





LIFE17 NAT/IT/00619 GREENCHANGE Green infrastructures for increasing biodiversity in Agro Pontino and Maltese rural areas



# REFERENCE FRAMEWORK FOR THE SYSTEMATIZATION OF INTERVENTIONS TO INCREASE THE FUNCTIONALITY AND ECOLOGICAL CONNECTIVITY OF RURAL AREAS

Action C1

**Date:** 11.10.2019

Version: 01.00l

# **ABSTRACT**

This deliverable represents one of the operational tools to make available to farmers and decision-makers, in order to highlight the possible wide-scale interventions to undertake for increasing the ecological functionality and connectivity of the rural territory, and to provide references for the definition of localization criteria.

The document is based on a model document prepared in Italian by POLIEDRA, that MIEMA translated in English and adapted to the characteristics of the Maltese rural areas involved in the project. Therefore, the document describes the main types of actions to improve the ecological functionality and connectivity of the agricultural territory in the Maltese islands (namely, Low-impact agricultural practices, Linear vegetation structures, Buffer zones, Vegetation strips along roads, New woodland and woodland scrub, Interventions for animal biodiversity, and Construction of wetlands), and identifies some points of attention for their implementation.







# THE PACT FOR AGRO-BIODIVERSITY

The Pact for Agro-biodiversity is meant as a territorial governance tool that defines a reference framework to harmonize priorities, actions, interventions and funding tools for the rural environment, orienting them towards environmental conservation and agroecosystems rehabilitation goals.

The Pact is conceived as a permanent open discussion and negotiation table, aimed at sharing with relevant local stakeholders (both public and private) the modalities of managing rural spaces so as to increase their level of ecological protection, functionality and connectivity. Therefore, active participants in the Pact will be the institutions in charge of programming and territorial management, as well as farm holdings and their representatives, as 'land stewards' and potential beneficiaries of the Common Agricultural Policy.

The Pact pursues the following objectives:

- Integrating the programs and plans in force, so as to facilitate entrepreneurs and territorial actors;
- Outlining scenarios to improve the maintenance and productivity of the rural territory, according to an ecosystem services approach;
- Setting up the conditions to maximize the effectiveness of interventions, in a logic of supra-enterprise network;
- Stimulating the active involvement of farmers through facilitation tools meant to
  foster access to CAP funding mechanisms, also by carrying out negotiation
  processes with national-level authorities around the interventions and selection
  criteria to adopt in the next programming period;
- Defining shared rules and support documents for the environmental management of interventions, especially those targeting rubble walls and wildflower strips.

The core activity of the Pact is to steer the territory towards the implementation of green infrastructure in farming areas and the creation of the conditions and methods to







improve the operational and organizational feasibility of agricultural practices in a long-term perspective. It is about implementing and testing tools and actions to demonstrate that the implementation of green infrastructures cannot overlook the farmers' support and involvement for increasing the agro-ecosystems' functionality and connectivity, and that it is also economically viable for holdings, due to the possibility to apply for dedicated funds.

This document is therefore one of the operational tools to make available to farmers and decision-makers, in order to highlight the possible wide-scale interventions to undertake for increasing the ecological functionality and connectivity of the rural territory, and to provide references for the definition of localization criteria.







# PROPOSED ACTIONS

The main types of actions to improve the ecological functionality and connectivity of the agricultural territory in the Maltese islands are the following:

- 1. Low-impact agricultural practices;
- 2. Linear vegetation structures (hedges, tree rows);
- 3. Buffer zones;
- 4. Vegetation strips along roads;
- 5. New woodland and woodland scrub;
- 6. Interventions for animal biodiversity;
- 7. Construction of wetlands.

The following chapters provide a description of such actions, along with an identification of some points of attention for their implementation.







#### 1. LOW-IMPACT AGRICULTURAL PRACTICES

In the rural territory, multi-functional green infrastructure can be implemented by applying agricultural practices meant to reduce impacts on the agro-ecosystems.

Low-impact agricultural practices include:

- Organic farming
- Integrated farming
- Conservation agriculture
- Balanced fertilization and crop rotation

Organic farming mainly contributes to environmental quality by reducing (and even eliminating) the use of fertilizers and phytosanitary products, thus preserving natural resources such as water and soil, improving the biodiversity and the rural landscape.

Integrated farming also helps reducing negative impacts due to a careless, uncalibrated use of fertilizers and phytosanitary products, especially where cultivation is more intensive.

Conservation agriculture aims at improving the quality of soil in terms of structure, resistance to erosion and compaction, capacity to absorb and retain water, to store carbon and maintain the organic matter. It is implemented through sod seeding directly on the residues of previous cultures, without ploughing or any other action meant to prepare the seed bed, or by adopting low-till techniques – i.e. tillage with lower impact than conventional ploughing, performed without overturning the active layer of the soil.

Balanced fertilization and crop rotation intervene on soil fertility whilst reducing soil depletion. They help increase soil fertility and crop yield, enhance biodiversity and improve the rural landscape.

In order to foster a real improvement of biodiversity and habitats, such practices should be integrated as much as possible, especially at the edges of agricultural holdings, with other types of operations aimed at increasing ecological functionality - for instance, linear vegetation structures and woodland strips, appropriately oriented and spatially distributed to protect crops. In this way, the combination of low-impact practices and







natural elements can ensure the totality of the functions that are required from an ecosystem. This concept also underpins the EU indications, which recommend the presence of natural areas within farm holdings.

- The increased crops variety characterizing low-impact agriculture makes agroecosystems less fragile against parasites and pests.
- The selection of rustic, local and ancient varieties minimizes maintenance and use of synthetic substances that can be harmful to local biodiversity.
- Crops rotation should foresee the rotation of at least three cultures in a fiveyears' time span. This is highly beneficiary to the soil and allows to reduce the use of synthetic substances.
- Conservation agriculture requires the use of specific machinery for soil tillage.







#### 2. LINEAR VEGETATION STRUCTURES

Linear vegetation structures such as hedges and tree rows, when formed by autochthonous species, increase the ecosystem's complexity, enrich and diversify the rural landscape, reinforce ecological networks and create shelter and reproduction spots for wild animals moving through the territory. Therefore, they play an important role in the preservation of animal and vegetal biodiversity.

More specifically, narrow linear vegetation structures mainly host species that are typical of open spaces or edge areas, while thicker ones can host species that are more linked to shady environments, and, in general, a richer and more complex living community. Such structures also serve to slow down wind speed, stabilize soil, and produce fruits; they are useful for bees, represent a source of energy and a carbon reservoir, and allow for moderate wood production.

Hedges are thick vegetation structures with a regular or irregular linear profile, formed by shrubs or trees belonging to the site's vegetal and floristic context. Tree rows are structures with linear or sinuous profile, formed by mono-species or multispecies timber trees belonging to the site's vegetal and floristic context.

The main types of intervention to be considered are as follows:

- hedges;
- complex multi-row patterns;
- single-row, multispecies tree plantings;
- single-row, mono-species tree plantings.

A well-structured planning of hedges plantings allows to achieve better results in terms of biodiversity: hedges formed by multiple species of shrubs and trees, for instance, can support a higher number of animal species and ensure higher resistance to plant diseases than those where a limited number of vegetation species prevails.

The complexity of the planting arrangement is also crucial: spacing and stand density matter, and intricate, evenly spaced arrangements can support more species than regular patterns. Moreover, higher, thicker hedges offer a larger internal volume sheltered from external climatic-environmental factors. The age and age difference are important, too:







older hedges and tree rows support more vegetal and animal species than recently planted ones, and keeping a certain age difference among the single units is also recommended.

- Linear vegetation structures should be positioned so as to limit the shading of crops, whilst effectively sheltering them from the wind and reducing soil erosion.
- The size of plantings must be carefully fine-tuned according to the functional objectives to pursue.
- Hedges and tree rows should preferably be positioned so that they can play
  multiple functions. For example, when planted along rural roads, these elements
  can work as greenways, providing cultural services to users.
- Implementing interventions that are adjoining and/or synergic among them and with other existing elements is essential to produce significant environmental effects and to pursue wide-range objectives also in terms of landscape improvement.







#### 3. BUFFER ZONES

Buffer zones are normally defined as linear formations of herbaceous, arboreal or shrub-like vegetation, usually 3-5 metres wide, planted between crops and watercourses that either drain water from the fields or belong to the minor hydrographic network.

Buffer zones protect surface and underground waters from the pollution due to agricultural activities, since they can intercept the surface runoff towards the receiving water body and filter waterborne pollutants – especially nitrates.

Buffer zones along fields can therefore be considered as a distributed system of filterecosystems, potentially capable to give a significant contribution to the water rehabilitation of the surface hydrographic network. They effectively capture fertilizers, but also have a purification capacity towards pathogens deriving from residential drainage.

Buffer zones also represent important ecological corridors: their planting and maintenance increases the specific and structural complexity of the ecosystem, reinforces the ecological networks by mitigating the habitats' fragmentation, and provides shelter and reproduction spots for fauna. Indeed, buffer zones can host a great amount of animal and vegetal species, ease the movement of wild animals, and work as 'refuge habitat' during the disturbance actions due to agricultural activities carried out in nearby fields.

#### Other advantages are:

- Limitation of the banks' erosion;
- Ecological and productive functions (especially timber);
- Shading of watercourses, reduction of water temperature and increase of dissolved oxygen;
- Wind-breaking action;
- Landscape and recreational functions.







- Selection of the vegetal species forming the buffer zones shall take into account
  the physical characteristics of the soil (depth, structure, draining capacity, water
  supply during the growing season). Use of blossoming and fructifying species
  increases the usefulness of the buffer zones as a shelter for wild fauna.
- Wider buffer zones are more effective as natural purifiers and as habitats for biodiversity.
- Buffer zones, when adequately subdivided and managed, can also produce biomass for energy purposes, work as recreational areas, and comply with greening criteria according to the CAP and to the EU orientations for the programming period 2021/2027.
- The management of buffer zones shall be strictly connected to the maintenance of the irrigation network (cleaning of ditches, mowing of banks). For instance, maintenance activities of ditches and banks should be scheduled in coincidence with the life cycle of the plants established.
- A long-term maintenance perspective allows the buffer zone to gain structure and functionality over the years. It is important to foresee its adequate management, including the assessment of the achieved levels of environmental functionality.
- When grassland buffer zones are concerned, moving should be carried out after the wild plants' blossoming period.







#### 4. VEGETATION STRIPS ALONG ROADS

Filter-ecosystem concepts can also be applied to the vegetation strips placed along road infrastructures, separating them from agro-ecosystems. Their function is the opposite of the buffer zones', since vegetation strips along roads – besides introducing natural and aesthetic elements – protect the countryside from the pollution generated by the use of road (and railroad) infrastructures.

The same role can be covered by other types of intervention, such as the vegetation areas embedded in turnpikes, roundabouts, traffic dividers, etc. Such elements are not necessarily linear, but often have a jagged profile, penetrating along and into abandoned, marginal areas.

- Vegetation strips shall be correctly sized, so that they can effectively filter air pollutants generated by motor vehicles.
- Like in buffer zones, the potential ecological role of vegetation strips depends on the width and continuity of interventions. Ideally, strips should be 15-30 metres wide, or more.
- The planting of vegetation strips can provide an opportunity to achieve objectives of landscape and territorial nature.
- Areas enclosed in turnpikes, roundabouts and traffic dividers can hardly be used for agricultural purposes and can therefore become vegetation areas of floristic value, or micro-habitats of faunal value.







#### 5. NEW WOODLAND AND WOODLAND SCRUB

Small woods, groups of trees and isolated trees are a historic feature of cultivated fields. They represent important transition environments for wild animals, and have a significant landscape value. Afforestation of agricultural land has become an EU objective since the 1990es, and is now one of the main measures of the Member States/Regions' Rural Development Programmes.

The possible types of intervention range from the afforestation in agricultural areas with environmental purposes, to the planting of woodland scrub, to the natural improvement of existing woods. Woods and woodland scrubs can be positioned in agricultural areas in many different ways, depending on the economic and environmental parameters considered – e.g. the possibility of performing mechanical tillage or the functionality within an ecological network.

In particular, in order to ensure a correct ecological functionality, it is important to take into consideration not only the single elements to introduce, but also the shape resulting from their combination in the agricultural space. Spatial planners and farmers should jointly search for spatial solutions able to optimize the relationship among economic needs, ecological requirements, and effective use of production means.

- New woodlands and woodland scrubs are better positioned in intensive agricultural areas where trees and shrubs were eliminated or strongly reduced.
- The presence of grasslands (e.g. clearings within woods and bushy areas) should be maintained to further diversify habitats and increase biodiversity.
- Woodlands should be positioned along lines of spatial continuity, so as to work as 'stepping stones' for the movements of fauna, thus creating ecological continuity conditions.
- Woodlands should be sized according to the expected functional objectives and to the surrounding ecological mosaic. As a general rule, a large wood is better than a small one since it normally hosts a higher number of species and allows for a higher biodiversity: in order to achieve ecosystems that are sufficiently structured, the creation of woodland should cover a surface of at least 0.5







hectares. At the same time, small woodland scrubs can be useful, too, especially as 'stepping stones'.

- New woodland units shall have a long-term maintenance perspective at least 20 years.
- New woods need a maintenance period of at least 3 years, during which it is necessary to provide for irrigation, containment of surrounding herbaceous vegetation, re-establishments in case of failed germination.
- Management activities may include minimal clearing intervention of natural areas, limiting the removal of dead and fallen plants to those that are dangerous for people safety (e.g. trees on the external boundaries, along roads or popular paths). In order to increase specific biodiversity, adequately staggered forestry treatments are recommended.
- The planting of these elements can provide an opportunity to achieve objectives of landscape and territorial nature.







#### 6. INTERVENTIONS FOR ANIMAL BIODIVERSITY

There are a number of interventions that can be implemented in agricultural areas to create habitats suitable for the conservation of vegetal biodiversity and wild fauna. In particular, in order to increase and maintain the amount of wild fauna, the following interventions can help create/restore those micro-environments that can be used for shelter and reproduction and for providing trophic resources:

- Implementation of cover crops for faunal purposes, envisaging the sowing (or the
  maintenance for non-productive purposes) of herbaceous cultures temporarily
  devoted to the feeding, shelter, rest and reproduction of wild species. Cover
  crops are arable lands where the farmer gives up harvesting part of the crop,
  leaving it at the fauna's disposal as food or refuge. They should be unevenly
  placed, preferring those fields that are closer to natural vegetation areas;
- Protecting the surface layer of the soil allows to keep a good floristic composition, whilst easing the containment of allochthonous species and weeds;
- Creation and maintenance of uncultivated grassland margins (formed by hedges, small woods, herbaceous strips along roads, ditches, aquatic habitats or fields boundaries) to become feeding and refuge spots. These shall not be subject to management actions involving chemicals and mechanical means that can have relevant environmental impacts. Grassland strips should be sown with a mixture of essences with staggered blooming periods;
- Planting of hedges, trees, windbreaks and small woods formed by autochthonous species, aimed at creating micro-habitats that – besides benefiting agricultural production – are crucial for the refuge, feeding and reproduction of many wild species;
- Planting of fruit-trees: they have a food-production function and attract the fauna;
- Realization and maintenance of small-sized (less than 1 hectare) ponds, lakes, etc., which are vital for many small animal species (amphibians, reptiles, insects) and provide watering spots for birds (that sometimes can nest therein, too) and mammals. When integrated into a network including also small woods, hedges and wetlands, they develop a strong ecological and landscape value;







- Management of larger wetlands (more than one hectare), of natural, semi-natural
  or artificial origin, having an important naturalistic value for amphibians, birds
  and mammals;
- Installation of facilities for the fauna, such as nests, mangers, artificial refuges, rubble walls, which integrate the habitat's resources;
- Maintenance of grasslands and clearings, which are extremely important for hares and other species that are affected by the reduction of open grasslands;
- Adoption of agricultural and land management practices with low environmental impact on the territory and the associated fauna, for instance by selecting harvesting times and methods that are compatible with the life cycles of local fauna, or by adopting specific tools and precautions during the harvesting, for example starting the cutting operations from the centre of the field;
- Correct management of cultural residues and stubble, since they represent a
  feeding source and help mitigate the environmental impact due to the harvesting
  activities, which causes a sudden change in the habitat. The value of the site as
  refuge and reproduction spot increases with the passing of time;
- Realization of winter cover crops, so as to avoid ploughing and tillage of arable land when harvesting has already occurred, and to keep the stubble and the soil untouched, thus creating a winter habitat suitable to wild fauna;
- Rehabilitation of uncultivated and bushy areas for faunal purposes, though ad hoc
  plantings or soil movements aimed at improving the habitat structure, especially
  in marginal, unused areas.

The presence of extensive agricultural production areas associated to grasslands is very important, since they represent a vital space for fauna, an enrichment of the number of species and vegetal communities - thus significantly contributing to biodiversity – and a characteristic feature of the rural landscape.

Grasslands also have a high environmental value, because they contain soil erosion, reduce the leaching of nutrients (nitrogen and phosphorus), improve soil structure and fertility, and help preserve the quality and quantity of deep water resources.







#### 7. CONSTRUCTION OF WETLANDS

Agro-ecosystems can host wetlands of varying nature and size (ponds, small lakes, etc.), though often man-made, mainly realized as water reservoirs. Wetland ecosystems are characterized by peculiar fauna and vegetation, and are able to significantly increase the sites' biodiversity by offering refuge and reproduction spots to several amphibian species, as well as watering spots for birds and mammals in areas otherwise unhospitable during summer months.

Wetlands are decisive for ecological functionality, therefore their revitalization, reconstruction or ex-novo realization is one of the most significant interventions for ecosystem rehabilitation. Wetlands with diversified depths are capable of hosting heterogeneous animal and vegetal communities, while shallow wetlands (around 30 cm deep) with permanently flooded basins are useful for the feeding and reproduction of waterfowl.

It is worth mentioning that wetlands are temporary ecosystems *per se*, bound to be naturally earthed up in the short or long term. When important wetlands are in the process of being earthed up, it is therefore necessary to undertake rehabilitation actions, that can vary according to the objectives to achieve.

- Wetlands should be shaped in sinuous, natural-like shapes.
- Banks should preferably have smoothly declining slopes, or steps of different depths, to ease colonization by wild flora and fauna.
- Small wetlands, albeit artificial, can be used as educational or recreational areas by students, families, and other citizens interested in the observation of wild fauna.
- Trees to be planted along the banks of wetlands should be hygrophilous species in the areas that are closer to water, and mesophytes in higher grounds; selected shrub species should be suitable for the nesting and feeding of birds.







# POSSIBLE FUNDING SOURCES

The possible funding sources for the implementation of proposed interventions in the Maltese islands are represented by two instruments:

- Malta's Rural Development Programme (RDP) 2014-2020;
- Environmental Funding Support Scheme for Voluntary Organisations, managed by the Maltese Ministry for the Environment, Sustainable Development and Climate Change.

The main characteristics of these instruments and the type of operations they support are described in the following paragraphs.







### RURAL DEVELOPMENT PROGRAMME

#### **OPERATION 4.4**

# Support for non-productive investments linked to the achievement of agri-environment-climate objectives

Support under this operation will provide for investment envisaged to contribute to the achievement of agri-environment-climate objectives and will include the restoration of habitats and landscapes, soil conservation, and water management where there is no significant economic return to a farm or other rural business from such action.

The aid intensity rate is 80%.

#### Type of investments

- Capital works within the framework of agri-environment-climate schemes, including collective landscape management groups as well as individual farmlevel contracts, and works, establishing, restoring, or re-instating infrastructure needed for management of habitats. This includes rubble wall (or other suitable boundary feature) establishment or restoration, terracing, and soil conservation measures;
- Restoration of landscape features and corbelled stone huts;
- Habitat creation or restoration works requiring investment actions.

#### **Eligibility conditions**

- All Natura 2000 sites or areas of high nature value are eligible;
- Durability of the investment of 5 years following the final payment to the beneficiary. For SMEs, this period is reduced to 3 years;
- Investments are to be related to purely environmental improvements;







 Support can be provided for tangible and/or intangible investments which are non-productive investments (linked to the achievement of agri-environmentclimate objectives as pursued under the Rural Development Regulation), including biodiversity conservation status of species and habitat as well as enhancing the public amenity value of a Natura 2000 area or other high nature value systems to be defined in the programme.

#### Principles with regards to the setting of selection criteria

Preference will be given to:

- Applications targeting more than one indicator and/or contributing considerably towards the relevant measure indicators;
- Applications showing a high level of preparedness to start the implementation of the project (permits, tenders, CBAs, etc.);
- Applications showing that the submitting organisation has the necessary resources to implement the project;
- Applications with effective project costing proposals, to ensure the viability and added value of the proposed project;
- Applications showing potential for the proposed project to lead to funding opportunities under other measures and/or funds;
- Proposals aiming to contribute towards the promotion of equal opportunities, equality, non-discrimination and improved accessibility whilst targeting sustainable development in the areas of economic growth, social cohesion and environmental protection;
- Applications which include interventions which are of greater benefit to agrienvironment-climate objectives/targets and which are complementary to the schemes established under M10.1 of Malta's RDP;
- Proposals in which the applicant or at least one of the farmers forming part of the group applying for funding falls within the definition of young farmer;
- Applicants participating in at least one of the AECMs under Measure 10;







- Proposals which include information on the dissemination of the results achieved by the project and the promotion of EU funding;
- Proposals submitted by more than one farmer, cooperatives, POs/PGs, etc.;
- Applicants providing evidence of participation in relevant training or advisory services in the two years preceding the submission of the application.

#### **OPFRATION 8.5.1**

#### Planting of indigenous trees/shrubs

Interventions under this type of operation will support both the creation of new woodland as well as the amelioration of existing woodland. Creation of woodland will seek to provide additional green spaces for recreational purposes. In the case of the amelioration of existing woodland, investments supported must be complementary to existing or newly designated management plans or equivalent instruments, such as the biodiversity strategy, Natura 2000 management plans, landscape management plans, local plans, etc. The objective of this operation is to maximise the proportion of woodland on the Islands.

Beneficiaries will receive the full amount (support rate of 100%) in grants.

#### **Type of investments**

- Planting of indigenous tree species for the establishment of new woodland areas;
- Re-planting in existing woodland;
- Establishment of bio-diverse woodland edge structure with appropriate trees and shrub species which also can serve for better microclimate creation purposes.

#### **Eligibility conditions**

 Projects should be compliant with the relevant appropriate level strategies, programmes and plans (if applicable);







- Projects should foresee an appropriate selection of both afforested areas and species, and contribute to landscape, environment and ecological objectives for Malta;
- Replanting of trees is only accepted during the first year as part of the establishment (afforestation). During the following years (up to 5 years) replanting will be eligible if the scale of the damage is higher than 20% (in the context of restoration activities);
- The area to be supported for the purpose of afforestation has a minimum size of 0.5 ha or more and has (or will have following afforestation actions) a minimum tree cover of 10%. The list of eligible tree/shrub species which may be planted is found in Annex IV of the 'Methodological Assumptions for Payment Calculations'.

#### Principles with regards to the setting of selection criteria

Preference will be given to:

- Projects targeting more than one indicator and/or contributing considerably towards the relevant measure indicators;
- Applications showing a high level of preparedness to start the implementation of the project, particularly in instances which could necessitate the approval of permits, the issuing of tenders, the drafting of CBAs etc.;
- Applications showing that the submitting organisation has the necessary resources to implement the project, as well as applications with effective project costing proposals;
- Applications which show potential for the proposed project to lead to funding opportunities under other measures and/or funds;
- Interventions addressing the principles of equal opportunities, equality, nondiscrimination and improved accessibility whilst targeting sustainable development in the areas of economic growth, social cohesion and environmental protection;
- Proposals which include information on the dissemination of the results achieved by the project and the promotion of EU funding;







 In addition to the general principles for the selection criteria, the principles for selection will take into account the number of eligible actions to be implemented as per project proposal as well as the project's contribution towards the improvement of air quality, sustainable management/use of water, better soil management and climate change adaptation and mitigation.

The selection criteria will be detailed in subsequent guidelines.

#### **OPERATION 8.5.2**

#### Protection of habitats and biodiversity

Protection of habitats and biodiversity-related actions include:

- Protection of certain habitats, species and areas under structural change against damage caused by natural or human action. These actions may include repair works, building of rubble walls or appropriate individual protection facilities;
- Removal of unwanted non-native species.

Beneficiaries will receive the full amount (support rate of 100%) in grants.

#### **Type of investments**

Support will take the form of grants for eligible actions which may include:

- Actions to prevent damage to forests by biotic and abiotic agents and related investments;
- Restoration actions after calamities and natural disasters and related investments.

#### **Eligibility conditions**

 Compliance with the relevant forest protection plan as regards the prevention of forest fires and other natural and biotic hazards (if applicable), as well as with the relevant appropriate level strategies, programmes and plans;







- Projects shall contribute to landscape, environment, ecological and climate priorities for Malta set out in Malta's biodiversity strategy and climate action plan;
- For risk prevention related activities, like thinning and pruning these shall be based on the forest protection plan or an equivalent document;
- Support under this sub-measure should not lead to any significant increase in the profitability of the forestry holding.

#### Principles with regards to the setting of selection criteria

In order to avoid inappropriate afforestation, support will only be provided for planting of trees/shrubs listed in Annex IV of the document 'Methodological Assumptions for Payment Calculations'. Non-native tree and shrub species shall not be eligible; only native and indigenous species are allowed to be planted.

#### MEASURE 10.1 - AGRI-ENVIRONMENT-CLIMATE

Agri-environment-climate measures (AECMs) are designed to encourage farmers to protect and enhance the environment on the land that they manage. They provide payments to farmers in return for a service, in the form of a multi-annual commitment to observe a set of prescribed management practices over a period of 5 years. The AECMs for Malta aim to enhance cultivation methods adapted to the environment and the features of landscapes, and specifically to enhance Maltese biodiversity and ecosystem services; promote water conservation and water quality improvement; and contribute to climate change adaptation and mitigation principally by increasing efficiency of input use and improving soil management. Eligibility conditions common to all AECMs are listed below. Additionally, each AECM foresees a set of measure-specific conditions.

#### **Eligibility conditions**

- The applicant farmer must have a minimum of 1124 m2 of agricultural land. Any parcels that are found to be less than 0.04 hectares are ineligible;
- Beneficiaries may only receive support from one AECM with the exception of AECM 3 that can be combined with any other AECM;







- Farmers will be required to keep records relevant to the parcel linked to AECM;
- AECMs must be implemented in the form of five year commitments;
- Farmers must be registered in the IACS Farmer Registry;
- Technical forms (such as Soil Management Plans, Integrated Pest Management Plans and Fertiliser Plans, etc.) must be compiled by an Agronomist or Technical Advisor recognised by the Competent Authority;
- As a basic conditionality, farmers must register (where possible) garrigue land.
  Eligible garrigue land must be surrounded at least on three sides by agricultural
  land, and must be fully enclosed (with necessary access points) with a boundary
  rubble wall, constructed in accordance with MEPA requirements and regulations;
- All agriculture reference parcels claimed should be unambiguously located on site and through satellite images;
- Farmers must observe the baseline Cross Compliance Requirements which include the statutory management requirements and the Good Agricultural and Environmental Conditions (GAEC);
- In case of transfer of holdings (or part of) following the first year of commitment, obligations pertaining to the sub-measure must be maintained. In any case adequate assessment shall be made to ensure that the objective of the measure would still be achieved:
- Beneficiaries will be required to attend a training module (provided free of charge) relevant to the AECM subscribed. Beneficiaries are also obliged to take advice for adequate fulfilment of all commitments and obligations. Advice (that may be supported through Measure 2) should be completed by the end of the 3<sup>rd</sup> year from acceptance on the scheme.

#### AECM 2 - Measure for the maintenance of trees

This measure provides support for the maintenance of recommended tree species replacing Alien Species or planted on slopes and terraces to prevent soil and wind







erosion. It complements the possibilities offered under sub-measure 4.4 for the removal of alien tree species or the planting of new trees on slopes or terraces in registered cultivated agriculture land.

This measure is targeted at registered cultivated agricultural land which is terraced or sloping, specifically sites upon which one or more alien species are found and sites with a high level/risk of erosion.

As well as providing an expanded habitat for local flora and fauna, the implementation of the measure will indirectly promote the planting of new trees which can be designed as buffer zones between agriculture and valuable natural assets such as watercourses. In addition, by increasing the number of trees present on a holding, farmers will indirectly target issues such as water logging, and erosion caused by water and wind.

The support rate for the maintenance of trees shall be of €38.99 per tree per year up to a maximum of 18 trees per hectare (which amounts to a maximum of €701.82 per hectare). The end support rate will then be provided over a 5-years' commitment period.

#### Type of investments

This measure aims to allow for regular clearing of weeds, the removal of dry undergrowth in summer months to prevent any fire outbreak, any trimming, pruning or support required to safeguard and protect the trees.

This measure is further divided into 2 sub-measures:

- Support for the maintenance of tree species planted on sloping land >=11% or terraces that are prone to soil erosion (2A);
- Support for the maintenance of tree species planted to replace invasive alien species (2B).

#### Specific eligibility conditions

• If applying under 2A all trees planted must be listed in Annex 8 and have to be planted on sloping/terraced land; If applying under 2B each invasive alien tree removed (which must be listed in Annex 7) must be replaced by two tree species found in Annex 8 (not necessary of the same species).







- In order to be eligible for both 2A and 2B the beneficiary must either: be selected as a beneficiary of non-productive investment Measure 4.4 and complete the project; OR, in cases where the farmer did not apply for funding under M4.4 and is privately funding the planting/removal, the beneficiary must provide the necessary photographic evidence as per the ARPA photography guidelines.
- Trees must be located on eligible agricultural land;
- Farmers are required to identify where they will be removing/planting the trees
  by specifying the reference parcel lds and take the necessary photographic
  documentation; they shall also sign a declaration stating when the trees were
  removed/planted.
- The removal of alien species and the planting needs to be in accordance with ERA Guidelines on managing non-native plant invaders and restoring plant communities in terrestrial settings in the Maltese Islands and the recommended list of trees for planting found in Annex 8. Any activity that involves alien plant removal and/or native plant conservation translocation (such as a reintroduction) within Natura 2000 sites or other protected area requires prior authorisation from ERA.
- If the original placement of the alien species hindered agricultural practices, the
  replacement tree(s) may be planted in a different location on the same farmer's
  holding. Moreover, if farmers deem that the replacement trees would be more
  efficient in preventing soil erosion on a different location on their holding, they
  must notify the authorities about the new location;
- In removing species farmers must adhere to the provisions for removal of alien species laid out in the 'Guidelines on managing plant invaders and restoring Native Plant Communities'.

#### Principles with regards to the setting of selection criteria

No selection criteria are established for AECM. However, in case of budgetary restrictions, priority will be given to applications within Natura 2000 areas.







# AECM 3 - Measure supporting the introduction of bee boxes on holdings

The objective of this measure is to incentivise farmers to set up bee boxes on their holding and to support registered beekeepers affiliated with an apicultural society, to encourage them to continue in the apiculture sector. This measure specifically targets garrigue and maquis. As a commitment beekeepers will be obliged to keep bee boxes within the vicinity and close proximity to garrigue/maquis land (not farther than 3km). Support offered though this AECM is expected to have a positive impact on overall pollinator populations as well as increasing the population of endemic species such as the Maltese honey bee, *Apis mellifera ruttneri*, a sub-species of the Western honey bee.

Since AECM 3 is complementary to all other AECMs and at the same time beneficiaries are beekeepers, AECM 3 can be coupled with other AECMs on the same parcel without impacting on the applicable rates for both AECMs.

Support rate amounts to €125.95/hive/year, for a minimum of 5 hives (which amounts to a total of €629.75/ha/year).

#### Type of investments

The AECM provides beekeepers with support to keep and maintain a maximum of 5 bee boxes per hectare. The bee boxes will be moved to different garrigue/maquis locations an estimated 3 times in a year, to accommodate the 3 honey seasons in the Maltese islands. Depending on the season the beekeeper will locate the boxes to ensure the bees have access to the prevalent flowering species at that given time.

The support rate is based on the fact that beekeepers are now obliged to travel potentially substantial distances to locate boxes in areas with a high garrigue/maquis ratio. The support rate keeps in consideration time spent to transport, preparation of boxes prior to transportation, setting up and actual relocation of boxes. Beekeepers are also expected (though not expressly required) to provide financial reimbursement to the farmer in exchange for placement of bee boxes on those holdings in close proximity to garrique and maquis land.

#### Specific eligibility conditions

• To apply for support the beekeeper must be registered with an Apicultural Society and the National Competent Authority, and is required to have a







minimum of 5 active bee boxes registered under this AECM (not necessarily all receiving support);

- Support under AECM 3 is permissible for parcels that are also linked to any of the
  other AECMs; if the beekeeper implementing AECM 3 and the farmer whose land
  the bee boxes are being placed on are not the same person, the farmer can
  receive support under any of the other AECMs (and the beekeeper can apply on
  parcels which are, at time of application, already committed to other AECMs).
- Bee boxes must be kept on agricultural land (including garrigue) throughout the
  year. They are to be linked/attached to agricultural parcel(s) upon registration of
  AECM. Beneficiaries are to inform the competent authorities on the exact location
  of bee boxes, and all bee boxes must be uniquely tagged for identification and
  control purposes.
- All land tied to this AECM must be within 3Km of garigue land. At least two
  parcels with a minimum size of 0.04Ha eligible land attached to this AECM must
  be at least 3Km apart. Beekeepers must mark, upon application, the 'reference'
  parcel, i.e. the parcel where bee-boxes under this AECM will be kept during the
  year, with the exception of the period when these have to be moved elsewhere;
- The farmer must sign a disclaimer stating that: they permit the beekeeper to keep bee boxes on their holding; the farmer retain responsibility for land eligibility conditions and cross compliance obligations for all land linked to this AECM; the farmer will not transfer the land attached to AECM 3 for the duration of the 5 year contract; the farmer only supports one beekeeper.

#### Principles with regards to the setting of selection criteria

No selection criteria are established for AECM. However, in case of budgetary restrictions, priority will be given to applications within Natura 2000 areas.

# AECM 5 - Measure for the implementation of a soil management and conservation plan on a holding

The objective of this measure is to incentivise farmers to prepare and implement a Soil Management Plan (SMP) on parcels which are part of their holding, targeting three







primary soil related threats on a parcel level; erosion, compaction and low soil organic matter.

The support rate is €213.75/t/year OR €1902.36/ha/year. The measure provides for 100% of the eligible rates or costs.

#### Type of investments

Preparation and implementation of a Soil Management Plan (SMP). An SMP must include composting together with at least 2 of the following actions/practices:

- Crop residue incorporation
- Mulching
- Planting of trees to target erosion
- Conservation tillage
- Green manuring
- Cultivation of forage crops
- Plant vegetative filter strip in low lying and runoff areas of fields
- Strip cropping

#### Specific eligibility conditions

- Permanent cropland is ineligible, as well as agricultural land with soil organic matter below 2%.
- Keeping of records of good practices and/or soil analysis regarding organic matter content in soil. Soil analysis is a legal obligation in the context of the nitrates action programme for testing on NPK values not SOM.
- Between the 15<sup>th</sup> October and the 15<sup>th</sup> of March, all un-terraced clay arable land having a slope of 11% or more shall be protected with a soil cover. SMP actions will not be marginalised to only sloping land however will target entire territory.







- Soil retaining rubble walls must be in good condition. Rubble walls must be kept
  in good condition in accordance with an SMP, however it is not a cost
  remunerated factor in the context of this measure.
- Ploughing must be performed parallel to the contours.
- There should be no evidence of burnt stubble in the field. Up to 10m2 only is allowed.
- Good practices (stubble management or manuring) should be carried out to maintain the levels of organic matter on irrigated land. SMP actions will not be marginalised to only irrigated land however will target entire territory.
- Machinery should not be used on the soil when it is flooded or water saturated.
- Unnecessary trampling of the soil with heavy machinery is prohibited.

#### Principles with regards to the setting of selection criteria

No selection criteria are established for AECM. However, in case of budgetary restrictions, priority will be given to applications within Natura 2000 areas.

# AECM 6 - Measure for the integration and maintenance of autochthonous Maltese species

The aim of this measure is to promote the protection, maintenance and enhancement of autochthonous Maltese farm species encouraging an increased level of awareness and responsibility amongst farmers for native breeds.

The support rate for each tree (unit) will be €38.99.

#### Type of investments

Protection, maintenance and enhancement of autochthonous Maltese vegetation species: Carob and Mulberry (AECM 6c).

#### Specific eligibility conditions







- Carob/Mulberry tree found on site;
- Trees must be located on eligible agricultural land, i.e. any agricultural area taken up by arable land or permanent crops. Payment may only be granted on agricultural area which has been maintained in line with annual minimum agricultural activity.

#### Principles with regards to the setting of selection criteria

No selection criteria are established for AECM. However, in case of budgetary restrictions, priority will be given to applications within Natura 2000 areas.

#### **OPFRATION 11.1**

#### Payment to convert to organic farming practices and methods

The measure provides for support for farmers to convert part or all of their production to organic farming practices. Support payments for conversion shall only apply for the first two years following the certification "in conversion to organic" issued by the control authority, for all land which is converted to organic production. The payment rate shall move onto the maintenance rate after the end of the second year of the conversion commitment.

The rate of payment will be €1208.55/ha for land which is under conversion, during the first 2 years of the conversion period. Due to the island's specificities (small size of parcels and holdings meaning that various annual/perennial crops are cultivated on the same reference parcel), Malta will not be applying any differentiation according to crop/production type, but will provide one support rate for all types. The premia paid will be 100% public funds. Support provided shall compensate for all of the additional costs and income foregone resulting from the commitments made..

#### **Type of investments**

Conversion of land to organic production.

#### **Eligibility conditions**

• Eligible land must be in an agricultural area







- Applicants must be active farmers and commit themselves to control management of land for the length of the conversion period
- Support will only be available on those parcels which were not converted to organic farming standards in the past.
- Beneficiaries must commit themselves to maintain the converted land for a minimum period of 5 years

Beneficiaries must respect also the baseline conditions, made of:

- Obligatory standards (Title VI Chapter I of Regulation (EU) No 1306/2013)
- Relevant criteria and minimum actions defined under Article 4(1)c point (ii) and (iii) of Regulation (EU) No 1307/2013
- Relevant minimum requirements for fertilisers and plant protection products use

#### Principles with regards to the setting of selection criteria

No selection criteria for organic farming measure have been established.

#### **OPERATION 11.2**

#### Payment to maintain organic farming practices and methods

The measure provides for support for farmers to maintain organic farming practices for a minimum of 5 years (following the 2 years conversion period described under submeasure 11.1).

The rate of payment will be €555.28/ha for organic land which is under maintenance, during the 5 years following the 2 years conversion period. Malta will not be applying any differentiation according to crop/production type, but will provide one support rate for all types. The premia paid will be 100% public funds. Support provided shall compensate for all of the additional costs and income foregone resulting from the commitments made.

#### Type of investments







Maintenance of already converted organic production.

#### **Eligibility conditions**

- Eligible land must be in an agricultural area
- Applicants must be active farmers and commit themselves to control management of land for the length of the conversion period, and to maintain the converted organic land for a minimum period of 5 years
- Support will only be available for 5 years from the initial certification date of organic certification status, depending on the crop type.
- Other relevant National requirements related to ecological farming.
- Beneficiaries must respect the baseline conditions.

#### Principles with regards to the setting of selection criteria

No selection criteria for organic farming measure have been established.







# ENVIRONMENTAL FUNDING SUPPORT SCHEME FOR VOLUNTARY ORGANISATIONS

Through the Environmental Funding Support Scheme for Voluntary Organisations, the Ministry for the Environment, Sustainable Development and Climate Change offers financial support to non-Government, not-for-profit organisations engaged in environmental conservation and its promotion, in recognition and support of their effort and contribution in the sector, and to incentivise further tangible environmentally-beneficial projects and initiatives that have the potential to:

- improve the state of conservation of the environment;
- promote responsible environmental management and raise awareness about environmental conservation and protection; assist in progressing good environmental management practices;
- restore degraded environments to their pristine condition; combat, and if possible, reverse environmental degradation and habitat deterioration;
- protect, rescue or rehabilitate indigenous wildlife (both terrestrial and marine);
- develop and foster closer collaboration on environmental initiatives between these organizations and the Ministry for the Environment, Sustainable Development, and Climate Change;
- strengthen the set-ups engaged in environmental conservation, environmental restoration and provision of environmentally-beneficial services;
- enhance the provision of community education programmes, including development of educational material, regarding the environment, its appreciation and its conservation; and/or otherwise contribute to any of the above-listed







objectives, inter alia by serving as pilot initiatives for eventual environmental projects, or by catalysing or kick-starting any such project.

The grant shall not exceed 80% of the total estimated cost of the project, and the maximum allocation for each project shall not exceed €10,000 (inclusive of VAT). Funding may be granted to finance projects that also involve commercial elements of a reasonable and limited nature, strictly ancillary to the overriding environmental deliverables of the project, and not constituting the primary consideration behind the project.

The first call was launched in 2016. Further calls are likely to be published in the future.

#### **Type of investments**

#### CONSERVATION AND ENHANCEMENT OF SITES

- Restoration of degraded land, habitats or environmental features to their pristine state.
- Clean-up of land from dumped material, rubble, scrap or refuse.
- Reversal, mitigation or stabilisation of ongoing degradation, to prevent further damage and facilitate recovery or natural regeneration.
- Planting of indigenous or archaeophytic trees or shrubs in appropriate locations, including new or replacement planting.
- Rehabilitation of degraded routes into informal, non-intrusive nature/heritage trails.
- Installation or improvement of context-appropriate protective measures to prevent or minimise damage/degradation caused by vehicular access and trampling.
- Removal of environmentally-incompatible or landscape-intrusive structures, unsightly boundary walls or redundant infrastructure.
- Replacement of existing structures/infrastructure with more environmentallycompatible alternatives (e.g. replacement of ashlar walls in the countryside with rubble walls).







- Repair of damaged soil-retaining rubble walls, or like-with-like reconstruction of damaged soil-retaining rubble walls in line with traditional good practice.
- Acquisition of land for the purpose of environmental conservation.
- Other initiatives aimed at protection, conservation and appreciation of the countryside, the rural landscape and the natural environment.
- Replacement of artificial hard-surfacing or hard landscaping with soft landscaping.
- Undoing of existing environmental damage.

#### CONSERVATION OF FAUNA & FLORA

- Curing and rehabilitation of injured or diseased indigenous trees, flora or fauna for subsequent re-establishment/release in the wild, and ancillary equipment or material
- Protection, rescue or rehabilitation of indigenous wildlife, or conduction of ancillary educational and awareness programmes.
- Propagation of native species of flora and fauna, for preservation of native stock and/or restocking of depleted/threatened wild populations, and ancillary equipment.
- Installation of reversible irrigation systems for initial maintenance of plantations of native trees/shrubs.
- Removal or eradication of ecological pests and invasive species.
- Provision, repair, maintenance or improvement of waste separation facilities, and recycling facilities.
- Installation, repair, maintenance or improvement of sewage/wastewater treatment and greywater re-use facilities.
- Installation, repair, maintenance or improvement of rainwater collection facilities other than the construction of new reservoirs above ground level.







- Installation, repair, maintenance or improvement of surveillance infrastructure (e.g. CCTV systems) for protected areas, dumping sites, and other environmentally-relevant contexts.
- Fire-fighting equipment for environmentally-relevant contexts.

#### ENVIRONMENTAL RESEARCH, INNOVATION AND GUIDANCE

- Preparation of specialist reports to guide/support specific conservation efforts.
- Conduction of controlled experiments/trials in preparation for specific conservation efforts.
- Pilot projects/trials for testing the feasibility or effectiveness of potential environmental initiatives.
- Development of innovative solutions to pre-empt, alleviate or remedy environmental impacts.

#### OTHER

- Continuation of already-ongoing projects/initiatives falling within the abovelisted categories.
- Widening or extension of successfully established projects/initiatives falling within the above-listed categories, onto adjacent areas.
- Hiring of duly qualified persons to manage and operate sites or facilities falling within the above-listed categories.

#### **Eligibility conditions**

• Applicants must be non-Government, non-profit voluntary organizations, with a clear primary focus on environmental conservation. At the date of application, they must be duly enrolled with the Commissioner for Voluntary Organizations and also be compliant with the Voluntary Organizations Act and its subsidiary legislation. Applicants involved in any relevant breach of environment protection regulations or other relevant infringements shall not be eligible for funding.







- Funds shall only be granted for projects that are in line with the terms of the guidelines.
- The project deliverables should have a definite completion timeframe of not more than 24 months from the date of the grant agreement.
- A past beneficiary organisation to this scheme would not be eligible for new funding if any past project is still not completed and is similar to a new application proposal by the same beneficiary.
- Applicants are to ensure that they have stable and sufficient resources and finances to sustain the portion of the project that is not supported by the grant. Applicants must also have the necessary operational capacity, expertise, competence and motivation to undertake and complete the project within the proposed time frame whilst meeting the appropriate technical, environmental and administrative standards.
- Projects, interventions and activities must be covered by all necessary regulatory
  and other permits and must be carried out in full conformity with all applicable
  laws and permits. Potential eligibility for funding under this scheme shall not per
  se constitute sufficient justification for: the granting of any permit which would
  otherwise not be issued; circumventing or influencing any assessment; or nonapplication or relaxation of any appropriate conditions or quality standards.
- Wherever relevant, the beneficiary must provide sufficient evidence of ownership, title, right of use or consent to intervene, and must subsequently keep any structural/physical improvements in good order for a minimum period of 3 years from completion.

#### Principles with regards to the setting of selection criteria

After eligibility screening checks and administrative compliance assessment are completed, proposals undergo technical evaluation stage, according to the following criteria:

Relevance of the proposed project to the priorities of the Fund (100% out of the total of 300% weighting score):







- extent to which the project meets the objectives, parameters, requirements and criteria, and addresses a priority area, as set out in the guidelines and in the call;
- demonstrated need, appropriate feasibility, effectiveness, reliability and sustainability of the proposal in meeting and addressing environmental needs and providing tangible environmental benefits, as well as possibly being complementary with other environmental projects and deliverables;
- wider implications of the project, particularly any other benefits, adverse impacts or consequences on the environment;
- strategic value in achieving the longer-term purposes of the Fund, and the extent to which the project can act as a catalyst for further environmental improvement or for the uptake of good environmental practice.

Quality of the proposal (100% out of the total of 300% weighting score):

- presentation, structure and comprehensiveness of the project plans;
- clarity of focus on achieving the declared outcomes in the most effective;
- soundness of budget and value for money, securing net long-term benefit;
- suitability, effectiveness and reliability of proposed methodologies;
- compatibility of any site-specific interventions with their environmental context;

Capacity of applicant organisation to carry out the proposed project (100% out of the total of 300% weighting score):

- sufficiency of resources of the organisation to carry out the proposed project;
- demonstrated ability, competence and experience and capacity of the organisation to successfully and lawfully implement the project in a timely and effective manner;
- the organisation's track record to meet appropriate environmental standards.

A technical evaluation pass mark of 65% for each criterion is set.





