paragraph. A summary of these issues is:

1. Including clear signalling in mobile observatory and livestock fencings: Corrected.
2. Submit detailed information of material produced in Ornithological Tourism Program.
3. Information about Action D4 (monitoring of socio-economic impact). Including in the corresponding action.
4. Explanation about technical document included in Action E3. Included in the corresponding action.
5. Update of KPI webtool. Done.
6. Financial issues: Documentation requested have been included.

In addition, we include some explanation about the state of the deliverable number 62: "Guidelines for the elaboration of the Conservation Plan of the Dupont's lark in Castilla y León". The Conservation Plan for the Dupont's lark is included in the execution of the assignment "Design and development of planning instruments for threatened species in Castilla y León", made to the Fundación Patrimonio Natural de Castilla y León in November 2020, and which has an execution period of 34 months. Specifically, the elaboration of the Conservation Plan for the Dupont's lark is scheduled for the year 2022. Thus, we replaced this deliverable by the following manual:

Santamaría, A.E.; Hervás, I.; Martín, A.; Gómez-Catasús, J.; Reverter, M.; Zurdo, J.; Barrero, A.; Bustillo, D. & Traba, J. (2021) Publicación técnica. Proyecto LIFE Ricotí. Fundación Patrimonio Natural de Castilla y León. Editorial GRAFIVERD. 52pp. Depósito Legal: DL VA 660-2021.

Finally, in the above mentioned report, project monitoring requested about financial explanations and supporting documents previously required in issues number 9 to 17 in the

letter of 16 January 2019 linked to the Mid-term Report. We should mention that all these issues were properly corrected in ulterior reports or in this Final Report.

5.3. Changes due to amendments to the Grant Agreement

As mentioned above and elsewhere in this report, Coordinator requested to EASME for two main amendments to the Grant Agreement. First, a request related to the withdrawal of MANCOMUNI (beneficiary partner) from the project. This meant a necessary modification in the project structure: functions and budget assumed by MANCOMUNI were transferred to two other project partners: UAM and DIPUTACIÓN. The rest of the partners of the LIFE Ricotí project knew the amendment and agreed with it, as justified by the letters of compliance accordingly attached to the request. This change was approved by EASME on October 2018 and finally signed on December 2018.

All functions and budget of MANCOMUNI were accordingly assumed by UAM and DIPUTACIÓN. MANCOMUNI undertook to present to the coordinating partner UAM all the necessary administrative and financial documentation to justify all the expenses executed and to ease the accomplishment of the actions up to the date of resolution, as well as to collaborate on the progress reports pending and in the final project report. Besides, both UAM and DIPUTACIÓN had technical and financial capacity to guarantee the correct execution of the new assignments, so this change in the project structure did not jeopardize the project objectives and the ability to reach them by the remaining partners.

Finally, a significant modification was made as a consequence of COVID-19 pandemics. End of the project was scheduled by February 15, 2021, but relevant delays in carrying out field work during spring 2020 due to restricted confinements forced us to request for an extension in the final date of the project. This extension was approved by EASME in January 2021, and it moved the project end date to September 30, 2021.

6. Technical part

6.1. Technical progress, per Action

6.1.1. Action A1. Information gathering (responsible beneficiary: UAM)

Foreseen start date:	September 2016	Actual start date:	September 2016
Foreseen end date:	February 2017	Actual end date:	February 2017

Action A1 is successfully finished.

With this action, we revised and updated the state of art about population, distribution and threats of the Dupont's lark and its habitats in Spain. We updated reference databases in relation with four relevant topics:

- General information about biology and ecology of the Dupont's lark.
- Current conservation state of the Dupont's lark.
- Characteristics of the natural vegetation steppes.
- Previous experiences of habitat management of the Dupont's lark and natural vegetation steppes.

The bibliographic database includes 395 different documents, from scientific and divulgation publications to unpublished technical documents.

366 out of the 395 documents are related to present state and biology and ecology of the Dupont's lark and related species. 20 documents are related to characteristics of natural steppes, and 9 with habitat management experiences both on the Dupont's lark and on the steppes.

Although the action is administrative and technically finished, our objective is going on since the search and gathering of bibliographic material is continuously active.

Table 6.1. Project milestones Action A1.

Milestone	Deadline	
	Foreseen	Actual
Start of gathering and analysis of information	20/09/2016	20/09/2016

6.1.2. Action A2. Previous studies: bird populations, habitat, and arthropods (responsible beneficiary: UAM)

Foreseen start date:	September 2016	Actual start date:	October 2016
Foreseen end date:	September 2017	Actual end date:	October 2018

Action A2 is successfully finished.

The main goal of this action was to define the present situation of Dupont's lark and its habitat in the study area. With some delay respect to foreseen end date, **all the programmed activities were successfully finished**, including census, vegetation sampling and arthropod collecting.

Just a few tasks were re-scheduled for spring and autumn 2018. Specifically, we re-scheduled bird census (spring) and habitat sampling and arthropod collecting (spring and autumn) corresponding to Retortillo area due to a delay in the execution of Conservation actions, which could compromise the species as overlapping with its reproductive period. Therefore, and to **avoid gaps in data gathering** during 2018, we continued preparatory action A2 just in this area. The rest of tasks related with Action A2 finished as scheduled. All field works were carried out as programmed, with no relevant incidences.

Field work included in A2 was planned around these 4 topics:

- **Habitat availability:** potential Dupont's lark habitat in the study area was mapped, using high-resolution orto-photogrammetry and field-testing.
- **Population size and distribution:** 97 transects for bird censuses were carried out between April and July 2017.
- **Plant structure:** Plant structure and floristic composition at microscale were determined. We sampled 7 different zones, with 115 sampling stations: 57 in shrublands, 20 in grasslands, 20 in pine forest, and 18 in holm oak forests. Samplings were carried out between April to July 2017 (excepting Retortillo area, see above).
- **Food availability:** Food availability was sampled in the same sampling stations described above. We located 3 pit-fall traps for terrestrial invertebrates per sampling station, plus 1 specific pit fall for coprophagous arthropods. In addition, we sampled in each sampling stations a 20 m transect for aerial invertebrates. Six different sampling dates were completed in 2017: February for winter period, April, May and June for breeding period, July for summer period, and October for autumn period (excepting Retortillo area, see above).

Three deliverables (all by UAM) were generated: The first one, *Cartography of the Dupont's lark habitat and census zones in the SPAs Altos de Barahona and Páramo de Layna* (deliverable nº 12; and an updated version with maps in PDF-format), includes digital maps of Dupont's lark habitat and census areas at the mentioned SPAs.

The second one, *Georeferenced database (shp) of Dupont's lark populations* (deliverable nº 24; and an updated version with maps in PDF-format), includes the georeferenced database (ESRI format .shp) of the Dupont's lark populations in the study area, after compiling the census carried out during spring 2017 (and 2018 for Retortillo area).

The third one, *Characterization of Dupont's lark populations and its habitats in the SPAs Altos de Barahona and Páramo de Layna*, includes all the results obtained from the characterization of the populations of Dupont's lark and its habitats in the Altos de Barahona and Páramo de Layna SPAs.

With a minimum of 786 territorial males found in 2017 for the total study area, the largest subpopulations were Retortillo-Barcones-Barahona (520), Layna (192) and Alcubilla de las Peñas and Mezquetillas (74). The highest densities were found in Retortillo – Barcones – Barahona (1.04 males/10 ha), Layna (0.83 males/10 ha) and Alcubilla de las Peñas and Mezquetillas (0.80 males/10 ha). See compiled results in Table 6.2.

In addition, we have re-defined the terms of population, subpopulation and locality, in order to accomplish metapopulation theory and fitting the most updated information about dispersal distances.

- **Locality**: All those habitat patches separated by less than 1 km are considered to belong to the same locality. Distance less than 1 km is considered insufficient to establish a clear separation between localities, since males can be kept in permanent contact through song or short-duration flights[1,2].
- **Subpopulation**: all those Dupont's lark territories separated by less than 5 km were considered to belong to the same subpopulation. This distance guarantees the consideration of different subpopulations to those with low or no communication of adults according to the available information on movements[3] and bioacoustics[4].
- **Population**: all those subpopulations separated by less than 20 km were considered to belong to the same population, according to thresholds of genetic differentiation[5].

[1] Suárez, F. (2010). *La alondra Ricotí (Chersophilus duponti).* Dirección General para la Biodiversidad. Ministerio de Medio Ambiente, y Medio Rural y Marino, Madrid, España.

[2] Vögeli, M., Serrano, D., Pacios, F. & Tella, J.L. (2010). The relative importance of patch habitat quality and landscape attributes on a declining steppe-bird metapopulation. *Biological Conservation*, 143: 1057-1067.

[3] Own unpublished data.

[4] Laiolo, P. (2008). Characterizing the spatial structure of songbird cultures. *Ecological Applications*, 18: 1774-1780.

[5] Méndez, M., Vögeli, M., Tella, J.L. & Godoy, J.A. (2014). Join effects of population size and isolation on genetic erosion in fragmented populations: finding fragmentation thresholds for management. *Evolutionary applications*, 7: 506-518.

Table 6.2. Minimum number of Dupont's lark males censused in spring 2017 per population, subpopulation and locality. Density (males/10 ha) is also shown.

Population	SPAs	Subpopulation	Locality	Minimum number of males 2017	Density of males 2017 (males/10 ha)
Soria Sur and Altos de Alcolea del Pinar		**Alcubilla de las Peñas and Mezquetillas**	Alcubilla de las Peñas	7	0.35
			Mezquetillas	67	1.02
			Romanillos - Depósito	0	0.00
			Total Alcubilla de las Peñas and Mezquetillas	74	0.80
	Altos de Barahona	**Retortillo - Barcones - Barahona**	Alpanseque	0	0.00
			Arenillas and la Riba de Escalote	25	0.83
			Barahona - Rello	139	1.35
			Barahona - Torrecilla	3	0.91
			Barahona - El Caballo Oeste	4	0.45
			Barcones - Marazovel	134	1.21
			Barcones - La Atalaya	4	0.47
			Barcones - La Lastrilla	1	0.10
			Barcones - Valdeliendre and Beatrias	24	0.49
			Arenillas-Las Sielvas	1	0.33
			Lumias-Los Llanillos	9	0.70
			Retortillo Los Bachos	78	1.16
			Retortillo La Lastra	98	1.04
			Total Retortillo - Barcones - Barahona	520	1.04
			TOTAL ZEPA Altos de Barahona	**594**	**1.00**
	Páramo de Layna	**Layna**	Layna	192	0.83
			TOTAL ZEPA Páramo de Layna	**192**	**0.83**
			TOTAL ZEPAS	786	0.96

The structure of vegetation showed differences between periods, localities and habitats within the study area, being these differences more pronounced between localities than between habitat types. We also found differences in food availability between different habitats and periods, with coprophagous being an important group during the winter season and epigeous arthropods during the breeding one. Factors explaining the intensity of use of space by Dupont's lark were habitat type, presence of herbivorous, and biomass of epigeous arthropods. According to these results, optimal habitat for Dupont's lark seems to be constituted by scrub formations in which the presence of cattle shapes the structure and height of vegetation, increasing food availability (Figure 6.1). These results are in accordance with previous assumptions about the relationship between the species and habitat quality.

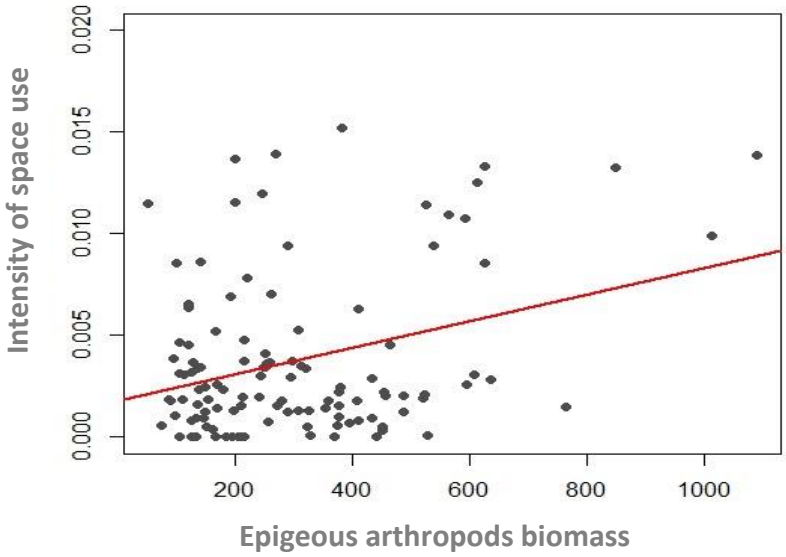


Figure 6.1. Relationship between food availability (epigeous arthropods biomass) and intensity of space use by Dupont's lark in the study area.

Table 6.3. Project milestones Action A2.

Milestone	**Deadline**	
	Scheduled	**Actual**
Ending preliminary habitat cartography	1/10/2016	1/10/2016
Ending definitive habitat cartography	1/11/2016	1/11/2016

6.1.3. Action A3. Previous studies: diagnosis of the situation regarding livestock (responsible beneficiary: UAM)

Foreseen start date:	September 2016	Actual start date:	September 2016
Foreseen end date:	April 2017	Actual end date:	May 2018

Action A3 is successfully finished.

The main goal of this action was to define the present situation of livestock husbandry, sheep meat subsector, within the ambit of the Project, based on bibliographic information, statistical databases, interviews with social agents and surveys to holders of farms in the study area. Although with some delay in relation with the programmed scheduled, **the action was successfully finished** (deliverable nº 17).

The delay in finishing this action was related to several aspects: The LIFE Ricotí project had several actions involving direct contact with local stakeholders: Actions A3, A4 (Socio-economic study and social perception of the Natura 2000 network, the Dupont's lark, the LIFE program, and the LIFE Ricotí project), and A10 (Contacts with owners and signing of collaboration agreements). After the first weeks of fieldwork, we decided to synchronize these actions to coordinate contacts, interviews and polls with owners, shepherds, farmers, majors, and other stakeholders. We tried to give a unified speech but considering that Action A10 was priority, as contract signing was an essential part of the project. This delayed the implementation of Actions A3 and A4, although this did not jeopardize the project itself. Besides, accomplishing law requirements in relation with personal data delayed data gathering and treatment.

The diagnosis of the situation was based on the collection and analysis of **statistical and documentary information** about sheep farming, and on the information collected through **surveys** of sheep-herds owners and managers, and through **interviews** with other key local and regional actors.

The **surveys** were based on a questionnaire with 32 sections asking for information on the characteristics of each farm, type of management and problematic of its activity. A total of 16 surveys were carried out covering all the existing holders in the SPA Páramos de Layna and nine in the SPA Altos de Barahona. The surveys were conducted through personal encounters with the shepherds, previously phone-contacted, and whose collaboration was excellent. The duration of each survey was 1-3.5 hours.

The **interviews** were based on a structured script around five sections, to gather complementary and contextual information on the evolution of livestock use in recent decades and about their current situation. A total of five people were interviewed, previously phone contacted. The duration of each interview was approximately 1 hour.

Main results are described below:

- Human population density in the area is extremely low (1.6 inhabitants / km^2). It is an aging population, with low birth and death rates, with a reduced natural growth and a regressive evolution of 40% in recent decades. The greatest business activity is registered in local businesses, including housing, the agrarian sector being a minority. Unemployment rate is lower than the provincial one.

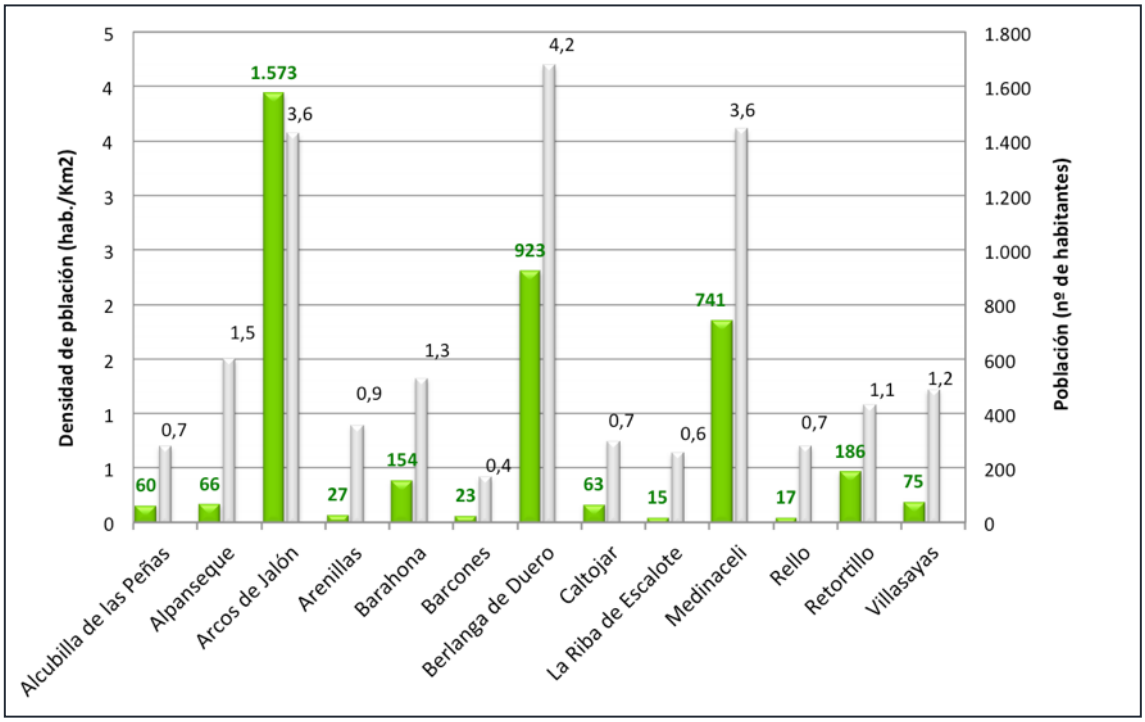


Figure 6.2. Population density (left axis; gray bar) and population size (right bar; green bar) in the study area.

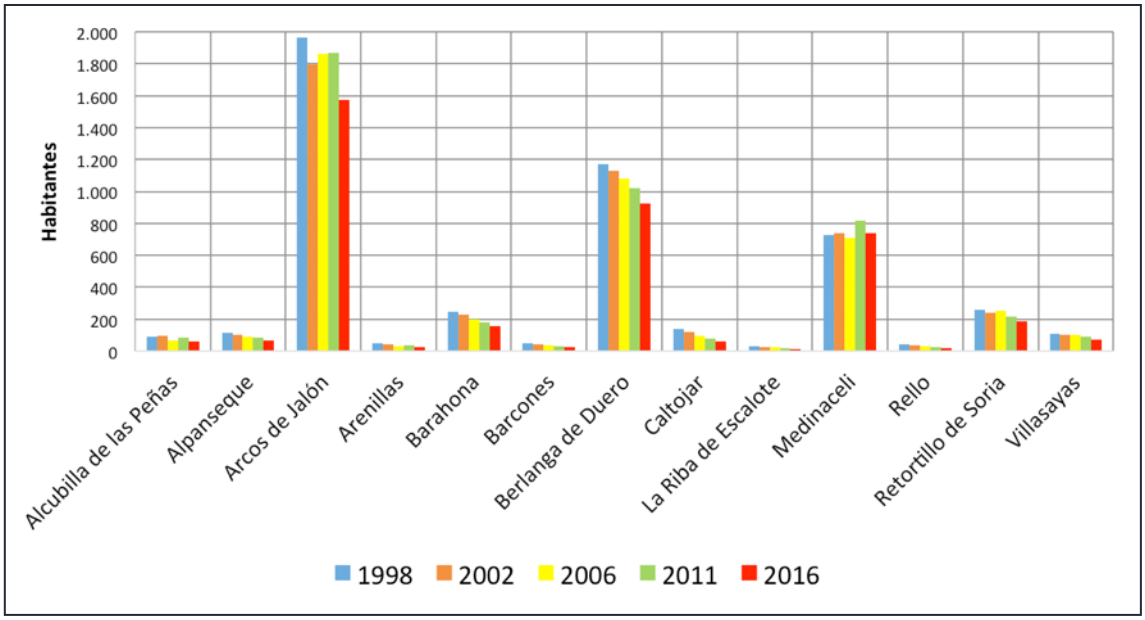


Figure 6.3. Demographic trend in the study area in the period 1998-2016.

- Cereals crops, grasslands and fallows are dominant, mostly in dry land, being minority woody crops.

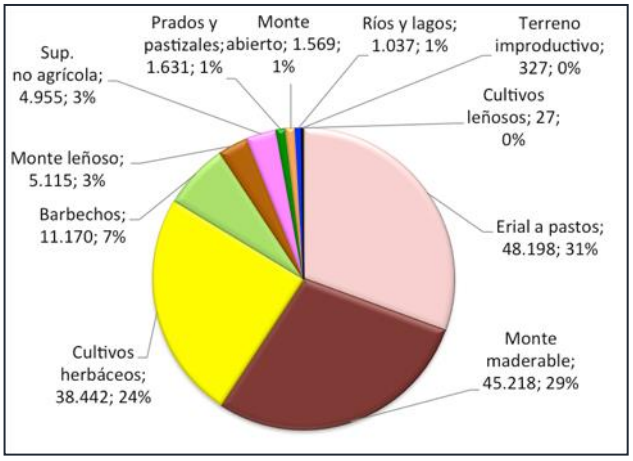


Figure 6.4. Land uses in the study area in 2016 (ha and percentage).

- Sheep census reaches about 40,000 heads, mostly breeding animals but with a significant presence of suckling lambs. Livestock density is extremely low (less than 1.4 animals/ha). As in the country as a whole, both total numbers and production of sheep meat, as well as the number of farms, have experienced a recessive trend in recent decades, linked to factors including changes in the Common Agricultural Policy, the negative evolution of demand for sheep meat by consumers, and the stagnation of prices, all in the context of socio-economic and demographic circumstances of rural areas.

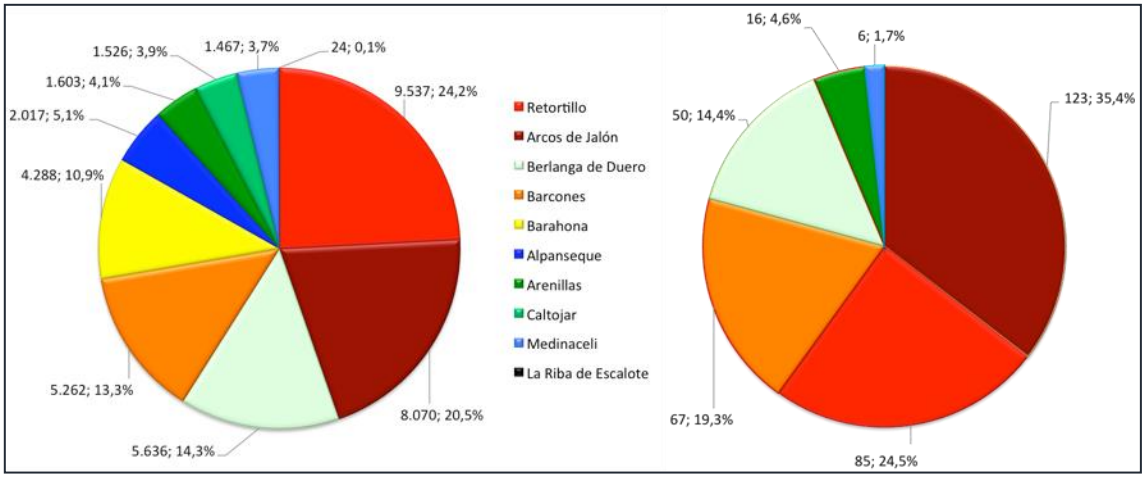


Figure 6.5. Number of sheep (left) and goat (right) under CAP subsidies in the study area in 2016 (total sheep, 39.430; total goat 347).

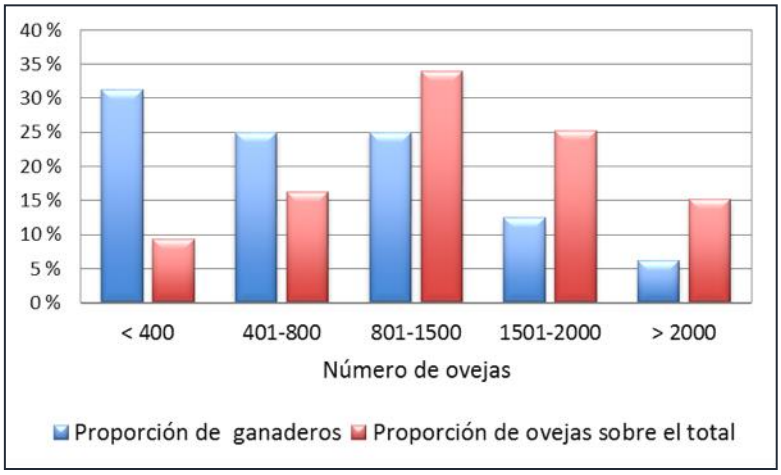


Figure 6.6. Shepherd (n=16) and sheep (total = 14.541) proportion, classified by herd size.

- The diagnosis confirms for the study area the difficult situation faced by the extensive livestock sheep meat sector in the country, and in the páramos of Castilla y León specifically. Farms show low profitability, a heavy dependence on aid from the CAP and some bleak prospects, linked to the limited generational changeover.
- Future for the sector in the study area is difficult, mainly because of the great dedication required by the work of shepherd, the little generational change - or difficulty to hire staff with sufficient training and time –, and its low profitability.

Table 6.4. Project milestones Action A3.

Milestone	**Deadline**	
	Scheduled	**Actual**
Starting field work for surveys and interviews with shepherds and local stakeholders	31/10/2016	15/07/2017
Diagnosis of livestock and shepherding at the SPAs Altos de Barahona and Páramo de Layna	30/04/2017	04/05/2018

6.1.4. Action A4. Socio-economic study and social perception of the Natura 2000 network, the Dupont's lark, the LIFE program and the LIFE Ricotí project (responsible beneficiary: UAM; collaborating beneficiary: ARTESA)

Foreseen start date:	October 2016	Actual start date:	October 2016
Foreseen end date:	May 2017	Actual end date:	July 2017

Action A4 is successfully finished.

This action has been divided into two different parts:

A. Socio-economic study

The socio-economic study focused on the analysis of the indicators proposed in the Deliverable nº 3 *Socio-economic impact assessment indicators of LIFE- Ricotí Project*. These indicators had to be real, objectively quantifiable, to provide clear and concise information, and to be easily interpretable. They were divided into two types:

- **General indicators** of socio-economic development. They are related to the variables that characterize the socioeconomic state of the area.
- **Specific indicators** of the impact of the project. These indicators try to measure what socio-economic changes are due to the project itself.

The socio-economic study aimed to analyse, at the beginning of the project, the characteristics of the study area in terms of employment, economic activities, extra-income activities (eco-tourism), economic and social isolation and general economic profile of the area. The main conclusions were as follows:

- **Demography:** Human population density is below 2 inhabitants/km^2, so it could be considered a demographic desert. Population is old and generational change is very low (see also deliverable 17).
- **Economic activity**: Unemployment rate stands at around 5%. Sectorial occupation is: Agriculture and livestock 78%; Industry (includes construction) 7%; Services 15%.
- **Infrastructure and Services**: The most important services (health, educational, financial and sports) are concentrated in Berlanga de Duero, Medinaceli and Arcos de Jalón. In the rest of the villages in the area services are practically non-existent.
- This situation hinders the maintenance of the population in rural areas and do not favour the incorporation of new inhabitants, social and/or economic entrepreneurship, the installation of new businesses and the creation of jobs.

B. Social perception study

This part has also been subdivided into two independent works. In the first one, we analyse **social perceptions** about the conservation of Dupont's lark and its habitats, and the LIFE project. We described potential conflicts between land use and conservation, using Q methodology (deliverable nº 19A, *Social perception of the Dupont's lark and LIFE - Ricotí project in the SPAs Altos de Barahona and Páramo de Layna: Social perception about actual situation and conservation problems of Dupont's lark, and social awareness*).

From the analysis of the interviews with 18 key social actors in the study area, three significantly different speeches were detected:

- A **pro-conservationist speech**, whose priority is the conservation of the Dupont's lark and to inform the population about citizen participation in the project.
- A **pro-development speech**, which gives priority to those land uses with greater economic profitability, arguing that the population of the area is small and old, and that the priority should be to stop this dynamic of rural depopulation.
- An **intermediate speech**, which also shows support for the conservation of the Dupont's lark and its habitat, but considering the maintenance of extensive livestock as the main driver to achieve the conservation, as well as to reverse the depopulation of the territory.

In the second part of this work, a **sociodemographic study of perceptions and attitudes of local population** was carried out (deliverable nº 19B, *Social perception of the Dupont's lark and LIFE - Ricotí project in the SPAs Altos de Barahona and Páramo de Layna: Socio-demographic study on perceptions and awareness*). Here we analysed a survey of 169 polls made in the study area. The results showed that, in general, the level of knowledge of the species was low at the beginning of the project, and there was room for the improvement of the social perception toward the species. Likewise, the level of knowledge about the LIFE Ricotí project was low, and the level of appreciation could also be improved. These results confirmed that the speeches supported by local actors who are aware of the problems related to the conservation of the Dupont's Lark were also present in the whole population in a greater or lesser extent. In general, all groups recognized that measures to mitigate rural depopulation and to promote knowledge of the páramo and its conservation should be implemented.

Participatory workshops were foreseen within the social perception study. However, once the above-described works successfully ended, and due to the clear results we obtained, we considered to change these workshops by a new series of surveys to be carry out during the last year of the project (see below). Thus, a more precise analysis of changes in social perception and awareness due to the Project itself would be attained. This small technical modification, already approved by EASME (Ref. Ares 2017; 5788544-27/11/2017; technical issues, nº 4) improved both the specific and the general objectives of this Action and the project.

Table 6.5. Project milestones Action A4.

Milestone	Deadline	
	Scheduled	Actual
Starting social perception surveys	15/11/2016	17/04/2017

6.1.5. Action A5. Analysis and evaluation of preliminary results (responsible beneficiary: UAM; collaborating beneficiary: AEPMA)

Foreseen start date:	June 2017	Actual start date:	June 2017
Foreseen end date:	November 2017	Actual end date:	November 2017

Action A5 is successfully finished.

Action A5 aimed to gather and analyse the most accurate and updated information regarding Dupont's lark and its habitat in the study area. To do this, at the date of finishing the Action we had compiled and analysed data from Action A2. Action A5 aimed also to be the basis for the design and implementation of Actions A6, A8, A9 and A10. Besides, it established the baseline for the monitoring actions D1, D2 and D3.

Action A5 started in June 2017, and finished in November 2017, with the deliverable nº 31, *Dupont's lark population and distribution in the study area: pre-operational state*. In this sense, a mistake was detected in the proposal attached to the Grant Agreement, where this Action was scheduled to finish during the third trimester of 2017.

Action A5 and deliverable 31 allowed us to:

1. Define the potential distribution area of the Dupont´s lark in the SPAs: Altos de Barahona and Páramo de Layna.
2. Identify the formations and land uses represented in the potential distribution area and to define habitat types in the whole study area and in each sector.
3. Using the data of horizontal and vertical structure of the vegetation, and biomass of arthropods, the results informed about:

    - Characteristics of microhabitat structure selected by the Dupont's lark.
    - Species preferences related to floristic composition.
    - Differential food availability in sectors with and without Dupont's lark.

Main results were:

A. Population size and distribution of the Dupont's lark in the study area

Differences in the number of males of Dupont's lark between the II National Census (2004 - 2006) and the 2017 LIFE-Ricotí project census showed an apparent increase in the last one. However, these results should not be interpreted as a positive population trend. Transect length differed between census, shortening their length, and increasing the sample effort in 2017. This is crucial when obtaining reliable data for this species, since the singing activity of the species is restricted to the first moments of the dawn and does not extend more than 20 - 45 minutes. This fact allowed us to explain discrepancies between the results of both census and, specifically, the smaller number of males registered in the first one, and prevented of obtaining positive population trends from these results. Future censuses conducted under the same methodology would provide comparable population estimates and, therefore, to perform a classical change ratio analysis (see below).

Table 6.6. Minimum number of males estimated by SPA, population and subpopulation both in the II National Census (2004 – 2006[6]) and by LIFE Ricotí in spring 2017. Male density (individuals/10 ha) in 2017 is also shown.

Population	Subpopulation	Minimum number of males 2004 - 2006	Minimum number of males 2017	Male density 2017 (males/10 ha)
ZEPA ALTOS DE BARAHONA				
Alcubilla de las Peñas and Mezquetillas	Alcubilla de las Peñas	2	7	0.35
	Mezquetillas	28	67	1.02
	Romanillos – Depósito	1	0	0.00
Total Alcubilla de las Peñas and Mezquetillas		31	74	0.80
Retortillo - Barcones - Barahona	Arenillas and la Riba de Escalote	8	25	0.83
	Barahona - Rello	111	139	1.35
	Barahona - Torrecilla	0	3	0.91
	Barahona - El Caballo Oeste	1	4	0.45
	Barcones - Marazovel	49	134	1.21
	Barcones - La Atalaya	0	4	0.47
	Barcones - La Lastrilla	*	1	0.10
	Barcones - Valdeliendre and Beatrias	21	24	0.49
	Arenillas - Las Sielvas	*	1	0.33
	Lumias - Los Llanillos	*	9	0.70
	Retortillo - Los Bachos	15	78	1.16
	Retortillo - La Lastra	40	98	1.04
Total Retortillo - Barcones - Barahona		245	520	1.04
TOTAL ZEPA Altos de Barahona		**276**	**594**	**1.00**
ZEPA PÁRAMO DE LAYNA				
Layna	Layna	116-132** 200***	192	0.83
TOTAL ZEPA Páramo de Layna		116-132** 200***	**192**	**0.83**
TOTAL ZEPAS		**392-408** 476***	**786**	**0.96**

* Subpopulations not censused in the II National Census.

** Data included in the official sheet of SPA "Páramo de Layna".

*** Own unpublished data (TEG-UAM).

[6] Suárez, F. (2010). *La alondra Ricotí (Chersophilus duponti).* Dirección General para la Biodiversidad. Ministerio de Medio Ambiente, y Medio Rural y Marino, Madrid, España.

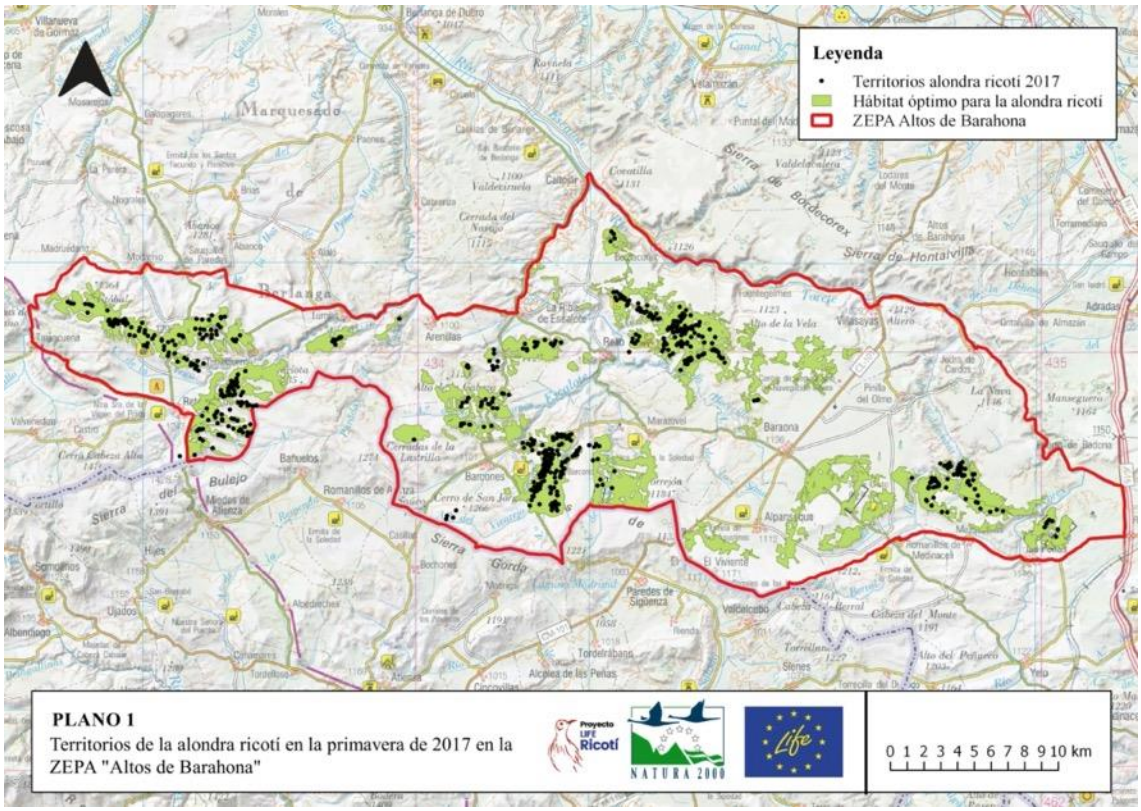


Figure 6.7. Dupont's lark territories in the SPA Altos de Barahona in 2017.

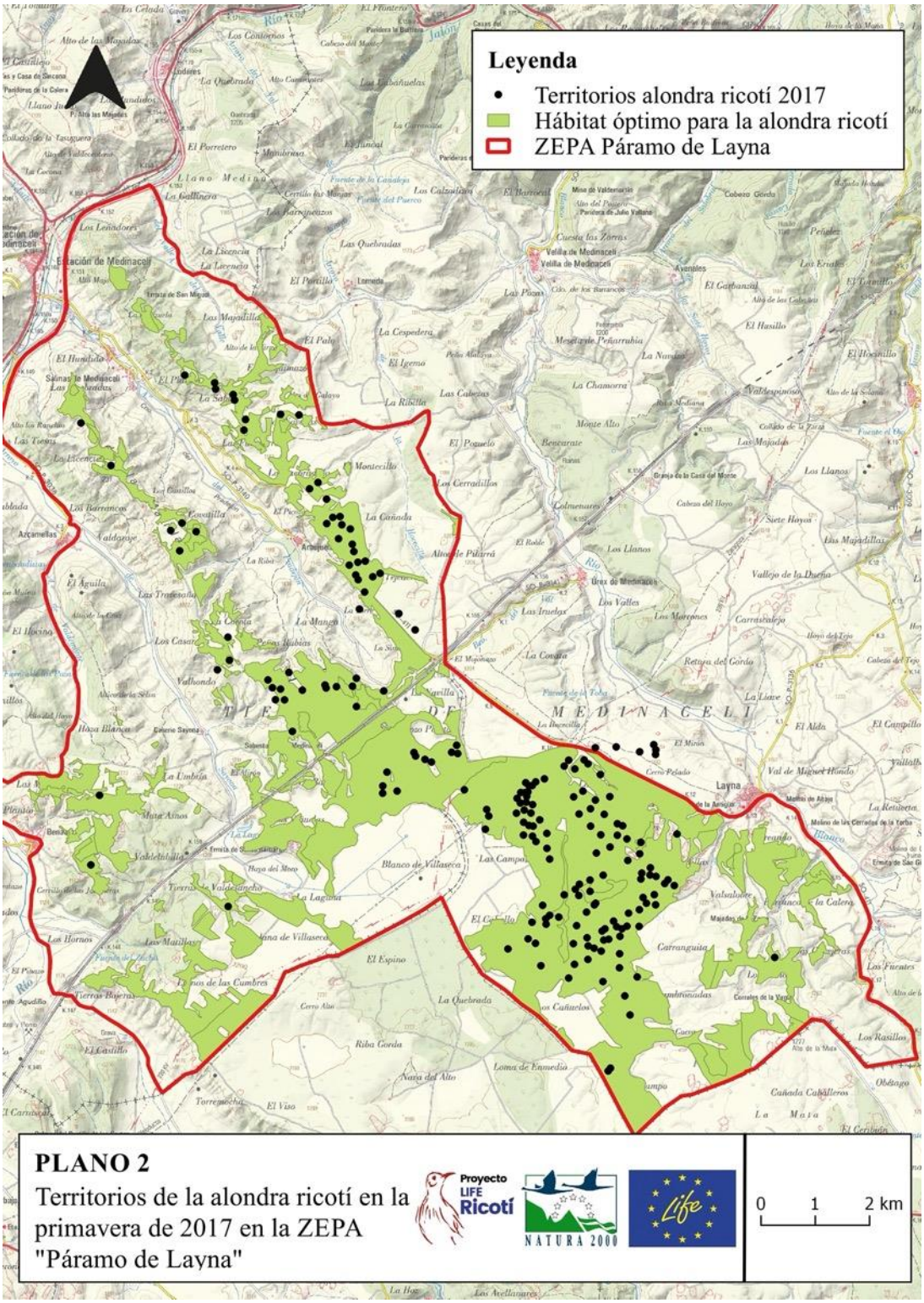


Figure 6.8. Dupont's lark territories in the SPA Páramo de Layna in 2017.

B. Habitat quality

Despite the absence of previous works prevented the comparison of results obtained on structure and quality of Dupont's lark habitat in the study area, our results seemed conclusive in relation with the link between species presence and food availability (see Action A2 and deliverable 25). An in-deep analysis can be consulted below, in Action D2 and D3.

In summary, factors that were positively associated with a greater intensity of space use by the Dupont's lark were: i) type of habitat, ii) presence of herbivores, and iii) biomass of epigeous arthropods. These results suggested that habitats formed by small shrubs-scrubs, where sheep control both structure and height of the vegetation, and contributed to ease the abundance of food in the form of arthropods would be the optimal habitat for the Dupont's lark.

C. Connectivity analysis

Connectivity analysis was carried out on the LIFE Ricotí study area using CONEFOR and applying maximum dispersal distance of 35 km in the modelling. Result yielded a connection probability index close to 1 for all the patches, and a percentage of functionally connected habitat greater than 90%. This result indicated that practically all habitat patches and subpopulations in the study area are connected and therefore connectivity could no longer be considered a differentiating criterion when prioritizing high value areas or defining priority areas for action. All these results can be consulted in the published paper by García-Antón et al. (2021)[7].

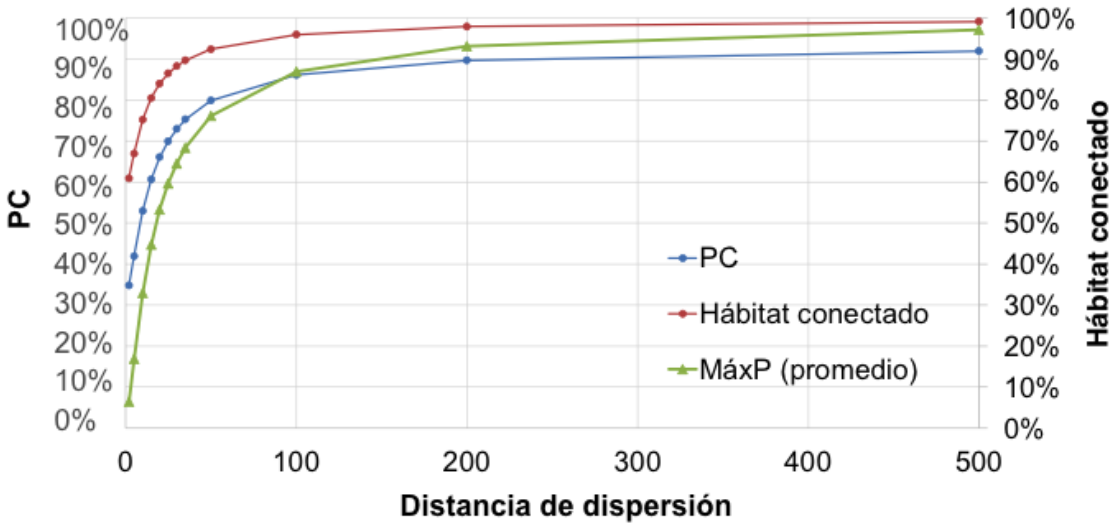


Figure 6.9. Probability of connexion (PC) and proportion of connected habitat, using a 35 km dispersal distance threshold. The percentage of connected habitat is greater than 90%.

[7] García-Antón, A.; Garza, V. & Traba, J. (2021) Connectivity in Spanish metapopulation of Dupont's lark may be maintained by dispersal over medium-distance range and stepping stones. *PeerJ*, 9: e11925.

D. Population Viability Analysis

We carried out a PVA on the subpopulations of the study area using VORTEX 9.99[8]. Despite the uncertainty about the quality of the input data of the model and the power obtained from iterations, results of the simulations seemed to predict relatively well the trend of the populations, which were considered stable-slightly regressive, despite the low population size of several of the subpopulations, and if no more habitat is lost (and with no catastrophic events considered; see below, however). The most striking result of the set of analyses carried out was the low probability of extinction of the metapopulation. This could be due to the high buffering ability to cope with population decreases due to the existence of export nuclei (source of individuals).

Another interesting result was the sensitivity to decreases in occupied habitat, which imply declines in carrying capacity. The sensitivity shown by the Dupont's lark to decreases in the carrying capacity has been previously described for the Iberian populations.

At the level of local (southern Soria) populations, the risk of extinction seemed to be dependent on the initial size of the populations, so that the smallest ones faced the greatest risks. Of course, those populations experiencing the greatest losses of occupied habitat were also those that more strikingly increased their risk of extinction with respect to the base scenario.

In addition, connectivity (expressed through the probability of dispersion among populations) must be a key factor in guaranteeing the survival of the metapopulation, as has been proven in other species. In our case, the high dispersion rate is justified by the geographic proximity of the populations (see previous section) and by the existence of source nuclei, which supply dispersing individuals to the rest of the populations. Therefore, and despite the robustness shown to variations in the probability of dispersion, survival during this critical phase for birds (in these models assumed optimistically by 70%), should be maintained at high values, since increases in mortality during this phase can compromise the survival of the metapopulation.

Finally, it should be noted that there are still important uncertainties about the quality and likelihood of the demographic parameters used, such as the dispersion rate or juvenile and adult mortality. Efforts should be made, therefore, in developing studies to elucidate their reliability. All these results can be consulted in the published paper by García-Antón & Traba (2021)[9].

Table 6.7. Project milestones Action A5.

Milestone	Deadline	
	Scheduled	Actual
Start of population, distribution and PVA analyses	15/06/2017	15/06/2017
Start of connectivity analysis	15/07/2017	15/07/2017

[8] Lacy, R.C., M. Borbat & J. P. Pollak (2005). *Vortex: A Stochastic Simulation of the Extinction Process. Version 9.99b.* Chicago Zoological Society, Brookfield, EE.UU.

[9] García-Antón, A. & Traba, J. (2021) Population viability analysis of the endangered Dupont's Lark *Chersophilus duponti* in Spain. *Scientific Reports*, 11: 19947.

6.1.6. Action A6. Identification of zones of action (responsible beneficiary: UAM; collaborating beneficiaries: AEPMA, ARTESA and DGMN-JCyL)

Foreseen start date:	June 2017	Actual start date:	May 2017
Foreseen end date:	October 2017	Actual end date:	October 2017

Action A6 is successfully finished.

Action A6 aims to the ultimate selection of zones where conservation actions C would be implemented. We used objective, technical and scientific criteria (population size, patch size of optimal habitat, connectivity, ownership) to prioritize specific areas where conservation actions were more needed for the conservation and improvement of the species.

While the final deliverable nº 27 was scheduled for October 2017, a first draft of selected areas was presented in May 2017, to fit the demands of Action A10. This information was included in the internal report *Protocol for identification, prioritization and selection of areas to be included in the Conservation Actions*.

Action A6 started in May 2017, and finished in October 2017, with the deliverable nº 27, *Identification of zones of action*. In this document, we presented the prioritization criteria and the final priority list of zones to potentially carry out conservation actions of the Project LIFE Ricotí (C1 to C5).

The potential areas of action were catalogued according to the possible action proposed in the LIFE Ricotí Project (C1 to C5), ordered by a specific identifier, and located according to the name of the municipality it belongs, and the action to be potentially carried out there.

Then, several evaluation criteria were applied, to consider both the Dupont's lark population size of the specific locality in which the area was located, and the distance to the nearest Dupont's lark territory. These criteria were considered critical for, on the one hand, favouring population increases in those areas included in the Land Stewardship Program (action C5), maintaining the present favourable situation; and, on the other hand, to increase the chance of recolonization in those areas where actions C1-C4 could be carried out.

According to these criteria, areas with identifiers 28 (Medinaceli) and 30 (Arcos de Jalón) were the best evaluated to be included in the Land Stewardship Program (C5). For Tree Clearing actions (C1 and C2), priority zones were those with identifiers 21 (Barahona) and 13 (Barcones). For the case of Tree Cutting actions (C1), the best-valued area was identified as 29 (Medinaceli). Finally, for the actions of Dung Sowing (C3) and Topographic Restoration (C2), the areas with identifiers 32, 33, 34 and 35 were the only ones evaluated. See attached maps and deliverable 27 for a further explanation.

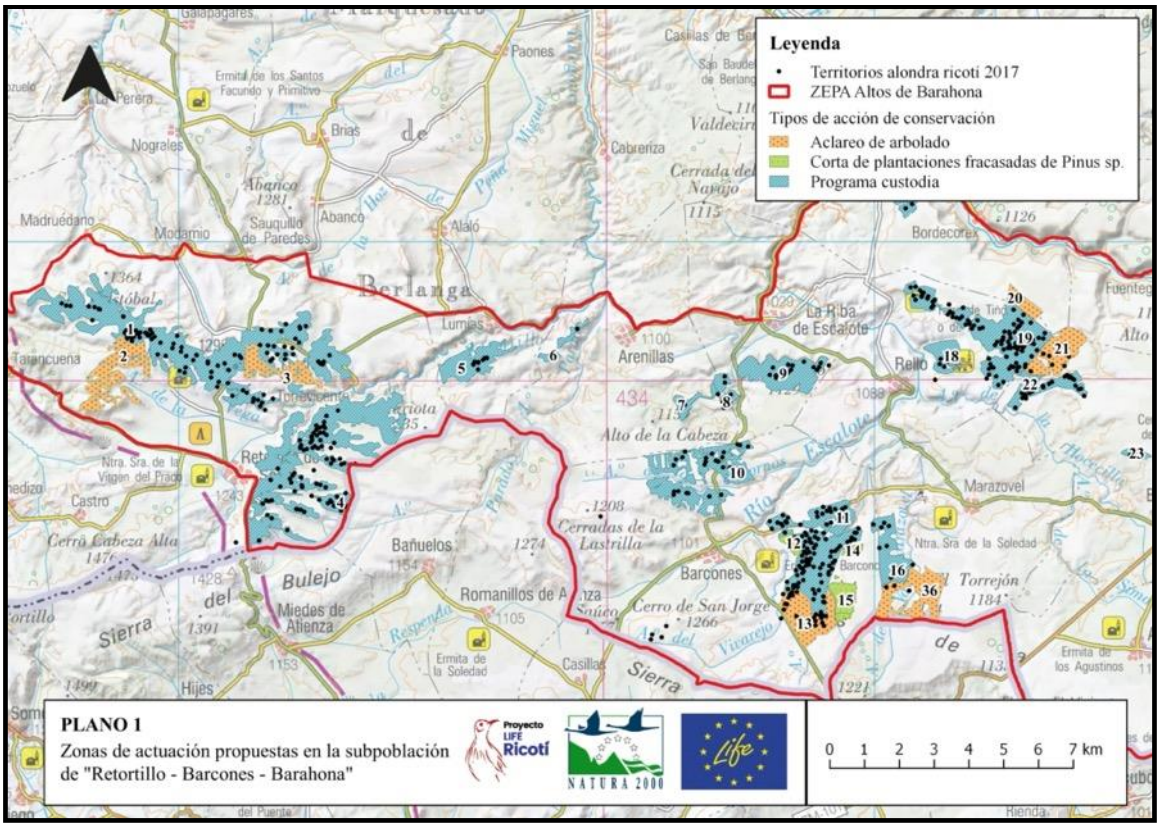


Figure 6.10. Zones of action proposed within the subpopulation "Retortillo – Barcones – Barahona".

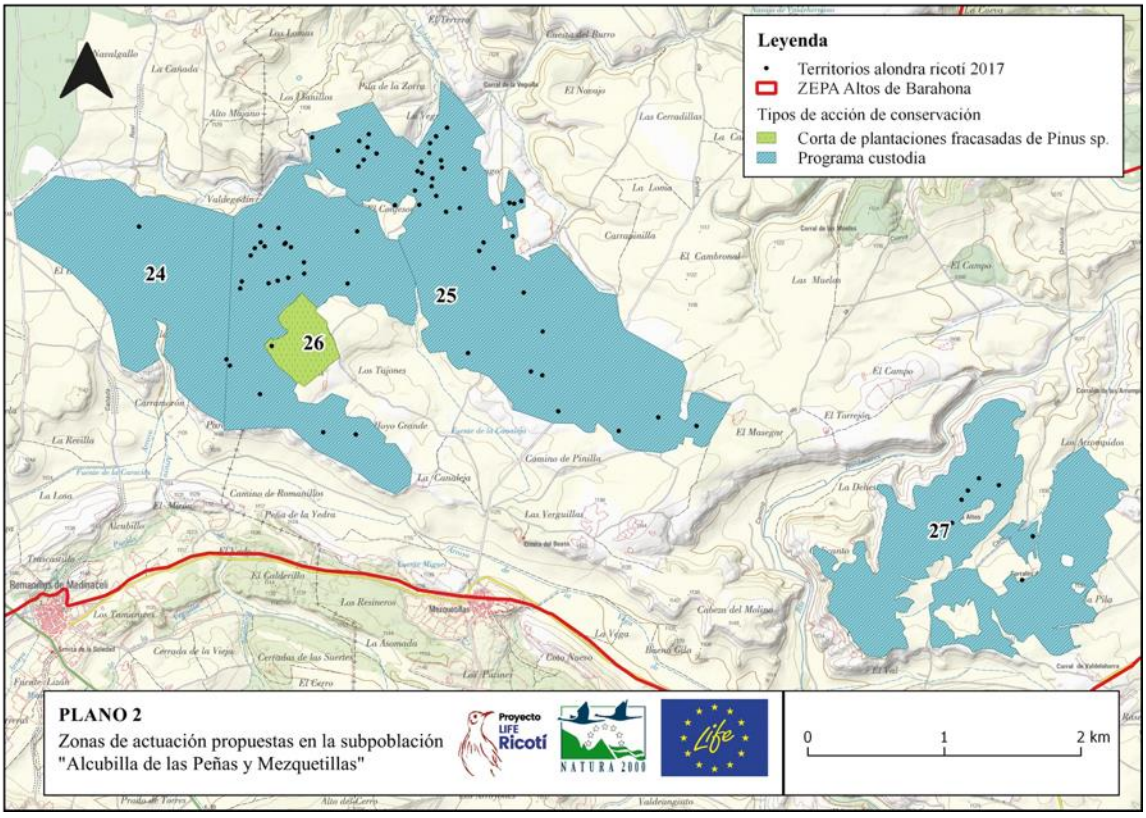


Figure 6.11. Zones of action proposed within the subpopulation "Alcubilla de las Peñas y Mezquetillas".

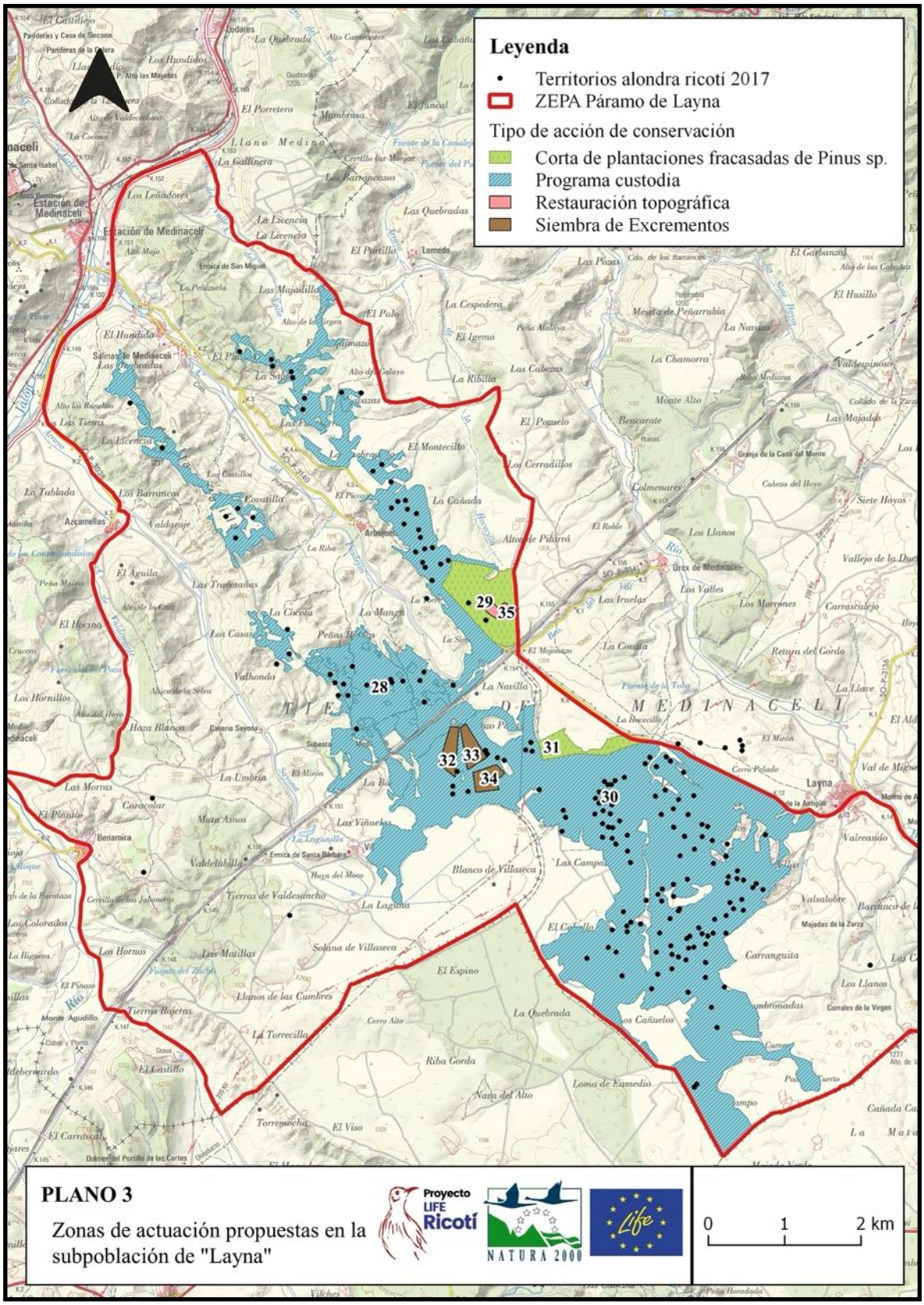


Figure 6.12. Zones of action proposed within the subpopulation “Layna”.

Table 6.8. Project milestones Action A6.

Milestone	Deadline	
	Scheduled	Actual
Starting identification and location of public owning fields	1/10/2016	1/10/2016
Starting valorisation process and priority and application of prioritisation criteria	15/07/2017	1/05/2017

6.1.7. Action A7. Guidelines for the management and sustainable conservation of the SPAs Altos de Barahona and Páramo de Layna (responsible beneficiary: AEPMA; collaborating beneficiary: DGMN-JCyL)

Foreseen start date:	October 2016	Actual start date:	October 2016
Foreseen end date:	September 2018	Actual end date:	July 2019

Action A7 is successfully finished.

Action A7 aimed at the elaboration of a technical report to establish the main guidelines for the protection, correction, or minimization of threats to the conservation of the Dupont's lark and its habitat in the study areas. This report would serve as a basis for formalizing the Management and Conservation Guidelines of the SPAs, which is the legal instrument for the regulation of land uses to the competent administration (JCyL).

The development of the action comprised the following phases:

- Phase 1: Drafting of the Initial Document: January 2017.
- Phase 2: Information of the First Draft (Initial Document). Date of public queries: February - March 2017.
- Phase 3: Drafting of the Progress Document: October 2017.
- Phase 4: Information of the Progress Document. Date of public queries: October 2017 - March 2018.
- Phase 5: Drafting of the Final Document: October 2018.
- Phase 6: Information of Final Document: October – November 2018.
- Phase 7: Final approval of Guidelines by Regional Government of Castilla y León: 22 July 2019 (Resolution of 15 July 2019).
- Phase 8: Field-testing of Guidelines: During 2019-2021 (action D6, see below).

Thus, the **Management and Conservation Guidelines of the SPAs**, which are a legal instrument for the regulation of land uses, were **officially approved by Regional Government** of Castilla y León (JCyL) on **22 July 2019** (Resolution of 15 July 2019).

The first draft (Initial Document) was redacted in January 2017 and underwent a first public participation (query) process. This was carried out among technicians, management managers and other local agents related to the species and / or management of its habitat. Technical and methodological comments and information were mainly collected during this first process, which was carried out during February - March 2017.

Information gathered along with the first draft of the guidelines (Initial Document) served as a basis for the drafting of the Progress Document, which corresponded to the deliverable nº 16, *Guidelines and methodology for the implementation of conservation measures, improvement or restoration of habitat of the Dupont's lark*. This deliverable included specific proposals aimed at the protection and improvement of habitats where the species is located, as well as to the recovery of areas where it has disappeared.

This document was subsequently submitted to revision by the Servicio Territorial de Medio Ambiente de Soria, and then subjected to a second process of public queries among local population in the study area. A total of 11 meetings were held in the villages of Layna, Barahona, Alpanseque, Alcubilla de las Peñas, Marazovel, Arenillas, Retortillo de Soria, Medinaceli, Villasayas and Caltojar, as well as two specific meetings for the environmental

agents in Almazán and Burgo de Osma. Meetings were held between October 2017 and March 2018. Results of this second public process were incorporated in the document. The document was completed by October 2018, when it was submitted to the third and last public participation process starting from November 2018. Final approval was made in July 2019. These Guidelines have been field-tested from 2019 onwards (Action D6, see below).

In addition, we prepared the deliverable nº 9, *Fine scale 1: 10,000 mapping according to types of conservation status of the Dupont's Lark and its habitats* (deliverable nº 9 and an updated version with maps in PDF-format). This mapping, together with Actions A2 and A5 results, has been the basis for the drafting of the Management and Conservation Guidelines.

Table 6.9. Project milestones Action A7.

Milestone	**Deadline**	
	Scheduled	**Actual**
Design of the collaboration framework with the DGMN and the scientific committee of the project	15/10/2016	15/10/2016
Ending of habitat mapping	16/01/2017	16/01/2017
Approval Guidelines for sustainable management and conservation by DGMN-JCyL	31/03/2019	28/02/2020

6.1.8. Action A8. Design of Dupont's lark habitat restoration and improvement projects (responsible beneficiary: FPN; collaborating beneficiaries: ARTESA, AEPMA and DGMN-JCyL)

Foreseen start date:	September 2016	Actual start date:	September 2016
Foreseen end date:	March 2017	Actual end date:	July 2017

Action A8 is successfully finished.

This action consisted of two different parts:

A. Collection of seeds and vegetable matter to be used in technical restoration projects

A total of 150,800 seeds belonging to the following species were collected in November 2016: *Lavandula latifolia* (90,000 seeds), *Satureja intricata* (40,000 seeds), *Salvia lavandulifolia* (12,000 seeds), *Digitalis obscura* (7,000 seeds), *Avenula pratensis* (1,800 seeds). All the seeds were collected at Sierra Ministra (Esteras de Medinaceli, Soria, Spain) in the vicinity of the wind farms of Sierra Ministra and Carrascalejo, areas adjacent to the Páramo de Layna.

Seed collection of 12 plant species was initially planned, and some more were even mentioned in the drafted Seed Collection Program (deliverable nº 4). This document included necessary tasks and procedure for the collection of seed and vegetal material of chamaephytes to be used during the conservation actions. However, many of them could not be found in commercial vivarium, so we finally selected those that could be directly collected in the project study area. We considered that project objectives will be successfully met with the collected species.

A total of 64,000 cm^3 of fruits of *Genista rigidissima* were collected in July 2017 at Alcubilla de las Peñas and Barahona (Soria, Spain). They were stored in the Valonsadero nursery of the Junta de Castilla y León (Soria, Spain), until sent to the central nursery of Valladolid where, along with the previously cited species, they were screened, submitted to germinate viability tests and stratified to obtain viable seedlings. Some maintenance problems in the Valladolid nursery prevented the whole pool of seedlings to be used in Action C4, and just a fraction could be planted as planned. This had no significant effects on the success of Action C4 (see below).

B. Drafting of restoration projects

This part establishes guidelines for restoration plans to be used as a methodological template, applicable to all restoration and improvement tasks included in the LIFE Ricotí project. We generated a basic model with a simple format where the measurable parameters or the variables that influence the actions were introduced as input, and the units of each applicable action, their economic costs and yields were obtained as an output. In addition, a warning system to monitor the effectiveness of the measures was established.

Along with the basic model, different generalized (template) projects were drafted to facilitate further elaboration of specific projects. This was included in deliverable nº 14, *Habitat restoration and improvement projects*. This document included a Basic Restoration Project, which was used as a reference model and methodological guide, applicable to all restoration and improvement actions proposed in actions C.

Between September and December 2017 (with the exception of Mezquetillas, due to the necessity of finding the right dump to be restored), contracts for the restoration plots were signed and final projects drafted, which were located in 4 municipalities: Alcubilla de las Peñas (Mezquetillas), Barahona, Medinaceli and Retortillo de Soria. Specific actions to be carried out there were:

- Tree Clearing (affecting holm oaks) at Barahona municipality: 3 field plots, 116,63 ha.
- Tree Clearing (affecting holm oaks) at Retortillo de Soria municipality: 4 field plots, 135,14 ha.
- Tree Cutting (affecting pine removal) at Medinaceli municipality: 1 field plot, 50 ha.
- Topographic restoration at Medinaceli municipality: 1 field plot: 5,16 ha.
- Dump restoration at Mezquetillas (Alcubilla de las Peñas municipality): 1 field plot: 2,1 ha.

Table 6.10. Project milestones Action A8.

Milestone	**Deadline**	
	Scheduled	**Actual**
Start of seed collection	7/11/2016	7/11/2016

6.1.9. Action A9. Design of dung sown project (responsible beneficiary: UAM, collaborating beneficiary: AEPMA)

Foreseen start date:	December 2016	Actual start date:	December 2016
Foreseen end date:	September 2017	Actual end date:	September 2017

Action A9 is successfully finished.

Action A9 aimed to design a project for sheep dung sowing in fields under conservation measures. By this action (C3) we tried to verify the reliability of dung sowing to replace the ecological functionality of the extensive grazing, specifically related to the availability of arthropods (food items for the Dupont's lark and other insectivores). The project for sheep dung sowing was finished on time, in early October 2017 (deliverable 26, *Technical project for sheep dung sowing*). Deliverable 26 presented both the criteria for the selection of the plots where the action would be carried out (see Figure 6.13), as well as the technical report describing methods for the extraction, transport and spreading of sheep dung. Conservation measure C3 has already been successfully carried out (see below) based on Actions A2, A6 and A9 results.

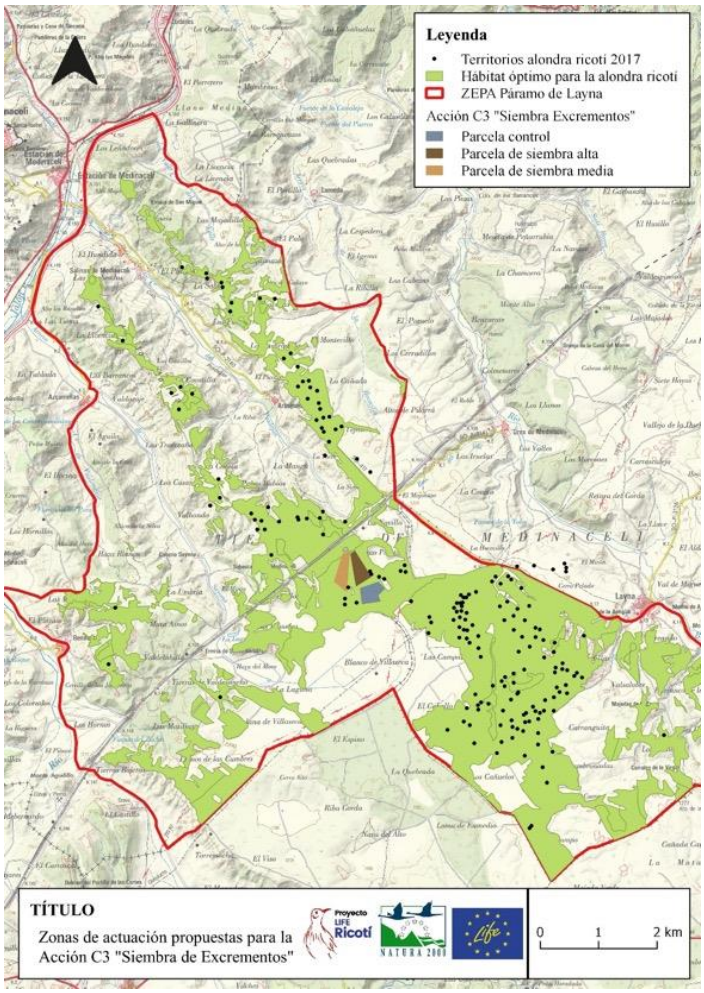


Figure 6.13. Location of fields proposed for Action C3 (Dung sowing).

As was properly notified in the first Progress Report (October 2017), a mistake was detected in the timetable included in the initial proposal (page 204 of the proposal), where the timeframe scheduled for this action was just the third quarter of 2017. However, the real timeframe of this action was December 2016 to September 2017 (page 103 of the proposal).

Table 6.11. Project milestones Action A9.

Milestone	**Deadline**	
	Scheduled	**Actual**
Start of technical project	15/12/2016	15/12/2016

6.1.10. Action A10. Contacts with owners and signing of collaboration agreements (responsible beneficiary: AEPMA; collaborating beneficiaries: ARTESA, DGMN-JCyL, FPN and MANCOMUNI)

Foreseen start date:	September 2016	Actual start date:	September 2016
Foreseen end date:	June 2017	Actual end date:	January 2018

Action A10 is successfully finished.

Action A10 aimed to sign specific contracts with landowners at SPAs Altos de Barahona y Páramos de Layna for the implementation of conservation measures proposed in the project LIFE Ricotí (Actions C). To achieve this goal, we carried out the following tasks:

- Landowner identification: Servicio Territorial de Medio Ambiente de Soria, Environment Territorial Service, JCyL.
- First contact with landowners: MANCOMUNI.
- Informative meetings with landowners: AEPMA, ARTESA, MANCOMUNI.
- First round of negotiations with landowners interested in conservation measures: MANCOMUNI.

This action slightly delayed mainly due to two causes:

- The need to obtain explicit approval from EASME for signing agreements with Municipalities involving financial compensation (date of approval: 10/05/2017).
- The duration of the procedure, greater than foreseen, for the drafting of a contract model and its approval by the Legal Cabinet of the Junta de Castilla y León (date of approval: 22/06/2017).

Action A10 first results were included in deliverable nº 5, *Potentially interested owners list* (deliverable nº 5). That was a preliminary, though full, list of landowners within the scope of the project, including a list of plots with their cadastral reference, cadastral surface, useful surface area for the project, land occupation, type of action to the carried out in, and owner.

Finally, contracts were signed between September and March 2018, with the exception of Alcubilla de las Peñas (Mezquetillas dump). Contracts are summarized Table 6.12.

Table 6.12. Contracts signed with landowners.

Landowner	Signing Date	Action to be carried out	Conservation Action
Barahona municipality	12/09/2017	Clearing of holm oaks	C1
Retortillo de Soria municipality	05/12/2017	Clearing of holm oaks	C1
Mrs. María José Rosa María Ramirez and sons (represented by Juan Carlos Fernández Esteban)	10/11/2017	Pine tree removal	C1
Mrs. María José Rosa María Ramirez and sons (represented by Juan Carlos Fernández Esteban)	10/11/2017	Topographic restoration	C2
Mrs. María José Rosa María Ramirez and sons (represented by Juan Carlos Fernández Esteban)	26/03/2018	Dung sowing	C3
Alcubilla de las Peñas municipality	10/03/2020	Dump restoration	C4

Table 6.13. Project milestones Action A10.

Milestone	Deadline	
	Scheduled	Actual
Start of negotiation	01/12/2016	01/02/2017

6.1.11. Action A11. Design and drafting of the Land Stewardship Programme (responsible beneficiary: AEPMA; collaborating beneficiaries: ARTESA, DGMN-JCyL, DIPUTACIÓN and MANCOMUNI)

Foreseen start date:	October 2016	Actual start date:	October 2016
Foreseen end date:	January 2017	Actual end date:	November 2017

Action A11 is successfully finished.

Action A11 aimed at the design and drafting of the Land Stewardship Programme (LSP), which was implemented through Action C5. The Land Stewardship Programme was one of the most ambitious measures included in LIFE Ricotí project, as it involved local population and local and regional public bodies. The delay in finishing this action was related to the necessity of finishing previous actions, especially Action A6 (Identification of zones of action). Besides, the previously mentioned necessity of coordinating different actions and speeches (see Action A3), and especially those related with signing contracts for conservation actions generated some delay in designing and drafting the LSP (see below).

The LSP has been structured in two sub-actions:

- **The Land Stewardship Programme itself**

  It was focused on achieving agreements with landowners for the management and/or improvement of well-preserved Dupont's lark habitats and that actually have or can have the species with no further habitat restoration. Owners should undertake to allow and encourage livestock use on their farms, not to change traditional land uses, to facilitate monitoring and scientific work, and to explore new forms of sustainable exploitation. In return, the Land Stewardship Program would carry out some of the following actions in agreed fields: improvement of livestock infrastructures, as equipment for livestock management (roads, fencing, etc.), and/or management plans.

- **The Ornithological Tourism Program**

  The objective was to achieve bird watching being a tourist resource and helping the local economy. Within this program, agreements with landowners to adapt their lands to commercial bird watching have been reached, including the following actions: conditioning and signalling of ornithological routes, conditioning of bird watching areas, application of a marketing plan, collaboration agreements with tour operators, training of local ornithological guides, and/or environmental education programs.

Action A11 was elaborated following the next structure (see deliverable nº 11, *Land Stewardship Programme*, for a further description of each task and sub-tasks).

1. Information gathering about Land Stewardship Programmes (LSP) in Spain and Europe related to conservation of species and protected areas. Documentation included general manuals about Land Stewardship and information on similar experiences carried out in the Autonomous Communities of Castilla y León, Aragón and Andalusia.

2. Visits to similar LSP in Spain. Specifically, a visit to the Raptor Refuge in Montejo de la Vega (Segovia) was carried out (on 20/09/2017), which has a LSP developed by

WWF/Adena. A second visit to the ornithological reserve of El Planerón in Belchite (Zaragoza) was carried out (on 27/11/2017), with a LSP developed by SEO/BirdLife.

3. General design of the LSP, including:

- Administrative organization of the LSP: DIPUTACION (associated beneficiary) was in charge of the coordination of the LSP for public owners. FPN (associated beneficiary) was in charge of the coordination of the LSP for private owners after proper request to EASME related with the inclusion of FPN in Action C5 to reinvest those savings from the low prices in the successful bid for the outsourcing of the conservation works (Action C1), in additional actions within the Land Stewardship Program (Action C5). Final approval was on November 27, 2019. MANCOMUNI (associated beneficiary) was in charge of the management, through its Management Office, specifically created. ***From September 2018 onwards, UAM was in charge of the Management Office due to the withdrawal of MANCOMUNI from the LIFE Ricotí Project. LSP is included within the conservation action C5 "Land Stewardship Program".***

- Definition of the general objectives of the Program: (i) establishing collaboration agreements with landowners with current or potential presence of Dupont's lark, (ii) creating a local custody network among landowners involved in the program, (iii) exchanging experiences between local landowners and other regional or national custody networks, (iv) promoting livestock use on farms with Dupont's lark habitat, and (v) improving social perception of the species among the local population.

- Drafting of the internal regulations and basics of operation of the LSP.

- Identification of potentialities and shortcomings of the territory to develop the Program: for this a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis was made.

- Identification of local stakeholders who could potentially be involved in the execution of the actions proposed by the LSP.

- Specific proposals of fields to be included in the LSP. We finally selected those in which owners maintain both property and management, and were willing to assume the conservation commitments proposed by the LS Entity.

- Proposal of types of agreements between the LS Entity and the owners.

- Methodology for the monitoring and evaluation of the LSP.

4. Preparation of Ornithological Tourism Program (OTP):

- Inventory of tourist resources: Task previously carried out by DIPUTACION (associated beneficiary).

- Writing of the guidelines for the Action Plan of the OTP. These guidelines were drawn up through technical assistance granted by DIPUTACION, which ended by December 2017. The final document is called: *Guidelines for the use and exploitation of the bird watching activity as a tourist resource, with special emphasis on the Dupont's lark*. It establishes conditions for the use and exploitation of bird watching as a tourist resource, with a special impact on Dupont's lark. This document has been the basis on which the entire OTP was developed.

- Identification, selection and contact with companies of the Nature Tourism sector. During 2017 third quarter, we established contacts with companies to create a network of tourism establishments and wild watching enterprises. This network was formalized in a meeting held in Diputación Provincial de Soria on 07/03/2018 and started to operate with 6 establishments, though at present the number is significantly larger (see below, Action C5).

5. Formalization of DIPUTACION as a Land Stewardship Entity. The associated beneficiary DIPUTACION has been constituted as a Land Stewardship Entity based on the declaration made for this purpose by the Commission for Economic Development and Tourism of the Diputación Provincial de Soria in November 2016.

6. Election of the headquarters for the Land Stewardship Programme. In an extraordinary session of the Directive Board of the Mancomunidad, held on 13th October 2016 in Medinaceli, the locations of Barahona and Medinaceli (Soria) were both chosen as headquarters for the Land Stewardship Programme. This decision was maintained despite the withdrawal of MANOCOMUNI as beneficiary partner of the LIFE Ricotí Project, as Mancomunidad has continued serving to the objectives of the project.

7. Selection and hiring of the LSP manager. Mancomunidad approved both the basis for the hiring of the manager and the job call in extraordinary session of the Directive Board, held on 13th October 2016, in Medinaceli. The manager, Mr. Fernando Marín, was finally hired on 22nd November 2016. Once the withdrawal of MANCOMUNI was approved by EASME, UAM oversaw hiring the LSP manager, who continue to be the same person.

Action A11 results are included in deliverable nº11, *Land Stewardship Programme*. This deliverable included objectives, scope, and contents of the LSP. It is an internal use report for the associated beneficiaries in the LIFE Ricotí project to be used as an "operative guide", helping in the organization of the Land Stewardship Programme, guiding its implementation and easing decision-making.

Table 6.14. Project milestones Action A11.

Milestone	Deadline	
	Scheduled	Actual
Administrative organization of the LSP	31/10/2016	31/10/2016
Headquarters selection	1/10/2016	13/10/2016
Selection and hiring of the LSP manager	15/11/2016	22/11/2016

6.1.12. Action B1. Compensatory payment for conservation actions: trees, shrubs and scrubs elimination (responsible beneficiary: FPN; collaborating beneficiary: DGMN-JCyL)

Foreseen start date:	June 2017	Actual start date:	December 2017
Foreseen end date:	February 2021	Actual end date:	February 2021

Action B1 is successfully finished.

Action B1 aimed at providing compensatory payment to landowners under conservation measures. These payments are only applicable to conservation actions C1 and C2, where loss of economic activity is expected.

Action B1 was expected to start on June 2017. This action finally started on December 2017, after first contracts were signed under Action A10 (Action A10; deliverable nº 22). Despite this delay, no further incidence has occurred.

To date, all the scheduled payments have been made (Table 6. 15):

Table 6.15. Payments made under Action B1.

Payments	Date	Amount (€)
Payment of 1st compensatory payment Barahona municipality	21/12/2017	4.484,88
Payment of 1st compensatory payment Ranz Ramírez family	27/03/2018	17.500,00
Payment of 1st compensatory payment Retortillo de Soria municipality	18/04/2018	4.865,10
Payment of 2nd compensatory payment Barahona municipality	26/02/2019	5.979,84
Payment of 2nd and last compensatory payment Ranz Ramírez family	27/06/2019	17.500,00
Payment of 2nd compensatory payment Retortillo de Soria municipality	29/08/2019	6.486,80
Payment of 3rd and last compensatory payment Barahona municipality	30/09/2020	4.484,88
Payment of 3rd and last compensatory payment Retortillo de Soria municipality	27/11/2020	4.865,10

Table 6.16. Project milestones Action B1.

Milestone	Deadline	
	Scheduled	Actual
Payment of the first instalment	30/06/2017	21/12/2017
		26/03/2018
		18/04/2018
Payment of the third and last instalment	15/02/2021	15/02/2021

6.1.13. Actions C1. Specific conservation actions. Habitat restoration and improvement: selective management and elimination of trees and shrublands (responsible beneficiary: FPN; collaborating beneficiaries: DGMN-JCyL)

Foreseen start date:	November 2017	Actual start date:	February 2018
Foreseen end date:	March 2018	Actual end date:	November 2018

Action C1 is successfully finished.

Action C1 planned the restoration of 300 has of habitat previously unsuitable for the Dupont's lark. This action implied a mixed mechanical/manual intervention on tree and shrub cover, oriented to clearing shrublands and elimination of large shrubs and trees. Maps of location of zones of actions can be consulted in Action A6.

Action C1 was expected to start on November 2017. This action finally started on February 2018, after the first contracts be signed under Action A10 (September 2017).

Restoration of steppe habitat was carried out in three plots in the municipal terms of Barahona (C.1.1: 116.63 ha), Medinaceli (C.1.2: 50.00 ha) and Retortillo de Soria (C.1.3: 135.14 ha), which totalled **301.77 ha, slightly exceeding the planned schedule**.

C.1.1. works in Barahona began in February 2018 and were finished in autumn 2018, as bad weather conditions prevented finishing before the reproductive period of the Dupont's lark in spring 2018.

C.1.2. works in Medinaceli were 100% completed as scheduled.

C.1.3 works in Retortillo de Soria began in October 2018 and finished a few weeks later. This work was delayed to avoid overlapping with the reproductive period of the species. This delay was indeed provoked by administrative reasons at the moment of signing the contract between FPN and Retortillo Council. When the contract was effectively signed and tasks were then publicly tendered, time for execution was already too late to finish before the beginning of the reproductive season.

Figure 6.14. Holm oak cutting and collecting in Barahona.

Figure 6.15. Pre and post-operational situation in Tree-Cutting action in Arbujuelo, Medinaceli.

Figure 6.16. Pre and post-operational situation in Holm oak cutting action in Retortillo.

Restoration works were carried out by FPN (beneficiary partner) through granting for external assistance from companies specialized in forestry works. Two deliverables related with start and end work certifications were elaborated (nº 28 and 36).

Table 6.17. Project milestones Action C1.

Milestone	Action	Deadline	
		Scheduled	Actual
Signing of the certificate of work beginning	C.1.1	1/11/2017	1/02/2018
	C.1.2	1/11/2017	27/02/2018
	C.1.3	1/11/2017	10/2018
Signing of the certificate of work ending	C.1.1	31/03/2018	11/2018
	C.1.2	31/03/2018	31/04/2018
	C.1.3	31/03/2018	11/2018

6.1.14. Action C2. Specific conservation actions. Habitat restoration and improvement: topographic restoration (responsible beneficiary: FPN; collaborating beneficiaries: DGMN-JCyL)

Foreseen start date:	November 2017	Actual start date:	February 2018
Foreseen end date:	March 2018	Actual end date:	April 2018

Action C2 is successfully finished.

This conservation action aimed at restoring and improving Dupont's lark habitat, through mechanical intervention on topographically altered habitats due to failed afforestations. This topographic alteration is the result of land preparation works prior to afforestation, which, in many cases, leads to an important movement of lands. Maps of location of zone of action can be consulted in Action A6.

Action C2 was expected to start on November 2017. This action finally started on February 2018, after the first contracts were signed under Action A10 (November 2017), and once public tenders were signed, and ended a few weeks later. As it was carried out within an area previously restored under Action C1, no interference with the reproductive period of the species was foreseen.

As planned, 5.16 ha were restored. Works consisted in i) elimination of failed afforestation; ii) topographic restoration with the use of backhoe loaders and bulldozer; and, iii) subsequent manual rework of ridges. This work was made in Arbujuelo (Medinaceli).

Levelling of plantation ridges by passing chains of the backhoe loader has been a success. This restoration technique has not been used to date in this type of terrain and has proven to be an effective technique that can be used in similar situations in other areas (Figure 6.17).

Restoration works were carried out by FPN (beneficiary partner) through granting for external assistance from a company specialized in forestry work.

Figure 6.17. Pre and post-operational situation of topographic restoration field in Arbujuelo, Medinaceli (Soria).

Two deliverables related with start and end work certifications were elaborated (nº 30 and 38).

Table 6.18. Project milestones Action C2.

Milestone	Action	Deadline	
		Scheduled	Actual
Signing of the certificate of work beginning	C2	1/11/2017	27/02/2018
Signing of the certificate of work ending	C2	31/03/2018	30/04/2018

6.1.15. Actions C3. Specific conservation action. Dung sowing (responsible beneficiary: FPN; collaborating beneficiaries: DGMN-JCyL, AEPMA, ARTESA and UAM)

Foreseen start date:	November 2017	Actual start date:	November 2017
Foreseen end date:	March 2018	Actual end date:	April 2018

Action C3 is successfully finished.

This action aimed to carry out a demonstration conservation action trying to restore the ecological functionality of the steppe habitat characteristic of the Dupont's lark, specifically in relation to the availability of food. By the implementation of this action, we aimed to check whether the emulation of grazing that involves dung sowing can increase food availability and, consequently, increase the habitat quality and its probability of occupation by the species.

This action was based on two premises: i) food availability for Dupont's lark and other insectivores should be the main factor determining the quality of the habitat, at least in those areas meeting the topographic and vegetation structure requirements described as optimal; and ii) extensive livestock influences food availability, as livestock mobilize in an accelerated way those nutrients that, otherwise, remain sequestered in their organic forms, and make them available to coprophagous arthropods, which finally are relevant feeding items for insectivorous as the Dupont's lark. Therefore, livestock can promote greater complexity in terms of diversity and abundance of different trophic levels, favouring a greater abundance of invertebrates. Extensive livestock is hard to maintain in depopulated areas as the studied one. From the LIFE Ricotí project we have planned this action to try to simulate the deposition of excrement made by cattle.

The design of this action was developed in preparatory action A9*, Design of the dung sowing* (deliverable nº 26). The selected areas meet the habitat requirements related to plant structure and floristic composition (as determined in action A6, *Identification of zones of action*). We collected sheep droppings from known flocks, which were spread over 20 ha, with a simple design with the following scheme: 10 ha with high density of excrement (0.5kg/m^2); 10 ha with low density of excrement (0.25kg/m^2); and 10 ha of control without sowing. These three zones showed similar characteristics of plant structure and floristic composition. Maps of location of zones of actions can be consulted in Action A6.

Due to some delay in negotiations with landowners, dung sowing took finally place at the end of March 2018, according to this protocol (see Deliverable nº 39, *Report of actions carried out to improve the quality of Dupont's lark habitat by dung sowing*):

- In-field verification of the selected areas.
- Agreement of dung supply with shepherds.
- Collecting of dung samples for analysis of toxins, pesticides, antibiotics, or other inputs.
- Collecting and transfer of dungs to selected sowing areas.
- Dung sowing according to project design (density/m^2).

Due to some difficulties in obtaining the volume of sheep manure from flocks close to the experimental areas, analyses of dung content were not carried out previously to dung sowing, to keep the project schedule (dung sowing prior to 2018 spring). These analyses were carried out by Universidad de Valladolid. As concentration of heavy metals found in dung samples was low, and according to Royal Decree 506/2013, of June 28th, on fertilizer products, dung used

in the action C3 could be classified in class A, the highest one. These results suggested that no supplying inputs to sheep were used (see Deliverable nº 39).

Monitoring actions addressed to test the reliability of dung sowing (food availability, plant structure, floristic composition) have been carried out following Action D3 (see below).

Figure 6.18. Temporal in-field storage of sheep dung before sowing (left). Dungs were in-field stored just for two days. Dung sowing (right). Dungs were sowed following the protocol as in the dung sowing project (Action A9).

Figure 6.19. Zoom-in to dung sowing in the high-density dung sowing area. Effects of dung sowing can be observed during the first days, until first spring rains.

Table 6.19. Project milestones Actions C3.

Milestone	Action	Deadline	
		Scheduled	Actual
Evaluation of the dung sowing as a technique to improve the quality of the habitat of the Dupont's lark	C3	30/04/2018	30/04/2018
Starting dung sowing activities	C3	1/11/2017	1/11/2017

6.1.16. Actions C4. Specific conservation actions. Habitat restoration and improvement: Removal of dumps and restoration of altered soils. Seed sowing, plantations and other previous restoration tasks (responsible beneficiary: FPN; collaborating beneficiaries: DGMN-JCyL)

Foreseen start date:	November 2017	Actual start date:	November 2020
Foreseen end date:	March 2018	Actual end date:	November 2020

Action C4 is successfully finished.

This action aimed to the restoration of Dupont's lark potential habitats occupied by dumps or altered by the intensive use of machinery.

Action C4 was expected to start on November 2017. This action was initially delayed because, at that date, the agreement with the landowner had not yet been signed. Later, preselected dump was rejected as it was included in a scheduled plan of JCyL to restore dumps in the region. Finally, the selected dump was located in Mezquetillas (Alcubilla de las Peñas municipality), next to an area with Dupont's lark presence. It is owned by the Alcubilla de las Peñas municipality. Restoration works were completed in November 2020. As planned, 2.1 ha were restored. Despite this delay, action was carried out correctly, and other conservation actions have not been jeopardized.

Figure 6.20. Some snapshots of the restoration process. Top left, previous state of the dump. Top right, bottom left, phases of the restoration work. Bottom right, final status and sign of the works.

Two deliverables related with start and end work certifications were elaborated (nº 29 and 37).

Table 6.20. Project milestones Actions C4.

Milestone	Action	Deadline	
		Scheduled	Actual
Signing of the certificate of work beginning	C4	1/11/2017	1/11/2018
Signing of the certificate of work ending	C4	31/03/2018	31/03/2019

6.1.17. Action C5. Land Stewardship Programme (responsible beneficiary: DIPUTACIÓN; collaborating beneficiaries: MANCOMUNI, AEPMA, ARTESA, FPN, DGMN-JCyL and UAM)

Foreseen start date:	January 2017	Actual start date:	January 2017
Foreseen end date:	February 2021	Actual end date:	September 2021

Action C5 is successfully finished.

The objective of the Land Stewardship Programme was to conduct land management compatible with Dupont's lark habitat conservation through signed agreements with landowners. In addition, it aimed to encourage the ornithological tourism as a new form of sustainable economic development.

This action experienced a significant change in its structure due to the withdrawal of MANCOMUNI from the LIFE Ricotí Project. Therefore, UAM and DIPUTACIÓN assumed duties and responsibilities of Mancomunidad de Obras y Servicios from October 2018 onwards.

Besides, FPN was included as a relevant part after proper request to EASME related with the inclusion of FPN in Action C5 to reinvest those savings from the low prices in the successful bid for the outsourcing of the conservation works (Action C1), in additional actions within the Land Stewardship Program (Action C5). It must be reminded that FPN is an official Land Stewardship entity, and it was in charge of signing agreements with private landowners, while DIPUTACIÓN was in charge of public landowners. These changes were communicated to and accepted by EASME via External Monitoring e-mail (November 29, 2019).

As an integral part of this action, deliverable nº 10, *Guidelines for the participation in the Land Stewardship Programme* was elaborated, where the following aspects were developed:

- Description of the basic contents of the Land Stewardship Programme.
- Lands, landowners and potential agreement recipients.
- Type of actions that can be performed on lands.
- Kind of agreements and commitments to be signed.
- Way of monitoring the agreements.

The Land Stewardship Program (LSP) consisted of two separated pieces: the LSP itself and the Ornithological Tourism Program (OTP). The tasks performed of each of the parties is as follows:

A. Land Stewardship Programme (LSP)

A total of 6 contracts with public owners and one with private ones have been signed, reaching **3060.97 ha included in the LSP** (see Table 6.21). Table 6.21 shows the works carried out in the different fields and municipalities. All works have been successfully finished and meet the needs and demands expressed by landowners to facilitate livestock operations and offer alternative uses.

Table 6.21. Summary of Land Stewardship Program agreements.

LAND-OWNER	Has	Tender Budget	Award Budget	Low	Land Stewardship Entity	Works	Length of roads (m)	Fencing surface (m2)
Barahona Municipality	**278.23**	40000	32599	7401	Diputación	Road repair	4630	-
Alpanseque Municipality (Marazovel)	**436.02**	30000	24299	5701	Diputación	Road repair and 2 livestock fencing	6000	1600
Alcubilla Municipality (Mezquetillas)	**224.69**	15000	12075	2925	Diputación	Road repair	3200	-
Ranz Ramirez	**521.1**				FPN	Fenced chasm, viewpoint, livestock fencing and bird observatory.		11000
Rello Municipality	**532.86**	33000	27720	5280	Diputación	Road repair, bird observatory	1800	-
Retortillo Municipality	**745.07**	48000	40080	7920	Diputación	Road repair and 3 livestock fencing	5000	4800
Arenillas Municipality	323	38000	31160	6840	Diputación	Road repair (3)	4680	-
Total	**3060.97**	**204000.00**	**167933.00**	**36067.00**			**25310**	**17400**

Despite some delays in the signing of contracts, the project reached all the objectives and **included more than 3000 ha** in the LSP. Delays in the contract signing (scheduled date: May 2017) was due to the priority assigned for Action A10 (signing contracts with landowners for conservation actions), which successfully ended in December 2017 (see deliverable 20). We considered that this delay in signing contracts would not jeopardize the achievement of the objectives of the project, as several landowners have already expressed interest in terms and conditions.

Since early 2018, contacts and negotiations were resumed with landowners, mainly town councils, to be involved in the LSP. Final agreements were reached with 6 municipalities of SPA Altos de Barahona (Alcubilla de las Peñas, Barahona, Alpanseque, Rello, Arenillas and Retortillo de Soria) that were willing to incorporate 2539.87 ha into the LSP.

In SPA Páramos de Layna, final agreement was reached with a private owner (521.1 ha) in Arbujuelo (Medinaceli). In this case, the agreement was established between the owner and FPN, which is official land stewardship entity, to avoid difficulties between DIPUTACIÓN and other private owners, and to take advantage of the surpluses left over from the cancellations of work awards made by FPN.

Some minor problems were detected during the monitoring visit, as the fences for livestock management installed in Alpanseque and Retortillo de Soria had no clear reference to the LIFE funding. These deficiencies have been properly solved, and all livestock fencings and repaired roads have clear and unequivocal signalling to the LIFE Ricotí project (see Figures 6. 21 to 6.25).

Figure 6.21. Pictures of works included in the LSP. Left, viewpoint at Arbujuelo; right, livestock fencing in Arbujuelo, both from agreement with Ranz-Ramírez.

Figure 6.22. Pictures of works included in the LSP. Left, road repaired in Barahona (contract with Barahona municipality); middle, road repaired in Marazovel (within the contract signed with Alpanseque municipality); right, road repaired in Rello (contract with Rello municipality).

Figure 6.23. Pictures of works included in the LSP. Left, road repaired in Alcubilla (contract with Alcubilla municipality); middle, road repaired in Arenillas (contract with Arenillas municipality); right, road repaired in Retortillo (contract with Retortillo municipality).

Figure 6.24. Pictures of works included in the LSP. Livestock fencings in Marazovel, both from agreement with Alpanseque municipality.

Figure 6.25. Pictures of works included in the LSP. Livestock fencings in Retortillo, from agreement with Retortillo municipality.

B. Ornithological Tourism Program (OTP)

Actions carried out within the OTP are the following:

- Writing of the guidelines for the Action Plan of the OTP. These guidelines were drawn up through technical assistance granted by DIPUTACIÓN, which ended by December 2017. The final document is called: *Guidelines for the use and exploitation of the bird watching activity as a tourist resource, with special emphasis on the Dupont's lark*. It establishes conditions for the use and exploitation of bird watching as a tourist resource, with a special impact on Dupont's lark. This document is the basis on which the entire OTP have been developed.

- Implementation by DIPUTACION of the network of tourist establishments associated with the OTP. It came into force in March 2018 and at present (December 2021) 31 establishments have been incorporated at the moment of writing this report.
- ARTESA elaborated the Supporting Plan for Entrepreneurs. This is the base document to guide entrepreneurs who want to start businesses related with ornithological tourism in the area. At present one company has an active tour than can be contracted (see https://www.soriavacaciones.es/tours/fin-de-semana-birdwatching-de-luxe).

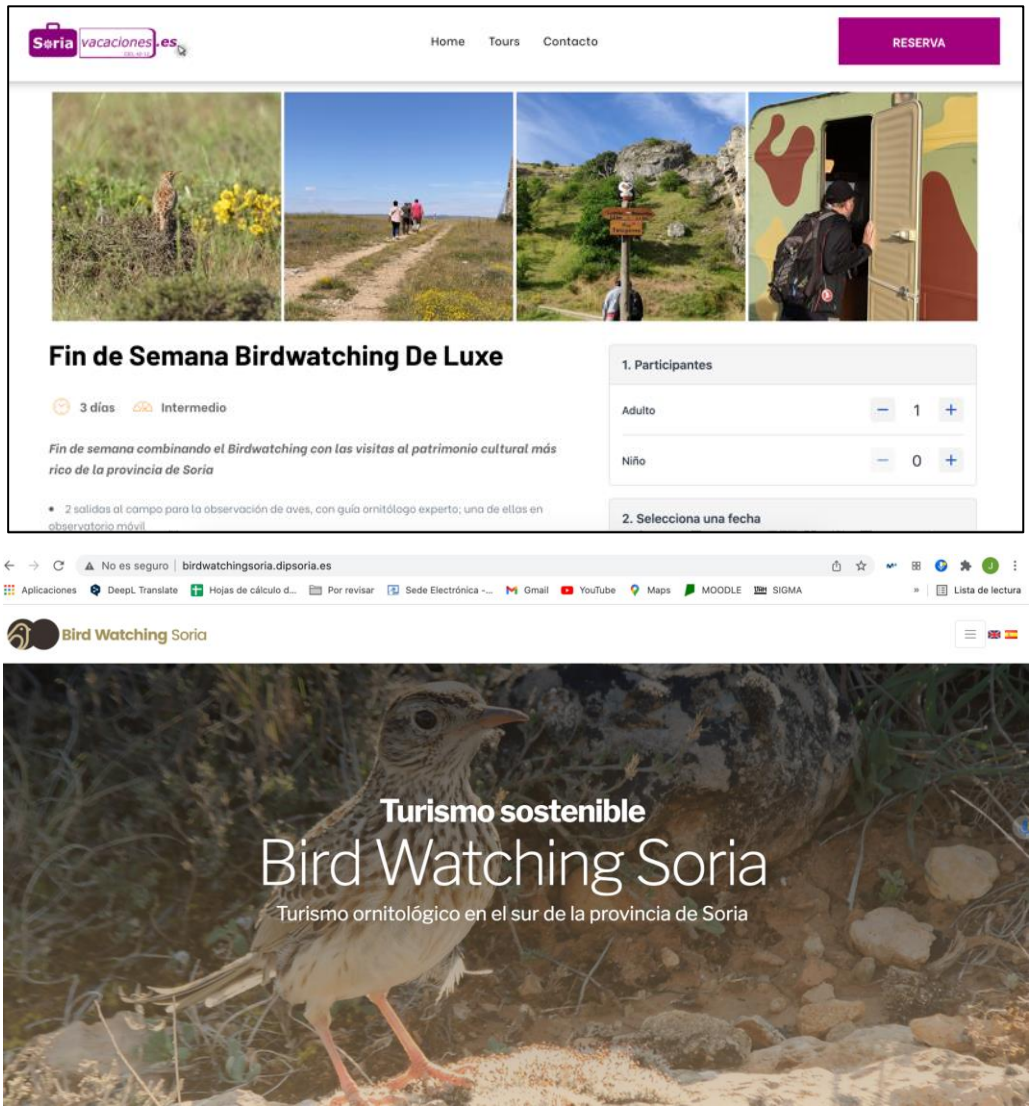


Figure 6.26. Top: Snapshot of the webpage where bird watching tours within the OTP can be contracted. Bottom: Snapshot of the webpage of Bird Watching Soria (birdwatchingsoria.dipsoria.es).

- DIPUTACION elaborated the Pilot Marketing Plan that was initiated with a workshop in Medinaceli in October 2018 and was developed throughout 2019 and 2021 (COVID-19 pandemic prevented to be fully implemented until 2021).

- In January 2018, the first of the four days of environmental education planned was held, aimed at primary school students from the schools of the area. Around 350 children participated. This task was carried out by DIPUTACION through an external assistance.
- In June 2018, DIPUTACION granted the construction of 2 bird observatories through external assistance that were completed in September 2018 (see Figure 6.27).
- In April 2019, the second of the four planned environmental education days was held, aimed at primary and secondary school students from schools in the area with a total of 227 children participating. This task was carried out by DIPUTACIÓN through external assistance.
- In August 2019, the third and fourth of the planned environmental education days were held. They were held in several villages within the project's scope: Retortillo de Soria, Barahona, Arenillas and Medinaceli. A minimum of 50 people participated. This task was carried out by DIPUTACIÓN through an external aid.
- Two promotional videos (one short time – 30 seconds -, one long-time – 2.30 minutes -) have been fully elaborated to disseminate via Internet the Ornithological Tourism Program.

Figure 6.27. Two pictures of the fixed (top) and mobile (down) observatories.

Figure 6.28. Snapshot of the promotional videos of the OTP.

- Ornithological guides training courses began in spring 2019, extending until autumn 2020, totalling 43 ornithological guides fully trained.
- Several ornithological routes have been designed and signalled, following the *Birdwatching in Soria* guide (Figure 6.29 to 6.33).
- AEPMA designed the outdoors Interpretation Centres that were finally in the municipalities of Barahona and Medinaceli, which were installed by June 2019 (Figure 6.33).

Figure 6.29. Signalling of the ornithological routes designed within the LIFE Ricotí project, located in Rello.

Figure 6.30. Signalling of the ornithological routes designed within the LIFE Ricotí project, located in Lumías (left) and Arenillas (right).

Figure 6.31. Signalling of the ornithological routes designed within the LIFE Ricotí project, located in Venta de Tiermes.

Figure 6.32. Signalling of the ornithological routes designed within the LIFE Ricotí project, located in Retortillo (left and middle) and Arbujuelo (right).

Figure 6.33. On the left panels, signalling of the LIFE Ricotí project and ornithological routes. On the right panels, children's playgrounds in outdoors Interpretation Centres in Medinaceli.

- A self-evaluation of efficiency of bird observatories, particularly the mobile one, was carried out in February 2021 by DIPUTACION. Results were satisfactory and served to improve some aspects of the facilities.
- Three familiarization trips were conducted between June and August 2021, as part of the experimental pilot marketing plan. Trips were addressed to: i) experienced ornithologists, ii) nature tourism tour operators and, iii) environmental press. Total number of participants was 15.
- In September 2021 a local tour operator (Soria Vacaciones S.L.) joined the OTP in order to be in charge of management and marketing of the tourist package. This company assumed the management of the web page (http://birdwatchingsoria.dipsoria.es) and the

coordination with DIPUTACION, with associated tourist establishments and with local ornithological guide companies.

- Two local ornithological and nature guide companies joined the commercial exploitation of the OTP: Photo&Birding Soria and Robin de los Bosques.
- The continuity of the OTP after the end of the LIFE project is guaranteed by the participation of the above-mentioned companies. DIPUTACION assigned to Soria Vacaciones S.L. the management and commercialization of the tourist package and all the products created: bird guide, ornithological routes, bird observatories, web page and contacts with the hotel and catering establishments associated with the project. In addition, two local bird guide companies guarantee the existence of a local service for those clients who require it.

Some minor problems were detected during the monitoring visit, as the mobile observatory had no clear reference to the LIFE funding. This deficiency has been properly solved (see Figures 6. 27).

Table 6.22. Project milestones Action C5.

Milestone	**Deadline**	
	Scheduled	**Actual**
Start of Land Stewardship Program	2/01/2017	2/01/2017
Ending and evaluation of the LSP	15/02/2021	15/02/2021

6.1.18. Action D1. Monitoring of bird populations: censuses, captures, ringing, nests, reproductive success, use of space (responsible beneficiary: UAM)

Foreseen start date:	March 2018	Actual start date:	March 2018
Foreseen end date:	February 2021	Actual end date:	September 2021

Action D1 is successfully finished.

Actions D1 aimed to determine the effects of the conservation actions carried out in the LIFE Ricotí project on Dupont's lark, focused on bird populations.

The indicators to evaluate the efficacy of the conservation actions were: i) population size; ii) distribution area; iii) movements; iv) connectivity; and v) diet. Data have been obtained through transects, captures and collection of biological samples. Additionally, data of coexisting birds were taken for comparison.

Monitoring actions started in 2018 spring and continued until the end of the project. All monitoring actions had their corresponding deliverable. Last monitoring census was scheduled for spring 2020, though COVID-19 pandemic prevented the realisation of field works, which were transferred to spring 2021, after the requested extension was approved.

i) Population size:

During years 2018-2021 (due to COVID-19 restrictions in 2020), we compared control and restored areas to compare success of conservation actions. During 2021 we carried out bird censuses in all localities, not only control and restored ones, to have a general view of population change by comparing with similar censuses carried out in 2017 (see Action A2). A series of deliverables included partial and final results of this monitoring action (44, 54, 63, 66 and 73).

As a general result, **conservation actions significantly increased Dupont's lark population size** within fields under restoration (Table 6.23). The number of Dupont's lark territories increased **from 9 in 2017 to 26 in 2021** (+189%; **up to 37 territories in 2020**, +311%, before Filomena storm) with **confirmed reproduction**: nests with eggs and female with fledglings were seen in both Retortillo and Barahona restored areas, respectively. Following the expected results of the LIFE Ricotí project, as included in the proposal, and considering an occupancy rate of 50% in these territories, we could have expected a population increase of 15-40 reproductive pairs, so **we have reached the target of the project**. The success of conservation actions within the LIFE Ricotí project is indisputable.

Comparative census showed a dramatic decrease in general population size (not specially within restored plots, see Figure 6.25) between 2017 and 2021, and especially after winter 2020, when Filomena storm affected practically the whole Iberian distribution. Filomena was a huge three-days snowstorm that affected eastern Iberian Peninsula, covering with 25-50 cm of snow all the breeding (and wintering, as it is a sedentary species) grounds of the species. No place for temporal escape could be found. Then, the next three weeks (January 2021 6-27) of sub-zero temperatures affected the same areas, thus allowing the snow to keep unaltered. This catastrophic weather event caused a documented dramatic decrease in population sizes between 2020 and 2021 in many breeding areas (between -60% to -80% in censused areas of Castilla y León and Castilla-La Mancha; see Traba et al. 2021, oral communication in Workshop

of working group of the Dupont´s lark). In LIFE Ricotí areas, this provoked a marked decrease in the whole study area, being this especially steep in control areas, but not in restored areas.

Table 6.23. Changes in population size (number of males) and density between spring 2017 and spring 2021. It is also included data on spring 2020, when just a few censused could be done due to COVID-19 restrictions.

SPA	Subpopulation	Locality	Males 2017	Males 2020	Density 2020 (males/10 ha)	Males 2021	Density 2021 (males/10 ha)	Change ratio 2017-2021 (%)
Altos de Barahona	Retortillo - Barahona	Arenillas y la Riba de Escalote	25	-	-	14	0.46	-44.00
		Barahona - Rello	139	73	-	86	0.84	-38.13
		Barahona - Torrecilla	3	-	-	0	0.00	-100.00
		Barahona - El Caballo Oeste	4	-	-	0	0.00	-100.00
		Barcones y Marazovel	134	83	0.75	48	0.43	-64.18
		Barcones - La Atalaya	4	-	-	7	0.83	75.00
		Barcones - La Lastrilla	1	-	-	0	0.00	-100.00
		Barcones - Valdeliendre y Beatrias	24	-	-	8	0.16	-66.67
		Arenillas - Las Sielvas	1	-	-	0	0.00	-100.00
		Lumias - Los Llanillos	9	-	-	1	0.08	-88.89
		Retortillo - Los Bachos	78	-	-	29	0.43	-62.82
		Retortillo - La Lastra	98	62	-	58	0.62	-40.82
		Total subpopulation Retortillo - Barahona	**520**	**218**	**0.75**	**251**	**0.32**	**-60.88**
	Mezquetillas - Alcubilla de las Peñas - Corredor de Medinaceli - Layna	Alcubilla de las Peñas	7	2	0.10	0	0.00	-100.00
		Mezquetillas	67	-	-	27	0.41	-59.70
		Depósito	0	0	0.00	0	0.00	0.00
		TOTAL SPA Altos de Barahona	**594**	**220**	**0.28**	**278**	**0.28**	**-59.35**
Páramo de Layna	Mezquetillas - Alcubilla de las Peñas - Corredor de Medinaceli - Layna	Layna	192	20	-	106	0.46	-44.79
	Total subpopulation Mezquetillas - Alcubilla de las Peñas - Corredor de Medinaceli - Layna		**266**	**22**	**0.05**	**133**	**0.22**	**-51.12**
		TOTAL SPA Páramo de Layna	**192**	**20**	**-**	**106**	**0.46**	**-44.79**
		TOTAL SPAs	786	**240**	**0.28**	**384**	**0.30**	**-58.44**

As already predicted in the Population Viability Analysis (Action A5), this species seems to show rapid positive responses in demographic parameters, when actions aimed at improving the quality of the habitat are implemented. Therefore, increasing the survival of chickens and juveniles significantly improves the risk of extinction of specific populations and patches, which should explain the positive effect of conservation actions on restored areas, despite the negative trend on control ones. Therefore, this should help to impulse conservation actions in a relevant greater area, to allow recovery of the species in its whole distribution.

As a conclusion, we can suggest that restored areas allowed to buffer the negative effects of Filomena and thus yet maintaining a healthy population in Southern Soria (Figure 6.34).

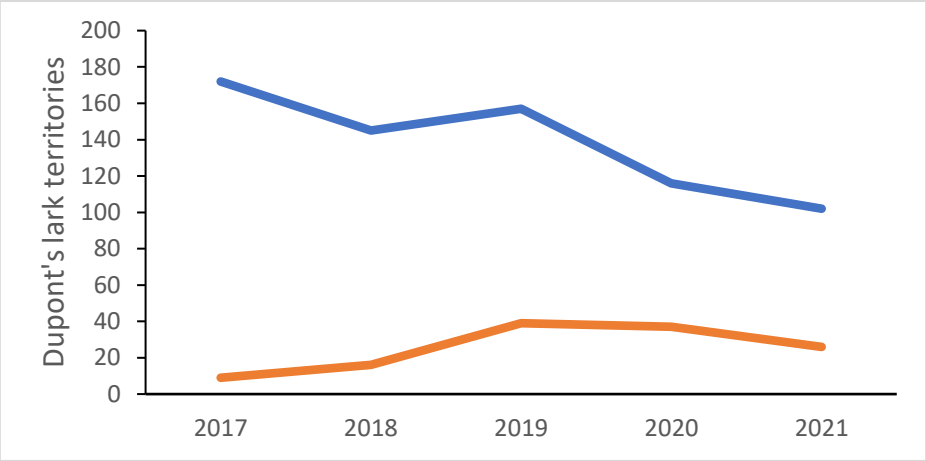
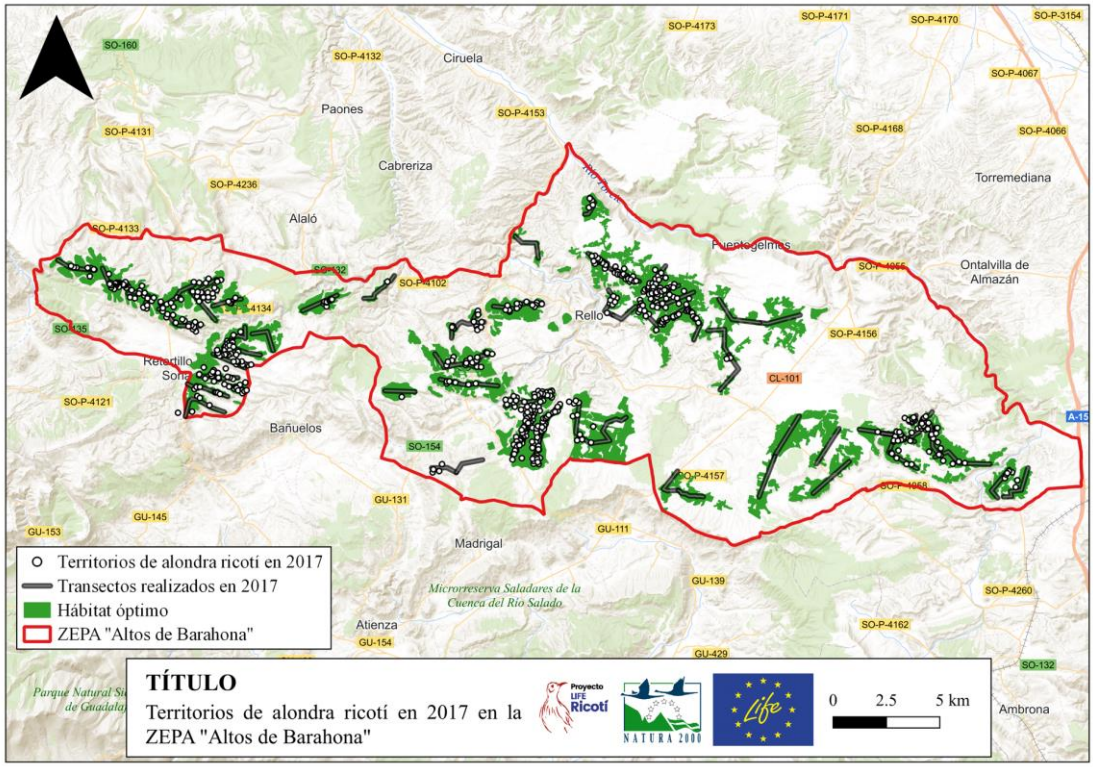


Figure 6.34. Trends in Dupont's lark population size (estimated as number of territorial males censused) in comparative areas in the period 2017-2021. Blue line shows control areas (from 172 to 102 males, -41%) and orange line shows restored areas under LIFE Ricotí project conservation actions (from 9 to 26 territories; +189%; up to 37 territories in 2020, +311%)

ii) Distribution area:

After 2021 censuses we evaluated changes in the distribution of the species in the whole study area. As can be seen in the maps (Figures 6.35 and 6.36), the distribution of the species practically has reduced, probably due to the steep decrease in number of territories after winter 2020. Some localities with presence of the species during 2017 were unoccupied during spring 2021 (see Table 6.23 and Figures 6.35 and 6.36): Barahona-Torrecilla; Barahona-El Caballo Oeste; Barcones-La Lastrilla; Arenillas-Las Sielvas; and Alcubilla de las Peñas. All these localities except Alcubilla had less than 5 individuals in 2017 (Alcubilla had 7 males), which makes them especially vulnerable to stochastic extinctions (see PVA results in Action A5). None of these localities were included in the conservation actions.



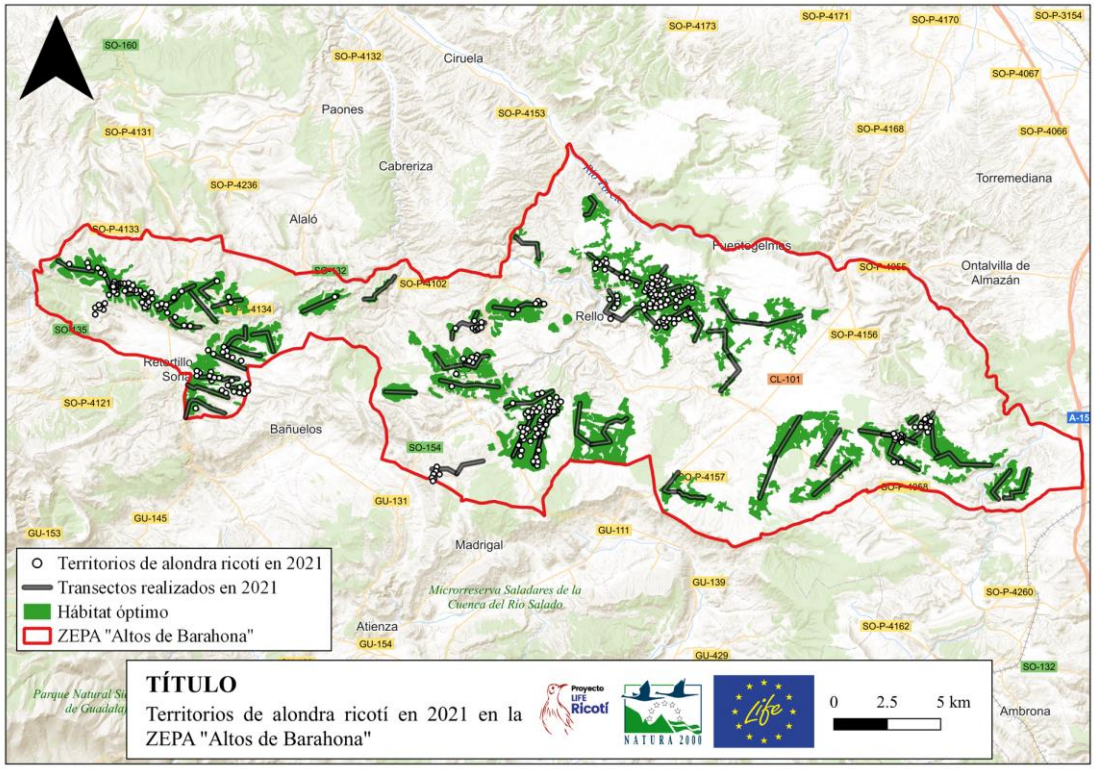


Figure 6.35. Transects (lines) carried out and territories (circles) censused in Barahona SPA during 2017 (top) and 2021 (bottom) springs.

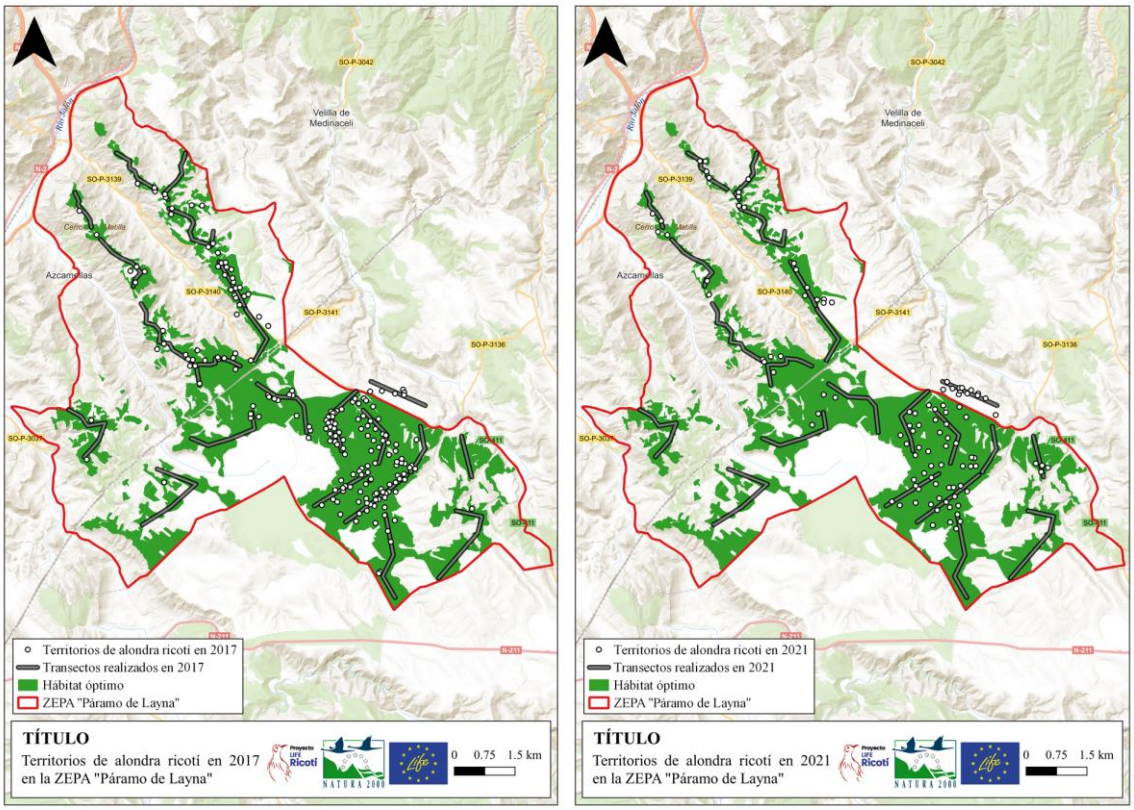


Figure 6.36. Transects (lines) carried out and territories (circles) censused in Layna SPA during 2017 (left) and 2021 (right) springs.

iii) Movements and iv) Connectivity

To identify origin and movements, and potential connectivity of the individuals that could eventually be detected in the areas where C actions of habitat restoration were carried out, during 2017 and 2018 we captured and marked birds with colour-rings. This monitoring has been maintained in 2019, 2020 and 2021. In total, we marked around 400 birds from areas within the LIFE Ricotí project and around 100 birds from different areas within the whole Iberian distribution, to test for movements and connectivity. Visual re-captures, useful for estimating movements, dispersal distance (mean, maximum, etc.), longevity, etc., were extraordinary scarce, suggesting a low interannual survival, or a higher-than-expected adult movements.

In this sense, data from technology based on molecular genetics provided evidence that the degree of exchange of individuals (connectivity) between populations is higher than previously thought. We extracted blood samples from each captured bird (N=400 + 61 individuals from Morocco). Genetic analyses were carried out by external assistances at the Instituto de Investigación en Recursos Cinegéticos and Universidad de Castilla-La Mancha. Results suggest the existence of (only) 5 clusters (genetic regions) in Spain and 4 in Morocco, based in genetic similarity (Figure 6.37). Based on the Mantel Tests carried out to test the importance of geographic vs. genetic distances, we obtained significant correlations in Spain ($R=0.07$, $p<0.05$) and in Morocco ($R=0.177$, $p<0.05$). This result shows the importance of the geographic distance on the genetics, as more distanced populations tended to be more genetically differentiated. Hence, this result shows the effect of isolation by distance (IBD). Gene flow

estimates showed that more distant populations (SS and AA) were less connected than the closer ones. In Spain, we observed how the Ebro Valley (EV), Iberian Mountains (IM) and South Plateau (SP) were more interconnected (Figure 6.28). As mentioned before, in Morocco, the Anti-Atlas region (AA) was the most isolated one. Meanwhile, Midelt, Rekkam and Ain Bni Mathar showed higher degrees of gene flow (Figure 6.28). Detailed information can be found in the specific report on genetic results.

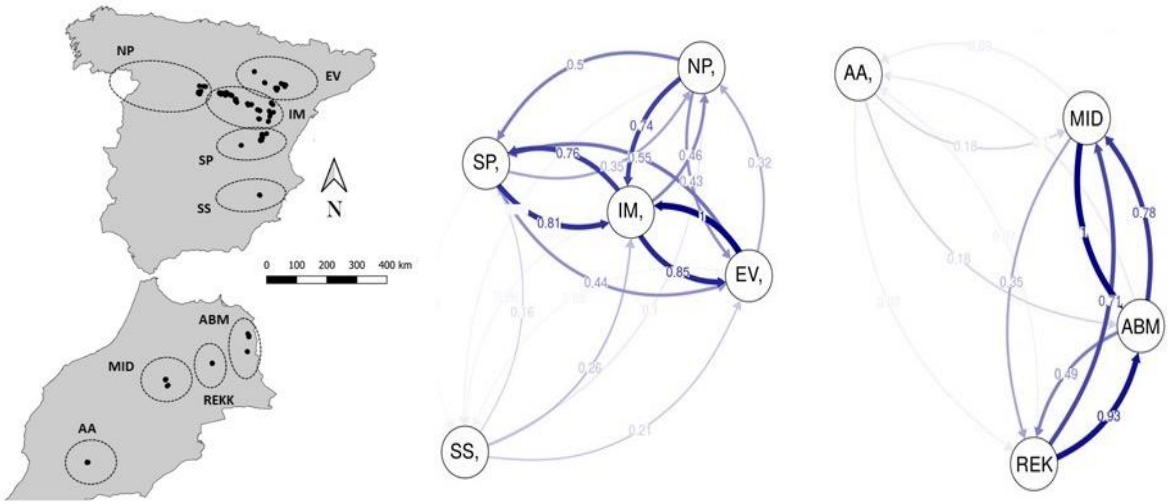


Figure 6.37. Left panel: Clusters based on genetic similarities found in Spain (5) and Morocco (4). Centre and Right panels: Connectivity graphs of 5 regions of Dupont´s lark in Spain (centre) and 4 regions in Morocco (right). Wider and darker arrows represent the most connected sites of this study with the highest relative connectivity. Detailed information can be found in the specific report on genetic results.

v) Diet

We monitored the effects of conservation actions on the availability of food for the Dupont's lark. During bird captures we collected dung samples from around 400 individuals. The samples were analysed by the technique of massive genotyping (DNA metabarcoding). This technique is based on the amplification of a common standard DNA region using universal primers, for a fast and accurate identification of the species whose DNA is present in the faecal sample. This method allowed to arrange series of data referred to the diet for two comparison scenarios: the study area at the beginning *vs*. end of the LIFE Ricotí project, and in areas where conservation actions were carried out, both before *vs*. after (BACI methodology). These analyses were carried out by external assistances to the Centro de Biología Molecular Severo Ochoa-CSIC and by Parque Tecnológico de Madrid.

Of all the adult samples collected in southern Soria, we were able to sequence with the first 18S primer: 111 samples of Dupont's lark, 26 of Skylark, 28 of Tawny pipit, 30 of Short-toed lark, 22 of Northern wheatear and 30 of Black-eared wheatear. After bioinformatic analysis, a total of 5350 OTUs were obtained and assigned to 361 taxonomic groups, of which 23 were arthropods, 2 were annelids and 1 was a mollusc. 10 out of the 22 arthropod taxa were considered as diet: Araneae, Opilions, Pseudoscorpions, Lepidoptera, Coleoptera, Blattodea,

Diptera, Hemiptera, Hymenoptera and Orthoptera. Two more arthropod taxa considered diet were at the subclass level: Pleurostigmophora (scolopendra) and Helminthomorpha (millipedes). The remaining arthropod taxa (Collembola, Cyclopoida, Eucarida, Phthiraptera, Psocoptera, Acari, Eumalacostraca, Copepoda, Ellipura and Maxillopoda) were not considered diet because they are either parasites or their size is so small that they must have been consumed indirectly through the stomach contents of predatory arthropods.

A mean of 2.35 arthropod taxa considered diet (order and subclass) per sample was detected (SD = 1.44, range = 0-6). The most frequently consumed prey items by the six species were Coleoptera, spiders, Orthoptera, Lepidoptera and Hymenoptera, varying in frequency among species (Figure 6.38).

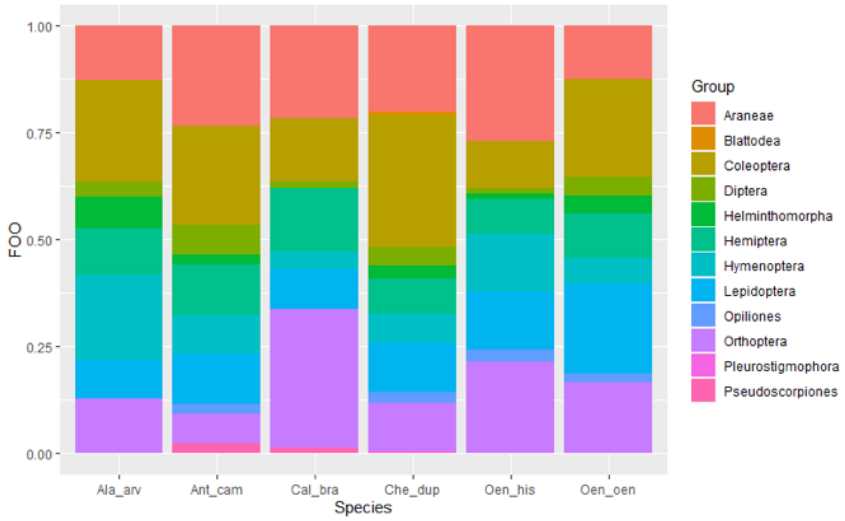


Figure 6.38. Bar graph showing the frequency of occurrence (FOO) of each of the arthropod groups detected by the first 18S for each of the passerine species studied (Ala_arv: Skylark; Ant_cam: Tawny pipit; Cal_bra: Short-toed lark; Che_dup: Dupont's lark; Oen_oen: Northern wheatear; Oen_his: Black-eared wheatear).

The PERMANOVA model performed with the presence/absence data of the arthropod groups showed that the diet among the six passerine species was significantly different ($F = 3.45$; p-value < 0.001). In addition, the SIMPER analysis allowed us to determine which arthropod groups showed differences between the meadowlark and the other bird species (Table 6.24).

Molecular analyses carried out with the 18S primer of the samples collected in Soria indicated that the feeding base of the six steppe passerines studied is mainly composed of Coleoptera, spiders, Lepidoptera, Orthoptera, Hymenoptera, Diptera and Hemiptera. However, arthropod consumption varies significantly among species. In the specific case of the **Dupont's lark**, a higher **general consumption of Coleoptera was observed**, **followed by spiders**. In addition, considering the richness of arthropod groups captured in the area by pitfall traps and that we can consider as diet (17), we can confirm that **the diet of the birds studied is diverse.**

The trophic niche overlap analysis revealed a high overlap between the species studied, with the Short-toed lark being the species with the highest trophic niche partitioning with the rest of the species, mainly due to the greater consumption of Orthoptera. On the other hand, the

Dupont's lark showed a greater similarity of trophic niche with the Tawny Pipit, although the individuals of the former consumed more Coleoptera, and those of the latter more Diptera. These results indicate that the coexisting species in the páramo of southern Soria compete for the same resources, although they show differences in the success of exploiting the different prey that reduce their competitive trophic overlap.

Table 6.24. Results of the SIMPER analysis for the contrasts between the Dupont's lark and the rest of the coexisting species in southern Soria. Only the p-value is shown for the arthropod groups with significant or marginally significant results (*). The colour assigned to each species (red: Dupont's lark; green: Skylark; blue: Tawny pipit; orange: Short-toed lark; gray: Northern wheatear; yellow: Black-eared wheatear) indicates the species with the highest mean for the taxon in question. For example, in the skylark-Dupont's lark contrast, the p-value in red for the Coleoptera group indicates that the mean of this group is higher for the first species.

	Dupont's lark – Skylark	Dupont's lark – Tawny pipit	Dupont's lark – Short-toed lark	Dupont's lark – Northern wheatear	Dupont's lark – Black-eared wheatear
Coleoptera	0.041	0.036	-	-	-
Hymenoptera	0.004	-	-	-	-
Helminthomorpha	0.040	-	-	-	-
Diptera	-	0.043	-	-	-
Orthoptera	-	-	0.001	-	0.063*
Lepidoptera	-	-	-	0.005	-
Araneae					0.062*

Finally, the molecular analysis of the Dupont's lark samples collected in the rest of its Spanish distribution reinforced the results obtained with the samples from Soria, concluding that the diet of this species is mainly composed of Coleoptera, spiders, Orthoptera, Lepidoptera and Diptera. Detailed information can be found in the specific report on metabarcoding results.

Table 6.25. Project milestones Action D1.

Milestone	Action	Deadline	
		Scheduled	Actual
Starting field work 2018	D1	1/03/2018	1/03/2018
Starting field work 2019	D1	1/03/2019	1/03/2019
Starting genetic and diet lab analysis	D1	2/01/2020	10/10/2018
Starting field work 2020	D1	2/03/2020	2/03/2020

6.1.19. Actions D2. Monitoring habitat structure and composition (responsible beneficiary: UAM)

Foreseen start date:	April 2018	Actual start date:	April 2018
Foreseen end date:	February 2021	Actual end date:	September 2021

Action D2 is successfully finished.

Actions D2 aimed to monitor the successional evolution of plant structure and composition in those areas where restoration and improvement of Dupont's lark habitats were carried out.

Monitoring actions started in 2018 spring and have continued until the end of the project. Several deliverables have been written as scheduled (see Deliverables 41, 53, 64, 74).

Samplings have been designed to estimate habitat characteristics in the study areas. In order to have a control situation, sampling was made also in areas not subjected to conservation actions (control areas, see preparatory action A2), and in areas where conservation measures have been carried out (restored areas). Likewise, and to evaluate sign and intensity of change produced by conservation actions, habitat data of preparatory action A2 was used to comparative purposes (BACI design: Before-After-Control-Impact).

At the end of the project, all data have been collected and pre-analysed, obtaining interesting results. Plant structure, both horizontal and vertical, was similar between sites where conservation actions have been carried out and those used as control. The floristic composition behaved similarly to the plant structure and differences could only be observed in the area where restoration was more recent (Retortillo; holm oak clearing in late 2018). In general, restored areas presented plant composition (and species abundance) very similar to those of control ones, being always plant communities dominated by basophilous scrubs and shrubs such as gorse, thyme and sage. Conservation actions increased vegetation cover in general and in herbaceous plants such as *Anthyllis vulneraria* and *Festuca hystrix* in the restored areas (Barahona, Retortillo and Arbujuelo), as well as a decrease in bare soil. Besides, floristic structure and composition of the vegetation in the conservation areas did not differ from structure and composition of the control ones.

We can conclude that the general trend is that of a h**igh similarity of the restored areas with the control ones**, which are optimal habitat for the Dupont's lark. In addition, this trend of closeness in terms of structure and floristic composition of the vegetation between control and restored areas was increasing with each year of monitoring. Therefore, from the vegetation point of view, restoration actions successfully increased the surface of optimal areas for the Dupont's lark. These results suggest that **conservation measures contribute to the improvement of the habitat in relation to the plant structure and floristic composition**, so these factors would not be an impediment to the colonisation of the restored areas by the Dupont's lark (Figures 6.39, 6.40, 6.41).

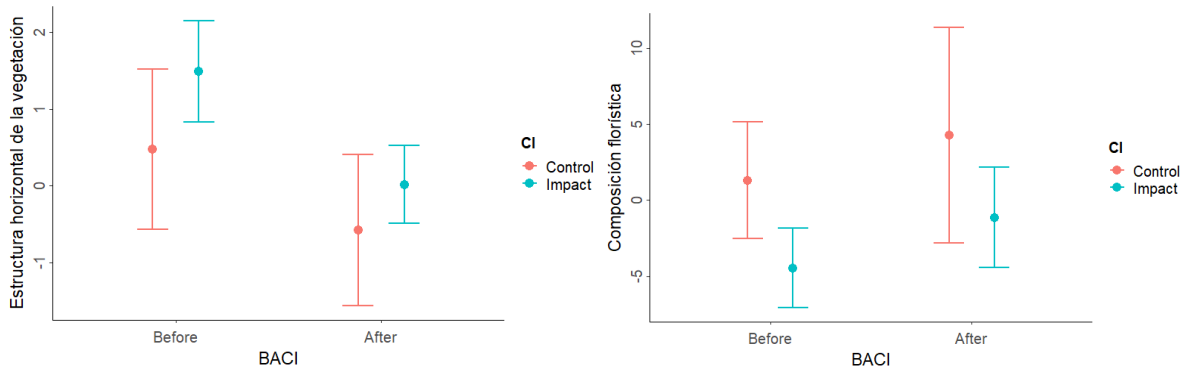


Figure 6.39. Plots (mean ± SD) showing values of (left) plant structure and (right) floristic composition after correspondent Principal Component Analysis, before and after habitat restoration under conservation action C1. Red: control areas; Blue: restored areas.

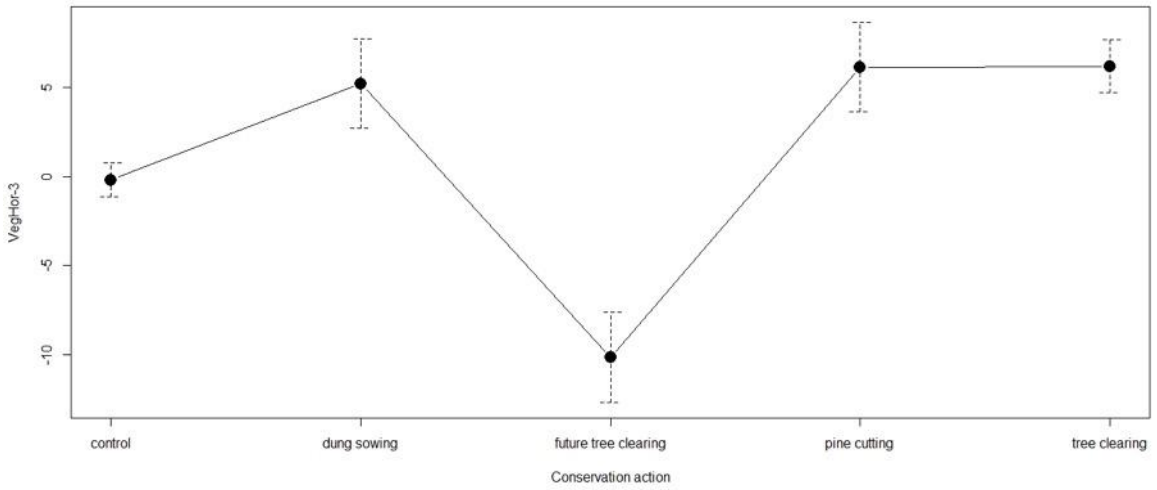


Figure 6.40. Graphic showing results from PCA resuming horizontal plant structure for different types of conservation actions.

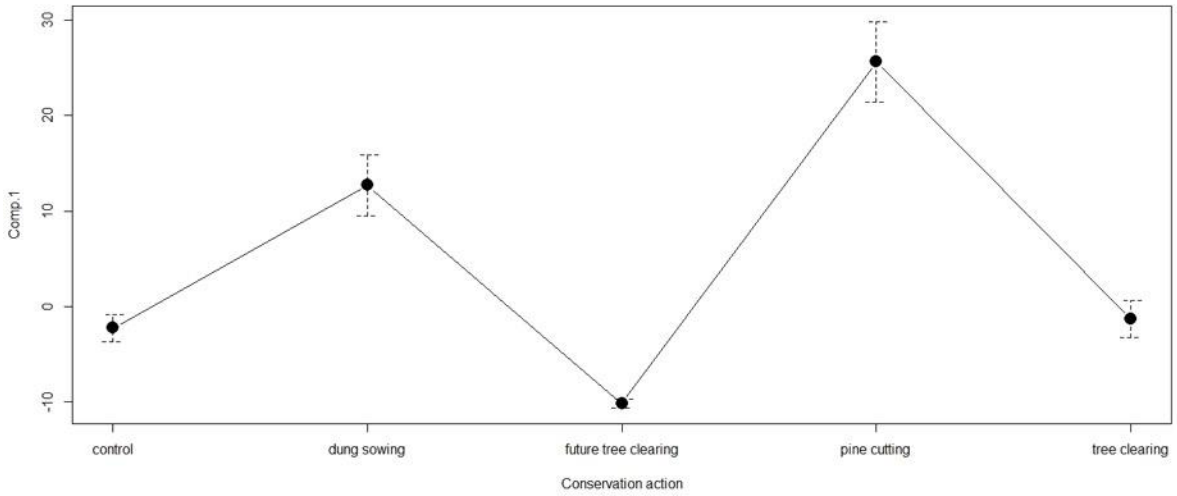


Figure 6.41. Graphic showing results from PCA resuming floristic composition for different types of conservation actions.

Table 6.26. Project milestones Action D2.

Milestone	Action	Deadline	
		Scheduled	Actual
Starting habitat field work 2018	D2	16/04/2018	16/04/2018
Starting habitat field work 2019	D2	16/04/2019	16/04/2019
Starting habitat field work 2020	D2	16/04/2020	16/04/2020

6.1.20. Actions D3. Monitoring habitat quality for the Dupont's lark: food availability (responsible beneficiary: UAM)

Foreseen start date:	October 2017	Actual start date:	March 2018
Foreseen end date:	February 2021	Actual end date:	February 2021

Action D3 is successfully finished.

The objective of this action was to evaluate the effects of conservation actions (restoration and grazing emulation) on the quality of the Dupont's lark habitat, specifically on food availability. Monitoring actions started in 2018 spring and continued until the end of the project, but considering that this action was not included in the extension requested and approved. Several deliverables have been elaborated as scheduled (see Deliverables 51, 61, 65).

Samplings were designed to estimate invertebrate biomass available for the Dupont's lark in the study areas. In order to have a control situation, samples were taken in areas not subjected to conservation actions (see preparatory action A2). Likewise, and to evaluate sign and intensity of change produced by conservation actions, food availability data of preparatory action A2 were used to comparative purposes (BACI design: Before-After-Control-Impact).

In the same points where we sampled plant structure and composition (Monitoring action D2), we collected invertebrate biomass using pit-fall traps and nets. Pit-fall traps were field-located for a week in spring (3 times: March, April and May), summer (July), autumn (October) and winter (January). Harsh meteorological conditions in the study area during 2018 January - March (heavy rain and snow) prevented the collection of that samples.

After field works, a process of laboratory classification and determination was carried out. All samples were processed, and statistical analyses were carried out. Main results show that:

- In relation with epigean arthropods, action C3 **dung sowing showed a significant higher biomass** than the rest of zones of action or control.
- In relation with hipogeous arthropods, **no difference in biomass between zones of actions was found**.
- Regarding coprophagous Coleoptera, **no significant differences in biomass between zones of action or conservation** measured were found.

These results show **high similarity** in terms of arthropod biomass, between those areas where conservation measures have been carried out and the control areas **(zones of optimal habitat for the Dupont's lark)** (see some examples in Figures 6.42 and 6.43, but detailed information can be found in deliverable 65)**. These results suggest that conservation actions contributed to create optimal areas for the species.**

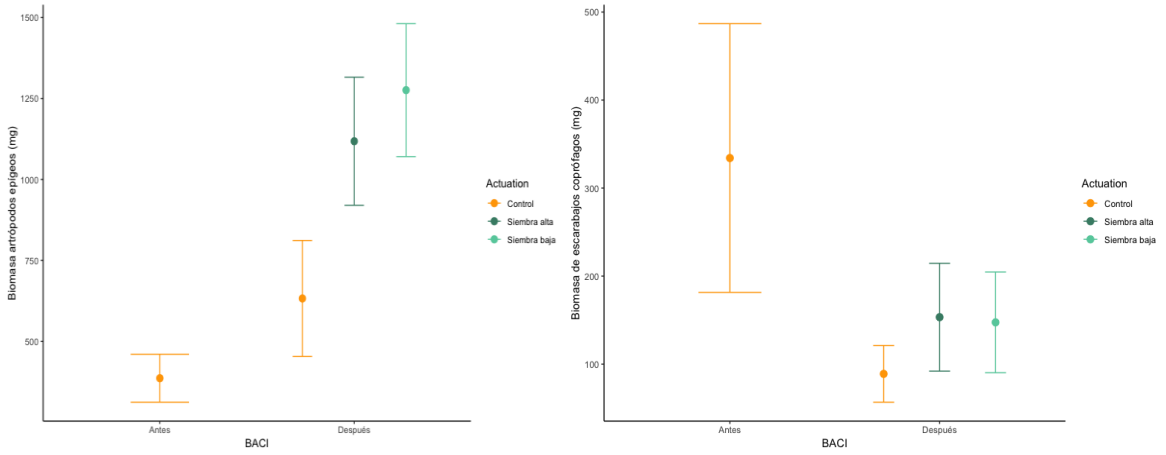


Figure 6.42. Biomass (Mean ± standard error) of epigean (left) and coprophagous (right) arthropods before and after restoration in control (orange) high (dark blue) and low (light blue) density of dung sown.

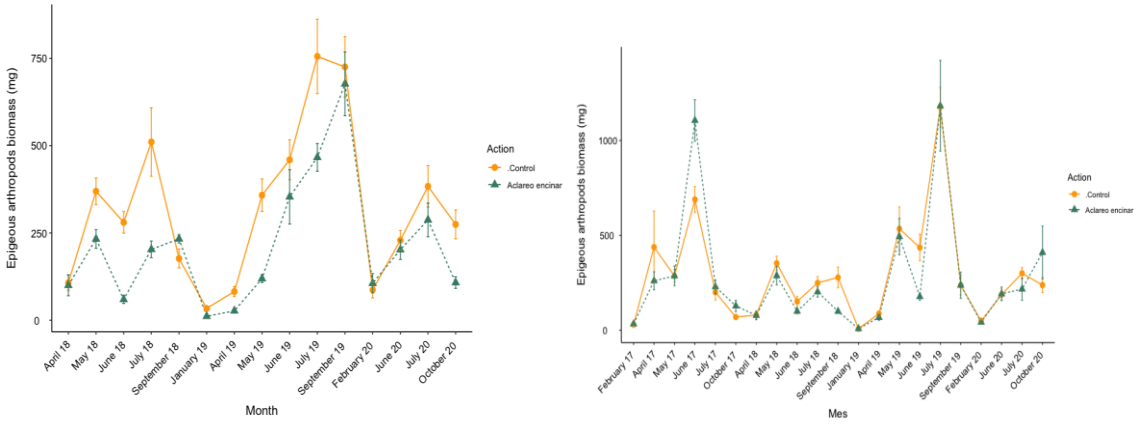


Figure 6.43. Temporal variation of biomass (Mean ± standard error) of epigean arthropods in Retortillo (left) and Barahona (right) before and after restoration in control (orange) and restored (light blue) areas.

A close relationship between sheep grazing and arthropod biomass (in a first place) and Dupont's lark space use (in a second phase) can be found after carefully analysis of data obtained. Thus, medium sheep grazing intensity relates positively with both arthropod biomass and Dupont's lark use (Figure 6.44). This result indicates the negative effect of decreasing extensive grazing in steppe areas, which may provoke Dupont's lark local extinctions (Figure 6.45).

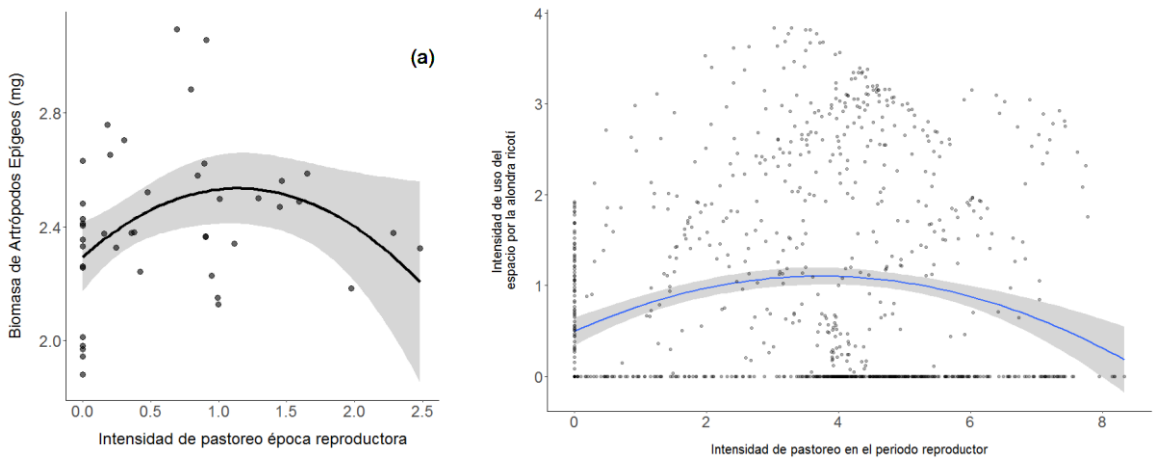


Figure 6.44 Left) Relationship between epigean arthropod biomass and grazing intensity in the reproductive season, and Right) Relationship between the intensity of space use by the Dupont's lark and the intensity of grazing during the reproductive period. Observations (dots) and model-predicted values are shown, both mean (line) and 95% confidence interval (gray surface). Figures from Gómez-Catasús et al (in prep.) with data from LIFE Ricotí project.

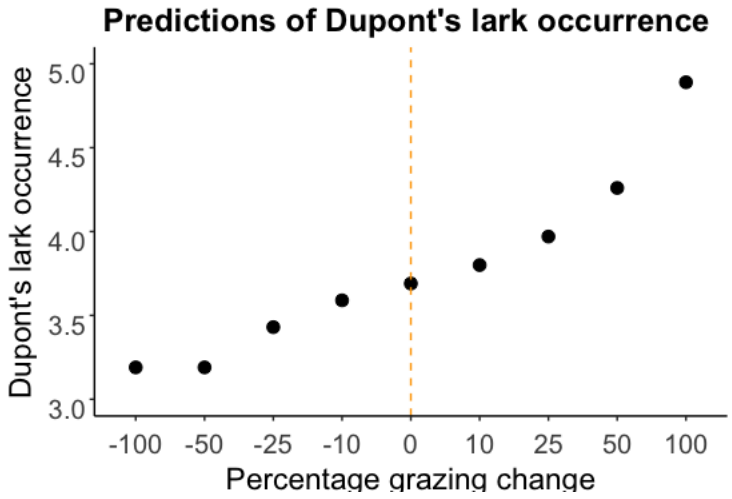


Figure 6.45. Predicted Dupont's lark occurrence under different scenarios of change in grazing intensity. Dotted red line indicates no change, which means at present situation. Scenarios predict the effect under increases of grazing pressure (to the right, positive values) or decreases (to the left, negative values). Figure from Reverter et al (in prep.) with data from LIFE Ricotí project.

Table 6.27. Project milestones Action D3.

Milestone	Action	Deadline	
		Scheduled	Actual
Starting food availability field work 2018	D3	16/10/2017	03/2018
Starting food availability field work 2019	D3	15/04/2019	15/04/2019
Starting food availability field work 2020	D3	15/04/2020	15/04/2020

6.1.21. Action D4. Monitoring of socio-economic impact of the project (responsible beneficiary: UAM; collaborating beneficiary: ARTESA)

Foreseen start date:	July 2018	Actual start date:	July 2018
Foreseen end date:	February 2021	Actual end date:	September 2021

Action D4 is successfully finished.

This Action aimed to evaluate changes in socio-economic variables and in the social perception regarding the LIFE Ricotí project, the LIFE program and the Natura 2000 Network, as a consequence of the LIFE Ricotí project implementation. These variables were tested at the beginning of the project in the study area, and results from preparatory Action A4 were used as a comparative reference framework (Action A4; deliverables 3 and 19). This Action has two pieces: evaluation of socio-economic impact of the project (itself), and evaluation of social perception changes due to the project implementation.

Socioeconomic impact

The socioeconomic study focused on analysing the characteristics of the study area in terms of employment, economic activities, supplementary income activities (eco-tourism), economic and social isolation and economic profile of the area. The initial assessment of the social and economic impact of the project was carried out between October 2016 and June 2017 (which corresponds with the aforementioned Action A4) and an inter- and post-project phase spanning from July 2018 to February 2021 (which corresponds to Action D4 called "Monitoring the socioeconomic impact of the project; see deliverable 79a).

Contents and scope of the socioeconomic study conducted in the pre- and post-project phases are as follows:

1. Demographic analysis and population dynamics.

    1.1. Population distribution. Population and human habitat. Structure by age and sex. Population dynamics and trends.

2. Analysis of the economic factors that characterize the study area.

    2.1. Employment/Active population, distribution of employment by sector. Unemployment rate.

    2.2. Primary sector. Activities related to agriculture, livestock and forestry.

    2.3. Secondary sector. Activities related to industry and product transformation.

    2.4. Tertiary sector. Activities related to commerce and services.

3. Urban and territorial system. Analysis of the spatial organization of the territory

    3.1. Territorial structure and local administrative organization. Territorial organization. City councils, associations of municipalities and other local administrations. Public or private entities managing the territory.

    3.2. Infrastructures and equipment. Transport networks, telecommunications, industrial land, urban and rural infrastructure.

4. Urban planning regulations. Analysis of municipal urban planning regulations. Classification, zoning, land use and authorized activities mainly in rural land.

This whole analysis was based on a series of indicators that allowed an objective evaluation of the socioeconomic trend of the area and the impact of the project. These indicators are real, objectively quantifiable, provide clear and concise information and are easily interpretable. They have been divided into two types:

- General indicators of socioeconomic trend. They are related to variables that characterize socioeconomic reality of the area and correspond to points 1, 2, 3 and 4 of the table of contents proposed in Table 1 in the study.
- Specific indicators of project impact. These indicators try to measure which socioeconomic changes are due to the development of the project. They basically coincide with indicators proposed in section "6.3 Other environmental, social and economic factors" of the Excel table "LIFE-RICOTI Project Specific Indicators Call 2015_NAT-ES-0802" included as an attachment to the technical forms of the LIFE Ricotí Project application.

Expenses of the LIFE Ricotí project incurred directly within the scope of the project in the period 2016-2021 amount to € 879,620.97, broken down as follows.

- Per diem and travel: 87,003.91 €.
- External assistance. 658,971.35 €.
- Equipment: 11,431.40 €.
- Compensation payments: 66,166.60 €.
- Consumables: 10,200 €.
- Other costs: 45,847.71 €.

These expenses can be considered as direct investments in the area that have had a direct and immediate impact on local businesses in the secondary sector (through the restoration of land, road repairs, livestock fencing, construction of observatories, etc.), and the tertiary sector (travel, food and lodging expenses), as well as compensatory payments to landowners for loss of profits.

In general terms, the socioeconomic impact of the project is more related to social aspects than to direct economic aspects. The 175,924.194€ average annual expenditure in the study area of the project does not represent a relevant amount in the context of the local economy. However, the change in the local population's perception of the Natura 2000 Network sites and the Dupont's lark, the incorporation of 6 town councils into the Land Stewardship Program, the implementation of the guidelines for the use and management of the SPAs and the improvement of livestock infrastructures have laid the foundations for better management of the protected areas and an increase in the participation of the local population in them.

Analysis of social perception

As described in the first Progress Report (October 2017) and in Action A4, participatory workshops were foreseen within the social perception study. However, once the above-described works have successfully ended, and due to the clear results we obtained in Action A4, we considered to change these workshops by a new series of surveys to be carry out during

the last year of the project. This small technical modification was already approved (Ref. Ares-2017 5788544-27/11/2017; technical issues, nº 4). For this purpose, a survey campaign was conducted during summer 2021, comparing these results with those carried out in 2017.

Changes in social perception were evaluated by conducting surveys in summer 2021 and comparing with the pre-operational ones (see Action A4; see deliverable 79b), using a single approach: a socio-demographic study of perceptions and attitudes of the local population, through personal surveys.

The key messages obtained were (more detail in deliverable 79b):

1. 37.1% of respondents stated that they were **aware of the LIFE Ricotí Project** in the study area, which is **17.6% higher than that recorded in the 2017 surveys** (Figure 6.46). Official and non-official presentations carried out by the project were the two main channels through which respondents learned of the existence of the project (66%).

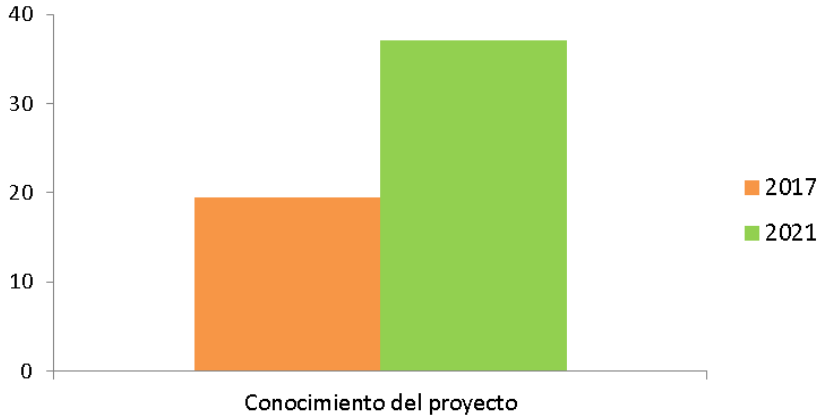


Figure 6.46. Percentage of people who said they were aware of the project in 2017 and 2021.

2. Almost all the objectives were better recognized in 2021 than in 2017. **The most recognized objective of the project was objective 1**, related to the conservation of the Dupont's lark (Figure 6.47).

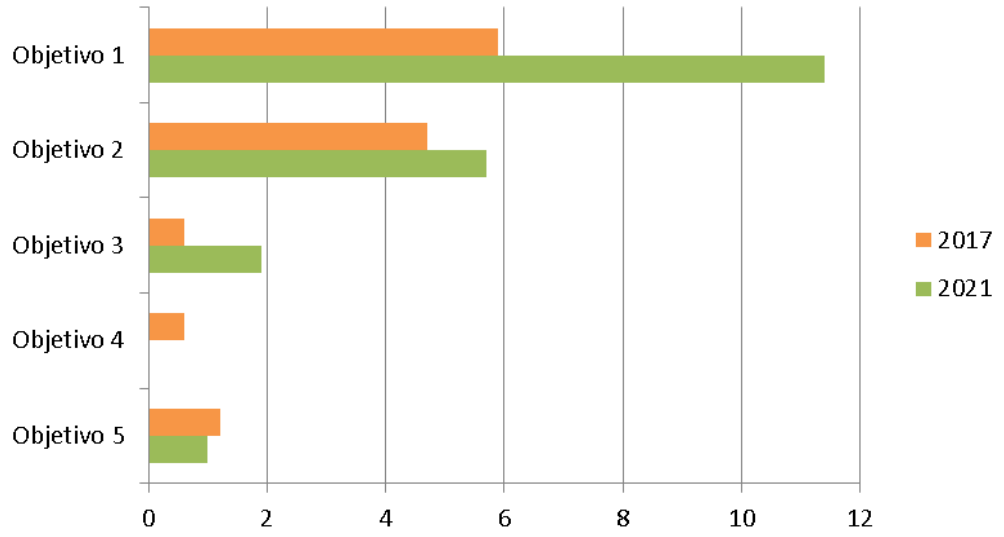


Figure 6.47. Percentage of respondents who were aware of any of the project objectives in 2017 and 2021.

3. **62.9% of the surveyed population considered that the project had brought some benefit to local populations**. The most mentioned benefits were environmental ones, linked to the conservation of the bird, its habitat and biodiversity in general, followed by environmental education and nature tourism.
4. 21.0% of respondents considered that the project had brought some harm to local populations during its development. By far the most frequently mentioned detriment was the perception that the project had limited the wind industry in the region.
5. The percentage of respondents who stated that they were **aware of the existence of SPAs in the study area increased by ten points compared to 2017** (Table 6.28). Thus, while in 2017 39.6% of respondents stated that they knew of the existence of special protection areas for birds in the south of the province of Soria, this value was 49.5% in 2021. For its part, the percentage of respondents who claimed to know the locations and names of either of the two SPAs increased more than 2-fold between 2017 and 2021.

Table 6.28. Knowledge of SPAs in southern Soria by respondents in 2017 and 2021.

Knowledge of SPAs	2017	2021
Knowing where is one of the SPAs	12.4	24.8
Knowing where are both SPAs	5.9	13.3
Naming one of the SPAs	3.5	8.6
Naming both SPAs	2.3	4.8

6. While only 9.5% of respondents recognized **the aspect of the Dupont's lark** in 2017, this value rose to **21.0%** in 2021 (Figure 6.48). On the other hand, while in 2017 13.6% of respondents were able to recognize both **the Dupont's lark habitat** and its feeding habits, these values rose to **24.8% and 20.0%** respectively in 2021. Finally, while in 2017 no person was able to correctly identify the lark's song, this value was 2.9% in 2021.

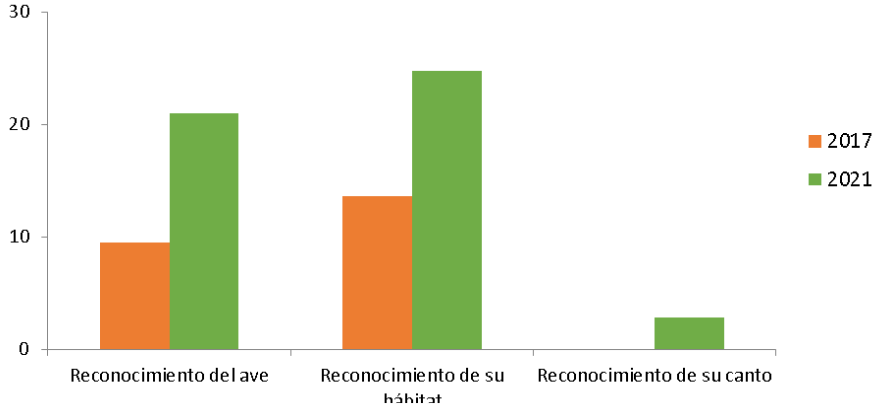


Figure 6.48. Recognition of the Dupont's lark, its habitat and song (from left to right) in 2017 and 2021.

7. As in 2017, those management measures that generated the greatest consensus among respondents were the promotion of knowledge of the páramo and its conservation problems (95.2%), the mitigation of rural depopulation (90.5%), the appropriate management of extensive livestock farming (82.9%), and the conservation of pine afforestations (79.0%).
8. 89.5% of respondents considered that **the presence of the Dupont's lark** in the SPAs of southern Soria **was positive** in contributing to the conservation of the páramo. This value was **10.8 points higher** than that recorded in 2017. In general, as was the case in 2017, respondents were **in favor of those measures that considered the Dupont's lark to be positive for the well-being of local populations**, and against those that suggested that its presence in the study area could be negative.
9. In contrast to what happened in 2017, the indexes of knowledge of the SPAs and of the Dupont's lark showed in 2021 a highly significant correlation between them. This result suggests that the **efforts made among local inhabitants of increasing the knowledge and valuation of the SPAs of southern Soria leads to a parallel increase in the knowledge of the Dupont's lark**, which is a key aspect for the conservation of the species.
10. Sociodemographic factors such as timespan of residence in the area, educational level and working in the primary sector were associated with a greater knowledge of the SPAs of southern Soria and of the Dupont's lark. In addition, the size of land ownership was associated with the level of knowledge of the SPAs, but not with the level of knowledge of the Dupont's lark. It should be noted that the levels of knowledge of SPAs and the Dupont's lark in 2017 were also associated with variables such as the time of residence in the area and the educational level of the respondents.

Table 6.29. Project milestones Action D4.

Milestone	**Deadline**	
	Scheduled	**Actual**
Starting surveys on socioeconomic impact	2/01/2020	2/01/2020

6.1.22. Action D5. Monitoring of the Land Stewardship Programme (responsible beneficiary: MANCOMUNI; collaborating beneficiaries: DIPUTACIÓN and ARTESA)

Foreseen start date:	July 2017	Actual start date:	July 2017- January 2018
Foreseen end date:	February 2021	Actual end date:	September 2021

Action D5 is successfully finished.

This action experienced a significant change in its structure due to the withdrawal of MANCOMUNI from the LIFE Ricotí Project. Therefore, UAM assumed duties and responsibilities of Mancomunidad de Obras y Servicios from September 2018 onwards.

The Land Stewardship Program (LSP) consisted of two parts: the LSP itself and the Ornithological Tourism Program (OTP). Monitoring of OTP started as scheduled (July 2017). However, delays in the signing of agreements included in Action A10 (related to Conservation Actions C1 to C4) provoked the start of monitoring LSP to be delayed with respect to planned schedule (starting date: July 2017). Finally, Action A10 finished in December 2017, so monitoring of LSP started in January 2018. As already mentioned in previous sections, this delay did not jeopardize the normal development of the Project as a whole. Two deliverables were elaborated (50, 78).

The objective of this action was to know the impact of measure C5 "Land Stewardship Programme (LSP)" through 3 specific tasks. The activities carried out in each of them were the following:

<u>Task 1. Monitoring of actions related to the improvement of livestock management</u>

ARTESA monitored those agreements reached between responsible partner (MANCOMUNI; UAM after withdrawal) and landowners (see Action C5). These agreements included carrying out improvement works in those fields to be incorporated to the LSP. Monitoring focused on the assessment of the suitability (both budgetary and ecologically speaking) of these works, and the potential improvement of livestock management these agreements may provide. In general, all agreed improvement works were considered suitable.

Actions carried out for the maintenance and improvement of extensive livestock management have been monitored. In general, they are all related to sheep management, although they are applicable to other types of livestock such as cattle. In most of the farms, access roads have been improved to facilitate the transit of livestock farmers and the supply of food and water to livestock.

During the process of negotiating the stewardship agreements, meetings were held with all stakeholders (landowners and local ranchers) and the most appropriate works were selected for each of the farms according to the needs of the ranchers. All stakeholders agree that the works carried out improve livestock management on the farms and facilitate the work of the farmers.

To assess the evolution of livestock farming, a comparison was made between the number of sheep livestock existing at the beginning (2016) and at the end (2021) of the LIFE Ricotí Project, although only official data from 2020 are available.

Data for 2016 show a census of 39,430 head of sheep in the 13 municipalities included in the project's area of action, distributed among all the municipalities except Alcubilla de las Peñas, Rello and Villasayas. 33% of the livestock were concentrated in the municipalities of Retortillo de Soria, Arcos de Jalón, Berlanga de Duero, Barcones and Barahona. For the year 2020 (the latest for which data is available) the livestock census amounts to 30,998 head of sheep, which represents a reduction of 21.38% with respect to 2016.

The area of the 13 municipalities total or partially included in the study area is 157,689.00 ha. The potential grazing area is approximately 68,000 ha (43% of the total area), so the stocking rate is 0.45 sheep/ha.

The potential habitat of the Dupont's lark included in the Altos de Barahona and Páramo de Layna SPAs is 10,414 ha, which represents 15% of the potential grazing surface. 30% of this area (3,060.97 ha) has been included in the LSP.

With the estimated livestock density for the study area, there enough pasture for the number of existing sheep, so the best quality pastures and those closest to the livestock farms tend to be grazed, to the detriment of some areas of potential habitat for the Dupont's lark, which are not grazed. This is the case of land in the municipalities of Alcubilla de las Peñas, Arenillas and Medinaceli.

After finishing the livestock improvement works included in the LSP in 2021, pastures in Alcubilla de las Peñas and areas of Medinaceli are grazed at present, and even cattle have been introduced in Arbujuelo (Medinaceli).

Task 2. Monitoring the actions related to the conservation of Dupont's lark habitat.

ARTESA carried out an analysis of the landowners with whom negotiations were established. All the municipalities have large extensions of potential habitat for the Dupont's lark, which has traditionally been used for pasture and hunting by local inhabitants.

Among the private landowners, some farms are used exclusively for pasture and others exclusively for hunting.

In the first phase of the project, negotiations were initiated with seven town councils and with two private owners, one of whom was an individual and the other was an association of Layna village. Finally, agreements were signed with 6 municipalities and 1 private landowner. All of them showed interest from the beginning in carrying out improvement works in the farms and signing stewardship agreements if traditional uses (extensive grazing, hunting, mushroom gathering, etc) were respected. None of them had any problem signing long-term contracts (30 years).

The private landowner (a family from Medinaceli) also proposed on their own initiative to promote the ornithological use of their land by placing bird observatories and informative signs.

Task 3. Monitoring of actions related to new forms of sustainable economic exploitation (Ornithological Tourism)

All the farms included in the LSP have been incorporated into the Ornithological Tourism Program. Therefore, more than 3,000 hectares are available for the development of the Program distributed throughout the Altos de Barahona and Páramo de Layna SPAs.

All these hectares have a commitment to collaborate with the OTP, which allows people transit to carry out ornithological routes and birdwatching activities. Likewise, both transit and parking of the mobile observatory and the use of fixed observatories placed in the municipalities of Medinaceli and Rello are allowed.

Analysis of landowner profile

Landowners (6 municipalities and one private landowner) showed agreement and interest in participating in the OTP. Municipalities were receptive from the beginning to explore any activity that could promote economic activity and create jobs. The private owner was already linked to the tourism sector as owning a hotel-restaurant in Medinaceli.

Valuation of the economic impact of nature tourism activities.

It is mainly focused on assessing the economic impact of ornithological tourism activities, characteristics of the visitors and usefulness of the tourist resources developed within the framework of the project.

Final implementation of the marketing plan took place during the summer of 2021. Restrictions imposed by the pandemic prevented it from starting as planned in the spring of 2020. Therefore, there has been no time to assess the real economic impact of the project.

However, there are several indicators that can help to make an estimate of the influence that the OPT may have on the local economy:

- Number of nature tourism enterprises joining the OTP: 2 enterprises with at least 3 jobs.
- Number of tourism establishments joining the OTP: 31.
- Number of local tour operator companies joining the OTP: 1
- Number of ornithology monitors trained: 43 (25 in 2019 + 18 in 2021).

Adequacy and usefulness of birdwatching infrastructures

As foreseen in Action C5, two fixed observatories and one mobile observatory were installed. Fixed observatories are located in the municipalities of Rello and Medinaceli. An operation analysis has been carried out, which shows usefulness and the variety of resources it offers.

It can be concluded that all OTP observatories fulfil properly and are suitable for the OTP objectives.

Evaluation of experimental pilot birding plans as a method to promote nature tourism.

Three experimental pilot plans were carried out. In each of them, a 2-3 day activity was carried out combining bird watching outings with cultural tourism.

The experimental plan made it possible to evaluate, detect deficiencies and improve the quality of a new tourism product within the LIFE Ricotí project's area of action and in the province of Soria in general, and to launch it on the market with guarantee of success.

Table 6.30. Project milestones Action D5.

Milestone	Deadline	
	Scheduled	Actual
Starting monitoring of the LSP (LSP itself)	1/07/2017	01/01/2018
Starting monitoring of the LSP (OTP)	1/07/2017	1/07/2017

6.1.23. Action D6. Monitoring of the implementation of sustainable management and conservation guidelines for SPAs Altos de Barahona and Páramo de Layna (responsible beneficiary: ARTESA)

Foreseen start date:	September 2018	Actual start date:	October 2018
Foreseen end date:	February 2021	Actual end date:	February 2021

Action D6 is successfully finished.

This Action aimed at monitoring and supervision of the implementation of sustainable guidelines through indicators of compliance and impact of the established measures. These works focused on advising technicians from the Territorial Service of the Environment of Soria and town councils for the correct interpretation of the Guidelines. In addition, monitoring of applications for changes in land use of private landowners were carried out. Deliverables 45, 59 and 75 informed about this action.

Following the changes in the timetable described in Action A7, Action D6 adapted to this new schedule, and the actions carried out were basically the same as those initially planned.

The following actions were carried out:

- Advice to the technicians of the Territorial Environmental Service of Soria on the correct interpretation of the Guidelines and their application to specific requests for changes in land use.

- Advice to the town councils and the local population of the study area on the opportunities and problems generated by the application of the guidelines. This advice consisted of resolving doubts about requests for changes in land use of plots located in the areas of maximum protection of the Dupont's lark. Requests were mostly related to the clearing of land for conversion to agricultural crops, for the planting of aromatic species, for the planting of truffle trees and, as a main novelty, the possibility of using cattle to graze on the paramos.

- In this sense, 14 field visits were made to 11 localities: Alpanseque, Arbujuelo, Barahona, Barcones, Layna, Madruédano, Medinaceli, Modamio, Pinilla del Olmo, Radona and Retortillo de Soria.

Table 6.31. Project milestones Action D6.

Milestone	Deadline	
	Scheduled	Actual
Delivery of Monitoring Report 1	28/12/2018	28/12/2018
Delivery of Monitoring Report 2	30/12/2019	30/12/2019
Delivery of Monitoring Report 3	15/02/2021	15/02/2021

6.1.24. Action E1. Diffusion of the project (responsible beneficiary: FPN; collaborating beneficiaries: DGMN-JCyL, UAM and AEPMA)

Foreseen start date:	September 2016	Actual start date:	September 2016
Foreseen end date:	February 2021	Actual end date:	September 2021

Action E1 is successfully finished (though it will continue through the post-LIFE)

This Action included different tasks for diffusion and dissemination aimed at publicizing the content and actions of LIFE Ricotí to the target population, both the general public and, especially, to land and livestock owners on one hand, and to schools on the other. Action advances were included in a number of deliverables (21, 40, 52, 70).

Subaction E1.1. Project Dissemination

The main lines of action were threefold:

- **Project website**

Initially, it was scheduled to be operative in December 2016. Several unexpected technical and administrative problems delayed its implementation until September 2017, and April 2018 for the English version. The main reason for this delay was an unplanned lack of qualified staff for the creation and development of the webpage in FPN (beneficiary responsible of this part of the project). Due to this inconvenience, this task was subcontracted (with a cost of 6,000 €), following the Public Sector Contracts Law. Finally, website was fully operative in Spanish since September 2017 in the URL: http://www.lifericoti.org and April 2018 for the English version (Figure 6.49). Subsequent maintenance and updating of the website are responsibility of FPN, including the post-LIFE period. Periodic updates are provided by the partners. From the launch of the website until September 30, 2021, end date of the project, 17997 sessions have been initiated by 15263 users (Figure 6.50).

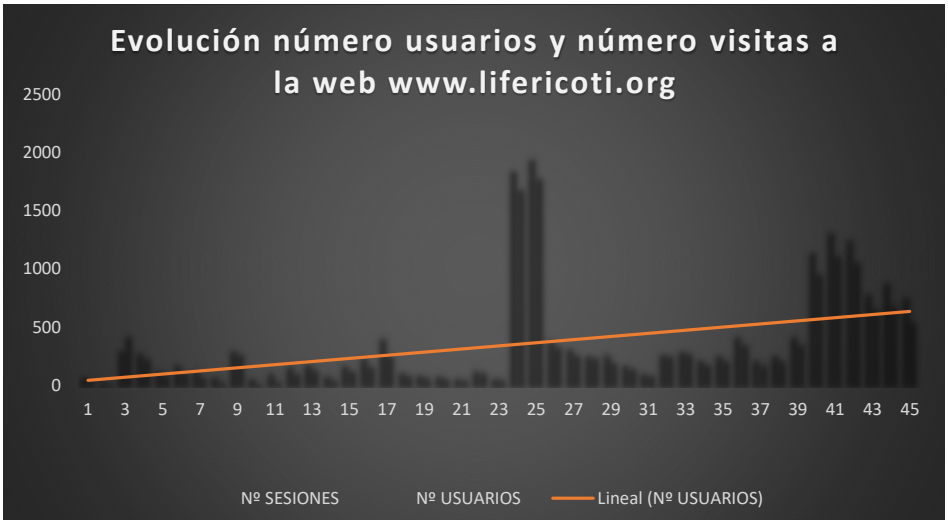


Figure 6.49. Time-change of users and sessions initiated on the website.

Data obtained show an average of 400 sessions per month by 339 users during the period analysed (Sep-2017 to Sep-2021). Until the end of 2019 the trend in the number of users had been downward, however, and due to the changes made to the website in 2020, with the incorporation of new sections, a more attractive environment and the existence of the linking of the website with social networks through the banner incorporated in the page that connects the website with the Twitter account of the project @LRicoti, this trend has been reversed, being positive and increasing the number of visitors.

Besides, though not included in the project, since early 2018 the project has a Twitter account (LIFE Ricotí @LRicoti) that periodically publishes posts on the status of the project and main results. At present, this account has 916 followers and has published a large number of posts (Figure 6.41). This account will persist during the Post-LIFE, linked to the new LIFE project (LIFE Connect Ricotí LIFE 20/ES/NAT/000133).

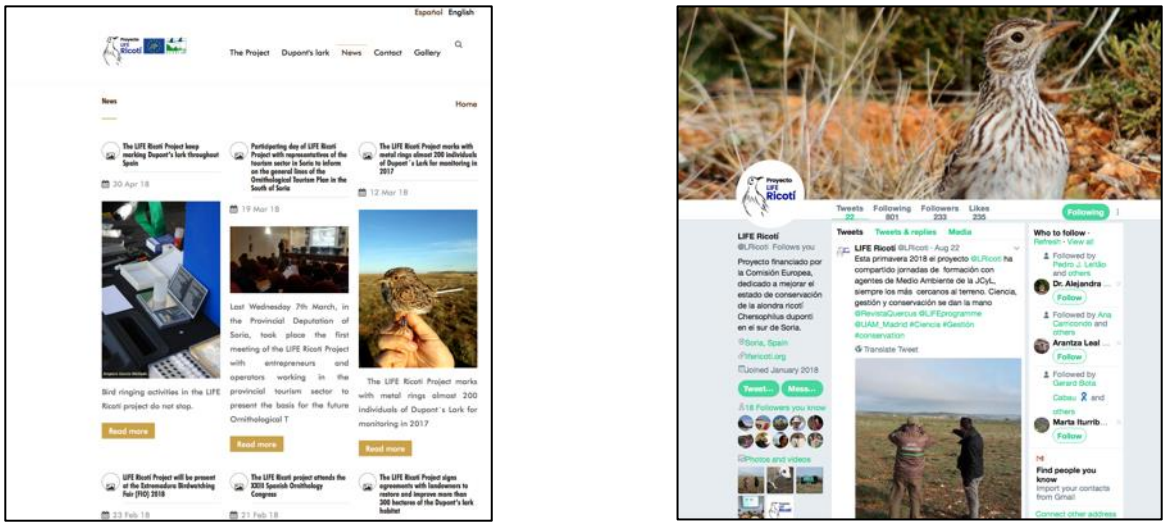


Figure 6.50. Screenshots of the website of the project LIFE Ricotí http://www.lifericoti.org (left), and of the Twitter account of the project LIFE Ricotí @LRicoti (right).

- **Panels and printed material**

- **The logo of the project** was designed in vector format, in two versions depending on the support to be used.
- **2000 outreach brochures** in Spanish have been edited, as planned. In addition, 1000 brochures have been also printed in English, in anticipation of potential foreign bird watchers.
- Two sets of **6 roll-up informative panels** have been edited, one set in Spanish and the other one in English.
- The project included the installation of **8 exterior panels** (see examples in Figures 6.51 and 6.52) in places of special visibility next to the road network and/or in the most important localities of the study zone have been installed in the localities were Conservation Actions C1 have been carried out.

Figure 6.51. Exterior panel located in the field, where C1 (Tree Clearing) Action area (Barahona) was carried out. It includes information about the LIFE Ricotí Project, action C1, aims, species of interest, dates, and funding entities.

Figure 6.52. Exterior panel located in the field, where C1 (Tree Cutting) Action area (Arbujuelo, Layna) was carried out. It includes information about the LIFE Ricotí Project, action C1, aims, species of interest, dates, and funding entities.

- **Organization of local events – Itinerant exhibition**

The objective of this task was to facilitate contact with local population and to alleviate the lack of knowledge about the Dupont's lark, SPAs, the LIFE Ricotí project and the LIFE Program. For these purposes, a series of talks and colloquiums were held to inform about the objectives and actions of the project LIFE Ricotí, as well as about participation and involvement. These

events were coordinated with those related to Action E4 (*Dissemination of results of the Land Stewardship Programme*). Despite objectives differ between actions, the LIFE Ricotí project wished to keep a single speech by all those workers involved in the dissemination process, establishing common contents and a coordinated schedule between actions. Must be kept in mind that the target population for both Actions E1 and E4 were the same, and an excess of calls could be counterproductive.

Events to be carried out in the framework of Action E1 were the organization of an itinerant exhibition with 20 panels by the main municipalities in the study area, and accompanied by the roll-up panels of the project (Figure 6.53). Exhibition content was completed with a series of photographs on rigid panels, not only of the species and its habitat, but also of traditional uses, restoration work, etc. Together with the six roll-up, these panels served as an itinerant exhibition to be installed in town halls and environmental education centres along Castilla y León. This material served to disseminate the project in other points of the Soria Province, Castilla y León and other Spanish regions. The itinerancy of the exhibition as well as the talks-colloquium will be extended during the Post-LIFE. At present, the exhibition has been exhibited in 8 places and has received attention by almost 13000 people (Table 6.32). At the moment of writing this report, the exhibition is located in the *Casa del Parque de la Laguna Negra*, in Vinuesa (Soria). The itineraries carried out are shown in Table 6.32.

The itinerant exhibition will be used for the dissemination of the project in all those territories of Castilla y León with populations of the Dupont's lark, as well as in those places whose presence can produce synergies for the species and the project. In this sense, and within the post-LIFE period, the exhibition will itinerate through those areas included in the LIFE Connect Ricotí project (LIFE20 NAT/ES/000133). At least the following itineraries are foreseen:

Figure 6.53. Two images of the itinerant exhibition.

Table 6.32. Itinerancies carried out until September 30, 2021.

EXPOSICIÓN ITINERANTE RICOTÍ LIFE 15/NAT/ES/000802		
ITINERANCIAS		
PERÍODO	**LUGAR**	**VISITANTES**
8 Y 9 DE Junio de 2019	XVII FERIA DEL VINO D.O. RIBERA DEL DUERO DE SAN ESTEBAN DE GORMAZ	3.000
01/07/2019 AL 30/07/2019	CP DEL SABINAR	938
06/08/2019 al 30/08/2019	CENTRO SOCIAL DE BARAHONA	
31/08/2019 AL 08/10/2019	ANTIGUAS ESCUELAS DE RETORTILLO	
09/10/2019 AL 09/12/2019	CP DEL CAÑÓN DEL RÍO LOBOS	3.815
05/02/2020 AL 19/04/2020	CP LAGUNA NEGRA Y CIRCOS GLACIARES DE URBIÓN	2.134
01/07/2020 AL 01/12/2020	CP DEL ACEBAL DE GARAGÜETA	2.710
	TOTAL	**12.597**

- Province of Segovia. Casa del Parque de la Hoces del Río Duratón and Casa del Parque de las Hoces del Río Riaza.
- Province of Valladolid. Environmental Resource Center and Environmental Park of the PRAE (Environmental and Educational Proposals).
- Province of Zamora. Casa del Parque del Convento de San Francisco en Arribes del Duero y Centro del Lobo en la Sierra de la Culebra.
- Cataluña: Centro de Ciencia y Tecnología Forestal de Cataluña, Solsona.
- Cataluña: Casa del Parque. Mas de Melons, Lleida.
- Castilla- La Mancha. Centro de Interpretación del Parque Regional del Alto Tajo. Dehesa de Corduente. Corduente. Guadalajara.
- Castilla- La Mancha. Centro de Interpretación del Parque Regional del Alto Tajo. Sequero de Orea. Orea. Guadalajara.
- Castilla- La Mancha. Centro de Interpretación Museo de la ganadería tradicional del Alto Tajo. Checa. Guadalajara.
- Centro de Interpretación del Parque Natural de los Calares del Mundo y de la Sima "Monte Ardal". Yeste, Albacete.
- Centro de Interpretación del Parque Natural del Barranco del Rio Dulce en Mandayona. Guadalajara.
- Centro de Interpretación del Parque Natural del Barranco del Río Dulce en Pelegrina. Guadalajara.
- Centro de visitantes de la Reserva Natural de la Laguna de El Hito. Montalbo, Cuenca.

Subaction E1.2. Layman Report

A disseminative report in an accessible writing (Layman report) has been produced in digital format, in both English and Spanish. It is a 22-pages document including the objectives, actions and results of the project. It can be found in the web page of the project (see Figure 6.54).

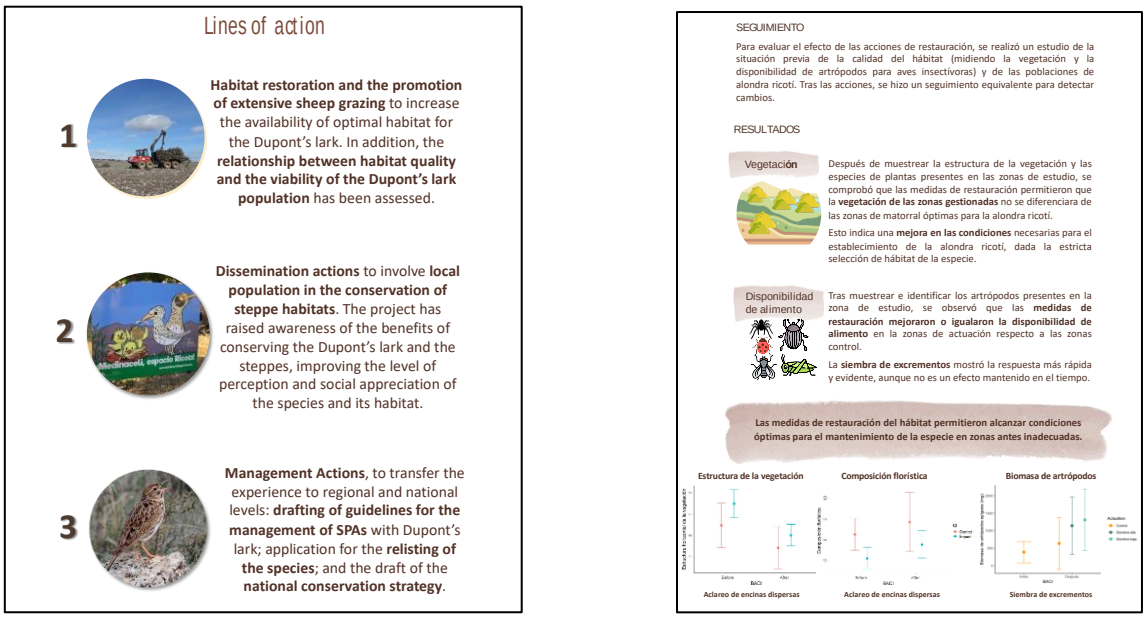


Figure 6.54. Two images of the Layman report in its English (left) and Spanish versions (right).

<u>Subaction E1.3. Networking. Exchange of information with other LIFE and No-LIFE projects</u>

This action aimed to establish a network of contacts that allows the exchange of information and cooperation with other projects similar to LIFE Ricotí, having differentiated three major thematic blocks: the Dupont's lark and its habitat, the interrelationship between habitats and livestock use, and the management of Land Stewardship Programmes.

An exchange of information and experiences has taken place with the Junta de Castilla y León and Fundación Patrimonio Natural, both partners of the LIFE Ricotí project, in the framework of the project for the restoration of the Dupont's lark habitat in the Corridor of Medinaceli, granted by several wind farming companies.

In addition, the coordinator of the LIFE Ricotí, Dr. Juan Traba, has actively collaborated with other LIFE projects, as he was part of the Scientific Committee of the project LIFE15 NAT/ES/000734 Estepas de La Mancha.

In addition, UAM participated as a speaker at the conference organized by the Royal Society for the Protection of Birds (RSPB), "Achieving sustainable species recovery: Lessons from the Stone-curlew LIFE project: RSPB EU LIFE + end of Project international conference" held in Cambridge in February / March 2017 (see also Action E3).

During August 2018, the Coordinator of the LIFE Ricotí Project Dr. Juan Traba visited several zones included in the LIFE projects: LIFE11 NAT/PL/422 "Preservation of wetland habitats in the upper Biebrza Valley", and LIFE13 NAT/PL/000050 "Restoration of hydrological system in the Middle Basin of the Biebrza Valley". Phase II. Though doing this during his personal vacation, Dr. Traba was able to appreciate similarities and differences between these successful projects and the LIFE Ricotí project, since both developed actions aimed to restore habitats for bird conservation.

Dr. Traba has maintained contacts with Dr. Herranz, partner responsible of the project LIFE12 BIO/ES/000660 “Development and demonstration of a bird anti-collision tubular screen for high-speed railway lines”. On 2018 July 11th Dr. Traba made a field trip to the zones where conservation actions are been implemented. Contacts between both coordinators are frequent.

Dr. Traba, as coordinator of the LIFE Ricotí project, was invited to participate in a meeting to delineate the Action Plan for Biodiversity to be carried out in the steppes of Molina de Aragón. This meeting held in Guadalajara (Spain) on 2018 September 21st.

Dr. Traba participated as a plenary speaker in the Final Congress of the LIFE + Pinzon, in Gran Canaria (Figure 6.55).

The LIFE Ricotí project has participated in the FIO 2018 (International Ornithological Tourism Fair, Cáceres (Spain) in February 2018; in the Geological Days in Spain, with the title "LIFE Project: Conservation of the Dupont's Lark and its habitat ", held in Berlanga de Duero (Soria) in May 2018; and the ornithological tour project was presented to businessmen and agents of the local tourism sector in March 2018 (for more details see Action E4).

The LIFE Ricotí project received in April 9, 2019, the visit of the LIFE11 NAT/HU/000924 “Large scale grazing management of steppe lakes in the Hortobágy”. Two members of this already finished project, Zoltan Ecsedi and Nikolett Petrones, visited our field zones.

Figure 6.55. Networking with LIFE+ Pinzon.

Due to COVID-19 pandemic, in-person activities were prevented, but Dr. Traba gave a talk in Final Congress of LIFE LIFE15 NAT/ES/000734 Estepas de La Mancha, in October 2020. In

September 2021, Dr. Traba was invited to the MadBird Fair to present final results of the LIFE Ricotí project, where the project was also present (Figure 6.56).

Figure 6.56. Presence of the LIFE Ricotí project at the MAdBird Fair (Madrid, 9th September 2021, left panel), and corporative image of the Final Congress of the LIFE Ricotí project (online, July 2021, right panel).

This Sub-Action E1.3 included the celebration of a Final Congress with representatives from other LIFE and non-LIFE projects, but due to the pandemic situation produced by COVID-19 it had to be held online on July 7 and 8, 2021. This has enabled a larger audience of public to the congress. The congress was live broadcasted through the YouTube LIFE Ricotí channel created for this purpose, and could be followed both through this channel and through the link on the project's website www.lifericoti.org/congreso. The page also served as an access point to the registration platform for those interested in following the program (Figure 6.56 right panel).

The program was carried out as planned, in the morning and afternoon on July 7, 2021, and only in the morning on July 8, 2021. On the first morning, the results of the LIFE Ricotí project were presented by the technicians responsible for each of the main actions carried out by the project. In the afternoon, speakers presented interesting examples of strategies for the conservation of endangered birds that have been carried out in other LIFE projects. The day of the 8th was divided into two thematic pieces: land stewardship as a tool for biodiversity management; and methodologies used for the conservation of endangered species.

Regarding the participation, 107 people with different professional profiles and very different geographical origins registered in advance. During the development of the conference, the audience varied according to the hours between 84 people on the 7th and 60 on the 8th. The contents of the congress have been viewed a total of 1554 times to date, of which 30% were viewed on day 7 and 15% on day 8.

All these activities have registered in four deliverables (21, 40, 52 and 70).

Table 6.33. Project milestones Action E1.

Milestone	Deadline	
	Scheduled	Actual
Start of the program of events and meetings with local population	12/2016	09/2018
Website start-up	12/2016	4/09/2017
installation of external information panels and distribution of printed material	04/2017	11/2017

6.1.25. Action E2. Dissemination of results to regional, national and European administrations (responsible beneficiary: FPN; collaborating beneficiary: DGMN-JCyL)

Foreseen start date:	January 2017	Actual start date:	January 2017
Foreseen end date:	February 2021	Actual end date:	September 2021

Action E2 is successfully finished (though it will continue through the post-LIFE).

The objective of this action was to make available to public and private bodies and entities involved in the management and conservation of biodiversity the knowledge and experiences that LIFE Ricotí will accumulate as it progresses. The communication strategy has been articulated around two main axes: a working group for the species and its habitats, and training courses.

Working group

- Phase 1: Information to the Spanish public administrations on the objectives of LIFE Ricotí project, and the proposal to set up the working group. The working group was launched (March 2016) ahead of schedule, as a result of another project coordinated by the TEG-UAM team (*Strategic basis for the guidelines of the National Conservation Strategy of the Dupont's lark´*). The 45 people working group includes scientist from different academic and research institutions, technicians and managers from both private and public bodies, and environmentalists from NGOs.

- Phase 2: Working Group Operation. The group is operating on an online basis from the beginning, transferring information, publications and calls.

- Phase 3: The workshop on the species was on July 9, 2021. As with the final Congress, the workshop had to be held telematically (Figure 6.57). Thus, the meeting of the working group took place in both morning and afternoon sessions. Fifty-one experts participated in this meeting. On this occasion the meeting was not open as in the case of the Congress, but was held through Zoom with exclusive access for the members of the working group.

The list of topics included in the workshop was:

- Conservation status of the species in Spain. Relisting of the species.
- Population size and trend in Spain (based on Gómez-Catasús *et al*. 2018. PeerJ), and effects of Filomena.
- Connectivity and viability of the Spanish metapopulation (based on García-Antón *et al.*, 2021. PeerJ and García-Antón *et al.*, 2021 Scientific Reports).
- Conservation measures already carried out and in progress.
- Relationships between Dupont's lark and sheep. Effects of food availability (based on Reverter *et al.*, 2019, 2021, and Gómez-Catasús *et al.,* 2019).
- Effects of crops and afforestation on space use by Dupont's lark (based on Reverter *et al*., 2021, and Gómez-Catasús *et al*., 2019).

One deliverable was elaborated: *Proceedings of the Dupont's lark working group*, deliverable nº 67.

Figure 6.57. Corporative image of the 2nd Workshop on the Dupont´s lark and its habitat held within the framework of the LIFE Ricotí project.

- Training courses

Training courses were addressed to Environmental Agents of the JCyL, personnel closest to the ground. Although this action was coordinated by FPN, given that UAM staff (coordinating partner) performed bird and habitat monitoring tasks, UAM assumed responsibility on the training courses. In this sense, an agreement between partners involved (UAM, FPN and JCyL) was signed.

During 2018 and 2019 springs, technical staff of the TEG-UAM carried out one-day training sessions for the Environmental Agents of JCyL. During these courses special emphasis was placed on the identification of the Dupont's lark, habitat characteristics, conservation problems, as well as methodologies for censusing and capturing. Information about other passerine species coexisting with the target species, such as the Skylark *Alauda arvensis*, the Tawny pipit *Anthus campestris*, the Northern wheatear *Oenanthe oenanthe* and the Black-eared wheatear *O. hispanica*, was also provided.

Specifically, the course programme included the following training activities:

- Description and identification of the potential habitat of the Dupont's lark.
- Identification of the species: visual, singing and calls.
- Methodology of census of the Dupont's lark.
- Methodology of capture of the Dupont's lark through the use of baited trap-nets.
- Identification of other species typical of the shrub steppes, coexisting with the Dupont's lark.
- Methodology of census of other coexisting passerines typical of the shrub steppes.
- Methodology of capture of other coexisting passerines.
- Collection of biometric data of the species and procedure in the collection of samples (faeces, blood and parasites).
- Food availability. Sampling methodology of invertebrates as a factor driving the habitat quality for the Dupont's lark.

During each visit, assistance was registered by signing the assistance document. See Table 6.34 for attendees.

Table 6.34. Agents attending during 2018 and 2019 springs

Name	Date	Locality
Félix Perruca Sanz	10 May 2018	Arbujuelo, Layna
Roberto C. Soria Soria	10 May 2018	Barcones
Félix Perruca Sanz	11 May 2018	Arbujuelo, Layna
Gonzalo San Frutos	7 June 2018	Retortillo de Soria
Carlos Abaso Rodríguez	7 June 2018	Retortillo de Soria
Cristian Pascual Escribano	14 June 2018	Retortillo de Soria
Carlos Abaso Rodríguez	14 June 2018	Retortillo de Soria
José Francisco Domínguez Franco	6 June 2019	Barahona
Christian Pascual Ochoa	6 June 2019	Barahona
Roberto C. Soria Soria	6 June 2019	Barahona
Carlos Abaso Rodríguez	6 June 2019	Barahona
José Manuel Meses Canalejo	13 June 2019	Barahona

Trainers:

- Dr. Juan Traba Díaz. Project coordinator and responsible.
- Dr. Cristian Pérez Granados. Trainer.
- Adrián Barrero Diego. Trainer.
- Margarita Reverter Cid. Trainer.

Table 6.35. Project milestones Action E2

Milestone	Deadline	
	Scheduled	Actual
Working group creation	1/06/2017	01/03/2016
Training courses	1/07/2017	30/11/2017
Training courses	2/07/2018	10/05/2018
Training courses	1/07/2019	1/07/2019
Workshop	15/10/2019	02/2019

6.1.26. Action E3. Technical publications and communication actions (responsible beneficiary: FPN; collaborating beneficiaries: UAM and DGMN-JCyL)

Foreseen start date:	June 2017	Actual start date:	February 2017
Foreseen end date:	February 2021	Actual end date:	September 2021

Action E3 is successfully finished (though it will continue through the post-LIFE).

This action aimed to disseminate the results of the LIFE Ricotí project in technical and scientific fields, with four main topics: (i) scientific publications, (ii) technical publications, (iii) publication of management manuals and guidelines, and (iv) presentation of project results in national and international congresses.

Main results until date are:

i) Scientific publications

1. Gómez-Catasús, J.; Garza, V. & Traba, J. (2018) Wind farms affect the occurrence, abundance and population trends of small passerine birds: the case of the Dupont's lark. *Journal of Applied Ecology*, 1-10. DOI: 10.1111/1365-2664.13107.
2. García Antón, A.; Garza, V. & Traba, J. (2018) Climate, isolation and intraspecific competition affect morphological traits in an endangered steppe bird, the Dupont's Lark *Chersophilus duponti*. *Bird Study*, 65:3, 373-384. DOI: 10.1080/00063657.2018.1504875.
3. Gómez-Catasús, J.; Pérez-Granados, C.; Barrero, A.; Bota, G.; Giralt, D.; López-Iborra, G.M.; Serrano, D. & Traba, J**.** (2018) European population trends and current conservation status of an endangered steppe-bird species: the Dupont's lark *Chersophilus duponti*. *PeerJ*.
4. Pérez-Granados, C.; Bota, G.; Giralt, D.; & Traba, J. (2018) A cost-effective protocol for monitoring birds using Autonomous Recording Units: a case study with a night-time singing passerine. *Bird Study*. DOI: 00063657.2018.1511682.
5. García-Antón, A.; Garza, V. & Traba, J. (2019) Factors affecting Dupont´s Lark distribution and range regression in Spain. *PLoS One* 14(2): e0211549.
6. Pérez-Granados, C.; Bota, G.; Guixé, D.; Giralt, D.; Barrero, A.; Gómez-Catasús, J.; Bustillo-de la Rosa, D. & Traba, J. (2019) Vocal Activity Rate (VAR) index: a useful method to estimate terrestrial bird abundance with acoustic monitoring. *Ibis*, 161: 901-907.
7. Pérez-Granados, C.; Bota, G.; Giralt, D.; Albarracin, J. & Traba, J. (2019) Cost-effective assessment of five audio recording systems for Wildlife monitoring. *Ardeola*, 66: 311-325.
8. Reverter, M.; Gómez-Catasús, J.; Barrero, A.; Pérez-Granados, C.; Bustillo-de la Rosa, D. & Traba, J. (2019) Interactions in shrub-steppes: implications for the maintenance of a threatened bird. *Ecosistemas*, 28(2): 69-77.
9. Pérez-Granados, C. & Traba, J. (2019) Testing the conspecific attraction hypothesis in a resident bird: conspecifics of the Dupont's lark do not attract. *Journal of Field Ornithology*, 90(3): 277-285.
10. Pérez-Granados, C.; Gómez-Catasús, J.; Bustillo-de la Rosa, D.; Barrero, A.; Reverter, M. & Traba, J. (2019) Effort needed to accurately estimate Vocal Activity

Rate index using acoustic monitoring: a case study with a night-time singing passerine. *Ecological Indicators*, 107: 105608.
11. Gómez-Catasús, J.; Garza, V.; Morales, M.B. & Traba, J. (2019) Hierarchical habitat-use by an endangered steppe bird in fragmented landscapes is associated with large connected patches and high food availability. *Scientific Reports*, 9: 19010.
12. Pérez-Granados, C. & Traba, J. (2021) Estimating bird density using passive acoustic monitoring: A review of methods and suggestions for further research. *Ibis*, 163, 765–783.
13. Pérez-Granados, C.; Barrero, A.; Traba, J.; Bustillo-de la Rosa, D.; Reverter, M. & Gómez-Catasús, J. (2021) Assessment of cue counting for estimating bird density using passive acoustic : recommendations for estimating a reliable cue rate. *Avian Conservation and Ecology*, 16(1): 11.
14. Zurdo, J.; Baonza, J. & Traba, J. (2021) New insights in plant communities and flora of the Southern paramos of the Iberian Range (Spain). *Phytocoenologia – Journal of Vegetation Ecology*, 50 (4): 371-382.
15. García-Antón, A.; Garza, V. & Traba, J. (2021) Connectivity in Spanish metapopulation of Dupont's lark may be maintained by dispersal over medium-distance range and stepping stones. *PeerJ*, 9: e11925.
16. García-Antón, A. & Traba, J. (2021) Population viability analysis of the endangered Dupont's Lark *Chersophilus duponti* in Spain. *Scientific Reports*, 11: 19947.
17. Bustillo, D.; Pérez-Granados, C.; Barrero, A.; Gómez-Catasús, J.; Reverter, M.; García, J.T.; Morales, M.B. & Traba, J. (2022) Leucocyte profile variation in Dupont's lark (*Chersophilus duponti*) in Spain and Morocco. *Journal of Ornithology*, 000-000.
18. Traba, J. & Pérez-Granados, C. (2nd review) Extensive sheep grazing is associated with trends in steppe birds in Spain: recommendations for the Common Agricultural Policy. PeerJ.
19. Traba, J.; Gómez-Catasús, J.; Bustillo, D.; García de la Morena, E.; Hervás, I.; Pérez-Granados, C.; Reverter, M.; Santamaría, A.; Zurdo, J. & Barrero, A. (2nd review) Estimating arthropod biomass through vegetation indices with satellite and drone imagery. A case study in the Iberian paramos. Ecological Applications.
20. Barrero, A.; Gómez-Catasús, J.; Traba, J. & Ovaskainen, O. (1st review) Dominance and competition drive assemblage configuration in an Iberian steppe bird community. *Ecology*.

ii) Technical publications, Manuals and guidelines

21. Gómez-Catasús, J.; Barrero, A.; Pérez-Granados, C.; Bustillo, D.; Hervás, I.; Oñate, J.J.; Morales, M.B.; López, C.; Novoa, J.A.G. & Traba, J. 2018. Casi 800 machos son censados en dos núcleos de alondra ricotí. *Quercus*, 386: 38-39.
22. Hernández, J.L. (2019) *Where and when to watch birds in the Southern uplands of Soria province, Spain* (English version) *Dónde y cuándo ver aves en el Sur de Soria* (Spanish version). Diputación Provincial de Soria.
23. Traba J.; Pérez-Granados, C.; Serrano, D. (2021) Alondra ricotí *Chersophilus duponti*. En: López-Jiménez, J. (Ed.): Libro Rojo de las Aves de España, pp. 321-329. SEO/BirdLife, Madrid.
24. Santamaría, A.E.; Hervás, I.; Martín, A.; Gómez-Catasús, J.; Reverter, M.; Zurdo, J.; Barrero, A.; Bustillo, D. & Traba, J. (2021) Publicación técnica. Proyecto LIFE

Ricotí. Fundación Patrimonio Natural de Castilla y León. Editorial GRAFIVERD. 52pp. Depósito Legal: DL VA 660-2021.

This manual contains fundamental technical information to understand the objectives, development and results achieved with the LIFE Ricotí project that has been carried out in the South of the Province of Soria between 2016 and 2021. The publication has been carried out within the Action E.3, Technical publications and communication actions responsibility of the Fundación Patrimonio Natural de Castilla y León. The coordination of the publication has been carried out by Juan Traba, coordinator of the LIFE Ricotí project. Two hundred paper copies have been published and it has been formatted so that it can be downloaded in high quality PDF format from the project website: http://www.lifericoti.org/sites/default/files/librot1.pdf.

This publication corresponds to deliverable number 62, and replaces the originally foreseen content: "Guidelines for the elaboration of the Conservation Plan of the Dupont's lark in Castilla y León". The Conservation Plan for the Dupont's lark is included in the execution of the assignment "Design and development of planning instruments for threatened species in Castilla y León", made to the Fundación Patrimonio Natural de Castilla y León in November 2020, and which has an execution period of 34 months. Specifically, the elaboration of the Conservation Plan for the Dupont's lark is scheduled for the year 2022.

25. TEG-UAM LIFE Ricotí (2021) Cuadernillo especial. El proyecto LIFE Ricotí. Quercus: 426.

iii) Congresses

26. Oral communication at the conference organized by The Royal Society for the Protection of Birds (RSPB), "Achieving sustainable species recovery: Lessons from the Stone-curlew LIFE project: RSPB EU LIFE + end of project international conference" held in Cambridge in February-March 2017.
27. Invited communication at International Conference: Conservation of threatened island birds through the establishment of new populations and habitat restoration. Traba, J. “Conservation of the Dupont’s lark (*Chersophilus duponti*) and its habitat in Soria (Spain) LIFE15 NAT/ES/000802”. Las Palmas de Gran Canaria, (13-16)-3-2019.
28. Invited communication at Presentación Plataforma por la conservación de las aves esteparias y sus hábitats en Andalucía. Sevilla, 2 de abril de 2019. Traba, J. “La alondra ricotí y los paisajes esteparios: una extinción anunciada.”
29. Invited communication at VII Entrega de premios Certamen Naturalizarte. Asociación Micorriza. Molina de Aragón (Guadalajara). 23 de mayo de 2019. Traba, J. “La alondra ricotí, el ave invisible”.
30. Invited communication at XI Jornadas Ornitológicas. SEO / Alectoris. Universidad Complutense de Madrid, 27 de marzo de 2019. Traba, J. “Últimos avances en la conservación de la alondra ricotí”.

31. Invited communication at Final Congress LIFE Estepas de la Mancha, 14 de octubre de 2020. Restauración para la conservación: mejora de hábitat para la alondra ricotí - LIFE Ricotí. Juan Traba

    In addition, these are communications presented in National and International Congresses until date.

32. Reverter, M.; Santos-Torres, A; Zurdo, J.; Barrero, A.; Gómez-Catasús, J.; Bustillo-de la Rosa, D.; Pérez-Granados, C. & Traba, J. Oral presentation. Inputs of sheep droppings increase arthropod abundance. Emulation of sheep grazing on natural steppes. SER Europe. 12th SERE Conference. (31-08)-(04-09)-2021. Alicante, Spain.
33. Santos-Torres, A; Reverter, M.; Pérez-Granados, C.; Zurdo, J.; Barrero, A.; Gómez-Catasús, J.; Bustillo-de la Rosa, D. & Traba, J. Oral presentation. Habitat restoration for the conservation of a threatened steppe bird, the Dupont lark (Chersophilus duponti). SER Europe. 12th SERE Conference. (31-08)-(04-09)-2021. Alicante, Spain.
34. Traba, J. Attendee. Restoring bird populations: Scaling from species to ecosystems. British Ornithological Union. Online Congress. (30-03)-(01-04)-2021.
35. Gómez-Catasús, J.; Barrero, A.; Reverter, M.; Bustillo-de la Rosa, D.; Pérez-Granados, C. & Traba, J. 2019. Wind farms increase nest predation and lead to local extinctions of small-passerine populations. Oral. 15th European Ecological Federation Congress and 18th National SPECO Meeting. 29th July-2nd August 2019, Lisbon, Portugal.
36. Reverter, M.; Gómez-Catasús, J.; Barrero, A. & Traba, J. 2019. Agrarian intensification reduces food availability for a threatened species: the Duponť s lark case. Oral. 15th European Ecological Federation Congress and 18th National SPECO Meeting. 29th July-2nd August 2019, Lisbon, Portugal.
37. Gómez-Catasús, J.; Barrero, A.; Reverter, M.; Bustillo-de la Rosa, D.; Pérez-Granados, C. & Traba, J. 2018. Landscape changes associated to wind farm implementation increase predation on artificial ground-nests. Oral and Poster. 5th European Congress of Conservation Biology. 12-15 June 2018, Jyväskylä, Finland.
38. Gómez-Catasús, J.; Garza, V. & Traba, J. 2017. Efectos de los parques eólicos en pequeños paseriformes. El caso de una especie gravemente amenazada, la alondra ricotí (*Chersophilus duponti*). Comunicación oral. Actas del XXIII Congreso Español de Ornitología. Pp. 45. 2-5 Noviembre, Badajoz, España.
39. Bustillo-de la Rosa, D.; Pérez-Granados, C.; Barrero, A.; Gómez-Catasús, J.; Abril-Colón. I.; Morales, M.B. & Traba, J. 2017: ¿Depende la condición física de los machos de la competencia intrasexual o de la carga de ectoparásitos? Póster. Actas del XXIII Congreso Español de Ornitología. Pp. 64. 2-5 Noviembre, Badajoz, España.
40. Abril-Colón, I.; Gómez-Catasús, J.; Pérez-Granados, C.; Barrero, A.; Bustillo-de la Rosa, D. & Traba, J. 2017. ¿Varía la agregación intraespecífica en función de la densidad? Patrones de agregación espacial en 3 especies de aves esteparias en la provincia de Soria. Póster. Actas del XXIII Congreso Español de Ornitología. Pp. 69. 2-5 Noviembre, Badajoz, España.
41. Gómez-Catasús, J.; Barrero, A.; Serrano, D.; López-Iborra, G.M.; Pérez-Granados, C.; Bota, G.; Giralt, D. & Traba, J. 2017. Tendencias poblaciones de la alondra ricotí en España. Póster. Actas del XXIII Congreso Español de Ornitología. Pp. 124. 2-5 Noviembre, Badajoz, España.

42. Barrero, A.; Gómez-Catasús, J.; Pérez-Granados, C.; Abril-Colón, I.; Bustillo-de la Rosa, D. & Traba, J. 2017. ¿Son los mejores machos los que más defienden el territorio? Comportamiento territorial de los machos de alondra ricotí durante el periodo reproductor en la ZEPA Altos de Barahona, Soria. Póster. Actas del XXIII Congreso Español de Ornitología. Pp. 140. 2-5 Noviembre, Badajoz, España.

Five deliverables (34, 48, 58, 62 and 71) have reported about this action.

Table 6.36. Project milestones Action E3.

Milestone	**Deadline**	
	Scheduled	**Actual**
Sending technical/dissemination paper for publication	1/06/2017	15/04/2018
Sending technical/ dissemination paper for publication	1/06/2018	1/06/2018
Sending scientific paper for publication	1/06/2019	1/06/2019
Sending scientific paper for publication	1/10/2019	1/10/2019
Sending scientific paper for publication	1/10/2019	1/10/2019
Sending scientific paper for publication	1/10/2020	1/10/2020
Sending technical/dissemination paper for publication	1/10/2020	1/10/2020

6.1.27. Action E4. Dissemination of results of Land Stewardship Programme (responsible beneficiary: DIPUTACIÓN)

Foreseen start date:	March 2017	Actual start date:	October 2016
Foreseen end date:	February 2021	Actual end date:	September 2021

Action E4 is successfully finished.

Action E4 aims to disseminate the objectives and actions outlined in the Land Stewardship Programme, spreading the idea that conservation agreements with local landowners, on one hand, and bird watching (Ornithological Tourism Program) on the other, can be an important driver of rural development. In this way, Dupont's lark is intended to be associated with a natural resource to be protected, but also with an economic one that adds value to the region. Action E4 comprises three main tasks:

- **Dissemination of the Land Stewardship Programme and Ornithological Tourism Program**

  Communication actions carried out up to date were:

  - Informative talk about the Land Stewardship Programme and conservation actions. It was held in October 2016, in Medinaceli, Soria, attending 14 people.
  - Informative talk about the Land Stewardship Programme and conservation actions. It was held in December 2016, in Arenillas, Soria, attending 15 people.
  - Presentation at MADbird Fair 2017 (International Fair for Wild Watching held in Madrid) of the LIFE Ricotí project through the installation of roll-up panels and the presence of technicians in a stand shared with DIPUTACIÓN. June 9-11, 2017. Numerous people (30.000 estimated) attended the stand during the three days.
  - Talk presentation at the National Museum of Natural Sciences of Madrid with the title "Conservation of the Dupont's lark through Territory Custody and Ornithological Tourism Programs". June 13, 2017, attending around 30 people.
  - Talk presentation at I Semana Verde Ambientalia (Sustainable Tourism Fair held in Soria) with the title "LIFE Project: Conservation of the Dupont's lark and its habitat". July 19-21, 2017, attending around 60 people.
  - Presentation at FIO 2018 (International Ornithological Tourism Fair, held in Cáceres, Spain) of the LIFE Ricotí project with the installation of roll-ups and the presence of technicians on a stand shared with Foundation Siglo for Tourism and Arts of Castilla y León. February 23-25, 2018.
  - Talk at the Geology Knowledge and Dissemination Days in Spain with the title "LIFE Ricotí Project: Conservation of the Dupont's lark and its habitat", held in Berlanga de Duero (Soria). May 11-12, 2018, with the presence of about 50 people.
  - Presentation talk of the Ornithological Tourism Programme before entrepreneurs and agents of the tourism sector held in Diputación Provincial de Soria. March 7, 2018 with the participation of about 10 people.
  - Presentation at NATURCyL 2018 (1st Ecotourism fair of Castilla y León, held in Cervera de Pisuerga (Palencia), Spain) of the LIFE Ricotí project and the LSP with the installation of roll-ups and the presence of technicians. September 28-30, 2018.

- Presentation talk on the LIFE Ricotí Project and the Land Stewardship Program at the School for Agricultural and Forestry Foremen of Almazán (Soria). February 14, 2019 with the participation of 32 people.
- Presentation at FIO 2019 (International Ornithological Tourism Fair, held in Cáceres, Spain) of the LIFE Ricotí project with the installation of roll-ups and the presence of technicians on a stand shared with MadBird Fair. February 22-24, 2019.
- Presentation at PRESURA 2019 (National Fair for the repopulation of rural Spain, held in Soria, Spain) of the LIFE Ricotí project and the LSP with the installation of roll-ups and the presence of technicians. November 8-10, 2019.
- Presentation at MADBird Fair 2021 (International Fair for Wild Watching held in Madrid) of the LIFE Ricotí project and the LSP through the installation of roll-up panels and the presence of technicians in a stand shared with DIPUTACIÓN. September 10-12, 2021.

- **Elaboration of dissemination material (brochures, posters, Web pages)**

  Material is included in the following deliverables, already finalized:

  - Deliverable nº 15: Design of outreach brochures. Design and layout for the brochure of the Land Stewardship Program (LSP) and Ornithological Tourism Program (OTP) are included in this deliverable. It aims to inform local landowners about characteristics of the two programs and conditions governing the participation. It also reports about the general guidelines that characterize the OTP. Deliverable nº 15 includes the .pdf file of the mentioned brochure, which has been printed for distribution in forums and fairs (see above).
  - Deliverable nº 18: Program of the outreach days of the LSP. Design and layout of the outreach days of the LSP are included in this deliverable. It aims to report on the activities and events planned during the first Outreach Days that were held between June and August 2017 in Madrid and Soria.
  - In June 2018, Diputación Provincial de Soria granted, through external assistance, the preparation and design of a web page for the promotion of the Ornithological Tourism Program. It will be completed by October 2018. In addition, the domain birdwatchingsoria.com has been registered.

- **Publication of field guides with the natural values of the area**

  - In May 2018 the report "*Where and when to see birds in the South of Soria*" was drawn up by AEPMA through external assistance. All the birdwatching interest areas in the South of Soria interesting to be included in the OTP are listed. This guide was published in paper and digital format.

Table 6.37. Project milestones Action E4.

Milestone	Deadline	
	Scheduled	Actual
Start of dissemination campaign	30/3/2017	10/2016
Days for the dissemination of the LSP	30/5/2017	30/05/2017

6.1.28. Action E5. Dissemination of Action A7: Guidelines for the sustainable management and conservation of the SPAs Altos de Barahona and Páramo de Layna (responsible beneficiary: ARTESA)

Foreseen start date:	September 2018	Actual start date:	September 2018
Foreseen end date:	February 2021	Actual end date:	February 2021

Action E5 is successfully finished.

This action aimed to disseminate the contents of the Guidelines for the conservation and management of the SPAs Altos de Barahona and Páramo de Layna, which was elaborated and approved under Action A7, among the local public/population. This action has been mainly focused on the elaboration of informative material and on the realization of meetings and informative talks in the municipalities included in project area. Tasks included in the dissemination are:

- Preparation of informative documentation on the contents of the guidelines (Deliverable 43).
- Dissemination of this information through brochures, posters and digital platforms.
- Meetings and informative talks (half-yearly) with the local population and municipalities.
- Sectorial meetings (at least five) with farmers, shepherds, forestry companies, innkeepers and nature tourism companies.

Three deliverables have reported about this action (43, 55, 76).

Actions finally made were:

- Two brochures have been prepared with the most important information on the guidelines for the two SPAs (Altos de Barahona and Páramo de Layna) (Figures 6.58 and 6.59).

- Meetings and informative talks have been organized with the local population in all the municipalities and in most of the towns and villages included in the area. Specifically, the following meetings have been held:

  Between January and December 2020, 41 meetings were held in 27 localities: Alcubilla de las Peñas, Alpanseque, Arbujuelo, Arenillas, Barahona, Caltojar, Castro, Esteras de Medinaceli, Jodra de Cardos, La Riba de Escalote, Lumías, Madruédano, Marazovel, Medinaceli, Mezquetillas, Modamio, Pinilla del Olmo, Radona, Retortillo de Soria, Salinas de Medinaceli, Sauquillo de Paredes Tarancueña, Torrevicente and Valvenedizo.

  In 2020, we continued with the campaign of meetings with individuals and landowners to resolve doubts related to specific farms and land and the possibilities of changing land use on each farm. Most of them were related to land clearing to create agricultural areas, changes in crop types (lavender plantation, truffle plantation, etc.) and in specific cases the introduction of cattle to graze on the paramos. Most of the

meetings were in-field with 1 or 2 owners and/or users (tenants) of farms, and occasionally with the presence of the mayor of each municipality.

Figure 6.58. Explanatory brochures on management guidelines. SPA Altos de Barahona.

Figure 6.59. Explanatory brochures on management guidelines. SPA Páramo de Layna.

Table 6.38. Project milestones Action E5.

Milestone	Deadline	
	Scheduled	Actual
Start of the dissemination campaign	31/10/2018	31/10/2018
Ending of the dissemination campaign	15/02/2021	15/02/2021

6.1.29. Action F1. Project management by UAM: administrative, technical and economic management (responsible beneficiary: UAM; collaborating beneficiaries: INNOMAKER, FPN and DGMN-JCyL)

Foreseen start date:	September 2016	Actual start date:	September 2016
Foreseen end date:	February 2021	Actual end date:	September 2021

Action F1 is in progress (until delivery of final report)

This action focuses on ensuring coordination and integration of all actions, maintaining communication between partners and ensuring the project development and action implementation in accordance with the schedule, as well as ensuring compliance with the deadlines and milestones planned for the achievement of the proposal. Its objective is to generate an efficient project management mechanism, to achieve and ensure the maximum cooperation between the partners and the fulfilment of their responsibilities. This action has the same duration as the LIFE Ricotí Project.

Coordination and administration of the project is being carried out by: i) the project coordinator Dr. Juan Traba, ii) one technician hired by the UAM, Israel Hervás, to support the coordination and monitoring of the project, and iii) the company INNOMAKER (associated beneficiary) in charge of administrative and financial aspects of the project (Fig. 5.1; see Organization Chart).

Coordinators in each partner are: Andrés Dochao (INNOMAKER), Alberto Díez (ARTESA), Luis Latorre (AEPMA), Alberto Abad (DIPUTACIÓN), Antonio Martín (FPN), David Cubero (in DGMN-JCyL from September 2018, after Juan Julián del Nido left the project) and Fernando Marín (MANCOMUNI), until MANCOMUNI withdrawal.

Information transfer has been eased with a full and organized set of directories in Dropbox. The project has a common directory accessible to all associated beneficiaries, and 8 private directories, one for each of the beneficiaries, but accessible to both technical and administrative and financial coordinators, due to the type of information included (payrolls, contracts, etc.).

Regarding the **administrative-financial monitoring**, INNOMAKER and UAM elaborated a specific report: *LIFE Ricotí Project economic management and monitoring guidelines*. These were the guidelines for associated beneficiaries to know management, control and reporting procedures, both for administrative and financial issues (Deliverable nº 6). This deliverable was planned to be updated as the project required.

In summary, every three months administrative and financial coordinators (INNOMAKER and UAM) required all the relevant information from each partner (bills, timesheets, contracts, payrolls, public offers, contract documentation, etc.). This information was revised, corrected if necessary, and filed in Dropbox. Consequently, expenditure executed by each partner, and the project as a whole, were quarterly updated, both by category of expenditure and by action, as well as by the contribution of each of the partners. Thus, the project had quarterly updated version of the "financialreporting.xls".

In relation to the **technical monitoring** of the project, an internal report was elaborated: *LIFE Ricotí Technical guidelines*. Here we described the deliverable noticing, submission, revision

and approval procedure. Briefly, UAM gave notice twice, one month and one week in advance, to the beneficiary or beneficiaries responsible of each deliverable, of the expected date of delivery of the document and requiring information about the level of execution until date (in percentage). Once the deliverable was submitted to the Coordinator, this was uploaded to the Dropbox file *Deliverables under revision*, and revised by the Coordinator and all those beneficiaries directly involved in the topic. Once it was approved, the Coordinator uploaded the final document to the Dropbox file *Definitive Deliverables*, and informed the partners via e-mail. A file .xls with the actual state of each deliverable, located in the Dropbox, was then updated. This excel file included all the relevant information about each deliverable: order number, name, action to be linked, scheduled delivery date, partners involved, state of the document, approval date, observations, and comments.

Communication between Coordinator and other partners has always been fluid and efficient. So far, quarterly meetings have been held in which all the associated beneficiaries have participated (see Action F2). In addition, many thematic meetings related to specific topics of the project involving several partners have also held.

In relation to changes in the project's management structure, three changes should be mentioned:

1. Mancomunidad de Obras y Servicios de Corpes (MANCOMUNI), one of the beneficiary partners of the LIFE Ricotí project withdrew of the project.

   Since December 2017, MANCOMUNI showed financial and budgetary difficulties, which, although not directly related to the LIFE Ricotí Project, were brought to the attention of the project coordinator. After careful evaluation, the conclusion was that these difficulties could jeopardize the existence itself of MANCOMUNI as an institution and, as a consequence, put at risk the ability of successfully carrying out actions and commitments acquired with the LIFE Ricotí Project.

   At this point, MANCOMUNI decided to definitively withdraw of its participation in the LIFE Ricotí Project, in agreement with the coordinating partner UAM. This withdrawal took place from August 31st, 2018, transferring actions, tasks, and budget to other partners of the LIFE Ricotí project, as detailed in the corresponding report submitted to EASME in July 2018 named: *Amendment request for modification of the consortium of the project LIFE15 NAT/ES/000802 LIFE Ricotí*. That document described and justified the amendment request to modify the partner structure of the LIFE Ricotí Project. The withdrawal modified the project structure and provoked the subsequent reallocation of functions and budget to two other project partners: Universidad Autónoma de Madrid (UAM; coordinating partner), and Diputación Provincial de Soria (DIPUTACIÓN; beneficiary partner). The rest of the partners of the LIFE Ricotí project knew the amendment and agreed with it, as justified by the letters of compliance accordingly attached to the request.

2. UAM, as a public university, had public elections to Rector (President of the University) in May 2017. The past Research Vice-rector, who was the person responsible for signing all the contracts between EASME and UAM, and between UAM and the associated beneficiaries, won the run, being the Rector until July 2021. As a consequence, the responsible person at UAM changed, being D. José Manuel González Sancho until July 2021.

3. In May 2021, a new Rector won the elections, and a new Vice-rector for Scientific Policy (Daniel Jaque García) is at present the person responsible for UAM. All these changes were properly communicated to EASME (now CINEA).

Two deliverables included in Action F1 have been completed: Deliverable nº2, *Kick-off meeting* and Deliverable nº 6, *Project Management Manual*.

Table 6.39. Project milestones Action F1.

Milestone	Deadline	
	Scheduled	**Actual**
Kick-off meeting	15/9/2016	30/09/2017
Annual management meeting	20/12/2016	18/05/2017
Internal training project economic management	16/01/2017	26/09/2017
Annual management meeting	20/12/2017	16/01/2018
Annual management meeting	20/12/2018	21/11/2018
Annual management meeting	20/12/2019	05/11/2019
Final management meeting	30/09/2021	23/09/2021

6.1.30. Action F2. Coordination: meetings (responsible beneficiary: UAM; collaborating beneficiaries: INNOMAKER, FPN and DGMN-JCyL)

Foreseen start date:	September 2016	Actual start date:	September 2016
Foreseen end date:	February 2021	Actual end date:	September 2021

Action F2 is successfully finished.

Meetings of the consortium were convened quarterly, though later in the project we decided to convene them every six months. Main tasks carried out in this action were:

- Report on the execution of tasks in the previous period.
- Review of the planned tasks for the next quarter of the project.
- Presentation of periodic reports and updates.
- Coordination strengthening and exchange among project members.

Meetings held are shown in table 6.40.

Table 6.40. Consortium meetings held to date.

MEETING	DATE
Kick off meeting. Held at the Autonomous University of Madrid (Madrid)	2016/09/30
I Quarterly meeting 2017. Held in Medinaceli (Soria)	2017/01/26
II Quarterly meeting 2017. Held in Medinaceli (Soria)	2017/05/18
III Quarterly meeting 2017. Held at the Autonomous University of Madrid (Madrid)	2017/09/26
IV Quarterly meeting 2107. Held in Barahona (Soria)	2018/01/16
I Half-yearly meeting 2018. Held in Alcubilla de las Peñas (Soria)	2018/04/24
II Half-yearly meeting 2018. Held in Retortillo de Soria (Soria)	2018/11/21
I Half-yearly meeting 2019. Held at the Autonomous University of Madrid (Madrid)	2019/07/04
II Half-yearly meeting 2019. Held in Medinaceli (Soria)	2019/11/05
I Half-yearly meeting 2020. Online	2020/04/24
II Half-yearly meeting 2020. Online	2020/10/29
I Half-yearly meeting 2021. Online	2021/03/11
II Half-yearly meeting 2021 (and final project meeting). Online	2021/09/23

All meetings started with a general exposition by the general coordination (Juan Traba, Israel Hervás, UAM) of the state of progress of the project, news and changes. Then, all partners

explained the status of progress of those actions in which they are involved, showing both the technical, economic, and financial progress. Second part of meetings were usually presented by INNOMAKER and were devoted to the presentation of the overall economic status of the project, as well as a review of administrative documents, invoices, time sheets and monitoring procedures. Ainhoa Darquistade, external project monitor, visited the LIFE Ricotí project several times:

1. May 18, 2017
2. April 24 and 25, 2018
3. May 16, 2019
4. May 12, 2020
5. June 30, 2021
6. December 1 and 2, 2021

In several of these meetings, some time was dedicated to field trips to visit conservation, monitoring or dissemination actions. Throughout each visit, the project monitor always provided suggestions, advice and resolved doubts.

1st and 2nd, and 3rd and 4th trimester 2018 meetings, were merged in one meeting, due to the lack of actions related to many different partners. From that moment, we convene to re-schedule the consortium meeting to a half-yearly basis.

Deliverables prepared so far in the context of Action F2 have been: 1, 7, 33, 47, 57, 69 and 82.

In addition to these general meetings of the consortium, numerous technical meetings have been held between different partners.

Table 6.41. Project milestones Action F2.

Milestone	Deadline	
	Scheduled	Actual
4th trimester 2016 meeting	15/12/2016	30/09/2016
1st trimester 2017 meeting	15/03/2017	26/01/2017
2nd trimester 2017 meeting	15/06/2017	18/05/2017
3rd trimester 2017 meeting	15/09/2017	26/09/2017
4th trimester 2017 meeting	15/12/2017	16/01/2018
1st trimester 2018 meeting (merged with the next)	5/03/2018	24/04/2018
2nd trimester 2018 meeting (merged with the previous)	15/06/2018	24/04/2018
3rd trimester 2018 meeting (merged with the next)	15/09/2018	21/11/2018
4th trimester 2018 meeting (merged with the previous)	15/12/2018	21/11/2018
1st trimester 2019 meeting (merged with the next)	15/03/2019	04/07/2019
2nd trimester 2019 meeting (merged with the previous)	15/06/2019	04/07/2019
3rd trimester 2019 meeting (merged with the next)	16/09/2019	05/11/2019
4th trimester 2019 meeting (merged with the previous)	15/12/2019	05/11/2019
1st trimester 2020 meeting (merged with the next)	16/03/2020	24/04/2020
2nd trimester 2020 meeting (merged with the previous)	15/06/2020	24/04/2020
3rd trimester 2020 meeting (merged with the next)	15/09/2020	29/10/2020
4th trimester 2020 meeting /1st trimester 2021 (merged with the previous)	15/02/2021	29/10/2020
2nd trimester 2021 meeting	30/06/2021	11/03/2021
3rd trimester 2021 meeting/Final meeting	10/09/2021	23/09/2021

6.1.31. Action F3. Indicators (responsible beneficiary: UAM; collaborating beneficiaries: FPN and DGMN-JCyL)

Foreseen start date:	September 2016	Actual start date:	September 2016
Foreseen end date:	February 2021	Actual end date:	September 2021

Action F3 is successfully finished.

This action aimed to elaborate and test a list of indicators, to evaluate the efficiency of the project. Technical and administrative-financial coordination of the project, under the supervision of the project coordinator, and with the collaboration of the FPN and JCyL coordinators have reviewed the list of indicators.

The new performance indicators (KPIs) that were used for the assessment of the LIFE Ricotí project were presented in deliverable 32, *Indicator reports*. These were updated to the structure of the LIFE Programme database, which collects the KPIs of all LIFE projects.

The implementation of this new database has increased the number of indicators compared to those presented in the e-proposal and the modification of the state values of many of them. On the other hand, after the preparatory actions concluded (Actions A) a more precise quantification of some important indicators could be done, such as the population size of the Dupont's lark.

6.1.32. Action F4. External audit (responsible beneficiary: UAM)

Foreseen start date:	January 2021	Actual start date:	January 2021
Foreseen end date:	February 2021	Actual end date:	December 2021

Action F4 is successfully finished

The UAM, as coordinator of the project, is responsible for the management of the audit and the hiring of the company responsible for executing it, ensuring compliance with the necessary quality, homologation and guarantee requirements.

Audit company was conveniently hired following standards protocols at UAM. During the last weeks previous to the delivery of this final report, audit company has revised and controlled expenses and executions of UAM partner, requesting for clarifications when needed. Final audit report is included with this final report.

Table 6.42. Project milestones Action F4.

Milestone	Deadline	
	Scheduled	Actual
Final audit report	30/09/2021	02/02/2022

6.1.33. Action F5. Scientific Committee (responsible beneficiary: UAM)

Foreseen start date:	November 2016	Actual start date:	December 2016
Foreseen end date:	February 2021	Actual end date:	September 2021

Action F5 is successfully finished.

The creation of a Scientific Committee for the monitoring of the LIFE Ricotí project arouse from the need to have objective, independent and critical support of scientific authorities with the capacity to help the Project Coordinator to achieve the optimum results in the conservation of the Dupont's lark and its habitats.

After accepting the formal invitation made by Juan Traba, project coordinator, the Scientific Committee was constituted in November 2016 (first e-mail communication on October 24th 2016) and was made up by the following members:

- Dr. David Serrano: Doñana Biological Station-CSIC (Spain).
- Dr. Eduardo de Juana: Complutense University of Madrid. Ex-President of SEO-Birdlife (Spain).
- Dr. José Miguel Olano: University of Valladolid (Spain).
- Dr. Germán López: University of Alicante (Spain).
- Dr. Mohammed Znari: University Cadi Ayyad of Marrakech (Morocco).

At the proposal of the project director, and with the consent of all members, Dr. Eduardo de Juana was appointed **Chairman of the Scientific Committee**.

Four deliverables were elaborated: 8, 35, 60 and 81. Number 46 was not delivered as meeting corresponding to that report did not occur (see below). The first meeting had an informative nature. The Project Coordinator outlined the functions to be developed by the Committee and its basic lines of operation. Subsequently, he made a detailed description of the project, outlining the main objectives to be achieved, the actions to be developed, the planned timetable and the budget allocated. The Committee endorsed the general approach of the project as well as the schedule of tasks to be carried out during 2017.

The second meeting was scheduled to be held in December 2017, but it was decided, with the agreement of all Committee members, to be postponed until spring 2018, in order to coincide with a field trip to the study area. This meeting was finally held on March 24th-25th 2018. During this field trip, the Scientific Committee had the opportunity of participate in bird censuses and captures. Thus, meeting

In the morning of March 25th, a field demonstration of the sampling techniques used in censusing, capturing, biological sample collection and biometric measurements of the Dupont's lark was carried out. Afterwards, those areas where habitat restoration actions had already been carried out were visited (selective management and elimination of trees and shrublands, topographic restoration and dung sowing).

A technical briefing was held in the afternoon. Dr. Juan Traba, coordinator of the project, presented the results obtained so far and the foreseen tasks planning until the project completion.

Third meeting was scheduled to be held during 2018, but did coincide with the second one already held. Besides, some difficulties to find a date for the whole Committee were find during 2019. Finally, third meeting was held telematically trough the Microsoft Teams platform on May 19, 2020. Dr. Juan Traba, coordinator of the project, presented the results obtained so far and the foreseen tasks planning until the project completion. The Committee requested and obtained detailed information on all the doubts, suggestions and comments raised. The Committee endorsed the general approach of the project, as well as the schedule of tasks to be carried out until the end of the project.

Fourth (and final) meeting held telematically on September 29, 2021. The meeting was attended by Dr. David Serrano, Dr. José Miguel Olano, Dr. Germán López, and Dr. Juan Traba Díaz, as project coordinator, and Mr. Israel Hervás. The final meeting of the Scientific Committee served to inform of the general results of the LIFE Ricotí project.

The project coordinator presented in a clear and detailed way the objectives of the project, the actions implemented, and the main results obtained.

The Committee requested and obtained detailed information on all doubts, suggestions and comments raised.

Particularly noteworthy conclusions were the following:

- The trend of the Dupont's lark in Spain is very worrying.
- It has been demonstrated that at a local scale the implementation of conservation actions is positive for the species.
- Extensive sheep farming is a key element for the conservation of the species.
- It is necessary to improve the social perception of the species and involve it in its conservation.

Table 6.43. Project milestones Action F5.

Milestone	Deadline	
	Scheduled	Actual
First meeting of the Scientific Advisory Committee	15/11/2016	16/12/2016
Meeting of the Scientific Advisory Committee	15/11/2017	25/04/2018
Meeting of the Scientific Advisory Committee (cancelled)	15/11/2018	-
Meeting of the Scientific Advisory Committee	15/11/2019	19/05/2020
Final meeting of the Scientific Advisory Committee	15/05/2021	29/09/2021

6.1.34. Action F6. After-LIFE dissemination plan (responsible beneficiary: FPN)

Foreseen start date:	January 2019	Actual start date:	January 2019
Foreseen end date:	February 2021	Actual end date:	September 2021

Action F6 is successfully finished.

The objective of this action is to extend the temporal scope of the diffusion of the results of the LIFE Ricotí project beyond its life. Before the finalization of the project, a document of design of the After-LIFE dissemination plan has been prepared (deliverable 68).

A minor mistake has been detected in the project, as a deliverable *Memoria anual de comunicaciones científicas; Annual Report of scientific communications* is allocated to this action, when it had to be included in Action E3.

The main lines of action of the Post-Life plan are:

Post-LIFE Dissemination Plan:

- Maintenance and updating of the project website for at least 5 years after the end of the project (FPN).
- Publication of technical and scientific papers (UAM).
- Communication of the results in congresses, conferences and workshops (UAM).
- Presentation of an itinerant photographic exhibition in different locations in Castilla y León (FPN).
- Maintenance and updating of content on social networks, by linking to the LIFE Connect Ricotí project (INNOMAKER).

Post-LIFE Conservation Plan:

- Monitoring and conservation of steppe habitats (JCyL).
- Restoration of steppe habitats (JCyL).
- Monitoring of the Dupont's lark populations, its habitats, and the state of conservation through regular meetings of the Working Group on the species (GEAR).
- Monitoring of the Land Stewardship Program and the Ornithological Tourism Program.
- Monitoring of the implementation of the normative instruments generated in the project (UAM).

6.2. Main deviations, problems and corrective actions implemented

1. During the first months of the project, the priority was to achieve formal agreements with landowners (Action A10) for the implementation of the Conservation Actions. This involved a long process of starting contact, gathering information and initiating negotiation, with a relatively small group of interlocutors, which must be managed in a very thoughtful way. From the first moment, we realized that total synchrony between all actions involving contacts with the local population was essential, with the aim of offering a unique, coherent and solid speech. As a result, this meant a slight to moderate delay of some actions. In addition, we decided to stop negotiations for a few weeks due to two reasons: (i) to obtain approval from EASME for the signature of contracts with local public administrations; and (ii) the procedure for drafting a contract model and then to be approved by the Legal Cabinet of the Junta de Castilla y León took more time than expected. Besides, one of the landowners that has initially given consent to sign contracts (Barcones municipality) finally retracted, and it forced the project to resume contacts with other landowners. In short, this has been a long and laborious process, more than anticipated in the project proposal, which have successfully culminated in the signing of contracts with landowners (public and private).

2. This delay in signing final agreements with landowners affected the implementation of Actions C on the field. In the specific case of Retortillo de Soria, this delay prevented starting habitat restoration works in this area before the beginning of Dupont's lark breeding period in spring 2018. Thus, this works began in October 2018 and it finished previously to the beginning of the next reproductive period. To avoid gaps in gathering data during that year, we kept sampling (Action A2) in this area until September 2018, just before the works started. In all other areas, all field tasks related with Action 2 were completed as planned.

3. The delay in Action A3 was due, in addition to above-mentioned reasons, to data protection requirements demanded by the regional administration in collecting detailed personal information. Deliverable nº 17 was finally approved in May 2018.

4. In view of the comments received from regional administrations, we proposed a modification in the final approval process and entry into force of the "Guidelines for the management and sustainable conservation of the SPAs Altos de Barahona y Páramo de Layna". Finally, the Guidelines were officially approved by Regional Government of Castilla y León on 22 July 2019 (Resolution of 15 July 2019).

5. In relation to dissemination actions, the main technical problem during these months was the full implementation of the webpage, which significantly delayed from the scheduled chronogram. Due to unprogrammed human resource problem in the associated beneficiary responsible for this action (FPN), creation and implementation of the web page had to be subcontracted, which needed a fully accomplishment of the Public Bodies Contract Law. This provoked a minor economic change (6,000€) from what was initially established in the project and motivated the delay. FPN is now in charge of the maintenance of the web page.

6. A relevant change was organizational, related to the withdrawal of one of the partners of the project, Mancomunidad de Obras y Servicios de Corpes (MANCOMUNI); and the subsequent reallocation of its functions and budget to two other project partners:

Universidad Autónoma de Madrid (UAM; coordinating partner), and Diputación Provincial de Soria (DIPUTACIÓN; beneficiary partner).

Since December 2017 Mancomunidad showed financial and budgetary difficulties, which, although not directly related to the LIFE Ricotí Project, were brought to the attention of the project coordinator. After careful evaluation, the conclusion was that these difficulties could jeopardize the existence itself of MANCOMUNI as an institution and, as a consequence, put at risk the ability of successfully carry out actions and commitments acquired with the LIFE Ricotí Project.

At this point, MANCOMUNI decided to definitively withdraw of its participation in the LIFE Ricotí Project, in agreement with the coordinating partner UAM. This withdrawal was notified to EASME and finally approved by October 2018.

7. Following the standard biding protocols for public administrations in Action C1, a considerable amount of money was saved from the low process in the successful bid for the outsourcing of the conservation works in additional actions within the Land Stewardship Program. We requested form external monitoring and EASME the possibility of including FPN in Action C5, which could ease to reinvest that saved money in other conservation actions. It must be reminded that FPN is an official Land Stewardship entity. Final approval from EASME came in November 27, 2019, which allowed to sign agreements with private landowners as Ranz-Ramírez family (Arbujuelo, Medinaceli, around 500 ha).

8. COVID-19 pandemics provoked significant alterations of scheduled activities, affecting several critical actions and forcing to request for a deadline extension (initially planned end of project was February 15, 2021). Actions affected by pandemics were:

   <u>Action C5 Land Stewardship Program</u>

   Ornithological Tourism Program

   The Ornithological Tourism Program (OTP) included in Action C5 "Land Stewardship Program", and coordinated by Diputación Provincial de Soria, was scheduled to carry out promotional meetings with national and international tour operators, and to be field-tested by these tour operators during April to June 2020. These activities were included in the final stage of the OTP Marketing Plan and should preferably be carried out in spring-summer due to the higher interest for bird watching during these seasons. Covid-19 restrictions prevented these works to be done on the scheduled date, so it was necessary to re-locate them in spring-summer 2021.

   Land Stewardship Program

   Negotiations for the signing of agreements with landowners that meant to be included in the Land Stewardship Program (LSP) also suffered a halt during the months of confinement of the pandemic. These negotiations were resumed in July 2020 and several contracts have already been signed with three landowners (two public, one private), but another one was expecting the landowner sign, while the signing of another three agreements were expected. Only after signing the agreements may the tasks of habitat improvement (mainly road arrangement, livestock fencing, and installing bird observatories) be carried out, so this imposed an expected date of finishing works beyond February 2021. Despite

this change, the budgetary items for external assistance and personnel foreseen for the execution of Action C5 remained unchanged. Any unforeseen expenses that could arise during the extension was assumed by Diputación, so the budget approved in the project was not modified.

Actions D1 (birds), D2 (habitat structure)

Field sampling of the whole study area should have been carried out during spring 2020 to compare with results from preparatory actions in spring 2017. Spanish government restrictions to mobility, especially those related to interprovincial movements due to Covid 19 pandemic, as well own safety measures, prevented of doing these tasks on time. Finally, after restrictions were lifted, only partial field sampling could be carried out during late June 2020, thus limiting the comparison with 2017 data.

These actions (D1 and D2) were developed just by UAM, and budgetary modifications corresponded exclusively to the UAM budget. In order to carry out these tasks, several budgetary changes were needed. In short, it was necessary to allocate more funds to Additional staff dedicated to field sampling and data and samples postprocessing. This change implied 104,094.70€ additional in relation to last approved budget. This amount was transferred from unspent budget due to undone field sampling during spring 2020. Specifically, 75,751.28€ came from unspent travel costs, 19,952.81€ from unspent car renting; 5,018.07€ from consumables; 2,320.95€ from other costs; and 1,421.76€ from equipment.

Action D4 (Socioeconomic monitoring)

This action needed to be extended, as final surveys and workshops were not carried out during the 2020 spring and should be re-scheduled for the next one. No budgetary modification was needed.

Action D5 (Monitoring of the Land Stewardship Programme)

This action was naturally time-extended as the deadline of the project was extended to September 2021. No budgetary modification was needed.

Actions E1 (project dissemination), E2 (dissemination to regional, national and European administrations), E3 (scientific and technical publications)

All these actions were naturally time-extended as the deadline of the project was extended to September 2021. No budgetary modification was needed.

Actions F (Project management). F1 to F6

All these actions were naturally time-extended as the deadline of the project was extended to September 2021. No budgetary modification was needed.

As a consequence, an extension to September 30, 2021 of the project deadline was requested to EASME to carry out field sampling and other necessary tasks in the whole study area and to allow comparisons with 2017 results. This extension did put no risk in the execution of the LIFE Ricoti project objectives; on the contrary, it allowed to achieve all the initially planned targets. This request was finally approved on January 29, 2021.

9. A significant problem was related to the filing of a civil lawsuit against UAM (as coordinating beneficiary of the LIFE Ricotí project) by the Comunidad de Eriales y Liegos de Layna, a private society of landowners (app. 1800ha) within the SPA Páramo de Layna (total area: app. 8000 ha), on the grounds that the execution of the Life Ricotí project had caused it an economic loss and it was also requesting an action for unjust enrichment. This action was heard at trial, and a judgment of conviction was issued against the plaintiff (Comunidad de Eriales y Liegos de Layna) exonerating UAM from all liabilities and expenses. However, the general coordinator of the project and the manager of the Land Stewardship Program had to attend and testify at the trial (November 14, 2019).

   This affair prevented of engaging this private society into the project, though this has not jeopardized the final outputs of the project.

6.3. Evaluation of Project Implementation

At the end of the project, we believe that the project LIFE Ricotí has reached all its main objectives, avoiding the main obstacles for its implementation, that is, signing contracts with landowners for the implementation of conservation actions. Objectives, expected results and achieved results are summarized in Table 6.44.

In relation with methodology applied in the project, actions carried out has been well adapted to objectives, in time, personal and material involved. This good fit between planning and execution is due to the extensive prior experience of the proponent team.

After excluding those issues beyond the control of the Consortium (delay in signing of contracts with landowners), the most remarkable delay was that related with creation and implementation of the webpage. As discussed in other parts of this report, a human resource problem in the beneficiary responsible for this action caused a significant delay in starting up the LIFE Ricotí web page.

After five years of project, main visible results are related to the implementation of conservation and dissemination actions. On the landscape level, effects of restoration measures linked to actions C1, C2 and C4 (elimination of trees, clearing of trees, topographic restoration, dump restoration) are eye-sight evident. The result of these actions is truly satisfactory, and it has increased habitat availability for the Dupont's lark. Action C3 has demonstrated the utility of dung sown to replace sheep grazing when/where this cannot be implemented. However, its utility decays with time, so for a correct implementation, dung sown has to be repeatedly applied, and cannot be considered a replacement of natural grazing. Action C5, though with some delays, has allowed to successfully increase the awareness and implication of local stakeholder and human population in the conservation of Dupont's lark and steppe habitat through the Land Stewardship Program. The Ornithological Tourism Program has provided an useful and already-functioning alternative for the socio-economic development of these marginal and depopulated regions.

From the explicitly point of view of knowledge of the project and dissemination, we believe that the LIFE Ricotí project is now well-known among local population, authorities, and scientific community.

In an in-deep analysis of the specific objectives of the LIFE Ricotí project, we can find that:

1. **Conservation and improvement** of Dupont's lark populations in southern Soria (SPAs ES0000203 Altos de Barahona and ES0000255 Páramo de Layna), which represent approximately 15% of the European population of the species.

   The population of Dupont's lark in southern Soria, where SPAs are located, has shown a decreasing trend during these last five years, as the whole Iberian population has suffered. Apart from causes related with fragmentation and isolation at a metapopulation Iberian scale, which are factors that did not cease during these years, a considerable percentage of this decrease may be attributed to a catastrophic meteorological event (Filomena snowstorm), which caused intense and dramatic population losses in the overall Iberian distribution of the species (between -60% to -80% in censused areas of Castilla y León and Castilla-La Mancha). However, in those areas under the framework of conservation actions of the LIFE Ricotí project, the number of Dupont's lark territories increased from 9 in 2017

to 26 in 2021 (+189%; up to 37 territories in 2020, +311%, before Filomena storm) with confirmed reproduction: nests with eggs and female with fledglings were seen in both Retortillo and Barahona restored areas, respectively. The success of restoration by conservation actions in the LIFE Ricotí project is indisputable, reducing and even reversing negative trends in the specific restored areas (see Figure 6.25), and buffering the terrible effect of Filomena. In the medium term (2025), we expect to find an increase in Dupont's lark population size as a response to restoration actions carried out by the project.

A relevant aspect, already predicted in the Population Viability Analysis carried out in the Action A5 (see above) is the rapid positive response of the population to improvements in the demographic parameters analysed, specifically those related to increase productivity and decrease youth mortality, both closely related. Any type of action aimed at improving the quality of the habitat result, therefore, in increasing the survival of chickens and juveniles, which significantly improved the risk of extinction of specific populations and patches, though could restrain effects on the whole metapopulation. This may help to explain the positive effect of conservation actions on restored areas, despite the negative trend on control ones. Therefore, this should help to impulse conservation actions in a relevant greater area, to allow recovery of the species in its whole distribution.

2. **Increase habitat availability** through direct habitat restoration measures and the maintenance and promotion of livestock management in the two considered SPAs.

The LIFE Ricotí project has provided new 325 ha of suitable habitat for the Dupont's lark, previously unsuitable/inadequate for the settlement of the species. Besides, the project has included more than 3000 ha to the Land Stewardship Program, addressed to keep maintaining excellent conditions and habitat quality for the establishment and reproduction of the Dupont's lark.

3. Evaluation of relationships between **habitat quality and population viability** of Dupont's lark in the framework of conservation strategies.

The LIFE Ricotí project has demonstrated the close relationship between extensive sheep grazing and steppe habitat quality. Extensive sheep grazing promotes an adequate plant structure, with bare ground and a low herbaceous cover. Sheep grazing also contributes to increase arthropod abundance (food biomass for insectivorous birds, as the Dupont's lark). Finally, a close and significant relationship between sheep grazing and Dupont's lark has been demonstrated.

4. Definition of **criteria for habitat management** of the species, which will be integrated into the National and Regional Conservation Strategies for the Dupont's lark.

The LIFE Ricotí project has greatly contributed to define management measures for the conservation of the species and its habitat in Castilla y León and Spain. It has be done through the Guidelines for the management and restoration of Dupont's lark habitat in Altos de Barahona and Páramo de Layna SPAs. The Management and Conservation Guidelines of the SPAs, which are a legal instrument for the regulation of land uses, were officially approved by Regional Government of Castilla y León (JCyL) on 22 July 2019

(Resolution of 15 July 2019). Besides, the LIFE Ricotí project has participated in the elaboration of the National Conservation Strategy for steppe birds (awaiting final approval), and the already officially approved relisting of the species in the National Catalogue of Threatened Species from “Vulnerable” to “Endangered”.

5. Improved level of **awareness and social valorisation** of the species in the local stakeholders.

The implementation of LIFE Ricotí project, and the continuous presence of members of the LIFE Ricotí team in the study areas during these 5 years have greatly contributed to a significant increase of the awareness and implication of the local population in the conservation of the Dupont’s lark and its habitat. Some figures are explanative about this: 37.1% of people stated in 2021 that they were aware of the LIFE Ricotí Project in the study area, which is 17.6% higher than in 2017. 62.9% of the surveyed population in 2021 considered that the project had brought some benefit to local populations during its development. The most mentioned benefits were environmental ones, linked to the conservation of the bird, its habitat and biodiversity in general, followed by environmental education and nature tourism. The percentage of respondents who stated that they were aware of the existence of SPAs in the study area increased by ten points compared to 2017. While only 9.5% of respondents recognized the aspect of the Dupont’s lark in 2017, this value rose to 21.0% in 2021. All these data confirm the increase in knowledge and awareness about the species, its habitat, the LIFE program and the N200 network during the timeframe of the LIFE Ricotí project.

The Diputación de Soria, beneficiary of the project, intends to continue with the implementation of a plan to promote ornithological tourism, which starts with this project. Likewise, all custody agreements signed in the framework of the Land Stewardship Programme will have a time framework much higher than the range of the project itself.

Besides, during the next years, dissemination activities will be working as scheduled in the Post-Life. At this moment, we have a dynamic web page, properly updated, and both in Spanish and English version (http://www.lifericoti.org). Dissemination material (panels, brochures, roll-up, manuals, books, etc.) have been edited and printed and area available to the public. Exterior panels are installed in restored fields. A great effort has been made to disseminate the scope of the project to local population through numerous meetings held in different localities. In relation to networking tasks, the working group was properly launched in March 2016, as a result of another project coordinated by the UAM team, and is working under scheduled. Finally, scientific papers are sending for publication at a good pace, as well as presentations in technical congresses.

Table 6.44. Foreseen objectives, expected results, achieved results and evaluation of the actions implemented.

Action	Foreseen	Achieved and evaluation
A1	**Objectives:** -Revising and updating the state of art about Dupont´s lark. **Expected results:** -Creation of an up-to-date bibliographic database.	- Establishment of a database with 395 documents. + The search and gathering of bibliographic material is continuously active.
A2	**Objectives:** -Define the pre-operational status of Dupont's lark and its habitat. **Expected results:** -Habitat availability mapping. -Estimation of Dupont's lark population size and distribution. -Estimation of plant structure and floristic composition. -Estimation of food availability.	- High-resolution potential Dupont's lark mapping. - 97 transects for bird censuses. - 115 sampling stations for determinate plant structure and floristic composition. - 115 sampling stations (per station: 3 pit-fall traps for terrestrial invertebrates + 1 pit fall for coprophagous - 20 m transect for aerial invertebrates) in 6 different sampling dates. + All field works have been carried out as planned.
A3	**Objectives:** -Define present situation of livestock in the study area. **Expected results:** -An accurate diagnosis of sheep/lamb sector in the study area.	- Collection and analysis of statistical and documentary information. - 16 surveys conducted on livestock farm owners. - 5 interviews with relevant actors from public institutions. - Diagnosis of the current state. + The objectives have been achieved.
A4	**Objectives:** -Analyse socioeconomic indicators prior to the project starting. -Analyse social perceptions about the conservation of Dupont's lark and its habitats. -Conduct a sociodemographic study of perceptions and attitudes of local populations. **Expected results:** -To get a complete picture of the characteristics of the study area in terms of employment, economic activities, etc. -Detect significant speeches about the conservation of Dupont's lark. -Assess local population knowledge about the species and the project.	- Selection of socioeconomic indicators, both general and specifics. - Assessment of socioeconomic situation in the study area. - 18 interviews with key social actors. - Analysis using Q methodology. - Survey of 169 polls. + All objectives have been successfully achieved. + Participatory workshops were replaced by a new series of surveys to be carried out during the last year of the project.
A5	**Objectives:** -Analyse data gathered in Action A2.	- Accurate distribution map for Dupont's lark.

Action	Foreseen	Achieved and evaluation
	Expected results: -Define potential distribution of Dupont's lark. -Identify formations and land uses in the study area. -Define Dupont's lark habitat selection. -Define size populations. -Estimate population trends. -Define the real distribution area. -Connectivity Analysis. -Population Viability Analysis.	- Accurate potential distribution map for Dupont's lark. - Updated Dupont's lark population size and trend estimates. - Relationship between habitat quality and species presence. - A Connectivity Analysis carried-out. - A Population Viability Analysis carried-out. + All tasks successfully finished. + Results were the basis for the design and implementation of Actions A6, A8, A9 and A10, and establish the baseline for the monitoring actions D1, D2 and D3.
A6	**Objectives:** -Identification of zones of action. **Expected results:** -List of potential areas of action.	- Prioritization criteria for the selection of action zones. - List of priority zones to carry out conservation actions (20 for Land Stewardship Programme, 6 for tree clearing actions, 6 for tree cutting actions, 3 for dung sowing, and 1 for topographic restoration). + All tasks successfully finished.
A7	**Objectives:** -Elaboration of a technical report which will serve as the basis for the "Management and Conservation Guidelines of the SPAs" **Expected results:** -Drafting of the "Guidelines for the management and sustainable conservation of the SPAs Altos de Barahona and Páramo de Layna"	- All phases completed. + Guidelines officially approved.
A8	**Objectives:** -Design of Dupont's lark habitat restoration and improvement projects. **Expected results:** -Collection of seeds. -Drafting of restoration projects.	-150.000 seeds collected and stored. - Restoration projects elaborated. + All tasks successfully finished.
A9	**Objectives:** -Drafting of a dung sowing project. **Expected results:** -Technical report describing methods for extraction, transport and spreading of sheep dung, as well as criteria for the selection of the plots.	- Dung sowing project was finished. It is included in deliverable nº 26. + All tasks successfully finished.
A10	**Objectives:** -To establish contacts and sign contracts with landowners for the implementation of restoration Actions C1-C4. **Expected results:** -Signing of contracts.	- Three contracts signed: Barahona municipality, Retortillo de Soria municipality, and Mrs. María José Rosa María Ramírez and sons. + All tasks successfully finished.

Action	Foreseen	Achieved and evaluation
A11	**Objectives:** -Design and drafting of the Land Stewardship Programme (LSP). **Expected results:** -Information gathering and visits to similar LSP. -General design of LSP. -Preparation of Ornithological Tourism Program (OTP). -Election of the headquarters for the LSP. -Selection and hiring of LSP manager.	-Information consultation and analysis of LSP implemented in the Autonomous Communities of Castilla y León, Aragon and Andalusia. - 2 visits to similar LSP in Spain: Raptor Refuge in Montego de la Vega (Segovia) and Ornithological Reserve of El Planerón (Belchite, Zaragoza). -Definition of general objectives of the Program. -Drafting of internal regulations. -Identification of potentialities and shortcomings. -Identification of local stakeholders. -Specific proposals of fields to be included in LSP. -Proposal of types of agreements. -Methodology for LSP monitoring. -Inventory of tourism resources. -Guidelines for OTP Action Plan. -Identification, selection and contact with companies of the Nature Tourism sector. -Formalization of DIPUTACIÓN as a Land Stewardship Entity. -Election of the headquarters: Barahona and Medinaceli (Soria). -Selection and hiring of LSP manager (November 2016). +All tasks successfully finished.
B1	**Objectives:** -Compensatory payment for conservation actions. **Expected results:** -Execution of payments	-All payments completed. + All tasks successfully finished.
C1	**Objectives:** -Habitat restoration. **Expected results:** -Selective management and elimination of trees and shrubs (300 ha).	- 116.63 ha restored in Barahona Municipality. - 50.00 ha restored in Medinaceli Municipality. - 135.14 ha restored in Retortillo Municipality. + All tasks successfully finished.
C2	**Objectives:** -Habitat restoration. **Expected results:** -Topographic restoration (5 ha).	- 5.16 ha restored in Medinaceli Municipality. - Levelling of plantation ridges by passing chains of a backhoe loader has been a success. - This restoration technique can be used in similar situations in other areas. + All tasks successfully finished.
C3	**Objectives:** -Habitat restoration. **Expected results:** -Ecological functionality restoration by sheep dung sowing (20 ha).	- 83,300 kg of sheep droppings have been spread over 20 ha in Medinaceli Municipality. + All tasks successfully finished.
C4	**Objectives:** -Habitat restoration.	- Restoration of a dump in Mezquetillas (Alcubilla de las Peñas Municipality).

Action	Foreseen	Achieved and evaluation
	Expected results: -Removal of dumps and restoration of altered soils (2 ha). -Seed sowing, plantations and other previous tasks.	+ All tasks successfully finished.
C5	**Objectives:** -To conduct land management compatible with Dupont's lark habitat conservation through implementation of a Land Stewardship Programme (LSP). **Expected results:** -Signing of contracts. -Implementation of an Ornithological Tourism Program (OTP).	- Description of LSP basic contents. - Contacts, negotiations and verbal agreements with landowners (6 municipalities and a private owner, for a total of 3000,60 ha). -Writing of guidelines for OTP Action Plan. -Implementation of network of tourism establishments associated with OTP. - Supporting Plan for Entrepreneurs. + All tasks successfully finished.
D1	**Objectives:** -To determinate the effects of conservations actions on Dupont's lark. **Expected results:** -Estimation of changes in population size. -Estimation of changes in distribution area. -Analysis of movements and connectivity. -Diet analysis (metabarcoding).	- Bird census carried out during 2018-2021 (population size and distribution). - >500 birds captured and marked in the study area (movements and connectivity). - Dung samples collected from >400 birds (diet analysis). - Genetic analyses. + All tasks successfully finished.
D2	**Objectives:** -To monitor successional evolution of plant structure and composition in those areas where restoration works have been carried out. **Expected results:** -Estimation of changes in plant structure and composition.	- 115 sampling stations during 2018-2021 to evaluate plant structure and floristic composition. + All tasks successfully finished.
D3	**Objectives:** -To evaluate effects of conservation actions on food availability. **Expected results:** -Estimation of changes in food availability.	- 115 sampling stations (per station: 3 pit-fall traps for terrestrial invertebrates + 1 pit fall for coprophagous + 20 m transect for aerial invertebrates) in 4 different sampling dates during 2018-2021. + All tasks successfully finished.
D4	**Objectives:** -Monitoring of socio-economic impact of the project. **Expected results:** -Assessment of potentially changes in socio-economic variables. -Assessment of changes in social perception.	- Pre-operational situation as defined in Action A4. - Post-operational situation analysed in 2021. + All tasks successfully finished.
D5	**Objectives:** -Monitoring of Land Stewardship Programme.	-A livestock census update to 2007 is available. -An inventory of current and potential pastures plots is available.

Action	Foreseen	Achieved and evaluation
	Expected results: -Monitoring of agreements. -Monitoring of implemented measures. -Livestock censuses. -Inventory of farms and new grazing areas. -Analysis of profile of landowners who join the LSP. -Analysis of profile of landowners who join the OTP. -Monitoring of economic impact of OTP. -Assessment of the adequacy of birdwatching observatories. -Assessment of usefulness of pilot schemes.	-Monitoring of landowners included in the LSP. + All tasks successfully finished.
D6	**Objectives:** -Monitoring of implementation of Sustainable Management and Conservation Guidelines. **Expected results:** -Analysis of previous situation. -Monitor proper application of Guidelines. -Data gathering: impacts, incidences, problems and obstacles. -Assessment of achieved objectives and expected results. -Updating and amending Guidelines.	- Monitoring of comments, suggestions and request of the implementation of Management and Conservation Guidelines. + All tasks successfully finished.
E1	**Objectives:** -Diffusion and dissemination of content and actions of LIFE Ricotí project. **Expected results:** -Web site. -Panels and printed material. -Exterior panels. -Organization of local events. -Networking. -Layman report.	-Website: implementation in September 2017. -Twitter account: LIFE Ricotí @LRicoti. -Design of a logo for the project. -2000 outreach brochures in Spanish. -1000 outreach brochures in English. -6 roll-up informative panels. -2 exterior panels installed. -Exchange of information with Junta de Castilla y León and Fundación Patrimonio Natural, in the framework of the project for the restoration of the Dupont's lark habitat in the Corridor of Medinaceli. -Coordinator of the LIFE Ricotí project in numerous networking - Final Congress held in 2021. - Layman report finished + All tasks successfully finished.
E2	**Objectives:** -Dissemination of results to public and private bodies end other entities involved in the management and conservation of biodiversity.	- Working group (GEAR) launched and operating on an online basis. -Training sessions for the Environmental Agents of JCyL carried out in spring 2018 and 2019. - Workshop of the GEAR held in 2021

Action	Foreseen	Achieved and evaluation
	Expected results: -Working group. -Workshop. -Training courses.	+ All tasks successfully finished.
E3	**Objectives:** -Dissemination of results in technical and scientific fields. **Expected results:** -Scientific papers. -Technical publications. -Guidelines publication. -National and International congress.	- 21 scientific papers. - 5 technical publications. - 1 manual / guidelines - 6 invited communications. - 11 communications in National and International congress. - Several technical, scientific and dissemination papers are scheduled from now to the end of the project. + All tasks successfully finished.
E4	**Objectives:** -Dissemination of results of Land Stewardship Programme. **Expected results:** -Outreach days. -Elaboration of dissemination material. -Publication of Field Guides.	- 8 informative talks and presentations addressed to different audiences: local population, fair visitors, etc. - Design and printed of outreach brochures. - web page for the promotion of the Ornithological Tourism Program is scheduled for October 2018. - Publication of field guide (in both paper and digital format. + All tasks successfully finished.
E5	**Objectives:** -Dissemination of the Guidelines for the sustainable management and conservation of the SPAs. **Expected results:** -Preparation of informative documentation. -Dissemination of this information. Meetings and informative talks. -Sectorial meetings.	- Dissemination campaigns carried out. + All tasks successfully finished.
F1	**Objectives:** - Project management. **Expected results:** -Coordination and administration of the project. -Financial monitoring.	- Information management via Dropbox. - Administrative-financial guide for associated beneficiaries. - Technical guide for associated beneficiaries. - Communication between Coordinator and other partners has always been fluid and efficient. - Mancomunidad de Obras y Servicios de Corpes (MANCOMUNI), one of the beneficiary partners of the LIFE Ricotí project has withdrawal of its participation in the project. - Deadline extension requested and granted. + All tasks successfully finished.

Action	Foreseen	Achieved and evaluation
F2	**Objectives:** -Coordination meetings. **Expected results:** -Regular meetings.	- Numerous coordinating meetings held. - 6 External monitor visits. - 1 field trip. - Numerous technical meetings have been held between different partners. + All tasks successfully finished.
F3	**Objectives:** -Review of performance indicators (KPIs). **Expected results:** -Establishing indicators.	- Initial indicator proposal. - Filling of the new KPI database managed by EASME (CINEA). + All tasks successfully finished.
F4	**Objectives:** -External audit. **Expected results:** -Management and hiring of the company responsible.	- Final audit report is scheduled for February 2021. + All tasks successfully finished.
F5	**Objectives:** -Creation of a Scientific Advisory Committee for the follow-up of the LIFE Ricotí project **Expected results:** -Regular meetings.	-4 meetings held to date. - 1 field trip carried out. + All tasks successfully finished.
F6	**Objectives:** -To extend the temporal scope of the diffusion of the results of the project beyond its life. **Expected results:** -Drafting of a Communication Plan. -Drafting of a document for the planning of future actions. -Scientific papers. -Web site. -Monitoring and management of Dupont's lark habitat. -Research work by UAM.	- After-LIFE project designed + All tasks successfully finished.

6.4. Analysis of benefits

6.4.1. Environmental benefits

a) Direct/quantitative environmental benefits.

The implementation of the project aims to contribute to the conservation and improvement of Dupont's lark populations in southern Soria, in two Natura 2000 sites: SPA ES0000203 Altos de Barahona and ES0000255 Páramo de Layna. Thus, the project LIFE Ricotí will contribute to achieving objectives and commitments of Birds and Habitats directives. To achieve this, besides concrete restoration actions, the project assure long-term management of those habitats suitable for this species.

The Dupont's lark is included in Annex I of the Birds Directive (Dir. 79/409/EEC) and since 2014 it is included in the Ornis committee species list, as a bird prioritized for the implementation of LIFE funds. In addition, the two SPAs host 32 bird species included in Annex I of the Birds Directive and 18 habitats types of Annex I of the Habitats Directive. Among the last are endemic oro-Mediterranean heaths with horse (code 4090), the sub-steppic areas with grasses and annuals of the Thero-Brachypodietea (code 6220) and endemic forests of Juniperus spp. (code 9560).

At present, we have restored 301.77 ha, slightly above the planned, within the framework of Action C1 (elimination of trees and clearing of dense shrublands), and 5.16 ha for Action C2 (topographic restoration). We have sown sheep dung in 20 ha of shrublands with low or null presence of Dupont's lark (Action C3) in order to carry out a demonstration conservation action trying to restore the ecological functionality of the steppe habitat in terms of food availability. Besides, we have restored 2.1 ha of Dupont's lark potential habitats occupied by dumps.

Contracts under the Land Stewardship Programme have included more than 3000 ha, ensuring their conservation status for the next 30 years. Implementation of this programme favour the maintenance of traditional livestock by sheep activities in areas with suitable habitat for Dupont's lark.

Project LIFE Ricotí contribute to the EU 2020 Biodiversity Strategy and the measures implemented will help strengthen the Natura 2000 network.

b) Qualitative environmental benefits.

Spanish population of Dupont's lark consists of some 1400-1800 pairs (very last estimation after Filomena snowstorm), a very small number for a small bird. Besides, a regressive tendency has been found in a good part of its range (-3.9% yearly). Direct habitat destruction is one of the most important factors in the decline of the species, but also habitat quality deterioration. In many cases, this is caused by the abandonment of traditional sheep grazing. At a global level, this threat will be difficult to reverse, in the light of currents trends in livestock. In this sense, it is expected that improving and developing livestock infrastructures must help to maintain traditional livestock farming activities at a local scale. However, these efforts will be useless if no changes in the Common Agrarian Policy (CAP) are implemented.

Extensive grazing should be considered as a key factor in future CAP reforms and conservation programs to stabilize, and even better increase, the traditional sheep farming system. Such

changes in CAP policies to promote sheep farming may partially tackle other concerns in the EU, such as the preservation of biodiversity, reduction of risks due to wildfire, valorization of environmentally friendly agricultural practices and prevention of desertification. Besides, changes from sheep to cattle, which could be seen as an opportunity for farmers due to lower production and maintenance costs, have to be deeply evaluated, as may provoke relevant changes in ecosystem structure and functionality, as the same grazing pressure may be favorable for some species of conservation concern, but detrimental to others. Extensive sheep grazing should be promoted as a multirole and low impact practice, which may contribute to increasing habitat heterogeneity, reversing shrub encroachment and improving the situation for birds while avoiding the need to apply other resource-consuming, and potentially hazardous practices such as mowing, manual shrub-clearing and/or controlled burning. In a climate change scenario, natural steppe habitats may need habitat management actions aimed at improving habitat quality for open-habitat bird species.

In addition, the project has direct or indirectly elaborated guidelines and management measures for the conservation of the species and its habitat to be applied beyond the life of the project:

- The National Conservation Strategy for Steppe Birds (Ministerio para la Transición Ecológica).
- The Basic Management Plans of the SPAs Altos de Barahona and Páramo de Layna (Dirección General del Medio Natural, Junta de Castilla y León).
- The relisting to “Endangered” of the Dupont’s lark in the National Catalogue of Threatened Species (Ministerio para la Transición Ecológica).

Finally, the After-LIFE Conservation Plan provides the basis for future conservation actions, as it details the type of specific actions to be taken, entity responsible for its implementation, costs and funding sources. Some of these actions consist of monitoring Dupont’s lark population, habitat management, continuing training courses, and sessions on management and conservation.

c) Ecosystem services benefits.

In this paragraph we assess the impact of the LIFE Ricotí project in ecosystem services in the study area. This assessment is concordat with that found in the KPI database. We have used a biophysical assessment to quantify ecosystem capacity to deliver ecosystem services for human benefit. Therefore, we have used data from direct estimation (basically field surveys) to establish reliable indicators of ecosystem services.
Biophysical assessment allows the characterization of ecosystem structure and function, and its relation to ecosystem services. Services evaluated are of three types: Regulating, Cultural and Provisioning services.

The study area of the LIFE Ricoti project can be included with the terrestrial ecosystem type: heathland and shrub.

A significant positive change in natural conditions of steppe habitats in those fields under conservation actions C1 to C4 has occurred during the LIFE Ricotí project.
This also provide additional provisioning services, as Livestock; Pollination potential and distribution; Pollinators species richness; Number of beehives; Areal coverage of vegetation features supporting pollination (hedgerows, flower strips, High Nature Value Farmland etc.);

Share of High Nature Value farmland; Water supply and regulation, Number of visitors in agricultural areas; Number of Number of rural enterprises offering tourism-related services; Walking and biking trails; Number of hunting licenses, number of birdwatchers.
The next ecosystem services have increased during the life time of the project, and to increase during the next 5 years.

Division	Group	Class	Heathland and shrub
Nutrition	Biomass	Reared animals and their outputs	● Livestock number
Maintenance of physical, chemical, biological conditions	Lifecycle maintenance, habitat and gene pool protection	Pollination and seed dispersal	● Pollination potential ● Pollinators distribution ● Pollinators species richness ● Number of beehives ● Areal coverage of vegetation features supporting pollination (hedgerows, flower strips, High Nature Value Farmland etc.)
		Maintaining nursery populations and habitats	● Share of High Nature Value farmland
Physical and intellectual interactions with biota, ecosystems, and land-/seascapes [environmental settings]	Physical and experiential interactions	Experiential use of plants, animals and land-/seascapes in different environmental settings	● Number of visitors in agricultural areas ● Number of rural enterprises offering tourism-related services ● Walking and biking trails ● Number of hunting licences, number of birdwatchers ● Expenditures related to hunting
		Physical use of land-/seascapes in different environmental settings	
	Intellectual and representative interactions	Scientific	● Amount of scientific studies on agro-ecosystems
		Aesthetic	● Number of visitors in agricultural areas

6.4.2. Socio-economic benefits

In view of the socio-economic indicators established in the initial stage, we believe that the project implementation may finally have had a positive impact on the local economy. In this respect, it should be recalled that the study area is one of the most depopulated European regions. In addition to direct payments linked to restoration actions, aids for improving and development of livestock infrastructures will help to maintain traditional livestock farming activities.

Aside from agricultural sector, recreational and sustainable green tourism could be other important land use for the project area. The main objective of the Ornithological Tourism Programme is to achieve bird watching being a tourist resource and helping local economy. This has involved the following tasks, already accomplished: conditioning and signalling of ornithological routes, conditioning of bird watching areas, application of a marketing plan, collaboration agreements with tour operators, training of local ornithological guides, and environmental education programs. We also hope to have encouraged local population about

economic benefits of nature protection and the availability of alternative economic opportunities.

6.4.3. Replicability, transferability and cooperation

Lessons learned from the project have be already applied to other Nature 2000 sites with similar habitats and species. Thus, Dr. Juan Traba has been requested to give advice for similar restoration actions carried out in the last few years (during the LIFE Ricotí project) in: Rincón de Ademuz (Valencia), Páramos de Valeria (Cuenca, Castilla-La Mancha), Burgos (Castilla y León), several areas of Aragón and Almería (Andalucía). Although some of them have been carried out with no previous monitoring, which prevents of knowing after-restoration results, LIFE Ricotí experience have provided advice and probable results.

6.4.4. Best Practice lessons

We strongly believe that the project has working hard to involve local bodies and landowners into management of Nature 2000 sites. The way of addressing the negotiation process has provided the necessary confidence, receptivity and disposition towards collaboration between different actors involved. As a result, and despite intrinsic difficulties, negotiation process has successfully led to signing agreements for the implementation of conservation actions.

6.4.5. Innovation and demonstration value

Dung sowing (Action C3) is an innovative conservation measure that, to our knowledge, has not been used in Spain until now with this purpose. It is aimed to carry out a demonstration conservation action trying to restore ecological functionality of target habitats. This action has demonstrated the utility of dung sown to replace sheep grazing when/where this cannot be implemented. However, its utility decays with time, so for a correct implementation, dung sown must be repeatedly applied, and cannot be considered a replacement of natural grazing.

Restoration measures, such as cutting trees and clearing shrublands are also fairly new in these habitats, and have a markedly demonstrative character. As far as we know, similar techniques have been tested in Rincón de Ademúz (Valencia), and in a minor scale, in Burgos and Aragón, (pers. Comm.), but no ex-post evaluation is available.

Finally, levelling of plantation ridges (Action C2) has been a successful technique. This restoration measure has not been used to date in this type of terrain and has proven to be an effective tool that can be used in similar situations in other areas.

We will monitor and evaluate these new management techniques, and we will ensure the dissemination and transfer of results.

6.4.6. Policy implications

The Guidelines for the management and sustainable conservation of the SPAs Altos de Barahona and Páramo de Layna serve as a basis for formalizing Basic Management Plans of the SPAs Altos de Barahona and Páramo de Layna, which are legal instruments for the regulation of land uses to the regional administration (Castilla y León). Besides, results from the implementation of the Project have provided technical information and content for The National Strategy for the Conservation of Steppe Birds (Ministerio para la Transición Ecológica;

regulation at national level) and for the Relisting of the Species in the National Catalogue of Threatened Species.

7. Key Project-level Indicators

The review of indicators is being carried out through the technical and administrative-financial coordination of the project, under the supervision of the project coordinator, and with the collaboration of the FPN and JCyL coordinators. KPIs have been updated to the structure of the LIFE Programme database, which collect the KPIs of all projects. The implementation of this new database has increased the number of indicators compared to those presented in the e-proposal and the modification of the state values of many of them. On the other hand, the conclusion of the preparatory actions (Actions A) has made it possible to quantify in a more precise way the initial value of some important indicators, such as the population size of the Dupont's lark. At this time, all performance indicators targets can be achieved.

Indicator values, descriptors and values of LIFE Ricotí KPIs are shown in Table 7.1.

Table 7.1. Indicator values, descriptors, and values of LIFE Ricotí KPIs.

Indicator Values	Descriptor	Begin Value	End Value	Beyond 5 Years Value	Unit
1.5. Project Area/length	Conservation or improvement of the status of an area or segment	0,00	3390	3465	ha
Comments	Area affected by Specific Conservation Actions: C1+C2+C3+C4=325 ha app. C5 (Stewardship Program) at present estimated = 200 ha app. We finally added 3060.97 ha to the Land Stewardship Program (C5) (6 times over planned), plus 329,03 ha in C1+C2+C3+C4, as planned. After 5 years we consider that a further increase in 75ha of restored surface is expected, coming from specific conservation actions addressed by the Regional Government for the conservation of the Dupont's lark.				
1.6. Humans (to be) influenced by the project	Persons who may have been influenced via dissemination or awareness raising project-actions (reaching)	0,00	5706	5421	Number of residents within or near the project area
Comments	Near all inhabitants permanently living in the area have been influenced by dissemination actions. A reduction in population size is forecasted if rural depopulation continues, at a -5% rate.				
7.1. Ecosystems and their services	Ecosystem Assessment	0,00	329,03	404,03	ha
7.1. Ecosystems and their services	Ecosystem Condition	Very poor/bad/non-functional	Good/favourable	Good/favourable	-
7.1. Ecosystems and their services	Ecosystem Trend	Deterioration	Improving	Improving	-
Comments	We expect an increase in 75 ha of heathland and shrub after 5 years (over the 329,03 ha already restored) as a consequence of the implementation of conservation measures applied by the Regional Government for the conservation of the Dupont's lark. These measures will benefit the Dupont's lark and also a set of threatened steppe birds coexisting with this lark: Little bustard, Stone curlew, Montagu's harrier, pin-tailed sandgrouse, etc.				
7.2. Ecosystems services assessment	Ecosystem Service Trend	Deterioration	Improving	Improving	-
7.2. Ecosystems services assessment	Ecosystem Service Condition	Very poor/bad/non-functional	Good/favourable	Good/favourable	-
Comments	A significant positive change in natural conditions of steppe habitats in those fields under conservation actions C1 to C4 has occurred during the LIFE Ricotí project. This also provide additional provisioning services, as Livestock; Pollination potential and distribution; Pollinators species richness; Number of beehives; Areal coverage of vegetation features supporting pollination (hedgerows, flower strips, High Nature Value Farmland etc.); Share of High Nature Value farmland; Water supply and regulation, Number of visitors in agricultural areas; Number of Number of rural enterprises offering tourism-related services; Walking and biking trails; Number of hunting licences, number of birdwatchers.				
7.3. Natural and semi-natural habitats	Annex I Habitats Directive	0	329,03	404,03	ha
7.3. Natural and semi-natural habitats	Habitat Trend	unfavourable - inadequate	favourable	favourable	-
7.3. Natural and semi-natural habitats	Habitat Condition	(declining)	= (stable)	= (stable)	-

Indicator Values	Descriptor	Begin Value	End Value	Beyond 5 Years Value	Unit
Comments	Data gathered from the Natura 2000 Standard Data Form. After the implementation of the LIFE Ricotí project, the surface of the 40910 habitat has increased in 329,03 ha previously under other consideration. We foresee an increase of 75 additional ha 5 years after the end of the project due to the implementation of conservation measures applied by the Regional Government for the conservation of the Dupont's lark. Conservation actions increased Dupont lark population size within fields under restoration. The number of Dupont lark territories increased from 9 in 2017 to 26 in 2021 (+189%; up to 37 territories in 2020, +311%, before Filomena storm) with confirmed reproduction. Following the expected results of the LIFE Ricoti project, as included in the proposal, and considering an occupancy rate of 50% in these territories, we could have expected a population increase of 15-40 reproductive pairs, so we have reached the target of the project.				
7.4. Wildlife species	Chersophilus duponti/Birds	786	384	826	cmales
7.4. Wildlife species	Chersophilus duponti/Birds	8221	8550,03	8625,03	ha
7.4. Wildlife species	Species Trend	Threatened	Threatened	Threatened	-
7.4. Wildlife species	Species Status	- (decreasing)	- (decreasing)	- (decreasing)	-
Comments	At the beginning of the project, the surface of potential habitat suitable for the Dupont's lark was 8221 ha, (map fine-scale estimation; see deliverable 12). At the end of the project, we have increased the surface of potential habitat in 329,03 ha through direct conservation measures, which sums 8550,03 ha (besides other 3060,97 ha included in the Land Stewardship Program). We consider that the implementation of new conservation/management actions by the Regional Government will add 75 ha 5 years after the end of the project, which totally sums 8625,03 ha. The trend of the species has been extremely decreasing during these 5 years in the whole distribution area, except in those filed under direct conservation measures by the LIFE Ricotí project. Thus, the population size in the study area has decreased from 786 males (direct counts during the first year of the project, previous to the implementation of the conservation actions) to 384 males (direct count during the final year of the project). Conservation actions increased Dupont lark population size within fields under restoration. The number of Dupont lark territories increased from 9 in 2017 to 26 in 2021 (+189%; up to 37 territories in 2020, +311%, before Filomena storm) with confirmed reproduction. Following the expected results of the LIFE Ricoti project, as included in the proposal, and considering an occupancy rate of 50% in these territories, we could have expected a population increase of 15-40 reproductive pairs, so we have reached the target of the project. We foresee an increase in the population size of the species during the next 5 years, recovering and slightly increasing the number of males at the beginning of the LIFE Ricotí project, thanks to the measures implemented during the project (specifically the Land Stewardship Program). Males will be estimated by direct counts.				
10.1.2. Supervisory/enforcement bodies involved	National authorities	0	1	1	Number of supervisory / enforcement bodies involved
Comments	Redaction and approbation of changing Listing Criteria for Dupont lark. Drafting of National Conservation Strategy of the species. National authority is the Spanish Ministry for the Environment (at present, Spanish Ministry for Ecological Transition and Demographic Challenge).				
10.1.2. Supervisory/enforcement bodies involved	Regional authorities	0	1	1	Number of supervisory / enforcement bodies involved
Comments	Redaction and implementation of Management Guidelines for the two SPAs. Regional authority is the Department in charge of these topics in the Junta de Castilla y León (at present Department of Environment and Publics Works).				
10.2. Involvement of non-governmental organisations (NGOs) and other stakeholders in project activities	Private for profit	0	39	49	number of stakeholders involved due to the project

Indicator Values	Descriptor	Begin Value	End Value	Beyond 5 Years Value	Unit
Comments	31 establishment included in the Ornithological Tourism Program (OTP), until date, considering 10 new establishments to be included in the next 5 years, well beyond the expected figures. 6 + 1 agreements signed with Land owners (public + private). 1 company involved in OTP implementation.				
10.2. Involvement of non-governmental organisations (NGOs) and other stakeholders in project activities	Individuals	10	50	550	number of individuals
Comments	-At the beginning: number of birdwatchers (10) - At the end: Owners participating in the Land Stewardship Programme (6+1), number of people in Ornithological Guides formation (43). - Beyond 5 years: Owners participating in the Land Stewardship Programme (6+1), number of users of the Ornithological Tourism Program and users of birdwatching infrastructures (500), number of people in Ornithological Guides formation (43).				
10.2. Involvement of non-governmental organisations (NGOs) and other stakeholders in project activities	Public body/bodies	0	1	1	number of stakeholders involved due to the project
Comments	Ministry of Environmental: Integrating information from LIFE Ricoti in National Conservation Strategy				
10.2. Involvement of non-governmental organisations (NGOs) and other stakeholders in project activities	NGO	0	1	1	number of stakeholders involved due to the project
Comments	Spanish Society of Ornithology (SEO/Birdlife)				
11.1. Website (mandatory)	No. of unique visits	0	339	500	No. of unique website visits
Comments	Data obtained show an average of 400 sessions per month by 339 unique users during the period analysed (Sep-2017 to Sep-2021). We foresee a trend in 25-30 new unique users per year during the next 5 years.				
11.2. Other tools for reaching/raising awareness of the general public	Other distinct media products created (e.g. different videos/broadcast/leaflets)	0	2	4	Number of outcomes (e.g. nr of reports, events, etc)
Comments	Promotional videos for the OTP. 2 new videos are expected to be released during the next 5 years.				
11.2. Other tools for reaching/raising awareness of the general public	Number of discrete Project Reports drafted	0	80	80	Number of outcomes (e.g. nr of reports, events, etc)
Comments	It includes project deliverables, technical guides and manuals, and disseminative reports.				
11.2. Other tools for reaching/raising awareness of the general public	Number of articles in print media (e.g. newspaper and magazine articles)	0	3	5	Number of outcomes (e.g. nr of reports, events, etc)
Comments	Only disseminative publications considered (publications in Quercus journal and technical manuals). At least two new disseminative publications are expected to be published in Quercus journal during the next 5 years.				
11.2. Other tools for reaching/raising awareness of the general public	Number of different publications made (Journal/conference)	0	36	50	Number of outcomes (e.g. nr of reports, events, etc)

Indicator Values	Descriptor	Begin Value	End Value	Beyond 5 Years Value	Unit
Comments	We have elaborated a large amount of scientific publications (both in journals and in congresses and conferences) during the life time of the project. We expect to continue this publication rate, but at slower pace (3 publications/year), during the next 5 years.				
11.2. Other tools for reaching/raising awareness of the general public	Number of Hotline/information centers created	0	2	2	Number of outcomes (e.g. nr of reports, events, etc)
Comments	Two interpretation centers built in the project area.				
11.2. Other tools for reaching/raising awareness of the general public	Number of events/exhibitions organised	0	8	12	Number of outcomes (e.g. nr of reports, events, etc)
Comments	We have assisted at 8 fairs during the LIFE Ricotí project (see final report), including an itinerant exhibition that has visited numerous locations within Castilla y León. We expect to continue this promotional events in several Tourism Fairs during the next 5 years (at least 1/year), and the itinerant exhibition will exhibit both within and outside Castilla y León.				
11.2. Other tools for reaching/raising awareness of the general public	Number of different displayed information created (posters, information boards)	0	40	40	Number of outcomes (e.g. nr of reports, events, etc)
Comments	It includes outdoor panels, itinerant exhibition and signalling of OTP.				
12.1. Networking (mandatory)	Members of interest groups / lobby organisations	0	50	50	No. of individuals
Comments	Includes informative talks to the local population. Includes members of livestock, farming and hunting local societies. We have reached the totality of these stakeholders, so the number cannot increase in the future.				
12.1. Networking (mandatory)	Professionals - experts in the field	0	40	60	No. of individuals
Comments	Workshops (40 people in Expert Group). We have considered all people participating in Expert Group Meetings. This includes ornithologist, managers, technicians, local experts and stakeholders and scientific staff. We consider that this amount can increased during the next 5 years as the number of people working with and interested in the species will also increase.				
12.2. Professional training or education	Pupils (of school age)	0	350	350	No. of individuals
Comments	Environmental education workshops in schools of Soria				
12.2. Professional training or education	Professionals - experts in the field	0	7	7	No. of individuals
Comments	Formation of environmental agents. This corresponds with the number of environmental agents of the Junta de Castilla y León assisting to formative sessions with LIFE Ricotí staff during the lifetime of the project. We expect no increase in the coming years, as the number of environmental agents has remained barely the same in the last years.				
12.2. Professional training or education	Other	0	43	43	No. of individuals
Comments	Formation of specific ornithological guiders. The number of ornithological guides formed in the two specific courses developed during the LIFE Ricotí project is 43. We expect no increase in the coming years, as the rural population in the area is decreasing, and people interested in this kind of formation reached a maximum with our courses.				
13. Jobs	Jobs	0	26.16	0	No. of FTE
Comments	Hours by partner (only additional staff): AEPMA: 963.00; ARTESA: 4,066.00; ARTESA: 3,690.00; INNOMAKER: 4,730.63; MANCOMUNIDAD: 5,184.00; UAM: 27,394.00. Total: 46,027.63 hours / 1760 h = 26,15 FTE. No additional FTE is considered for the coming years				

Indicator Values	Descriptor	Begin Value	End Value	Beyond 5 Years Value	Unit
14.1. Running cost/operating costs during the project and expected in case of continuation/replication/transfer after the project period	Running cost/operating costs during the project and expected in case of continuation/replication/transfer after the project period	0	3224891.68	3314891.68	€
Comments	Considering an estimated cost of 75 ha and 1,200.00 euros/ha (90000 euros)				
14.2.2. Operating expenses expected in case of continuation/replication/transfer after the project period	Operating expenses expected in case of continuation/replication/transfer after the project period	-	-	0	€
Comments	Operating expenses are considered to be kept within regular costs of entities involved in conservation of habitats/species in Castilla y León				
14.3. Future funding	Grants, subsidies	-	-	90000	€
Comments	Costs for applying conservation/restoration measures on 75 ha (1200euros/ha, totalling 90000euros) are expected to be obtained from European subsidies for rural development.				
14.4.3. Entry into new geographic areas	ESPAÑA	-	-	-	-

8. Annexes

8.1. Number, title, scheduled and actual delivery date of deliverables

Deliverable		Delivery date	
		Scheduled	Actual
Number	**Title**		
1	*Minutes of the Kick-off meeting*	15/10/2016	25/01/2017
2	*Kick-off meeting*	15/10/2016	4/11/2016
3	*Socio-economic impact assessment indicators of LIFE- Ricotí Project*	1/11/2016	8/11/2016
4	*Seed collection program*	1/11/2016	8/11/2016
5	*Potentially interested owners list*	1/12/2016	30/12/2016
6	*LIFE Ricotí Project economic management and monitoring guidelines*	19/12/2016	25/01/2017 Updated on: 26/07/2017
7	*Minutes of the 2016 meetings*	30/12/2016	25/01/2017
8	*Annual Report of the Scientific Advisory Committee*	30/12/2016	16/01/2017
9	*Fine scale 1: 10,000 mapping according to types of conservation status of the Dupont's Lark and its habitats*	20/01/2017	24/01/2017 Updated on: 15/10/2018
10	*Guidelines for the participation in the Land Stewardship Program*	31/01/2017	19/06/2017
11	*Land Stewardship Program*	31/01/2017	26/09/2017
12	*Cartography of the habitat of Dupont's lark and census zones in the SPAs Altos de Barahona and Páramo de Layna*	15/02/2017	26/02/2017 Updated on: 15/10/2018
13	*Compilation and analysis of information on the Dupont's lark and its habitat*	28/02/2017	28/02/2017
14	*Habitat restoration and improvement projects*	1/03/2017	18/07/2017
15	*Design of outreach brochures*	30/03/2017	20/06/2017
16	*Guidelines and methodology for the implementation of conservation measures, improvement or restoration of habitat of the Dupont's lark*	20/04/2017	30/10/2017

Deliverable		Delivery date	
		Scheduled	Actual
Number	**Title**		
17	*Diagnosis of the situation of livestock husbandry in the SPAs Altos de Barahona and Páramo de Layna*	30/04/2017	4/05/2018
18	*Program of the outreach days of the Land Stewardship Program*	30/05/2017	26/06/2017
19A	*Social perception of the Dupont's lark and LIFE - Ricotí project in the SPAs Altos de Barahona and Páramo de Layna: Social perception about actual situation and conservation problems of Dupont's lark, and social awareness*	31/05/2017	18/07/2017
19B	*Social perception of the Dupont's lark and LIFE - Ricotí project in the SPAs Altos de Barahona and Páramo de Layna*: *Socio-demographic study on perceptions and awareness*	31/05/2017	18/07/2017
20	*First contracts with landowners*	31/05/2017	11/02/2021
21	*LIFE-RICOTÍ informative campaign. 2017 status*	1/06/2017	20/11/2017
22	*Contracts signed by the landowners*	30/06/2017	13/01/2018
23	*Payment document for the first instalment*	30/06/2017	24/04/2018
24	*Dupont's lark populations georeferenced database (shp)*	15/07/2017	18/07/2017 Updated on 15/10/2018
25	*Characterization of Dupont's lark populations and its habitats in the SPAs Altos de Barahona and Páramo de Layna*	30/09/2017	12/12/2017
26	*Technical project for sheep dung sowing*	30/09/2017	5/10/2017
27	*Identification of priority areas for conservation actions*	16/10/2017	30/10/2017
28	*Certificates of Start of Work corresponding to Action C1*	1/11/2017	22/03/2018
29	*Certificates of Start of Work corresponding to restoration works included in Action C4*	01/11/2017	29/11/2019
30	*Certificates of Start of Work corresponding to Action C2*	1/11/2017	22/03/2018

Deliverable		Delivery date	
		Scheduled	Actual
Number	**Title**		
31	*Potencial population and distribution of Dupont's lark in the LIFE Ricotí study area: pre-operational state in 2017*	15/11/2017	20/11/2017
32	*Indicator reports*	21/12/2017	1/02/2018
33	*Minutes of the 2017 meetings*	30/12/2017	22/02/2018
34	*Certificates of attendance at scientific congress*	30/12/2017	21/12/2017
35	*Annual Report of the Scientific Advisory Committee*	30/12/2017	7/05/2018
36	*Acceptance certificate corresponding to the conservation actions included in Action C1*	31/03/2018	3/05/2018
37	*Acceptance certificate corresponding to the conservation actions included in Action C4*	31/03/2018	02/02/2021
38	*Acceptance certificate corresponding to the conservation actions included in Action C2*	31/03/2018	3/05/2018
39	*Report of actions carried out to improve the quality of Dupont's lark habitat by dung sowing*	30/04/2018	30/04/2018 Updated on 31/10/2018
40	*LIFE-RICOTI information campaign. 2018 status*	01/06/2018	07/01/2019
41	*Monitoring habitat structure and composition in 2018*	28/09/2018	04/12/2018
42	*Guidelines for the management and sustainable conservation of the SPAs Altos de Barahona and Páramo de Layna*	30/09/2018	27/09/2018
43	*Design of outreach programme*	31/10/2018	05/02/2019
44	*Monitoring of the habitat restoration actions in 2018*	01/12/2018	26/04/2019
45	*Monitoring Report 1*	28/12/2018	01/02/2019
47	*Minutes of the 2018 meetings*	31/12/2018	16/02/2019
48	*Certificates of attendance at scientific congresses in 2018*	31/12/2018	27/12/2018
49	*Second payments for compensation to landowners*	31/12/2018	04/03/2019
50	*Monitoring of the Land Stewardship Programme*	31/12/2018	19/02/2019
51	*Monitoring habitat quality for the Dupont's lark in 2017-2018: food availability*	31/12/2018	18/12/2018

Deliverable		Delivery date	
		Scheduled	Actual
Number	**Title**		
52	*LIFE-RICOTÍ informative campaign. 2019 status*	01/06/2019	04/06/2019
53	*Monitoring habitat structure and composition in 2019*	30/07/2019	31/07/2019
54	*Monitoring of the habitat restoration actions in 2019*	02/12/2019	03/12/2019
55	*Dissemination of Action A7 (Guidelines for the sustainable management and conservation of the DPAs Altos de Barahona and Páramo de Layna) between October 2018 and December 2019*	20/12/2019	09/01/2020
56	*Annual report of scientific communications*	20/12/2019	18/12/2019
57	*Minutes of the 2019 meetings*	30/12/2019	09/01/2020
58	*Certificates of attendance at scientific congresses in 2019*	30/12/2019	20/12/2019
59	*Monitoring Report 2*	30/12/2019	09/01/2020
60	*Annual Report of the Scientific Advisory Committee*	30/12/2019	04/06/2020
61	*Monitoring habitat quality for the Dupont's lark in 2019: food availability*	30/12/2019	20/12/2019
62	*Technical publication: "Proyecto LIFE Ricotí, Conservación de la Alondra Ricotí Chersophilus duponti y su hábitat en Soria (España)*	30/09/2021	14/09/2021
63	*Monitoring of the habitat restoration actions in 2020*	30/12/2020	20/09/2020
64	*Monitoring habitat structure and composition in 2020*	30/12/2020	10/09/2020
65	*Monitoring habitat quality for the Dupont's lark in 2020: food availability*	30/12/2020	20/12/2020
66	*Sampling campaign in Morocco, 2020*	30/12/2020	30/10/2020
67	*Proceedings of the IV Workshop of Experts on the Conservation of the Dupont's lark*	01/07/2021	22/07/2021
68	*Design of the post-LIFE Dissemination and Conservation Plans*	30/09/2021	01/11/2021
69	*Minutes of the 2020 meetings*	30/12/2020	30/04/2021
70	*LIFE-RICOTÍ informative campaign. Achieved results*	15/02/2021	02/11/2021
71	*Certificates of attendance at scientific congresses in 2020-21*	30/09/2021	13/09/2021

Deliverable		Delivery date	
		Scheduled	Actual
Number	**Title**		
72	*Third payments for compensation to landowners*	15/02/2021	10/02/2021
73	*Evaluation of habitat restoration actions on Dupont's lark population*	30/09/2021	24/06/2021
74	*Evaluation of habitat structure and composition in conservation action areas*	30/09/2021	15/09/2021
75	*Monitoring Report 3*	15/02/2021	30/04/2021
76	*Dissemination of Action A7 (Guidelines for the sustainable management and conservation of the DPAs Altos de Barahona and Páramo de Layna) between October 2018 and December 2020*	15/02/2021	30/04/2021
78	*Monitoring of the Land Stewardship Programme*	30/09/2021	15/10/2021
79A	*Monitoring of socio-economic impact of the project*	30/09/2021	15/10/2021
79B	*Monitoring of changes in social perception*	30/09/2021	21/09/2021
80	*Final audit report*	30/09/2021	2/02/2022
81	*Final Report of the Scientific Advisory Committee*	30/09/2021	30/09/2021
82	*Minutes of the 2020 meetings*	30/09/2021	30/09/2021