FORM A

Have you or any of your associated beneficiaries already benefited from previous LIFE co-financing? (please cite LIFE project reference number, title, year, amount of the co-financing, duration, name(s) of coordinating beneficiary and/or partners involved): (Maximum Characters: 5000)

Veneto Agricoltura - Azienda Regionale per i Settori Agricolo, Forestale e Agro-alimentare
LIFE09 ENV/IT/000208; AQUA - Achieving good water Quality status in intensive Animal production areas
Year: 2009
Amount of the cofinancing: 1.310.901,00 €
Duration: 42 months
Coordinating Beneficiary: Centro Ricerche e Produzioni Animali di Reggio Emilia (C.R.P.A. Spa)
Partner: Fondazione CRPA Studi Ricerche ONLUS, Consiglio per la Ricerca e la Sperimentazione in Agricoltura, ERSAF, Veneto Agricoltura, ERSA, Ipla Spa.

LIFE 09/NAT/IT/000213; SORBA – Improvement and preservation of Bacchiglione river sources and SPA IT 3220013 and SCI IT 3220040 habitats
Year: 2009
Amount of the cofinancing: 612.000,00 €
Duration: 36 months
Coordinating beneficiary: Provincia di Vicenza

Have you or any of the associated beneficiaries submitted any actions related directly or indirectly to this project to other European Union funding programmes? To whom? When and with what results? (Maximum Characters: 5000)

For those actions which fall within the eligibility criteria for financing through other European Union funding programmes, please explain in full detail why you consider that those actions are better suited to financing through LIFE and are therefore included in the current project: (Maximum Characters: 5000)

LIFE14 NAT/IT/000760 Life VitEcoSer - B1

Project title:
Increasing biodiversity and associated ecosystem services towards environmental sustainability of viticultural regions

SUMMARY

Project objectives: (Maximum Characters: 2500)

The project will contribute to implement the Commission Communication "Our life insurance, our natural capital: an EU biodiversity strategy to 2020" (COM(2011) 244) in two viticultural Italian areas (Prosecco-Valdobbiadene DOCG and Valpolicella DOCG).

The project foresee the following objectives:

- Identify best management techniques of green areas within the vineyard and its surrounding areas and apply these techniques in some pilots farms in Conegliano-Valdobbiadene and Valpolicella areas
- Propose to farms a management protocol that is functional both for the general management of the fields both for biodiversity
- Monitor the effectiveness of the activities carried out and the whole entire ecosystem both during ante and post course work. At the same time it provides a quantification of the value of ecosystem service by estimating air quality, impollination and biodiversity value
- increase the awareness of citizens about what farms are doing to protect the biodiversity of the environment, in particular by reducing pesticide treatments
- Promote the dissemination of project's' results also favouring networking and sharing project results on EU scale. Building a permanent network of projects that are focused on the management of viticultural areas. The exchange of experience and good practices on management , citizens' involvement, and nature preservation will still continue after project end.
- Ensuring efficient and effective project management. This will not only ensure proper activities implementation, but it will also maximize the usefulness of the resources. At the same time, project management will also guarantee nature preservation after project end.

Actions and means involved: (Maximum Characters: 2500)

The preliminary actions of the project include the selection of best farms where do the concrete works and the elaboration of communication plan.
The application of the best management techniques will be achieved through the field interventions: in action C.1 a large quantity of new autochthonous plants will be produced and planted in vineyards (action C.2). are tested some best (actions C1 C.2). in the areas neighboring the vineyards' are foreseen works for increasing the quality of arid grasslands and for the elimination of alien species in forests (1st objective)
In action C.6 the project will elaborate a new protocol for farms that would apply these techniques in their lands. It is foreseen the increasing application in order to cover all the Consortia's farms and improve the biodiversity (2nd objective)
The project involves monitoring to assess the effectiveness and consistency of interventions (3rd objective) from the environmental point of view (Action D.1) is also provided monitoring of the socio-economic and ecosystem services (D.2 and D.3 actions) to provide citizens with the evidence of the multiplicity of positive effects for the community caused by the presence of natural areas. Also an

economic evaluation is foreseen in order to quantify a possible value of these precious services (action D.4).
The dissemination activities consistent with the goal of increasing the awareness of the population (4th objective) and include activities for citizens and other generic public (Action E.1, E.2, E.4 and E.7) and some targeted to specific stakeholders (in particular farms, agronomist and technicians, public bodies and citizens) (Action E.5 and E.6) (5th objective).
To ensure the exchange of best practices for increasing biodiversity in viticultural areas (5th objective) will include a networking action (Action E.3).
Finally, including activities (Actions F.1 - F.4) to ensure maximum efficiency in the implementation of the project and ensure the maintenance of a satisfactory ecological status even after the end of the project (6th objective).

Expected results (outputs and quantified achievements): (Maximum Characters: 2500)

The biodiversity issue targeted by this project is about the loss of biodiversity inside the vineyards and outside (in the nearest areas). So for each kind of vegetation a specific concrete action is foreseen and will give these results:

- Production of 78000 plants and 85 kg od seeds of local species (obj. 1)
- Restoration and correct management practices in at least 30 farms (minimum 1 ha each) (obj. 1)
- Plantation of 2700 woody plants, creation of 1800 m of hedgerows and sowing 1000 me of flower trips (obj. 1)
- Restoration and correct management of 15 patches of arid grasslands managed (obj. 1)
- correct management and removal of alien species in 3 ha of forests (obj. 1)
- Preparation of one farmers protocol for the correct “biodiversity friendly” management of vineyards and neighboring areas (obj. 2)
- One monitoring report for environmental aspects per year, reports on socio-economical effect, ecosistemic services and their economic value (obj.3)
- 2 workshops for citizens, at least 300 citizens taking part to trips and trekking and 100 classrooms taking part to field trips and school lessons every year (obj.4)
- One technical publication, one final conference, training courses for technicians an the creation of a network with other projects and other viticultural consortia in European area (obj.5)
- Compulsory reports for UE and a correct project management (obj.6)

Explain why the project can be considered climate-related: (Maximum Characters: 2500)

The proposal addresses the following project topic(s):

Projects aimed at implementing Target 2 of the Biodiversity Strategy, through the integration of actions to maintain and enhance ecosystems and their services into the activities of the public or private sectors, by establishing Green as well as Blue Infrastructure and restoring degraded ecosystems. These projects should test and apply approaches aimed at mapping and assessing (including valuation) of ecosystems including marine ecosystems and their services to contribute to a priority setting for restoration, Green or Blue Infrastructure or No Net Loss restoring ecosystems including coastal and marine ecosystems and their services by applying the Restoration Priority Frameworkdeveloping methodologies for valuation of and payment for ecosystem services (including tangible and intangible services); or innovative management schemes addressing, in particular, water related ecosystem

services, which could provide potential funding mechanisms to achieve the Biodiversity Strategy targets and contribute to aims of the Water Framework Directive and the Floods Directive.

Projects implementing actions targeting Invasive Alien Species (under Target 5 of the Biodiversity Strategy or in view of contributing to reaching the level of protection set out in descriptor 2 - Non-indigenous species of the Marine Strategy Framework Directive) through actions testing and applying approaches aimed at preventing the introduction of invasive alien species, in particular by tackling pathways of unintentional introduction,establishing an early warning and rapid response system, and eradicating or controlling established invasive alien species on an appropriate spatial scale. These projects shall address with their actions the three steps (prevention; early warning and rapid response; eradication/control) in a comprehensive framework, or, where one of the steps has already been addressed, their actions shall at least be clearly situated in a broader framework that links all three steps. They should be set up to improve existing - or introduce new - technical, administrative or legal frameworks on the relevant level; they should aim at preventing the broader establishment of IAS within the EU.

Pilot or demonstration projects testing and then implementing Green Infrastructure actions focusing on: innovative technologies and the development and application of technical standards regarding them; the preservation or restoration of ecosystems for the benefit of human health; or cost-efficient technologies and methods that minimize the impact of existing energy and transport infrastructures on biodiversity by strengthening the functionality of spatially linked ecosystems.

Reasons why the proposal falls under the selected project topic(s): (Maximum Characters: 2500)

In accordance with the European Strategy for Biodiversity (COM/2011/0244 final) the project will contribute to achieve Target 2 “By 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15 % of degraded ecosystems” (point 1, letter a)
Project initiatives will improve some identified ecosystem services – yield production, pollination, biological control, and air quality (see Action D.3) – and will measure their increment (see Action D.4) with specific methodologies which will be tested during the project (point 1, letter c)
Are foreseen also some action for alien species (point 2, letter c)

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Name of the project site:
Valpolicella DOCG area

Surface area (ha): 30000
Surface description (max. 100 chars):

SPA: **NATURA 2000 Code:**
SAC/SCI/pSCI: X **NATURA 2000 Code:** IT3210021

Other protection status according to national or regional legislation:

None

Main land uses and ownership status of the project area:

The main land uses are:
Vineyards: 35% (100% private)
Other wooded crops 15%(100% private)
Woodlands: 20%
Grasslands: 5% (100% private)
Crops: 5% (100% private)
Urban areas: 20%

Scientific description of project area:

The production area of the DOC and DOCG “Valpolicella” wine includes the lower part of the following valleys in the Verona province :

- The valley of Fumane
- The Valley of Negrar
- The Valley of Marano
- The area around Sant’Ambrogio di Valpolicella
- The area around San Pietro in Cariano
- The Valpantena
- The Valley of Mezzane
- The Val d’Illasi
- The Valley of Cazzano di Tramigna.

The municipalities in the area of Valpolicella are 19: Sant’Ambrogio di Valpolicella, San Pietro in Cariano, Fumane, Negrar, Marano di Valpolicella, Pescantina, Verona, Dolcè, Grezzana, San Martino B.A., Lavagno, Mezzane, Colognola ai Colli, Illasi, Tregnago, Cazzano di Tramigna, Cerro Veronese, San Mauro di Saline e Montecchia di Crosara.
Despite some differences, the valleys have in common an high suitability to viticulture, thanks to the geological and climatic characteristics that give to the wines their original character. The countryside of the Valpolicella is mainly hilly, with gentle slopes and watersheds at low altitude and is dominated almost everywhere by vineyards. Enjoying the excellent protection from the Lessinia mountain range to the North and good exposure to sun on the valley slopes to the south, the climate of this "County" is sub-Mediterranean: on the low and mid foothills we find cultivation of vines, cherry trees, Mediterranean plants such as olive and cypress trees as well as figs, almonds, peaches and pomegranates.

It is a typical cultural landscape, where man during the centuries shaped the hills profile, using drywalls and man-made escarpments to get land suitable to be cultivated. These markedly thermophile, intensely cultivated areas, inhabited by humans since ancient times, now show only few relict of natural vegetation, while bordering woods in upper or steeper parts. Natural potential vegetation can be attributed to the series of the mixed colline, termophile, submediterranean, deciduous Oak-Hornbeam woodlands of southern alps, with Cotinus coggygria, in a mosaic with Ostryo carpinifoliae-Fraxino orni sigmetum. Wood hedges consist in mesoxerophile communities of shrubs (Crataego-Prunetea). Relict baso-neutrophile, nitrogen poor meadows (Festuco-Brometea) survive only in small patches at dry places, in particular at the western border of the area, sometimes hosting interesting wild orchid species such as Orchis purpurea, O. simia, O. coriophora, Ophrys benacensis.
Being largely a human, rural landscape, its main contribute to biodiversity should however be reported to anthropogenic (secondary) habitats such as vegetation of fields and country roads margins, that of drywalls and of traditional cultivations, often including rare or uncommon species (Lathyrus nissolia, Allium neapolitanum, Bellevalia romana, Cynoglossum creticum, Allium ampeloprasum, Spergula arvensis, Papaver apulum, Ornithogalum narbonense, Veronica tryphyllos ecc.). The vineyard “green cover” includes species of different vegetation types, mainly arable weed communities (Stellarienea mediae), communities of cultivated meso-eutrophic meadows (Molinio–Arrhenatheretea), and also of dry, nutrient poor meadows (Festuco-Brometea). Italian vegetation types checklist describes the alliance Veronico-Euphorbion as one of the more “vineyard related” communities. The level of conservation of these plant communities is highly variable given the contexts in which they develop. They are in fact adapted to disturbances and alterations of the soil, as a result of agricultural operations, of stamping, etc.: not always however they tolerate disturbances caused by too much intensive agricultural activities (fertilization, herbicide use, chopping and so on), which can cause changes in the species composition – with the loss of the more exigent species - or even the disappearance of these communities. Botanists say that it may be advantageous to use these communities as bio-indicators of agronomic activities, and that it would be desirable to encourage the maintenance of their presence even in limited areas of the intensive farming territories, being species rich communities linked to an equally rich community of other organisms (in particular insects). Their presence has also a significant landscape value, as a consequence of the diversified phenology of the species. The presence of drywalls can potentially supply a secondary habitat to therophytic and succulent plant communities typical of outcrops and rocks, or to xerophilous species of dry meadows/wood margins, and the soil at their foot can be a suitable site for good native weed species too, but they are often invaded by more nitrophilous species such as Parietaria judaica. In general, composition and originality of all these plant communities tends to be altered by recent intensive management, that promotes the spread of trivial, nitrophilous, sometimes alien species, so that, for example, the escarpments between or along the vineyards can be invaded by undesirable plants (Urtica dioica, Erigeron canadensis ecc.)

Importance of the project area for biodiversity and/or for the conservation of the species / habitat types targeted at regional, national and EU level (give quantitative information if possible):

The Valpolicella DOC and DOCG area is an important transition area of high bio-geographic value, from the pre-Alps to the Veneto plain: being close to the insubric region with the Garda Lake, flora shows a greater mediterranean influence than the Valdobbiadene area. Although only few studies focus on this area, it is well known that this agricultural landscape has been strongly modified by intensification. At the same time, just like the Valdobbiadene area, project actions in these areas has an high demonstrative value, as a consequence of the fame and of the economic importance of the wines. In this perspective, as indicated in the previous section, this project area could improve the conservation of important species typical of well conserved agro-ecosystem, contributing to the

demonstration of sustainable managing practices and of the importance of the presence of wild vegetation in and around the vineyards, thanks to the implementation of action C2 and C3.

Name of the project site:
Conegliano-Valdobbiadene DOCG area

Surface area (ha): 25000
Surface description (max. 100 chars):

SPA: **NATURA 2000 Code:**
SAC/SCI/pSCI: X **NATURA 2000 Code:** IT3240005

Other protection status according to national or regional legislation:

No protection status

Main land uses and ownership status of the project area:

The main land uses are:
Vineyards: 30% (100% private)
Woodlands: 55%
Grasslands: 5% (100% private)
Crops: 5% (100% private)
Urban areas: 5%

Scientific description of project area:

This area is characterized by a hilly landscape where altitude ranges between 70 and 450 m, annual precipitation is between 900 and 1000 mm and mean annual temperature is 11°C. This hilly landscape is intensively cultivated with vineyards while semi-natural vegetation is restricted to small scattered forest patches or hedgerows. The cultivated area is composed by small vineyards, usually between 1 and 2 ha, belonging to several owners. This fragmented arrangement of the ownerships implies that management practices are not homogeneous at the landscape scale, strongly depending on the attitude of each single owner, and may vary even between adjacent vineyards. In particular, the control of weeds may have different intensity depending on mowing frequency and the use of herbicides. Also nitrogen supply is not constant, even if nitrogen input is generally low.

Within the Conegliano-Valdobbiadene DOCG areas there are some natural and semi-natural habitats whose dynamics are closely related with vineyard management. In general, these habitats directly compete with vineyard cultivation and suffer negative effects in terms of loss and fragmentation. In particular, the dynamics of arid grasslands and of some forest types are closely related with the increasing of vineyard surface and with the intensity of their management. Some of these habitats are not only a crucial connective system between cultivated and natural sites, but are also recognized as keystones for biodiversity conservation in the European Union, according to the “Habitat directive”.

The main grasslands that can be found in the Conegliano-Valdobbiadene DOCG area and that correspond to well described habitats of interest for the EU are:

1. High priority habitat 6110 (Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi) that is usually related to small, rocky surfaces in very dry situations. This habitat is characterized by the presence of succulent plants as in the case of Sedum sp.pl.;

2. habitat 6210 (Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) that is a high priority habitat only when there are important orchid sites according to at least one of these three conditions: a) a high number of orchis species are present, b) there is a huge population of a single species of conservation interest at the national level, c) there are one or more species of high conservation importance at the national level. This habitat includes herbaceous and partially shrubby plant communities whose maintenance is ensured by extensive management as in the case of salutary mowing or moderate grazing. The habitat 62A0 (Eastern sub-mediterranean dry grasslands - Scorzoneretalia villosae), including communities of Chrysopogono-Centaureetum cristatae is ecologically very similar to 6210.

3. As far as forests are concerned, in the project areas there are termophilous formations that could be listed under the Natura 2000 code 91H0 (Pannonian woods with Quercus pubescens; high priority habitat), 91L0 (Illyrian oak-hornbeam forests - Erythronio-Carpinion), and 91E0 (Alluvial forests with Alnus glutinosa and Fraxinus excelsior - Alno-Padion, Alnion incanae, Salicion albae; high priority habitat). Moreover, there chestnut forests that can be listed under the code 9260 (Castanea sativa woods).

Information on the project area was mainly retrieved from the following sources:

· Nascimbene J., Marini L., Ivan D., Zottini M. 2013. Management intensity and topography determined plant diversity in vineyards. PloSONE. 8(10): e76167.

· Tomasi D., Gaiotti F. (eds.), 2011. I terroirs della denominazione Conegliano Valdobbiadene. CRA-Vit, ISBN978-88-97081-07-4.

· Personal field experience by the research unit of the Biology Department (UNIPD). Technical material on Natura 2000 habitats produced by Regione Veneto.

Importance of the project area for biodiversity and/or for the conservation of the species / habitat types targeted at regional, national and EU level (give quantitative information if possible):

The Conegliano-Valdobbiadene DOCG area is an important transition area of high bio-geographic value, from the pre-Alps to the Veneto plain. Recent research on plant communities indicated that this area is still surprisingly rich in species, including several orchids and plants of arid grasslands, that are however scattered in small, fragmented, and potentially declining populations.

In this perspective, as indicated in the previous section, this project area could improve the conservation of EU habitats of interest and their associated species in the Veneto Region, outside of already protected areas. In particular, this area could significantly contribute to the conservation of arid grasslands and some deciduous forest types.

To achieve these potential effects on biodiversity the reduction of management intensity and

actions of habitat restoration should however be implemented.

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Description of species / habitats / biodiversity issues targeted by the project: (Maximum Characters: 10000)

In the last decades, landscapes subjected to agricultural intensification have experienced severe biodiversity loss. Nevertheless, biodiversity conservation is increasingly recognized among the most relevant landscape features that sustain relevant ecosystem services that improve human wellbeing. This concept is becoming popular also in some viticultural egions where there is an attempt to couple wine production with high environmental quality. In this framework, plant diversity is among the main topics, being related with the occurrence of several organisms that could be beneficial for vineyards cultivation. In particular, arid grasslands, that are often outcompeted by vineyards, are among the most relevant habitat type for biodiversity conservation in the European Union, according to Natura 2000 policies. In the hilly landscapes of Italy, such as in the Valpolicella and Conegliano-Valdobbiadene DOCG areas, this habitat type is severely declining due to both abandonment and agriculture intensification being replaced by vineyards. In this perspective, increasing wine production is among the main causes of habitat fragmentation and loss of arid grasslands. These dynamics contributed to model the landscape of the Valpolicella and Conegliano-Valdobbiadene DOCG areas in the last 70 years, resulting in a mosaic composed by cultivated and semi-natural patches.
The loss of biodiversity associated with these dynamics is likely to negatively affect ecosystem functions and services that could be useful both for vineyard cultivation and for improving human wellbeing. The promotion of biodiversity is a key aspect for arthropods-mediated ecosystem services such as pest control and pollination. The use of broad-spectrum pesticides and habitat simplification in grape agro-ecosystems have been associated with the disruption of ecosystem services such as natural control of grapevine pests (Duso et al., 2010). More than 30 species of natural enemies of grape berry moths (Lobesia botrana) were collected in vineyards in northeastern Italy, in particular in Valpolicella area, but their presence and activity iwas strongly affected by the use of synthetic pesticides (Marchesini and Dalla Montà, 1998). The use of insecticides that are non-selective toward natural enemies has determined a reduction in the abundance of predatory mite species in vineyards located in the Conegliano-Valdobbiadene area (Padoin, 2004). The design of modern viticultural systems should integrate ecological compensation measures and management practices aimed at biodiversity enhancement such as habitat management, a form of conservation biological control, that is an ecologically based approach, aimed at increasing functional biodiversity to enhance biological control in agricultural systems. Habitat management is unique in its ability to provide a wide variety of ecosystem services in addition to pest population reduction.
Recent research on plant communities in these areas highlighted that both topographic conditions and management intensity influence plant diversity and composition. In particular, vineyards located on steep south-facing slopes and managed with low cut frequency avoiding the use of herbicides are potentially relevant for biodiversity conservation, hosting rich plant assemblages similar to those of semi-natural arid grasslands. These results couple with the view that also agricultural landscapes including fragments of semi-natural habitats and extensively managed crops may play a relevant role for biodiversity conservation outside of protected areas (i.e. Nature Parks and reserves, SIC, ZPS). In general, results of recent studies support the idea that vineyards are not only functional elements of an economically relevant agricultural type but they could represent green infrastructures useful for implementing biodiversity conservation in anthropized landscapes according to Natura 2000 policies and the Global Biodiversity Strategy.

Provide this information for those species / habitat types or biodiversity issue directly targeted by the project: (Maximum Characters: 10000)

This project aims at counteracting the process of biodiversity and habitat loss associated with intensification of agricultural practices for vineyards management. Viticulture is the main perennial cropping system in the project areas (Istat, 2014). In the last decade, there has been an increase in the amount of land used for grape cultivation. In particular, this has been observed in Conegliano - Valdobbiadene and the Valpolicella wine production areas (Istat, 2014). In these areas, viticulture is often in the form of large-scale monoculture, characterized by high pesticide pressure to control pathogens and pests and a widespread removal of ecologically valuable structures such as semi-natural habitats. Our main hypothesis is that the improvement of management practices with lower environmental impact associated with habitat restoration practices could have beneficial effects on the biodiversity and its associated ecosystem services. In this perspective, vineyards could become green infrastructures that improve habitat connectivity and the provision of ecosystem services

In our background analysis, we identified two main sources of threat that are addressed by specific project actions.

Threats 1. Not "biodiversity friendly" vineyard management practices.
Intensification of vineyard management that is well documented to produce biodiversity (plants, insects) loss, compositional shifts toward communities composed by trivial species, and decreasing of community evenness and functional diversity. This issue is specifically addressed by the actions C1 and C2A of this project.
Management intensification is increasingly promoting the use of pesticides that are posing threats to both biodiversity and air quality, and in turn to human wellbeing. The extensive use of pesticides is considered among the major causes of arthropods biodiversity loss in agro-ecosystems. The application of broad-spectrum insecticides against agricultural pests can attain undesirable side-effects on non-target organisms that may occur in agro-ecosystems. Pesticides detrimental to beneficial organisms represent one of the principal limitations for the provision of the arthropods-mediated ecosystem services such as biological control of arthropods pests and pollination. Several pests can attack grapevines in Conegliano - Valdobbiadene and the Valpolicella areas: grape berry moths (GBMs), leafhoppers (including vector of Flavescence dorée disease), leafminers, coccids, mealybugs, and mites. GBMs are considered key pests of grapevine and several insecticide applications can be required for their control. Additional insecticide applications are necessary against Scaphoideus titanus vector of Flavescence dorée disease that in specific areas is subjected to a mandatory pest control program (Directive CE 2002/89/CE; Decreto Ministeriale n° 32442 del 31 maggio 2000). The number of insecticide applications is expected to increase in the next years because of the occurrence of the new invasive pest Drosophila suzukii. Pest management programs rely heavily on synthetic pesticides with a negative outcome on arthropods biodiversity in vineyards and surrounding areas. Despite their environmental impact, chemical pesticides are still often considered a unique option in pest management and little has been done for the empowerment of the ecosystem service of natural pest control in the project areas.
Modern pest control tools characterized by a reduced environmental impact represent eco-friendly alternatives to chemical pesticides. The use of pheromones in the control of grape berry moths [i.e., Mating disruption (MD)] has increased in vineyards due to the high selectivity and low environmental impact (Ioriatti et al., 2011). A number of non-chemical pesticides are available in the market. These products are effective against pests and characterized by a reduced impact on non-target organisms. The adoption of modern pest control tools in vineyard management strategies can be promoted to

conjugate the needs of pest control and biodiversity preservation and this is the objective pursued in action C2.
The effects of these project actions will be evaluated with specific monitoring actions dedicated to both biodiversity patterns and patterns of ecosystem services (respectively project actions D1 and D3).

Threats 2. Impact of viticulture on semi-natural habitats, mainly arid grasslands and forest margins, surrounding the vineyards
This impact is related with habitat loss, fragmentation and disturbance that have negative influence on biodiversity and associated ecosystem services. Moreover, also an opposite trend related with abandonment may in some cases threat dry grasslands. These issues are specifically addressed by actions C3, C4, and C5. The effects of these project actions will be evaluated with specific monitoring actions dedicated to both biodiversity patterns and patterns of ecosystem services (respectively project actions D1 and D3).
Hedgerows and groundcover management as well as agroforestry models aimed at the increase of beneficial organisms in vineyards are ecologically based practices (Tixier et al., 2002, 2006). Managed hedgerows can represent a valuable instrument for the compensation of semi-natural habitat losses and biodiversity decrease due to intensive viticulture with a positive effect on pest outbreaks control (Rieux et al., 1999). Groundcover management practices (e.g. native plants used as cover crops) is another viable option to promote the beneficial organism's persistence in agro-ecosystems (Nicholls et al 2000; Begum et al. 2006). These aspects will be addressed in actions C2 and C3 where habitat management practices will be applied in vineyards and their proximity.
The effects of these project actions will be evaluated with specific monitoring actions dedicated to both biodiversity patterns and patterns of ecosystem services (respectively project actions D1 and D3).

Previous conservation efforts in the project area and/or for the habitats/species targeted by the project: (Maximum Characters: 10000)

Conegliano-Valdobbiadene DOCG area
At our best knowledge, in this project area any conservation activity was previously conceived, even if there is increasing interest by the farm owners and by the Consortium DOCG to promote a more sustainable production model. In this framework, two recent research projects were promoted in the area of the LIFE project (Conegliano-Valdobbiadene DOCG) to react to the scarcity of information on plant diversity patterns in relation to vineyards management, topographic conditions and landscape structure and to start-up a process of integration between grape production and biodiversity conservation that should be consolidated with this new LIFE project.
The two above mentioned projects were promoted and coordinated by the Department of Biology of the University of Padova in partnership with the Conegliano-Valdobbiadene DOCG consortium and funded by the Plan for Rural Development (PSR) of the Veneto Region. Their general aim was that of coupling vineyard management with the maintenance of high plant diversity.
1) Biodivigna Project, Mis. 24 PSR Veneto "Creazione di un modello di recupero e gestione del patrimonio di biodiversità viticola nel sistema del vigneto collinare del Conegliano".
This project ended in 2013 and included a section dedicated to the study of the relationships between plant diversity and vineyards management, mainly focusing on the role of slope, mowing frequency, herbicides use and nitrogen input in determining plant diversity and biological traits composition of the communities. Results of this study were published in the journal PloSONE available on the web (Nascimbene J., Marini L., Ivan D., Zottini M. 2013. Management intensity and topography determined plant diversity in vineyards. PloSONE. 8(10): e76167). In the following sections an estende abstract of the study is reported.

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Study area - The study was carried out in the area of the Conegliano-Valdobbiadene DOCG including 6100 ha of vineyards in the northern part of the province of Treviso (Veneto, NE Italy, N 45°52'40'', E 12°17'5''). Sampling design - Twenty-five vineyards belonging to different owners were selected to represent the whole geographical range of the Conegliano-Valdobbiadene DOCG and the gradient of management intensity (from intensive to extensive) and slope conditions. Vineyards were selected to reduce difference in altitudes between the sites. Further criteria to include a vineyard in the study were an age above 10 years and a minimum area of 1 ha. All the vineyards have spontaneous vegetation and farmers did not sow any seed mix for at least 10 years.Vascular plants were sampled once between April 2nd and 23th, 2012 before any management interventions. In each vineyard, 10 1m x 1m plots were randomly placed in the central part of the cultivated area in the field between grape rows. Within each plot, all vascular plants were recorded and for each species the abundance was visually estimated using 5% cover classes.
Results – A total of 141 species were found. The mean number of species per vineyard was 35.2±12.7 (range: 19-69). Management intensity and topography are both relevant drivers of plant species diversity patterns in our vineyards, confirming results already available for other types of agro-ecosystems. The two most important factors are slope and mowing frequency that respectively yielded positive and negative effects on different measures of plant diversity. A significant interaction between these two factors in determining local plant diversity was also demonstrated, providing new insights for effective management practices to promote plant diversity. In particular, this result warns against the detrimental effects of increasing mowing intensity on steep slope (slope higher than 40%) where plant communities are more diverse. On the contrary, increasing mowing intensity may be not detrimental to plant diversity in flat sites where the species pool is poorer. These results predict that the maintenance of high plant diversity in our study area is mainly related to the management intensity applied to vineyards on steep slopes where low mowing frequency is recommended. As the steep slopes were more often mown with manual devices than flat areas, the lower impact of this mowing technique could have contributed to explain the interaction between slope and mowing frequency. Steeper slopes might be buffered to some extent against invasion by more competitive species, probably due to edaphic factors including low phosphorus availability.
The analysis of plant traits clarifies the mechanism that is behind the observed effect of mowing frequency on plant diversity. The response of plant communities to mowing frequency is mediated by a process of selection of resistant growth forms, such in the case of rosulate and reptant species. These species tend to cover a large amount of the available surface hindering the establishment of plants that are less tolerant to mowing. In general, this study corroborates the idea that some simple changes in farming activities, which are compatible with grape production, should be encouraged for improving the natural and cultural value of the area of the Conegliano-Valdobbiadene DOCG, by maintaining and improving wild plant diversity.
2) Endoflorvit project "Flora spontanea e microorganismi endofiti nel vigneto: sviluppo di un sistema agricolo che valorizzi e salvaguardi la biodiversità all'interno del territorio del Conegliano-Valdobbiadene " PSR 2007-2013 Misura 124.
This project will end in May 2015 and is focused on the study of local biological communities of both plants and microbial endophytes to promote a more sustainable management of vineyards and to improve the touristic-cultural attractiveness of the Conegliano Valdobbiadene DOCG area. The research on plant communities aims at improving the checklist of the study area (c. 500 plant species already listed) for creating an interactive identification key available on the Web and for suggesting indicators of plant diversity. Moreover, the study will evaluate the influence of the landscape context and management on plant communities of steep slope vineyards comparing them with remnants of semi-natural dry grasslands.

Valpolicella DOCG area

Since 2011, the Consortium has adopted a set of pest-control regulations named “Regulation of integrated pest control – Advanced” counting on consultancy by an expert agronomist to lay down a set of guidelines. The regulations on which they are based are those set out by the Veneto regional government which precautionary excludes products with the risks codes R40, R41, R63, R67, all of which are dangerous to vine workers and those who live close to the vineyards.

The experiment with MD to control the grapevine moth which was managed and promoted by the Consorzio was particularly successful. This technique of integrated pest control allows the reduction or even elimination this pest. Since 2010 the MD has spread in Valpolicella. Through monitoring the biological cycle of the insect, newsletters (weekly during the most delicate phases) are sent out with instructions on the population trend of moth and eventual treatment (with Bacillus thuringiensis) suitable for each macroarea with SMS alerts to guarantee that the information reaches all the vinegrowers.

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Best practice character of the project: (Maximum Characters: 10000)

Action C2, C3, C4 and C5 propose the application of habitat management in vineyards and surrounding habitats, including habitat restoration practices. Habitat management and restoration are recognized as an effective approach for biodiversity conservation aimed at increasing functional biodiversity to enhance ecosystem functions and services as in the case of biological control in agricultural systems (Landis et al 2000). The practices proposed in this project include hedgerows and groundcover management as well as agroforestry practices aimed at the increase of beneficial organisms (Tixier et al., 2002, 2006; Barbar et al. 2006; Liguori et al. 2011) and at the conservation of EU habitats of conservation interest such in the case of dry grasslands. The potential of using cover crops for functional biodiversity enhancement in viticulture has been widely exploited worldwide (Nicholls et al 2001; Costello and Daane, 2003; English-Loeb et al. 2003; Begum et al. 2006). The use of native plants which provide food and refuge for beneficial organisms as cover crops can have favourable effects on pest control and biodiversity conservation as well (Lee et al. 2001). For example, it is well known that hedgerows offer refuges and the alternative food sources to natural enemies of grapevine pests (e.g., other prey, pollen, nectar and honeydew; Cerutti et al., 1989; Viggiani et al., 1991; Ponti et al. 2003; Zanolli and Pavan 2011) and that groundcover management practices based on inter-row or field margin cover crops are other viable options to promote the beneficial organism's persistence in agro-ecosystems. These practices, coupled with a decrease of management intensity of the vegetation (action C2), are invoked by results of recent research in the project area (Nascimbene et al., 2013).
Moreover, pest control practices proposed in action C2 are characterized by a well-known efficacy and low environmental impact and are considered best practices in pest control in vineyards. Mating disruption (MD) with hand-applied dispensers is the most widely used pheromone-mediated control technique against grape berry moths (Charmillot and Pasquier, 2000; Ioriatti et al., 2008; Witzgall et al., 2010; Ioriatti et al., 2011). Long-term adoption of MD in vineyards associated with the non-use of synthetic insecticides leads to a range of positive effects on beneficial arthropods populations, allowing a natural regulation of primary and secondary pests (Delbac et al., 1996; Schirra and Louis, 1998). A number of non-chemical pesticides are available in the market. Recent studies conducted in Veneto region showed that these products have a good efficacy against grapevine pests and a reduced impact on non-target organisms as compared to conventional pesticides (Mori et al., 2014; Duso et al., 2014).
Decision Support Systems (DSS) are well-known tools used for the optimization of pest control measures (Gutierrez et al., 2012; Hardman, 2012). Restoration of autochthonous beneficial arthropods through inoculative releases of local strains of natural enemies is a technique that has been extensively tested in research activity of UNIPD (e.g., Duso 1989, Duso and Vettorazzo, 1999, Duso et al., 2006). The establishment of natural enemies in vineyards can prevent pest infestation and avoid insecticide application with a positive outcome for the environment. Moreover the use of local populations of natural enemies is in compliance with best practices in biodiversity conservation such as Convention on Biological Diversity - Access and Benefit Sharing.

Demonstration character of the project: (Maximum Characters: 10000)

The project responds to the need to concretely demonstrate that there are management strategies that allow to reconcile biodiversity conservation with the needs of production and that this union brings benefits to both components (environment and production), as complex agro-ecosystems (ie with high biodiversity) are notoriously more stable and productive. While this concept is increasingly incorporated in the management of other crops, it is still scarcely adopted in vineyard districts where however the potential for biodiversity conservation is even higher given the proximity of the vineyards with habitats of conservation interest.

The project actions will be therefore carried out in a selected number of sites where the agreement between land owners and project partners will give a unique condition to emphasize the demonstration character of the project. This is a crucial mission on the success of which depends the extent of the practices implemented by the project to wide areas of the two study territories, leading to a middle-long-term increasing of environmental quality in these (high-quality) wine production areas of north Italy.
The realization of such a virtuous example in these two areas of national and international interest for wine production would rise the possibility that the practices implemented by the project could be adopted as a model for several wine production areas in Italy and Europe.

Pilot aspects of the project: (Maximum Characters: 10000)

The involvement of the wineries in the drafting and implementation of the biodiversity protocol is at least one test case in Italy. The replicability of the initiative, however, is easily accomplished since the project aims to demonstrate that management practices favorable to biodiversity may also be more cost effective for the farm and therefore easy to apply and spread.

EU added value of the project and its actions: (Maximum Characters: 10000)

EU added value: extent and quality of the contribution to the specific objectives of the priority areas of the LIFE sub-programme for Environment

- Although the application of the new EU regulations (COM) has remarkably reduced the vineyards surface in Europe, by rewarding those wine producers abandoning permanently this cultivation, the entire vineyards surface in Europe is 3.6 million hectares, of which 650 thousand in Italy (EU data, 2009). Considering the importance of this sector, the project will identify some best management strategies which will favour biodiversity in vineyards and adjacent areas.
- In accordance with the European Strategy for Biodiversity (COM/2011/0244 final) the project will contribute to achieve Target 2 “By 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15 % of degraded ecosystems”. Project initiatives will improve some identified ecosystem services – yield production, pollination, biological control, and air quality (see Action D.3) – and will measure their increment (see Action D.4) with specific methodologies which will be tested during the project.
- In accordance with the European strategy for biodiversity (COM/2011/0244 final), the project will also contribute to achieve target 3A: “By 2020, maximise areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity-related measures under the CAP so as to ensure the conservation of biodiversity and to bring about a measurable improvement in the conservation status of species and habitats that depend on or are affected by agriculture and in the provision of ecosystem services as compared to the EU2010 Baseline, thus contributing to enhance sustainable management”. Although it is not possible to reduce vineyards surfaces in the project area, because they are fundamental for local economy, the project will: (a) foster initiatives which can guarantee the maintenance of the meadows which are adjacent to the vineyards as well as to the forests and which are presently threatened by invasive alien species; (b) limit the negative effects of farming cultivations, by reducing the use of pesticides and herbicides. Finally, as analysed in Action d.2, ecosystem services linked to vineyards, will increase and will be regularly monitored.

Contribution to the project topics
Regarding the priorities identified in LIFE Multiannual Work Programme for 2014-2017, the project is to be included in priority 1), points a) and c) (see above). However, it will also play a role in priority 2), as it includes some demonstrative actions for contrasting alien forest vegetation in adjacent woods and

meadows to the vineyards (e.g. contrasting black locust and ailanthus).

EU added value: multipurpose, synergies, and integration
The project has a strong synergy with the purposes and objectives of Directive 2009/128/EC for integrated pest management which foresees that Member States will establish appropriate incentives to foster plant protection featuring poor use of pesticides, by favouring the non-chemical methods any time it is possible. This will induce professional users of pesticides to adopt practices or products which feature lower risks both for human health and for the environment among all those available for the same purpose. Italy adopted this Directive with Legislative Decree n. 150 of 14th August 2012, whose art. 19 makes integrated pest management compulsory and establishes that, from 1st January 2014, the adoption of integrated pest management techniques as well as monitoring of pest and infections, the use of organic parasite control systems as well as the adoption of appropriate cultivation practices for human health and the use of plant protection products which are less dangerous for human health and the environment.

EU added value: replicability and transferability
he project aims at identifying management protocols which increase biodiversity in vineyards and adjacent areas (green infrastructures). These protocols can be replicated in other European wine-growing regions quite easily, as they feature mostly low-cost interventions for the companies (e.g. reduction in the number of mowing between rows or reduction in the number of parasiticide treatments). Promotion in other wine-growing regions is facilitated by the two project partners which are among Italian most important wine consortia and have a European as well as international contact network.
As a consequence, some management indications applied in the project which could also be adopted in other European areas will be promoted through project networking and, if shared with other organisations, they will be transferred to the European Commission to be incorporated into e.g. European Guidelines.

EU added value: transnational, green procurement, uptake
None

Socio-economic and ecosystem services effects of the project: (Maximum Characters: 10000)

The project foresees the improvement of the management of the vineyards and neighboring areas with particular attention to the reduction of pesticide treatments. This issue is particularly felt by the resident population that sees the presence of the vineyards close to homes as a danger for their health. The two areas (like most of the cultivated areas of the hilly zones) are densely populated and vineyards are often adjacent to homes or schools.
The organization of workshops with citizens will illustrate the environmental benefits of the new practices introduced and explain the objectives on increasing the biodiversity that consortia will arise in the long period.
In action D2 are described in the action other socio-economic aspects dealt with by the project.
As for the ecosystem services, these will be greatly improved and it will be quantified the contribution from the environmental and economic point of view (shares D3 and D4). These services are related to biological control, pollination and air quality.

Efforts for reducing the project's "Carbon footprint": (Maximum Characters: 10000)

Because the project do not foresee the realisation of infrastructures and use of raw materials, it is assumed that its carbon footprint is therefore very limited and mainly linked to:
- use of energy for the working group's transfer and for the locations where the activities will take place;
- use of energy and consumables for laboratory activities and for breeding initiatives;
- use of consumables for office activities and for the production of deliverables.

The commitment of the promoter and beneficiaries will consist in reducing the working groups' displacements as much as possible, through the use of video conference technologies and the strictest limitation of paper documents.

Efficiency and energy consumption will constitute an important evaluation factor for all the equipment that will be purchased within the project. For this purposes green procurement procedures will be adopted in all the public tenders promoted by the partners during the project.

Please note that the coordinating beneficiary since 2007, as part of the objectives of improving the Environmental Management Programme began experimenting with the application of the principles of Green Public Procurement also to the provision of products, such as cleaning products eco-friendly, environmentally friendly fuel and biodegradable lubricant for equipment, material wooden construction certificate.

Given the positive experience of the application of Green Public Procurement to some reality, this tool since 2008, formally recognized by top management with the integration of Environmental Policy, will also be extended to other companies.

Among the possible actions to apply the GPP as a tool for sustainable development, will be adopted in the following commitments:

ü insert predetermined minimum environmental criteria in the purchase of certain products such as paper, office furniture or furnishing for CEN, computer equipment, motor vehicles;

ü restrict the purchase of toxic or dangerous products, with significant environmental impact and provide awareness on the topic structures of the dealers;

ü prefere products and services to more long-lasting, high energy efficiency, obtained from materials recycled / recyclable materials, which minimize the production of waste;

ü promote choices in procurement of works and services, green building techniques, labeling systems, environmental management systems certified;

ü insert in the award criteria environmental elements involving economic benefit administration, taking into account the costs incurred during the entire life cycle of the product.

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Stakeholders involved and target audience of the project: (Maximum Characters: 12000)

The involvement of the main stakeholders of the project is expected already in the actions and the application form to which we refer.
In fact, the project aims to involve:

- The farms and wineries of Conegliano-Valdobbiadene and Valpolicella areas (Action C6 and E5)
- The agronomists, wine makers, technicians at regional and national level (action E6)
- The international scientific community (Action E6)
- The citizens of the two project areas (action E7)

Of particular note is the role of farms and their representatives in writing the text of the Protocol through participation in the work table which will provide their feedback.

Expected constraints and risks related to the project implementation and mitigation strategy: (Maximum Characters: 12000)

The project foresees small risks because the beneficiaries are subjects with particular experience in the implementation of the actions that will be called upon to perform, and in some cases, with previous experience related to previous LIFE projects (see Veneto Agricultura).
So the main risk factors is reduced to two:

PARTICIPATION OF FARMERS
The most critical aspect considered is the involvement of farmers in the concrete actions that will be undertaken on land currently in private ownership. For this purpose, the design phase was preceded by direct contacts with some farmers, through consortia, and has already led to the identification of 15 farms available.

DELAYS DUE TO UNUSUAL WEATHER SITUATIONS
Since some of the project activities are linked to the seasonality and however they can be delayed by exceptional weather events has been planned a timetable that provides the ability to recover any slips. Similarly there may be difficulties in case of interventions of propagation of plant material present strong mortality. In timetable we have not foreseen concrete action during the last 6 months of the project.

CONTINUATION OF THE PROJECT

Which actions will have to be carried out or continued after the end of the project? (Maximum Characters: 5000)

C2 Halting the loss of biodiversity in habitat INSIDE the vineyard
C3 Halting the loss of biodiversity in habitat NEAR the vineyard – hedgerows and flower strips
C4 Halting the loss of biodiversity in habitat NEAR the vineyard – arid grasslands
C5 Halting the loss of biodiversity in habitat NEAR the vineyard – FOREST
The concrete actions of the project will continue after the conclusion independently. The project was conceived in fact thinking of a management tool vineyards and nearby areas in the long term. The protocol (C6 action) will be progressively applied to all companies in the consortium that will manage their lands in a sustainable way by allowing the gradual increase of the biodiversity of the area

How will this be achieved? What resources will be necessary to carry out these actions? (Maximum Characters: 5000)

There will be no additional resources required. The farms, however, will have access to grants from the Veneto Rural Development Fund 2014-2020 are expected to be maintained even in the subsequent programs for certain activities such as the creation of hedges.

Protection status under National / local law of sites/species/habitats targeted (if relevant): (Maximum Characters: 5000)

Not relevant

How, where and by whom will the equipment acquired be used after the end of the project? (Maximum Characters: 5000)

In this project equipment is purchased only by UNIPD that is a public body. In specific are foreseen three PC and a spray apparatus. These will be dedicated exclusively to the project and after the completion of activities will be employed activities of the department of biology which, by its constitution, deals exclusively biodiversity conservation and the protection of nature.

To what extent will the results and lessons of the project be actively disseminated after the end of the project to those persons and/or organisations that could best make use of them (please identify these persons/organisations)? (Maximum Characters: 5000)

The extension of dissemination activities will be held by two wine consortia. In fact they will:
- maintain the network with other Italian and European project s (action E.3)
- promote the application of the Protocol to all farms in project areas (action E.5)
- organize other meeting for citizens for illustrate the increasing environmental positive effects of concrete activities held by farmers (action E.7)
- involve technical agronomist in field visits in project's sites (action E.6)

Moreover the two consortia have a website in which will be published all the results of the project. Also the project website will remain available.

How will the long term sustainability of the project's concrete actions be assured? (Maximum

Characters: 5000)

The long-term sustainability is the final goal of the project. In fact, with the drafting of a protocol on biodiversity, the application on the entire wine-growing area of the two consortia of sustainable management practices from an environmental perspective is ensured in the long period. The whole area will then become a green infrastructure that can provide over time a higher and higher quality of ecosystem services.

LIST OF ACTIONS

A. Preparatory actions, elaboration of management plans and/or of action plans
B. Purchase/lease of land and/or compensation payments for use rights
C. Concrete conservation actions
D. Monitoring of the impact of the project actions (obligatory)
E. Public awareness and dissemination of results (obligatory)
F. Project management and monitoring of project progress (obligatory)

A. Preparatory actions, elaboration of management plans and/or of action plans

A.1 Choosing farms for demonstrative activities

Beneficiary responsible for implementation:
CON-PROS

Responsibilities in case several beneficiaries are implicated:
Support of Consorzio Valpolicella

Description (Maximum Characters: 10000)
In order to have the areas where realizing concrete actions, the two consortia will identify at least 10 companies that are suitable from the technical point of view and who are willing to join the project. So it will be made a first list of farms to select the areas that are suitable to scientific technical reasons the implementation of interventions (for location, spatial distribution, slope of the land, exposure, etc.). Then the farmers will be contacted to explain them the purpose of the project and the commitments that have to shoulder. In particular, they will carry out the activities for the management of agricultural fields and areas bordering the vineyard following the indication of UNIPD or give permission for direct works in their field. The consortia have already carried out an initial search of the companies that led to the identification of 15 companies, 6 for the Consortium Conegliano Valdobbiadene and 9 companies for the Consorzio Valpolicella. The declaration of support are in attachment to this proposal.

Reason why this action is necessary (Maximum Characters: 2000)
The action is needed to ensure the availability of the areas of intervention given that consortia do not own agricultural land.

Constraints and assumptions (Maximum Characters: 2000)
The risks of this action are related to the difficulty of finding available owners. However, since an initial list of companies has already been prepared, it is expected that the action can be carried out regularly.

Expected results (quantitative information when possible) (Maximum Characters: 2000)
At the end of 2015 will be available the list of companies (at least 10 per consortium) who will join the project.

Indicators of progress (Maximum Characters: 2000)
None

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
The costs of the action are only due to man-days of staff of the two consortia.

A.2 Communication plan and mapping of potential stakeholders

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:
Legambiente will support the responsible beneficiary

Description (Maximum Characters: 10000)
Development of the Communication Plan
Throughout the project, communication actions will be planned and implemented in order to inform stakeholders regarding project activities and to transfer project results.
The plan, which will take account of the need for visibility and dissemination of information relating to the project at regional, national and international level, will be finalized the organization of activities and the definition of communication mode. It will thus optimize the forms and methods of impact and involvement of the target, publicizing activities and results, both through the production and distribution of suitable material, both informing and raising awareness of actions, progress and results of the project.
The communication plan will also establish measures for the ongoing evaluation of the communication and its possible revision.
This action will be based on the following activities:
- Dissemination Strategy and Plan: Legambiente, after consulting with VA and consortium will prepare a detailed planning of communication and dissemination activities, identifying communication targets, communications means, timing and actions. The communication plan will address all the applicable requirements of art. 13 of the Common Provisions LIFE+ (2013);
- Project Visual Identity definition: in order for project to be easily recognizable and widely known, we will build a strong project image, brand and style in line with the project aims and environmental messages to be communicated. The Visual Identity will include:
• Official project logo and official project colors;
• A word document template (to be used for news releases, information sheets, reports, deliverables and so on);
• A generic poster template (in portrait and landscape);
• A generic template for the slideshow;
• A brochure template to be customized for different events and scopes;
• The project concept image to be used to summarize and easily communicate project scopes and expected impacts to a wider audience.
Material of the project visual identity will contain the LIFE+ program logo, acknowledgement of the EC contribution, references and information on the LIFE program.
Visual Identity will be defined through a process of consultation among partners, coordinated by Legambiente.

Mapping of potential stakeholder
This activity will characterize the different project stakeholders. Due to the participation of wine makers and citizens, this project has a very wide number of stakeholders. These stakeholders are interested in the project results for different reasons. This activity will analyze in detail their interests, information needs, and reasons for communicating with the project. On the basis of these information the main opportunities to interact with the project will be identified and consultations with the most

representative stakeholders of each category will be organized. In particular we plan to have these consultations associated with a launching event and a dissemination event to be held at the very beginning and end of the project as specified in the dissemination plan.

All the work of this action will be done at the sites of the involved partners

VA will be responsible for organizing and managing the action, collecting inputs from the partners to develop the Communication Plan; it will also coordinate partners to identify a wide network of stakeholders.

Reason why this action is necessary (Maximum Characters: 2000)
Action is necessary in order to define strategies for the implementation of the communication and dissemination of results, aims and objectives of the project but also to plan in detail the communication products, open up channels of local, national and EU dissemination level.

Constraints and assumptions (Maximum Characters: 2000)
No risks are foreseen for the development of this action

Expected results (quantitative information when possible) (Maximum Characters: 2000)
Implementation of a communication plan that allows you to achieve the following results:
• Raise awareness of the targets identified on the issues of the project;
• Identify an unified communications strategy for all partners;
• Definition of forms, media and content more appropriate in relation to the project objectives and to different audiences;
• Creation of a "network" of communication flows between the associated partners, territory, institutional;
• Increase the visibility of the project in the territories concerned and inform with the activities, actions and results;
- Expected and quantifiable results of this action are the characterization of the project stakeholders;
- Production of a strong and coherent project image and style in line with the project aims and environmental messages to be communicated;
- Creation of easy to use and adaptable templates in various formats;
- Effective dissemination and communication of project aims, results and impact with the production and delivery of the following dissemination means.

Indicators of progress (Maximum Characters: 2000)
The Communication strategy and Plan and Project Visual Identity have being produced. All the main stakeholders have been identified and are being characterized.

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
Staff costs are calculated on the basis of data collected by national collective agreements and refer to staff currently employed by the partner organizations, as well as the human resources that will be used specifically for the project.
For all other costs, an assessment was made taking into account the average market prices.

B. Purchase/lease of land and/or compensation payments for use rights

C. Concrete conservation actions

Action title:

C.1 Large scale production of propagation material for new plants (herbaceous grass and scrubs)

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:
Support of Padua University

Description (Maximum Characters: 10000)
The aim of this action is to provide propagating materials to the other C actions (C2, C3 and C4) that need planting or sowing to restore sites and/or increase floristic diversity in terms of species richness and composition. The action implies the use of local genetic resources by seeds collection in the wild within the project areas. Seed collection will be managed following the principles of the ENSCONET (2009) “Seed Collecting Manual for wild species”.
This task will be achieved by the following activities (in the brackets is indicated the beneficiary charged for):

- Identification of germoplasm collection areas in natural and semi natural habitats surrounding vineyards of the two project areas and in other vineyard districts, all belonging to the same ecological region (Veneto Agricoltura and Unipd).

Preliminary results of previous research already allowed us to map several potential sites in both areas, including the mapping of some orchids populations belonging at least to 15 different species including for example Anacamptis pyramidalis, A. morio, Ophrys apifera, Ophrys benacensis, Ophrys insectifera, Orchis tridentata, Orchis papilionacea. This background knowledge will ensure positive results to this critical starting phase.

- Orchid production and cultivation (Veneto Agricoltura and Unipd).

The Padua University (Biology Department) provides skills and instrumentation for the critical first stage of orchid production, that will be performed in laboratory with in vitro techniques. The action consist in applying a protocol for orchid seeds germination, in vitro cultivation of young plants and ex vitro acclimation. Preliminary tests were already conducted on 4 species (Anacamptis pyramidalis, A. morio, Ophrys apifera, Serapias vomeracea) in the laboratory of the Biology Department of the University of Padova and positive results were obtained, supporting the feasibility of this action and its high potential for restoring plant diversity within vineyards (action C2) and in semi-natural arid grasslands surrounding vineyards (action C4). This activity will involve at least 8-10 species among those already listed in the two project areas. Also vegetative propagation from other types of explants from orchid plants (e.g. leaves, meristematic tissues) will be tested. Large scale production of orchid plants cultivated in ”in vitro” conditions will be performed at the Biology Department. Large scale ex vitro acclimatation will be performed in the Veneto Agricoltura nursery “Centro Sperimentale Ortofloricolo Po di Tramontana”, while extensive cultivation of young orchid plants in pots will be

carried out in the Veneto Agricoltura nursery of Montecchio Precalcino (see following n. 4).

- Seeds and seedlings production (Veneto Agricoltura)

This action will be performed in the Veneto Agricoltura nursery (Montecchio Precalcino). The growing of plants (both orchids (see prev. n. 3) and other species,) will be made in container, to obtain young plants in pot, to be used in the designated sites (for the species intended to be planted). Plants will be cultivated also in plots, for ex situ seed production (for the species intended to be sown - not planted - in the designated sites). For species list and destination descriptions, see action C2, C3, C4. Previous activities including selected species of arid grasslands were already conducted as preliminary tests (orchids species by the Biology department), and as complete production and plantation in natural sites, in Veneto Agricoltura nursery's previous experiences (for example LIFE 08 NAT/IT/00362 "Colli Berici Natura 2000"), supporting the feasibility of this action. Seed, and eventually bulbs, collection will start at 2016, April.

Reason why this action is necessary (Maximum Characters: 2000)

This action is necessary to restore and/or increase floristic diversity inside the vineyards and in the remnants of semi-natural arid grasslands around the vineyards. In particular, this action would allow to improve the presence and population size of species that are typically related with semi-natural arid grasslands of conservation concern according to EU Natura 2000 policies. Particular effort will be dedicated to orchids that give the priority status for conservation to the arid grasslands under the Natura 2000 code 6210.

In general, this action is indispensable to counteract the decline of plant diversity associated with intensive vineyard management and loss of semi-natural habitats in both project areas.

Constraints and assumptions (Maximum Characters: 2000)

The collection of seeds and other plant material require the collaboration of landowners for the management of grassland surrounding the vineyards. The preparatory action A2 will guaranty this collaboration. Also site availability for seed collection could hinder the effectiveness of this action. However, we have already performed preliminary studies documenting the presence in the project areas of a sufficient number of collection sites and of populations of rare species such in the case of orchids Further constrains could arise in the critical phase of orchid seeds germination. We are aware of this potential criticism and already performed laboratory tests with selected species that yielded positive results. Also the production of various species typical of arid grasslands in our region was preliminary tested. In this way we believe to be able to counteract potential constrains related to this action.

Expected results (quantitative information when possible) (Maximum Characters: 2000)

We expect the production of about 78.000 plants, including 8-10 orchid species. We also expect the production of about 85 kg of seeds. Species and their habitats, as well as the surfaces and length measures, are listed in the description of C2, C3, C4 actions.

Indicators of progress (Maximum Characters: 2000)

The progress of this action will be measured in terms of plant and seeds production. We estimate that about half of all materials will be disposable in the first part of the third project year.

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)

The cost is based on the production's cost of plants, including those rare and difficult to find/moltiplicate, and on the production's cost of seed of high quality belonging to uncommon species, for most part needing manual collection. The cost has been built taking into account the consumables

necessary for the production, the workers costs required for production, the technical and administrative management, and specialistic assistance for seed collection. The number of plants and the seed's quantity was estimated basing on a theorical (i.e. a quantity that has to be considered an average, that will be sufficient for a future on-site natural propagation) density of 3 plants/square meter and of 5 seed grams per square meter.

Action title:

C.2 Halting the loss of biodiversity in habitat INSIDE the vineyard

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:
Support of VA and two wine consortiums

Description (Maximum Characters: 10000)
This action has two sub-actions:
A Groundcover management in vineyards (UNIPD-Biology, Veneto Agricoltura).
This sub-action is among the core activities of the project, aiming at increasing plant biodiversity and cover inside the vineyard. Depending on the slope condition and current plant cover it can be divided into different activities.
Steep slope sites with already existing plant cover. This situation is typical of the Conegliano-Valdobbiadene area and will be carried out at least 15 vineyards of this area, on a minimum surface of 1 ha in each vineyard. In this environmental context, the project aims at creating and/or restoring plant communities that resemble those of semi-natural habitats of conservation concern according to the EU "Habitat" directive (habitat code 6210, 62A0). In this perspective, these vineyards should play the role of green infrastructures that improve landscape connectivity of the project area, representing a surrogate of semi-natural habitats. This task will be achieved by the following actions:
1) Reduction of mowing frequency to twice in a year. Additionally, the first mowing will be conducted late in the season in order to allow most plants to complete their vegetative cycle (mowing plan prepared by Unipd; mowing activity by farmers);
2) mowing in alternate rows to favor the permanence of pollinators (mowing plan prepared by Unipd; mowing activity by farmers))
3) Raking mown grass to avoid nutrient increase (mowing plan prepared by Unipd; raking activity by farmers);
4) No herbicide use (Supervision by Unipd, activity by farmers);
5) Planting of selected species that are typical of semi-natural arid habitats (Orchid species: Anacamptis pyramidalis, A. morio, Ophrys apifera, Ophrys benacensis, Ophrys insectifera, Orchis tridentata, Orchis papilionacea; Festuco-Brometea: Pulsatilla montana, Pseudolysimachion barellieri ecc.)
These plants will be prepared on the basis of seed collection in the project area and their further cultivation in the nursery according to the activities described in the project action C1 that will also include the cultivation of rare/endangered species such in the case of some Orchidaceae. In this case the cultivation process will include a preliminary phase of seed germination under controlled conditions in laboratory. In this regard, some preliminary tests were already conducted on 4 species

(Anacamptis pyramidalis, A. morio, Ophrys apifera, Serapias vomeracea) in the laboratory of the Biology Department of the University of Padova and positive results were obtained, supporting the high potential of this action to improve plant biodiversity of steep slope vineyard. In particular cases in which plant cover is depleted this action will also include sowing using seed material collected of suitable species (for example Bromus erectus, Bothriochloa ischaemum, Festuca valesiaca ecc.) collected in remnants of semi-natural habitats. This will be used also as a natural mulch along the grape rows, as described in the B)3 point. For seeds collection and treatment see action C1. Planting plan and supervision by UNIPD (Biology); planting activity by Veneto Agricoltura

Plain or moderate slope sites, where the agro-ecosystem's species richness decreased as a consequence of intensive management, with herbicide use and hard practices on plant cover and a consequent diffusion of trivial species. Environmental conditions are potentially suited for the typical agro-ecosystem plant communities, including those of field margins with showy blooms, attractive to bees, bumbles ecc., and those living in the traditional vines' cultural landscape (such as Tulipa sylvestris, Gladiolus italicus ecc.). In this situation, the project aims at restoring and increasing plant diversity and ecosystem services, with a particular regard to pollinators, by the following actions that will be carried out in a total of at least 15 vineyards, on a minimum surface of 1 ha in each vineyard :

1) Promoting the role of green infrastructures of drywalls and escarpments that should play as biodiversity hot spots within the vineyard. This issue will be addressed by sowing along these structures native plant species typical of healthy agro-ecosystems, which can enhance insect biodiversity and help a sustainable management of the vineyard itself. Plant species will be chosen in the appropriate communities (Stellarienaea mediae, Papaveretalia rhoeadis, Onopordetalia acanthi, Molinio-Arrhetheretea, Festuco-Brometea, Koelerio-Corynephoretea ecc.), and, depending on the ecological conditions of each site, will include for example Anchusa italica, Anthemis arvensis, Echium vulgare, Papaver apulum, Cyanus segetum, Gladiolus italicus, Saponaria ocymoides, Cota tinctoria, Ornithogalum brevistylum, Leontodon hispidus, Muscari neglectum ecc. It will be necessary to previously prepare soil and remove trivial and alien species.

2) Enriching plant diversity under the vines, by planting seedlings of typical, rare native "vineyard species", such as Tulipa sylvestris, Gladiolus italicus, Muscari neglectum Bellevalia romana, Gagea villosa and others. Supervision, planting plan by Unipd-Biology; planting activities by Veneto Agricoltura).

3) Enriching plant diversity under the vines, sowing native plant species suitable to form a living mulch: depending on the different soil conditions, species could include on one side, for example, Prunella vulgaris, on the other, for example, Sedum sexangulare. This treatment would reduce or eliminate herbicide use along the vines rows, increasing at the same time plant diversity and ecosystem functions.

Additionally, the following activities will be carried out:

4) mowing in alternate rows to favor the permanence of pollinators (mowing plan and supervision by Unipd-Biology; mowing activity by farmers)

5) chopping of the dead branches of vine plants during the winter (chopping plan prepared by Unipd-Biology; mowing activity by farmers)

B Pest management in vineyards (DAFNAE, Valpolicella and Conegliano Valdobbiadene Consortia)

This action will be aimed at the application of "biodiversity friendly pest control strategies" based on the reduction in use of synthetic pesticides and the restoration of natural enemies occurrence. Synthetic pesticides will be replaced by non-chemical measures (e.g., augmentative biological control) and natural pesticides applying monitoring and existing Decision Support Systems (DSS). These strategies can attain a positive effect on biodiversity in vineyards and the surroundings habitats with the promotion of ecosystem services. An important aspect of this action is to demonstrate to growers that "biodiversity friendly pest control strategies" can conjugate effective pest control with the

conservation/increase of biodiversity.
These pest control strategies will be applied in 10 blocks of vineyards of approximately 4 hectares in both Valpolicella and Conegliano – Valdobbiadene areas. The strategies will be based on the replacement/substitution of synthetic pesticides with alternatives with a low environmental impact. The following measures will be implemented:

1) Replacement of synthetic pesticides

In pest control strategies aimed at preserving biodiversity, synthetic insecticides against GBMs can be replaced by using Mating Disruption (MD) and/or biopesticides based on Bacillus thuringiensis. MD is based on the use of synthetic equivalents of insect's pheromones to prevent or delay the mating of insects. The most promising MD formulation will be selected based on scientific literature and previous field experiments. For each vineyard a map of MD dispensers distribution will be designed according to the topography of the specific areas and technical traits of the selected products. Bacillus thuringiensis will be used to mitigate GBM pressure if MD will be not fully effective (e.g., against the third generation of L. botrana). This biopesticide could also affect other lepidopteran pests damaging berries. The use of Decision Support Systems (DSS) that are based on predictive pest population dynamics models is crucial to optimize timing of sampling and pest control measures. These DSS are well-proven and currently provided by commercial companies that offer the model output through a web-based platform with a customization on specific sites.

2) Restoration of indigenous natural enemies

Indigenous populations of natural enemies will be restored by collecting/rearing and releasing in vineyards strains originating from Northern Italy, possibly from the two project areas. The restoration activities will involve particularly predatory mites and parasitoid wasps.
Phytoseiid mites (e.g., Kampimodromus aberrans and Typhlodromus pyri) are important generalist predators of herbivore mites and small insects in European vineyards, and they occur even in Valpolicella and Conegliano Valdobbiadene areas. They are able to persist on plants in absence of prey by feeding on alternative foods like pollen or fungi. However, the use of synthetic pesticides can determine their extinction and this phenomenon can be locally relevant. Their restoration in vineyards will be performed through the release of strains collected from source vineyards in the Veneto region and previously monitored by UNIPD. Laboratory mass reared colonies can be produced in the laboratories of UNIPD. Release techniques have been developed and well-proven, and have been successfully implemented on several occasions by UNIPD. These techniques comprise: a) the release of predatory mites at the end of winter by the transfer of two year-old branches colonized by wintering females; b) the release of predatory mites during the growing season through the transfer of young shoots colonized by the species of interest; c) the release of laboratory mass-reared predatory mites using release medium. Repeated releases may be necessary to the establishment of the populations in vineyards.

Reason why this action is necessary (Maximum Characters: 2000)

This is among the core actions of the project aiming at improving plant diversity and cover within the vineyards and developing habitat conditions and community assemblages that mimic those of semi-natural habitats of conservation concern including rare/endangered species, and those of agro-ecosystems of high environmental value. The increase in plant biodiversity (see monitoring action D1) would be reflected in improving ecosystem functions and their related ecosystem services such in the case of pollination and pest control (see monitoring action D3). These services should reduce the use of pesticides with expected positive effects on the fundamental ecosystem service related to air quality (see monitoring action D3).
This action is necessary

- to reduce the negative effects in terms of habitat loss and fragmentation of the intensification

process of vineyard cultivation in the project areas where arid grasslands that are among the most relevant habitat type for biodiversity conservation in the European Union according to Natura 2000 policies, are increasingly outcompeted by vineyards

- to improve ecosystem services of vineyards (see monitoring action D4).

Constraints and assumptions (Maximum Characters: 2000)

Apparently, there should not be problems to implementing this action. Some concern may arise on the process of plant production starting from autochthonous material collected in the wild. However, we already performed preliminary tests and improved our experience in cultivating species that are typical of semi-natural arid grasslands related to the EU habitats 6210, 62A0.

Some constraints may arise from the mass-production of indigenous strains of parasitoids because required specific facilities and know-how are not easily available. However the service that will be settled with a biofactory will reduce the chance of problems in this activity. There are no other constraints for this action implementation since other pest management tools applied here are feasible and their efficacy is known.

Concern may also arise on the availability of a sufficient number of farms that would allow to carry out this project action in their vineyards. However, this critical point was already addressed by a collaboration with the two consortia during the development of the project. The two consortia, on the basis of their relationships with the farmers, indicated a realistic, even underestimated number of farms that will certainly collaborate with the project (see also the compliance letters attached to the submission).

Expected results (quantitative information when possible) (Maximum Characters: 2000)

This action is expected to produce beneficial effects to plant diversity both in terms of plant richness and composition and cover inside the vineyards that will be assessed by the monitoring action D1. In particular, in steep slope situations we expect an amelioration of plant composition, shifting from communities mainly composed by trivial species to communities that also include species that are typical of semi-natural arid habitats of conservation concern according to EU Natura 2000 policies. In general, the improvement of plant diversity and cover are expected to have a positive influence on ecosystem services directly related with pollination and pest control and indirectly with air quality.

With the propagation material producted with act. C1, we expect about the plantation of 60.000 plants, and the sowing of 85 kg of seeds

Within this action broad-spectrum insecticides will be replaced by more specific pest control tools characterized by higher specificity toward the target pests and a reduced impact on non-target organisms. The application of ”Biodiversity friendly pest control strategies” should reduce the impact of pest control tools on arthropods community that occur inside and around 80 hectares of vineyards that is likely to increase in its species richness that will be assessed in monitoring action (see monitoring action D1). In the same habitats indigenous population of biological control agents will be restored with a positive impact on ecosystem services promotion. The low impact on biological control agents and pollinators as selection criteria for pest management tools employed in this action will ensure the promotion of ecosystem services provided by these functional groups and this will be monitored in action D3.

Indicators of progress (Maximum Characters: 2000)

The progress of this action will be measured according with the executive action plan that will be arranged by Unipd for each farm. In this plan each activity will be listed for each farm and a time-table will be assigned to each activity. This will allow to check, step by step, the advances of each activity in each farm.

An executive time-table will be defined with all actors involved in this action at the beginning of the project. The progress of this action will be continuously evaluated during its application by specific monitoring actions (see monitoring action D1). An indicator of the progress of this action will be the increase in general arthropods species richness and functional biodiversity to the ecosystem service of biological control in vineyards and surrounding habitats. The progress of the actions will be evaluated at the end of each growing season by analyzing data obtained in monitoring actions. Project consortium meetings with vineyard managers or owners will be organized to present and discuss result in term of increase biodiversity, ecosystem services promotion and pest control efficacy.

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
Veneto Agricoltura: Cost is estimated considering plant/seed transport, planting/sowing operations, external assistance for earthworks and other processing needing tractors.
UNIPD: Personnel for ctivities supervision, interaction with researchers and technicians. design of MD dispensers distribution map, selection of MD formulations and natural or reduced risk pesticides, action threshold assessment, design of release and releases of natural enemies, interaction with growers.
Travel and subsistence: Field visits during growing seasons (approximately 72 travels of 1-2 days): action threshold assessment for pest control and repeated releases of natural enemies in vineyards.
Equipment: Computer controlled spray apparatus and personal computer to perform laboratory tests on side-effects of pesticides on autochthonous strains of natural enemies.
External assistance:access to web platform for customized DSS tools.mass-production of autochthonous strains of natural enemies to be released in vineyards.Consumables:Material for insects rearing to be used in autochthonous strains of natural enemies laboratory colonies establishment and maintenance and materials for pest monitoring (e.g., traps).
Consortia: Personnel cost are foreseen for supporting UNIPD in field activities
for Conegliano Valdobbiadene in consumbles is foreseen the purchase of a “farm kit”, a MD dispensers kits and natural or reduced risk pesticides to growers for ten farms; for Valpolicella: Technical assistance for selection of MD formulations and natural or reduced risk pesticides, design of MD dispensers distribution map, distribution of MD dispenser in vineyards, action threshold assessment.

Action title:

C.3 Halting the loss of biodiversity in habitat NEAR the vineyard – hedgerows and flower strips

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:
Support: UniPD

Description (Maximum Characters: 10000)
This action is mainly aimed to increase the botanical diversity contiguous to vineyards in order to improve agro-ecosystem functions (e.g., natural control of pests, increased resources for pollinators). It will focus on the impact of hedgerows and field margins. In a number of agricultural systems (included

vineyards) hedgerows have been removed for several reasons, primarily to make easier machine movements and increase acreage. Hedgerows can exert a number of functions, they can produce wood as well as pollen and honeydew for beneficial arthropods, mitigate water and air pollution caused by pesticides, reduce nutrient content in water, preserve river edges, create refuges for wildlife and beneficial arthropods, etc. Therefore hedgerow removal have been associated with negative effects (e.g., reduced response to pest outbreaks by natural enemies, increase in water pollution by herbicides). In addition to hedgerows, the presence of flowering plants at the field margins have been proposed for their positive effects on natural control of pests and pollination.
In a number of vineyards (6-8 in both Conegliano-Valdobbiadene and Valpolicella areas) secondary hedgerows will be planted along a side of a large vineyard. Hedgerows will comprise the plant species typical of wood and wood hedges in Veneto region such as Acer campestre, Carpinus betulus, Sambucus nigra, Ligustrum vulgare, Corylus avellana, Cornus sanguinea etc.. Plants will be produced by the Veneto Agricoltura nursery (see action C1). Plant species will be selected according to data retained by previous research by UNIPD and literature search and selection criteria will be the provision of refugees, food sources, oviposition sites for beneficial arthropods providing ecosystem services (i.e., pollination and biological control).
Seedlings will be produced by the Veneto Agricoltura nursery (see action C1) and planted in 2015 fall. The secondary hedgerows will be pruned (1 m laterally, 2.5 m at the top, at least 100 m long). It is expected that mixed hedgerows will exert most of their functions at the end of the project.
Field margins interested by hedgerows will include also flowering plant strips. Vineyards contiguous to these field margins could be considered infrastructures that improve landscape connectivity of the project areas, simulating mechanisms acting in semi-natural habitats. Flowering plant strips (at least 1 m x 100 m.) will comprise autochthonous dicotyledonous species characterized by a prolonged flowering periods (e.g., Anchusa italica, Echium vulgare, Cota tinctoria etc.). In particular these species will be selected according to prolonged flowering periods and nectar production and availability for beneficial arthropods. They will be mowed once per year late in the season (e.g. after August) to allow most plants to complete their vegetative cycle (mowing plan prepared by UNIPD-DAFNAE ; mowing activity by farmers). No herbicides will be used close to these field margins.
Before hedgerows planting and herbaceous strip sowing the soil will be prepared and trivial and alien species will be removed (Supervision, sowing and planting plan by UNIPD-DAFNAE; soil preparation, sowing and hedgerows planting activities by Veneto Agricoltura).

Reason why this action is necessary (Maximum Characters: 2000)
Hedgerows are important landscape elements with well-known benefits in term of general biodiversity conservation in agro-ecosystems. The selection of plant communities similar to semi-natural habitats will ensure the conservation of these species in the agro-ecosystems. Moreover, it is well known that the provision of plant-derived food sources, oviposition sites and refugees are necessary for the enhancement of arthropod diversity and in particular those components functional to ecosystem services. All these aspects can be fulfilled by the planting of new hedgerows and flowering plants. An additional benefit of new hedgerows planting is also the control of pesticide drift in off-crop area. This can be a relevant aspect in vineyards close to urban areas typical of wine production areas of Consortia involved in this project.

Constraints and assumptions (Maximum Characters: 2000)
No constraints should emerge during the implementation of these actions since plants will be chosen among those that are already in production in Veneto Agricoltura nursery with well-proven planting and managing protocols.

Expected results (quantitative information when possible) (Maximum Characters: 2000)
Plantation of approximately 2700 woody plants for about 1800 mt. hedgerows and sowing of about 1800 mt. of flower strips.
An increase in terms of beneficial arthropod diversity in vineyards and an increase in ecosystem services is expected. Hedgerow effects are expected to increase during the project together with hedgerows development, while the effects obtained by flowering strips should be visible in short term. Information obtained by new hedgerows planting and flowering strip will be used for the definition of vineyards management practices to be included in the management protocol (see action C7)

Indicators of progress (Maximum Characters: 2000)
The progress of this action will be evaluated according to the executive time-table that will be defined with all partners at the beginning of the project. The progress of this action will be continuously evaluated during its application by specific monitoring actions (see monitoring action D1). An indicator of the progress of this action will be the increase in general arthropod species richness and functional biodiversity related to the ecosystem services of biological control and pollination in vineyards and surrounding habitats. The progress of the actions will be evaluated at the end of each growing season by analyzing data obtained in monitoring actions.

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
The cost is based on planting, sowing and soil preparation costs (see details in financial forms) for Veneto Agricoltura
For UNIPD the cost is based on personnel cost (supervision., design of sowing, planting and mowing plan and interaction with growers)

Action title:

C.4 Halting the loss of biodiversity in habitat NEAR the vineyard – arid grasslands

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:
Support: Veneto Agricoltura, Regione Veneto

Description (Maximum Characters: 10000)
Arid grasslands are among the most relevant habitat type for biodiversity conservation in the European Union, according to Natura 2000 policies. In the project areas they are increasingly outcompeted by vineyards. However, results of recent research carried out by Unipd (Biology Department) indicated that in the Conegliano-Valdobbiadene area there are still some remnants of this habitat in the surrounding of vineyards and for this reason this project action will be focused on this area. At least 15 patches
of arid grasslands will be included in the project. Their size could be variable. On the border of the vineyards there are small fragments (e.g. 200-2000 m2) that form a transition area between vineyards

and woodlands. These small fragments are usually mown at least twice in a year (their management is in general less intensive than that of the adjacent vineyards) and are progressively eroded by the expanding vineyards. Larger fragments (2000-8000 m2) are rare and are either abandoned sites where a secondary succession is rapidly taking place or natural sites in which the succession is slow.
According to results of previous research conducted by Unipd (Biology Department) these remnants, even those that are very small, could provide refuge and propagule sources for several plant species that are typically associated with arid grasslands, potentially establishing also inside the vineyards according to the management improvements that are planned in this project under the concrete action C2. In this perspective, these remnants could play the role of green infrastructures that improve landscape connectivity by connecting semi-natural and cultivated sites.
However, these remnants are increasingly threatened by surface loss and abandonment that enhances a succession to shrub-dominated vegetation. This project action aims at counteracting these process by increasing, restoring and maintaining plant biodiversity in remnants of arid grasslands surrounding the vineyards.
This task will be achieved by the following activities:
1) Cutting of shrub individuals that are colonizing abandoned grasslands to restore habitat quality, counteracting the secondary succession that is causing a shift to shrub-dominated communities (activity plan and supervision by Unipd, cutting by Regione Veneto). A similar activity is scheduled in the project action C5 (margin between grasslands and woodlands), aiming at improving grasslands surface and restoring their environmental value in terms of species composition.
2) Mowing once in a year to counteract secondary succession (activity plan and supervision by Unipd, mowing by Regione Veneto)
3) Enhancement of population size of selected species typical of semi-natural arid grasslands by planting about 15000 cultivated plants (activity plan and supervision by Unipd, planting by Veneto Agricoltura).
Plants for point 3 will be prepared on the basis of seed collection in the project area and their further cultivation in the nursery according to the activities described in the project action C1 that will also include the cultivation of rare/endangered species such in the case of Ophrys apifera, Ophrys benacensis, Ophrys insectifera, Orchis papilionacea , Pulsatilla montana, ecc

Reason why this action is necessary (Maximum Characters: 2000)
This is among the core actions of the project aiming at restoring/maintaining plant diversity in the remnants of semi-natural arid grasslands surrounding the vineyards.
This action is necessary
1) to reduce the negative effects in terms of habitat loss of the intensification process of vineyard cultivation in the project areas where arid grasslands, that are among the most relevant habitat types for biodiversity conservation in the European Union according to Natura 2000 policies, are increasingly outcompeted by vineyards
2) to halt the loss of plant biodiversity related to habitat loss
3) to maintain viable refuges and propagule sources for several plant species that are typically associated with arid grasslands, potentially establishing also inside the vineyards (grasslands as green infrastructures connecting the semi-natural and the cultivated areas)..

Constraints and assumptions (Maximum Characters: 2000)
Apparently, there should not be problems to implementing this action. Some concern may arise on the process of plant production starting from autochthonous material collected in the wild. However, we already performed preliminary tests and improved our experience in cultivating species that are typical of semi-natural arid grasslands related to the EU habitats 6210, 62A0.

Another concern may arise on the availability of sites to implement the action. However, previous research conducted by Unipd (Biology Department) allowed to check the presence of a sufficient number of remnants that could be selected for the project during the preparatory action A1.

Expected results (quantitative information when possible) (Maximum Characters: 2000)
This action is expected to produce beneficial effects to counteract habitat loss and species impoverishment of remnant semi-natural arid grassland patches. We expect an improvement of their plant diversity, mainly in terms of community composition that should reflect that of the semi-natural arid habitats of conservation concern according to EU Natura 2000 policies. In particular the reference species composition is that of the EU habitats 6210, 62A0 These improvements will be assessed by the monitoring action D1.
Moreover, the activities included in this project action are expected to improve farmers awareness on the sustainability of agriculture practices (see dissemination actions) . This would facilitate the development of a new management protocol of plant cover within vineyards, balancing between production needs and biodiversity conservation. In general, results of this project action will give the basis for the development of the project action dedicated to dissemination, including the development of a management protocol (action E5).
It is expected the plantation of about 15.000 plants

Indicators of progress (Maximum Characters: 2000)
The progress of this action will be measured according with the executive action plan that will be arranged by Unipd for each patch of dry grassland. In this plan, each activity will be listed for each patch and a time-table will be assigned to each activity. This will allow to check, step by step, the advances of each activity in each patch.

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
Cost is estimated considering plant transport and planting operations and personnel (see financial form for details)

Action title:

C.5 Halting the loss of biodiversity in habitat NEAR the vineyard – FORESTS

Beneficiary responsible for implementation:
Regione Veneto

Responsibilities in case several beneficiaries are implicated:

Description (Maximum Characters: 10000)
In the project areas the forest are located in limited zones, which are characterized by a strong heterogeneity. The types present are mostly classified as maples frassinati-, homo-ostrieti, oak-hornbeam and chestnut trees. In most cases some previous inappropriate interventions, a prolonged

state of disrepair, the lack of programming linked to the extreme fragmentation of the property, have modified the potential typology of the station. Added to this is the presence of invasive alien species, in particular of Robinia pseudacacia that in some situations may represent 60-70% of the composition of the over ground forestry. Robinia pseudoacacia.
In fact, species of trees other than the black locust often show a very limited and difficult renewal, while the black locust does not show the dynamics of recession and indeed appears to be favored by the excessive cuts and the disrepair of the edge of the forest.
Are therefore provided the following interventions:
1 identification of the forest areas margins of the farms affected by the project actions;
2. identification of forest types characterizing the site: they can be identified as "core areas" of intervention in which the presence of invasive alien species is predominant and "buffer zones" in which interventions will be seen in a logical of design and functional completion;
3 interventions on the invasive alien species: girdling, depression of the active sprouts, use of systemic products;
4 cleanup operations on the shrubs weeds present in the margin of the forest;
5. targeted silvicultural interventions aimed at encouraging the renewal of the overground: marginal cuts and opening of small holes, elimination of the competition for the seed-bearing plants;
6 targeted silvicultural interventions aimed at at promoting the integration between the forest and the semi-arid grasslands: establishment of lobed margins
7 identification of an intervention protocol allowing to identify ways of diversified management in forested areas at the edge of the vineyards as a function of the forest type identified.

Reason why this action is necessary (Maximum Characters: 2000)
Currently interventions in forest margin areas are rare or run with techniques unsuitable for the maintenance of biodiversity - for example clear cutting – and thus helping to create the right conditions to invasive species.
This action identifies interventions aimed at the management of biodiversity also in these areas in order to identify appropriate procedures to minimize and mitigate the negative effects of invasive alien species on biodiversity and ecosystem services of the vineyard.
The proper management of the margins of the forest areas, helping to control the invasion of weeds, especially shrubs and trees such as bramble, hazel, elder, smoke tree, and the same black locust, which often colonize the semi-arid grasslands, areas of other interventions.
The forestry interventions aimed at promoting the integration between forest and dry grasslands, such as the realization of lobes and small holes, also allow the creation of micro-habitats suitable for the development of important plant species such as orchids.
The action is also needed because of the recent proposal of the European regulation on the prevention and management of the introduction and expansion of invasive alien species (2013/0307), as it anticipates that the European Union will ask to the Member States starting from 1st January 2015, date on which the Regulation enters into force.
This activity will lead to an intervention protocol useful also for other territories.

Constraints and assumptions (Maximum Characters: 2000)
Apparently there are no discernible problems. The interventions identified lead to an improvement of the crop, of the management and biodiversity of the areas at the edge of the vineyard. These interventions are among those provided in the plans of Forestry reorganization approved by the Veneto Region and concerning forest areas, both public and private, located within the wine growing areas covered by the project.

Expected results (quantitative information when possible) (Maximum Characters: 2000)
Apparently there are no discernible problems. The interventions identified lead to an improvement of the crop, of the management and biodiversity of the areas at the edge of the vineyard. These interventions are among those provided in the plans of Forestry reorganization approved by the Veneto Region and concerning forest areas, both public and private, located within the wine growing areas covered by the project
These measures allow to identify ways of managing marginal forest areas often abandoned so to make them integral parts of the vineyard agro-system and therefore by contributing to minimize and / or mitigate the negative effects on biodiversity acused by invasive species
The operations must be carried out in at least 3 different forest areas on the sidelines for a minimum total area of 3 ha.
It will also be identified at least 1 intervention protocol that will be diversified according to the forest type involved and that can allow the replication of the intervention in other territorial contexts.

Indicators of progress (Maximum Characters: 2000)
N° of intervention areas
Hectares of land covered by the interventions

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
To estimate the costs two aspects have been considered:
1- the works will be entrusted to the competent and experienced Regional Forestry Services already operating on the project territory;
2- the works in sites will affect small areas, in different areas, and therefore require manual and very punctual intervention.
The two aspects above have thus two consequences:
1- labour costs will be borne by the State and shall be recorded under cost of internal staff ;
2- planned activities will require skilled labour which will be the highest cost item.
That said, for the realization of such action is estimated a cost of 7.000 €/ha.
At this expenditure will also add the cost of external expertise useful to define:
- Areas of intervention;
- Types of intervention;
- Preparation of the intervention protocol.

Action title:

C.6 Farmers protocol for biodiversity management

Beneficiary responsible for implementation:
CON-PROS

Responsibilities in case several beneficiaries are implicated:
Support: Consorzio Valpolicella, VA

Description (Maximum Characters: 10000)
The wine protocol is a planning tool for plant protection measures and decision support in the

agricultural choices for viticultural activities.
Since 2011, the Prosecco di Conegliano-Valdobbiadene Consortium and Valpolicella Consortium distributed each year to all its members this document so that it can become a guide for important initiatives of integrated pest management and rational view of the reduction of the environmental and human health. On the other hand, the EC Reg. 128/2009 and the Legislative Decree n. 150/2013 define the scope of application of the Directive on the use of pesticides in agriculture, promoting the creation of virtuous disciplinary for the defense of the territory of interest. Therefore, the protocol can be defined as a specification of advanced integrated pest management that exceeds the standards in force and puts us in the grower to make some choices that the rule does not impose, but dictated by an increased awareness on environmental issues.

This tool is a check list for the adoption of innovative and ecofriendly techniques applied into agricultural areas included in the territory of the following municipalities: Conegliano, San Pietro di Feletto, Pieve di Soligo, Refrontolo, Vittorio Veneto, San Vendemiano , Cison of Valmarino, Tarzo, Susegana, Vidor, Follina for a total of 4,000 affected rural area has about 6,100 on the total production area; in the Valpolicella area the tool is promoted over the whole territory and managed directly by individual producers.
The Consortium Conegliano Valdobbiadene from a few years is doing a verification phase post-harvest of the application of the information contained in the Protocol through multi-residual analysis on the grapes, in order to know the residual nature of plant protection products used in season joining also the consultation of the orchard used by each grower for the recording of operations in the vineyard.
The action is thus performed in several stages:

- Creation of a working group formed by the technical staff of the Consortia, by engineers Veneto Agriculture and by technicians of a third party certification body. The certification body is expected to immediately ensure control of the first environmental performance of the companies that have joined the project (see point 4) and will be fundamental in phase "After Life" for the long-term monitoring of environmental performance and increased biodiversity in the long term.
- Study and design of a protocol even more "advanced" and restrictive to the diffusion of the techniques targeting the enhancement of biodiversity, choosen by the University of Padova and tested during the project.
- Checking and verification of standards for process and product with the active participation of 20 farms to the start of the implementation phase of the procedures of the Protocol in order to test the actual applicability of the entire supply chain DOCG.

The winemakers will be involved in the process of writing the protocol through dedicated meetings (see action E.5).
For the drafting of the Protocol working group will use the monitoring data and project specific surveys (in particular will be carried out detailed soil mapping (with GPS equipment) carried out by specialized agronomists.
The action will be initiated in the first year of the project for the creation of the document structure in its key points; by the end of 2017 will be available a version of "draft" document that will be circulated among the companies to check for any problems and observations. In 2018, with the first results of monitoring the text will be implemented to arrive at a final version in September 2019 This version will be presented at the final conference of the project (November 2019, action E.6)

Reason why this action is necessary (Maximum Characters: 2000)
The action is in fact the heart of the project. In fact, it is essential in order to effectively enforce best management practices for biodiversity in the areas tested by the project "pilot" in order to apply them in all the farms of Conegliano- Valdobbiadene and Valpolicella areas. This would allow the increase of

conservation and possible expansion of plant and animal biodiversity in the hill system. It is necessary to reach this objective so that the environments already valued today from the point of view of biodiversity remain so in the future and may have externalities directly serving the new functionality of the vineyard with a view to biological control served and assisted by the information contained in the Protocol.
Finally, this action ensures the long-term sustainability of the project given that the gradual accession to the Protocol by the farms of the two consortia will lead to a steady increase biodiversity in the area. The results of the action then will be adequately promoted by networking and dissemination activities of the project to ensure the widest possible dissemination and encourage the creation of similar protocols in other wine-growing regions in Europe.

Constraints and assumptions (Maximum Characters: 2000)
Although the action is complex, the working group identified by the project has all the necessary skills to ensure the smooth conduct of the action

Expected results (quantitative information when possible) (Maximum Characters: 2000)
The preparation, implementation and validation of the Protocol acquiring the necessary know-how for its extension and certification at all the companies belonging to the sector of the Conegliano Valdobbiadene and Valpolicella
Indicators of progress (Maximum Characters: 2000)
During the project, the working group will provide, in the course of management meetings, a verbal report on the progress.

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
The action includes staff costs by the consortia for the drafting of the Protocol.
Other costs of external assistance for the certification body, graphics, and printing of the protocol and for a specific agronomic advice on issues complementary to those addressed by the University of Padova

D. Monitoring of the impact of the project actions (obligatory)

Action title:

D.1 Biodiversity monitoring

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:
Biologia, DAFNAE

Description (Maximum Characters: 10000)
This action will be developed analyzing two main aspects: plants and insects.

- Plant communities (Biologia)

Monitoring diversity patterns of plant communities is among the activities of this monitoring action aiming at evaluating the effects, in terms of biodiversity of selected indicator groups, of the concrete actions of the project C2A (vineyards), C4 (arid grasslands), C5 (forest margin). The effectiveness of the proposed measures will be assessed by comparing plant abundance and diversity across time series in the project sites of actions C2A, C4, C5.
The executive sampling design and the monitoring program will be preliminarily conceived. The monitoring activity will be carried out over the project lifetime. The monitoring program will include a preliminary survey before any intervention to achieve a baseline dataset that will be used for comparisons with the surveys the surveys (three during the project lifetime) carried out after the project interventions. Both the preliminary survey and the subsequent monitoring surveys will be carried out twice in a growing season, in spring and summer, to account for the flowering phenology of different plant species.
Sampling method: in each site a 5x25 m permanent transect will be established in the central part of the project site according with slope direction. All vascular plants will be recorded inside the transect and their abundance will be estimated in percentage with a cover scale in which each step is 5%. Plant will be mainly identified in the field, but for critical species specimens will be collected to be further identified in laboratory or sent to specialists. For each species found during the monitoring program, at least one reference herbarium specimen will be arranged and stored in the Herbarium of the Biology Department for enabling future re-evaluation of species identification.
The dataset obtained with this sampling method will allow the evaluation of the response of plant communities to the project actions in terms of different metrics describing plant community diversity. In particular, we will use traditional analysis of species richness (also considering the different additive components of diversity alfa, beta and gamma) and composition patterns, as well as the analysis of functional traits diversity and taxonomic diversity. Metrics indicative of the reciprocal relationships among species in terms of abundance will be also used (evenness).
Insect communities (DAFNAE)
The effect on arthropod diversity of measures for biodiversity promotion proposed in actions C2, C3, and C4, will be monitored over the project lifetime. The effectiveness of the proposed measures will be assessed by comparing arthropod abundance and diversity in sites where biodiversity promotion measures are applied with similar sites where these measures are not applied. The assessment will be performed several times over the growing season (at least 3) to evaluate the evolution of arthropod

community structures. The executive sampling design and the monitoring program will be preliminarily conceived. A preliminary assessment will be performed to obtain information on the initial status prior to any measures application. In each site, arthropod abundance and diversity will be evaluated inside and outside vineyards (C2 and C3) or arid grasslands (C4) using the following protocol.
A permanent sampling plot of 10 m x 25 m will be established in each site inside and outside vineyards (C2 and C3) or arid grasslands (C4). In each plot a number of insects collection methods (e.g., sticky traps, butterfly net, sweep net, beating samplings, pit-fall traps, vacuum, Malaise trap) will be used depending on the taxonomic group. Visual sampling on plants and the collection of plant samples (e.g., fruits, flowers, leaves) will be also performed on grapevine and the most representative plant species present in the sampling plot. Sampled material will be processed in the laboratory under a dissecting microscope. Collected arthropods will be identified using specific keys. Part of this material will be sent to specialists for the identification at species level. Moreover, arthropods will be classified in different functional groups (e.g., biocontrol agents; pollinators). Data obtained by sampling will be analyzed to assess the effect of applied measures in terms of arthropods species richness and evenness that will be considered as indicator in action evaluation.

A technical report documenting the ex-ante monitoring activity, including information on the sampling design and methods will be prepared during the first project year.
For each project year a technical report documenting the monitoring activity will be prepared. The technical report will present the results obtained by different actions in term of plant and arthropod species richness. The report will be distributed to the project consortia and vineyards managers and owners. A brochure reporting the most relevant results will be also produced and distributed to the public. Charts and tables showing most relevant results will be also displayed in the website of the project.

Reason why this action is necessary (Maximum Characters: 2000)

The monitoring activity on plant and insect communities is necessary to evaluate the effectiveness of the concrete actions of the project aiming at restoring plant diversity and cover inside the vineyards (C2A), at applying biodiversity friendly pest control strategies (C2B), at restoring/conserving the remnants of semi-natural arid grasslands around the vineyards (C4), and enhancing hedgerows and flower strips bordering the vineyards (C3).

Constraints and assumptions (Maximum Characters: 2000)

No constraints are expected to perform the plant and insects monitoring program.

Expected results (quantitative information when possible) (Maximum Characters: 2000)

The monitoring program on plant and insect communities is expected to allow the quantitative-qualitative evaluation of the effectiveness of the concrete actions of the project C2, C3, and C4 in improving plant and arthropod diversity both inside the vineyards and outside, in the remnant patches of semi-natural arid grasslands. In particular, for actions C2A and C4 we expect a pattern of increasing diversity especially of those plants that are typical of semi-natural grasslands related with the EU habitats of conservation concern. Actions C2B and C3 are expected to have a positive outcome on beneficial arthropod diversity and abundance in vineyards.

Indicators of progress (Maximum Characters: 2000)

The progress of this action will be measured in terms of database filling containing the data of plant and insect communities documenting the patterns of their diversity in the monitoring sites.

Moreover, the progress of this action will be measured according with the executive monitoring action plan that will be arranged by UNIPD for each project site. In this plan, each activity will be listed for each farm and a time-table will be assigned to each activity. This will allow to check, step by step, the advances of each monitoring activity in each farm.

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)

The main cost of this action is due to personnel; the details are in the financial forms. The personell will be involved in definition of sampling design and monitoring program, data analysis. arthropods identification. Other costs are for travel (field visits during growing seasons -approximately 24 travels of 1 or 2 days, other visits will be performed during travels organized in action D3) and consumables (devices for arthropods monitoring, estimated on market value).

Action title:

D.2 Assessment of the socio-economic impact of the project actions on the local economy and population

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:

Description (Maximum Characters: 10000)
The socio-economic assessment will focus on the following main aspects:
- Economic impact on vineyard cultivation. The effect of the agricultural practices proposed by the project on the local vineyards will be assessed. The assessment will consider the increase/decrease of the cultural costs and the estimation of the eventual yields variations.

- Creation of new diversification opportunities. The creation of new opportunities for the diversification of the income of the wine growers will be assessed and put into relationship with the increasing of the environmental quality of the area. This diversification will be evaluated as related to new tourism approaches like ecotourism, cycling, environmental tourism, bird-watching, etc.

- Reduction of local infighting. It will be evaluated the eventual variation of local infighting between wine growers and citizens as a consequence of the activities carried out by the project.

All the assessments will be carried out by mean of questionnaires and interviews, data collection and

elaboration.
Concerning the assessments focused on wine growers (economic impact on vineyard cultivation and diversification), the questionnaires will be spread out to a sample of farmers already involved in the project. The questionnaires will be supported also by interviews to local opinion leaders and experts.
Concerning the assessment of local infighting, interviews will be conducted with administrators and representatives of local media.
All the data and information collected with questionnaires/interviews will be summarized into a final document in which a global evaluation related to the socio-economic effects of the project will be discussed.

All the activities will be undertaken 2 times during the project. A first phase within the first months of implementation of the actions and a second time close to the end of the project, when the socio-economic effects will be more evident.
In general the questionnaires and the interviews will be addressed to the same subjects in the first and the second phase of the work.

Reason why this action is necessary (Maximum Characters: 2000)
The action is necessary for performing a global evaluation of the impact of the project approach at local level. The results of the action will be exploited in the dissemination activities in order to demonstrate the sustainability of the proposed methods for the wine growers and the positive social effects generated for the territories.

Constraints and assumptions (Maximum Characters: 2000)
Considering that the action include just questionnaires, interviews and desk activities, nor constrains or assumptions have been considered

Expected results (quantitative information when possible) (Maximum Characters: 2000)
- No. 20 questionnaires to farmers (X 2 times)
- No. 10 interviews to local authorities, opinion leaders and representative of local media (X 2 times)
- N. 1 general evaluation of the socio-economic effects of the approach promoted by the project (Final)

Indicators of progress (Maximum Characters: 2000)
- No. of questionnaires (target value: 20 x 2 times)
- No. of interviews (target value: 10 x 2 times)

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
The action will be undertaken by personnel of the beneficiary responsible for the implementation of the action (Veneto Agricoltura). Related costs have been calculated on the base of day rate salary and the forecast of the time that will be employed.

Action title:

D.3 Assessment of the ecosystem functions restoration

Beneficiary responsible for implementation:
UNIPD

Responsibilities in case several beneficiaries are implicated:

Description (Maximum Characters: 10000)
This action will be developed analyzing four ecosystem services (ES): yield production, pollination, biological control, and air quality. Two ES will be internal (yield and biological control) and two external the vineyards (pollination and air quality).
-Yield production (DAFNAE)
Yield will be measured in each vineyard involved in the concrete activities included in the project action C2 (C2A+C2B). We will measure grape yield through farmer harvest estimates.
-Biological control (DAFNAE)
In biological control assessment, pests of grapevine (e.g., leafhoppers, berry moths, leafminers and herbivore mites) will be the targets. The biological control of D. suzukii could be considered when required. Arthropods will be collected in vineyards using the above mentioned protocol (D1), and their diversity and abundance will be quantified at different trophic levels (e.g., herbivores, predators, parasitoids). Moreover, natural occurring larvae of berry moths, will be collected and kept in the laboratory until parasitoid emergence. Leaf samples will be collected and analyzed in the laboratory to evaluate: a) leafhopper egg densities and parasitism rate b) the density of phytophagous mites or thrips and of their natural enemies c) incidence of leafminers and parasitism rate. A number of leaves infested by leafminers and with leafhoppers oviposition sites will be kept in the laboratory to obtain parasitoid emergence. The so called “biological control potential” will be estimated by exposing in vineyards a defined number of insect immatures as sentinel insects (e.g., larvae of grape berry moths or D. suzukii) obtained from laboratory mass rearing. These insects will be collected after the exposition period and processed in laboratory to quantify biological control rates.
Data on biological control agents abundance and diversity as well as biological control potential will be considered in the assessment of the ecosystem service of biological control, that is an indicator of the results of the project.
This action is connected with the concrete action of the project that aims at decreasing the use of insecticides for vineyard management (C2B). This action will be applied in sites involved in the project action C2B, i.e., 10 sites (size at least 4 ha) in which the C2B action will be carried out and 10 reference sites of similar size, managed according to ordinary practices, in both the Conegliano-Valdobbiadene and Valpolicella areas.
-Pollination (DAFNAE)
Pollination will be measured using a phytometer experiment. We will place a number of potted plants of Anchusa sp. in the middle of the field sites to measure pollination services. These plant species have been selected as they are not common in the surrounding landscapes, depend on insects for pollination and are unpalatable for several organisms. When the plants are placed out on the sites, any flowers will be pinched off, leaving only new buds. During the two weeks of the experiment, these buds will flower and attract insect pollinators which will pass between the individual plants and pollinate them. After 2 weeks, we will collect the plants and collect the resulting seeds. The weight and number of these seeds

will give us an idea of the efficiency of pollinators on each site. Plants placed on a site with a low number of pollinators are less likely to have a large number of heavy seeds, than those placed on sites with healthy pollinator populations. The pollination will be measured in the sites interested by the concrete project action C4.

-Air quality (Biologia, Scienze Chimiche)

This monitoring action is based on the use of epiphytic lichens as bio-accumulators to detect deposition patterns of organic pollutants related with the use of insecticides for vineyard management. In particular, this action is connected with the concrete action of the project that aims at decreasing the use of insecticides for vineyard management (C2B). This action will be applied to the sites involved in the project action C2B, including 8 sites (size at least 4 ha) in which the C2B action will be carried out and 8 reference sites of similar size, managed according to ordinary practices, in both the Conegliano-Valdobbiadene and Valpolicella areas.

According with well experimented techniques in this biomonitoring field, we will use lichen transplants that will be exposed for a given period after which the content of selected pollutants indicative of the management activity (in particular, neonicotinoid insecticides and their metabolites) will be determined by appropriate analytical procedures.

The activities planned to perform this monitoring action include:

1) the collection of adequate amounts of lichen material of the fruticose species Pseudevernia furfuracea (L.) Zopf in natural habitats. This material will be stored in refrigerator until it will be used;
2) the set up of the final sampling design that approximately will include 8 sites in each study area where the project concrete actions (C2B) will be carried out and 8 reference sites with ordinary management. In each site, lichen specimens will be exposed in triplicate to account for local biological variation in the accumulation rate. Three monitoring surveys will be carried out during the project lifetime, exposing the specimens during the period of most intensive insecticide management. At least 10 specimens of the material collected in natural sites will be included as further reference for estimating the deviation of the values recorded in the two project areas from natural conditions. With this sampling design, a total of c.ca 300 samples (including preliminary tests) will be processed;
3) the preparation of the lichen explants and their exposition in the field;
4) the collection of exposed material and the preparation of the material for the chemical analyses. This phase will include the accurate mechanical cleaning of the material under the dissecting microscope, the pulverization using a ceramic or agatha mortar with liquid nitrogen and kept at 4°C (stored in eppendorf) until analyses.
5) the chemical analyses reference specimens and of all the specimens for each monitoring survey. Chemical analyses will include pollutant extraction, purification and accurate instrumental determination (UHPLC-MS and GC-MS) using high resolution MS instrumentation;
6) the implementation of a database including the concentration values obtained during the three surveys;
7) data analysis.

This is the detailed GANNT for this action:

executive ecosystem functions monitoring program including accurate details of the sampling design, according to site selection performed during the preparatory action A1: September 2015-Febrary 2016:.
Yield production monitoring: September-October 2016, 2017, 2018, 2019
Biological control monitoring: June-September 2016, 2017, 2018, 2019
Pollination monitoring: May-August 2016, 2017, 2018, 2019
Air quality
Winter 2015-Spring 2016: final set up of the sampling design, collection of the lichen material in natural sites
Summer 2016: first monitoring survey

Autumn-Winter 2016 – Spring 2017: sample processing, chemical analyses, database filling
Summer 2017: second monitoring survey
Autumn-Winter 2017 – Spring 2018: sample processing, chemical analyses, database filling
Summer 2018: third monitoring survey
Autumn-Winter 2018: sample processing, chemical analyses, database filling
2019 data analysis, writing the final report

Reason why this action is necessary (Maximum Characters: 2000)
This monitoring action is necessary to evaluate the restoration and the improvement of ecosystem services in the project sites. Yield estimate will be necessary in the economic evaluation of the ES. Pollination and biological control are key in services in supporting and regulating ecosystem functioning both within and outside the crop. Air quality is among the fundamental ecosystem services related with the decreasing environmental impact of vineyard management in terms of insecticide use that is expected by the implementation of the concrete project action C2B.

Constraints and assumptions (Maximum Characters: 2000)
Some difficulties in the implementation of this monitoring action could arise for applying an adequate sampling design allowing the direct evaluation of the actions carried out in the specific project due to the presence of confounding factors such as the excessive vicinity with other vineyards in which standard management practices are used. In this case the positive effect of the management practices experimented with the project could be masked by the negative influence of the management of surrounding vineyards. To avoid as much as possible this problem we will take into account it in the preparatory phase of site selection and will use specific sampling designs for critical situations. For biological control and pollination it is possible that both services are not deteriorated enough to detect a significant effect of the introduction of our actions. However, a significant effect on the biodiversity that deliver these services can be indicative of a significant benefit on the stability of the services over time (not measurable over the time span of the project).

Expected results (quantitative information when possible) (Maximum Characters: 2000)
This monitoring action would allow evaluating the beneficial effect of the project in terms of ecosystem services.
We expect no yield loss due to the introduction of our actions. Biological control will benefit from the reduction of chemical control. Pollination is also expected to increase due to a reduced impact of pesticides on insect pollinators. Air quality, especially in connection with the expected reduction of insecticides in the project sites. We expect a decreasing pattern of deposition of selected pollutants indicative of insecticide use and better conditions compared with sites managed with standard practices. The protocol used for air pollution monitoring during the project will be included in the management guidelines of the two study areas among the tools for monitoring environmental quality after the project.

Indicators of progress (Maximum Characters: 2000)
The progress of this action will be measured in terms of database filling containing the data on the four ecosystem services targeted in this action, documenting their patterns in the project sites.
Moreover, the progress of this action will be measured according with the executive monitoring action plan that will be arranged by Unipd for each project site. In this plan, each activity will be listed for each farm and a time-table will be assigned to each activity. This will allow to check, step by step, the advances of each monitoring activity in each farm.

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
The main cost for this action is personnel: it is estimated basing on precedent experience of UNIPD in similar activities. The details are in the financial forms. Are also foresee some travel costs for field visits during growing seasons (36 travels of 1 or 2 days) and consumables (Devices for ecosystem services assessment e.g., sentinel insects, phytometer) estimated on market value.

Action title:

D.4 Evaluation of environmental services of the vineyard agro-system and identification of possible mechanisms of PES (Payment Schemes for Environmental Services)

Beneficiary responsible for implementation:
REG VEN

Responsibilities in case several beneficiaries are implicated:

Description (Maximum Characters: 10000)
The activation of PESs is conditioned by a series of factors:
Ø First, the clear identification of a cause link between managerial action and effect (in terms of environmental performance: for example, a lack of grass cover in the vineyard can have a direct negative effect on the absorbing capacity of the soil or the creation or restoration of arid lawns and meadows rich with species has positive effects on increasing biodiversity);
Ø Second, the estimate of the economic value of the environmental service target, generated by a given management action, which allows a suitable quantification of the value of the service and clear communication of the same;
In the measurement and evaluation of ecosystem services a key role is played by the so-called "capital", defined as a set of formal and informal relationships between the different actors of a community, that runs the community itself (think of all the farmers, producers of physical ecosystem services):
Provide an application method to identify and activate a possible mechanism for payment for the main environmental and social externalities identified, by adopting innovative approaches to governance,

Reason why this action is necessary (Maximum Characters: 2000)
This action is necessary because it will allow for the identification of a causal link between managerial action and effect and for the economic evaluation of the positive externalities that will be encountered.

Constraints and assumptions (Maximum Characters: 2000)
The economic assessment of the value of environmental services is quite complex and therefore requires specialist knowledge: it is therefore necessary an adequate technical advice.

Expected results (quantitative information when possible) (Maximum Characters: 2000)
- Identification of causal link between managerial action and effect.

- Assessment of the economic value of ecosystem services in agro-system such as biodiversity, pollination control and air quality caused by a different vineyard management implemented through concrete identified actions.
- Identification of possible payment mechanisms linked to the ecosystem services highlighted.

Indicators of progress (Maximum Characters: 2000)

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)

This cost, which will be used for technical advice, it is considered reasonable based on the experience previously carried out which aimed to identify the PESs in protected areas.

E. Public awareness and dissemination of results (obligatory)

Action title:

E.1 Notice boards

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:

Description (Maximum Characters: 10000)
Notice board will contain a summary of the project in order to publicize the project, the LIFE financial instrument and the activities.
It is foreseen the realization of two kind of notice boards.

- Notice boards placed in all farm involved in the project concrete activities. They will be realized with a wood support and weather resistant materials for printing text and images. A minimum of 40 notice boards will be produced (20 in Prosecco -Valdobbiadene and 20in Valpolicella)
- Notice board placed in partners'' premises (roll up banner) – 10 copies (5 for VA and one each for other beneficiaries)

On the whole, 50 notice boards will be placed in the first year of the project.
Notice boards will be prepared by Veneto Agricoltura.

Reason why this action is necessary (Maximum Characters: 2000)
Share project's ideas with all possible farm visitors will be important to promote the consciousness on project themes especially in project target areas.

Constraints and assumptions (Maximum Characters: 2000)
No contraints and assumption are foreseen for this action

Expected results (quantitative information when possible) (Maximum Characters: 2000)
40 notice board "on-site" and 6 notice boards in partners' premises

Indicators of progress (Maximum Characters: 2000)
Tender procedure for the selection of external service for realization and printing will be concluded within February 2016

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
The cost of the panels will be charged in external expertise for printing, preparing wood support and installation in field. The cost for the preparation of text and images will be charged on internal partners' personnel.

E.2 Project website

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:
VA with the support of Legambiente will be responsible for organizing and managing the action, coordinating all partners as for their inputs in the website (text, logos, images, media contents and so on)

Description (Maximum Characters: 10000)
The aim of this action is to design, develop the project web campaign, in particular:
- Project website;
- Social media campaign;
- Newsletter;

The project website.
It will represent a dissemination channel at national and international level, as well as an instrument facilitating and supporting the interaction with and between the participants to the project initiative.
The website will be created and managed by VA with the support of all other associated beneficiaries, in particular Legambiente which is specialized in dissemination to a large audience.
The website will be multilingual (Italian and English). The website architecture will be conceived like a "web portal" with sections for the dissemination and publication of news and their sources, and interactive sections aimed at facilitating the interaction of the project partners, stakeholders and target audience.
The general appearance of the website will profit from a large use of images from landmarks of the territory and vineyards and caves, to gain appeal towards a more generic audience and better link with the image of the territorial marketing websites of the consortia.
The website will have different sections dedicated to specific purposes. The most important anes are as follows:
- A Section containing a detailed project description with objectives, partners, means used and actions undertaken for the purpose of the project. This section will also contain reports and publications related to the different actions of the project;
- A section dedicated to the project news, which will diffuse the project progress and the useful news related to the project theme and that will host copy of the newsletters sent to the target audience;
- A section concerning the financial instrument LIFE that will publicize the financial instrument and the actions that the European Union puts in place for the protection of the environment;
- A gallery section in which it could be possible to upload video and photos of the events and the dissemination materials produced by the project;
- A section dedicated to the project downloadable documents;
- News: news section of the project. Will host a copy of the newsletter sent to the target audience;
- Gallery: section for videos and photos of events and outreach materials;
- The LIFE+: section with a description of the financial instrument LIFE;
- Contacts: an information page to contact the partner in charge of the project communication and all the project staff;
- a section about biodiversity in the areas of the project and arid grasslands in particular.
- A section with the glossary to explain all the technical terms;
- A page for subscribing to newsletter;

- A page with useful links to the partners' websites, with the links to the networking projects and the links to interesting activities related to the project.
The website development will begin at the beginning of the project and it will be updated and maintained regularly till the end of the project.
The web site will also be accessible through the websites of the project partners.
The Web Site will be integrated with the major social networks (LinkedIn, Facebook, Google+).
Social media campaign.
Communicating project's objectives, actions, achievements and developments is crucial for the project program in order to help people understand project's benefits, its potential and overall relevance to them.
A variety of different communication tools are used by the project and these include dedicated social media presences on LinkedIn (business-oriented social networking service) , on Facebook (online social network service) and on Google+. Project's LinkedIn profile is a networking tool that will help the project to discover inside connections to recommended job interaction, industry experts and business partners. Project's Facebook Page is used to communicate a range of information in text and visual formats, create events for the public such as trekkings and trips or workshops. Project's Google+ is a "social layer" that it is not simply a social networking website, but also an authorship tool that associates web-content directly with its owner/author: it could be used to upload maps of the trekking and trips, galleries of pictures showing the advance of the project, videos, etc.
The simultaneous use of a wide range of social media will increase the audience of the project.
The social media campaing will be managed by VA with the support of all other associated beneficiaries.

Newsletter.
We wll also issue a newsletter in order to disseminate information about the project and to maintain a continuous flow of communication. The newsletter will be produced twice a year, for a total of 6 numbers in an electronic format and will be sent to a distribution list agreed between the beneficiaries and will also be made available on the project website. The newsletter will report only major enhancement of the project.
The newsletter will be prepared by Legambiente and the other beneficiaries will be involved in all technical aspects of the actions.

Reason why this action is necessary (Maximum Characters: 2000)
The production of information materials allow to disclose the project in various channels and events. The web is the best tool to achieve the maximum number of people at a low cost and to raise awareness of the project and the results obtained, in addition to ensuring and improving communication between partners and all potentially interested parties who can easily interact.

Constraints and assumptions (Maximum Characters: 2000)
Not foreseen

Expected results (quantitative information when possible) (Maximum Characters: 2000)
- Creation and development of a dedicated website
- Realization of six electronic newsletters
- 15000 visits to the website by the end of the project
- 300 project newsletter subscriptions
- LinkedIn followers, group members, discussions and posts: 1 post weekly (4 posts monthly)
- Facebook followers, likes and posts: 2 posts weekly (8 posts monthly)

- Google+ Circle adds/followers and posts: 1 posts weekly (4 posts monthly)

Indicators of progress (Maximum Characters: 2000)
- N. of website accesses
- N. of recipients of the newsletter
- N. of LinkedIn followers and posts
- N. of Facebook follower and posts
- N. of Google+ followers and posts

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
It is foreseen a cost for web mastering and the creation of the platform with open source software and internal personnel costs for management (text, images and so on). An external cost for translation is also foreseen.

Action title:

E.3 Networking

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:
VA will be responsible for organizing and managing the networking activities with other national and international projects, for identification and classification of other technical projects and projects contents' analysis.
Legambiente, UNIPD and other partners will collaborate to the activities supporting VA in the selection of the best national and international projects

Description (Maximum Characters: 10000)
The aim of this action is to identify national and European projects, funded under various programs and initiatives, working on the project's themes and create a network involving all the relevant projects on the same themes followed by the project. The networking activities should support the project in improving its communication and information campaign through lessons learnt and best practices identified in other projects.
This action will be carried out through:
- Identification and contacts with other national and EU projects, working on the project themes and funded under the Life program, the Environment Theme of the FP7, the MED programs, Italian funding program, etc.;
- Participation to meetings and workshops organized by other projects and bidding the other projects to join the project events. Networking will be launched since the beginning, with dedicated slots during the project events;
- Creation of 'ad-hoc' sections in the project website for exchange of information and documents, discussions and dissemination of initiatives among the various EU-funded projects on the same themes;
The networking activities involves an exchange and remote collaboration with various stakeholders identified and participation in meetings with the project leader or involved in projects.

Reason why this action is necessary (Maximum Characters: 2000)
The activities responds to the need to promote a continuous exchange of experiences and systematic collaboration between the various groups working in Europe on the issues of the project -namely vineyards and /or habitat code 6210/62A0- in order to capitalize on experiences already carried out successfully, to improve the knowledge and methodologies in the field of reference and promote coordinated interventions.

Constraints and assumptions (Maximum Characters: 2000)
No contraints and assumption are foreseen for this action

Expected results (quantitative information when possible) (Maximum Characters: 2000)
- Exchange of best practices, knowledge, methodologies and strengthened cooperation at European level and documented by reports of networking activities;
- 2 meetings with organizations and groups involved in the same theme.

Indicators of progress (Maximum Characters: 2000)
- Number of project successfully contacted

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
The cost estimate was made on the basis of the staff profile, the staff unit costs, and the timing and materials needed to carry out the planned activities and loaded on individual actions.
Some costs for travel are foreseen for all beneficiaries.

Action title:

E.4 Layman's report

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:
Support: Consorzio Conegliano Valdobbiadene, Consorzio Valpolicella

Description (Maximum Characters: 10000)
The Layman's report will consist of an informative document dedicated to an audience (target audience), not technical.
The report will be oriented primarily to illustrate the results of the project (the project presentation will instead be contained in the brochure that will be a document "complementary"). In Layman's report will also describe the results obtained in terms of socio-economic impact. This aspect is of particular importance due to the strategic directions of the Commission indicate that the enhancement of ecosystem services as one of the objectives related to the conservation of biodiversity, with reference to the time horizon 2020.
For the realization of the Layman's report, will be held the following actions:
1 Definition content (particular attention will be devoted to compliance with the disclosure

requirements of the LIFE programme and the Community co-financing); this activity will be conducted by Veneto Agricoltura in collaboration with Wine Consortiums.
2 Editing, graphics and printing. The graphics and printing will be outsourced to specialized companies. For graphics will be referred to a general line of graphics project, which will cover all the tools and materials prepared as part of the assignment in external assistance by Veneto Agricoltura
3 Distribution. The distribution will take place in the course of the project through the various initiatives of the project and of each beneficiary. The remaining copies will remain available for direct distribution in the course of events and visits. All materials will be available through the project website.
Like the other products also the Layman's Report will contain references to the project, the Life program, co-financing from the EC, the link to the project site and the site logo Life and the Life program and the Natura 2000 network.

Reason why this action is necessary (Maximum Characters: 2000)
The Layman's report is required to give visibility to the results of the project. It will be made at the end of the concrete actions, when it will be possible to observe the tangible result of the actions taken.

Constraints and assumptions (Maximum Characters: 2000)
No difficulties are foreseen for the performance of this action

Expected results (quantitative information when possible) (Maximum Characters: 2000)
10,000 copies of the Layman's report - size color size 29.7 x 21 cm composed of at least 6 pages both in Italian and in English

Indicators of progress (Maximum Characters: 2000)
Not foreseen

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
Some costs for graphics, printing and translation are foreseen in external assistance (cost estimed on market values) and personnel costs for texts and images.

Action title:

E.5 Dissemination for farmers and promotion of Protocol (guidelines for the management of vineyards and neighboring areas)

Beneficiary responsible for implementation:
VALPOL

Responsibilities in case several beneficiaries are implicated:
Support: Consorzio Conegliano Valdobbiadene

Description (Maximum Characters: 10000)

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The action foreseen the active involvement of farmers in the two consortia during the drafting and the promotion of the Protocol (see action C6) in farms and with specialized press.
It will be structured through the following activities:
1 Involvement of farmers through meetings and testing sessions in the vineyard in order to ascertain the impact of innovative techniques introduced as a result of the actions undertaken by the project partners, both in management - mowing the turf, use of desiccants, etc. - both in defense - kit biological insecticides and sexual confusion. Will be organized at least 8 sessions over the 4 years of the project for each of the consortia which aim to help people understand the importance of including in the management plans of the vineyard such agronomic activities
2 Brochures and a technical synthesis of protocol will be prepared and distributed to farms of consortia to present the tool with the aim of expanding the range of use of the same;
3 Presentation of the Protocol and first results of the project to the press area (Italy and abroad). Will be organized at least 2 incoming (one in 2016 and one in 2018) for journalists of some of the most popular Italian and foreign press ("Informatore Agrario", "Vigne e Vini", "Civiltà del Bere", "Gambero Rosso", "Corriere della Sera" ed "il Sole 24 ore" and Decanter, Merum, Vinum, WeinWirtschast, Meinninger, Gilbert e Gaillard), who will visit both areas and sites of action;
4 A joint press conference initial and final: the first time to the general presentation of the project and initiatives within the two areal viticultural with the presentation of the first traces of the Protocol (the Italian media) - Autumn Winter 2015
The second time, at the end of the project, to share the results and to reveal the externalities generated by these initiatives. The press conference will be held at the City of Venice.

Reason why this action is necessary (Maximum Characters: 2000)
The action is important for increasing the consciousness of farmers on biodiversity themes and the involvement of press is fundamental for promoting the project at national and European level and support its replicability in other viticultural areas.

Constraints and assumptions (Maximum Characters: 2000)
Risks or delays are not expected in the execution of the action

Expected results (quantitative information when possible) (Maximum Characters: 2000)
8 meetings with the participation of at least 1000 farmers in total
5000 brochure printing - color, size 29.7 x 21 cm composed of at least 6 pages in English (graphics and printing by VA, text and images Consortia)
2 incoming events for at least 20 Italian and foreign journalists

Indicators of progress (Maximum Characters: 2000)
The implementation of periodic meetings with companies will be evaluated periodically

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
The action includes staff costs for the organization of events and to the preparation of materials. There are costs in external assistance for the graphics and printing, estimates of market values. The expenditure for the incoming was evaluated assuming to pay travel, accommodation and meals in 10 Italian journalists and 10 foreign journalists.

Action title:

E.6 Dissemination for technicians and scientists organized by Veneto Agricoltura

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:
Support. UNIPD

Description (Maximum Characters: 10000)
The action includes the involvement of the technical sector (agronomists and winemakers) at regional and national level. In addition, the international scientific community will be informed through articles in professional journals.

- Training of consultants (agronomist, winemakers, marketing consultants)
- meetings with public bodies
- Articles on specialized scientific press
- final technical publication
- Final Conference

Training of consultants (agronomist, winemakers, marketing consultants)
It is a training course for thematic modules that can be attended in full or in part by the 3 categories of consultants according to their interests.
We identify three types of technical consultants:
- viticultural consultant (specialized in the techniques of vineyard management, following the farm in the management of wine-growing countryside) - can enrich his expertise on the importance of biodiversity management in the different phases of production (from the plant, the varietal choices, pest management, etc..) is the subject of more than one else can put into practice in fields the management strategies contained in the Protocol that the project will develop.
- Wine consultant (specializing in the wine making process, followed by the company in the early stages of winemaking cellar) - can enrich its expertise in relation to the impact that certain choices of campaign determine the quality of the wine product
-marketing consultant (specializing in the stages of promotion and sales, followed by the wine firm in the market, is the interface of the producer with the distribution, trading and, albeit in an indirect way with the consumer) - can enrich its expertise in relation to the commercial exploitation of wine products that are of biodiversity and green then approach an element of distinction on the market
We provide 4 training modules thematic, one each devoted to the elements of its approach to biodiversity of the three professionals identified above, and a fourth module dedicated to a methodological and relational aspect that is becoming more and more important and that is the so-called "social dialogue" with social stakeholders.
In summary, the training program would be as follows:
-module 1 - Biodiversity in the vineyard - crop choices and defense, cultivation protocol = 21 hours (3

days)
- Module 2 - Biodiversity in the cellar - implications of the grapes produced in accordance with enological techniques and options that are respectful of biodiversity = 7 hours (1 day)
- Module 3 - Biodiversity on the market - how to enhance the product green, green market trends, data and testimonies casehistory = 21 hours (3 days)
- Module 4 - Biodiversity as a factor of social cohesion - the importance of dialogue between world production and civil society, as the company sees the world of production, how to explain to citizens the production problems, how to interpret questions and scaremongering social, communicative methodologies and dialogue = 14 hours (2 days)
The course will be attended in full or in part by the 3 categories of technical consultants-according to their interests. The training will be supported by the production and provision of educational materials to participants.
It provides for the creation of a class of 12-24 students per module

2 -Meeting for public bodies
These meetings are analysis and comparison with the local authorities and public sector bodies (municipalities, Regional Environmental Agency and healthcare organization) of the territories involved to share their best practices that emerge from the project so that they can be reflected in the local regulations (regulations rural police) and in the management of environment and health monitoring of competence of these bodies. It will be organized a series of meetings in the interim phase of the project in order to present the first results and invite the parties to the final conference of the project. We provide 4 meetings during the 2017/2018

3 -Articles on specialized scientific press
UniPD will prepare at least two scientific articles: the results of the project will be published in peer-reviewed journals. Potential titles: Journal of Applied Ecology; Biological Conservation; Ecography; Biodiversity and Conservation; Diversity and Distribution; Biological Control; Biocontrol; Agriculture Ecosystems & Environment; Landscape Ecology; Plos ONE

4- Final technical publication
It will be drawn up with the support of the University of Padova and in the Italian with English summary. The report will present all the environmental outcomes of the project and explain in detail the agronomic techniques adopted to allow for replicability in other contexts.
The final publication will consist in a booklet of about 70 pages in colour with text and pictures; 10,000 copies of the booklet will be printed – 2,000 will be in English and the rest in Italian

5- Final conference
This is the final presentation of the project results. It is foreseen to realize a day structured as follows: the first part at the conference room of Veneto Agriculture in Legnaro (near Padua), where the partners will illustrate the environmental performance of the project; the second part at some farms of the two consortia to see what interventions took place. So bus to transport participants to the area of Conegliano and Valdobbiadene Valpolicella will be foreseen.

Reason why this action is necessary (Maximum Characters: 2000)
The action is essential to ensure the dissemination of the project's environmental and promote its national and European level.

Constraints and assumptions (Maximum Characters: 2000)

Risks or delays are not expected in this action

Expected results (quantitative information when possible) (Maximum Characters: 2000)
Training of at least 100 technicians
4 meetings with public bodies
1 final conference
3 scientific articles
10,000 copies of the booklet will be printed – 2,000 will be in English and the rest in Italian

Indicators of progress (Maximum Characters: 2000)
the smooth running of training courses will be assessed

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
The costs of training were estimated based on the experience of Veneto Agriculture regularly organizes this kind of training courses. On average it is estimated a flat fee of 150 euro per day/ participant, divided by 70% of external costs (teachers, tutors), 20% consumption expenses (room, play educational materials, etc..), 10% other expenses administrative. The amount covers the cost of design, tutoring, voice, teaching, teaching material, room and audio video equipment. These costs are detailed in the financial forms.

Action title:

E.7 Dissemination for citizens

Beneficiary responsible for implementation:
LEGAMB

Responsibilities in case several beneficiaries are implicated:

Description (Maximum Characters: 10000)
Several activities for engaging citizens through a virtual adoption of the project will be put in place as well as activities to disseminate the results and the objectives of the projects at national level towards consumers and stakeholders (such as environmental NGOs as well as consumers organizations).
This action is meant to reach mainly four goals:

- raise awareness in children about the richness of the area in biodiversity, the need of its conservation and the risk that abuse of pesticides pose to biodiversity and health.
- Create a proper understanding of the relationship between local agriculture and the territory
- widen the social and cultural impact of the project in the territory
- raise awareness among wine makers about the social and cultural impact of such a project in their territory, through the visits of students to the arid grasslands, to the orchards and their wine cellars.

More in detail, local communication will be carried out through a set of activities targeting both adults and children.

· Presentation brochure

- on field visits and trekking
- schools trips to vineyards and arid grasslands
- workshops (2) on local biodiversity
- video of the project

Project presentation brochure
An A5-format brochure in colour consisting of max. 10 pages including both pictures and information text.
About 30,000 copies will be printed – 5,000 of them in English –, as the brochure will be distributed to farmers, naturalistic associations, students, visitors of Consortium farms and wineries and citizens.
On-field visits and trekking:
Field trips and trekking along main natural paths in the area of the project will be organized by Legambiente, preferably during local country fairs or national holidays in ease participation, with the goal of involving local citizens in tangible activities of "territory adoption". During these trips participants will be visiting the areas of the projects and meet wine makers actually carrying out the actions of biodiversity protection. Visit to arid grasslands and forest margins will increase awareness raising of the population about the richness of local biodiversity.
School trips:
Students and pupils of the area will be taken to the vineyard to learn about biodiversity and the need of protection: bees, insects, pollination, plant protection and local flower diversity will be some of the main highlights of the visits.
School lessons will be preparing children to the visit and they will get a special brochure about local biodiversity in vineyard, that will interact with the project website through a Qr code.
Expert will make them collect specimens and ideally "measure" biodiversity themselves, through a set of tools and laboratories put in place during trips but linked with everyday class activities.
At the end of the visit students will be given a gadget to allow them plant local flowers seed at home.
Local Workshops:
two main workshops in relevant landmark sites of the two areas involved will be organized to target a vast audit of local citizens. The workshops will present the results of project with special regard to air quality monitoring (D3) and the application of the protocol (C6, D2), as well as containment of pesticide use and progress of the mating confusion.
Video
It is foreseen the realization of at least 10 short video (3 minutes each) in MPEG format, available in project website section and on You Tube. They are informative video clip containing: the project presentation, photo and video documentation of the main stages of the project with the explanation of the techniques used in the project

Reason why this action is necessary (Maximum Characters: 2000)
This action in meant to create consensus within consumers and local citizens in order to allow a wider application of the best practices of this project in the coming years.
Locally, many concerns about the use of pesticides and fungicides have arose in the last years, and the actions of this project are among those that can promote a better communication between local stakeholders (institution, citizens, NGOs, wine producers, consortium etc) as well as a more scientific and precise communication on these issues.
Results on air quality and pesticide reduction are much welcomed by citizens and, on the other hand, the communication of the above mentioned results and all effort that wine makers made to get there are very relevant to them.
We hold that this methodology of intervention, involving scientific bodies, wine producers, consortium and NGOs can be a best practice that can spread to many other wine production areas around Europe.

Constraints and assumptions (Maximum Characters: 2000)
Although many schools will be involved, it will not be possible to reach out for each and every student of the area, since the territory is vast and densely populated.

Expected results (quantitative information when possible) (Maximum Characters: 2000)
100 classrooms taking part to field trips and school lessons every year
at least 300 citizens taking part to trips and trekking
at least 30 classrooms taking part to field trips

Indicators of progress (Maximum Characters: 2000)
Lessons carried out
Report signed by teachers.
Hits in the local media about these actions.
Trekking and trips carried out successfully

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
Staff costs are calculated on the basis of data collected by national collective agreements and refer to staff currently employed by the partner organizations, as well as the human resources that will be used specifically for the project.
For all other costs, an assessment was made taking into account the average market prices.

F. Project management and monitoring of project progress (obligatory)

Action title:

F.1 Project management by Veneto Agricoltura

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:
VA will be responsible for the activities. Each partner will participate in the activities mentioned above in order to guarantee a complete coordination of the activities from the technical and administrative point of view.

Description (Maximum Characters: 10000)
The action is related to the technical and administrative project management and envisages both the organization of a project management board in which each beneficiary will be represented and administrative procedures. The action envisages the realisation of the project Kick off meeting, the intermediate coordination meetings and the project technical and administrative reporting, including payment requests.
Veneto Agricoltura, as Coordinating Beneficiary, will be responsible for the overall management and coordination of the project and in particular it will be responsible towards the Commission for its effective and efficient implementation and sound management.
Project coordination will be ensured on the basis of daily contacts among Beneficiaries' staff involved in the project, according to a relational model illustrated in the following "Management Chart", and with the support of specific kick off and coordination meetings.

The kick off meeting will aim to establish the formal start of the activities and coordinate the partners and main subcontractors for the first activities to be undertaken, both under the technical and administrative points of view.
During the meeting the following topics will be discussed:
- Presentation of the contract with Commission and obligations for the beneficiaries;
- Administrative and reporting procedures;
- Start up of the first technical activities of the project;
- Time schedule of the Coordination Meetings.

In order to guarantee a complete coordination of the activities, it is foreseen the organization of "coordination meetings" involving all project's technical managers every 2-3 months.
The kick off meeting will take place in a Veneto Agricoltura office but the coordination meeting will take place in rotation in associated beneficiaries' offices.

For the whole project's duration, upon request by the Commission, the availability of data and information concerning the state-of-the-art of the project implementation as well as the intermediate results obtained, will be ensured.
The Beneficiary will produce also the requested technical reports in accordance with the deadlines established by the project and the Coordinating Beneficiary will collect from other Beneficiaries all needed elements for reporting in due time.

Reporting will include: no. 1 Progress report (month 11), no. 1 Mid-term report (month 19) with mid-term pre-financing payment (according to article II.23 of 2014 Model Grant Agreement), no. 2 Progress report (month 32), no. 1 final report (month 50+3) with final statement of expenditure.
Activities related to the administrative and financial management of the project (task and work assignment, spending commitments, payments, etc.) shall be performed on the basis of regular procedures adopted by the beneficiaries and in relation to the contract (in terms of keeping separate books, admissibility of costs, accounting methods). Each beneficiary shall designate an administrative manager among its staff, who shall be under the supervision of the coordinating beneficiary of the project, especially in terms of financial reports to the Commission.
During the kick off meeting, all administrative responsible will be involved in order to share the contents of the procedures.
At the conclusion of the project, the project final statements of expenditure and income shall be verified by an independent auditor, as requested by the 2014 Model Grant Agreement (Art. II.23.2). See in detail action F2.

The project manager will be part time. This because the same person will not only undertake further activities for the project, but also because this person will have to accomplish the institutional assigned tasks for VA, at the same time.
The coordinating beneficiary (VA) will keep full control of the project because it will make the strategic choices and check the progress of project activities day-by-day, together with the rest of the partners and by means of daily contacts with the external assistance team.
The project leader will lead all coordination meetings and will work so to reach the objectives of the project. The role as a leader will not be given over to the external assistance team and the Coordinating Beneficiary will only be supported by them in order to improve the quality and effectiveness of the project.
The activities performed by the external team will be complementary to those carried out by the VA's staff. The Project Leader will be the official representative of the project and will be responsible for the strategic coordination of the activities, the validation of outputs and deliverables, the management of coordination meetings, the representation of the project in front of EC and Monitoring Team.

Due to the importance of communication aspects, a specific "communication staff" will be created for organizing the dissemination activities

Reason why this action is necessary (Maximum Characters: 2000)
The action is requested for ensuring the coordination of all project activities, both from technical and administrative points of view

Constraints and assumptions (Maximum Characters: 2000)
The proposed activity is entirely desk and no authorizations or opinions are required. The responsibilities of the partners are adequate to accomplish the proposed actions, and consequently are not expected problems, requiring significant changes to the program of activities, for their implementation.

Expected results (quantitative information when possible) (Maximum Characters: 2000)
Presentations from the kick off meeting
Minutes of the coordination meetings
Compulsory reports (progress report, intermediate report, final report)

Indicators of progress (Maximum Characters: 2000)
The effectiveness of the action will be witnessed from the progress of financial state that will be monitored through the verification of the amounts spent for each category compared to the total project. The physical progress of the project will be monitored through specific indicators under each technical action.

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)

Action title:

F.2 Audit

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:

Description (Maximum Characters: 10000)
Since the contribution requested exceeds 300.000 €, as shown in the Model Grant Agreement 2014, the project accounting will be subject to verification by an independent auditor and its report will be attached to the final report.
The independent auditor will be appointed by the project manager and in addition to monitoring compliance with national legislation may check the accounts on the basis of the requirements of the 2014 Model LIFE Grant Agreement.
To ensure maximum independence of the auditor will be selected a third party unrelated to the Park by selecting from the list of Legal Auditors
(http://www.revisionelegale.mef.gov.it/opencms/opencms/Revisione-legale/ registroRevisori /).

Reason why this action is necessary (Maximum Characters: 2000)
Since the contribution requested exceeds 300.000 €, the action is mandatory.

Constraints and assumptions (Maximum Characters: 2000)
No difficulties are foreseen for the performance of this action

Expected results (quantitative information when possible) (Maximum Characters: 2000)
Report of the independent auditor (attached to the final report)

Indicators of progress (Maximum Characters: 2000)
None

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
The Auditor costs have been estimated on the basis of identical tasks assigned to other Life projects, done in the past by Veneto Agricoltura

Action title:

F.3 After Life Plan

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:

Description (Maximum Characters: 10000)
An “After-LIFE plan” will be added as a separate chapter to the final report of the project.
The document will include at least the contents specified in the Guidelines for Applicants 2014 and will be written in Italian and English in paper and electronic format.
The document will be prepared by the technical staff of the project, under the supervision of the project leader.
The plan will describe how the protocol will be applied in Consortiums’ area after the end of the project and how the “biodiversity friendly” management strategy could be promoted in other viticultural regions in Italy and in Europe.

Reason why this action is necessary (Maximum Characters: 2000)
The After-LIFE plan will be an important tool for managing the activities related to vineyard management in Veneto Region (and other areas) after the end of the project. It will have an operative approach and will define also the resources that should be dedicated to the continuation of the activities.

Constraints and assumptions (Maximum Characters: 2000)
No constraints and assumptions are foreseen

Expected results (quantitative information when possible) (Maximum Characters: 2000)
No. 1 After-LIFE plan in Italian and English, annexed to the project’s Final Report.

Indicators of progress (Maximum Characters: 2000)
Not foreseen

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
The action will be undertaken by personnel of the beneficiary responsible for the implementation of the action (Veneto Agricoltura). Related costs have been calculated on the base of day rate salary and the forecast of the time that will be employed.

Action title:

F.4 Indicators tables

Beneficiary responsible for implementation:
VA

Responsibilities in case several beneficiaries are implicated:
VA will be responsible for the coordination of the activities related to the preparation of the document that will be performed by the technical staff of the project (all the partners).

Description (Maximum Characters: 10000)
Life program foresees the compilation of a specific table about the “indicators” quantitative and qualitative. These tables will be filled by VA in cooperation with all associated beneficiaries.
As indicated in Guidelines for Applicants 2014 these indicators will contribute to evaluating the impact of Life project in view of overall objectives of the Life Programme, in line with regulation and the Multiannual Work Programme for 2014-2017.

Reason why this action is necessary (Maximum Characters: 2000)

It is a compulsory action and it is necessary to evaluate the contribution of this project on European objectives.

Constraints and assumptions (Maximum Characters: 2000)
No constraints and assumptions are foreseen

Expected results (quantitative information when possible) (Maximum Characters: 2000)
Two versions of the indicators tables (one within the first progress report and one attached to final report)

Indicators of progress (Maximum Characters: 2000)
Not foreseen

What methodology did you use for estimating the costs of the main expenditures in this Action? (Maximum Characters: 2000)
The action will be undertaken by personnel of the beneficiary responsible for the implementation of the action (Veneto Agricoltura). Related costs have been calculated on the base of day rate salary and the forecast of the time that will be employed.

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DELIVERABLE PRODUCTS OF THE PROJECT

Name of the deliverable (max. 200 characters)	Number of the associated action	Deadline
1 final publication	E6	2019-11-30
1 farmers brochure	E5	2018-06-30
Final monitoring report	D1	2019-12-31
Annual monitoring report	D1	2018-12-31
Annual monitoring report	D1	2017-12-31
Ex ante report (including information on the sampling design and methods)	D1	2016-10-31
Layman's report	E4	2019-12-31
Annual technical report on the benefits of our concrete actions on the selected ecosystem services	D3	2018-12-31
Annual technical report on the benefits of our concrete actions on the selected ecosystem services	D3	2016-12-31
Annual technical report on the benefits of our concrete actions on the selected ecosystem services	D3	2017-12-31
Final technical report on the benefits of our concrete actions on the selected ecosystem services	D3	2019-12-31
Final report of the independent auditor (attached to the final report)	F2	2020-03-31
List of farms participating	A1	2015-12-31
Small atlas of biodiversity on vineyard	E7	2017-10-31
Seed pot or Seed bookmark (made of seed paper) as a gadget to students	E7	2018-10-31
First draft of the protocol "biodiversity friendly"	C6	2017-12-31
Final version of the protocol	C6	2019-09-30
Stakeholder map	A2	2016-02-28
Project Visual Identity material	A2	2016-02-28
Communication Plan	A2	2016-01-31
Production of Communication strategy and Plan	A2	2016-01-31
Project's 5th newsletter	E2	2019-04-30
Project's 2nd newsletter	E2	2017-07-31
Project's 1st newsletter	E2	2016-12-31
Project's 3rd newsletter	E2	2018-03-31
Project's 4th newsletter	E2	2018-11-30
Project's 6th newsletter	E2	2019-10-31
First versions of the indicators tables	F4	2016-09-30

(within the first progress report)		
Final version of indicatorors tables (attached to final report)	F4	2020-03-30
Some personnel for writing the plan is foreseen	F3	2020-03-30
protocol for the intervention on alien species	C5	2018-03-31
Check-list of potentially invasive species and their potential	C5	2016-03-31
No. 1 draft of the questionnaires	D2	2016-04-01
Report of networking activities	E3	2018-12-31
Charts and tables at the end of each project year	C2	2018-12-31
Charts and tables at the end of each project year	C2	2017-12-31
Charts and tables at the end of each project year	C2	2016-12-31
Report on the assessment of the economic value of ecosystem services in agro-system	D4	2019-06-30

MILESTONES OF THE PROJECT

Name of the milestone (max. 200 characters)	**Number of the associated action**	**Deadline**
First meetings with public bodies	E6	2017-12-31
Field Notice board installed in 40 farms	E1	2016-10-31
First farmers' meeting	E5	2016-04-30
- Complete collection of seeds	C1	2018-10-31
- Starting seed collection	C1	2016-05-31
- About half seed/plants supply to the other C actions	C1	2018-04-30
- Complete seed/plants supply to the other C actions	C1	2019-11-30
Beginning of the first monitoring survey to collect ex ante data	D1	2016-04-30
Beginning of the collection of lichen material in natural sites	D3	2016-03-31
Beginning of biological control assessment	D3	2016-06-30
First yield production assessment	D3	2016-10-31
Beginning of pollination assessment	D3	2016-05-31
Starting of sites preparation and planting/sowing operations	C3	2016-11-30
First class visit	E7	2016-05-31
Project website online	E2	2016-03-31
- Starting of plantations	C4	2017-09-30

- Starting to cut shrub individuals that are colonizing abandoned arid grasslands	C4	2016-03-31
- Starting to mow arid grasslands	C4	2016-07-31
Identification of areas of forest margin of farms involved	C5	2016-03-31
First Intervention on invasive alien species	C5	2016-07-31
Starting of indigenous strains of predators/parasitoids releases	C2	2016-03-31
Starting plant management activities in Conegliano-Valdobbiadene area	C2	2016-03-31
Starting of mass-rearing of indigenous strains of predators/parasitoids	C2	2016-03-31
Starting of plantations and sowing operations	C2	2017-09-30
Starting chopping of the dead branches in Valpolicella	C2	2016-02-29
Starting of MD application: March in the first growing season	C2	2016-03-31
Identification of ecosystem services in agro-system vineyard	D4	2018-12-31

ACTIVITY REPORTS FORESEEN

Type of report	**Deadline**
PROGRESS_REPORT	2016-10-31
MIDTERM_REPORT	2017-06-30
PROGRESS_REPORT	2018-11-30
FINAL_REPORT	2020-03-31