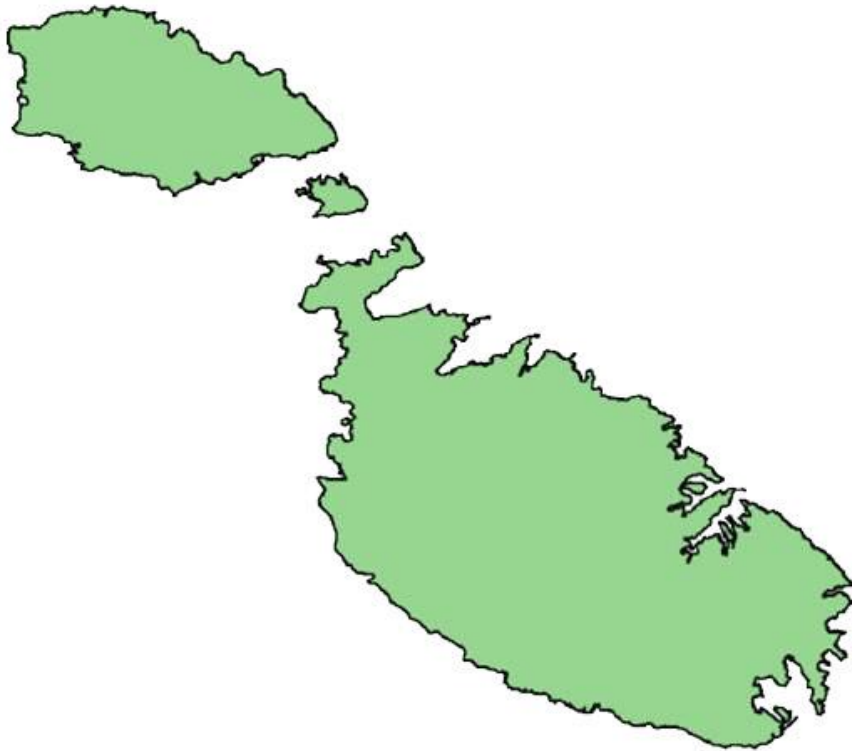


# Fourth National Report to the Convention on Biological Diversity

Republic of Malta  
2010



2010 International Year of Biodiversity



NBSAP  
malta



CBD



Compiled by the  
Malta Environment and Planning Authority



## Executive Summary

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Malta has been a Party to the [United Nations \(UN\) Convention on Biological Diversity \(CBD\)](#) since 29 December 2000. It is also a Party to other UN Conventions, a member of the Council of Europe and a Member State of the European Union, amongst others. As a Party to the CBD, Malta is required to contribute to the achievement of the Convention's three objectives at a national level. These three objectives which underpin the principles of sustainable development are: the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources (Article 1 of CBD [Convention text](#)). Malta has made several efforts, especially in the last decade, in order to protect the natural heritage that it is bestowed with. Such efforts also positively contribute to achieving the CBD's objectives at a national level as further expounded of this report.

Maltese people share their islands and surrounding marine environment with a remarkable variety of species and also depend on various [ecosystem services](#) for their day-to-day comfort and security. Such ecological services are driven by biodiversity and the functioning of healthy ecosystems. Indeed, the myriad of species of flora and fauna that inhabit the Maltese Islands interact with biotic (living) and abiotic (non-living) factors to form inexorably complex communities that play an important role in ecosystem functioning and in the associated ecological services that are indispensable for supporting the Maltese community. Ecosystem functions and associated services include carbon sequestration and production of oxygen during photosynthesis, regulation of soil erosion and hence maintenance of soil fertility and agriculture productivity, screening of certain pollutants, as well as the provision of food and other raw materials. Habitats provide an important refuge for particular organisms, such as mammals, birds, reptiles and insects, including species that have a commercially important role as exemplified by bees, which are crucial for plant pollination and honey production. The natural environment is also of scenic, scientific, educational and recreational value.

Natural and semi-natural plant communities are also intrinsically important from a biodiversity aspect and contribute immensely to Malta's natural heritage. Unfortunately, human activities can threaten this natural heritage and undermine efforts to safeguard it. Protecting Malta's natural heritage is a very challenging task more so when considering the very high population density (1,309 persons per square kilometre - [NSO Demographic Review 2008](#)), the limited assimilative and carrying capacity, and the small overall size of the islands, apart from other environmental concerns that are associated with such insular systems. The land constrained characteristics combined with the various conflicting land uses, poses considerable pressure on Malta's biodiversity and the ecosystem functioning and services upon which a number of sectors and quality of life depend. [Malta's State of the Environment Report \(SOER\) for 2005](#) stated that the "three principal threats to Malta's biodiversity are development in rural and marine areas, introduction of invasive species and exploitation of wildlife". These pressures are also identified in the [2008 SOER](#). The 2005 and 2008 reports and accompanying state of environment indicators (SOEI) for 2005, [2006](#), [2007](#) and [2008](#) deliver clear messages on the state of biodiversity and its drivers of change. A key message that is of concern is that many rare and indigenous species are threatened and continue to decline.

The dire need to protect and conserve nature, unfortunately, is not understood by all members of society. In fact, environmental impacts may only become apparent when adverse effects are felt by various sectors of society, and when impacts have socio-economic repercussions. When this happens remedial action can be financially taxing and consequences of certain impacts can even be irreversible. To this end, conservation action must be pro-active, while policy integration of biodiversity concerns across relevant sectors is also crucial.

A number of sectoral measures are being implemented or are in the pipeline, with the aim of harmonising various sectoral/cross-sectoral aspects with environmental protection. Such measures do positively impact, whether direct or indirectly, biodiversity in Malta. The following statements, documented via the 2005 SOER and accompanying SOEIs for 2006, 2007 and 2008, illustrate this:

- An enhanced legal framework has been put in place to ensure the protection of ecologically important sites in the Maltese Islands, including marine protected areas (SOER 2005 - Key message delivered by the [Sub-report on Biodiversity](#)).
- Trees planted in afforestation projects increased by 14% between 2006 and 2007, with over 33,200 trees planted in 2007 (SOEI 2007 - [Indicator PR4](#)).
- A total of 54 schools, involving 24,500 students, participated in the EkoSkola environmental education programme during the 2006/07 scholastic year (SOEI 2007 - [Indicator PR3](#)).
- Progress has been achieved in setting-up waste management systems such as permitting, improved landfill management, and better enforcement. (SOER 2005 - Key message delivered by the [Sub-report on Waste](#)). A key instrument in Malta's recycling policy is the use of bring-in sites by the public. By end 2007, 197 bring-in sites had been set up in various localities in Malta and Gozo, and the amount of material collected had risen by 24.6% between 2006 and 2007, from 2,255 to 2,810 tonnes (SOEI 2007 - [Indicator WS3](#)).
- There have been significant decreases in the levels of sulphur dioxide and benzene in the air, due to switches to cleaner fuels. Annual average sulphur dioxide concentrations decreased by 41% between 2005 and 2006 (SOEI 2007 - [Indicator A5](#)).
- In 2006 33% of the Maltese landscape was legally protected<sup>1</sup>, almost three times more than in 2000 (SOEI 2006 - [Indicator LS1](#)).
- By end 2008, 13% of the Maltese Islands formed part of the Natura 2000 network of protected sites for habitats and species of European Community interest (SOEI 2008 - [Indicator B3](#)).

Areas for priority action have also been identified in the 2005 SOER and are mentioned hereunder.

- Focusing on environmental impacts that have a serious effect on human health, such as air pollution from particulates;
- Protecting renewable natural resources such as the water table;
- Promoting eco-efficient economic growth by decoupling growth from material resource use and waste generation, and in particular addressing environmentally-damaging trends in the energy and transport sectors;
- Promoting formal as well as community-based environmental education;
- Drawing on public environmental concern to gain support for public and private initiatives, particularly to address countryside and coastal issues;
- Improving the knowledge base to support the development of environmental policy, particularly in the areas of biodiversity, waste and environmental health, by building up a structured ambient monitoring information system for state of the environment reporting;
- Leveraging finance to fund environmental improvements across government and the private sector;
- Better coordination between government ministries and agencies to improve the coherence and effectiveness of policy, by means of early integration of environmental considerations into all government policies and plans;
- Improving capacity for implementation and enforcement;
- Setting up a multi-actor process to develop a government-led environmental action plan to coordinate the activities of the principal players and identify investment priorities and short and medium term objectives and targets in the environmental field.

Although major milestones have been achieved such as in strengthening legislative frameworks, raising awareness, designating protected areas and in building partnerships between entities, future efforts now need to be directed *inter alia* to:

- resource mobilisation in order to address capacity needs of sectoral governmental departments, research institutions, and NGOs that all play a role in the protection of Malta's natural environment;
- coordinated action that drives forth conservation and sustainable use of biological resources; and

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<sup>1</sup> Designated as Areas of High Landscape Value (AHLV) under the provisions of the Development Planning Act

- the need to bridge policy making and scientific research.

A biodiversity monitoring regime needs to be further developed in order to assess the conservation status of species of European Community Importance with an unknown status, and also to assess the status of species of national importance; this will require investing in additional resources. Research is needed to further evaluate the effects of climate change on local biodiversity. Findings of scientific research should also be well publicised and presented in a format that can be used by policy makers. The development of additional indicators to help elucidate habitat and species trends, as well as trends of drivers of biodiversity change, is warranted. The promotion of incentive-driven and community-based conservation can also be encouraged further.

Major leaps have been made in building a national network of protected areas, including Malta's contribution to the EU Natura 2000 network and the Council of Europe's Emerald Network. Instances though arise when legal status and establishment of protected areas do not suffice in guaranteeing the conservation and recovery of endangered species. Ongoing conservation efforts include the restoration of degraded habitats and the removal of invasive species. Agri-environment measures and cross-compliance requirements, as well as [Structure Plan](#) policies contribute towards safeguarding biodiversity in the wider countryside. While various forms of public awareness have been considered throughout the years (e.g. publication of posters, leaflets, workshops, talks broadcasted on mass media, and so forth) it is acknowledged by entities involved in nature conservation that more needs to be done in this field. The 2005 SOER noted that the protected area management process will need to be significantly accelerated if Malta is to reach its target to halt the loss of its biodiversity by 2010. To this end, the Malta Environment and Planning Authority (MEPA) as the competent authority that *inter alia* administers the Environment Protection Act (CAP. 435 as amended) and functions thereto, has submitted an application for funds under the European Agricultural Fund for Rural Development (EAFRD) for a [proposed project](#) to establish a framework for the management of terrestrial Natura 2000 sites in the Maltese Islands and to increase awareness of Natura 2000 amongst the general public and stakeholders..

Malta shares the concerns expressed in the "Mid-term Assessment of Implementing the EC Biodiversity Action Plan" ([COM/2008/864 final](#)) that it is unlikely - on the basis of current efforts - that the overall goal of halting biodiversity loss in the EU by 2010 will be achieved. Malta has taken up various actions that provide for the protection and conservation of biodiversity. Although the process for developing Malta's National Biodiversity Strategy and Action Plan (NBSAP) is still ongoing, it is evident that sectors are becoming more environmentally conscious. Nonetheless, the NBSAP, once developed and formally adopted, will aim to yield results in terms of increased awareness on, and stewardship of, biodiversity, besides driving forth direct biodiversity action across sectors via an integrated approach. The participation of all relevant stakeholders is deemed of essence in order to achieve this.



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## List of Commonly Used Abbreviations in the Report

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4NR	Fourth National Report
AA	Appropriate Assessment
ABS	Access and Benefit Sharing
AFRD	Agriculture and Fisheries Regulation Division
AEI	Area of Ecological Importance
AIA	Advanced Informed Agreement
AU	Apiculture Unit
BCC	Biosafety Coordinating Committee
CA	Competent Authority
CAMP	Coastal Area Management Programme
CAP	Common Agricultural Policy
CBD	Convention on Biological Diversity
DCC	Development Control Commission
DPA	Development Planning Act
EAFRD	European Agricultural Fund for Rural Development
EIA	Environment Impact Assessment
EMU	Ecosystems Management Unit (within MEPA)
EPA	Environment Protection Act
ERDF	European Regional Development Fund
FMZ	Fisheries Management Zone
GN	Government Notice
GSPC	Global Strategy for Plant Conservation
ICZM	Integrated Coastal Zone Management
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
LN	Legal Notice
MAT	Mutually Agreed Terms
MEA	Multilateral Environmental Agreement
MELP	Malta Embellishment and Landscaping Project
MEPA	Malta Environment and Planning Authority
MCFS	Malta Centre for Fisheries Sciences
MMA	Malta Maritime Authority
MoU	Memorandum of Understanding
MPA	Marine Protected Area
MPASC	Marine Protected Area Steering Committee
MRA	Malta Resources Authority
MRRA	Ministry for Resources and Rural Affairs
NBF	National Biosafety Framework
NBSAP	National Biodiversity Strategy and Action Plan
NCSD	National Commission for Sustainable Development
nm	Nautical mile
NMPAS	National Marine Protected Area Strategy

#### Fourth National Report to the CBD - MALTA

NGO	Non-governmental organisation
NRP	National Reform Plan
NSSD	National Strategy for Sustainable Development
ODZ	Outside Development Zone
PA	Protected Area
P.A.R.C.	Department of Parks, Afforestation and Restoration of the Countryside
PIC	Prior Informed Consent
PIM	Petites Iles de Méditerranée
PoW	Programme of Work
RAC/SPA	Regional Activity Centre for Specially Protected Areas
RDB	Red Data Book
SAC	Special Area of Conservation
SAP	Species Action Plan
SEA	Strategic Environment Assessment
SOE	State of the Environment
SOEI	State of the Environment Indicator
SOER	State of the Environment Report
SPA	Special Protection Area
SSI	Site of Scientific Importance
UCA	Urban Conservation Area
UN	United Nations
UoM	University of Malta
WFD	Water Framework Directive
WSC	Water Services Corporation

## 1.0 Overview of Biodiversity Status, Trends and Threats

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*This chapter provides an overview of the status and trends of biodiversity in the Republic of Malta (or the Maltese Islands), with the main aim being to inform decision-makers. References used for building this chapter and other chapters of this report are listed in Appendix II unless otherwise indicated (as hyperlinks or sources for further information). These publications should be referred to for obtaining any further information on the subject of interest.*

### 1.1 Biodiversity of the Maltese Islands

The Maltese archipelago is located in the central Mediterranean and is approximately 93 km south of Sicily and 290 km north of the African Continent. The archipelago consists of a group of three islands aligned in a north west - south east direction: Malta and the two smaller islands of Gozo (Maltese: *Għawdex*) and Comino (Maltese: *Kemmuna*), together with a series of smaller uninhabited islets, which are found scattered around the 271 km coastline of the islands. Islets such as Filfla, St Paul's Islands (Maltese: *Il-Gzejjer ta' San Pawl/Selmunett*) and Fungus Rock (Maltese: *Haġret il-Ġeneral*) are of a very high conservation value in that each harbours endemic species as well as distinct plant communities that are solely restricted to these islets. For instance, a species of giant leek (*Allium* sp. nov. aff. *commutatum*) which may be endemic but remains to be studied, is essentially confined to the small islets. Filfla supports the largest breeding colony (between 5,000 to 8,000 pairs) of the European Storm-Petrel (*Hydrobates pelagicus melitensis*). The Maltese Islands are sloping towards the north east. This has created two types of Maltese coastlines - the sheer cliffs and screes bordering the south west and west of Malta and Gozo in contrast to the gently sloping shores to the north east of Malta.

The Maltese Islands form part of the semi-arid region of the Mediterranean and hence exhibit a bi-seasonal climate, which is typical of the region. The Maltese Islands are heavily influenced by the strength and frequency of winds namely the north-westerly and north-easterly winds. The geology of the Maltese Islands is mainly constituted by different types of limestone deposited during Oligo-Miocene era, with some marls and clays. Limestone is Malta's principal non-renewable mineral resource, whereby Globigerina Limestone (softstone), is used for the manufacture of limestone blocks and other products for use in the construction industry, while Lower and Upper Coralline Limestone is mainly used for road construction and in the production of concrete. The topography of the islands is pretty much low-lying with only low hills and terraced slopes; there are no mountains, rivers or lakes present. The dearth of freshwater has contributed to the overall rarity of freshwater flora and fauna in the Maltese Islands, especially when considering those species that are dependent on a relatively constant supply of water.

A limited, yet diverse, array of ecosystems is found in the islands and its surrounding waters. One can appreciate an interesting variety of flora and fauna, especially when considering the relatively small land area (316km<sup>2</sup>), the limited number of habitat types and the intense human pressure. Indeed, when considering both the land area and the territorial waters, the islands are fairly rich in native plant and animal diversity, as well as habitat diversity. Such natural heritage is of particular importance for the well-being of the Maltese population. It is noteworthy that Malta's isolated yet central position in the Mediterranean has led to some species exhibiting elements of Western Mediterranean, Eastern Mediterranean, and North African and Sicilian affinity (including circum-Sicilian islands). The historical interchange of species has particularly influenced the composition of plants and animals that currently inhabit the Maltese Islands. Indeed, the occurrence, geographic distribution and affinity of such species has been analysed by local ecologists in their study of the biogeography of the Maltese Islands. For instance, the family of the door-snails (Clausiliidae) (such as the Genera *Lampedusa* and *Muticaria*) have been used as the subject matter for investigating evolutionary processes and providing insight to the zoogeography on a Mediterranean level and especially in expounding the biogeography of the Maltese Islands (*vide* for instance Giusti *et al.*, 1995).



The land use pattern of the Maltese Islands is illustrated by mapped CORINE land cover data (Figure 1 and Table 1 show 2006 data). Approximately 19% of land area that is naturally vegetated lies mostly in coastal locations. The land use pattern of the archipelago has remained largely constant between 2000 and 2006; development on the island of Malta is mainly concentrated in the north-eastern part of the mainland, while Gozo is characterised by pockets of development, mainly located in the southern and central part of the island (SOEI 2007 - Land Cover by Type).

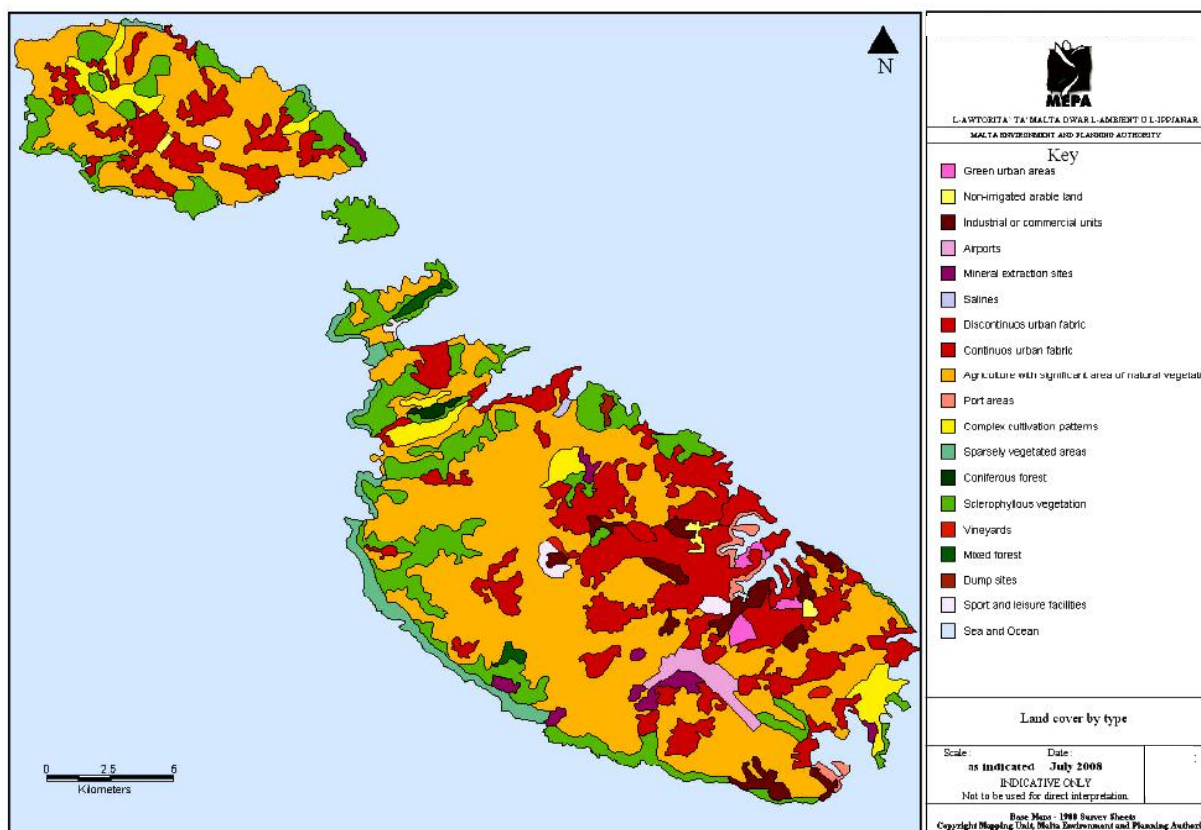


Figure 1 - CORINE Land Cover Map  
Table 1 - CORINE Land Cover Data

CLC DESCRIPTION (2006)	Area (Km <sup>2</sup> )	Percentage
Salines	0.25	0.1%
Vineyards	0.27	0.1%
Dump sites	0.41	0.1%
Non-irrigated arable land	0.59	0.2%
Coniferous forest	0.67	0.2%
Mixed forest	1.43	0.5%
Green urban areas	1.81	0.6%
Port areas	2.32	0.7%
Sport and leisure facilities	3.09	1.0%
Airports	3.72	1.2%
Mineral extraction sites	3.86	1.2%
Continuous urban fabric	3.88	1.2%
Industrial or commercial units	8.11	2.6%
Sparsely vegetated areas	8.11	2.6%
Complex cultivation patterns	10.71	3.4%
Sclerophyllous vegetation	49.69	15.8%
Discontinuous urban fabric	66.51	21.1%
Agriculture with significant area of natural vegetation	149.93	47.5%
<b>TOTAL Maltese Islands (as per CLC resolution)</b>	<b>315.35</b>	<b>100.0%</b>

**1.1.1 Ecosystem and Habitat Diversity**

Maltese ecosystems and habitats can be classified as shown in Table 2. Further details are provided in the following paragraphs.

Natural and Semi-natural Ecosystems	Main Habitats	
Successional Ecosystems	Evergreen woodland	
	Maquis	
	Garigue	
	Steppe	
Inland Water Ecosystems / Freshwater Wetlands	Valley watercourses	
	Permanent natural ponds	
	Permanent natural springs	
	Temporary rainwater ponds/Karstland pools	
Coastal Ecosystems	Adlittoral Habitats	Coastal wetlands/Saline marshlands
		Sand dunes
		Sea cliffs / Boulder screes
	Supralittoral Habitats	Gently sloping rocky shores
		Soft substratum shores
	Mediolittoral Habitats	Habitats on bioconstructions (Vermetid/ Coralline algal rim)
Marine Ecosystems	Infralittoral habitats	Habitats on hard substrata ( <i>Posidonia</i> 'barrier reefs')
		Habitats on soft substrata (Seagrass meadows: <i>Cymodocea nodosa</i> , <i>Posidonia oceanica</i> )
		Habitats on biogenic concretions ( <i>Cystoseira</i> communities, <i>Dictyopterus</i> belts, <i>Corallina elongata</i> belts, <i>Cladocora caespitosa</i> banks)
	Circalittoral habitats	Habitats on hard substrata (Coralligene communities)
		Habitats on soft substrata (Mäerl communities)
Agro-ecosystems	Habitats shaped by different farming practices	Dry farmed land
		Irrigated land
Afforested Areas	Areas that have been planted by man. In the past afforestation led to the planting of alien trees. Nowadays indigenous trees are solely being planted with the purpose of not only creating areas of a recreational value but also to attract fauna to the area.	

**Table 2 - Types of ecosystems and habitats found in Malta**

Malta's most characteristic vegetation communities are those that pertain to the sclerophyll series. The four communities - woodland remnants, maquis, garigue and steppe - undergo vegetational succession in response to both natural and man-made disturbance/stress. More often than not, these habitats occur in a mosaic fashion. Moreover various sub-types of these communities exist - for instance with regards to garigue one can mention phrygana, labiate garigues and pre-desert

scrub. The highest expression is the “evergreen wood”, which has practically disappeared from Malta since the first settlers colonised the islands 7000 years ago, due to the fact that they felled trees for procuring wood (for building and to make tools), and for clearing land for agriculture, apart from having introduced grazing animals that prevented regeneration of saplings. Moreover, trees were destroyed in great numbers during the Turkish invasion in the 16<sup>th</sup> century, namely, to make wood scarce for the defenders. Trees were also felled as a source of wood during both World Wars (see Lanfranco, 2000). What remains nowadays are pockets of evergreen wood remnants generally composed of large evergreen trees such as Holm Oak (*Quercus ilex*) and Aleppo Pine (*Pinus halepensis*). The various microclimates and shelter available to species inhabiting this habitat type, means that such species are unique to this habitat. *Buskett* qualifies as the only locality which can be said to represent “mature woodland” in the Maltese Islands.

The second stage is the “maquis”, dominated by a variety of small trees and large shrubs, including trees introduced in antiquity in view of their usefulness. A particularly interesting maquis community is that dominated by Malta’s national tree - Sandarac Gum Tree (*Tetraclinis articulata*). Although once a widespread species, Sandarac Gum Tree is now rather rare in the natural environment. Maquis also constitutes a rich undergrowth of large herbs and lianas. The structural complexity of this habitat supports a diverse biota and hence various niches are formed. The third stage is the “garigue”, a shrub community that typically forms on karstic substrate particularly on large expanses of limestone with shallow pockets of soil and rock fissures, in exposed areas. Garigue also constitutes a rich diversity of herbaceous plants, while serving as a home to around 500 species of flowering plants. This habitat also supports many rare species including orchids and irises. The fourth stage is the “steppe”, which supports a high diversity of herbaceous plants but lacks woody species. It is in fact represented by grasses, thistles, umbellifers and geophytes and is characterised by a uniform layer of soil which is low in nutrients. Steppe is the pioneering stage, but can also derive from maquis and garigue as a result of some form of degradation, such as due to fire and grazing. Grasslands are important for many invertebrates and also serve as nesting sites for certain bird species.

Apart from the sclerophyll series, other significant terrestrial ecosystems include freshwater and coastal ones, mostly being represented by minor yet more specialised habitat types, some of which have suffered extensive range contraction over the years. Such ecosystems are considered to be very crucial from a conservation and ecological point of view, supporting native communities that are of high conservation value, while playing important ecological roles.

Freshwater ecosystems are essentially vulnerable systems in Malta as in other parts of the world. They include valley watercourses, permanent ponds and springs, and temporary rainwater rockpools. Watercourses are the commonest type of freshwater habitat on the islands, albeit restricted in range. While being one of the most species-rich habitats, it is also one of the most intensively exploited. Some of the plants that colonise this habitat are rare on a national scale; the most well-known animal from this habitat is the only native amphibian found in Malta - the Painted Frog (*Discoglossus pictus pictus*). In general, the greater part of local flora and fauna reliant on water during some part of their lifecycle are found in valley watercourses, which are generally dry during certain months of the year whilst water flow is normally limited to the wet season. Certain valleys however drain springs originating from the perched aquifers and retain some surface water even during the dry season. The few remaining permanent springs support unique species, being very rare and with a restricted distribution, such as the endemic subspecies of the Mediterranean Freshwater Crab (*Potamon fluviatile lanfrancoi*). These pools are of great local interest since they represent the only natural standing water bodies in the islands. Rockpools, which are pools in karstic limestone depressions that originate as a result of flowing water, and, which collect freshwater in the wet season, support a number of rare species specialised to this habitat.

In view of the relatively small size of the Maltese archipelago, the entire State can be considered to be essentially coastal. Indeed, all habitat types are under some degree of maritime influence. Coastal ecosystems *per se*, include transitional coastal wetlands, saline marshlands, sand dunes, rupestral habitats and rocky shores, amongst others. Saline marshlands are very scarce in Malta, with only a few extant noteworthy marshes, and another few sites which are highly degraded. Biota that inhabit marshlands have become specialised to withstanding harsh environmental conditions that predominate. They have done this through changes in behaviour and physiology and hence are

considered as habitat specialists restricted to this type of habitat. For instance, a number of invertebrates are only known from this habitat type. Species found in local marshlands include for instance Sharp Rush (*Juncus acutus*), Sea Rush (*Juncus maritimus*), Sea Clubrush (*Bolboschoenus maritimus*) and Common Reed (*Phragmites australis*), amongst others. Each marshland is also typified by its own characteristic habitat features and assemblage of species. Different species assemblages colonise transitional coastal wetlands during different periods of the year. For instance, during the dry period, conditions favour brackish water species since water reaching these depressions is seawater carried by wind and wave action. Coastal wetlands in Malta are important as stop-over sites for migratory avifauna. At present, there are very few extant marshes that are noteworthy in terms of conservation value, the largest being *L-Għadira* (Malta). Transitional coastal wetlands are then represented by only a few, minor examples. Over the years many sand dunes have been lost and, nowadays, this habitat type is extremely restricted in the Maltese Islands. Presently there are only few that still persist and are amongst the rarest and most threatened of local ecosystems. The dune system at *Ir-Ramla* (Gozo) is the largest and most representative in the Maltese Islands and has suffered the least alteration by man. The dune system is characterised by the embryo dune, *i.e.* the most seaward zone of the dune where perennial plants are first encountered, followed by the mobile dune. The latter is characterised by the following sequence of sub-zones: a low dune (sparsely vegetated by plants such as Sand Couch Grass - *Elytrigia juncea* and, Sea Holly - *Eryngium maritimum*); a semi-consolidated dune (characterised by Carnation Spurge - *Euphorbia terracina*, Sea Daffodil - *Pancratium maritimum* and, Spiny Echinophore - *Echinophora spinosa*), and a fixed dune (vegetated with a dense thicket of salt tolerant shrubs such as Sand Restharrow (*Ononis natrix* subsp. *ramosissima*)). Maltese sand dunes also have characteristic invertebrate fauna namely nematodes, annelids, several insects, amphipods, and isopods.

Rupestral communities are both of national and international importance. Maltese sheer seaside cliffs and scree vary from 0m up to 250m in altitude and are composed of coralline limestone, with calcareous soils. They extend along the south-west coast of the main islands and are an important natural habitat since they harbour a variety of interesting species, including endemic plants, with Maltese Everlasting (*Helichrysum melitense*) being solely restricted to the western cliffs of Gozo, and found nowhere else in the world. Cliffs also support interesting fauna, including one of the rarest animals found in Malta - the endemic Maltese Door-Snail (*Lampedusa melitensis*), which is restricted to crevices and cavities in boulders that have detached from cliff edges. Coastal cliffs are also noteworthy since they provide shelter and a breeding habitat for many bird species, including seabirds, such as Cory's Shearwater (*Calonectris diomedea*); Yelkouan Shearwater (*Puffinus yelkouan*) and European Storm-Petrel (*Hydrobates pelagicus melitensis*). When compared to other terrestrial habitats, cliff communities have suffered moderate anthropogenic effects, and various areas have been relatively untouched by man and these serve as particularly important refugia for endangered and rare species including endemic ones. Indeed, coastal cliffs immensely contribute to the natural heritage of the Maltese Islands, and are deemed of high priority for protection, conservation and management.

Low-lying rocky coasts are colonised by halophytic vegetation, which grows in isolated patches in shallow saline soil which accumulates in rock pockets, with the species mainly forming the vegetational community referred to as *Crithmo-Limonietaea*, which also include a number of endemic species.

As regards the marine environment, different macrobenthic assemblages are found in marine waters around the Maltese Islands and include communities of photophilic algae on hard substrata; meadows of Neptune Grass (*Posidonia oceanica*); meadows of Lesser Neptune Grass (*Cymodocea nodosa*), photophilic and sciaphilic communities; communities of bare, well-sorted sand, and mærl communities. Seagrass meadows, and communities based on *Cystoseira* species, are possibly the most important natural habitat in Maltese waters in terms of productivity since they provide shelter and a place for breeding and feeding for numerous marine species.

Man-made habitats shaped by various actions and activities brought about by man since the time the first settlers set foot on the islands also characterise the physiognomy of the islands. Agricultural land in the Maltese Islands accounts for just over half (51%) of total land area. Agroecosystems are shaped by the different farming practices employed: dry farmed land (Maltese: *Raba' baġħli*) or irrigated land (Maltese: *Raba' saqwi*). Agroecosystems are supported by organisms that are

important in nutrient cycling, pest and disease regulation, pollination, soil and water conservation, and maintenance of soil fertility. In turn, agriculture has played an important role in moulding the rural landscape via a patchwork of terraced cultivated and fallow fields. The traditionally built stone rubble walls which delineate land parcels, serve as important ecological corridors for instance for native reptiles, such as Moorish Gecko (*Tarentola mauritanica*), Maltese Wall Lizard (*Podarcis filfolensis*), Ocellated Skink (*Chalcides ocellatus*), Western Whip Snake (*Coluber viridiflavus*), and Leopard Snake (*Elaphe situla*), together with species such as shrews. They also serve as a refuge for insects and molluscs, amongst others. Rubble walls, as stabilising structures, are important in soil conservation. Agricultural land provides a food supply for insectivorous birds that breed in the Maltese Islands, like Sardinian Warbler (*Sylvia melanocephala*), Spectacled Warbler (*Sylvia conspicillata*), Corn Bunting (*Emberiza calandra*), and Short-Toed Lark (*Calandrella brachydactyla*). Very rare plant species are also found in fallow fields such as Wild Tulip (*Tulipa sylvestris*).

The urban fabric, which covers approximately 22.3% of land area, is also important for certain species that have managed to adapt to living alongside man and use man-made structures as refuges. Such species include various birds (e.g. Spanish Sparrow - *Passer hispaniolensis*), various invertebrates (e.g. House Centipede - *Scutigera coleoptrata*), and various reptiles (e.g. Turkish Gecko - *Hemidactylus turcicus*, Leopard Snake - *Elaphe situla* and Maltese Wall Lizard - *Podarcis filfolensis*). Other species that are encountered within urban environments include House Mouse (*Mus musculus*), shrews, and bats, with the latter roosting in old and abandoned dwellings and bastions.

#### 1.1.2 Species Diversity

Various in-depth accounts of Maltese biodiversity have been undertaken over the years and can be traced all the way back to the 1800s. Such research, both published and unpublished, has considerably advanced the local knowledge of Malta's natural heritage. Isolation and long-term evolution have led to some species being strictly endemic to the Maltese Islands. Sub-endemic species also occur, and include Siculo-Maltese, Hybleo-Maltese and Pelago-Maltese endemics. An estimate of the number of endemics and sub-endemics for some taxonomic groups is given in [Table 3 \(overleaf\)](#). However, many species are still under study. Apart from the intrinsic importance of endemic species, such species contribute a great deal to the uniqueness of Malta's natural heritage.

Considering the flora, vascular plants are the most taxonomically diverse and are also the most studied group. Malta's indigenous flora amounts to some 1,200 species of flowering plants with around 25 strict endemics (2%). The Maltese plant endemics: Maltese Rock Centaury (*Palaeocyanus crassifolius*), Maltese Cliff-Orache (*Cremnophyton lanfrancoi*) and Maltese Everlasting (*Helichrysum melitense*) are included amongst the top [50 Mediterranean Island Plants at the brink of extinction](#), since they are critically endangered. They are in fact strictly protected in Malta, and are also included as species of European Community Importance. The least diverse group of flora is that of the gymnosperms whereby only two conifer species are native. Considering marine plant diversity, this is mainly represented by micro-algae and macro-algae (seaweeds), including a variety of taxonomic groups, such as blue-green, brown, red and green algae. Five species of seagrasses are recorded - with two species possibly extinct (Source: Lanfranco, 1989 in the Red Data Book). *Posidonia oceanic*, which is endemic to the Mediterranean, forms one of the most important marine habitats types in Maltese territorial waters, as it serves as a feeding and nursing ground for various fauna that seek shelter amongst the blades of its dense foliage.



FAUNA	
Invertebrates (excluding insects) <sup>2</sup>	ca. 27 endemic species ca. 14 sub-endemic species
Insecta <sup>3</sup>	ca. 51 endemic species ca. 36 sub-endemics Many species are still under study
Vertebrates <sup>4</sup>	1 endemic subspecies of shrew ( <i>Crocidula sicula calypso</i> ) 5 endemic subspecies of Maltese Wall Lizard ( <i>Podarcis filfolensis</i> )
FLORA	
Fungi (macro and microfungi) <sup>5</sup>	ca. 134 possibly endemic species - further research is required Some groups such as the microfungi are understudied.
Lower Plants (12 Lichens and 2 Bryophyta)	ca. 14 endemic species Many species are still under study
Higher Plants (Angiosperms)	ca. 25 endemic species

**Table 3 - Number of Endemic and Sub-endemic Species**

When considering fauna indigenous to the Maltese Islands, one can mention the immense diversity of insects, this being the most taxonomically represented group, with Coleoptera and Lepidoptera recorded being in the region of 600 for each group. New records are continually being discovered. Considering vertebrates, while a significant number of birds and marine bony fish occur (over 200 for each group), the number of mammals is very limited - less than 30 species, and mostly represented by bats and cetaceans, with large land mammals being practically inexistent nowadays. One of the reptilian species that has received most attention nationally is the sub-endemic Maltese Wall Lizard (*Podarcis filfolensis*), with one endemic subspecies found on the main islands of Malta, Gozo and Comino, while other endemic subspecies are confined to islets: one to Filfla, one to *Selmunett* and one to Fungus Rock; it is also possible that a further subspecies is present on the islet of Cominotto. In view of the scarcity of freshwater ecosystems in Maltese (rivers being entirely absent), freshwater organisms are very limited in number, with for instance only one amphibian and one fish being known from freshwaters. Marine fauna are then particularly diverse, with a considerable variety of annelids and molluscs. Amongst the marine fauna of the open sea, of particular interest are various cetaceans and marine turtles, together with a variety of sharks and rays. Endemic marine organisms are also present, such as Maltese Topshell (*Gibbula nivosa*).

One can also appreciate the importance of soil biodiversity. Indeed, a myriad of highly diverse species live in Maltese soils. [Malta's soil information system \(MALSIS\)](#) was a project funded under the LIFE, Third countries. The two-year project was completed in February 2004 and was implemented by the National Soil Unit within the Ministry for Resources and Rural Affairs (MRRA). Prior to the MALSIS project, the only soil survey information available for the Maltese Islands was the 1:31,680 scale map and accompanying report produced by Lang (1960) for the then Colonial Office. In MALSIS, a precise grid survey at 1km x 1km interval was conducted on Malta, Gozo and Comino and data was recorded manually on field recording forms from 272 sampled sites. The information recorded on the field survey form enabled the soil to be classified according to the World Reference Base for Soil Resources (WRB). The MALSIS grid survey has identified 19 soil units, from 7 soil reference groups (Leptosols, Arenosols, Vertisols, Calcisols, Luvisols, Regosols and Cambisols) according to the WRB soil classification system ([Figure 2](#)). (For more information refer to [Sammut 2005](#)).

<sup>2</sup> Estimates based on Adi Associates Environmental Consultants & Ecoserv (2005). *Biodiversity Action Plan. Tender for the setting up of a list of Threatened and/or endemic invertebrates of the Maltese Islands, excluding insects*. Report commissioned by the Malta Environment and Planning Authority as part of the Biodiversity Action Plan Programme and the Habitat Inventorying Programme. (Unpublished).

<sup>3</sup> Estimates based on AIS Environmental Ltd. (2005). *Biodiversity Action Plan. Tender for the setting up of a list of Threatened and/or Endemic Insects*. Report commissioned by the Malta Environment and Planning Authority as part of the Biodiversity Action Plan Programme and the Habitat Inventorying Programme. (Unpublished).

<sup>4</sup> Estimates based on Adi Associates Environmental Consultants & Ecoserv (2005). *Biodiversity Action Plan. Tender for the setting up of a list of Threatened and/or Endemic Vertebrates excluding Fish, Birds, Cetaceans and Bats*. Report commissioned by the Malta Environment and Planning Authority as part of the Biodiversity Action Plan Programme and the Habitat Inventorying Programme. (Unpublished).

<sup>5</sup> Estimates based on Red Data Book for the Maltese Islands

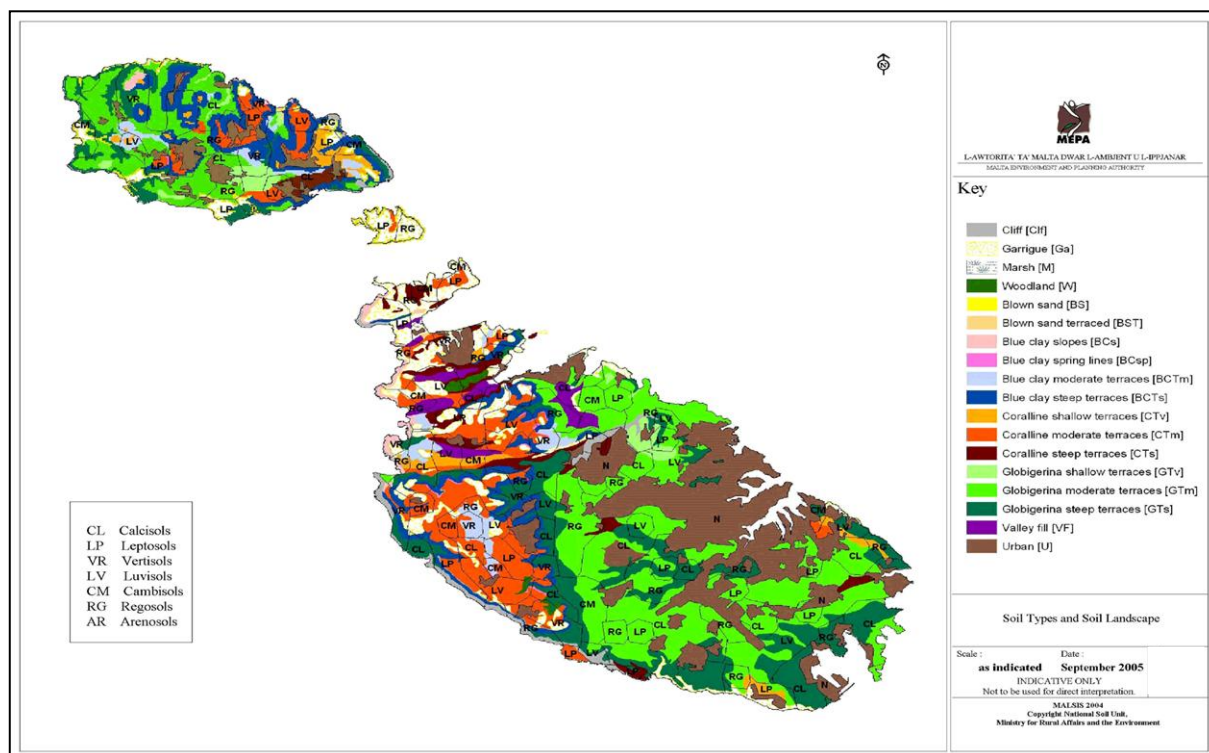


Figure 2 - Soil types in Malta  
(A higher resolution map is available [here](#))

Such soil types act as a habitat and food source for soil microorganisms, microfauna, macrofauna, megafauna, microflora and macroflora. Important habitat types in terms of soil biodiversity include woodlands of various types. A number of soil-inhabiting species have been found in soil at 10-30cm depth, often under trees, many of which have been recently described as new species to science, and endemic to the Maltese Islands. Argillaceous soils (clay slopes) and karst soil pockets in garigue, rocky steppes and *rdum* are also important for a wide array of fauna, including threatened and endemic species such as the very rare Filfla door-snail, (*Lampedusa imitatrix*), the Maltese door-snail (*Lampedusa melitensis*) - a critically endangered endemic species, and, the *Ghar Lapsi* top snail (*Trochoidea gharlapsi*) - a vulnerable endemic snail. Wooded areas and garigue are also important for various fungi. Many fungi live in soil and are mostly inconspicuous to the naked eye. An exception is provided during the fruiting period of the so-called macrofungi, which produce various fruiting bodies, of different forms and shapes. The soil of kamenitzae, a specialised habitat type, is also important for its biodiversity. Kamenitzae are essentially karstic structures in Coralline Limestone that fill with freshwater during the wet season forming temporary rock pools. Since this habitat is of an ephemeral nature, because of the percolating nature of coralline limestone, these pools house a transient flora and fauna which grows rapidly and is capable of reproducing in the limited time available. Such flora and fauna persist from one cycle to another as seeds, eggs or cysts found in the shallow soil layer in the karstic structure that eventually fills with water. Important species thriving in such resting stages in the soil include: the rare Maltese horned pondweed (*Zannichellia melitensis*) endemic to the Maltese Islands, the rare Maltese Waterwort (*Elatine gussonei*), the very rare Mediterranean Star-fruit (*Damasonium bourgaei*), and the very rare Tadpole Shrimp (*Triops cancriformis*), one of the oldest species inhabiting this planet. Specialised habitats, including saline marshlands, freshwater wetlands and other humid areas, as well as sand dunes, also house important species, including many rare and endangered beetles, which depend on the soil /sand. (For more information refer to [Stevens 2005](#)).

### 1.1.3 Genetic Diversity

Information on genetic diversity is available when considering certain habitat types. Considering woodlands, native tree stands are important since they are the last remaining native genetic stocks, with certain trees being very old and hence listed as “trees of antiquarian importance” by [Government Notice 269 of 1933](#) published under the provisions of the Antiquities (Preservation) Act (Act XI of 1925 as amended), which protects all trees older than 200 years. These include Holm Oaks estimated to be between 500 - 900 years old. The work of Borg (1922) provides an extensive account of plant varieties in Malta, particularly with respect to trees.

As indicated earlier, freshwater habitats are very restricted in Malta. Hence, most of the native species reliant on water during some part of their life cycle are found in valley watercourses, implying the importance of these habitats in terms of both species and genetic diversity. Added to this is the significance of rock pools when noting the distinctive flora and highly specialised fauna that they support. The genetic diversity of saline marshlands is noteworthy since each such marshland is typified by its own characteristic habitat features and species assemblages, with a number of invertebrates known only from this habitat type.

When considering plant and animal genetic resources for food and agriculture, modern varieties of both plants and livestock have been imported throughout the years to Malta in favour of local varieties. This resulted in Maltese genotypes being eroded or entirely lost. Nevertheless, certain varieties of cultivated crops remain that are considered to be autochthonous. For this reason, characterisation trials have recently been launched for selected varieties. Trees on farms believed of local origin include possibly more than one variety of peach, possibly more than one variety of citrus (such as the Maltese blood orange), the local cultivar “*Bambinella*” (Small Malta June Pear), olive, and vines (two indigenous varieties: *Ġellewża* [red] and *Girgentina* [white]).

Project Primo aims at propagating the indigenous olive variety called *Tal-Bidni*, planting of *Tal-Bidni* olive orchards, and establishing an olive oil production industry. The [Annual Report for 2008](#) issued by the [Ministry for Resources and Rural Affairs](#) (MRRRA) reports production of around 1,000 *Tal-Bidni* olive trees during the year. *Tal-Bidni* olives were harvested from olive trees growing on farm grounds for the first time and an oil sample was obtained.

The Viticulture and Oenology Unit within the Department of Agriculture was granted a research programme under FP7 by the Malta Council for Science and Technology. The project, which deals with the identification of local vine varieties, will be carried out in conjunction with the University of Malta. It will mainly focus on the Maltese indigenous varieties of vines - *Girgentina* and *Ġellewża*.

There has been a growing interest in the reintroduction and preservation of autochthonous livestock breeds. Amongst these one can mention the Maltese Ox (*‘Il-Baqra Maltija’* - critically endangered indigenous breed listed in the [FAO’s World Watch list for Domestic Animal Diversity for the year 2000](#)), the Maltese goat, the Maltese sheep (a small population still exists in parts of the country), the Maltese ‘black’ chicken (renowned for its prolific production of large white eggs and its reluctance to brood) and the Maltese turkey (well adapted to backyard production systems). Of interest is also an endemic subspecies of honey-producing bees (*Apis mellifera rutneri*) which is phenotypically different from other Mediterranean bees. The Apiculture Unit (AU) within the Department of Agriculture assists all registered beekeepers in Malta and Gozo in all aspects of beekeeping, including any bee disease problems that might occur. A new mating station has also been set up. The main work at the mating station at Romeo Romano Gardens involves the breeding of selected drones of the Maltese taxon in order to congest the surrounding congregation area and hence guarantee as much as possible the controlled mating of selected Maltese queen bees with these drones. This work aims to conserve the local honey bee subspecies. The AU is also collecting samples of Maltese bees from different apiaries for further analysis to determine the level of hybridisation of *A. m. rutneri* with imported *Apis mellifera* in the Maltese Islands (Source: MRRRA Annual Report 2008).

There are various wild relatives of cultivated species known in the Maltese Islands. These include for instance, the wild Sulla (*Hedysarum coronarium*) known in Maltese as “*Tan-nebbieta*” found

mainly on clay slopes in the north and northwest of Malta. One can also mention Wild Leek (*Allium commutatum*) and Maltese Leek (*Allium melitense*) which grow in rocky steppe, Wild Artichoke (*Cynara cardunculus*), Wild Carrot (*Daucus carota*), and Fennel (*Foeniculum vulgare*).

The [Crop Husbandry Unit](#) within the Department of Agriculture is responsible for the setting up and execution of trials and experiments performed both in the open field and also under protected cultivation. These trials consist in the growing and demonstration of vegetables, herbs, flowers, fruit trees and forage crops. In 2008, various crops were grown besides the maintaining of fields and surroundings.

When considering wild relatives of domesticated species, the Maltese race of the European Rabbit (*Oryctolagus cuniculus*<sup>6</sup>) is noteworthy for its distinct red colour. Although found in the wild in small numbers on the larger islands, the rabbit is found in considerable numbers on the smaller island of Comino.

#### **1.1.4 The Importance of Malta's Biodiversity**

The importance of Maltese biodiversity has been echoed in various works, with authors expressing the necessity to safeguard our natural heritage. This is crucial noting that biodiversity is a vital resource. Benefits derived from ecosystem services, such as provision of food and raw materials, freshwater and clean air, are indeed considered to be indispensable life-support services. These greatly contribute to the human well-being and quality of life of the Maltese population.

The importance of Maltese biodiversity also extends far beyond our national boundaries. For instance, certain native species are regionally and internationally important because they may be endangered on a European scale or have a restricted Mediterranean distribution (even though some are locally relatively common). For instance, Filfla supports one of the largest breeding colonies of the European storm-petrel (*Hydrobates pelagicus*) in the Mediterranean. Some taxa with a restricted distribution were also first described from Maltese material, and for these the Maltese Islands are the type locality.

Apart from the intrinsic value of biodiversity in the Maltese Islands, other values are considered imperative: social, aesthetic (e.g. observing wildlife and bird watching), recreational (e.g. natural areas are sought by families during weekends following a hectic week), educational, scientific (e.g. noting that various species are of particular evolutionary and biogeographical interest in a small island State), ecological (e.g. biodiversity plays a vital ecological role that is translated in various ecosystem services that are important to the Maltese, such as the maintenance of soil fertility and insect pollination), cultural (e.g. endemic species contribute a degree of uniqueness to the Maltese natural environment and its identity), commercial and economic (sectors like agriculture, fisheries and tourism, are ultimately dependent on biodiversity).

For instance the following communities are associated with particular services:

- Steppic grasses are important for grazing although this is not that much practised anymore in Malta.
- Garigue is an important habitat for aromatic shrubs that are used as herbs, such as Rosemary (*Rosmarinus officinalis*); other species have been also associated with medicinal properties such as Maltese Savory (*Satureja microphylla*), which is documented as a diuretic (e.g. by Lanfranco, 1993); the thyme component (*Thymus capitatus*) is important in honey production as it is a foraging species for the honey bee; *Thymus capitatus* is also documented in literature for its medicinal properties by Lanfranco (1993), such as used for sore throat, cough, bronchitis, asthma, arthritis, amongst others.
- Maquis includes trees which were introduced in antiquity in view of their usefulness e.g. pomegranate and almond trees; carob and olive trees are still exploited for the making of carob julep/syrup and olive oil;

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<sup>6</sup> *Oryctolagus cuniculus* is an introduced species

- Woodland remnants are important for air quality in terms of carbon sequestration and oxygen production; soil stabilisation; in the water cycle (evapotranspiration); shelter provided by the canopy; amenity and recreational value;
- Valley watercourses are a very important ecosystem in view of the availability of water; important also for drying higher ground during the rainy season and thence in preventing floods;
- Saline marshlands act as a water catchment area and are important for coastal protection. Reed beds that colonise this habitat are also important in filtering pollutants apart from creating a refuge for certain rare species such as the freshwater crab (*Potamon fluviatile lanfrancoi*);
- Sand dunes are important in the prevention of beach erosion;
- Soil biota are essential in nutrient cycling (by decomposers) and in the maintenance of soil fertility, which in itself is important for agriculture productivity;
- Certain species are also particularly important (and hence are termed “keystone species”) such as insect pollinators of plants including crops and hence play a crucial role in food security,

The use of local biological resources brings various benefits to the Maltese community and also the local economy (recreation and tourism). Use of local biological resources (as food, medicinal products) provides the country with a degree of self sufficiency and minimises the reliance on the importation of foreign produce and resources thereby minimising the risk of introduction of alien species and potential plant pests which can devastate Maltese agriculture and horticulture, not to mention ecosystems. Local produce can also have an important place in niche markets.

As a natural resource, soil provides a number of important functions in the context of ecosystem processes, such as providing a growth and support medium for plants; storing carbon and water; buffering of ions; water purification, as well as the breakdown and cycling of organic matter and the nutrient supply to soil biota. Such functions contribute to soil quality and the health of ecosystems and form a basis for land and agricultural productivity and viability. The legal mandate for soil protection in Malta stems from the [Fertile Soil \(Preservation\) Act \(CAP 236, as amended\)](#). National policies and measures, including agri-environmental measures under the Malta’s Rural Development Plans (for the past programming period [2004-2006](#), and the current one covering the programming period [2007-2013](#)) have also been directed to mitigating processes that induce soil erosion. Some standards for good agricultural and environmental condition (GAEC) also relate specifically to the protection of rubble (stone) walls, which are traditional soil retaining structures. The ‘Rubble Walls and Rural Structures (Conservation and Maintenance) Regulations, 1997’ ([LN 160 of 1997](#), as amended by [LN 169 of 2004](#)) also play a role in soil protection.

Bearing in mind the afore-mentioned, it is appreciated that the maintenance of biodiversity is of utmost importance, and that hence it is the responsibility of the Maltese community to ensure the conservation and sustainable use of components of biodiversity. It is deemed imperative to ensure this for both present and future generations.

## 1.2 Assessment of Conservation Status

### 1.2.1 Species

Although the state of knowledge of species present in Malta has been rather stable over the last decades, a number of new records have indeed been published, while others await publication. Research has thus far concentrated on the more popular groups (birds, plants, insects and fish). Although some less popular groups did receive attention, (e.g. slime moulds and branchiopods), knowledge on certain taxonomic groups (mostly marine) still remains poor. Appraisals of the conservation status of species of the Maltese Islands have been carried out intermittently since the 1970s, but the first official detailed assessment was made in 1989 with the publication of the ‘Red Data Book for the Maltese Islands’. Over the past few years, work has been initiated on updating the RDB, which has involved the commissioning of several studies. A general review of the status and

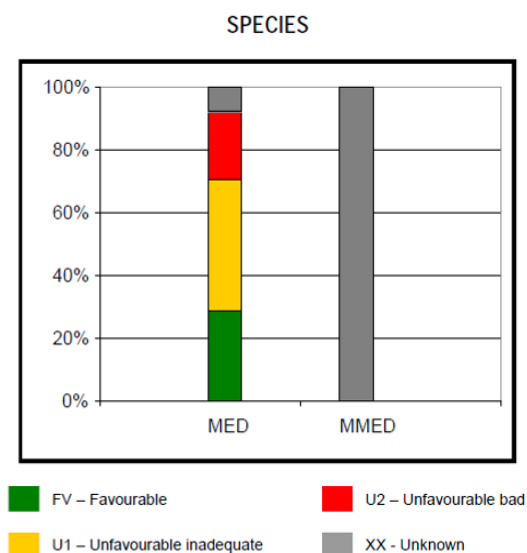


trends of selected groups of species was considered in various State of the Environment Reports (SOERs) and State of the Environment Indicators (SOEIs).

The status of breeding birds has also been reviewed by the [SOEI 2007 - Indicator on the Status of breeding Birds](#). Examples of threatened breeding bird species include the following European Species of Conservation Concern; Turtle Dove (*Streptopelia turtur*), Common Quail (*Coturnix coturnix*) and Short-toed Lark (*Calandrella brachydactyla*). Malta also holds over 10% of the world population of the globally near threatened Yelkouan Shearwater (*Puffinus yelkouan*), over half of the Mediterranean sub-species of the European Storm-petrel (*Hydrobates pelagicus melitensis*) and an estimated 4,500 pairs of Cory's Shearwater (*Calonectris diomedea*). The latest account of 34 species of breeding birds (as well as a further 3 introduced species) is available on [Malta's Breeding Bird Atlas 2008](#).

Though all Maltese endemic species that merited protection were afforded legal protection by 2003 (some species were protected way before 2003), many species remain threatened. The high population density coupled with conflicting land and sea use practices has inevitably affected the conservation status of a number of species, with resilient species adapting better to such changes. Species that are particularly threatened are taxa with extremely restricted distribution and high habitat specificity, including species characterised by small fragmented populations and/or inhabiting habitat that are restricted in distribution.

Further evaluation has been carried out for those species of European Community interest as part of reporting obligations under Article 17 of the EC Habitats Directive (Council Directive 92/43/EEC). Malta's Report was submitted to the European Commission in 2008 and a [national summary](#) has also been published. [Figure 3](#) shows the conservation status of species of European Community interest that are found in the Maltese Islands, following an assessment carried out in 2007, which took into consideration 55 species. [Figure 4](#) shows the overall assessment of conservation status by species category. The status of 37 percent of species listed in the Habitats Directive is still unknown. Furthermore, 44 percent of species have a bad or inadequate conservation status.



**Figure 3 - Conservation status of species of European Community interest that are found in the Maltese Islands (2008)**

(MED - Mediterranean Region; MMED - Mediterranean Marine Region)

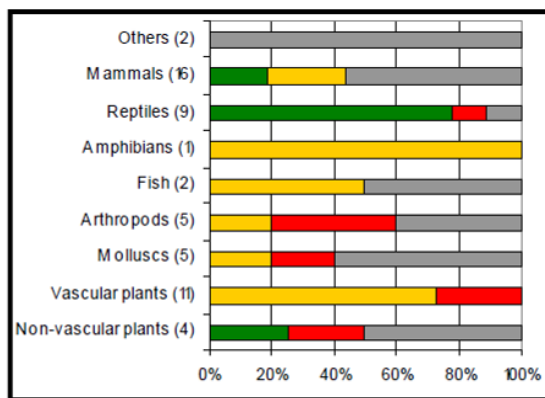


Figure 4 - Overall assessment of conservation status by species category (2008)  
(The number in brackets indicates the number of occurrences)

The conservation status of endemic and sub-endemic plant species that are of community interest was also assessed through the Article 17 Report submitted as per requirements of the EC Habitats Directive. Ten such species are listed in the Annexes of the Directive. The categories which could be assigned to a species were: Favourable (0% of species), Unfavourable - Inadequate (80% of species), Unfavourable - Bad (20% of species), Unknown (0% of species). Figure 5 shows the distribution of these species when considered altogether, using 1x1km grids. It can be clearly noted that the distribution of these species is mostly along the coastal cliffs, since certain species are confined to such a specialised habitat. The distribution map also covers areas where the habitat type consists of garigue/phrygana, which supports orchid species. On the other hand, the distribution map does not cover the central and southern areas of mainland Malta - this is clearly in view of the extent of urbanisation in these parts.

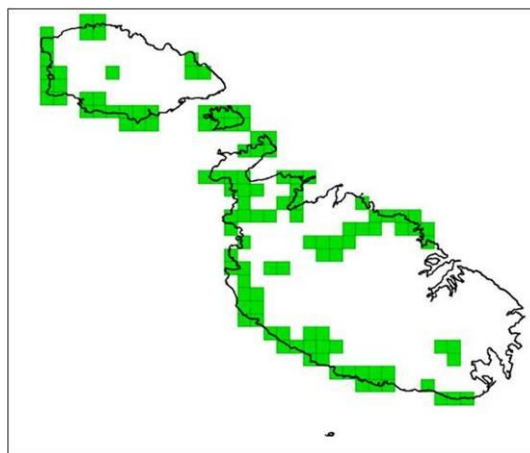


Figure 5 - Distribution endemic and sub-endemic plant species of European community interest (2008)

Native trees in the Maltese Islands form the following communities: Mediterranean sclerophyllous woodlands and maquis; dry valley-bed woodlands; riparian woodlands; coastal maritime woodlands; and semi-natural woodlands. Despite the small size of the islands, the variety and diversity of Maltese trees is impressive, amounting to about 60 species. Nonetheless, 77% of these are rare, threatened, or are not found anymore (Figure 6). Noting that 11% of Maltese trees are already extinct from the wild, and that two-thirds (66%) of Maltese trees are rare and/or threatened, an increased effort is required to reduce this trend, noting that a good number of Maltese trees are on the verge of extinction.

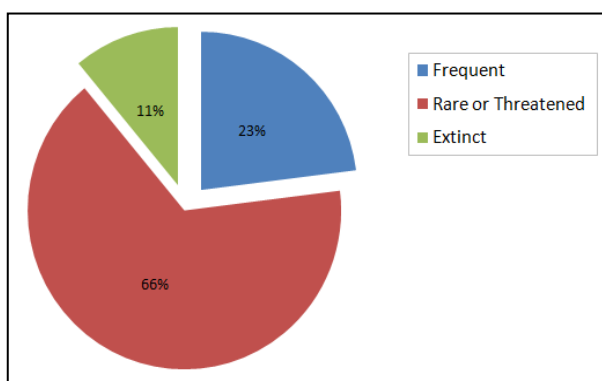


Figure 6 - Status of Native Trees (MEPA 2008)

Means to effectively enforce current regulations and to further promote the use of Maltese trees in afforestation, reforestation and ecological restoration projects needs to be sought.

Lepidoptera of the Maltese Islands have been considered as part of a commissioned study, which included a review of their distribution and status. An assessment of 87 possibly threatened species of Lepidoptera was hence carried out following such study, assigning a threat category, where this applied. Each species was assessed utilising the IUCN Criteria. Threatened species were included under Critically Endangered, Endangered or Vulnerable. This led to the results depicted in Figure 7. Apart from 5% being extinct, 58% are indeed threatened, with a high degree having been assigned the worst threat status *i.e.* “Critically Endangered”. For instance, if one considers the threatened species<sup>7</sup> only, almost 50% of these are critically endangered. Only 13% are “Near Threatened” or of “Least Concern”; there was not enough data to assess 23% of the species (+ 1 species which was not evaluated). The latter implies that actually more species that were initially assessed would possibly qualify as threatened, apart from the fact that 10% are close to being threatened if their situation remains as it is or if it worsens.

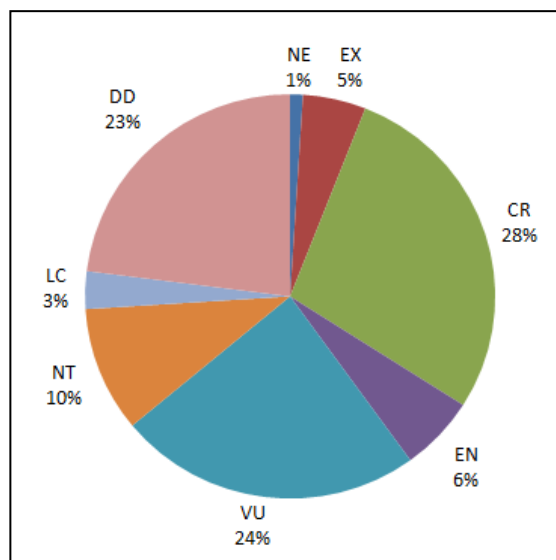


Figure 7 - Status of Butterflies and Moths in Malta (MEPA 2008)

### 1.2.2 Habitats

The Article 17 assessment mentioned above in Section 1.2.1 has also resulted in the preparation of 31 datasheets on habitats: 26 terrestrial and 5 marine. Such assessment serves as baseline for monitoring habitat change in future years. Figure 8 provides a summary of the conservation status assigned to such habitats in Malta - with a few habitat types having a favourable conservation status. Figure 9, overleaf provides further details. It is apparent that further studies are needed to obtain the necessary details for assessing certain habitat types, especially, when considering those for which the conservation status is yet unknown.

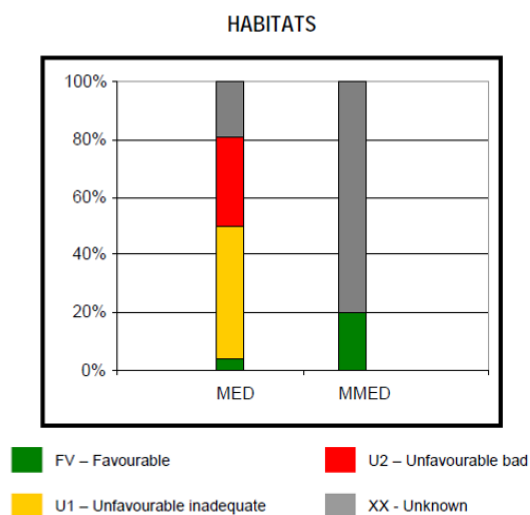
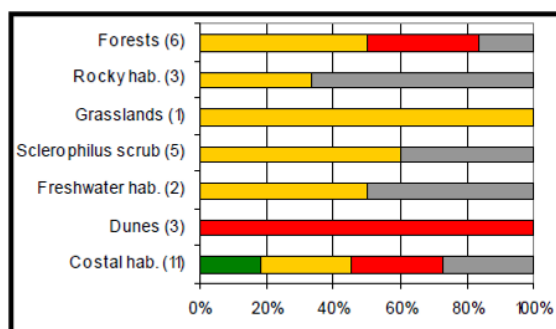


Figure 8 - Conservation status of habitats of European Community importance (2008) (MED - Mediterranean Region; MMED - Mediterranean Marine Region)

<sup>7</sup> Threatened species = Critically Endangered (CR) (48%) + Endangered (EN) (10%) + Vulnerable (VU)(42%)



**Figure 9 - Overall assessment of conservation status by habitat category (2008)**  
(The number in brackets indicates the number of occurrences)

The marine habitat type dominated by *Posidonia oceanica* meadows is indeed the only marine habitat for which the conservation status could be assigned, since details were available following a survey carried out in 2002. The aim of this survey was to map the important habitats formed by this species and to determine its extent and character (health status) in Maltese waters. The survey results indicate that *Posidonia* meadows were in a good state of health, with the channels between Gozo-Comino and Comino-Malta being very densely covered. *Posidonia oceanica* colonises approximately 1.4% of the 12nm Maltese territorial waters. Although some meadows have locally regressed, eroded or have experienced heavy epiphytic loads and reduction in shoot density, the status of this species and its meadows in the Maltese Islands is still overall relatively good and healthy. This survey has paved the way to select potential marine protected areas, especially to form part of the EC Natura 2000 network, noting that *Posidonia* beds is a priority habitat type in Annex I of the EC Habitats Directive.

### 1.3 Trends

A biodiversity monitoring regime needs to be developed further in order to assess the conservation status of species of European Community Importance with an “unknown” status, and also to assess the status of species of national importance. Notwithstanding this, a number of indicators have been considered. Indeed, various indicators are included in this chapter (Sections 1.1 and 1.2 of this chapter). However, time series comparisons are limited since mostly baseline data is available, though Malta is active in gathering data for the development of indicators based on time series. Following the publication of the [State of the Environment Report for 2005](#) (SOER 2005), which was already based on indicators, State of the Environment Indicators (SOEI) were published in [2006](#) and in [2007](#). These included indicators related to biodiversity, amongst other environment sectors. The publication of the 2008 SOER/SOEI is forthcoming. Over the years, different assessments have been carried out by different entities and individuals in relation to biodiversity in the Maltese Islands. Appraisals related to the status of species and habitats have been published through the years, with the latest assessment of habitats and species of EU importance being considered through the Article 17 Report submitted to the EC in 2008 as afore-mentioned in section 1.2. An indication of trends based on information gathered via the SOER process is provided hereunder.

#### 1.3.1 Population Trends

[Table 4, overleaf](#) (reproduced from the [2005 SOER](#) - Section on Biodiversity) provides an overview of the status and trends of groups of species.

<p><b>PLANTS</b></p> <p>Significant reduction in species diversity since early 1980s, particularly in sand dunes, freshwater wetlands and saline marshlands. Some species possibly extinct while others vulnerable or endangered, mainly through habitat loss or modification. The endemic Maltese Everlasting is now found only in Gozo. Increased species diversity is observed in disturbed habitats, possibly due to invasions by alien species that threaten native flora, including endemics.</p>	<p><b>MAMMALS</b></p> <p>Variable trends and information available. Bats are generally declining. The Algerian Hedgehog seems stable, although the impact of vehicles needs more detailed assessment. Rats are increasing, particularly in urban areas, disturbed habitats and smaller islands, to the detriment of flora and fauna. Wild rabbit populations increasing in some areas, particularly Comino, which may negatively affect the regeneration of native plants and animals. Status of marine mammals is unknown.</p>
<p><b>FUNGI</b></p> <p>Many species are confined to few areas, particularly forest remnants and selected garigue sites, of which a good number are protected. Increased human disturbance in key areas leading to possible decline.</p>	<p><b>FISHERIES</b></p> <p>Mediterranean dolphin fish stocks appear unaffected by fishing pressure so far. Stocks of tuna and swordfish apparently diminishing. Large pelagic species account for over 60% of annual value of landings - these are heavily dependent on international management efforts. Fishing activities or effort distribution in the 25 mile Fisheries Management Zone should not be increased to ensure their sustainability and safeguard fish “refugia”.</p>
<p><b>INVERTEBRATES</b></p> <p>Studies of a few well-known groups such as insects (e.g. butterflies) indicate general decline. Molluscs also declining in particular habitats, especially water-associated species, and some endemics threatened by human-associated disturbance and development.</p>	<p><b>BIRDS</b></p> <p>33 bird species breed in Malta, of which some 20 retain constant numbers. Recent increases in breeding pairs for the Tree Sparrow are noted, while Corn Bunting numbers continue to decrease drastically. Spectacled Warbler still breeding in very low numbers but seems to be spreading slowly in Gozo. Most breeding in protected areas (<i>Buskett</i> and <i>Simar</i> sanctuary), where Moorhens, Little Ringed Plovers and Reed Warblers increased recently. Reed Warbler breeding records increased from 1 (at <i>Salina</i>) in 1995 to 8 (at <i>Simar</i>)<sup>8</sup> in 2004.</p>
<p><b>AMPHIBIANS &amp; REPTILES</b></p> <p>Populations overall appear stable, although many species still vulnerable and/or subject to illegal exploitation. Despite lack of detailed assessment, endemic wall lizard populations appear stable, with the possible exception of those at <i>Selmunett</i>. Some snake populations appear to be increasing. Although marine turtles accidentally captured or injured are now being rehabilitated, their status needs assessment.</p>	
<p>Sources: MEPA, Malta Centre for Fisheries Science, M. Gauci/Birdlife Malta, Coleiro 2002, Coleiro 2003, Bertrand <i>et al</i> 2000, Camilleri 2002, Camilleri 2005, MaLiRa Group 2004, Mosteiro and Camilleri 2005, MEPA Nature Protection Unit 2005</p>	

**Table 4 - Population Trends of Certain Taxonomic groups (MEPA 2006)**

As an update to the status of birds presented in table 4, it is noted that 34 bird species were recorded as either “Confirmed” or “Probably Breeding” in Malta in 2008, along with a further 3 introduced species. Recent increases in breeding success rates for Yelkouan Shearwater at their main colony at *Rdum tal-Madonna* are also noted. On the other hand, Corn Bunting numbers continue to decline. Spectacled Warbler still breeds in lower numbers than historically, but appears to be increasing again in Gozo. Many of the rarer species breed in protected areas (such as *Buskett* Bird Sanctuary and *Ghadira* and *Simar* Nature Reserves), where species such as Little Grebe, Little Ringed Plovers and Reed Warblers retain their only Maltese breeding populations. Reed Warbler breeding records increased from 1 (at *Salina*) in 1995 to 8 (at *Simar*) in 2004. In 2009, the first pairs of Common Kestrel were confirmed breeding after an absence of 15 years. In that year, Pallid Swifts bred for the first time, Grey Wagtail returned after an absence of 150 years, and two species of finch were confirmed breeding (Common Chaffinch and Linnet).

<sup>8</sup> *Is-Simar* and *Salina* are both protected areas.



### 1.3.2 Habitat Trends

Although garigue is one of the most common vegetation communities in the Maltese Islands it is fast declining due to land conversion. Specialised habitats such as valley watercourses and sand dunes have suffered extensive range constriction over the years due to habitat loss, modification and deterioration.

As part of the process of developing Malta's NBSAP, a questionnaire-based survey was carried out directed at research and education entities, NGOs and environmental consultancy agencies. The following question was posed - "How would you rate the severity of the following direct drivers of biodiversity change in Malta (Legend: 1-not of concern; 2-low; 3-moderate; 4-high; 5-very high)?" Table 5 shows how respondents replied to the question.

Driver	Type of Ecosystem	1	2	3	4	5
Biotic exchange/Invasive alien species	Marine	14%	0%	43%	29%	14%
	Freshwater	0%	0%	0%	43%	57%
	Terrestrial	0%	0%	0%	57%	43%
Anthropogenic Climate Change	Marine	14%	0%	0%	57%	29%
	Freshwater	14%	0%	14%	43%	29%
	Terrestrial	14%	0%	29%	29%	29%
Changes in land use and cover - habitat transformation	Marine	17%	0%	33%	17%	33%
	Freshwater	0%	0%	0%	17%	83%
	Terrestrial	0%	0%	0%	0%	100%
Harvest and resource consumption - overexploitation	Marine	0%	0%	14%	14%	71%
	Freshwater	0%	0%	14%	29%	57%
	Terrestrial	0%	0%	14%	14%	71%
Nutrient Loading/Pollution	Marine	0%	0%	14%	43%	43%
	Freshwater	0%	0%	14%	14%	71%
	Terrestrial	0%	0%	0%	57%	43%

**Table 5 - Responses to the question - "How would you rate the severity of the following direct drivers of biodiversity change in Malta (1-not of concern; 2-low; 3-moderate; 4-high; 5-very high)?"**

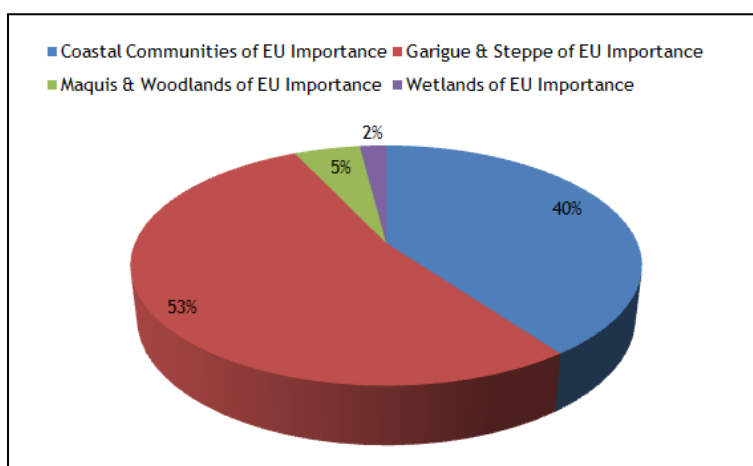
CORINE land cover data provides a depiction of the extent of natural and semi-natural ecosystems compared to the country's area (see Figure 1 in this chapter). When comparing the CORINE land cover maps of 2000 and 2006 and associated data, the SOEI of 2007 reports that the land use pattern of the archipelago has remained largely constant between 2000 and 2006.

Considering sectors related to biodiversity that take up land/sea area, namely agriculture and aquaculture, it can be stated that:

- the share of organic farming is still minimal in Malta, apparently the lowest amongst European countries (*vide* for instance EEA technical report 5/2009 - [Progress towards the European 2010 biodiversity target](#) - indicator fact sheets - page 58);
- taking into account the aquaculture production relative to length of coastline, it appears that the value for Malta is amongst the lowest when considering European countries (*vide* for instance EEA technical report 5/2009 - Progress towards the European 2010 biodiversity target - indicator fact sheets - page 62).

Habitat protection aimed directly at species conservation has been adopted in Malta in later years, with legislation being published for the first time in 2003 in this respect. The habitats concerned are especially those of European Community interest, listed in Annex I of the EC Habitats Directive. These include coastal and marine communities, garigue and steppe, maquis and woodland

formations, and wetlands. An assessment was carried out in 2005 to estimate the cover of these habitats within Natura 2000 sites. Figure 10 give a summary of the results.



**Figure 10 - Percent cover of the main habitat groups of EU Importance in Natura 2000 sites (MEPA 2006)**

Of the 32.24% cover of the four habitat groupings when considering the total area covered by Natura 2000 sites (as at 2005), Figure 10 depicts that 53% of this is comprised of garigue and steppe communities. These include the very rare thorny burnet phrygana based on *Sarcopoterium*, found only in one locality across the Maltese Islands. It also includes other more frequent habitat types as are the Maltese Spurge communities based on the endemic *Euphorbia melitensis* and the Mediterranean xeric grasslands. Coastal communities<sup>9</sup> comprise the second-largest group - 40% of the habitat groups of European community importance. On the other hand, maquis and woodland communities, and wetlands, together comprise only the remaining 7%, clearly depicting the fact that these habitat types are restricted across Malta.

As per above, habitats of European importance constitute about a third of the Natura 2000 sites that had been proposed up to 2005. The other areas are occupied mostly by natural habitat types of national importance, these including ericaceous heaths, labiate garigue, ermes, andropogonid grass steppes, rock-rose communities, together with other maquis, garigue and steppic communities. Buffer zones, mostly comprised of agricultural land, are also present within the sites. It should be noted that additional sites were and are being considered for inclusion in the Natura 2000 network, including marine sites. Additionally, further surveys are necessary to enhance the habitat mapping that has been carried out to date. Nevertheless, the change in relative cover of the different habitat types is not expected to change drastically.

### **1.3.3 Environmental Trends**

Indicators documented on the State of the Environment for the years [2005](#), [2006](#) and [2007](#)<sup>10</sup>, have been compiled by the [Malta Environment and Planning Authority](#) (MEPA) in partnership with the [National Statistics Office](#) (NSO). These indicators draw upon information and data deriving from environmental monitoring programmes carried out by various government agencies including the Malta Resources Authority, the Malta Standards Authority and the Department for Environmental Health. The indicators are considered according to 10 policy areas ([Table 6](#)). The faces accompanying the indicators have been awarded according to two criteria, related both to the overall dimensions of the problem and the recent trend.

<sup>9</sup> In this assessment, sites/data analysis excluded marine habitats, except for a minimal cover of reefs which in this case were included with terrestrial sites.

<sup>10</sup> For detailed accounts of these indicators please refer to [www.mepa.org.mt/state-environment](http://www.mepa.org.mt/state-environment). The publication of the 2008 SOEIs is forthcoming.



Positive outlook



Outlook unclear or positive but limited, insufficient to reach targets



Negative outlook

Indicator	2005	Indicator	2006	Indicator	2007	Indicator	2008
<b>Theme: Driving Forces for Environmental Change</b>							
Population trends and projections		Population trends and projections		Population changes		Population Density	
Sectoral contributions to GDP		Sectoral contributions to GDP		Sectoral contributions to GDP		Sectoral contributions to GDP	
Housing permissions		Housing permissions		Housing permissions		Housing permissions	
Vehicle fleet per capita		Vehicle fleet per capita		Vehicle fleet per capita		Vehicle fleet per capita	
Sectoral electricity consumption		Electricity Generation		Electricity Generation		Electricity Generation	
Daily number of tourists		Daily number of tourists		Daily number of tourists		Daily number of tourists	
/	/	Area covered by Operational Quarries		Area covered by Operational Quarries		Area covered by Operational Quarries	
<b>Theme: Air</b>							
Particulate matter concentrations		Particulate matter concentrations		Particulate matter concentrations		Particulate matter concentrations	
Ozone concentrations		Ozone concentrations		Ozone concentrations		Ozone concentrations	
Benzene concentrations		Benzene concentrations		Benzene concentrations		Concentration of benzene and other volatile organic compounds	
Nitrogen oxides concentrations		Nitrogen oxides concentrations		Nitrogen oxides concentrations		Nitrogen dioxide concentrations	
Sulphur dioxide concentrations		Sulphur dioxide concentrations		Sulphur dioxide concentrations		Sulphur dioxide concentrations	
<b>Theme: Climate Change</b>							
Greenhouse emissions by sector		Carbon dioxide emissions from energy generation		Greenhouse emissions by sector		Greenhouse gas emissions by sector	
Energy intensity of growth		Energy intensity of growth		Energy intensity of growth		Energy intensity of the economy	
<b>Theme: Water/Freshwaters</b>							
Water consumption by source		Water consumption by sector		Billed water consumption		Billed water consumption by sector	
Nitrate and chloride levels at abstraction boreholes		Nitrate and chloride levels at WSC pumping stations		Nitrate and chloride levels at WSC pumping stations		Nitrate and chloride levels at WSC pumping stations	
Groundwater quantitative status		/	/	/	/	/	/
<b>Theme: Water/Coastal and Marine Environment</b>							
Bathing water quality		Bathing water quality		Bathing water quality		Bathing water quality	
<b>Theme: Waste/Resources &amp; Waste</b>							
/	/	/	/	/	/	Domestic material consumption	
Waste generation by type		Waste generation per unit GDP		Waste Generation		Waste Generation	
Municipal waste generation per capita		Municipal waste generation per unit GDP		Municipal waste generation per capita		Municipal waste generation per capita	
Waste separation		Waste recycled		Waste recycled		Waste recycled	

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and recycling							
<b>Theme: Land</b>							
Land cover by type		/	/	Land cover by type		/	/
% 1Km coast built up		% 1Km coast built up		/	/	/	/
% Organic farming		% Organic farming		% Organic farming		% Organic farming	
/	/	/	/	Vacant dwellings		/	/
<b>Theme: Soil</b>							
Soil organic matter		Soil organic matter		/	/	/	/
Concentrations of heavy metals in soil		Lead concentrations in soil		/	/	/	/
Risk of soil erosion		Soil salinity		/	/	/	/
<b>Theme: Landscape</b>							
Areas protected for landscape value		Areas protected for landscape value		/	/	/	/
<b>Theme: Biodiversity</b>							
Natural areas designated & managed		Natural areas designated & managed		Natural areas designated & managed		Natural areas designated	
Percentage of total species of international importance per group protected by national legislation		/	/	/	/	/	/
Status of selected groups of species		Status of selected groups of species		Status of breeding birds		Status of Maltese habitats and species of European community importance	
/	/	Sites proposed or designated as part of the Natura 2000 Network		Sites proposed or designated as part of the Natura 2000 Network		Sites designated as part of the Natura 2000 Network	
<b>Theme: Policy Responses</b>							
Public environmental expenditure		Public environmental expenditure		Public environmental expenditure		Public environmental expenditure	
Take-up of voluntary schemes		Take-up of voluntary schemes		Take-up of voluntary schemes		/	/
/	/	Schools covered by Ekoskola		Schools covered by Ekoskola		Schools covered by Ekoskola	
/	/	Number of trees planted in afforestation projects		Number of trees planted in afforestation projects		/	/
/	/	/	/	/	/	Sites requiring IPPC permits	

Table 6 - Trends depicted by State of the Environment Indicators

## 1.4 Type of Threats

The high population density and the growing demand for natural resources in a land constrained insular system such as Malta, has inevitably adversely affected the conservation status of a number of species and habitats alike. Threats to Maltese biodiversity have been reviewed in detail via the state of environment reporting process (1998, 2002 and 2005). The State of the Environment Report for Malta 2005 (SOER 2005) acknowledged development in rural and marine areas, the introduction of non-native species that may compete with native biodiversity, and the exploitation of wildlife, as the main threats to local biodiversity. Four economic sectors are considered to have the most significant impacts on the environment in general: housing, transport, energy generation and tourism (SOER 2005). One should appreciate that various actions have been considered in order to control such threats, especially in the last 15 years or so. The conservation status of native and endemic flora is thwarted by an intricate suite of threats that act concurrently to the detriment of Maltese biodiversity (Table 7). Such threats can be essentially traced to changes in land use and mismanagement of natural resources. Ensuing adverse impacts include those associated with pollution, nutrient overload, land fragmentation, soil erosion, anthropogenic climate change and biological invasions.

<u>Bioinvasions</u>	<u>Inappropriate management of natural resources</u>
<ul style="list-style-type: none"> <li>▪ competition for resources</li> <li>▪ alteration of habitat and environmental regimes (such as water, fire, soil)</li> <li>▪ homogenisation</li> <li>▪ loss of native species</li> <li>▪ introduction of diseases</li> <li>▪ hybridisation</li> </ul>	<ul style="list-style-type: none"> <li>▪ excessive water abstraction and alteration of hydrodynamism affecting freshwater ecosystems</li> <li>▪ redirection of water courses adversely affecting inland water biodiversity</li> <li>▪ afforestation using non-native species (happened in the past, but no longer practised) - although the use of specimens of foreign provenance might result in genetic pollution</li> <li>▪ abandonment of agricultural land</li> <li>▪ high input agriculture</li> </ul>
<u>Pollution (Diffuse &amp; Point Source)</u>	<u>Land conversion (including illegal land reclamation and encroachment)</u>
<ul style="list-style-type: none"> <li>▪ nutrient overload and eutrophied water bodies</li> <li>▪ biomagnification and bioaccumulation of chemicals such as heavy metals</li> <li>▪ other toxic effects</li> <li>▪ acid deposition</li> </ul>	<ul style="list-style-type: none"> <li>▪ loss of species and natural habitat</li> <li>▪ habitat degradation</li> <li>▪ fragmentation and edge effects</li> <li>▪ range contraction of species</li> <li>▪ local extirpation of species especially those exhibiting high habitat specificity</li> </ul>
<u>Illegal Capture and Trade of Species</u>	<u>Climate Change</u>
<ul style="list-style-type: none"> <li>▪ incidental capture and killing</li> <li>▪ illegal, unreported and unregulated fishing</li> <li>▪ direct persecution of species as an act of vandalism</li> <li>▪ illegal trade</li> <li>▪ indiscriminate methods of collection</li> </ul>	<ul style="list-style-type: none"> <li>▪ changes in species migration and breeding times</li> <li>▪ increased stress</li> <li>▪ shifting habitats</li> <li>▪ extinction of species with high habitat specificity</li> </ul>
<u>Overexploitation of Species</u>	
<ul style="list-style-type: none"> <li>▪ selective removal of species</li> <li>▪ dwindling populations in view of rate of removal being far greater than rate of natural population recovery</li> <li>▪ changes in food web structures</li> </ul>	<ul style="list-style-type: none"> <li>▪</li> </ul>

**Table 7 - General Threat Categories and Related Issues, including Examples of Ensuing Impacts on Biodiversity**



Following is an overview of some of the threats to biodiversity in Malta.

**Land Conversion:** Land development in Malta is of major concern particularly given the very limited land area (316 km<sup>2</sup>). Since land is Malta’s primary non-renewable resource it is an important investment good, with construction occupying an important role in the economic development of the islands (although it has a relatively small contribution to the GDP). Undoubtedly, this leads to negative impacts on habitats and species; land use takes up natural and agricultural land area which is important for native biodiversity to flourish. One must say that various efforts have been made to identify those locations where important habitats and species thrive. Despite the fact that various measures have indeed been successful, land development is still a direct and indirect driver of biodiversity loss; transport and mineral extraction are two drivers of biodiversity loss even in undeveloped areas. It has been estimated that between 1990 and 2006, about 2.5km<sup>2</sup> of land area which consisted of sclerophyllous vegetation, agricultural land and non-irrigated arable land, has been converted to discontinuous urban fabric, industrial or commercial units, mineral extraction sites and dumping sites. Being small in size and having a high population density, land use in the Maltese Islands is regulated through the Development Planning Act which also establishes a Structure Plan and subdivides Malta into different development zones with also include “out of development zones” (ODZ). Development in areas within ODZ is limited in accordance with Structure Plan policy and related guidelines and is currently being strengthened through new legislation which is presently being discussed at Parliament.

**Invasive Alien Species:** Throughout the years alien species have been intentionally and unintentionally introduced into the Maltese Islands. The entry and spread of alien species has however increased in Malta along with trends in trade, travel and living standards, and also possibly climate and land use change. When considering alien plants, a number of these have become major invaders of Maltese ecosystems, for instance Castor Oil Plant (*Ricinus communis*) invading watercourses. When considering alien fauna, those of major concern include pests of commercially important species and crops. An invasive species that has caused considerable damage in the past months is Red Palm Weevil (*Rhynchophorus ferrugineus*) [first recorded in Malta in July 2007]. Various actions were taken to inform the public and to control its spread (refer to Plant Health Department [portal on published articles](#)). A European Commission Decision ([2007/365 EC](#)) has also been adopted to address this species. Nationally, two studies have been commissioned by the Malta Environment and Planning Authority (MEPA) to set up lists of alien flora and fauna that are already found in the Islands. The study on alien flora, which addressed slightly less than 500 alien taxa recorded from the Maltese Islands, has revealed that the commonest mode of introduction has been through horticultural trade ([Figure 11](#)). About 3% of species are possibly native while about 1% are archaeophytes (i.e. species not native to the Maltese Islands but introduced before 1492). At least 2.7% of the alien flora species, identified so far, are known to be invasive.

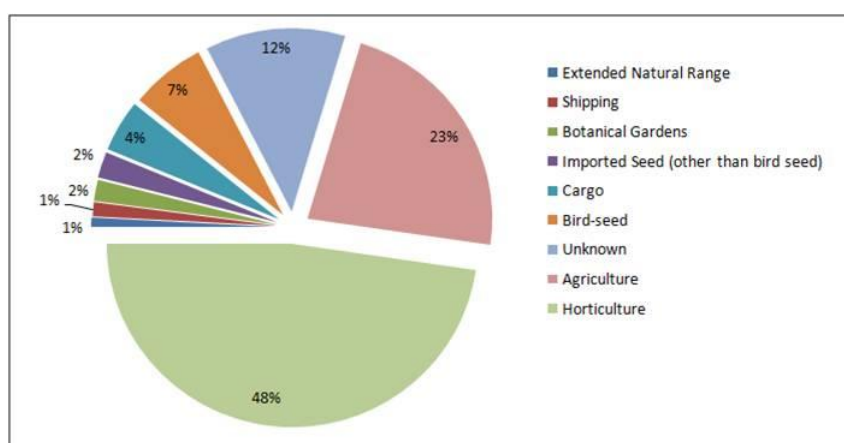


Figure 11 - Mode of introduction of alien flora into the Maltese Islands (MEPA 2006)

These commissioned studies, which are still pending publication, have also put forward recommendations to deal with biological invasions. Such recommendations need to be integrated in a national strategy. There are ongoing eradication/control initiatives, albeit mainly targeting

protected areas. A legal framework for addressing invasive species is also in place. A national strategy would not only strengthen implementation of legal frameworks, but would also contribute towards targeting priority areas for remedial action, strengthening preventive measures and addressing policy gaps, such as the control of alien introduction via marine vectors and pathways. Moreover, information extracted from the commissioned studies will be used to develop Malta's National Database on Alien Species.

**Genetically Modified Organisms (GMOs)** do not currently pose threats to biodiversity in Malta. As an EU Member State, Malta regulates the contained use of Genetically Modified Micro-organisms (GMMs), the release of GMOs into the environment, and their placing on the market. MEPA has established a [Biosafety Coordinating Committee \(BCC\)](#), assigned with the role to review and assess applications sent by the EC for consultation with Member States, as well as any possible applications originating from Malta. The BCC is also requested to comment on draft documents, legislation and safeguard clauses. MEPA received no applications for the experimental release of GMOs in Malta that have not yet been tested in other countries. Further work has been done with respect to the obligations of the [Cartagena Protocol on Biosafety](#), ratified by Malta on 5 January 2007. In this respect, Malta has finalised the [National Biosafety Framework for Malta](#) and established the [Biosafety Clearing House](#) - an information exchange mechanism with the aim of facilitating sharing of information on, and experience with, living modified organisms.

**Overexploitation of wildlife** is a burgeoning concern as this engenders loss of biodiversity. Quantitative data on exploitation levels is however lacking, excluding data on commercially exploited fish, which is collected on a monthly and annual basis by the National Statistics Office based on fish that is landed [Such data is published online by NSO - e.g. [Censuses of Fisheries](#); [Data on Fish Landings](#)] [See also [Section 3.2](#) for data gathering activities by AFRD and MCFS]. Legislation is in place to regulate the exploitation of species. However, further monitoring is needed in order to assess whether the current rate of exploitation is negatively affecting the conservation status of some species. Species that are threatened and hence may become extinct if exploited are legally strictly protected in Malta. Such species include, amongst others, Painted Frog (*Discoglossus pictus pictus*); a number of *Iris* species such as Southern Dwarf Iris (*Iris pseudopumila*); Maltese Pyramidal Orchid (*Anacamptis urvilleana*) and other species of orchids; Date Mussel (*Lithophaga lithophaga*); Loggerhead Turtle (*Caretta caretta*); and conspicuous marine invertebrate species such as sponges, corals, and molluscs. With regards to strictly protected marine species, bycatch can also undermine the conservation status of species such as turtles and other megafauna that play a vital ecological role in food webs. Other species are covered by provisions that are based on the principles of sustainable use. These include, amongst others Rosemary (*Rosmarinus officinalis*); French Daffodil (*Narcissus tazetta*); Mediterranean Heath (*Erica multiflora*); Rock Urchin (*Paracentrotus lividus*); European Lobster (*Homarus gammarus*) and other species of lobster; and Dusky Grouper (*Epinephelus marginatus*).

**Hunting and Trapping:** One can here also mention the practice of hunting and trapping across the Maltese Islands. Legislation is in place which regulates this practice for species that can be hunted. Although certain practices are legal during specified seasons and for certain birds as specified by national legislation (see for instance the 'Conservation of Wild Birds Regulations, 2006' [[Legal Notice 79 of 2006](#), as amended] and 'Conservation of Wild Birds (Declaration of the periods for Hunting and Taking for 2009) Regulations, 2009' [[LN 239 of 2009](#)]), illegal practices of hunting and trapping have posed threats to various species along the years. Bag statistics indicating the scale of exploitation of wild migratory birds is attained through the Carnet de Chasse declarations, which consist of booklets with details on the catches registered by individuals holding a licence for hunting and/or trapping. The total number of birds declared hunted or trapped over a five year span is shown in [Figure 12](#). The most hunted/trapped bird species in later years have been Turtle Dove and Song Thrush.

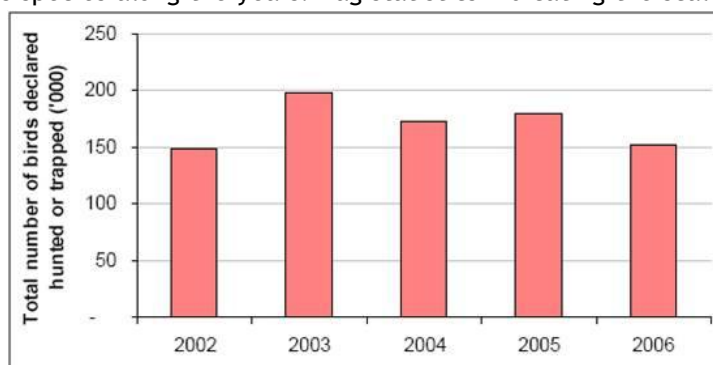


Figure 12 - Declared hunted and trapped birds (2002-2006)

**Climate Change:** The effects of climate change are already being felt in Malta as in other parts of the world. Efforts to conserve local biodiversity can be significantly undermined by the effects of climate change. In its first communication to the United Nations Framework Convention on Climate Change Malta noted that the expected impacts of climate change will include, amongst others, the deterioration of potable water supplies and water quality, frequent extreme weather events, increased desertification and soil erosion, changes in sea water mass characteristics, and sea level rise. Certain impacts will act as direct or indirect drivers of biodiversity loss. Studies on the effect on climate change on biodiversity are also needed, although expert observations are noting the increase in drought-tolerant species in wetlands, and the arrival of new species to the Maltese Islands from northern Africa, possibly as natural extension (*e.g. Persicaria lanigera; Persicaria senegalensis*). However, the link of this with climate change has not been scientifically ascertained, as yet. Conservation efforts should aim at increasing the resilience of ecosystems to adapt to the changing climate and associated environmental changes.

Past and current endeavours, including envisaged measures, to curb such threats across sectors to the benefit of local biodiversity are reviewed in Chapters 2 and 3 of this report.

## 2.0 Current Status of National Biodiversity Strategies and Action Plans (NBSAP)

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*In view of the ongoing process of developing Malta's NBSAP, this chapter provides an overview of the progress made in implementing the CBD's Programme of Work (PoW) on Island Biodiversity and also reviews advancements made in putting into actual practice the recommendations of national strategic documents.*

The mandate for developing the National Biodiversity Strategy and Action Plan (NBSAP) for Malta stems from Article 6 of the CBD, the EU Council Decision 93/626/EEC, the European Community Biodiversity Strategy (ECBS - COM/1998/42) and the "EU Biodiversity Action Plan to 2010 and beyond". The need to develop the NBSAP has also been recognised at a national level. Its development and adoption is in fact called for by the 'Convention on Biological Diversity (Incorporation) Regulations, 2002' ([Legal Notice 160 of 2002](#)), the 'Flora, Fauna and Natural Habitats Protection Regulations, 2006' ([LN 311 of 2006](#), as amended), Malta's [National Reform Programme \(2005-2008\)](#) as well as Malta's [National Strategy on Sustainable Development](#).

The development of Malta's NBSAP is still an ongoing process. Although an NBSAP is not yet in place, in the past years, national documents of a strategic nature have been developed. These include for instance, the State of the Environment Reports (SOERs), the Structure Plan for the Maltese Islands, the National Strategy for Sustainable Development (NSSD) and the National Report on the Strategic Action Plan for the Conservation of Maltese Coastal and Marine Biodiversity (SAPBIO Report). These documents have put forward a number of recommendations for safeguarding, as well as for conserving and managing, biological resources in the Maltese Islands. In this respect these documents have served a similar purpose as the NBSAP, that is, that of recommending activities for mainstreaming biodiversity across sectors. In addition, conservation endeavours have been undertaken nationally; these positively bring forth the goals laid out by the Programmes of Work (PoW) under the framework of the CBD as well as the Convention's three objectives.




In order to arrive at strategic directions for integrating the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies, an assessment has been undertaken via a literature-based review and also by consulting relevant stakeholders:

- to identify those factors across sectors that impinge on biodiversity and, assess what measures are in place to address these;
- to evaluate progress in following up recommendations of the CBD PoW on Island Biodiversity as well as those of national policy; and,
- to identify gaps in implementation that would be addressed via the NBSAP so as to strengthen mainstreaming of biodiversity concerns.

To this end, this chapter is based on data gathered via the consultation exercises held to date to develop Malta's NBSAP and also consultations that have been carried out to develop this national report. It reviews the state of progress in implementing the CBD PoW on Island Biodiversity, as well as, national recommendations.

## 2.1 Progress in implementing the CBD Programme of Work on Island Biodiversity

### LEGEND:

	Goal/target being successfully attained		Ongoing work but goal/target not yet attained as further measures are necessary		Goal/target not being attained
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**Goal - 1:** Promote the conservation of the biological diversity of island ecosystems, habitats and biomes -

**Target 1.1:** At least 10% of each of the island ecological regions effectively conserved

**Assessment of Overall Progress at a National Level** -  [target 1.1]

### Description of Progress

Major nature protection legislation has been set up since 1991, although some minor law was already in place as far back as 1932<sup>11</sup>. The Environment Protection Act (EPA, Act V of 1991) was first enacted in 1991 and was subsequently repealed and replaced in 2001 by [Act XX of 2001](#). The EPA (Act XX of 2001 as amended by [Act II of 2006](#)) is an environmental framework law with general mandatory provisions regarding various environmental issues. Under this Act, the Minister responsible for the environment is granted the power to issue subsidiary legislation specific to environmental issues related to, amongst others, the protection of biological diversity. Thenceforth, several pieces of subsidiary law have been published (either as [legal notices \[LN\]](#) or [government notices \[GN\]](#)) in conformance with relevant global and regional treaties to which Malta is a Party.

Legal notices include regulations on protected areas, protected species (covering flora and fauna, and in certain cases being specific to groups of taxa e.g. the protection of [marine mammals](#), [reptiles](#) and [birds](#)) and their management. Provisions aimed at the strict protection of endangered species, endemic species and migratory species are integrated into domestic law such as prohibitions of capture, killing and trade. Habitats important for the survival of such species are also protected. Subsidiary legislation pertaining to the protection of species also includes **provisions on permitting**, that is, the requirement for the issuance of a permit prior to handling, possession, capture, trade, exchange and release of specimens of those species that are nationally protected. An up-to-date list of published legislation under the EPA is available on MEPA's [Legislation and Policy portal](#). Seminars on legislative instruments (e.g. the enactment of the 'Flora, Fauna and Natural Habitats Protection Regulations' and the repeal and replacement of the 'Trees & Woodland Protection Regulations') have been held. Participatory workshops have also been carried out to gain sectoral support for the Natura 2000 Network in Malta.

Malta has made considerable advancement in affording legal protection to threatened species. An assessment carried out in 2005 revealed that out of the 189 species of international importance which are found in Malta, 183 (97%) were protected through Maltese legislation ([Figure 13, overleaf](#)). This is noteworthy when considering that in 2002, 39% of the **species of international importance**<sup>12</sup> were unprotected. The most marked improvement has been with respect to higher plants (29% protected in 2002 vs. 100% in 2005), fish (21% vs. 93% in 2005) and crustaceans (12% vs. 89% in 2005). Of the six species that remained unprotected, one is reported as threatened in Malta, while three species are non-native. 2009 updates, reveal that 100% of crustacean and insect species of international importance are now also protected. Two of the six unprotected taxa have since been protected through the 'Flora, Fauna and Natural Habitats Protection Regulations, 2006' ([LN 311 of](#)

<sup>11</sup> Some legislation already existed during the rule of the Knights of St John, whereby species were protected in view of their commercial importance; e.g. the collection of *Cynomorium coccineum*, which was highly valued for its presumed medicinal properties during the 18<sup>th</sup> century, was strictly prohibited (*vide Stevens et al. 1995*).

<sup>12</sup> Only species listed in international treaties, red data lists, and lists of species of conservation importance are included, and only locally breeding species are considered; migratory and vagrant birds are excluded from the list.



2006, as amended), such that 2.1% remain unprotected. It should be noted that actually, these 4 remaining species are not protected by any Treaty/Legislation; they are instead included in IUCN Red list of threatened species (of 1996 and/or of 2000).

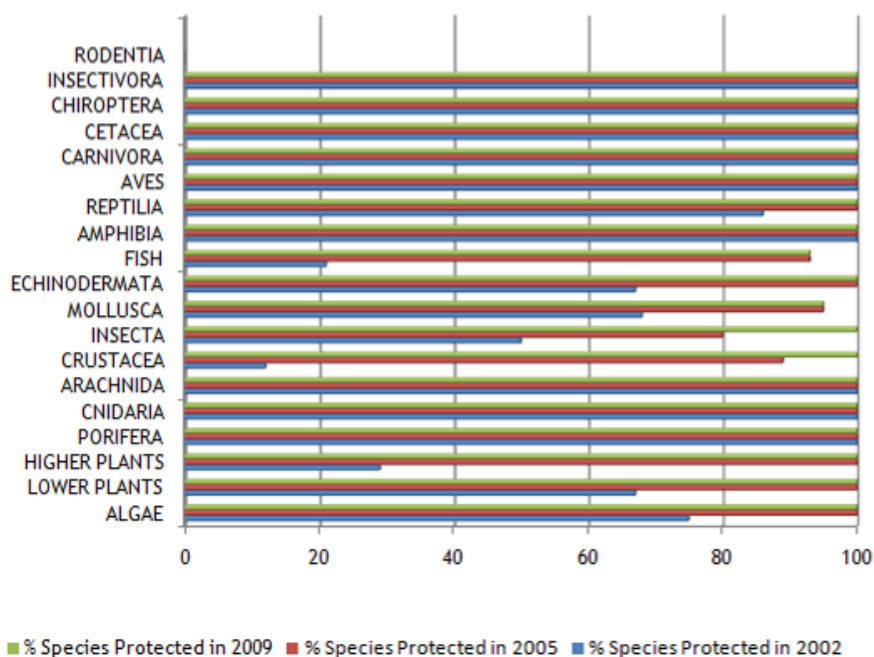


Figure 13 - Species of international importance covered by national legal protection (Source: MEPA 2006 - SOER 2005; + 2009 Updates<sup>13</sup>)

Sensitive areas important for biodiversity have been identified and are essentially mapped, being either designated or scheduled areas under the EPA and the Development Planning Act (DPA), respectively [or under both Acts as in the case of Special Areas of Conservation (SAC)] [see Appendix III (B) of this Report]. Habitat mapping has been carried out since 1995, leading to an inventory of areas of ecological importance (AEIs) and sites of scientific importance (SSIs) in connection with Article 46 of the DPA [see Section 3.6]. Habitat mapping has also been carried out since 2002 as part of the Emerald/Natura 2000 selection process of SACs and SPAs. Considering the sites submitted to the EC to form part of the Natura 2000 network under the Habitats Directive, Malta has reached a high percentage (92.64% as at June 2008) under the sufficiency index for the terrestrial sites (Source: Natura 2000 Barometer). The evaluation of sufficiency is based on the range of each habitat and species in the full territory of each member state and within the sites proposed by each member state. To reach 100% sufficiency, proposed sites must be enlarged or new sites proposed; work is underway to achieve such objective.

Identification and mapping of tree protected areas has been done since 1999 and finalised in 2009. An exercise was also recently carried out to survey the mediolittoral algal communities, along the coastline of the Maltese archipelago in order to confirm the water quality and also aid in the nomination of marine protected areas (MPAs). Furthermore, through a number of environment impact assessments other mapping exercises were also carried out for particular marine areas. A wetlands inventory is also available; this includes extant wetlands and the major tributaries.

The protection of biodiversity is fundamentally important in view of its pivotal role in ensuring the continuity of ecosystem services. This is mainly achieved via statutory protection of sites under the EPA and DPA. Although the protection of sites was initiated a number of years ago, the extent of coverage has greatly increased in the past five to six years. Those areas designated under the EPA normally come along with the direct aim to protect habitats and species of importance; those scheduled under the DPA are aimed towards restricting development. Management of selected sites

<sup>13</sup> Species Protected in 2009 were actually protected in 2006, (by way of LN 311 of 2006) but are included as 2009 for consistency since those marked 2002 and 2005 were not necessarily protected in those years but before.

protected under the EPA is also being considered. **Areas designated under the DPA and EPA** cover about 20% of the land area of the Maltese Islands, with some of the sites being afforded protection under more than one piece of legislation. Marine areas are still limited, although a considerable amount of work has been carried out in 2008 to select further marine protected areas. A complete and updated list of the designated sites in Malta is available [here](#).

**Sites submitted to the EC for inclusion in the Natura 2000 Network** under both the Habitats (SACs) and Birds (SPAs) Directives have increased from 2004 to date as shown in [Table 8 \(a\) and \(b\)](#). Some areas under one Directive overlap with those under the other Directive.

Number of Sites			
Date of submission	SACs - terrestrial	SACs - marine	SPAs - terrestrial
2004	23	0	6
2006	26	1	12
2008	27	1	13

Area (sq km)			
Date of submission	SACs - terrestrial	SACs - marine	SPAs - terrestrial
2004	39.35	0	7.63
2006	39.72	8.49	14.34
2008	41.12	8.49	16.34

**Table 8 (a) & (b) - Number of sites (and area covered) as submitted to the EC for inclusion in the Natura 2000 network**

The development and implementation of **management plans** (and other conservation measures) targeting protected areas (PAs) is an ongoing practice which, where possible, is supported by stakeholder involvement. In the case of terrestrial sites, there are currently in the region of six protected sites that are covered by management plans which are implemented under a signed management agreements. Management plans are being drafted for another two PAs. In the case of small islets, no management plan is actually required, since management measures and a strict protection regime are afforded through legislation; access is restricted to these sites. An Action Plan is also currently being implemented for *il-Qawra/Dwejra* Heritage Park and a management framework has been developed for *Il-Majjistral* Park. To date, site managers of protected areas primarily include non-governmental organisations (NGOs). However, there is the scope for moving on from this to include other types of site managers. In some protected areas, farmers constitute the great majority of land-owners or land-users of the area, thereby being extremely relevant site managers in these areas. Furthermore, private owners are also envisaged to potentially play a key role in the management of protected areas.

A management framework and an action plan for two marine protected areas (MPAs) have been approved. These include measures on how to:

- protect the areas from threats,
- enhance the marine environment,
- promote stakeholder involvement and
- propose different zones within the marine environment.

Work on the establishment of the first management plan for a MPA has continued, along with discussions with relevant governmental and non-governmental stakeholders.

Notice to Mariners 67/2004 and 5/2008 provide for the creation of **Conservation Areas around Wrecks and Artificial Reefs**, for the protection of species and habitats in these areas, through restrictions of use of fishing gears in these areas. The [Agriculture and Fisheries Regulation Division](#)

(AFRD) and the [Malta Maritime Authority](#) (MMA) are the competent authorities for the implementation of these regulations.

The [Malta Environment and Planning Authority](#) (MEPA) is legally obliged to follow a **participatory approach in policy development** - A consultation process is normally implemented when new legislation is proposed, compliant with Article 10.1 of the EPA. Public participation in developing management plans is also integrated in the 'Flora, Fauna and Natural Habitats Protection Regulations, 2006' ([LN 311 of 2006](#), as amended) and is practiced for instance in the protected areas - *l-Għadira*, *is-Simar*, and *Rdum tal-Madonna* - where the local communities and land users are involved as stakeholders in the management planning process through an active participative approach with site managers.. Locals are actively involved in the problem-solving process, and are encouraged to submit proposals for solutions, some of which may actually require them to take responsibility themselves.

Efforts aimed at the **rehabilitation of certain degraded habitats** are ongoing in protected areas that are covered by a management plan. *Ad hoc* interventions in areas not covered by a management plan are also undertaken (e.g. *Selmunett* Islands). Habitat Restoration activities targeting the maquis systems at *Wied Għollieqa* and *Wied il-Mizieb* have also been undertaken.

**Ecosystem monitoring programmes** are also being developed for instance in compliance with the EU Water Framework Directive (WFD). Selected habitats are also monitored on *an ad hoc* basis. Scientific surveys of wetlands in the Maltese Islands are currently ongoing to assess their status in relation to Annexes I and II of the EC Habitats Directive. Monitoring exercises have also targeted the marine biodiversity such as **monitoring of certain species** - e.g. the baseline study carried out to monitor and assess the populations of *Pinna nobilis* in the *Rdum Majjiesa* MPA.

A **satellite tagging project** was carried with the help of the Regional Activity Centre for Specially Protected Areas (RAC/SPA) and the Stazione Zoologica di Napoli (SZN). The project involved the release of two specimens of loggerhead marine turtles fitted with satellite tags. RAC/SPA and SZN provided essential guidance, financial and expert assistance for the success of the exercise, whilst Fisheries assisted in the turtle release exercise. This project provided information on the migration routes followed by the released turtles. Satellite telemetry used in conjunction with other studies may allow the identification of migration routes and important areas frequented by these marine turtles. This may lead to obtaining the required knowledge-base for arriving at appropriate conservation measures that would be established in line with national and international obligations, accordingly.

A **multiple device tagging exercise** was also carried out as part of the EU LIFE Yelkouan Shearwater Project at *Rdum tal-Madonna*, where Yelkouan Shearwaters were fitted with satellite tags, data loggers and geolocators. This tracking exercise enabled the assessment of different tagging techniques and methodologies. The results also provided data on important rafting sites, feeding areas, post-fledging migratory routes and adult wintering quarters for this species. The satellite tracking techniques were also tested on several individuals of the Cory's Shearwater.

**Obstacles, Needs & Future Priorities** - The understanding of ecological process needs to be strengthened via further research and monitoring. Malta has applied for funds to prepare management plans and/or legislation for all Natura 2000 sites of the Maltese Islands via a [proposed project](#). It is envisaged that full stakeholder involvement through the entire management planning process will be carried out via the envisaged project if approved for funding. Climate change and adaptation issues are also envisaged to be considered in the development of management plans. The development of a habitats interpretation manual is also in the pipeline.

**Goal - 2: Promote the conservation of island species diversity**

**Target 2.1: Populations of island species of selected taxonomic groups restored, maintained, or their decline substantially reduced**

**Target 2.2: Status of threatened island species significantly improved**

**Assessment of Overall Progress at a National Level** - ☹️ (many species remain threatened) [targets 2.1 and 2.2]

**Description of Progress**

Conservation measures aimed at the **recovery of threatened/endangered species** are also being implemented. Where needed, *in situ* conservation efforts are supported by *ex situ* measures especially with regards to endangered plant species such as diseased specimens/populations that would benefit from micropropagation in order to boost up population numbers. For instance, a number of reinforcement measures have been undertaken such as for the endangered *Sarcopoterium spinosum* and the endemic *Cremnophyton lanfrancoi*.

Projects comprising measures for the recovery of endangered species have also been undertaken or are in progress. Two projects are presented here as examples:

- The **ecological restoration of Selmunett Islands**, which is a Nature Reserve and a Specially Protected Area (under the SPA Protocol of the Barcelona Convention) since 1986, has been carried out by MEPA, with the help of funds provided by the HSBC Cares for the Environment Fund (HCEF). The aim of this project was to restore the habitat for the endemic lizard, *Podarcis filfolensis kieselbachi*, to allow the population to recover. This involved the eradication of rats and alien vegetation from the site.
- The ongoing **EU LIFE Yelkouan Shearwater Project** funded project [“Monitoring and Conservation of Shearwaters and Petrels in the Maltese Islands \(GARNIJA-MALTIJA\)”](#) aims at reversing the declining trend observed in the *Puffinus yelkouan* population at *Rdum tal-Madonna*, a designated SPA. This protected area hosts the largest colony of *Puffinus yelkouan* on the islands. BirdLife Malta are leading this project in partnership with two other conservation NGO’s and four Government Authorities. MEPA is a co-financier to the project.

MEPA is also actively involved in **turtle release programmes**, as well as, in aiding the **local network for stranding of cetaceans and turtles**, through the provision of expertise and direct help in such stranding events.

MEPA has been involved in a number of other projects, including projects administered and (co-) funded by MEPA, as well as projects funded through EU funds and funds from the United Nations Mediterranean Action Plan (UNEP/MAP). Details on [internationally and EU funded projects](#) in which MEPA was or is currently a partner is available through the MEPA website.

A documentary entitled [“Journey into the Depths of the Mediterranean”](#) has been produced. The documentary offers a visual experience of marine life found in the seas around the Maltese archipelago. It gives a detailed explanation of the origins of the Mediterranean Sea, and an in-depth description of life in today’s Mediterranean, covering organisms and habitats of the sea floor as well as conservation issues. The DVD also incorporates a detailed index of over 40 different fish and invertebrates. The description of each animal also looks into their sources of food, and their spawning.

The MEPA website provides access to information on Maltese biodiversity, protected areas and adopted policies, including State of Environment Reports/Indicators for Malta.

Various studies have been commissioned by the Malta Environment and Planning Authority to collect essential information on Malta’s biodiversity and to improve the **knowledge base on groups of threatened and endemic species** (invertebrates; vertebrates, excluding birds and cetaceans), as well as a study on *Posidonia* meadows in Maltese waters. Some of these studies have provided maps

showing the distribution of endangered species, such as maps of endangered insects. These studies will contribute to the updating of the [Red Data Book](#) and will also help in the development of conservation measures. Under some of the commissioned studies a series of databases in MS access format have been developed, which shall be centralised when a national database on biodiversity will be established; this will be available to the public through the MEPA website.

**Taxonomic training** as part of continued professional development is offered as courses which are attended by environment protection officers or else is offered by MEPA to its own staff as in-house training. Taxonomic studies are also undertaken on an individual basis by scientific experts who publish their work in scientific journals.

**Obstacles, needs and future priorities** - Obstacles include various resource limitations and conflicting issues arising in view of land constraints. Species and habitat monitoring and improving their conservation status is deemed of priority. Additional CEPA activities and further resource mobilisation are also desired.

### **Goal - 3: Promote the conservation of island genetic diversity**

**Target 3.1: Genetic diversity of crops, livestock, and other valuable island species conserved, and associated indigenous and local knowledge maintained**

#### **Assessment of Overall Progress at a National Level - ☹ [target 3.1]**

##### **Description of Progress**

Throughout the years, modern varieties of plants and livestock have been imported in favour of local populations, with the result that the Maltese genotypes have been eroded or entirely lost. **Agro-species believed of local origin** include possibly more than one variety of peach; possibly more than one variety of citrus (such as the Maltese blood orange), the local cultivar “Bambinella” (Small Malta June Pear), olive, and two indigenous varieties of vines: *Ġellewża* [red] and *Girgentina* [white] (see [Rural Development Programme 2007-2013](#); Section 3.1.3.2.1 Agricultural biodiversity).

The [Plant Health Department](#) (PHD) regulates the marketing of seeds irrespective of their origin. Although there is no real seed bank at the Department, some seeds of cereals, fodder plants and vegetables that are thought to belong to local varieties are being conserved and **characterisation trials** have been carried out in order for a morphological description of such varieties to be established. In collaboration with MEPA, endangered species, such wild orchids and one species of tulip are also being micropropagated and at the same time conserved at the Tissue Culture Lab within the PHD. Other indigenous plants, which have been propagated in the past as part of conservation efforts, include *Cremonophyton lanfranconi*, *Helichrysum melitense*, *Cratageus monogyna*, *Urginea pancraticum*, *Pyrus syriaca* and *Pistacia terebinthus*.

Interest in the **reintroduction and preservation of livestock breeds** is also increasing. Among autochthonous breeds one can mention the Maltese Ox known in Maltese as ‘*Il-Baqra Maltija*’. This is a critically endangered indigenous breed listed in the FAO’s World Watch list for Domestic Animal Diversity for the year 2000. Prior to mechanisation, this beast was utilised exclusively as a working animal. This breed has gradually been replaced by modern forms of mechanised traction. The Maltese Cattle Foundation was established to restore the herds by artificial selective interbreeding techniques. Presently no 100 percent pure-bred cattle remain in Malta (see [RDP 2007-2013](#); Section 3.1.3.2.1 Agricultural biodiversity).

Malta’s [RDP 2007-2013](#) provides, under Axis II:

- support for the conservation of genetic resources in agriculture [The objective is to conserve and possibly reverse the trend of erosion of genetic resources in agriculture including plant species and varieties and livestock breeds],
- support for the conservation of species in danger of genetic erosion [The aims are to (1) conserve and maintain biodiversity by preserving Maltese indigenous livestock breeds in danger



of genetic erosion, in particular the Maltese ox, by supporting the rearing and breeding of this particular breed; (2) to protect and maintain agricultural biodiversity by preserving those plant species that are in danger of genetic erosion, through support for their maintenance. The aims of this measure include the preservation of native varieties, the maintenance of habitats associated with endangered fauna and flora, and the conservation of genetic heritage to improve the agri-touristic potential of the island]

**Obstacles, Needs and Future priorities** - People are not fully aware of the necessity to conserve local varieties of species of agricultural importance. Lack of data can also impede the conservation of local varieties. The running of a seed bank requires resources - personnel are needed for seed collection and resources are needed for cleaning and storage. The promotion of the uptake of related agri-environment measures under the RDP is deemed very important.

**Goal - 4: Promote sustainable use and consumption**

**Target 4.1:** Island biodiversity based products are derived from sources that are sustainably managed, and production areas managed, consistent with the conservation of biological diversity

**Target 4.2:** Unsustainable consumption of island biological resources and its impact upon biodiversity is reduced

**Target 4.3:** No species of wild flora and fauna on islands is endangered by international trade

**Assessment of Overall Progress at a National Level** - 😞 [target 4.1 and target 4.2] 😊 [target 4,3]

**Description of Progress**

**Sustainable use** is promoted under the “Flora, Fauna and Natural Habitats Protection Regulations, 2006” ([LN 311 of 2006](#), as amended) for plant and animal species that are directly exploited from the wild. These regulations integrate provisions that regulate the exploitation of a number of species that may become endangered if such activities are unsustainable and hence damaging to conservation status of the targeted species. For instance, when considering wild plants that are harvested and managed for food one can mention capers (*Capparis orientalis* and *C. spinosa*); fennel (*Foeniculum vulgare*) and rosemary (*Rosmarinus officinalis*). Other flowering species such as *Narcissus tazetta* are collected from the wild and sold. Threatened species that are strictly protected are only collected from the wild for *bona fide* studies and only when authorised by the competent authority, *i.e.* MEPA.

Regulatory programmes to ensure that harvest for **trade in species** is sustainable have been adopted in accordance with CITES and relevant EU regulations, via the implementation (issuances of CITES permits/certificates) and enforcement (inspections & penalties in the case of infringements) of the “**Trade in Species of Fauna and Flora Regulations, 2004**” ([LN 236 of 2004](#) as amended by [LN 426 of 2007](#)). Regulation 8(2) of LN 236 of 2004 (as amended) states that when an offence is committed as per Regulation 8(1), the offender will on conviction be liable to a fine of not less than four hundred and sixty-five Euros and eighty - seven cents (€465.87) but not exceeding four thousand and six hundred and fifty-eight Euros and seventy - five cents (€4,658.75), or to imprisonment for a period of not less than one month but not exceeding two years, or to both such fine or imprisonment. Trade of non-CITES listed species is regulated through the legal mandate of the EPA and the subsidiary legislation enacted thereto.

**Sustainable agricultural practices** are promoted in the Code of Good Agricultural Practice for Malta (COGAP). This Code contains recommendations concerning all aspects of agricultural production, namely: animal husbandry, manure handling, fertilisation practice, irrigation practice and plant protection. Sustainability is also ensured via the implementation of cross-compliance measures and abiding by statutory management requirements (SMRs) in the field of the environment, food safety, plant and animal health, and animal welfare, and good agricultural and environmental conditions (GAECs). The Rural Development Plan (RDP) for Malta also provides support for community projects [[See Section 3.1 of this report](#)].

**Sustainability standards in the fisheries sector** are reflected in selected provisions of relevant legislation currently in force e.g. Regulations 37 and 38 under the Fisheries Regulations (Code of Police Laws - Cap 10 - [Subsidiary Legislation 10.12](#)) which lays down minimum size limitations of species. Since 1971, Malta has managed a 25 nautical mile (nm) management zone previously known as the “Fisheries Conservation Zone” (FCZ) *i.e.* an extended fisheries management zone, beyond the 12nm territorial waters. Throughout all these years a strict licensing system was maintained within this zone, keeping large-scale industrial fishing such as trawling at a minimum. On 28 June, 2002, Malta and the EU reached an agreement that the 25 nm management zone will continue to be managed by the Maltese Authorities. During the negotiations it was argued that unrestricted access to the 25 nm zone would undermine the sustainability of the fish stocks in this ecologically important area, more so since fishing fleets of other neighbouring countries are known to be better equipped and more technologically advanced. The results of the Malta-EU negotiations on the **25 nautical mile Fisheries Management Zone** have led to the adoption of a new Council Regulation ([EC 1967/06](#)), which lays down detailed conservation measures in connection with the zone’s management regime. This regulation also calls for the designation of **Fisheries Restricted Areas in zones beyond or partly within jurisdiction** [See [Section 3.2](#) of this report].

A “no-take zone” (Figure 14) is proposed within the marine protected area *Rdum Majjiesa to Ras ir-Raheb* along the north-western coast of Malta - this zone covers an area of exceptionally high scientific, ecological, conservation and aesthetic value. The area offers the maximum protection level for the habitats and species that it hosts.

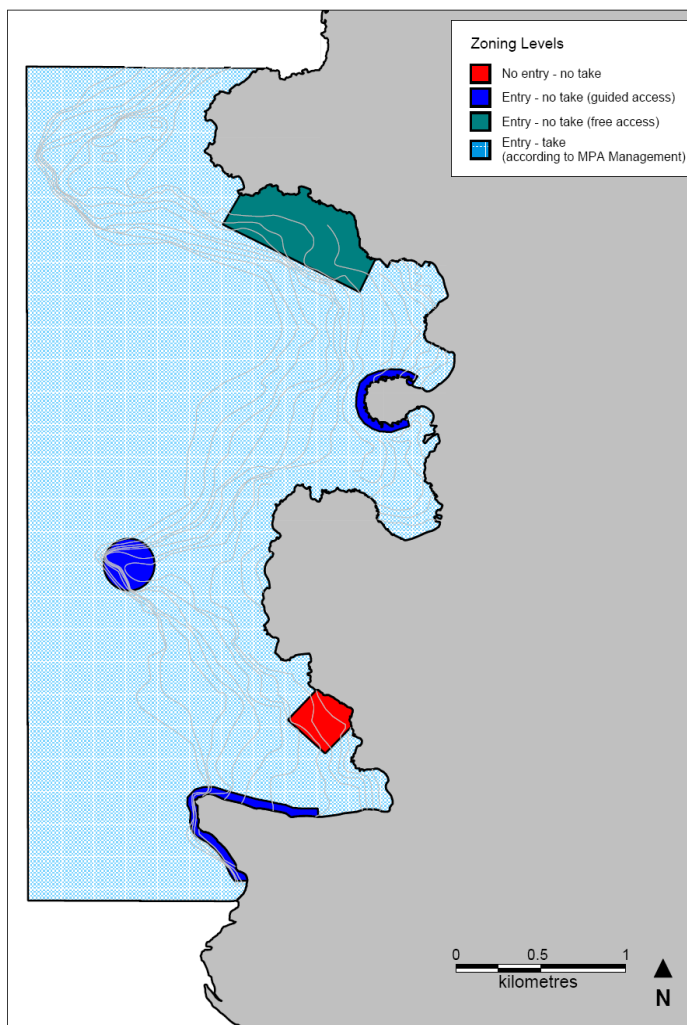
**Goal - 5: Pressures from habitat loss, land-use change and degradation, and sustainable water use, reduced on islands**

**Target 5.1: Rate of loss and degradation of natural habitats in islands significantly decreased** (target 5.1 of the 2010 framework)

**Assessment of Overall Progress at a National Level - 😞** [target 5.1]

**Description of Progress**

Land development/use control and spatial planning are regulated by way of the DPA and the Structure Plan for the Maltese Islands [See [Section 3.6](#) on Land Use of this report]. The [Structure Plan for the Maltese Island](#) puts forward a series of policies that promote **integrated land and water use planning**. Structure Plan policies also contribute to prevent soil degradation. Integrated policy is also laid down by the Development Planning Act, the Environment Protection Act and subsidiary legislation thereto. Other tools include, *inter alia*, the National Strategy for Sustainable Development (NSSD) and Integrated Coastal Zone Management (ICZM), EIAs and SEAs (SEA and EIA legislation is reviewed periodically for continued improvement), and the ongoing WFD implementation process. [Planning Enforcement](#) is carried out in the form of direct action procedures as part of development control [see [Section 3.6](#) on Land Use for more detail]. MEPA also coordinates with other entities for land and water use planning or management. For



**Figure 14 - Zoning scheme with three levels of protection in the *Rdum Majjiesa to Ras ir-Raheb* Marine Protected**

instance, under the WFD, such coordination and implementation is being jointly carried out by MEPA and the Malta Resources Authority. Extensive consultations are being made in the Structure Plan Review Process. Malta's Rural Development Plan (2007-2013) sets measures to aid in land and water management integration from a rural perspective.

Impacts on habitats from land development are assessed through [environmental assessments](#) and in the case of Natura 2000 sites and SACs of national importance, via an [appropriate assessment](#) (AA) in compliance with Article 6 of the EC Habitats Directive. Indeed, Regulations 18 and 19 of the 'Flora, Fauna and Natural Habitats Protection Regulations, 2006' ([LN 311 of 2006](#), as amended) establish a procedure to be followed for "any operation or activity related to development, or any endeavour, which is envisaged to have impact on biodiversity and the SAC" [Regulation 18(3)] as well as "an operation or activity which is or forms part of a plan or project which (a) is not directly connected with or necessary to the management of the protected site, and (b) is likely to have a significant effect thereon, either individually or in combination with other plans or projects" [Regulation 19(1)]. An application for consent is to be submitted to the Competent Authority (MEPA), and processed under Part III of LN 311 of 2006 (as amended). In this respect, the AA procedure is initiated, with a screening exercise, carried out in line with guidelines established by the European Commission. Consent may be granted by the Competent Authority in accordance with the provisions established by the afore-mentioned law, which transposes the EC Habitats Directive. Such consent "may contain such conditions and other provisions it deems fit and appropriate to impose" [Regulation 18(2)]. In terms of frequency, most applications are one-off *ad-hoc* activities, particularly concentrated during the spring/summer period, and not all involve large-scale events. There were 12 applications for activities in 2008 (of which only 5 applications, about 42% of the applications, were related to organised events), and 16 applications in 2009 (of which 12 applications, 75% of the applications, were organised events). Of 12 organised events in 2009, only 25% of the applications (3 applications) were relatively large-scale, and of these only two out of three were in Natura 2000 sites.

Malta submitted its official [report](#) on the implementation of the Recommendation for **Integrated Coastal Zone Management (ICZM)** in Europe to the European Commission on 27 March 2006. Malta's ICZM Strategy is embodied in the [Coastal Strategy Topic Paper](#) prepared by MEPA as part of the [Structure Plan Review](#). **ICZM** is the remit of a number of agencies, though its close linkage with spatial and regional development planning places MEPA in the lead role. This ensures that ICZM issues are considered in development planning mechanisms.

From 2000 - 2002, Malta benefited from funding under the **Mediterranean Action Plan for a Coastal Area Management Program (MED CAMP)**, which was aimed at introducing and applying the principles, methodologies and practices of sustainable coastal management in Malta, particularly in the North West area. MEPA was also a project partner in the [DEDUCE](#) (*Développement durable des Côtes Européennes*) Project. This trans-national project concerned ICZM and was co-financed by the European Commission and the participating regions, in the framework of Interreg IIIC South. The main objective of the project was to evaluate the utility of indicators for optimal decision-making in relation to the coast, following the principles and criteria established by the EU Recommendation on ICZM. The stocktaking exercise required by the ICZM Recommendation was carried out by Malta through the preparation of the Coastal Strategy Topic Paper as part of the review of the national development plan: the [Structure Plan for the Maltese Islands](#). This stocktaking exercise shows that the natural resources within the terrestrial coastal zone are diverse but their occurrence is not abundant due to the limited size of the Maltese Islands. Pressures on the coastal zone arise from development that leads to loss of open space for the public, degradation of habitats and conflicts with, or displacement of, other uses.

**Benthic habitats and their biota** are often vulnerable to anthropogenic activities such as bottom fishing with trawls. Considering the need to investigate the wider ecological impacts of fishing activities on seabed habitats and organisms, one can mention the [BENSPEFISH Project](#) [**Benthic Secondary Production and Essential Fish Habitats in the Malta FMZ**], which a collaborative research project between the Marine Ecology Research Group (MERG) at the Department of Biology of the University of Malta, and the [Malta Centre for Fisheries Sciences](#) (MCFS). It forms part of a wider study on the benthic habitats and biotic assemblages of actual and potential fishing grounds in Malta's Fisheries Management Zone (FMZ) within the scope of the [MEDITS](#), GRUND and [MedSudMed](#)

programmes. The project involves a long-term study involving benthic sampling for faunal and sediment analysis using remote operated sampling gear, as well as analysis of the benthic invertebrates collected during the ongoing trawl survey programmes ([MEDITS](#) and GRUND). Findings of this research are also published. See project website for further details. [See also [Section 3.2 of this report](#)].

**Obstacles, Needs and Future priorities** - With regard to establishing and promoting participatory tools and mechanisms to develop and implement integrated land and water use plans, consultation and awareness-raising initiatives focussing on integrated water resource management (under the WFD), also targeting different sectors of the public and various government agencies, are underway, since this is considered as one of the priorities in this sector.

### **Goal - 6: [Control threats to island biological diversity from invasive alien species](#)**

**Target 6.1:** [Pathways for major potential alien invasive species are identified and controlled on islands](#)

**Target 6.2:** [Management plans in place and implemented for major alien species that threaten ecosystems, habitats or species](#)

**Assessment of Overall Progress at a National Level** - 😊 [targets 6.1 and 6.2]

### **Description of Progress**

Management of biological invasions crosscuts a number of fields (e.g. biodiversity conservation, plant and animal health) and a number of sectors (e.g. trade, aquaculture, and tourism). In Malta, several entities are entrusted with the role of controlling the risks associated with invasive alien species.

The Ecosystems Management Unit (EMU) within MEPA is entrusted with the responsibility of overseeing the implementation and enforcement of nature protection and wildlife trade legislation. The Authority addresses **alien and invasive flora and fauna species from the perspectives of protecting biodiversity** (reference is made to Part III of the [EPA](#) and [LN 107 of 2002](#)). Nature protection legislation in Malta has addressed alien species since 1992. Recently, new provisions have been laid down apart from those calling for the prevention, control and monitoring of introductions, and adoption of eradication plans. By way of the ‘Flora, Fauna and Habitats Protection Regulations, 2006’ ([LN 311 of 2006](#), as amended), possession may now also be prohibited besides importation. Guidelines on the keeping, monitoring, prevention, control, and eradication measures of established alien species may also be issued. The mandate is also in place to refuse a development application on the basis of the possible impact resulting from invasive alien species as per Regulation 18 of LN 311 of 2006 (as amended). In efforts to address IAS and prevent, control and mitigate spread and harm to local biodiversity, the 15 CBD Guidelines (Decision VI/23), as well as strategic guidance by other MEAs to which Malta is a party are followed.

Provisions on the **regulation of importation of potentially invasive species** are integrated in the regulations on wildlife trade. The CITES Management Authority (within MEPA) liaises closely with the Trade Services Directorate and the Customs Department in the field of import/export and hence **interception of invasion species at border controls** takes place when necessary. A system is in place for controlling importation of species from non-EU countries. An import license, issued by the Trade Services Directorate in accordance with Regulation 3 of the “**Importation Control Regulations, 2004**” ([LN 242 of 2004](#), as amended by LN 230 of 2005) is required before animals listed in Schedule II of the said Regulations, can be imported. On the other hand, importation of plant species from non-EU countries currently does not require an import license; nonetheless, importation must be done in conformity with national legislation. The term “Importation” caters for introduction into the EU from third countries; introduction into Malta from EU countries is not importation but movement of goods/products or transport. The CITES Management Authority is assisted by the CITES Scientific Authority, when assessing the invasive potential of species proposed for importation. The precautionary approach is also followed when assessing applications for importation of alien species.



The [Plant Health Department](#) (PHD) within the [Ministry for Resources and Rural Affairs](#) (MRRA), is entrusted with the responsibility of coordinating and regulating activities to control the introduction and spread of plant pests as per requirements of **national legislation on plant health** (the Plant Quarantine Act, 2001 [Act XVIII of 2001, as amended] and subsidiary legislation enacted thereto) and in line with the International Plant Protection Convention and related EU Policy. The Department therefore addresses alien and invasive plant pests from a phytosanitary aspect. The PHD is also the Maltese National Plant Protection Organisation (NPPO). [Legislation](#) is available online. A review of biological control agents released in Malta is given by [Mifsud \(2008\)](#).

A National Plant Protection Board has been set up in accordance with the [Plant Quarantine Act](#). This Board regularly reviews the state of plant quarantine in Malta on the formulation of policies in this regard, and advises the Minister on any matters with which this Act is concerned. One of the matters addresses is the phytosanitary implications of importing any plant material, plant products, pests, beneficial organisms or soil.

Other relevant entities include the Veterinary Affairs and Fisheries Department in the field of zoosanitation and the Malta Maritime Authority in the field of maritime affairs.

The most thorough **seminar on alien species** carried out to date was that held in 1996, the proceedings of which have been edited by Baldacchino and Pizzuto (1996) and published. The proceedings provide an important [account of alien species in Malta](#). Issues discussed at the time included the introduction and regulation of alien species, and the need to conserve the local biodiversity from the threats caused by such alien species. Recent outreach initiatives on alien species included a broadcasted debate on a local TV station and publicising the rat control on *Selmunett*.

The collection of **baseline data on alien flora and fauna already present in the Maltese Islands** has been commissioned by MEPA with the aim of assessing the status of alien flora and alien fauna that have been introduced to the islands and prioritising action accordingly; the data gathered will be used to develop a **national database on alien species**. The information obtained through the studies includes various details, including *inter alia*, species distribution, source of introduction, level of invasiveness, and ease of eradication.

The University of Malta (UoM) was involved in the [PORTAL Project](#) (PORT surveys in the Mediterranean Sea for ship-transported Alien organisms) in collaboration with CIESM (International Commission for the Scientific Exploration of the Mediterranean Sea). A report on a study of the fouling assemblages within the Grand Harbour, Valletta, Malta, by Schembri, Deidun and Muscat (2006), made in connection with Phase 1 of the PORTAL project has been published.

A number of invasive species are being earmarked for removal from a number of protected areas. Monitoring of progress is revealing natural rehabilitation of native vegetation and fauna upon **removal of invasive species**. Preliminary efforts have been undertaken, or are ongoing, and are aimed at controlling the spread of specific terrestrial invasive plants from earmarked locations in the Maltese Islands such as emergency actions concerning the eradication of *Carpobrotus edulis* from sand dunes, where it was successfully eradicated from *Ir-Ramla tat-Torri* (northern coast of the island of Malta) and *Ir-Ramla l-Ħamra* (along the northern coast of the island of Gozo). Other ongoing activities include the removal of the invasive *Arundo donax* and *Vitis vinifera* from *Ir-Ramla l-Ħamra*, *Acacia saligna* from *Għajn Tuffieħa* (western coast of the island of Malta), *Agave* spp. from *Rdum tal-Madonna* and the eradication of *Rattus norvegicus* from *Selmunett*. The LIFE Funded Garnija Project directed at the conservation of the largest breeding site of the Yelkouan Shearwater (*Puffinus yelkouan*) at *Rdum tal-Madonna*, in the north of Malta, also includes rat eradication in its [programme of activities](#) seeing that rats are a direct threat to the chicks of this protected bird. Progress in eradicating rats in this area is documented in the [Rat Eradication Report](#)<sup>14</sup>.

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<sup>14</sup> Varnham, K. J. & Meier G. G. (2007) *Rdum tal-Madonna rat control project, December 2006 - March 2007, Final report*. Unpublished report to BirdLife Malta & RSPB, 28pp.

**Obstacles, Needs and Future priorities** - The fact that there are no restrictions on intra-community transfer of species that can be potentially invasive in Malta in view of the single EU market<sup>15</sup>, can lead to costly repercussions especially if invasion is not intercepted and addressed in a timely and coordinated manner. This is especially important considering the insular nature of the country and its particular ecological susceptibility. Malta's National Strategy for Sustainable Development (NSSD) acknowledges the risks associated with IAS and calls for the development of a national strategy to control existent IAS and to prevent further introductions. Additional research is required to understand IAS pathways and shed light into effective means of minimising IAS transfer. Research is also required to understand the mechanisms of invasion and ecology of IAS relative to native species, so as to predict which species could turn out to be invasive, apart from aiming to improve the effectiveness of remedial measures. The launching of an IAS campaign targeting a wide audience would be beneficial, including tailored outreach initiatives targeting a number of sectors that promote the undesirable transfer of alien species. Only by informing the public at large on invasive species and their associated risks and consequences, apart from educating on how to minimise such threats, can support be fostered, apart from instilling a sense of responsibility not to spread IAS. Future priorities include:

- development of an online national database on alien species already present in the Maltese Islands;
- guidelines on the removal of invasive alien plants;
- a national strategy on IAS; and
- continued monitoring to assess invasiveness as well as allow the timely detection of new alien species.

**Goal - 7: Address challenges to island biodiversity from climate change, and pollution**

**Target 7.1: Resilience of the components of biodiversity to adapt to climate change in islands maintained and enhanced**

**Target 7.2: Pollution and its impacts on island biological diversity significantly reduced**

**Assessment of Overall Progress at a National Level** - 😊 [targets 7.1 and 7.2]

**Description of Progress**

There are various ongoing **afforestation projects** that are aimed at increasing the number of trees which would serve as a sink for CO<sub>2</sub>. MEPA (2008) in the published [SOEI on policy responses for 2007](#), documents a 14% increase in trees planted between 2006 and 2007, with a total of 33,278 trees planted in 2007. A project of afforestation in several areas around the Maltese Islands was launched by the Government in 2003 called [“Trees for People”](#). Other planting campaigns such as the [“34U”](#) are also promoted.

During the period 2002-2008 **major tree planting activities** were carried out by the Department of Parks, Afforestation and Restoration of the Countryside (P.A.R.C. Department) within MRRA. The following sites were targeted for afforestation: *Foresta 2000* (l/o *Mellieħa*); *Salini* (l/o *Qawra*), *Xrobb l-Għaġin* (l/o *Marsaxlokk*), *Wied Blandun* (l/o *Paola*) and *Ta' Qali* National Park (l/o *Rabat*). Proposed indigenous species for planting would be dependent on existent species in the earmarked areas. The P.A.R.C Department has undertaken the production of Aleppo Pine (*Pinus halepensis*), Holm Oak (*Quercus ilex*), Sandarac Gum Tree (*Tetraclinus articulata*), Narrow-Leaved Ash (*Fraxinus angustifolia*), Carob Tree (*Ceratonia siliqua*), White Poplar (*Populus alba*), Mediterranean Cypress (*Cupressus sempervirens*) and Maltese Rock-Centaury (*Palaeocyanus crassifolius*) from seeds/shoots of local stock (source P.A.R.C Department 2009 as part of 4NR consultations).

Other planting activities are undertaken by environmental NGOs. [“Foresta 2000”](#) is a joint venture between Birdlife Malta, *Din l-Art Helwa* and the P.A.R.C Department (MRRA). It involves the planting of trees and other native flora, as well as restoration of rubble walls over an area of 104 ha. The intention is to create a Mediterranean woodland that can attract native and endemic fauna. Nature trails will also be planned in the area.

<sup>15</sup> This issue is also noted in the [Communication from the Commission on Towards an EU Strategy on Invasive Species](#)



It must be noted that **potential impacts on biodiversity of plans, programmes and projects for afforestation** is regulated through different aspects of the EPA and the DPA. Afforestation would constitute 'development' under certain criteria of the latter Act. In such circumstances, afforestation would be subject to permit from MEPA, in which cases biodiversity considerations are taken into account. Indeed, the 'Environment Impact Assessment Regulations, 2007' ([LN 114 of 2007](#)) includes provisions related to afforestation and deforestation activities. An Environment Planning Statement (EPS) or an Environment Impact Statement (EIS) would be required depending on the area covered by the afforestation scheme (5 ha or more; more than 25 ha, respectively). Certain deforestation activities are also covered through these Regulations. Afforestation and deforestation projects are also covered through Section 9 of Schedule IA of the above-mentioned Regulations, which refers to developments affecting natural and cultural heritage (such as protected trees and protected copses). Moreover, any afforestation activities located within protected areas declared under various Regulations of the EPA would also be regulated, as for instance would afforestation within Special Areas of Conservation (SAC) under the 'Flora, Fauna and Natural Habitats Protection Regulations, 2006' ([LN 311 of 2006](#), as amended). If such afforestation is not within the management plan of the protected site in question, and is likely to have a significant effect thereon, either individually or in combination with other plans or projects, an appropriate assessment (AA) would be required in order to assess the implications of such operation or activity on the site in view of the its conservation objectives, as per Regulation 19 of the afore-cited Regulations.

Currently, Malta is working on the compilation of the "[Second National Communication to the United Nations Framework Convention on Climate Change \(UNFCCC\)](#)" as part of a project under UNEP/GEF funding. This second communication will be focusing on vulnerability and adaptation in the Maltese Islands, hence climate change impacts, in relation to various sectors.

Measures on addressing air and water pollution are mentioned in [Sections 3.4 and 3.7](#) of this report.

In Malta, the incorporation of the essential **elements of sustainability in waste management policy** is done through a process of strategic waste management planning, which includes the preparation of the National Solid Waste Management Strategy for the Maltese Islands. Another important element in ensuring adequate protection of human health and the environment is to have a tight waste management regulatory regime. MEPA is the Competent Authority regulating waste management in the Maltese Islands. MEPA provides for the regulation of all waste management facilities and activities. Information on the various types of permits that are issued by MEPA to facilities and individuals working within the local waste management industry, as well as information about national legislation, plans and policies is provided on MEPA's web portal on [waste](#).

Extensive activities aimed at enhancing and promoting public awareness and action to **minimise, manage and recycle waste** have been undertaken by [WasteServ Malta Ltd](#). This company is entrusted with the role of organising, supervising and controlling the provision of major waste management facilities and related services throughout the Maltese Islands. The [awareness campaign](#) that is implemented includes delivering talks to schools as well as to organisations including MEPA. WasteServ, in cooperation with a Maltese youth singer, has also released a song entitled '[Waste Matters](#)'. This song, which is another in a series of initiatives by WasteServ, aims at explaining and emphasising the educational message with regards to the environment and waste separation. WasteServ is also implementing a [Battery Buster Campaign](#), which is being sponsored and supported by FIMBank plc. Initially targeted at school children, the campaign is extending its audience to supermarkets, shopping complexes and other centrally-located retail outlets in Malta and Gozo. The campaign encourages consumers to dispose of their used batteries in an environmentally sustainable manner, while at the same time they are participating in a competition with attractive prizes to be won. WasteServ has also established a **network of bring-in sites** for the deposit of paper, plastic, metal and glass for recycling and civic amenity sites for the separate collection of bulky waste. A **Materials Recovery Facility** was also established to enable further sorting of recyclables. A mechanical biological treatment plant shall also be commissioned in 2010; this facility shall enable the generation of energy from waste, as well as compost. Relevant environmental data on waste is also generated and published by the National Statistics Office ([Table 9, overleaf](#)):

Label	Description	Frequency
WASTE	Waste Disposal - Total quantities of waste treated - NUTS 1 level - Disposal (other than incineration).	ANNUAL_TWOYEARLY
WASTE	Waste Generation - By EWC-STAT codes and economic activities (NACE), amounts in 1000 tonnes per year.	ANNUAL_TWOYEARLY
WASTE	Waste Incineration - Total quantities of waste treated - NUTS 1 level - Incineration	ANNUAL_TWOYEARLY
WASTE	Municipal Waste	ANNUAL
WASTE	Waste Quality Report	ANNUAL_TWOYEARLY
WASTE	Waste Recovery - Total quantities of waste treated - NUTS 1 level - Recovery (excluding energy recovery)	ANNUAL_TWOYEARLY
WASTE	Waste Facilities - Number and capacity of recovery and disposal operations per region	ANNUAL_TWOYEARLY

Source: Unit B4: Environment and Resources

**Table 9 - Environmental Data generated by the National Statistics Office**

**Obstacles, Needs and Future priorities** - Research should target the downscaling of regional climate projections and the development of local scenarios which take into consideration local characteristics throughout various sectors.

**Goal - 8:** Maintain capacity of island ecosystems to deliver goods and services and support livelihoods

**Target 8.1:** Capacity of island ecosystems to deliver goods and services maintained or improved

**Target 8.2:** Biological resources that support sustainable livelihoods, local food security and health care, especially of poor people living on islands, maintained

**Assessment of Overall Progress at a National Level** - 😞 [ target 8.1] 😊 [ target 8.2]

### Description of Progress

Efforts to conserve ecosystems (e.g. saline marshlands and sand dunes) that provide protection against storm surges are ongoing as part of PA management. Valley cleansing activities are carried out to control floods and hence maintain this ecosystem's functions. Planting activities have also been carried out (such as at *Magħtab*) to prevent the risk of landslides.

National organisations entrusted with the role of overseeing disaster preparedness, response and mitigation include the Marine and Storm Water Unit, and the Valley Management Unit, both under the [Services Division](#) within MRRRA. These units are involved in the implementation of marine and storm water infrastructural works, and the maintenance of valleys.

Afforestation activities are also carried out to strengthen the capacity of wooded areas in Malta in Climate Change adaptation. The implementation of agri-environment measures and cross-compliance activities also safeguard the capacity of agroecosystems in food security.

MEPA is currently working on the Water Catchment Management Plan (= River Basin Management Plan). Indeed, a Twinning 'light' [project](#), funded by the Transition Facility Programme for Malta 2006, was implemented between Malta and France during 2009. The overall objective of this project was to achieve compliance with the requirements of the Water Framework Directive (WFD) 2000/60/EC pertaining to the preparation of the first River Basin Management Plan.

The National Statistics Office carries out a [Survey on Income and Living Conditions \(SILC\)](#), which serves as a source of statistics on income distribution and aims to provide a complete set of indicators on poverty, social exclusion, pensions and material deprivation. The first survey was conducted in [2005](#) [see also [Press Release 80/2007](#)] and is currently being conducted on an annual

basis (The [2007](#) survey findings are also published). The [Ministry for Social Policy](#) has also issued a National Action Plan on Poverty and Social Exclusion 2004-2006 and National Reports on Strategies for Social Protection and Social Inclusion for 2006-2008 and 2008-2010. These provide an assessment of the social situation in Malta and describe priority policy objectives. The national report for [2008-2010](#) documents the following: “Malta’s long-term vision remains that of promoting and sustaining a better quality of life for all, particularly for those who are considered to be more vulnerable and therefore at greater risk of social exclusion and poverty.” For the short term<sup>16</sup>, the strategy for social inclusion integrated in this report, aims to maintain the rate of those experiencing risk of poverty stable at 14.2%<sup>17</sup>. This goal is complemented by the medium term<sup>18</sup> target, to reduce the rate of people at risk of poverty and social exclusion from the present 14.2%. This strategy also aims to address a number of other issues of concern specific to the strategy’s priority objectives, through enhancing children’s social inclusion prospects, promoting active inclusion, and promoting equality of opportunities. See the actual report for further details. Looking at the Survey on [Income and Living Conditions 2007](#) published by the National Statistics Office, 14% (57,440 individuals) of the Maltese population are at risk of poverty.

**Obstacles, needs and future priorities** - Awareness on biodiversity’s role in natural hazard reduction, and also in underpinning agricultural productivity, and in climate change adaptation should be raised further. Additional resource mobilisation is also warranted.

### **Goal - 9: Maintain socio-cultural diversity of indigenous and local communities on islands**

**Target 9.1:** Measures to protect traditional knowledge, innovations and practices associated with island biological diversity implemented, and the participation of indigenous and local communities in activities aimed at this promoted and facilitated

**Target 9.2:** Traditional knowledge, innovations and practices regarding island biodiversity respected, preserved and maintained, the wider application of such knowledge, innovations and practices promoted with the prior informed consent and involvement of the indigenous and local communities providing such traditional knowledge, innovations and practices, and the benefits arising from such knowledge, innovations and practices equitably shared

**Assessment of Overall Progress at a National Level** - 😊 [targets 9.1 and 9.2]

### **Description of Progress**

**Rubble walls** characteristically delineate terraced field plots in Malta. ‘Constructed originally from the local limestone, these architectural elements result in a very distinctive landscape that provides continuity with the historic features and fabric of many villages and other urban centres. Over the centuries, terracing and construction of retaining dry rubble walls have allowed the extension of agricultural activities along steep slopes that would have been considered marginal. Traditionally built and well-maintained rubble walls are appreciated for their aesthetic value, their importance as a habitat for many species of flora and fauna, and as soil conservation structures’ (Source: RDP 2007-2013). Since the enactment of the ‘Rubble Walls and Rural Structures (Conservation and Maintenance) Regulations, 1997’ (LN 160 of 1997, as amended), the Government has started investing in the trade of rubble wall builders in order to conserve this trade, as well as restoring and conserving such traditional dry walls which, apart from being an important traditional rural structure (in terms of avoiding soil erosion and desertification), rubble walls also serve as an important ecological corridor and a refuge for a number of endangered terrestrial fauna. Besides being protected structures, under the retention of landscape features, the GAEC standard - Terraced rubble walls should be preserved and maintained in good state - is adopted. Under the RDD 2004-2006, the Restoration of Terraced Rubble Walls sub-measure was by far the most popular with a total of 1,937 applications throughout the three year programming period (Source: RDP 2007-2013). Under [RDP 2007-2013](#) - support for the conservation of rural structures providing a natural habitat for fauna and flora - is adopted as an agri-environment measure under Axis II - Improving the Environment and the Countryside.

<sup>16</sup> Short term is hereby defined in terms of the two year time frame covered within the current action plan.

<sup>17</sup> The poverty rate stood at 13.7% amongst males and 14.7% amongst females (Source: SILC 2005).

<sup>18</sup> Medium term is hereby defined in terms of time frames exceeding the two years.

Various publications deal with a number of aspects of traditional knowledge and practices in relation to biodiversity; amongst such publications one can mention the works of Gulia (1856, 1859); Borg (1922); Lanfranco (1993) and Pisani (2000). Furthermore, an **ethnobotanical survey** is being undertaken by a local researcher, who has been gathering ethnobotanical data for 17 years and has started doing so systematically since 1996. This ongoing research consists of semi-structured interviews, including discussions, and participant observation. Most interviewees are farmers and/or herders, and sometimes fishermen and traditional healers. Since traditional knowledge has declined considerably during the past 50 years, informants are usually sought from among the pre-World War II generation. Aspects of biocultural knowledge discussed include: medicinal plants; folk concepts of disease; local cultivars of crops; plants in myth, legend and superstitions; vernacular names and ethnotaxonomy; traditional agricultural practices; traditional methods of pest control; role of plants in animal husbandry, e.g. use of plants for veterinary purposes and fodder; old methods of pest control; fibre crafts; etc. This research will culminate in the publication of a monograph on the ethnobotany of the Maltese Islands.

**Obstacles, Needs and Future priorities** - Further encouragement of the uptake of the agri-environment measure would help strengthen the role of farmers as stewards of the Maltese Countryside.

### **Goal - 10: Ensure the fair and equitable sharing of benefits arising out of island genetic Resources**

**Target 10.1:** All access to genetic resources from islands is in line with the Convention on Biological Diversity and its relevant provisions and, as appropriate and wherever possible, with the International Treaty on Plant Genetic Resources for Food and Agriculture and other applicable agreements

**Target 10.2:** Benefits arising from the commercial and other utilization of island biodiversity genetic resources shared in a fair and equitable way with the island countries providing such resources in line with the CBD and its relevant provisions

**Assessment of Overall Progress at a National Level** - 🟡 [targets 10.1 and 10.2]

**Description of Progress** - Provisions on access and benefit sharing (ABS) as called for by the CBD are integrated into domestic legislation. Endemic species are assigned a legal status except for those that are common.

**Obstacles, needs and future priorities** -The national ABS regime will require further development in consultation with relevant stakeholders.

### **Goal - 11 - Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention**

**Target 11.1:** New and additional financial resources are allocated to all islands, in particular small Islands developing States and for developing country Parties, to facilitate the effective implementation of this programme of work and, in general, their commitments under the Convention in accordance with Article 20

**Target 11.2:** Technologies are transferred to developing country Parties, in particular small island developing States, to allow for the effective implementation of this programme of work and, in general, their commitments under the Convention, in accordance with Article 20, paragraph 4

**Target 11.3:** Capacity of islands to implement this programme of work on island biological diversity and all its priority activities is significantly strengthened

**Assessment of Overall Progress at a National Level** - 😊 [target 11.3] 😊 [targets 11.1 and 11.2]

### **Description of Progress**

#### Improved Financial Capacity

When considering the **engagement of the private sector** in biodiversity conservation one can mention the financial support provided by national banks to conservation projects (including in financially assisting the publication of awareness raising material on biodiversity). Some banks have also set up conservation trust funds such as the [HSBC Cares for the Environment Fund](#). Bank of Valletta (BOV plc.) have a number of initiatives that positively impact the environment amongst which one can mention the ['34U Campaign in Localities'](#) launched in collaboration with the Ministry

for Resources and Rural Affairs and undertaken in collaboration with various Local Councils. Staff members from Maltese Banks have also participated for instance in conservation activities, as well as in clean-up activities held on World Environment Day (e.g. [BOV Clean-up Malta Campaign](#) and the [Underwater Clean-up](#)).

The [Environment Initiatives Partnership Programme \(EIPP\)](#) is a scheme for financing environmental projects under MEPA management. The programme is based on the implementation of projects that benefit the natural and cultural heritage of the Maltese Islands through direct and active involvement of other governmental and non-governmental agencies. The monetary resources to fund the programme arise mainly from:

- planning gains in certain development permit conditions (especially for medium or large-scale projects) seeing that development, even when acceptable in principle, has an impact on environmental resources and society (e.g. indirect effects on natural resources or infrastructure); planning gain is a legally-enabled concept that seeks to secure some environmental benefit in return;
- forfeited bank guarantees, which are penalties incurred by developers for breaching permit conditions; the bank guarantee itself is not a funding source, but is intended as a deterrent against infringement of permit conditions; in the event of default, confiscated funds are used to remedy damage and/or for other environmental purposes.

### Improved Human Capacity

At a national level, informal *ad hoc* intergovernmental **partnerships** are established, whereas formalised partnerships between the government and NGOs are established in the form of legal contracts. MEPA in its capacity as a regulator of environmental law, including on biodiversity, liaises with a number of entities that are involved in enforcement activities, such as the [Customs Division](#) and the Administrative Law Enforcement Unit. **Sectoral memoranda of understanding (MoU)** are also being established e.g. the MoU established between MEPA and the [Malta Resources Authority](#) with regards to the implementation of the Water Framework Directive (WFD) in Malta. A **Marine Protected Area Steering Committee** has been established to tackle issues related to the marine environment, particularly within marine protected areas, however, other areas are also being considered. MEPA also liaises with a number of entities (e.g. with the Malta Centre for Fisheries Sciences - MCFS) in the rehabilitation of marine turtles that have been injured for instance by fishing activities, as well as in addressing strandings.

The **staff complement** working within the Ecosystems Management Unit (EMU) within MEPA has also more than doubled since 2001. The EMU coordinates activities, policy and strategies related to MEPA's response in the areas of ecosystems management, nature protection, GMOs and biosafety. This includes, amongst others, issues related to the EC Habitats Directive and the Natura 2000 Network of Protected Areas, the National Biodiversity Strategy and Action Plan (NBSAP), terrestrial and marine protected areas, habitat and species protection and management, nature permitting applications and processes (including CITES) and the implementation and follow-up of EU-funded projects related to biodiversity and nature protection.

### Improved Scientific, Technical and Technological Capacity

The Maltese Islands are used as the **unit for spatial planning**, with due consideration to environmental requirements as set out by the [Structure Plan for the Maltese Islands](#) and its seven [Local Plans](#). With regard to mainstream biodiversity into integrated planning, this is achieved via provisions under the DPA and EPA as well as the designation of areas of ecological importance (AEIs) and Sites of Scientific Interest (SSIs) where stricter development control is exercised. Public consultations are carried out in both EIA and SEA procedures [See [Section 3.6 on Development Control and Land Use Planning of this report](#)].

Apart from national indicators on the state of the environment, work on sustainability indicators has been carried out in the past through work carried out by the **Sustainable Indicators - Malta Observatory (SI-MO)** hosted by the Islands and Small States Institute within the [Foundation for](#)



International Studies. The SI-MO project (Nov 2000 - Nov 2002) was carried out in connection with the Mediterranean Environmental Reporting Monitoring and Information System (MED-ERMIS). SI-MO's work to conduct research and development work and, to disseminate information on Sustainability Indicators for Malta was divided into seven work-packages. Work-package One (WP1) related to the identification of data collection and systematic reporting on environmental indicators for air, aquatic and terrestrial environments. One of the themes which were addressed, and for which indicators were designed, included "biological diversity and ecosystems".

Various **twinning missions** have been carried out in partnership with foreign and local entities, including on enforcement. Certain entities, such as MEPA and Customs Division, also provide in-house training to their staff. For instance, trade regulations are included in the training curricula of the Customs Division. The Customs Training Unit also regularly conducts an organisational training needs analysis upon which the yearly training plan is based.

MEPA has participated in the project entitled "**Mediterranean Collaboration on Small Mediterranean Islands**" under the PIM funding mechanism. Via this project, Malta received assistance in relation to the species assessments, interpretation of habitats, management of protected areas and biodiversity monitoring.

### Support to Developing Countries

Malta as part of the European Community provides external assistance to developing countries in implementing their commitments under the CBD.

**Obstacles, needs and future priorities** - More enabling activities for the implementation of the CBD PoW on Island Biodiversity are definitely needed, including better networking and resource mobilisation. Although monitoring activities are carried out, such as in PAs, or else targeting specific species, a national biodiversity monitoring strategy is crucial. Innovative ways of engaging the private sector in biodiversity conservation endeavours are needed. To improve CITES-related compliance, Malta has recently set up a National Compliance Committee, composed of Customs and Police officials, together with officials from the CITES Management Authority, amongst others. This Committee is planning to shortly adopt a national action plan for the co-ordination of compliance.




## **2.2 Progress in Implementing National Recommendations on Biodiversity**


### 2.2.1 State of the Environment Reports for Malta

Since 1998, Malta has published reports documenting the state of the environment (SOER) including the state of biodiversity during the reporting period. The SOER of 1998 and 2002 provided in-depth analyses of various sectors that in a way or another impact biodiversity. Each report puts forward a suite of recommendations for bringing forth the conservation of biodiversity in Malta. In certain cases recommendations are also aimed at mainstreaming biodiversity into sectors, in particular agriculture and fisheries. The most recent SOER, which was published in 2005, adopted a new approach focussing on providing easily understandable information to policy makers, organisations and the general public, contrary to the more technical information provided by its preceding reports. Apart from data gathering and presentation, such reports have also presented recommendations for the development of new policy directions. The 2005 SOER is supplemented by the 2006 and 2007 State of the Environment Indicators (SOEI), which update the set of indicators that were published in 2005. These indicators provide concise information on key environmental trends to policymakers, organisations and the public in an active, user-friendly and systematic way. (Refer to the [SOEI 2006](#) and [SOEI 2007](#)) [See [Chapter 1](#) of this report for an overview].

In view of the ongoing development of the NBSAP, an evaluation of progress made in implementing SOER recommendations was carried out so as to identify gaps in implementation that would then be covered by the implementation of the NBSAP. A summary of recommendations relating specifically to biodiversity issues is provided below, along with whether it was successfully implemented. Recommendations targeting sectors are evaluated in [Chapter 3](#) of this report.

LEGEND:

	Recommendation being successfully implemented		Ongoing work but recommendation not yet fully implemented		Recommendation not being successfully implemented
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Summary of SOER Recommendations specific to Biodiversity	Status	Comments
<p>The rich biodiversity of the Maltese Islands should be better publicised as an important component of our national heritage. Endemic species in particular should be regarded with the same esteem as are other unique features of the national heritage. In particular, most should be granted a ‘protected species’ status, in order to safeguard them and highlight their importance and uniqueness - SOER 1998 &amp; 2002</p>		<p>Various CEPA activities have been carried out, including the publication of a series of posters, including a poster on endemic species published in 2007 (<a href="#">Figure 15</a>). Endangered endemics are protected under the ‘Flora, Fauna and Natural Habitats Regulations, 2006’ (<a href="#">LN 311 of 2006</a> - Regulation 26, as amended) <a href="#">EkoSkola</a> - Environmental Management in Schools - is a national school framework coordinated by Nature Trust Malta (NTM) with the support of the <i>EkoSkola</i> National Steering Committee (ENSC). It provides targeted environment education and forms part of the Ministry’s strategy to adopt Agenda 21 locally. It is Malta’s version of the international programme called “Eco-Schools”. <i>EkoSkola</i> aims to <i>inter alia</i> raise environmental awareness through school and classroom activities and extra-curricular events, as well as encouraging the school community to play a more active role in environmental decision-making. “A total of 54 schools are now involved, 11 more than in 2005/2006, which amounts to approximately 25% of all schools, most of which provide primary education (and does not include other schools that may be implementing environment-friendly measures but are not participating in this programme). During the 2006/2007 scholastic year, about 24,500 students were involved in the programme through their schools, 7,500 more than in the previous scholastic year.” (Source: SOEI 2007 - <a href="#">Schools covered by EkoSkola</a>)</p> <p>The first edition of <a href="#">Dinja Waħda</a> (One World) was in 1994 targeting more than 50% of all the primary schools. During the time, 14 activities were undertaken to promote pro-environmental behaviour that varied from simple tasks (e.g. drawing a poster) to more demanding ones (e.g. organising a clean-up campaign). Nowadays 30 green activities, including school visits at the SACs and SPAs <i>l-Għadira</i> and <i>Is-Simar</i>, and which are included in an Action Plan, are offered to primary schools. Upon completion of each activity, a school is rewarded points. Awards (gold, silver, bronze and merit) are given to those schools that have gathered the majority of points by the end of the year. Bank of Valletta</p>

	<p>has also been appointed as the <a href="#">education partner</a> of this education programme, which is led by BirdLife Malta.</p> <p>[See also responses to PoWs on Island Biodiversity, GSPC and Protected Areas]</p>
<p>Research aimed at gaining a better understanding of the diversity of the biota of the Maltese Islands should be promoted and funded. In particular, funding should address existing gaps in knowledge - SOER 1998 &amp; 2002</p>	<p>A series of studies have been commissioned by MEPA to increase an understanding of Maltese biodiversity. Further knowledge is gained via university dissertations, funded projects, studies carried out by national experts in their own personal capacity as well as through findings of EIAs.</p> <p>EU funds that support research are also available. The <a href="#">Malta Council for Science and Technology (MCST)</a> is the national advisory body to Government on science and technology policy. MCST's tasks also <i>inter alia</i> include the responsibility for the <a href="#">National Strategy for Research and Innovation for 2007-2010</a>, entitled 'Building and Sustaining the Research and Innovation (R&amp;I) Enabling Framework' and the responsibility as National Contact Organisation for creating awareness and providing support for <a href="#">EU's Research and Development Framework Programme (FP7)</a>.</p> <p>Malta is a member of the European Platform for Biodiversity Research Strategy (EPBRS). The <a href="#">Malta National Biodiversity Platform</a> was launched on 27th of October 2003 as part of a European funded project.</p> <p>Various national research institutions also contribute towards strengthening an understanding of Maltese biodiversity and some also participate in regional research projects (apart from academic research at a national level). Amongst such entities one can mention the <a href="#">Department of Biology</a> within the University of Malta (UoM) and the <a href="#">Institute for Environmental Studies</a>. The UoM has established a number of Institutes (e.g. the <a href="#">International Environment Institute</a>, the <a href="#">Institute for Islands &amp; Small States</a> and the <a href="#">Euro-Mediterranean Centre on Insular Coastal Dynamics</a>), which combine research and teaching in varying degrees. Environmental NGOs also carry out research.</p> <p>[See also responses to PoWs on Island Biodiversity, GSPC and Protected Areas]</p>












Figure 15 - Poster on Endemic Species




<p>Existing inventories and databases of local biota should be reviewed, updated and extended to cover the whole of the Maltese Islands and their territorial waters. The Red Data Book for the Maltese Islands should be revised, updated and published with urgency - SOER 1998 &amp; 2002</p>	<p>Work is in progress - The National Database on Biodiversity will be developed using the data collated through the studies that have been commissioned by MEPA. Deliverables of some studies have included databases dealing with specific taxonomic groups developed in MS Access format. These will be centralised in the national biodiversity database.</p> <p>A short intensive training course on how to establish national biodiversity inventories was given to MEPA officers by RAC-SPA in 2008. The updating of the RDB is envisaged through the development of Red Data Lists. Work has been initiated through the afore-mentioned commissioned studies. Datasheets will be prepared for every threatened species.</p>
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<p>Threatened species of local biota, and the majority of endemic species, should be included in the list of protected species. Different species should be given different protection ratings depending on their particular conservation status - SOER 1998</p>		<p>Legislative texts are accompanied by lists of protected species as schedules. Levels of protection are applied in terms of whether strictly protected or else whether covered by provisions on sustainable use. As aforementioned, since 1998 there was a highly significant increase in the number of protected species.</p>
<p>Locally occurring habitats and ecosystems of international importance, particularly in the Mediterranean region, should be protected as required by the various conventions and agreements to which Malta is party, and managed according to internationally accepted standards - SOER 1998</p>		<p>Important habitats have been protected through legislation which calls for the designation of protected areas covering such habitat types. Significant progress has been achieved in developing <a href="#">Malta's Ecological Network of Protected Areas</a>. Work is ongoing to complete the system of marine protected areas [See also response to goal 1 of CBD PoW on Island Biodiversity in <a href="#">Chapter 2</a>; and <a href="#">Appendix III(b)</a>].</p>
<p>The <i>Environment Protection Act 1991</i> should be reviewed and revised in order to remedy certain deficiencies and bring it in line with modern international practice. In particular, the designation 'Nature Reserve' in the <i>Environment Protection Act 1991</i> should be totally revised as it does not conform to internationally accepted definitions of nature reserves. It is strongly recommended that the various categories of protected areas that are internationally accepted and used, be incorporated into local legislation (the <i>Environment Protection Act 1991</i>). Schedule IV sites declared as 'Nature Reserves' (in effect 'Tree Reserves') by the Tree and Woodland Protection Regulations should be mapped as soon as possible, in order to effectively protect the sites listed, and render the provisions of Schedule IV enforceable - SOER 1998 &amp; SOER 2002</p>		<p>The EPA has been reviewed - <a href="#">CAP. 435 - Act XX of 2001</a> Environment Protection Act, which was subsequently amended by <a href="#">Act II of 2006</a> (with respect to Article 9). A Better Regulation Initiative is ongoing and consists of reviewing legislation based on experiences gained to date in implementing and enforcing the respective regulations. With regards to the 'Tree and Woodland Protection Regulations, 2001' (LN 12 of 2001) these have been revised with the intention of repeal and replacement (reference is made to <a href="#">GN 682 of 2008</a>). Tree Protection Areas have been mapped and will be published along with the revised legislation. Public consultation on the repeal of LN 12 of 2001 has also been carried and involved a seminar.</p>
<p>Certain discrepancies between the <i>Environment Protection Act 1991</i> and the <i>Development Planning Act 1992</i> and subsidiary legislation should be resolved - SOER 1998</p>		<p>Discrepancies were addressed via repeal and replacement and/or amendments. One of the activities envisaged via the <a href="#">MEPA Reform</a> is that of harmonising the DPA and EPA into a single Act that re-establishes MEPA and defines its core functions, role and responsibilities in promoting sustainable development.</p>
<p>Malta' implementation of the various international conventions and agreements concerned with the protection of nature and natural resources to which it is party should be reviewed. This review should also include sites and species declared under these conventions - SOER 1998 &amp;</p>		<p>An evaluation of species of international importance afforded legal protection nationally has been undertaken under the SOER 2005 process and recently updated [See response to goal 1 of CBD PoW on Island Biodiversity in <a href="#">Chapter 2</a>]. Ongoing review as part of a Better Regulation Initiative</p>








2002		
<p>Local agencies that have the responsibility of implementing the various international conventions and agreements concerned with the protection of nature and natural resources to which Malta is party, should be given the necessary resources to carry out the required work. In some cases, implementation requires the concerted efforts of a number of different agencies, in which case the necessary administrative machinery for taking such concerted action should be set up - SOER 1998 &amp; 2002</p>		<p>Although some investments in resources have been made, such as recruitment of staff and capacity building measures, additional resources are needed especially in the field of monitoring and enforcement.</p>
<p>An official policy concerning the importation of alien species for commercial and other purposes needs to be formulated and local legislation enacted and/or amended accordingly. All efforts should be made to prevent invasion of natural ecosystems by aliens and genetic contamination of native species, subspecies, races, varieties and stock by alien genetic material. Apart from other implications, the use of Genetically modified organisms (GMOs) poses a potential threat to natural ecosystems and their biota and therefore GMOs should be included in any policy and/or legislation on alien species. Where local ecosystems have become invaded by alien species, all efforts should be made to eradicate the invaders and to prevent reinvasion - SOER 1998 &amp; 2002</p>		<p>Alien species and GMOs are treated by separate legislative texts enacted under the EPA and DPA, as well as relevant legal texts under the responsibility of other Governmental Departments - for instance legislation on plant health and phytosanitation are administered by the Plant Health Department.</p> <p>The policy concerning the importation of alien species is defined by legal provisions that are in line with EU obligations. Various entities are involved in overseeing the implementation of preventive and control measures in the field of nature protection, trade, phytosanitation, zoosanitary measures and maritime issues. The use and release of GMOs also falls under the responsibility of more than one Competent Authority.</p> <p>Efforts to eradicate invasive species mainly deal with plant invaders within protected areas. The eradication of <i>Rattus</i> spp. from islets (and <i>Rdum tal-Madonna</i>) has also been initiated with successful eradication reported for <i>Selmunett</i>.</p>
<p>Existing inventories (including cartographic ones and GIS databases) of local habitats and biocoenoses should be reviewed, updated and extended to cover the whole of the Maltese Islands and their territorial waters, and aligned to international land use and biotope classifications, with possible local adaptations - SOER 1998 &amp; 2002</p>		<p>The <a href="#">MEPA Map Server</a> is the online Geographic Information System (GIS) developed and used by MEPA. It provides mapping data, aerial photography and planning information to all internet users via an interactive map. It is possible to search for streets, view aerial photographs, look up planning applications and enforcement actions. One is also able to access other spatial environmental data, including habitat types (terrestrial &amp; some marine) and protected area boundaries. Research on marine habitats is gradually increasing yet more is required in order to strengthen existing knowledge.</p> <p>Further work was carried out via Article 17 reporting obligations stemming from the Habitats Directive.</p>

<p>Scientifically important, rare, and/or threatened ecosystems and habitats and areas with complexes of such ecosystems and habitats that are not already legally protected should be included in the list of protected sites; Locally occurring habitats and ecosystems of international importance, particularly in the Mediterranean region, should be protected as required by the various conventions and agreements to which Malta is party, and managed according to internationally accepted standards - SOER 1998</p>		<p>Since 1998 major progress has been achieved in the number of species and habitats that have been afforded legal protection, by way of updated legislation and a significant increase in protected area coverage.</p> <p>The legal basis for designating protected areas is provided by national subsidiary legislation enacted under the EPA and DPA. Designation is done in compliance with the various MEAs, including the CBD, to which Malta is a Party. Some areas fall under more than one designation, thereby giving them protection on multiple fronts. Maps of designated areas are included in published legal and government notices.</p>
<p>Marine protected areas should be declared - SOER 1998</p>		<p>This is an ongoing process. To date there are three marine protected areas (with one being designated a marine SAC in the Natura 2000 Network); Malta is currently working to designate other areas.</p>
<p>Bodies, governmental or non-governmental, entrusted with the management of a protected site should be closely monitored by the central authority responsible for protected sites to ensure that national policy is being met. It is recommended that a Board of Management for each protected site be set up - SOER 1998</p>		<p>PA/Site managers are required to submit an annual report of progress made in implementing conservation measures aimed at the maintenance or recovery of biodiversity within the designated site in question.</p> <p>MEPA is the central authority on the designation and management of SACs and SPAs, but more coordination is required between different entities involved in site management.</p>
<p>Deficiencies in the present legislation regulating hunting and trapping need to be addressed - SOER 1998</p>		<p>Deficiencies in the 1996 regulations were addressed through the Conservation of Wild Birds Regulations, 2006 (LN 79 of 2006) and its amendments.</p>
<p>An official policy, backed by legislation, concerning the exploitation of wildlife (other than hunting and trapping) needs to be formulated - SOER 1998</p>		<p>Work has been initiated on developing a dossier on the exploitation of wild fauna aimed at proposing a number of measures that would contribute to strengthen the strict protection regime in line with the EC Habitats Directive (Council Directive 92/43/EEC). This Dossier will set the basis for developing more detailed biodiversity action plans.</p>
<p>All regulations concerning biota and habitats need to be effectively enforced - SOER 1998</p>		<p>A higher degree of horizontal enforcement and increase in resource mobilisation and strengthening of existing collaboration are needed to control and limit possible malpractices. Indeed, one of the activities envisaged via the <a href="#">MEPA Reform</a> is that of more effective enforcement. Indeed enforcement has been identified as one of the pillar of the Reform process - 'The fourth pillar of this reform focuses on the actions required in order to ensure that the regulator's activities are indeed effective. Land and natural resources being both limited resources on the Maltese Islands makes the</p>




		<p>regulation of land use and activities affecting the environment very critical. The success of the reform and more importantly the effectiveness of MEPA's regulation are dependent upon the establishment of a robust enforcement regime in order to secure respect to the sustainability principle.'</p>
<p>An official nation-wide 'vision', with stated national objectives and strategies concerning Malta's biodiversity (and environment in general) is urgently required. A Maltese 'Biodiversity Strategy' should be adopted as soon as possible - SOER 2002</p>		<p>Work has proceeded on the development of Malta's NBSAP. So far a number of consultation exercises have been carried out to gather the necessary information basis. An evaluation exercise of progress made to date in implementing national recommendations, and also relevant CBD PoWs, has been carried out in order to identify any gaps that would need to be addressed by the NBSAP. This CBD 4<sup>th</sup> National Report (4NR) provides an overview of such assessment.</p>
<p>Resources and infrastructure, including funds and the human resources, should be appropriately increased and ameliorated so as to cater for the considerable work related to nature protection. A well-trained, well-remunerated scientific civil service should be set up, such as exists in other countries - SOER 2002</p>		<p>By and large, officials working in governmental departments have a scientific background (Diploma, BSc, MSc or PhD degree in some biology-related discipline). Staff within the Ecosystems Management Unit within MEPA has more than doubled since 2001. Additional training of staff has either been achieved via a hands-on approach or else attained via attendance to twinning missions comprising mainly presentations on conservation issues and legislation coupled with field activities, or else in the form of attendance to tailored courses both nationally and abroad.</p>
<p>There should be better communication between the many different institutions [environment protection, development planning and land-use, agriculture, fisheries, aquaculture, tourism, maritime affairs, public research institutions, public health, law enforcement, museums, etc.] whose work in some way involves living resources - SOER 2002</p>		<p>Some networks at a national level (both informal and those that are formally established via a committee) exist, amongst which one can mention those between:</p> <ul style="list-style-type: none"> <li>▪ MEPA and the CITES Scientific Authority - mainly in connection with taxonomy and wildlife trade issues;</li> <li>▪ MEPA and the Argotti Botanic Garden and University Herbarium - mainly in connection with plant conservation and reinforcement programmes;</li> <li>▪ MEPA and the Plant Health Department - mainly in connection with the propagation of plant species (with relevant permits and guidance provided by MEPA accordingly);</li> <li>▪ MEPA and the Customs Division with respect to CITES implementation and enforcement;</li> <li>▪ MEPA and the Malta Resources Authority with respect to the implementation of the WFD;</li> <li>▪ NGOs and the UoM with respect to dissertations undertaken in protected areas;</li> <li>▪ Fisheries Department and Armed Forces</li> </ul>



		<p>of Malta (AFM) with respect to enforcement at sea;</p> <ul style="list-style-type: none"> <li>▪ MEPA and the Veterinary Services with respect to the treatment of injured wild animals particularly marine turtles;</li> <li>▪ MEPA and Animal Welfare particularly in the control and eradication of IAS (e.g. feral pigeons, ducks and geese)</li> <li>▪ Various entities are involved in implementing the Code of Practice on Cetacean Stranding;</li> <li>▪ MEPA and the P.A.R.C. department with regard to the removal of eyesores from the countryside such as the removal of <i>oil drums on rubble walls</i>.</li> </ul>
<p>There should be strengthening of the existing infrastructure for biological collections, and the transfer of modern technologies for taxonomic research and capacity-building should be encouraged and supported. Responsible authorities should adopt internationally agreed levels of collection housing (climate control, fire protection systems, pest control, acceptable levels of workplace health and safety) that ensure protection of collections and the well-being of all people working on and/or accessing the collections, and avoid further loss of collections valuable for biodiversity study and protection - SOER 2002</p>		<p>Preliminary discussions were held with concerned entities on strengthening the infrastructure of biological collections. In 2005 the project "<a href="#">A Biological Collection Access Service for Europe (BIOCASE)</a>" financed by the 5th Framework Programme (FP5), was completed. MEPA was the National Node for Malta. Through BioCASE, collectors had the opportunity to describe the nature of their collections (both flora and fauna). A seed bank has been established at the Argotti Botanical Gardens however seed collection and storage are still in the preliminary phases.</p>
<p>National, and possibly regional, training programmes on local biological diversity should be developed at different education levels. This is particularly relevant for staff of the main governmental institutions - SOER 2002</p>		<p>Training as continued professional development and selected in-house training within certain organisations (e.g. MEPA, Customs Division) are promoted. Environment officers and other government officials may attend training workshops abroad. Training is also acquired via EU funded Twinning Missions in partnership with other countries. NGOs may also participate in other capacity-building training.</p>
<p>A local 'Clearing-House Mechanism' web-site on the lines set in the Convention on Biological Diversity should be set up. Appropriate use of the Convention on Biological Diversity's Clearing-House Mechanism for the dissemination and analysis of taxonomic information should be encouraged - SOER 2002</p>		<p>MEPA's <a href="#">portal on biodiversity</a> serves as Malta's CHM. This portal is currently being updated and revamped.</p>
<p>The Planning Authority and the Environment Protection Department should as a matter of priority finalise the draft EIA Regulations - SOER 1998</p>		<p><a href="#">Environmental Assessment related legislation</a> has been finalised and even reviewed in order to strengthen provisions. Capacity-building has also been carried out. Quality of EIAs submitted to MEPA is assessed by its Environmental Assessment Unit. [See <a href="#">Section 3.6.1 of this Report</a>]</p>

<p>A national study on the environmental impact of quarrying and on the state of the local quarrying industry is urgently required - SOER 1998</p>		<p>Such a study has been carried out via the Structure Plan Review Process: <a href="#">Minerals Subject Plan</a>. This plan documents the following:          “Environmental protection is a priority for this Minerals Subject Plan and the development control framework seeks to protect scheduled sites. It also seeks to protect environmental capital, such as agriculture, landscape, and water supplies, as well as the Maltese population through the control of site operations that may cause disturbance. This control is essential for the sustainable development of this industry. Priority is also given to site restoration and policies are formulated to seek to improve on current practice.”          Further information on quarrying is available on MEPA’s <a href="#">Portal on Minerals</a>.</p>
<p>Existing treaties should be transposed into local legislation and implemented, especially the provisions related to alien species included in the Convention on Biological Diversity, the Cartagena Protocol on Biosafety, the Bern Convention and the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean of the Barcelona Convention - SOER 2002</p>		<p>These have all been transposed into national legislation.</p>
<p>A nature wardening or ranger service should be set up as soon as possible, and fees (<i>‘multi’</i>) should be increased for infringement of particular regulations, so as to provide an effective disincentive - SOER 2002</p>		<p>The Administrative Law Enforcement (ALE) within the Police Force fulfils this function in terms of enforcement but additional resources are still required. Although a step in the right direction has been taken to recruit environmental wardens in order to enforce certain provisions relating to environmental regulations, there is a need to train them and to widen their role to encompass conservation and nature protection functions.          The new proposed Act dealing with environment protection specifically addresses the issue of enforcement.</p>
<p>Valuable trees should be identified and afforded protection through legislation - SOER 1998</p>		<p>Done initially via the ‘Trees and Woodland Protection Regulations, 2001’ (LN 12 of 2001) and further strengthened via a repeal and replacement process, which is nearing finalisation; this included the mapping of Tree Protection Areas.</p>
<p>Information on the environment (especially data on environmental quality) should be made public and access to all records facilitated. Public entities should be encouraged to make use of the latest technology to facilitate public access to information and justice - SOER 2002</p>		<p>There has been significant progress in this field. For instance the National Ecological Network on Protected Areas is available online; Regulations on access to information in compliance with the Aarhus Convention have been enacted (‘Freedom of Access to Information on the Environment Regulations, 2005’ - <a href="#">LN 116 of 2005</a>). A system is in place within the Ecosystems Management Unit</p>



		(MEPA) to process Requests for Information (RFIs) on biodiversity-related issues. There are also plans to develop a National Database on Biodiversity, which would be available online.
Malta should ratify and implement the Cartagena Protocol on Biosafety in order to prevent any possible invasive behaviour of GMOs - SOER 2002	😊	Malta ratified the Cartagena Protocol on Biosafety on 5 January 2007 and it entered into force for Malta on 5 April 2007.
<p>For every protected area of whatever status, a management plan should be formulated, and a body or agency charged with its implementation. A monitoring programme to ensure that the objectives of the plan are being met should be set up. Any deficiencies should be assessed and addressed. Existing management plans for protected sites should be revised and updated. In particular there needs to be a clear statement of the objectives of the protected site on which to base management. - SOER 1998</p> <p>Declaring protected areas is not enough; it is also necessary to manage, monitor, draw up action plans, protect and enforce all the legal requirements for the protection of the site. This is also an obligation of a number of international conventions to which Malta is a party. Therefore all protected areas should have an associated management plan to include these requirements - SOER 2002</p>	😐	<p>MEPA has submitted an application for funds under the European Agricultural Fund for Rural Development (EAFRD) for a project to establish a framework for the management of all terrestrial Natura 2000 sites in the Maltese Islands and to increase awareness of Natura 2000 amongst the general public and stakeholders.</p> <p>A management framework and an action plan for two MPAs have been approved. These include measures on how to protect the areas from threat, enhance the marine environment, stakeholder involvement and also propose different zones within the marine environment. Such zones are proposed to have different regulations that would range from a “no-entry &amp; no-take” status to “entry-take” status. The involvement of stakeholders in the management of MPAs is being currently discussed.</p>
<p>Although most of the sustainability indicators developed to monitor and report on the conservation and use of biodiversity are inter-related, Malta needs to commence data collection according to international standardised procedures, including CORINE procedures and IUCN criteria. However, it should also be borne in mind that many of the criteria employed by the OECD, United Nations (including the Convention on Biological Diversity and Mediterranean Action Plan), and the European Union are not suitable for the Maltese Islands, either because of the very small size of the Maltese archipelago, or else because of differences in the economic infrastructure. In this respect local versions of indicators should be developed, as close as possible to the original indicators, in order to allow comparability - SOER 2002</p>	😐	<p>CORINE data collection is an ongoing process and is also reported in SOERs and available for viewing on MEPA’s Map Server.</p> <p>Selected biodiversity indicators compiled in Malta include the following:</p> <ul style="list-style-type: none"> <li>▪ Habitat protection coverage by main habitat groups within Natura 2000 sites (considers the habitats in Annex I of the Habitats Directive);</li> <li>▪ Wetlands of the Maltese Islands</li> <li>▪ Species of international importance protected by national legislation - to be updated</li> <li>▪ Endemic species (including a case study on the status of <i>Helichrysum melitense</i>)</li> <li>▪ Status of selected groups of species (including selected vertebrates, insects, flora)</li> <li>▪ Status of selected habitats</li> <li>▪ Exploited species (including a case study on <i>Discoglossus pictus</i>)</li> <li>▪ Soil biodiversity</li> <li>▪ Alien flora (in relation to their mode of</li> </ul>

		<p>introduction)</p> <ul style="list-style-type: none"> <li>▪ Sites proposed / designated as part of the Natura 2000 network</li> <li>▪ Natural areas designated and managed</li> </ul> <p>Further indicators shall be considered especially in line with the process of Streamlining European 2010 Biodiversity Indicators (SEBI 2010).</p>
<p>Incentive measures should be introduced as a 'soft' method to ensure the conservation and sustainable use of biological diversity. The introduction of appropriate financial incentives, including fiscal measures such as tax deductions, should be explored - SOER 2002</p>		<p>Some incentive measures are in place e.g. the incentive directed at fishermen to land injured turtles for their safe rehabilitation and release back into the wild. More work is needed though.</p>
<p>The 'Polluter Pays Principle' should be rapidly introduced to cover activities affecting biodiversity - SOER 2002</p>		<p>The recently enacted 'Prevention and Remedying of Environmental Damage Regulations, 2008' (<a href="#">LN 126 of 2008</a>) are in force.</p>
<p>The possibility of public-private partnerships for increasing investments in biodiversity relevant projects and programmes should be more thoroughly explored - SOER 2002</p>		<p>An example of a successful public-private partnership is what is known as the Malta Embellishment and Landscaping Project (MELP). The latter started operation on 1 November 2002 under the first agreement of a public-private partnership in Malta. The Environment Landscapes Consortium Ltd (<a href="#">ELC Malta</a>) was chosen to run the function of the Urban and Rural Landscaping (URL) Section which was responsible for the urban and rural landscaping of various sites in Malta that fall under the responsibility of the Central Government. As a result of the agreement, all employees with URL, together with all operating sites and equipment, were loaned to the Consortium. The role of the Consortium under the agreement is:</p> <ul style="list-style-type: none"> <li>▪ the embellishment of traffic islands, gardens, valleys and roundabouts, particularly by means of fountains and floral displays;</li> <li>▪ the landscaping of major thoroughfares, public gardens and parks that fall under the responsibility of the Government;</li> <li>▪ the carrying out of other landscaping and gardening operations, such as upgrading works in housing estates, environmental projects and upgrading works at main touristic areas;</li> <li>▪ the improvement of afforested areas;</li> <li>▪ the landscaping of specified public gardens;</li> <li>▪ the development of the resources of <i>Wied Incita</i> Nursery and any other Government nursery to provide for the requirements of any assignment, undertaking or project under this Agreement; and</li> <li>▪ any other assignment, undertaking or</li> </ul>

		<p>project as may be required by the Government from time to time,</p> <p>The project is supervised by a Monitoring Unit. A Monitoring Board controls the running of the agreement. After five years the agreement was improved and extended up to the end of 2012.</p> <p>Other forms of public-private partnerships in Malta include the financial support provided by local banks to conservation projects. In certain cases, staff time has also been devoted to participating in conservation projects.</p> <p>More innovative ways are needed to further engage private entities.</p>
<p>As a sound basis for policymaking, there is a need for more baseline and trend data about Malta's biological heritage ... there is also need for wider and continuous monitoring of the condition of Malta's natural heritage - SOER 2005</p>		<p>The first assessment in line with Article 17 of the EC Habitats Directive has established the baseline for gathering future trend data on species and habitats of Community interest; Other species and habitats (<i>i.e.</i> those not covered by the Habitats Directive) are surveyed on an <i>ad hoc</i> basis.</p>
<p>Communication, awareness-raising and educational measures are also required to complement activities related to monitoring, designation and management of protected areas and species - SOER 2005</p>		<p>Information on species has been disseminated through the publication of awareness-raising material (posters, coasters, bookmarks and calendars) and during seminars/ conferences held, as well as broadcasted on TV and radio programmes.</p> <p>A number of activities are also envisaged via the Natura 2000 communication campaign under <a href="#">proposed EAFRD project</a>.</p> <p>A quantitative field study on "The awareness of Natura 2000 among the Adult Maltese population" was commissioned by MEPA and completed in April 2008.</p> <p>Malta also participates in the <a href="#">Green Spider Network (GSN)</a>.</p>

### **2.2.2 National Strategy for Sustainable Development**

Sustainable development in Malta is advocated by the [National Commission for Sustainable Development](#) (NCSD). This Commission was also responsible for the development of the [National Sustainable Development Strategy \(NSSD\)](#), which was adopted by the Commission in 2006 and by the Cabinet of Ministers in 2007. It is currently being updated with a view to publication. With regard to biodiversity, Malta's NSSD calls for the development of the NBSAP and lays down a set of strategic directions aimed at biodiversity conservation. The NSSD identified 20 priority areas under each of the three pillars of sustainable development. The 8 priority areas focussing on the environment are shown hereunder ([Table 10, overleaf](#)) along with the main strategic directions for each priority area, which the NCSD considered as warranting foremost attention for the attainment of sustainable development goals in Malta.




The indicators set for the Policy Area on "Nature and Biodiversity" are the following:


- 'the proportion of surface area protected and managed to the total surface area of the Maltese Islands', and
- 'trends in abundance, distribution and status of selected species (priority protected/threatened species)'.

Priority Area under the Environmental Pillar	Main Strategic Direction
Climate Change	Take steps to reduce greenhouse gas emissions through transport policy and an energy policy that seeks to promote environmental protection, competitiveness and security of supplies and, as a result, decouple the rate of growth of GHG emissions from economic growth.
Air Quality	Take remedial action to control emissions of air pollutants (ambient levels of particulate matter, sulphur dioxide, carbon monoxide, benzene, lead, ozone, heavy metals and nitrogen oxides), and achieve compliance with European standards.
Nature and Biodiversity	Halt loss of biodiversity by 2010, and achieve management of protected areas by 2008.
Freshwater	Adopt a policy with the aim of ensuring the utilisation of water resources in a manner that is environmentally and economically sustainable, while safeguarding the water needs of the population, and of the agricultural, commercial and industrial sectors, and achieve good quantitative status by 2015.
Seawater	Sustain compliance with the Bathing Water Directive and achieve compliance with Barcelona Convention standards.
Wastes	Prevent and minimise waste by achieving EU waste-related objectives and targets, reviewing Malta's Waste Management Strategy by 2007.
Land use	Protect, maintain and improve the urban and rural environment and, through the planning system, protect the open countryside from uses, particularly residences, which can be more appropriately located in urban areas.
Transport	Reduce car ownership rates to the EU average by 2014. Attain 1995 bus patronage levels by 2014 (40 million passengers).

Table 10 - Strategic Directions identified by the NSSD for the Environment Pillar

The target is 'Halt loss of biodiversity by 2010, and achieve management of protected areas by 2008.' The policy driver identified is the National Strategy for Protection of Biodiversity (= NBSAP). An evaluation was carried out of progress made in implementing the NSSD strategic directions on "Nature and Biodiversity" so as to identify gaps in implementation that would then be covered by the implementation of the NBSAP. The results of the evaluation are tabulated below.

	Strategic direction being successfully implemented		Ongoing work but strategic direction not yet fully implemented		Strategic Direction not being successfully implemented
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NSSD Strategic Directions identified for the Policy Area on "Nature & Biodiversity"	Status	Comments
Monitor and protect all rare and/or threatened endemic species and their habitats, as well as other locally occurring species of international importance, and take active measures for their conservation and restoration.		All endemic species are strictly protected by Regulation 26 of <a href="#">LN 311 of 2006</a> , as amended, excluding common species, which are listed in schedule X to these regulations. Species of international importance and that are found locally are also protected. Their distribution and range is mapped and their conservation status is assessed. Policy guidance is being developed that will help identify priority species and also desired conservation measures to be implemented in the short, medium and long term. <a href="#">[See also response to Goal 1 of PoW on Island Biodiversity in Chapter 2 of this report]</a>

<p>Designate additional habitats for protection (including marine areas), based on sound scientific information, in order to protect these habitats from incompatible development.</p>	<p>☹️</p>	<p>Protection of important terrestrial habitats has been afforded by means of a significant increase in the coverage of protected areas. Work is ongoing to complete designation of additional MPAs in order to afford protection to Malta's important marine habitats. [See also <a href="#">Appendix III (b) on PoW PA</a>]</p>
<p>Draw up and implement the required management plans for Special Areas of Conservation</p>	<p>☹️</p>	<p>A few sites are covered by a management plan. Through a <a href="#">proposed EAFRD project</a>, management plans for all terrestrial protected areas will be developed. [See also <a href="#">Appendix III (b) on PoW PA</a>]</p>
<p>Draw up a National Biodiversity Strategy for Malta based on the aims of the Convention on Biological Diversity</p>	<p>☹️</p>	<p>Work is in progress to develop Malta's NBSAP. So far a number of consultation exercises have been carried out to gather the necessary information basis. An evaluation exercise of progress made to date in implementing national recommendations and also relevant CBD PoWs has been carried out in order to identify any gaps that would need to be addressed by the NBSAP. This CBD 4NR provides an overview of such assessment.</p>
<p>Fulfil all obligations under existing environmental treaties concerning biodiversity and equip local agencies responsible for implementing these treaties with the necessary resources, personnel and administrative machinery to enforce legislation.</p>	<p>☹️</p>	<p><b>Various resource constraints currently challenge implementation. Nonetheless capacity-building activities have been or are being undertaken as part of EU funded projects.</b> Moreover, resource mobilisation is being given due priority in the process of the MEPA reform and attainment of the reform objectives.</p>
<p>Set up a nature wardening service and introduce or increase fines for infringement of particular regulations, so as to provide an effective deterrent.</p>	<p>☹️</p>	<p>Penalties are issued for infringements of Regulations. These either include a fine, imprisonment for a specific period, or both, depending on the gravity of the infringement.</p>
<p>Adopt an official policy on the introduction and eradication of alien species (including genetically modified organisms).</p>	<p>☹️</p>	<p>The legislative and administrative system for dealing with the introduction of alien species from e.g. nature protection, trade and phytosanitary perspectives are in place. Other pathways of introduction need to be addressed, especially those dealing with the marine environment. GMOs are addressed by tailored Regulations and not by those dealing with alien species. In the latter case provisions are integrated in nature protection legislation and other sectoral legislation such as on plant health. Eradication of alien species is being currently implemented mainly in protected areas or on an <i>ad hoc</i> basis. However, guidelines on eradicating alien flora are being developed. [See also <a href="#">Response to Goal 6 of PoW on Island Biodiversity in Chapter 2</a> of this</p>



		report]
Promote and fund research to gain a better understanding of local biodiversity, including the establishment and funding of a national inventory/database of biodiversity.	😊	MEPA has commissioned a number of studies that are now complete. Via the studies the information basis necessary to develop a National Database on Biodiversity has been acquired and covers a number of taxonomic groups. Indeed, deliverables of some of these studies have included species-specific information in a series of databases in MS Access format. These will be centralised in the national database.
Devise schemes to improve awareness on the richness of local biodiversity	😊	Several awareness raising activities have been held to promote Malta's biodiversity. Such activities are undertaken by environmental NGOs, research entities, relevant Governmental Departments and Ministries, as well as MEPA and the Office of the Prime Minister. Conservation projects are also well publicised. These have included publication of material such as posters, leaflets and documentaries on DVDs, and also including workshops/seminars/conferences and talks on television and local radio stations. [See also responses to PoWs on Island Biodiversity, GSPC and Protected Areas]
Ratify and implement the Cartagena Protocol on Biosafety.	😊	Malta ratified the Cartagena Protocol on Biosafety on 5 January 2007 and it entered into force for Malta on 5 April 2007.
Discourage land reclamation in ecologically sensitive areas and encourage re-use of abandoned fields.	😞	Land reclamation is being discouraged by the setting up of disincentives and incentives - e.g. bring-in sites and provision of skips to discourage dumping of waste in ecologically sensitive areas. Fees/penalties also apply when infringements are made. Land abandonment is also discouraged via the Rural Development Plan and its agri-environment measures and also via cross-compliance requirement.
Encourage organic farming, thereby reducing use of pesticides.	😞	Organic farming is an emerging practice. Uptake of organic farming is being encouraged through the Malta's Rural Development Programme. As at end 2008, there were 14 registered operators of organic products in the Maltese Islands, covering 21.78ha, increasing from 17.3ha in 2007, and representing approximately 0.19% of total agricultural land, and 0.21% of Utilised Agricultural Area.
Promote the use of ecological corridors.	😊	Ecological corridors in Malta essentially include traditionally built rubble walls (legally protected structures), and natural features such as valley watercourses. Important valley watercourses are being addressed via the implementation of the EC Habitats Directive and the EC Water

		Framework Directive. The majority of protected areas that form part of the National Ecological Network come along with a “buffer zone”, which for instance covers agricultural land. Moreover the boundaries of certain PAs overlap.
Promote awareness that biodiversity is an economic resource of value to tourism, and that is enjoyed by tourists and the local population alike.	☹️	Malta’s National Tourism Plan integrates the action “We will increase tourists’ and locals’ awareness about the fragility of our marine environments” (As from June 2007 and beyond). A number of CEPA activities (refer to Section 3.3) have been undertaken to this end, although further activities would be desirable. [See responses to PoWs on Island Biodiversity, GSPC and Protected Areas]







**2.2.3 Malta’s National Report on the Strategic Action Plan for the Conservation of Maltese Coastal and Marine Biodiversity (SAP-BIO Project, 2002)**

Malta’s SAP-BIO report presents in-depth information on the state of marine and coastal biodiversity of the Maltese Islands and identifies the problems that affect biodiversity and their proximate/ultimate causes, as well as assesses their relative importance. It also puts forward a suite of measures for the conservation of threatened and vulnerable species and habitats in the Maltese Islands in response to the findings of a gap analysis. The SAP-BIO report also proposes national action plans for certain taxonomic groups. At the time of its compilation, it was noted that the SAP-BIO report would be instrumental in forming the basis for Malta’s NBSAP.



An evaluation has been carried out to assess progress made in meeting the priorities for action identified in the SAP-BIO report so as to identify gaps in implementation that would then be covered by the implementation of the NBSAP. The results of the evaluation are tabulated below.

😊	Priority action being successfully met	☹️	Ongoing work but priority action not yet fully met	☹️	Priority action not being successfully met
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Priority Action	Status	Comments
Creation and expansion of checklists and databases, compilation of lists of threatened and alien species, and suggestion of ways for managing and tackling threatened or alien taxa	☹️	A series of studies have been considered, aiming at setting up lists of threatened and alien species; suggestions for dealing with extant plant invaders have been drafted.
Preparation of Species Action Plans (SAPs)	☹️	The SAP-BIO Report itself suggests action plans on: - marine turtles - cetaceans - groupers - shark, rays and skates More detailed SAPs have been drafted. These need to be reviewed and processed for consultation. Work on a Dossier on Wild Fauna Exploitation will help lay down the basis for SAP compilation for threatened fauna.

<p>Mapping of marine or coastal communities and phytosociological study</p>		<p>Habitat mapping is being carried out as part of the Natura 2000 designation process. This is at an advanced stage for coastal terrestrial sites. Mapping of marine communities has been partly carried out via EIAs and also via a series of commissioned studies such as has been done for <i>Rdum Majjiesa</i> to <i>Ras ir-Raheb</i> and <i>Filfla</i>. The <i>Rdum Majjiesa</i> to <i>Ras ir-Raheb</i> MPA had also been selected as a <a href="#">European Marine Biodiversity Research Site</a> by the <a href="#">BIOMARE</a> project, funded under the Energy, Environment and Sustainable Development Programme of the European Union.</p> <p>A survey of mediolittoral algal communities along the whole coastline of the Maltese Islands has also carried out in a separate study. [See also response to PoW on PAs in <a href="#">Appendix III (b)</a> and also response to Goal 1 of the PoW on Island Biodiversity in <a href="#">Chapter 2</a> of this report]</p>
<p>Preparation of Habitat Action Plans</p>		<p>Conservation measures aimed at habitat protection are to be integrated within management plans.</p> <p>The SAP-BIO report did propose at the time an action plan for the micro-cartography, mapping and surveillance of <i>Posidonia oceanica</i> meadows in the Maltese Islands. A detailed study on <i>Posidonia</i> Meadows has been carried out (G.A.S. s.r.l. 2002).</p>
<p>Declaring marine or coastal protected areas</p>		<p>Coastal protected areas have been designated. The designation of MPAs is ongoing. A management framework and an action plan for two MPAs have been approved.</p> <p>[See also response to PoW on Pas in <a href="#">Appendix III (b)</a>]</p>
<p>Regulating the harvest of biodiversity resources and exploitable species</p>		<p>Provisions on sustainable use are integrated in environmental and fisheries regulations. For more detail see response to Goal 4 to the PoW on Island Biodiversity in <a href="#">Chapter 2</a> of this report and <a href="#">Section 3.2</a> of this report.</p>
<p>Creation of experts in the fields of marine biology and the need for training</p>		<p>Training as continued professional development is promoted. Environment officers attend training workshops abroad such as offered by RAC-SPA. Training is also acquired via Twinning Projects in partnership with other countries. NGOs also participate in other capacity-building training.</p>
<p>Monitoring plans and programmes</p>		<p>MEPA has carried out an exercise whereby it has consolidated all its present water quality monitoring</p>

		<p>requirements under the various regulations and formulated a holistic, integrated water quality monitoring programme which maximises resource utilisation by combining the sampling and analysis for different waters at specific timeframes and for the different parameters required by legislation.</p> <p>Monitoring of marine biodiversity is being carried out in the form of a series projects (e.g. MEDITS Trawl Survey Programme and Medsudmed) or else in the form of compliance monitoring as per regulatory requirements.</p> <p>[See also <a href="#">Section 3.2</a> of this report].</p>
<p>Addressing accidental captures and other fisheries interactions with protected or important biodiversity</p>	<p>☹️</p>	<p>Data on by-catch of marine turtles is collected by MCFS. The MCFS is also carrying out a research project on the incidental by-catches of seabirds (part of the EU LIFE+ Garnija Project). <a href="#">Preliminary findings</a> are published.</p> <p>[See also <a href="#">Section 3.2</a> of this report].</p>
<p>Policies addressing particular problems, improvement and updating of legislation and effective enforcement</p>	<p>☹️</p>	<p>Environmental legislation is currently being reviewed as part of a Better Regulation Initiative.</p> <p>National policies are generally based on EU regulatory frameworks.</p>
<p>Addressing marine aquaculture and tuna penning effects on biodiversity</p>	<p>☹️</p>	<p>Fish farms are required to fulfil and adhere to environmental monitoring programmes as required by development permit conditions.</p> <p>Existing inshore aquaculture units have been encouraged to relocate at a greater distance from the shore and in deeper waters, to mitigate any environmental impacts.</p> <p>Malta's Fisheries Operational Programme (2007-2013) sets as one of its objectives under Priority Axis 2 to reduce the negative impact of aquaculture on the environment.</p> <p>[See <a href="#">Section on Aquaculture and Fisheries</a> in <a href="#">Section 3.2</a> of this report]</p>
<p>Development of ecotourism for the marine and coastal environment should be recommended and promoted</p>	<p>☹️</p>	<p>It is envisaged that management plans for MPAs would explore ways of catering for the provision of an alternative income to those stakeholders who practice various activities that may be a threat to the conservation of the environment, or else, stakeholders may be directed towards non-consumptive uses, within the MPA. Through the management plans that are expected to be produced for MPAs, Malta should be aiming at achieving sustainable use of the marine environment with the involvement of stakeholders in the management of the areas.</p>

<p>Monitoring of artificial reefs and the adoption of a policy governing scuttling of wrecks or other artificial reefs for the purpose of establishing an ecosystem</p>		<p>Notice to Mariners 67/2004 and 5/2008 provide for the creation of Conservation Areas around Wrecks and Artificial Reefs, for the protection of species and habitats in these areas, through restrictions of use of fishing gears. The Agriculture and Fisheries Regulatory Division (AFRD) and the Malta Maritime Authority (MMA) are the competent authorities for the implementation of these regulations.</p>
<p>Communication, Education and Public Awareness</p>		<p>Several awareness raising activities have been held to promote Malta's biodiversity. These have included publication of material such as posters, leaflets and documentaries on <a href="#">CDs &amp; DVDs</a>, including workshops and talks on television and local radio stations. Conservation projects are also well publicised.</p> <p>Participation by environment protection officers of the Ecosystems Management Unit (MEPA) in various local TV programmes also contributed to raising public awareness with regard to the need and functioning of MPAs.</p> <p>A CEPA initiative has been undertaken by the University of Malta in the MPA at <i>Rdum Majjiesa to Ras ir-Raheb</i> to establish the status of the environment.  [See also responses to Goal 3.5 of the PoW on Protected Areas]</p> <p>Malta's National Tourism Plan integrates the action "We will increase tourists' and locals' awareness about the fragility of our marine environments" (As from June 2007 and beyond). A number of CEPA activities have been undertaken to this end.</p>



## 3.0 Sectoral and cross-sectoral integration or mainstreaming of biodiversity considerations

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*In view of the ongoing process of developing Malta NBSAP, this chapter provides an overview of implemented and planned sectoral measures that, positively impact, whether directly or indirectly Malta's Biodiversity.*

### 3.1 Agriculture & Rural Development

[More information on this Section of the Report is available at - [www.agric.gov.mt/home?!=1](http://www.agric.gov.mt/home?!=1) and also from [MARRA's Annual report for 2008](#)]

Agriculture and biodiversity are inexorably interlinked. Whereas biodiversity underpins agriculture productivity, agroecosystems can provide an important habitat for many native species particularly those that rely on farmed land for their survival (e.g. provision of food, availability of a refuge). Farmed land in Malta and associated rural structures, such as rubble walls, form an integral part of the landscape and further serve as an essential ecological corridor between fragmented semi-natural habitats. Being the main land user in the Maltese Islands (amounting to 51% of land cover based on [Land CORINE Cover Data of 2006](#)) reflects the importance that farming has for Malta's natural environment.

Although the agriculture sector contributes little towards the domestic economy ([2.6% to the GDP in 2005](#)), it nonetheless imparts the country some degree of self-sufficiency in terms of food security. The various farming practices also contribute to the maintenance of the rural character and countryside recreation. In addition, this sector's potential to enhance other more economically prolific sectors, such as tourism, has been acknowledged. Strengths, Weakness and Needs of the Agriculture Sector in Malta have been documented (see [Rural Development Strategy for Malta 2007-2013](#)).

The [2005 State of the Environment Report](#) identifies land abandonment, farm intensification, poor farming practices and fragmentation of ownership as the “most critical land-related **agro-environment issues**”. The agriculture sector in Malta contributes around 5 % of the total national greenhouse gas emissions. The **mean annual GHG emissions from the agriculture sector**, as reported in Malta's [GHG Inventory](#) covering the time series 1990 to 2007 (MEPA 2009), amount to 68.0 Gg CO<sub>2</sub> equivalence. Enteric fermentation is the major source of GHG emissions, followed by the emissions from manure management. The contribution from agriculture soils is relatively small and amounts to about 5 Gg CO<sub>2</sub> equivalence annually.

Malta's Rural Development Plan for 2007-2013 (section 3.1.3.2.2) acknowledges the importance of **harmonising agricultural practices with biodiversity conservation in Natura 2000 sites**. This need is evident when considering the amount of agricultural land that falls within Natura 2000 sites in Malta - “Therefore, in order to preserve the natural environment and landscape, and to protect and improve natural resources, as required by Natura 2000 designation, agricultural practices within such sites need to be brought in line with environmental requirements. In order to diminish the loss of biodiversity till the year 2010, protection and management plans in respect of Natura 2000 sites should be implemented. These will aid to increase the quality of life in rural areas by identifying and avoiding tendencies that lead to ecological, economic and social decline.”

In an effort to harmonise agriculture activities with biodiversity conservation in protected areas, the project [“Integration of environmental considerations into Malta's agriculture on the basis of the IRENA operation”](#) funded under Malta's Rural Development Plan (RDP 2004-2006) was initiated in January 2007 and ended in July 2008. This project aimed to examine and improve the performance of the different types of farming systems and agricultural land management practices in the protected northwest coastal cliffs area of Malta on the basis of the IRENA approach. The IRENA

project analysed the applicability of 35 indicators to the Maltese Islands and the data available. Recommendations were given as to how certain indicators can be worked out for Malta.

### 3.1.1 Rural Development

**National Rural Development Plans (RDP)** have been compiled for the two consecutive EU financial programming periods: 2004-2006 and 2007-2013 under the reference frameworks provided by the national strategy plans and in line with the requirements of EU Rural and Environmental Policy. Essentially, such national rural development policy seeks to encourage the multifunctional role of the agricultural sector within a wider framework for integrated rural development aiming at achieving sustainable development.

In 2008, the [Rural Development Department](#) (RDD) was responsible for the management and implementation of the various measures funded under the Guidance and Guarantee (EAGGF) 2004-2006 programmes. With regard to the Guidance funds, the RDD was the final beneficiary under the Single Programming Document for Malta, and as such it was responsible for the implementation of the 3 priority measures, mainly Investments in Agricultural holdings and Improving in Marketing and Processing of Agricultural Products. With respect to measures funded under the RDP Guarantee section, the RDD acted as the Authority responsible for the management, implementation and authorisation of payments linked with the various measures under the 2004-2006 programme. The Rural Development Plan for the programming period 2007-2013 was approved in December 2007. Under this new programme, the RDD assumed the role of Managing Authority and, together with the [Paying Agency](#) within the MRRA, took the necessary steps towards the successful implementation of the funding programme under the European Agricultural Fund for Rural Development (EAFRD).

Uptake of **agri-environmental measures** under the RDPs assists in addressing biodiversity concerns in this sector. Agri-environment measures under [RDP 2004-2006](#) included the following:

- Preservation of Rubble Walls;
- Organic Farming;
- Conservation of Autochthonous Species: Maltese Oak & Maltese Ox Species.

Progress in implementing the 2004-2006 RDP during 2007 was reported to the Commission through the Annual Progress Report (APR). Another major reporting task entrusted to the Managing Authority is to provide for the setting up and submission of [Malta's ex-post evaluation report](#). The ex-post evaluation is an evaluation process which informs authorities, the general public, the EU and other stakeholders involved about the outcomes of the 2004-2006 RDP. With regards to the agri-environment measures, the ex-post report documents the findings as shown in [Table 11, overleaf](#). In the case of the rubble walls sub-measure, the uptake can be considered to be good, although only 79% of the target had been reached by end 2008. Initial administration and control difficulties delayed the processing of payments for a time. The conservation of the Maltese Ox sub-measure met with a degree of success; this was the least complex as there was only one beneficiary involved. Although the target was not fully reached, and this for reasons outside the control of the programme, the measure can still be considered to have been successful. The Holm Oak sub-measure met with very limited success, with only 25% of the original target having been achieved, this in spite of altering of the criteria for eligibility, which to a measure increased the degree of participation in 2006. This may be attributed to insufficient efforts towards animation, but is also most probably due to the relatively small compensation being offered compared to costs. The organic farming sub-measure also met with limited success, with only 20% of the original target having been achieved. According to MRRA statistics, the agri-environmental measure achieved a degree of success in enticing farmers to increase record-keeping, although this indicator was attained at only a 53% level compared to the original target. Some further improvement can however be expected with the continued outlays on the agri-environment measure in coming years (Source: [Malta's ex-post report](#))

Objective	Indicators	Targets as per RDP	Actual Realised Targets as at end 2008	%
Reducing Soil Erosion	Area of rubble walls restored	200,000m <sup>2</sup> of rubble wall restored	158,683*	79%
Conservation of Autochthonous species	Number of Maltese Oxen conserved	Survival of 9 Maltese Oxen with projected natural increases as per breeding program	6	67%
	Conservation of the areas with Holm Oak populations and their buffer zones	Conservation of at least 50% of the buffer area around Holm Oak Populations- Area around Holm Oak populations at least 13ha	3.243**	25%
Promotion of organic farming	Applicants practising organic farming methods	A maximum of 30 applicants undertaking organic production signifying an increase of producers	6	20%
Increasing records	Applicants keeping farm records through Whole Farm Management Plan	10% of the farming community keeping farm records (Total farmers - 17,969 FSS 2005)	952	53%
<p>*Based on spot control Figures made in 2008 based on claim year 2004/05/06</p> <p>**The area decreased comparing to end of 2006 due to the commitments were not continued</p> <p>Source: MRRA</p>				

Table 11 - Agri-Environment Measure - Indicators and Results

In a national context, EAFRD's Axis II as considered in Malta's RDP 'intends to improve the environment and the countryside through encouraging the retention of agricultural activity and promotion of environmental friendly production methods in line with rural heritage'. Several measures, especially under Axis II measure 214, are related to farming activities that reduce the impact on biodiversity. Measure 213 (Natura 2000 payments) was not adopted. Allocations for Axis II amount to 25,025,000 Euro of Public funds of which 10,525,000 Euro are for measure 214. Environmental complementarity under Axis III measure 323 would also be attained via the development of Natura 2000 and environmental management plans with an estimated allocation of about 8,000,000 Euros.

Agri-environment measures under the current [RDP 2007-2013](#) include the following:

- AEM 1: Use of environmentally friendly plant protection products in vineyards
- AEM 2: Traditional cultivation of sulla through crop rotation
- AEM 3: Low input farming
- AEM 4: Suppress the use of herbicides in vineyards and fruit orchards
- AEM 5: Establishment and maintenance of conservation buffer strips
- AEM 6: Conservation of rural structures providing a natural habitat for fauna and flora
- AEM 7: Providing a healthy forage area for bees
- AEM 8: Support for Organic Farming
- AEM 9: Support for the Conservation of species in danger of genetic erosion

On a specific area a farmer can apply for one of the above measures or for a combination of two measures according to the following packages: AEM2 + AEM3 and AEM1 + AEM4.

The current RDP (2007-2013) links environmental measures to the objectives of the Sixth Community Environment Action Programme (6<sup>th</sup> EAP). In 2008, the RDD launched a number of measures contained in the Rural Development Plan 2007-2013. Axis II "Improving the environment and the countryside" was fully launched. This launch consisted in Measures 212 and Measure 214

which together accounts for 25% of all the funds available under the RDP 2007-2013. The measures were publicised with the distribution of numerous leaflets and publications. In conjunction with these initiatives, numerous posters were produced accompanied by billboards and audiovisual clips.

### **3.1.2 Good Agricultural Practice**

The [Code of Good Agricultural Practice \(CoGAP\) for Malta](#) constitutes an exhaustive compilation of all good practices pertinent to a number of EU Directives, prevailing national legislation, good farming practices as well as a number of potential practices under a voluntary basis. The Code contains recommendations concerning all aspects of agricultural production namely: animal husbandry, manure handling, fertilization practice, irrigation practice, and plant protection. Such recommendations are divided into the following categories:

- Codes that are obligatory for all farmers because they form part of the EU Nitrates Directive, more specifically of the Malta Action Programme for the Nitrates Directive;
- Codes that are obligatory for all farmers because they form part of other EU Directives;
- Codes that are obligatory for farmers entering into any agri-environment commitment and/or are in receipt of compensatory allowances in Less favoured Areas, since they form part of the Good Farming Practices; and
- Codes that are voluntary for farmers.

### **3.1.3 Cross-compliance**

Farmers receiving direct payments under the Common Agricultural Policy (CAP) are required to follow cross-compliance requirements *i.e.* are required to abide to Statutory Management Requirements (SMRs) in the field of the environment, food safety, plant and animal health, and animal welfare. In addition, farmers are obliged to keep their land in Good Agricultural and Environmental Conditions (GAECs) in compliance with standards established by Member States.

The “Cross-Compliance Related to EU Aid Applications in terms of the Paying Agency Regulations, 2005” ([LN 346 of 2005](#) as amended) lays down the structure for the management of cross-compliance, and EU obligations related thereto, in Malta. The Competent Control Authority is the Control Unit of the [Paying Agency](#) within the Ministry for Resources and Rural Affairs (MRRRA). In its capacity as the Control Authority, this Unit ensures compliance with all SMRs and GAECs in Malta.

On a national level, cross-compliance on all direct payments has been introduced since 1 January 2005. Farmers receiving direct payments were required to respect SMRs referred to in Annex III of [Regulation \(EC\) 1782/2003](#) and the GAECs over a three year period. In 2005, the GAECs, all the environmental SMRs and the identification and registration of SMRs were applied. As from 1 January 2006 a number of SMRs relating to public, animal and plant health came into force and started to be controlled, while in 2007 the same applied to the animal welfare SMRs.

On-the-spot checks are delegated to three specialised bodies. [Cross-compliance national guidelines](#) define the SMRs and minimum standards for GAEC for the implementation of cross-compliance in Malta. Malta developed the GAECs on the basis of the framework set up in Annex IV of Regulation (EC) 1782/2003, taking into account the specific characteristics of Maltese conditions. Although all the issues indicated in the annex were covered, not all the standards were applicable to Malta. Ten national standards were established, targeting soil erosion, soil organic matter, soil structure and minimum level of maintenance. In Malta, the standards for each SMR were developed by the government department or agency with the most relevant experience of the issues covered by the SMR standards. The standards themselves were based on existing national legislation. Each Competent Authority developed its own checklist.

The Control Unit acquires data from the Competent Authorities, either through direct link with IT systems or via correspondence as agreed in a memorandum of understanding. The Control Unit carries out checks every year on a sample of farmers that would have applied for aid under both Pillar I and Pillar II measures of the CAP. On-site inspections are carried out to ensure that farmers

are complaint with the relevant SMRs and GAECs applicable to them. For those farmers who apply for measures under Axis II of the EAFRD, additional controls are made with regards to minimum requirements on the use of fertilisers and plant protection products. Inspectors assess their findings on the basis of standard checklists. The results of an inspection are then inputted in the control system software and in this way the outcomes are calculated in accordance to the 'Cross-Compliance Related to EU Aid Applications in terms of the Paying Agency (Amendment) Regulations, 2009' ([LN 207 of 2009](#)). The farmers are informed about non-compliances found and breaches (if any).

Cross-compliance checks are carried out on a minimum of 1% of farmers receiving direct payments. Most of the penalties issued on GAEC breaches were related to the abandonment of agricultural land. Inspectors regularly carry out inspections and when in contact with the farmer explain what their mission is and what irregularities (if present) should be corrected. From the 2008 controls, 293 farmers were selected for controls, out of which 23% were fully compliant with all the SMRs/GAEC. Although an intensive promotion campaign was conducted in 2008, 66% of the farmers were sanctioned with 1% and 5% of their direct payments. Nonetheless, there is evidence that cross-compliance is effective in that it leads to an improvement of the degree of compliance. Evidence showed that cross-compliance induced a lot of farmer activities aimed at improving their farming practice up to EU standards. Farmers are definitely more aware of what good agricultural practices entail as well as the impact pollution may have on the environment in general.

The Control Unit was strengthened through a capacity-building programme so as to be able to perform all the controls. The inspectors carrying out cross-compliance checks in Malta have a University Diploma and/or postgraduate degree in agricultural sciences. They are familiarised with the various directives pertaining to each SMR as stipulated in [Council Regulation EC 73/2009](#). Specialised training is also provided by the National Competent Authority for the respective Regulation and Directive.

### **3.1.4 Organic Farming**

The [Organic Farming Unit](#) was set up in 2003 within the Rural Affairs and Paying Agency Division and entrusted with *inter alia*, promoting and increasing awareness of organic farming in the Maltese Islands. Malta's Control Authority on Organic Farming is the [Malta Standards Authority](#) (MSA).

Till the end of 2007 there were about 12 approved and certified producers of organic products in Malta. In total, these producers farmed 17.3 ha of agricultural land (0.17% of total UAA) and when compared with the previous year, a decrease of 14% in organically farmed land is noted. This decline has been attributed to the decline in land used for organic production of olive trees, which currently occupies 40% of the organically farmed land ([State of the Environment Indicators 2007](#)). Updated information is provided by the [SOEI 2008](#). An appraisal of the State of affairs of organic agriculture in Malta is available by Calleja (2004) is available [online](#).

After accession to the EU, Malta embarked on the process of adopting specific rules on organic farming, aligned on EC rules on organic farming. In 2004, the Organic Farming Regulations of 2004 (LN 237 of 2004) were published in order to transpose Council Regulation (EEC) 2092/91, thereby laying out the measures to be taken to control the organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs, and hence creating the setup which would enable the certification of local organic products. LN 237 of 2004 was subsequently amended by LN 180 of 2005 and LN 232 of 2007 (Legal Notices available for download from [here](#)).

### **3.1.5 Other Information**

The [Rural Strategy Topic Paper](#) adopted in 2003 and developed as part of Malta's Structure Plan review process, advocates the integration of development with the local rural context, with an emphasis on the protection of the countryside and the efficient use of natural and man-made resources for present and future generations. The National Strategy for Sustainable Development in Malta - 2007 to 2016 (NCS, 2006) highlights a number of important issues that need to be addressed in order to integrate sustainability into the agricultural sector in Malta.



The **National Rural Network for Malta** was recently officially launched during a [seminar](#) in 2009 with the aim of drawing together stakeholders (representatives from local councils, cooperatives, local communities, civil society and NGOs who are interested in the agriculture sector so as to discuss within focus groups related themes (climate change, bioenergy, biodiversity, water resource management) and thereby drive forth sustainability of this sector. This network together with networks of other Member States will form the European Network for Rural Development.

With regards to data related to the agricultural, husbandry and horticultural sectors, Unit B4: Environment and Resources within the National Statistics Office generates the data shown in [Table 12](#).

Label	Description	Frequency
AGRI	Results of Farm Structure Surveys	ANNUAL
AGRI	SGM Coefficients	SEQUENTIAL
ANI	Gross Indigenous Production - Cattle	SIXMONTHLY
ANI	Gross Indigenous Production - Pigs	QUARTERLY
ANI	Gross Indigenous Production - Sheep & Goats	SIXMONTHLY
ANI	Structure of Hatcheries	ANNUAL
ANI	Livestock Survey - Cattle - November/December	ANNUAL
ANI	Livestock Survey - Cattle - Size of Herd	BIANNUAL
ANI	Livestock Survey - Pigs - November/December	ANNUAL
ANI	Livestock Survey - Pigs - Size of Herd	BIANNUAL
ANI	Livestock Survey - Sheep & Goats - November/December	ANNUAL
ANI	Livestock Survey - Sheep & Goats - Size of Herd	BIANNUAL
ANI	Supply Balance Sheets - Eggs	ANNUAL
ANI	Supply Balance Sheets - Meat	ANNUAL
ANI	Slaughterings	MONTHLY
ANI	Trade of Chicks	MONTHLY
FRUCTUS	Orchards Survey - 5 yearly	FIVEYEARLY
REGIOAE	Agricultural Accounts at Regional Level Annual.	ANNUAL
REGIOAE	Animal Populations at Regional Level.	ANNUAL
REGIOAE	Crop Production at Regional Level	ANNUAL
REGIOAE	Land Use at Regional Level	ANNUAL
VITIS	Vineyards - Forecast - Annual	ANNUAL
VITIS	Vineyards - Areas - Annual	ANNUAL
VITIS	Vineyards - Grub (re)planted - Annual	ANNUAL
VITIS	Vineyards - Wine Production - Annual	ANNUAL

**Table 12 - Data related to the agricultural, husbandry and horticultural sectors**

## 3.2 Fisheries & Aquaculture

[More information on this Section of the Report is available at - <http://vafd.gov.mt/home> and also from [MRRRA's Annual report for 2008](#)]

### 3.2.1 Fisheries

The fisheries industry in Malta is considered mainly to be artisanal, that is, predominantly non-industrial. Maltese fisheries can also be considered as multi-species and multi-gear fisheries, whereby fishers alter between fishing gears throughout the year depending on the species they are targeting. The majority of Maltese fishers operate on a part time or leisure basis and as such their livelihood does not depend solely on catching and selling fish. The social and cultural importance of the Maltese fishing industry far outweighs its negligible economic contribution. In 2007, the [National Statistics Office](#) (NSO) published the "[Census of Fisheries 2006](#)". This provides detailed information on the structure of fishing vessels used by fishers in Malta and Gozo including data on the production, expenditure and labour force relating to this sector. In addition the type data shown in [Table 13](#) is also generated by the NSO.

Label	Description	Frequency
FISH	Fishery Captures Statistics	ANNUAL
FISH	Fishery Aquaculture Statistics	ANNUAL
FISH	Fishery Landings Statistics	ANNUAL
FISH	Fishery Landings Statistics	MONTHLY

Source: Unit B4: Environment and Resources, NSO

**Table 13 - Fisheries related data**

The Agriculture and Fisheries Regulation Division (AFRD) in Malta regulates and manages the capture fisheries together with all other related activities and including the aquaculture industries. This regulatory body promotes an **ecosystem-based approach to fisheries** by applying sound fisheries management in order to safeguard the sustainability of living marine resources. With respect to fisheries, the AFRD aims "to manage marine areas and preserve fisheries stocks, including their means of sustenance". The [Fisheries Conservation and Management Act \(CAP. 425\)](#) makes provision for the regulation, conservation and management of the fisheries of Malta and matters incidental thereto. This Act has a wider scope and is not just limited to the safeguard of fish that are captured for direct consumption, since certain provisions of the Act also provide a legal basis for the protection of turtles, dolphins and other aquatic organisms [Article 38(2)h]. The Armed Forces of Malta (AFM) in collaboration with the AFRD are responsible for fisheries enforcement within Malta's jurisdiction.

**Overfishing of Mediterranean fish stocks** is a burgeoning concern. The **International Commission for the Conservation of Atlantic Tunas (ICCAT)** and the **General Fisheries Commission for the Mediterranean (GFCM)** have acknowledged that a number of important stocks in the Mediterranean, especially those of migratory species, are considered to be fully exploited or close to being fully exploited. Malta is a member of both ICCAT (as from 7 August 2003) and the GFCM (as from 29 April 1965). The three most important commercial species in Malta are Bluefin tuna (*Thunnus thynnus*), Swordfish (*Xiphias gladius*) and Common dolphinfish (*Coryphaena hippurus*).

Malta has observed the 1994 ICCAT Recommendation on **Bluefin tuna** catch limits and has regulated fishery through the Fishery Regulations ([Government Notices 206/1934 and 148/1935](#)) which lay down detailed licensing and operational regulations. In March 2003, the AFRD issued a Government Notice stating that it was ready to receive a maximum of four applications for the fishing of tuna. Subsequently, two licenses were issued to fishing vessels already registered in the Maltese Fishing Vessel Register to target Bluefin tuna using purse seine nets. In 2007 the number of authorised purse seiners was also 2. With respect to surface long line fishing of Bluefin tuna, 89 vessels were authorised in 2007 to operate in the ICCAT Convention area. This number of vessels has been stable

for the last eight years. With respect to Bluefin tuna fishing, Article 4 paragraph 2 of Council Regulation (EC) No 1559/2007 establishing a multi-annual recovery plan for Bluefin Tuna in the Eastern Atlantic and Mediterranean, states that for those quotas smaller than 5% of the Community quota, Member States 'may adopt a specific method to manage their quota in their fishing plan' (Source: [Fisheries Operational Programme for Malta 2007-2013](#)).

**Swordfish** is known to be an over-exploited species. The size of the fish landed over the years appears to involve a large number of smaller fish and immature images. In view of this a close season in force from 15 October to 15 November has been instituted in an attempt to save juveniles. Another important species (in terms of catch) is the Mediterranean dolphinfish which is also a GFCM priority species. During a recent study on the species, it was found that **dolphinfish** fisheries mostly target 'age 0' fish (2 to 8 months) thus depending on annual recruitment which is considered to be very variable. It was also concluded that the relationship between maturity and size is not regular and that the important parameters in the measurement of the fishing effort for this FAD fishery is the number of FADs deployed and the number of fishing trips made (Source: [Fisheries Operational Programme for Malta 2007-2013](#)).

Given the importance of both Bluefin tuna and Swordfish to the local fishing industry, it is clear that a shift towards less threatened species as well as aquaculture species will need to take place over the coming years (Source: [Fisheries Operational Programme for Malta 2007-2013](#)).

The **adjustment of fishing effort** is included as one of the objectives under priority Axis 1 "Adaptation of the Community fishing fleet" of the Fisheries Operational Programme for Malta 2007-2013. The result indicator is a 6% Reduction in fishing capacity of Malta fleet sector for declining species (Bluefin tuna and swordfish) by 2015. This axis includes the following measures:

- Measure 1.1: Public aid for permanent cessation of fishing activities - The general objective of the measure is to adjust the fishing capacity of the Maltese registered fishing fleet as well as to manage the fishing effort in accordance with the aims of the CFP.
- Measure 1.2: Public aid for temporary cessation of fishing activities - The general objective of this measure is to provide temporary support to fishers and owners of vessels who in the context of the fishing adjustment plans referred to in Article 21(a) of Regulation No 1198/2006 must temporarily cease their fishing activities.
- Measure 1.3: Investments on board fishing vessels and selectivity - The general objective of this measure is to enhance safety and improve working conditions on board fishing vessels. It is also aimed at safeguarding the environment by reducing the impact of fishing.
- Measure 1.4: Socio-economic compensation for the management of the Community fishing fleet - The general objective of the measure is to support the management of the Community fishing fleet through the diversification of skills and activities and the upgrading of professional skills.

Since 1971, Malta has managed a 25 nautical mile management zone *i.e.* an extended fisheries management zone, beyond the 12nm territorial waters. Throughout all these years a strict licensing system was maintained within this zone, keeping large-scale industrial fishing such as trawling at a minimum. On the 28 June 2002, Malta and the European Union reached an agreement that the 25nm management zone will continue to be managed by the Maltese Authorities. During the negotiations it was argued that unrestricted access to the 25nm zone would undermine the sustainability of the fish stocks in this ecologically important area, more so since fishing fleets of other neighbouring countries are known to be better equipped and more technologically advanced. The Malta-EU negotiations on the **Fisheries Management Zone** have led to the adoption of [Council Regulation \(EC\) No. 1967/06](#) concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea. This Regulation lays down detailed conservation measures in connection with the zone's management regime (see Chapter X - Measures for the Waters around Malta - Articles 26 and 27) and also calls for the designation of Fisheries Restricted Areas in zones beyond or partly within the jurisdiction. Article 4 of Council regulation EC 1976/06 also lays down provisions that safeguard **Posidonia meadows, coralligenous habitats and mäerl beds** by prohibiting certain fishing practices to operate above these habitat types. In line with Article 3 of EC 1967/2006 Malta is also obliged to monitor the seagrass beds affected by bottom towed nets and in order to fulfil this

obligation in collaboration with the University of Malta, a pilot study has been initiated to identify the impacts of towed gears on the *Posidonia oceanica* ecosystem (Source: [Fisheries Operational Programme for Malta](#)).

Notice to Mariners 67/2004 and 5/2008 provide for the creation of **Conservation Areas around Wrecks and Artificial Reefs**, for the protection of species and habitats in these areas, through restrictions of use of fishing gears in these areas. The AFRD and the [Malta Maritime Authority](#) (the latter is now Transport Malta) are the competent authorities for the implementation of these regulations.

The [Malta Centre for Fisheries Sciences](#) (MCFS), the national institution responsible for scientific monitoring and research related to capture and culture fisheries in Malta, has participated actively in FAO subregional projects such as the [FAO-COPEMED](#) Tuna Programme initiated 1998; the ongoing [MedSudMed](#) Project, which was launched in 2001 to investigate the ecosystem approach to fisheries (EAF) in the Mediterranean, and is also actively participating in the Mediterranean International Bottom Trawl Survey ([MEDITS Trawl survey](#)), which has been collecting information on the status of a number of commercially important species in the Mediterranean Sea. The MEDITS survey is performed in order to collect data on abundance and biological aspects of 38 species of the priority MEDITS list, including fish, crustaceans and cephalopods. MEDSUDMED also finances two research survey programmes in Maltese waters: the Echosurveys and the Ichthyoplankton survey.

As an EU member state, Malta is required is obliged required to conduct an annual **National Fisheries Data Collection Programme (NFDCP)**, in line with the EU Data Collection Regulations (DCR) EC1639/2001 and EC1581/2004, amended by Council Regulation EC199/2008 followed by the Commission Decision 2008/949/EC. The programme contributes to a better knowledge of the main fishery resources of Malta from the biological, managerial, economical and social points of view. In this regard, three species are studied in detail: Bluefin tuna (*Thunnus thynnus*), Swordfish (*Xiphias gladius*) and Dolphinfin (*Coryphaena hippurus*). The MCFS is also responsible for the development and maintenance of the databases and information systems of the NFDCP. Data on Bluefin tuna and swordfish length by sex are reported to ICCAT for their use in the respective stock assessment exercises. Data on pelagic sharks are also sent to ICCAT as requested.

A national plan of action to combat **illegal, unreported and unregulated fishing (IUU)** has been developed. Malta's commitment to fight against IUU activities was reiterated during a national seminar held in 17 April 2008 with the theme "Preventing, Deterring and Eliminating Illegal, Unreported and Unregulated Fishing (IUU)", and attended by both the Minister Responsible for the Environment and the European Commissioner for Fisheries and Maritime Affairs ([DOI Press release 0552](#)).

The prohibition of the capture, killing, taking, possession and disturbance of strictly protected marine species such as marine turtles (LN 76 of 1992 and [LN 311 of 2006](#), as amended), cetaceans (LN 203/03 and LN 311/06, as amended) and certain chondrichthyes species (LN 311 of 2006, as amended) are covered by the provisions of the particular regulations enacted under the Environment Protection Act. Exploitation of these species is therefore strictly forbidden. In addition, any form of destruction or disturbance to natural habitats harbouring such species is also prohibited. A specific requirement of Regulation 25 under the 'Flora, Fauna and Natural Habitats Protection Regulations, 2006' (LN 311 of 2006, as amended) is mentioned in sub-regulation (2), which obliges the Competent Authority to set up a system to monitor the incidental capture and killing of animals listed in Schedule V and VI. These schedules include a number of species of marine species that are affected by incidental capture namely as **by-catch** as a result of certain fishing techniques. Regulation 31 of LN 311 of 2006 (as amended) prohibits the use of indiscriminate means and forms of capture capable of causing local disappearance of, or serious disturbance to, populations of mammals and fish listed in Schedule XI to these regulations, which for fish covers poisons and explosions. These Legal Notices are administered by the Malta Environment and Planning Authority (MEPA).

Awareness raising activities targeting fishermen have been undertaken. The AFRD is also the National Focal Point to the [FAO's Code of Conduct for Responsible Fisheries](#) (FAO, 1995). This Code of Conduct has been published in Maltese and a seminar has been held to launch its publication in

Maltese and to spread awareness amongst fishermen. The [Sea Turtle Handling Guidebook for Fishermen](#) (UNEP/MAP/RAC-SPA, 2001) has been translated in Maltese and has also been distributed amongst fishermen following an awareness campaign targeted at fishing communities by MEPA with the assistance of the AFRD. The MCFS assists the activities of the Environment Protection Directorate (MEPA) in connection with the rehabilitation of injured turtles. Surgical intervention is carried out on injured turtles (generally to extract swallowed hooks), and the said turtles are kept for rehabilitation and under observation for a number of weeks, as deemed necessary, before their actual release. Data on by-catch of marine turtles is collected by MCFS. The MCFS is also carrying out research projects on the incidental by-catches of seabirds as well as awareness raising with local fishermen (part of the EU LIFE Yelkouan Shearwater Project - published research under the Garnija project is available [here](#)).

In 1999, MEPA published a **Cetacean Stranding Protocol**. Through this protocol a Stranding Network has been developed to take action in the event of strandings of cetaceans. On the basis of the same Protocol another network dealing with marine turtle strandings has been developed. These stranding networks provide for assistance in stranding events together with Environmental NGOs. Another objective of these networks is to collect data on the stranded animals.

### 3.2.2 Aquaculture

Since its inception in 1991 on a commercial scale, the aquaculture industry in Malta has experienced several developments, which have included the setting up of a National Aquaculture Centre (NAC) at Fort St Lucian in 1988, and later renamed the **Malta Centre for Fisheries Sciences (MCFS)** in 2001. The aquaculture industry started off with the initial establishment of marine-based fish farming of European seabass and Gilthead seabream and then also progressed to the introduction of tuna penning of wild-caught Bluefin tuna (*Thunnus thynnus*), where the first development permit was issued in 2001. When considering developments that have occurred over the last four years, the following are also noteworthy:

- The re-opening of the pilot marine hatchery at the MCFS and its operation focusing on research into aquaculture species diversification in 2005. The pilot hatchery is in operation and research is being carried out on *Seriola dumerilii* [Amberjack Project] and *Thunnus thynnus*.
- The establishment of an offshore aquaculture zone in the period 2004 to 2006 where it was made operationally following the issuance of a development permit.

In Malta, the assessment of environmental impacts caused by fish farms has been initiated in 1994 through the adoption of the [“Policy and Design Guidance for Aquaculture”](#), originally developed to ensure the maintenance of healthy environmental conditions in and surrounding fish cages, and subsequently [amended in 2001](#). One of amendment made, laid down the requirement that ‘no new aquaculture development would be considered in areas less than 1 nautical mile from the shore, or in sites having a water depth of less than 50m (give or take 5m) whichever is the lesser’. Since then, existing inshore aquaculture units have been encouraged to relocate at a greater distance from the shore and in deeper waters, to mitigate any environmental impacts. This was successfully done with two inshore farms in 2001.

The legal mandate for the regulation of the aquaculture industry in Malta is laid down *inter alia* by the following primary legislation:

- Chapter 425: Fisheries Conservation and Management Act (FCMA) of 2001 and subsidiary legislation thereto
- Chapter 356: Development Planning Act of 1992 (as amended by Act XXI of 1992, XVI and XXIII of 1997, XXIII of 2000, VI and XXI of 2001, L.N. 22 and 47 of 2002, and Act VI of 2002) and subsidiary legislation thereto;
- Chapter 435: Act XX of 2001 Environment Protection Act (EPA - as amended by Act II of 2006) and subsidiary legislation thereto.

Malta is also bound to follow EU policy on aquaculture under the Common Fisheries Policy.



Development in aquaculture both on land and at sea necessitates a development permit and an environmental assessment is required before an aquaculture development is initiated. Fish farms are required to fulfil and adhere to environmental monitoring programmes as required by development permit conditions. Such terms and conditions also apply for the management of the fish farm in question. Provision calling for the restoration of a site to address the eventuality of the cessation of the fish farm, is also secured before development takes place. If such development is proposed to occur within or in the vicinity of a marine Special Area of Conservation, an appropriate assessment is required to be carried out in line with Article 6 of the EU Habitats Directive. The role of granting development permission of aquaculture facilities and the protection the environmental is assigned to the Malta Environment and planning Authority (MEPA) under its respective directorates.

The MCFS is involved in scientific monitoring, research and development in addition to the technical advice it offers to the Maltese aquaculture and fishing industry and other information it provides to the general public.

The MCFS is one of the marine research institutes participating in the EU-financed [SELFDOTT Project](#) (Self-sustained Domestication of Bluefin Tuna) which started in 2008 and deals with the reproduction, larval rearing and nutrition of the Bluefin Tuna. MCFS is involved in the project as a scientific research centre and through the industry with Malta Fishfarming Ltd which provides the cages and broodstock for the experiments.

[Malta's Fisheries Operational Programme \(2007-2013\)](#) prepared in accordance with Council (EC) Regulation No. 1198/2006 on the European Fisheries Fund (EFF), sets as one of its objectives under Priority Axis 2 to reduce the negative impact of aquaculture on the environment. This axis also aims to contribute to the development and sustainability of the aquaculture, processing and marketing sectors. Support under this axis is available for aqua-environmental measures. The actions that are eligible under this measure are the implementation of aqua-environmental methods aimed at protecting and enhancing the environment and producing more eco-friendly aquaculture products -

#### Other Sources of Information:

- Camilleri, M. (2003). Background to the establishment of the 25 mile fisheries conservation zone around the Maltese Islands. In: Ecosystem Based Fisheries Management in the Mediterranean: Proceedings of the APS Seminar 2003. Malta. 106 pp.
- Camilleri, M., Cordina, G., Franquesa, R. (2002). An analysis of the impact of purse-seining and industrial longlining activity within Malta's 25 mile Conservation Zone. Department of Fisheries and Aquaculture. Ministry for Agriculture and Fisheries. February 2002. Available from: [www.gemub.com/pdf/malta1.pdf](http://www.gemub.com/pdf/malta1.pdf)
- de Leiva, I., Busuttil, C., Darmanin, M. and Camilleri, M. (2001). FAO COPEMED Project: Artisanal Fisheries in the Western Mediterranean - Malta Fisheries. The Department of Fisheries and Aquaculture of Malta, 21pp. [Online] Available from: [www.faocopemed.org/vldocs/0000174/maltafisheries.pdf](http://www.faocopemed.org/vldocs/0000174/maltafisheries.pdf).
- EU council (2006). *Council Regulation (EC) No 1967/2006 of 21 December 2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) No 2847/93 and repealing Regulation (EC) No 1626/94*. Official Journal, L 409, 30/12/2006, 0011-0085.
- FAO Fishery Country Profile - The Republic of Malta. [Online] Available from: [www.fao.org/fi/fcp/en/MLT/profile.htm](http://www.fao.org/fi/fcp/en/MLT/profile.htm).
- MCFS (2006). Data estimates compiled directly from farms. Fisheries Conservation and Control Division, Malta. 2006.
- Schembri, P.J., Baldacchino, A.E., Mallia, A., Schembri, T., Sant, M.J., Stevens, D.T. and Vella, S.J. (2002). Natural Resources, Fisheries and Agriculture. In: *State of the Environment Report for Malta, 2002*. Ministry for Home Affairs and the Environment. August 2002. 180 pp.

### 3.3 Tourism

[More information on this Section of the Report is available at - <https://opm.gov.mt/mta?l=1>; <http://mta-news.info/>]

Tourism is an important economic industry in Malta and is in fact one of the main contributors to Malta's GDP. In 2007, the number of inbound tourists was estimated at 1,243,510 - an increase of 10.6 per cent over 2006. The purpose of visit was primarily as a holiday experience (1,046,176) followed by business trips (98,811) ([NSO 2008](#)).

The organisation of the public sector side of tourism and the upgrade and promotion of tourism in the Maltese Islands is entrusted to the [Malta Tourism Authority](#) (MTA), which was set up in 1999 (following a merger of various organisations) under the mandate of the "Malta Travel and Tourism Services Act, 1999" [Cap. 409 - [Act XII of 1999](#)].

Tourism is one of the four economic sectors in Malta considered to have the most significant impacts on the environment (MEPA 2006, [SOER 2005](#)), in that it 'increases demand for development of coastal and other scenic land, places pressure on sensitive ecological or cultural sites such as garigue areas, beaches and archaeological sites, and increases traffic congestion, noise pollution, and waste production.' **Tourism infrastructure development** has also grown over the years mainly in terms of construction of new accommodation facilities. Tourism is in fact one of the major users of coastal areas lapping Malta and Gozo and to a lesser extent Comino. Threats to coastal & marine biodiversity by coastal and mass tourism are mentioned in Malta's National Report on the Strategic Action Plan for the Conservation of Maltese Coastal and Marine Biodiversity ([SAP-BIO Report](#)). "The increase in the tourism industry also led to increased pollution and waste discharge, high pressure on infrastructure and to socio-cultural impacts on the local population." ([CAMP-Malta Inception Report](#))

Approximately five percent of Malta's 1km coastal buffer area was developed between 1990 and 2004, indicating significant development pressures coming mainly from tourism and recreation (MEPA, 2006 - SOER 2005). Low-lying areas, beaches and sand dunes are under continuous pressure from tourism and recreational activities, which have led to the obliteration of certain areas (see Coastal Strategy Topic paper). The 2005 State of the Environment Report (SOER) acknowledged the need for developing a sustainable tourism strategy. The report further draws attention to the potential to improve national coastal and marine policy by better integrating sectoral policies such on tourism and recreation, and the environment.

Malta's Structure Plan identifies three interrelated objectives for tourism, namely market diversification, seasonality reduction and product/tourist upgrading. The [Tourism Topic Study](#) prepared under the Structure Plan Review process was adopted in 2001. This study examines current trends in the tourism sector including land use implications, current policies and future demands and options. Various surveys were carried out to obtain the required data. This Topic Study acknowledges the importance of embracing tourism product development with the environment as well as the safeguard of both natural and cultural heritage. Although the Tourism Topic Study touches on the topic of tourism activity along the coast, it is dealt with in greater detail in the [Coastal Strategy Topic Paper](#), which reviews tourism as one of the coastal uses and acknowledges the need for measures to protect existing sandy beaches and low-lying rocky shorelines within popular bathing areas from development.

[CAMP-Malta](#) was initiated in February 2000 and aimed to introduce and apply the principles, methodologies and practices of sustainable coastal management in Malta. The project area dealt with the island of Malta on a first level and its northwest area as the operational level. Due to a high demand for further economic development and intensive expansion of all kind of activities, in particular tourism, the NW is subject to increasing pressures and user conflicts, requiring therefore urgent sustainable management measures. The Programme involved 5 thematic project activities, amongst which was Environment Health Impacts on Tourism which included the following objectives:

- to contribute to a sustainable development of tourism in Malta, reducing/eliminating potential impacts on health of the resident population and tourists, and in particular related to the NW area,
- to contribute to the protection of the environment and rational use of tourism resources, improving health conditions and increasing the level of sanitary protection and control,
- to formulate recommendations for land use and future development of tourism taking into consideration the relevant health aspects identified, and
- to formulate proposals for a follow up of the activity.

This programme resulted in the formulation of an integrated resource plan on the NW of mainland Malta.

The [Tourism Policy for the Maltese Islands \(2007-2011\)](#) has been developed in response to four key areas: governance, competitiveness, sustainability and macroeconomic matters. It puts forward the guiding principles upon which decisions, actions and other matters relating to tourism in Malta are to be based. The accompanying Tourism Plan outlines a series of actions that are to be implemented mainly by ministries, governmental entities and the private sector over a five year period in order to drive forth the achievement of the objectives set out in the policy. One of the key issues featuring in such policy is that of developing tourism in a sustainable way to ensure an improved quality of life through the conservation and maintenance of environmental and socio-cultural resources. The objective sought is that of 'direct[ing] tourism activity towards complementing the three pillars of economy, environment and society rather than allowing them to work in conflict' and incorporates a number of central priority areas which include:

- Ensuring the optimal use of the financial and human resources dedicated to tourism within the public sector
- Providing direction to the tourism industry and implementing better regulation initiatives
- Deepening the tourism offering focusing on the existing product elements and on those activities which improve quality and service provision
- Encouraging creative thinking and seek ways of increasing tourism value added also through the provision of innovative and authentic products
- Training and retraining of personnel working in the industry, create the right environment for maintaining existing employment, generate more and better jobs in tourism, also in the non-traditional segments of the industry, and invest in education and lifelong learning
- Achieving a fair distribution of income from the tourism industry
- Favouring construction for tourism purposes that respects our cultural and natural heritage
- Addressing the structural reforms required in tourism
- Developing synergies between tourism and other development sectors, ensure an integration of tourism policies within the other development sectors' policies and plans and vice versa
- Maintaining tour operator business and improve relationships with tour operators also at a strategic level
- Incentivising local tourism business to operate and invest responsibly and sustainably whilst ensuring that the effort of the industry is rewarded through awarding mechanisms that operate to promote the businesses themselves and that benefit from long-term contracts engaged upon with tour operators
- Improving the quality and depth of information available through tourism statistics and work on the formulation of tourism satellite accounts
- Creating the right image and perception of Malta in overseas markets and deliver the promise of an enriching stay
- Managing tourism zones by ensuring that basic facilities are available, well preserved and maintained
- Identifying the most important niches in the different zones and directing investment accordingly;
- Develop and implement a tourism zone management plan

- Encouraging tourism service providers to provide a proper service which makes us more competitive and which offers good value for money
- Monitoring Malta's overall price competitiveness and curb practices of overcharging through increased enforcement and consumer protection measures
- Ensuring adherence to set standards by the tourism service providers and clamp down on practices which harm tourism (e.g. littering and illegal dumping, illegal hunting, vandalism, lack of maintenance)
- Taking initiatives which address the seasonality issue
- Marketing Gozo as a unique rural destination
- Facilitating access between Malta and Gozo through sea and air links
- Making Malta more accessible, facilitating the development of air transport networks and attracting a mix of distribution channels
- Increasing visibility on the web and initiatives aimed at direct online booking and further use of information technology for marketing and information provision
- Maximising benefits of EU membership and actively participate in the decision-making process and discussions held at an EU level
- Ensuring that all the initiatives and project development undertaken by the public sector and by the wider private sector in the tourism industry contribute towards the Sustainable Development Strategy for the Maltese Islands.

A number of salient tasks that are given continuous priority include:

- active participation in Agenda 21 for Tourism and European Tourism Sustainability Group;
- continued assessment of EU proposals (both legislative and non-legislative);
- stakeholder consultation meetings;
- the continued carrying out of EIAs for major tourism projects;
- regular monitoring of tourism impacts on the environment;
- corrective measures to rectify damage;
- issuance of legislation on environmental management of construction sites;
- criteria for assessing public and private sector proposals;
- eco-certification of tourism service providers;
- seeking ways of how tourism can benefit the environment (curbing illegal development, strengthened enforcement, encouraging participation of the private sector).

A series of measures targeting beaches, coastal shores and the marine environment are established under the theme "Our product offer and destination management" as well as measures targeting the landscape (protecting and managing rural areas, afforestation projects). Of these the following are mentioned:

- Action 8.1 - Management of existing and new beaches
- Action 8.12 - We will work in order to get blue flag status for all our prime existing and new beaches
- Action 8.17 - We will undertake anti-pollution measures particularly by eliminating the outflow of sewage into the sea through waste water treatment plants.
- Action 8.20 - We will designate marine protected sites and ensure their management and protection (2009);
- Action 8.21 - We will increase tourists' and locals' awareness about the fragility of our marine environments (June 2007 and beyond);
- Action 8.33 - We will continue and increase our efforts to protect our flora and fauna (2007 and beyond)

- Action 8.35 - We will continue to implement our tourism zone policy and take actions accordingly including the maintenance of such zones. This will entail better co ordination between entities concerned.
- Action 8.39 - We will encourage afforestation projects which respect our natural environment including programmes such as the Tree4U campaign and other initiatives involving the private sector.

Endeavours at strengthening Malta's tourism industry in terms of competitiveness and offering innovative tourist products and services, have focused on the diversification of the national tourism market, with the following marketing segments receiving particular attention: meetings, incentives, conferences and events business (MICE); leisure and tour-operating business; sports tourism; Gozo-based holidays; culture and heritage; English language learning, as well as other growth niche markets (including cruise and stay, film production, health and wellness, short breaks and vacation ownership).

Tourism at peak periods in the summer can overpower the carrying capacity of fragile environments. Therefore, efforts are also directed at reducing the seasonality of tourism by minimising the peak flow in the summer months (June to September and peaking in August) and hence diminishing associated pressure on the infrastructure during these months (in terms of energy consumption, roads, traffic, visits to cultural sites) and increasing the share of tourist arrivals in the winter and shoulder months. Guidelines for tourist scheduling and policies were presented in the 2002 Carrying Capacity Assessment published by the Ministry of Tourism. Recommendations included *inter alia* the need to adopt the limited-growth scenario and to stabilise the total accommodation capacity and directing commercial policies to low season.

A number of other initiatives are being undertaken by the MTA in collaboration with other national organisations. Such initiatives encompass the heritage scene through restoration of historic buildings and other features of cultural interest; the rural scene involving for instance an assistance scheme for landscaping projects, and the issuance of booklets laying out a series of planned countryside walks for Malta and Gozo, as well as a branding exercise aiming at more effective marketing of Malta in the various tourism segments. Part of the latter branding exercise has involved a detailed questionnaire-based study - Malta Brand Survey - which contributed to determine the three core values of Malta's brand platform: *Heritage, Diversity and Hospitality*. There are also various ongoing activities of quality assurance. A noteworthy activity is the ongoing **Eco-certification Scheme**. This scheme encourages tourist accommodation establishments that are interested in reducing operational costs and their impact on the environment, apart from improving their image, 'to deliver a better product to meet the demand of the ever increasing environmentally aware tourist.' In order to participate, hotels must comply with a number of criteria in the following 10 areas of assessment and that are all aimed at improving the hotels' environmental performance and increasing environmental awareness amongst employees:

- Environmental management systems
- Waste management
- Products and materials
- Energy use
- Water use
- Air quality
- Noise protection
- Buildings and green areas
- Local culture
- Guest information

Another scheme that is of particular relevance in linking nature protection and tourist-related activities, is the international voluntary [Blue Flag certification scheme](#) run by the Foundation for Environmental Education (FEE). This scheme has recently been adopted in Malta. Beaches and marinas achieve a Blue Flag status if they conform to the following criteria:



- Bathing water quality
- Environment protection and management (nature protection, waste separation, sewage treatment)
- Environment education and awareness
- Safety and services

Blue Flag International is represented by Nature Trust. To date the following beaches are Blue Flag certified: St George's Bay (St Julians - the first certified beach in 2007) and the perched beach in Qawra. Other beaches are currently engaged in the process of obtaining the Blue Flag Award. These beaches include Ramla Bay in *Xagħra* Gozo and *Għadira* Bay in *Mellieħa*.

Over the past few years, attention has increasingly been drawn towards the importance of sustainable tourism development. Sustainability in the tourism sector is advocated by national policy including the National Strategy for Sustainable Development.

The [National Strategic Reference Framework 2007-2013](#) encompasses initiatives to sustain the tourism industry and promote culture under the strategic direction "Sustaining a growing, knowledge-based, competitive economy". Under the financial support of the European Regional Development Fund a €10 million Grant Scheme is available for Sustainable Tourism Projects undertaken by tourism enterprises in Malta. This scheme is managed by the Tourism and Sustainable Development Unit within the Office of the Prime Minister. To be eligible for funding projects must not only strengthen Malta's competitive advantage in tourism, but must also increase good environmental practice by these enterprises.

A tourism awareness campaign for children entitled in Maltese as "[Apprezza](#)", i.e. "appreciate" has been launched. It targets children and aims to increase their awareness on Malta's history, culture, heritage and natural environment (see -). The Campaign aims to engage and educate young children towards a future in tourism by exposing them to its multifaceted nature. The campaign aims at achieving substantial results in the long run. It is understandable that what the project is setting out to achieve is in essence a cultural change which is not something that can happen overnight.

The **Rural Development Plan for Malta (2007-2013)** acknowledges the rural landscape as an important backdrop for tourism. Encouragement of tourism activities is included as an eligible measure (measure 313, alongside two other measures) under "Axis 3 - Improving the Quality Life in Rural areas and Diversification of the Rural Economy". This axis, through its three measures, aims to contribute to '... the enhancement and rehabilitation of rural areas and landscape amenities that will provide the opportunities for diversification associated with tourism and informal recreation.' The legal basis for measure 313 stems from Article 55 of Council Regulation (EC) No. 1698/2005.

The rural tourism project entitled *Malta Goes Rural: Sustaining Rural Tourism* has been submitted by the Malta Tourism Authority under the European Agricultural Fund for Rural Development (2007-2013). This project was submitted by the MTA during May 2009 and currently awaits approval by the Managing Authority. The project aims to strengthen the rural tourism offer whilst diversifying the rural tourism product; it seeks to achieve an effective reduction in the seasonality problem of tourism demand and shall contribute towards fairer distribution of tourism generated income.

#### Other Sources of Information:

- *Draft Tourism Policy for the Maltese Islands 2007-2011*, Ministry for Tourism and Culture, September 2006.
- Mallia A, Briguglio M, Ellul AE & Formosa S (2002). Physical Background, Demography, Tourism, Mineral Resources and Land-Use. In: *State of the Environment Report for Malta, 2002*. Ministry for Home Affairs and the Environment. August 2002. 120 pp. (Section 3.5 on Tourism)
- MEPA (2006). Sub-Report on Land, In: *State of the Environment 2005* [Online] Available at: [www.mepa.org.mt/soer2005-land](http://www.mepa.org.mt/soer2005-land)

#### Fourth National Report to the CBD - MALTA

- Ministry for Tourism 2001. Carrying Capacity Assessment for Tourism in the Maltese Islands; Tourism development policies 2000 - 2010.
- Strategic Planning and Research Division (2005). Tourism Segments Report, MTA [Online] Available at: [www.mta.com.mt/uploads/3058/1285/Segments\\_report\\_2\\_.pdf](http://www.mta.com.mt/uploads/3058/1285/Segments_report_2_.pdf)
- UNEP/MAP: MAP CAMP Project "Malta": Final Integrated Project Document and Selected Thematic Documents. MAP Technical Reports Series No. 138, Vol. II, (2 Vols), UNEP/MAP, Athens, 2003. [Online] Available at: [www.pap-thecoastcentre.org/about.php?blob\\_id=36&lang=en](http://www.pap-thecoastcentre.org/about.php?blob_id=36&lang=en)

### 3.4 Air Quality

[More information on this Section of the Report is available at - [www.mepa.org.mt/air](http://www.mepa.org.mt/air); [www.mepa.org.mt/soer2005-air](http://www.mepa.org.mt/soer2005-air)]

Environmental problems linked to air emissions include *inter alia* acidification and eutrophication as a result of emissions of SO<sub>2</sub>, NO<sub>x</sub> and NH<sub>3</sub>; anthropogenic climate change; ground-level ozone and, the associated damage to ecosystems and wildlife. Measures aimed at reducing such emissions can hence also benefit biodiversity. To this end the following paragraphs provide a brief overview of national measures being implemented or planned to curb air pollution and to address climate change issues.

The [monitoring of air pollution in ambient air](#) (excluding indoor air) and the coordination of abatement measures in Malta falls under the responsibility of the Malta Environment and Planning Authority (MEPA).

Air monitoring activities in Malta fall under two categories:

- *Passive Monitoring*: A monitoring network was launched in 2000 as a **National Air Monitoring Programme**. Passive diffusion tubes installed in a number of streets in [44 localities](#) in Malta and Gozo are used. Such sites can be considered to be representative of “roadside”, “urban intermediate” and “urban background” sites. Air pollutants monitored by this method are: SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, and hydrocarbons (benzene, toluene, ethylbenzene and xylenes).
- *Real Time Monitoring*: Currently carried out by using four air monitoring stations at [fixed sites](#) to complete the real time measurement network, representing different air pollution regimes, e.g. background, suburban, traffic *etc.* Real time data is available [online](#).

Requests for access to the actual diffusion tube data should be made by [email](#). Access to diffusion tube maps for the various pollutants is also [available](#).

[National legislation on ambient air quality](#) transposes the legislation of the European Commission, and thus aims for the same objective, that is, to develop a long-term, strategic and integrated policy advice to protect against significant negative effects of air pollution on human health and the environment. The EU legislative framework on air quality is mainly based on [Council Directive 96/62/EC](#) commonly known as the **Air Quality Framework Directive** and its four daughter directives. Under Article 5 of the Framework Directive, Member States, including Malta, are required to undertake a preliminary investigation of ambient air quality prior to the implementation of the Daughter Directives, which in turn, set limit values regulating specified ambient air pollutants within Europe. The **Maltese agglomeration** as per requirements of Air Quality Framework Directive is composed of Valletta, Sliema districts and some surrounding environs. These sites were chosen on the grounds of being the most significant continuous urban area in Malta with an assumed population of greater than 250,000 inhabitants. All other territories and urban areas outside of this agglomeration form part of the Maltese zone.

A preliminary assessment of air quality within Malta has been conducted for the pollutants regulated by the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> **Daughter Directives** on ambient air quality in 2002 by [Stacey and Bush \(2002\)](#) in order to establish estimates for the overall distribution and levels of pollutants, and to identify monitoring necessary to fulfil the required obligations. Based upon the observations made for the Maltese agglomeration, Stacey and Bush (2002) concluded that certain pollutants at the time were above, or, where measurements were not available, likely to be above thresholds; and thus require fixed measurements to be made for compliance with the Daughter and Framework Directives. Based on emission inventory calculations for 1997, the most significant **sources contributing to emissions of NO<sub>x</sub>, SO<sub>2</sub> and PM<sub>10</sub>** were combustion in the energy and transport sector. With respect to complying with the requirements of the 4<sup>th</sup> **daughter directive**, an interim report was published by MEPA in 2007 presenting the findings of a preliminary assessment of arsenic, cadmium, nickel and mercury in the air.

The [Background Report on Air Quality](#), compiled as part of the development of the [2005 State of the Environment of Malta](#), illustrates the **sources, situation and trends** of the following major pollutants, which were identified to be of concern to the health of the Maltese population - Sulphur Dioxide, Nitrogen Oxides, Benzene, Ozone and Suspended Particulate Matter - by presenting and analysing the recorded results of air monitoring from passive diffusion tubes (from January 2003 until December 2004; 124 locations in 31 towns and villages across Malta and Gozo) and real time measurements recorded by the three fixed air monitoring stations. Diurnal and seasonal variation patterns for certain gaseous and particulate pollutants are also described. This report shows that "... positive results can be achieved with the introduction of abatement measures, albeit with increased costs".

The [2007 SOER Indicators for Malta](#) document the improvement in reducing the concentration of certain air pollutants, whilst a worsening trend is observed for a number of others. National average SO<sub>2</sub> registered a 41% decrease between 2005 and 2006, in comparison with the 24% decrease between 2004 and 2005. The annual average concentration of O<sub>3</sub> increased by 19% between 2005 and 2006 as it rose from 85.9µg/m<sup>3</sup> to 102.2µg/m<sup>3</sup> respectively. The main sources of O<sub>3</sub> precursors are transport, followed by energy and industry, however the majority of O<sub>3</sub> affecting Malta is of transfrontier origin. Average national NO<sub>2</sub> concentrations remained well below the 40µg/m<sup>3</sup> EU annual limit value for human health protection in 2006, although concentrations increased once again, this year by 12% (from 22.8µg/m<sup>3</sup> in 2005), while between 2004 and 2005 the increase was 13%. Malta' national programme prepared as per requirements of the [Directive 2001/81/EC](#) on national emission ceilings for certain atmospheric pollutants (**NEC Directive**) provides information on policies, adopted and envisaged, and quantified estimates of the effect of these policies and measures on the emissions of those pollutants in 2010.

The **Integrated Pollution Prevention and Control Directive** ([IPPC Directive 2008/1/EC](#)) has been transposed by the 'Integrated Pollution Prevention and Control Regulations, 2002' ([LN 234/2002](#) as amended by [LN 230/2004](#) and [LN 56/2008](#) ). Since accession, ten of the 14 operational installations have been IPPC permitted. These are two landfills, three pharmaceutical companies, two chemical plants, two power stations and an incinerator. Such permits include conditions which control emissions to the air including requests for self monitoring and compliance with specified emission limit values (Source: MEPA 2009).

An [Air Quality Plan](#) was recently issued by MEPA and outlines ways in which the quality of the air around the Maltese islands can be improved. The plan outlines initiatives that aim to reduce vehicle emissions; to encourage a change in travelling patterns and habits; to reduce the traffic impact of new developments; to better manage the road network and to promote cleaner vehicle technologies. This air quality plan is primarily focused to reduce concentrations of PM<sub>10</sub>, with the aim to bring the daily averages in line with the thresholds present in Directive 1999/30/EC. However in 2006 and 2007 the annual limit value for nitrogen dioxide (NO<sub>2</sub>) has been exceeded in the traffic site within the agglomeration. Therefore, these measures are also targeted to bring concentrations in this site in line with the annual limit value for NO<sub>2</sub>.

### **3.4.1 Reducing Air Emissions in the Road Transport Sector**

In Malta **road transport** is a significant contributor of air emissions. Malta has experienced dramatic increases in the levels of motorisation in the last years. The National Statistics Office - Transport Statistics Unit (2008 - [Press Release No 19/2008](#)) report that "The stock of motor vehicles rose by 1,767 in the fourth quarter of 2007, to stand at 287,120".

A number of activities are currently being implemented or are being planned by the [Malta Transport Authority](#) (ADT) (now [Transport Malta](#)) to address vehicular emissions.

Amongst ongoing activities the following are mentioned:

- The **Vehicle Roadworthiness Test (VRT)** which was gradually introduced in Malta since October 1999 is now fully obligatory (as from the 1st January 2005).

- The ongoing **SMS Based Emission Alert Campaign** which was initially launched in August of 2005 is contributing to raising public awareness, including amongst all road users, on the negative impact of high vehicular emissions on health and the environment. This campaign also serves as an enforcement tool. This campaign essentially involves the participation of members of the general public who report excessive vehicular exhaust emissions from private, commercial and public vehicles by sending (whilst not driving) an SMS bearing the registration number of the vehicle in question. The reports are then followed up by ADT (Licensing and Testing Directorate), who will call in the vehicle for an inspection during which an emission test is carried out. If the vehicle fails the test, the owner is required to address the problem and is then obliged to return within one week for another emission test. Failure in the second test will result in a licence restriction. The same applies to those vehicles that do not turn up for the test in which case final notices are sent by ADT and if the owner of the vehicle in question fails again to show up, a restriction on the vehicle license will be issued and the vehicle road license will not be renewed until the vehicle is tested.
- Apart from the above, ADT also carries out random road-side checks on private and passenger-carrying and goods-carrying vehicles to ensure compliance with the Motor Vehicle Regulations, including testing for emission levels.
- ADT has also started implementing the **“Valletta Strategy”**, aimed at reducing traffic into the historical capital city of Malta. During the last three years the Government has also granted an operating license for the use of electric mini-cabs in Valletta. Although this service is still not fully carbon-neutral unless the battery powering the mini cab is charged through a photo-voltaic system, they still contribute to cleaner air in terms of NO<sub>x</sub> and PM<sub>10</sub>'s. Other measures that have been taken to reduce emissions in Valletta include a controlled vehicular access system, extension to the Valletta pedestrianisation and the operation of a Park & Ride facility.
- The liberalization of the minibus and coaches sector has included a number of measures to ensure **modernisation of the fleet of public transport vehicles**. Changes made to the regulatory framework by means of LN 149 of 2009, stipulate that as of January 2015, coaches and minibuses will not be able to be older than 28 years, and any bus that is imported from 19 May 2009, cannot be older than five years.
- Tourists now can also avail themselves with the use of open-top tour sightseeing buses which have been in operation on various localised routes around Malta. This will also minimize the use of smaller vehicles such as taxis to larger passenger capacity vehicles therefore meaning less vehicles making use of the roads at any given time. This will create competition within the various modes and making transport more sustainable.

ADT has also submitted a project proposal for ERDF funding to set up an **ICT-based Intelligent Transport Management System (ITMS)** in Malta as an attempt to alleviate traffic congestion and hence contribute directly to less time travel and therefore less Greenhouse Gas Emissions.

A **reform of the public transport service** is also being planned and is aimed at a high standard of public transport provision and which will contribute to making public transport a more viable alternative to the private car and hence should lead to a modal shift to more environmentally sustainable means of travel.

#### Sources of Information:

- MEPA (2006a). *Reporting of national programmes under the National Emission Ceilings Directive*, December 2006 [Online] Available from: [www.mepa.org.mt/file.aspx?f=3511](http://www.mepa.org.mt/file.aspx?f=3511)
- MEPA (2006b). *State of the Environment Indicators 2006 for Air* [Online] Available from: [www.mepa.org.mt/soe2006-air](http://www.mepa.org.mt/soe2006-air)
- MEPA (2007). *Interim Report on the Preliminary Assessment of Arsenic, Cadmium, Mercury, Nickel and Polycyclic Aromatic Hydrocarbons in Ambient Air in Malta*. Malta Environment and Planning Authority, Pollution, Prevention and Control Unit, September 2007 [Online] Available from: [www.mepa.org.mt/file.aspx?f=3142](http://www.mepa.org.mt/file.aspx?f=3142)
- MEPA (2008). *State of the Environment Indicators 2007 - Indicators on Air* [Online] Available at: [www.mepa.org.mt/soe2007-air](http://www.mepa.org.mt/soe2007-air)
- Nolle, M., Vella L. and Axisa N. (2005): *State of the Environment Report for Malta 2005 - Background Report on Air Quality* [Online] Available from: [www.mepa.org.mt/file.aspx?f=1759](http://www.mepa.org.mt/file.aspx?f=1759)



#### Fourth National Report to the CBD - MALTA

- Stacey, B and Bush, T. (2002): *Preliminary assessment of air quality in Malta*. A study commissioned by MEPA. AEA Technology Environment, Culham Science Centre, Culham, Oxon, UK, 165pp. [Online] Available from: [www.mepa.org.mt/file.aspx?f=3149](http://www.mepa.org.mt/file.aspx?f=3149)
- Vella, A.J., Callus, J., Galea, H. And Vella, A.D. (2002): Air Quality. In: *State of the Environment Report for Malta 2002*. Ministry for Home Affairs and Environment. 32pp.
- Information submitted by ADT as part of compilation of this report

### 3.5 Climate Change

“The links between biodiversity and climate change run both ways: biodiversity is threatened by climate change, but proper management of biodiversity can reduce the impacts of climate change” (CBD Secretariat, 2007 - [Biodiversity and Climate Change](#) - Booklet Prepared for International Day for Biological Diversity 2007).

“Malta’s climate has changed slightly over the last 50 years, and is slowly becoming warmer and dryer, consistent with international climate change predictions” (One of the key messages delivered by the [2005 State of the Environment Report](#)). Updated information is given by the 2008 SOER - [Section on Climate Change](#).

Malta became a signatory to the **United Nations Framework Convention on Climate Change (UNFCCC)** in 1994 as a non-Annex I country, ratifying the Convention on 17 March 1994. It also ratified the **Kyoto Protocol** on 11 November 2001. As part of Malta’s obligations to submit national communications as required by Article 12 of the UNFCCC, **Malta’s Climate Change Project** was initiated in March 2001 through collaboration between the Government of Malta and the Department of Physics of the University of Malta. The Project, funded by UNDP’s Global Environment Facility (GEF) resulted, *inter alia*, in the compilation of [Malta’s First National Communication to the UNFCCC](#). This was submitted officially to the UNFCCC in April 2004 and officially presented at the twentieth meeting of the Subsidiary Bodies of the UNFCCC in June 2004.

**Malta’s First National Communication (FNC)** outlined current and future concerns in relation to climatic vulnerability, arising from current and projected climate change impacts (such as increase in temperature, decrease in precipitation) including:

- Drought;
- Deterioration of freshwater quality and availability;
- Increased risk of floods;
- Increase in soil erosion and desertification and associated impacts on agriculture;
- Increased risk of storms and severe weather incidence;
- Accelerated coastal erosion;
- Changes in sea water mass characteristics;
- Sea level rise;
- Biodiversity loss and degradation.

Malta’s FNC gives a qualitative indication of climate change impacts that may affect the Maltese Islands but does not indicate the extent or significance of such impacts. Nevertheless, these concerns are already a reality today. Future climate change will be expected to add on and hence aggravate existing pressures on natural, semi-natural and man-made systems in the Maltese Islands.

Malta’s Climate Change Project included a **vulnerability study**, which identified the most important impacts caused by climate change on natural systems. Of special importance for Malta in the context of its island status, are the effects of climate change on the marine environment, which will bring about:

- changes in the physico-chemical parameters, especially changes in sea temperature, localised changes in salinity due to increased runoff and increased turbidity from sediment washout;
- impacts on the important seagrass ecosystems through reduced photosynthesis as a result of increased turbidity;
- increased UV (especially UV-B) radiation, which penetrates well into sea water, can have a negative effect on photosynthesis;
- higher sea temperatures can result in the westward migration of Lessepsian species from the Red Sea and the Levantine basin of the Mediterranean, leading to competition with local species.

A preliminary qualitative analysis of climate change impacts indicates that coastal and marine environments are at risk. Terrestrial coastal biodiversity may be particularly affected by drought, sea-level rise and coastal erosion. In particular, coastal wetlands and other transient aquatic ecosystems present along the coast are very vulnerable to drought and associated deterioration of freshwater quality and availability, as well as inundation and salinisation of coastal aquifers through sea level rise. Such vulnerability is further exacerbated by the poor conservation status of most of the coastal habitats, particularly those located on the low-lying north eastern shores, which in general are restricted to small pockets surrounded by developed areas.

Limitations associated with the information available on climate change effects on Maltese biodiversity, include the following:

- local data on climate parameters (especially long time-series data) is limited, thus also limiting projections of climate change impacts at a local scale;
- local data on vulnerability is mainly qualitative rather than quantitative, therefore while there is an indication of the impacts to which Malta may be exposed to, there is no indication of the extent and/or significance of such impacts;
- the resolution of climate change projections and impact scenarios at a global/regional scale may not be applicable to the Maltese Islands; projections are thus not available at a local scale and vulnerable regions or sectors within the Maltese Islands cannot be identified with certainty;
- global/regional climate change impact scenarios do not necessarily take into consideration characteristics that are specifically associated with small island states;
- long time-series data on species and ecosystems is not available;
- knowledge on the biology of species and their tolerance range to changes in environmental parameters is very limited, hence the species response to climate change impacts is uncertain;
- knowledge on the distribution of marine habitats, with the exception of *Posidonia* beds (*Posidonium oceanicae*) is limited;

Given the scarcity of available information, there is an urgent need for Malta to initiate or strengthen (where already in place) research on climate change, including impact and vulnerability assessments. Research should target the downscaling of regional climate projections and the development of local scenarios which take into consideration local characteristics throughout various sectors. This would entail large-scale data collection throughout various sectors and hence requires cooperation between various entities and capacity building and training.

Although Malta does not have any quantified targets for reducing or limiting GHG emissions over the 2008-2012 period (also known as the first Kyoto Protocol commitment period) under the Kyoto Protocol or under [EU Decision 2002/358/EC](#), nevertheless, as a Member State of the European Union, Malta is still bound by the obligations set out in European Union legislation on various issues related to addressing climate change. Of particular significance is [Directive 2003/87/EC](#) transposed into national law via the “**European Community Greenhouse Gas Emissions Trading Scheme Regulations, 2005**” ([Legal Notice 140 of 2005](#), as amended by [LN 73 of 2006](#) and [LN 274 of 2006](#)). The implementation of the [EU ETS](#) is regulated by the Malta Environment and Planning Authority (MEPA). The two Maltese installations currently participating in the scheme are the power plants operated by EneMalta Corporation; these plants are also, by far, the largest contributors to overall emissions of greenhouse gases in Malta.

In response to obligations stemming from Article 9 of [Directive 2003/87/EC](#), Malta has prepared and submitted to the EU commission **National Allocation Plans for the trading periods 2005-2007 and 2008-2012** pursuant to the Emissions Trading Scheme Directive. Both NAPs have as a basis an extrapolation of the ‘business-as-usual’ correlation between energy generation, time and GDP. This extrapolation presents a projection of electricity demand over the course of the respective trading phases.

Nationally, MEPA is entrusted with the task of maintaining the **national greenhouse gas inventory** and addressing national reporting requirements in respect of [Decision 280/2004/EC](#) establishing a mechanism for the monitoring of greenhouse gas emissions in Community Member States. The **Annual National Greenhouse Gases (GHG) Emissions Inventory** identifies trends of past and

present emissions that provide useful information to drive the development of mitigation measures to combat climate change. The most recent GHG inventory (2009) covers the time series [1990-2007](#) and reveals that throughout the whole period 1990-2007, the **major contributors to the total emissions for Malta** were energy generation, transport, waste and fuel combustion in the industrial, commercial and residential sectors, with minimal contributions by other sources. Besides meeting reporting requirements pursuant to legislation, the inventory also provides a crucial tool to identify the trends of past and present emissions and to enable the development of effective policy measures related to Climate Change. In general, per capita emissions have risen from around 5.5 tonnes per head in 1990 to 7.3 tonnes per head in 2007. Malta contributes around 0.1 % to the EU-27 GHG emissions.

Activity data used for the preparation of this inventory has been mainly obtained from the National Statistics Office, from government entities, from other public bodies such as regulatory authorities and from private establishments.

Awareness of the issue of climate change has increased and discussions have gained momentum in the past months. The **Biennial Report on Climate Change policies and measures (PAMs)** covers information on national policies and measures considered as most effective in reducing GHG emissions in the various sectors. Malta has recently submitted its [2009 PAMS report on projections and national programmes](#) in fulfilment of the obligations arising from Article 3(2) of **Decision 280/2004/EC** concerning a monitoring mechanism for greenhouse gas emissions in the European Community. The report was prepared by the Malta Environment and Planning Authority in collaboration with various entities involved in developing and implementing policies and measures affecting emissions of direct GHG and presents the state of play as at the end of 2008. The report includes information on those national policies and measures considered as most effective in reducing GHG emissions or in raising awareness on the need to reduce emissions from the various sectors, and in particular measures targeted at the energy sector which is the main emitting sector. Estimated projections of GHG emissions until 2020 for the various sectors, ranging from energy to waste agriculture, are also included in the report. The policies and measures described in the report and taken into account in developing the projections include **implemented as well as planned measures**; however, policies and measures still under discussion or at consultation stage have not been included. The information provided is without prejudice to future developments taking place in Malta since these may change with time depending on various factors such as availability of the necessary resources and economic, technical and social developments.

**Malta's actions in the area of climate change**, not only aim at addressing mitigation of emissions, directly or indirectly, but also stem from the need for adaptation to the impacts of the effects of climate change. The latter is very important in view of the particular circumstances (geophysical, economic and social) of the nation as a small island state, making it highly vulnerable to such effects. To date local action on climate change issues has focused on mitigation measures; the vulnerability and adaptive capacity of the Maltese Islands are only recently being addressed. Initiatives undertaken by the Government to help mitigate to the impact of climate change include *inter alia* the [Energy Policy Proposal for Malta](#) and the [National Strategy for Policy and Abatement Measures to the Reduction of Greenhouse Gas Emissions](#).

Currently Malta is working on the compilation of the [Second National Communication to the UNFCCC](#). This second communication will be focusing on vulnerability and adaptation in the Maltese Islands, hence **climate change impacts, vulnerability and adaptation** will be assessed for various sectors.

In addition, the Physics Department of the University of Malta is embarking on **regional climate modelling**, which shall be established as one of the Department's research areas. These initiatives shall provide scientific data and projections to support the nation's efforts in tackling the challenges of climate change.

A recently appointed the **National Climate Change Committee** has also been tasked with the drafting of a National Strategy on Adaptation for Climate Change tailored to address Malta's adaptation concerns.

### 3.5.1 Energy Efficiency - Reducing GHG emissions by the Energy Sector

The [Malta Resources Authority](#) (MRA) is the authority responsible for the **regulation of energy utilities and management** in the Maltese Islands. MRA is responsible to implement legislation relating to energy efficiency, reduction of sulphur content of fuels, and renewable sources regulations, amongst others. Such measures contribute to a decrease in the use of fossil fuels, and thus a reduction in emissions.

A [National Energy Efficiency Action Plan](#) (EEAP) in accordance with the requirement of the recent Energy End-Use Efficiency and Energy Services Directive (2006/32/EC) has also been developed. The scope of this action plan is savings in energy end use in line with **Directive 2006/32/EC**. This plan of action notes that “Energy efficiency finds synergy in the achievement of all Government’s energy policy objectives - it assists the economy, as well as help to achieve social and environmental goals.”

#### 3.5.1.1 Plant Loading and Fuel Switching

[EneMalta Corporation](#) (EMC) is Malta’s only electricity producer and distributor on the island. This corporation is responsible to monitor and, where possible, reduce emissions from the two power plants located in Marsa and Delimara by respecting the relevant emission limit values present in the **Large Combustion Plants Directive** (LCPD - [2001/80/EC](#)) and operating the power plants at best available techniques, where practicable and possible, as outlined in the Directive on Integrated Pollution Prevention and Control (1996/61/EC). EneMalta made the switch to a more expensive low sulphur fuel in January 2004 - a sulphur content of 1% bringing a drastic reduction in SO<sub>2</sub> emissions. The Marsa Power Station (MPS) steam boilers with a total capacity of 240MW have been subject to the 20,000 hours operation time limit since 1<sup>st</sup> January 2008, in line with the requirement of the LCPD. The complete shutdown of this plant has to occur by not later than 31 December 2015. Due to this requirement the plant dispatch and load management of EneMalta has changed, with a larger proportion of the load being met by the Combined Cycle Gas Turbine (CCGT) plant in the Delimara Power Station (DPS). The effect has been a reduction in the overall GHGs emitted per MWh generated, in view of the higher efficiency of this plant and the lower emissions per TJ of gas oil compared to heavy fuel oil.

#### 3.5.1.2 Planned Activities

A number of measures aimed at energy efficiency are also in the pipe line and include for instance the supply and installation of an Automatic Meter Management system complete with Smart Electricity Meters. It is envisaged that such a new metering system will enable the implementation of time-of-use tariffs, believed to contribute to reduction in energy demand (i.e. reduction in CO<sub>2</sub> emissions). Energy efficiency measures in street lighting are also being explored considering that street lighting consumption accounts for more than 1% of the total MWh of energy generated in the Maltese Islands. Malta is also currently assessing the potential of renewable energy generated by wind farms.

#### 3.5.1.3 Grant schemes for energy efficiency and renewable energy projects

Various grant schemes are ongoing and which target the non-residential sector and the residential sector.

##### **(A) Non-residential sector**

The **energy grant scheme**, which is to be funded through the European Regional Development Fund (ERDF) (2007 to 2013), was launched in February 2009. Funds of €10,000,000 are available under this scheme. This incentive scheme aims to assist companies to implement projects related to energy efficiency (such as the installation of intelligent lighting systems, solar heating, thermal insulation, building management systems and energy-saving lighting) and electricity generation from renewable sources such as solar and wind. The scheme is being administered by Malta Enterprise,

the government agency responsible for the promotion of foreign investment and industrial development in Malta. Approved and selected projects (through competitive call) will be refunded 50% of their investment cost on renewable resources and energy efficiency, with a minimum investment of €25,000 and not exceeding €200,000. The first call for applications for funds has been closed and the contracts for the funding are to be signed by the end of August 2009. This scheme is being run in parallel with a scheme aimed at assisting companies to carry out energy audits for their systems and energy use, this scheme is funded by the Maltese Government through Malta Enterprise. **Energy audits** can identify measures which can then be funded through the energy grant scheme. The grant amounts to 40 per cent up to a maximum of 300 Euros on audits for small enterprises and up to 1,000 Euros for large enterprises. The aim is that 1,000 enterprises will undertake such audits during the course of 2009.

### ***(B) Residential Sector***

#### ***Promotion of Solar Water Heaters***

Since January 2006, Malta has been implementing financial incentives for the **passive use of renewable energy**. In 2009, the financial support in the form of grants for solar energy products for domestic premises was increased from 25% to 66% on the capital costs of these products. The capping to this grant was also increased from €233 to €465. In addition, in the case of Solar Water Heaters installed in new households, EneMalta is waiving €163 from the connection fee.

#### ***Grants on purchase of micro RES generation equipment***

Malta has continued to adopt measures to increase the penetration of **micro-generation from wind and solar photovoltaic (PV)**. The capital grant schemes for micro wind and solar photovoltaic systems introduced in 2006 continued to be applied up to the end of 2008.

In 2009, the previous capital grant scheme for the residential sector was replaced by the following financial support mechanism:-

- Capital grants of 30% on the purchase price of micro-wind turbine generating systems for installation in residential premises (subject to a maximum grant of € 750).
- Capital grants of 50% on the purchase price of solar PV systems for installation in residential premises (subject to a maximum grant of € 3,000). A fund of € 500,000 was allocated for this grant.

In addition to these grants:

- the cost for the installation of the meter necessary to monitor the output of these technologies is waived by the Maltese Distribution System Operator (EneMalta Corporation); and
- a net metering mechanism exists for electricity generated from renewable energy sources with a spill tariff of € 0.07/kWh for any excess electricity fed into the grid.

#### ***Distribution of Energy Saving Lamps in the residential Sector***

Government launched a scheme in 2009 in which security vouchers were distributed to every family entitling them to free energy saving lamps. This measure is aimed at creating awareness in favour of energy efficient lighting in the residential sector, and discouraging the purchase of incandescent and fluorescent bulbs and tubes, to reduce electricity wastage.

#### **3.5.1.4 Raising Awareness on Energy Efficiency**

The Malta Resources Authority, the Ministry for Resources and Rural Affairs, the Malta Transport Authority and other entities are collaborating in a sustained educational campaign to generate awareness and instil a new culture on ideal behaviour in energy consumption. Indeed, a



considerable amount of communication, education and public awareness (CEPA) activities have been undertaken to instil a new culture on ideal behaviour in energy consumption in Malta.

Media was used in the widest possible manner in order to target the general public at large. Energy Saving Tips were published on local newspapers (both in English & in Maltese). These were also published in local magazines. Media coverage included discussions over local radio stations as well as TV programs are being broadcasted over a span of several months. Talks on energy saving in everyday lives were given at public places and local councils. These talks proved to be very successful and requests were made by schools, private companies and government green leaders for other similar talks to be given. Demo videos were used in the talks and TV programs. Popular material has also been developed. Flyers have been distributed at homes and around all Maltese youths.

A booklet entitled “Concern for the environment requires us to take energy efficiency very seriously” was published by the Malta Resources Authority (MRA). The booklet delivered the message: “The environment benefits from less pollution and you can get lower bills while enjoying same or better comfort in our homes.” The booklet guides the consumer on how to save energy as well as provides information on available grants. An evaluation of the energy saving campaign has also been carried out by MRA in order to provide *inter alia* insight as to how the Maltese public received TV commercials, as well as to deduce whether action was taken by the public to save energy, and if not, why. Another booklet was published on “[Tips about reducing green house gases and climate change](#)” by the former Ministry for Rural Affairs and the Environment. Tips cover ways of reducing GHGs on the road and at home.

The ongoing campaign on “[SWITCH - To efficiency](#)” is one of the green initiatives led by the government. This campaign includes a number of information spots with national TV personalities indicating how one can save energy in his/her everyday life. An e-mail and free phone helpline have also been set up for any queries posed by members of the general public, along with articles, a booklet and a presentation on the topic.

Significant work has thus been carried out to promote energy efficiency in Malta. More CEPA activities are in the pipeline such as on building energy efficient homes and renewable energy.

#### Main Sources of Information:

- 1st National Communication of Malta to the United Nations Framework Convention on Climate Change, Ministry for Rural Affairs and the Environment, University of Malta, April 2004. Report prepared by the University of Malta Physics Department (editors Charles V. Sammut and Alfred Micallef) for the Ministry for Rural Affairs and the Environment, April 2004.
- MEPA (2006). *State of the Environment Report for Malta: Sub-Report on Climate Change* [Online] Available at: [www.mepa.org.mt/file.aspx?f=2113](http://www.mepa.org.mt/file.aspx?f=2113)
- MEPA (2008). *State of the Environment Indicators 2007 - Indicators on Climate Change* [Online] Available at: [www.mepa.org.mt/soe2007-climatechange](http://www.mepa.org.mt/soe2007-climatechange)
- MEPA (2009a). *Malta's Biennial Report on Policies and Measures and Projected Greenhouse Gas Emissions*, Malta Environment & Planning Authority, Malta [Online] Available at: [www.mepa.org.mt/file.aspx?f=3511](http://www.mepa.org.mt/file.aspx?f=3511)
- MEPA (2009b). *National Greenhouse Gas Emissions Inventory Report for Malta 1990-2007*, Malta Environment & Planning Authority, Malta. [Online] Available at: [www.mepa.org.mt/file.aspx?f=3499](http://www.mepa.org.mt/file.aspx?f=3499)
- MEPA (2009c). *National Overview on vulnerability and impacts related to Climate Change on Mediterranean marine and coastal biodiversity*. National Report to SAP-BIO Stage 2 Process.
- Information submitted by MRA-Energy Directorate as part of compilation of this report

### 3.6 Development Control and Land Use Planning

[More information is available at - [www.mepa.org.mt/topics-planning](http://www.mepa.org.mt/topics-planning); [www.mepa.org.mt/integrated-coastal-zone](http://www.mepa.org.mt/integrated-coastal-zone); [www.mepa.org.mt/heritage-home](http://www.mepa.org.mt/heritage-home); <http://www.mepa.org.mt/permitting>; [www.mepa.org.mt/soer2005-land](http://www.mepa.org.mt/soer2005-land); [www.mepa.org.mt/ter08-land](http://www.mepa.org.mt/ter08-land)]

Land is considered as Malta's primary non-renewable natural resource. Competing demands for land use arise from various sectors, including increased use of private transport, increase in tourism infrastructure, demand for new housing, space requirements for industry, extensive quarrying and land intensive waste disposal. Human influence is the principal factor driving land-use change. The main strategic factors affecting **land use change in the countryside** are urbanisation, quarrying, agriculture and recreation. Urbanisation is one of the most significant pressures on the Maltese countryside ([2005 State of the Environment Report - Land](#)).

Since March 2002, environment protection (under the remit of the Environment Protection Department) and land use planning (under the Planning Authority) have merged under the responsibility of one institution, the [Malta Environment and Planning Authority](#) (MEPA). The legal mandate is provided by the Environment Protection Act (EPA - [Act XX of 2001](#) as amended by [Act II of 2006](#)) and the Development Planning Act (DPA - [Act I of 1992](#) as amended), respectively. The merger was aimed to increase co-ordination, efficiency and effectiveness in these two strongly interlinked areas.

The **Development Planning Act (DPA)** regulates and controls land use in the Maltese Islands and aims at mainstreaming the land use sector with environmental protection. One of its requirements is that land development, including changes of use, requires planning permission by MEPA. The DPA also extends development planning and control to the sea. For a development to be carried out, development permission is required. This matter is regulated by Article 32 of the DPA.

MEPA carries out an ongoing [development control process](#) whereby proposals for development are vetted with respect to their environmental impact. Development control involves the processing of all development planning applications both of a scale which legally designates them as "Major Projects" and those which are certainly more prolific but are lesser in size. The Authority is obliged to monitor all development operations to ensure that development is carried out in accordance to development permits. [Development Control Commissions \(DCCs\)](#) carry out the function of determining development planning applications. In line with the main objectives of the MEPA reform project, a number of changes are envisaged to take place in the [development control process](#) in order to ensure greater efficiency and improved consistency in the analysis and decision-making processes when it comes to development permission applications.

"**Planning enforcement**" encompasses actions taken by the MEPA where there is illegal development. This could be either any development without a planning permission or breaches of conditions imposed in development permits. **Monitoring** is undertaken by the Enforcement Unit and each inspection is recorded on a database outlining the stage of development reached on site at that particular time.

A compliance **certificate** is issued in terms of Article 61 (1) and (2) of the DPA. The Planning Enforcement Officer (PEO) inspects the site in question and confirms whether the development has been carried out in accordance with the approved plans and the conditions imposed in the permit. This document is considered as one of the most effective enforcement tools. New development cannot be provided with water and electricity services unless such a compliance certification is issued by MEPA. **Direct Action operations** are carried out on a regular basis throughout the year in various localities around Malta, Gozo and Comino. Direct action may involve the use of official MEPA seals to close off premises to cease works and/or prevent further unauthorized land use. Another possibility is for the Direct Action Team to enter the land and physically remove or demolish the illegal development. MEPA is also empowered to clamp, disable or remove machinery or tools that may be caught on site used in the execution of illegal development (Article 55 A.1) Expenses incurred during direct action are considered as civil debt and therefore billed to the owner of the land (Article 55 A.4).

In the recent past MEPA has taken initiatives and has also been involved with interested Government agencies to clear **eyesores from the country side**. Such action included the direct removal of scrapped vehicles from various rural locations. Current cooperation with such an agency is focusing on a clean-up of scrap (rusty oil drums etc) which had for years injured the appearance of the rural landscape and damaged the protected traditional rubble wall. Enforcement action by MEPA and the PARCS Department has yielded the removal of 6,812 objects from the countryside over a span of 13 months. 5,867 of these objects were oil drums from fields situated in ODZ, across 26 localities.

The Enforcement Unit is also highly involved in the investigation of **complaints** concerning planning enforcement issues regularly received from the general public, media and NGOs. All received complaints with subsequent results, replies and action taken by the enforcement officers are regularly maintained in a Database by the Enforcement Unit Complaints Office. The quantity of yearly complaints exceeds the 2000 mark.

The development framework for the Maltese Islands is laid out in the [Structure Plan for the Maltese Islands](#) adopted through the Development Planning Act. Seven Local Plans apply the Structure Plan policies at the local level: Marsaxlokk Bay Local Plan (MBLP); Grand Harbour Local Plan (GHLP); North Harbour Local Plan (NHLP); North West Local Plan (NWLP); Gozo & Comino Local Plan (GCLP); Central Malta Local Plan (CMLP) and South Malta Local Plan (SMLP). The Structure Plan hence aims to influence the quality and distribution of land uses through a set of sectoral and area-based policies that take into account the socioeconomic and environmental conditions of the Maltese Islands. The objectives of this national planning tool are three-fold. The Structure Plan provides guidance to Local Plans and Subject Plans, and gives a general direction for development control as well as strives to conserve and enhance the countryside by prohibiting urban development outside the development zone.

The Development Planning Act contains the powers necessary for the designation of Urban, Rural, and Marine Conservation Areas. The **Designated Urban Conservation Areas** in Malta and Gozo cover a total of 15.14 square kilometres. The DPA thereby provides for the scheduling (statutory protection) of property in view of environmental, cultural, aesthetical, geomorphological, archaeological and other considerations. A [database for scheduled property](#) is available online. The Development Planning Act provides owners of scheduled property the right to request MEPA to reconsider the scheduling, and if MEPA's reconsideration is not satisfactory to the owners they may seek redress through an appeal. Scheduling ensures protection at a national level thus covering also those habitats and/or species that might not be covered by the EU Habitats Directive. Scheduling also targets the preservation of the natural landscape *per se* through the designation of Areas of High Landscape Value.

In the Conservation Areas development control is stricter and more specific. Development is guided by a number of Structure Plan policies including:

- *RCO Policies* - aiming towards the conservation of natural habitats, natural features and the landscape;
- *ARC Policies* - aiming towards the conservation of archaeological areas and sites within urban, rural and maritime areas;
- *MCO Policies* - aiming towards marine conservation;
- *CZM Policies* - aiming towards coastal zone management;
- *AHF Policies* - aiming towards encouraging major improvements in agriculture, horticulture and fisheries while still safeguarding natural resources for future generations;

RCO policies provide conservation measures with respect to the following:

- scenic value;
- agricultural land;
- ecology;

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- rehabilitation of degraded habitats and landscape;
- sandy beaches and dune areas;
- control of erosion;
- protection of valleys;
- trees and afforestation;
- cultural and archaeological heritage;
- minor islands;
- education and research;

Within Rural Conservation Areas the following sub-areas can be designated, using the International Union for Conservation of Nature definitions and criteria where relevant:

- Areas of Agricultural Value: areas comprised of high grade agricultural land including irrigated and partially irrigated land - None of these have been legally designated nonetheless such sites have been referred to in Local Plans.
- Areas of Ecological Importance: relatively large areas designated to protect typical and rare habitats. 187 AEIs have been scheduled to date - when those sites which are designated both as AEIs and SSIs are also considered, the number increases to 214.
- Sites of Scientific Importance: sites containing individual species and populations, species assemblages, and geological features. 87 SSIs have been scheduled to date - when those sites which are designated both as SSIs and AEIs are also considered, the number increases to 114
- Areas of Archaeological Importance: concentrations of valuable archaeological sites - 13 designated to date.
- Sites of Archaeological Importance: individual and/or isolated archaeological sites.
- National Parks: relatively large areas of national significance not materially altered by human use, with managed visitor access and amenities. The GCLP (2006) identified the Qawra/Dwejra area (Gozo) as a Heritage Park area. The Qawra/Dwejra Heritage Park Action Plan (2005) provides detail on the protection and planning parameters of this National Maritime Park area.
- Areas of High Landscape Value - cover a total of 61.69 square kilometres (combined cultural and natural heritage AHLVs) (Please note that the majority of these sites overlap since AHLV boundaries are normally delineated on areas covered by other scheduling.)

**Areas of Ecological Importance (AEI) and Sites of Scientific Importance (SSI)** cover a total of 61.27 square kilometres. However, several areas contain multiple levels of protection (for instance a site may be scheduled as a Level 1 AEI as well as a Level 2 SSI). Therefore, if the total area occupied by such overlap is eliminated the resultant scheduled natural heritage occupies a total land area of 48.89km<sup>2</sup> (the spatial extent of scheduled natural heritage). [Table 14](#) provides numerical data on the designation of these sub-areas within the over the last 15 years (Source MEPA).

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
AEI	2	38	74	8	0	7	1	4	10	8	0	7	7	0	21
SSI	0	12	23	1	1	1	0	9	21	1	1	2	2	0	13
AEI/SSI	0	0	0	0	0	1	0	1	0	0	0	0	6	0	19
Total	2	50	97	9	1	9	1	14	31	9	1	9	15	0	53

**Table 14 - Number of AEIs and SSIs designated 1994-2008**

The Structure Plan is currently undergoing a [process of review](#), steered by a Core Team and chaired by the Director of Planning within MEPA. The review process comprises three phases:

- Phase 1 of the review process involved the preparation of **topic papers on all land-use sectors** that shall be addressed through the revised plan and the preparation of subject plans. Topic papers address the following key issues: demography; housing; social facilities and community care; employment (including an industry subject study, garages and warehousing); retail; tourism; leisure and recreation; minerals; waste; public utility services; urban conservation

(including archaeology); rural strategy (including agriculture); coastal strategy (including aquaculture and fisheries); visual landscape and transport. The development of each topic paper has involved various stages of consultation with key players before a final draft was published for public consultation. These topic papers are available online. To assist the consultation process, a radio programme series was prepared in-house and aired live on a local radio station.

- Phase 2 includes the [Strategic Growth Scenarios Paper](#) and the [Issues Paper](#). Whilst the former examines the implications of catering for alternative levels of housing and employment growth for the Structure Plan Review, the Issues paper collates and identifies the key issues raised in the topic papers.
- Phase 3 is the strategy and policy formulation stage and is complemented by the strategic environment assessment process. To this extent a [scoping report](#) has been prepared. This outlines the proposed SEA methodology and will initiate the environmental assessment process, which will be ongoing. The assessment will cover both the strategy formulation and policy formulation stages of the New Structure Plan process.

[Supplementary policy guidance](#) to the Development Planning Act is also developed and all guidance documents are available online. Approved guidance for instance includes the "[Guidelines on trees, shrubs and plants for planting and landscaping in the Maltese Islands](#)" which was issued in 2002. This policy guidance document promotes the planting of appropriate native trees, shrubs and plants to improve the rural and urban environment.

The strategic objective for land use in Malta as set out in the [National Strategy for Sustainable Development](#) is "[to] protect, maintain and improve the urban and rural environment and through the planning system protect the open countryside from uses, particularly residences, which can be more appropriately located in urban areas." This strategy recognises land development as a human-mediated activity whose consequences lead to undesirable ecosystem changes. One way of foreseeing and hence preventing/mitigating adverse affects of land development on biodiversity is by undertaking [environmental assessments](#).

### **3.6.1 Environment Assessments**

[Environment Assessment](#) comprises the carrying out of **environment impact assessments (EIA)** for development projects that may have significant impacts on natural and human populations, and the undertaking of **strategic environment assessments (SEA)** for plans or programmes that may result in significant effects on the environment. The Malta Environment and Planning Authority (MEPA) is the competent authority responsible for the environmental assessment of projects, whilst the SEA Audit Team within the Office of the Prime Minister (OPM) is the competent authority responsible for Strategic Environmental Assessment on plans and programmes.

Malta's EIA and SEA procedures reflect the requirements of the relevant EU directives as well as national legislation particularly the 'Environmental Impact Assessment Regulations, 2007' ([LN 114 of 2007](#)) and 'Strategic Environmental Assessment Regulations, 2005' ([LN 418 of 2005](#) as amended by [LN 327 of 2008](#)). Biodiversity concerns are integrated in the development and review of EIA/SEA reports. Although there is no specific national guidance on environmental assessments and biodiversity, a comprehensive set of **guidance** for the implementation of the EIA procedure and another on SEA, which will complement the existing legislation and ensure greater consistency in the application of the related EU Directives and good practice, are under preparation. EIA procedure and legislation are constantly under review in order to improve practice.

MEPA, in line with the [EU Directive 85/337](#), as amended, on the assessment of the effects of certain public and private projects on the environment, undertakes **screening** for projects requiring an EIA. MEPA holds **scoping meetings** with applicants, consultants and stakeholders, including NGOs and Local Councils, prior to the finalisation of terms of reference for EIAs. **Public hearings** related to EIAs are also held, during which stakeholders and the public are given the opportunity to voice their views on the findings of a respective EIA. All decisions are taken in a public meeting, where the findings of the **Environmental Statement** and all feedback from consultation processes are presented to the decision-making body. MEPA's Environmental Assessment Unit also provides its

technical assistance to the SEA Audit Team by screening proposals for the preparation of plans and programmes, and reviewing scoping reports and environment reports, as required by LN 418 of 2005, as amended.

The development of the EIA and SEA processes adopted in Malta has been assisted by **capacity building** which has involved training courses and workshops. For instance, a three-day training course on EIA techniques was organised by MEPA in conjunction with the Institute of Environmental Management and Assessment of the UK. The course was attended by graduates and professionals working in the field of EIAs. A two-day course for EIA consultants in government departments and agencies also followed.

Appropriate assessment (AA) under Article 6 of the EC Habitats Directive is also carried out in the context of Special Areas of Conservation (SAC) and Special Protection Areas (SPA). The rationale of the AA process is ultimately similar to that behind the better-known EIA, albeit the scope is strictly related to the EC Habitats Directive and the EC Birds Directive. The AA process is regulated by the 'Flora, Fauna and Natural Habitats Protection Regulations, 2006' ([LN 311 of 2006](#) as amended). The AA is not a substitute for the EIA, nor vice-versa. If the development qualifies for both AA and EIA, then both need to be carried out and submitted as free-standing documents (whilst striving to avoid any unproductive duplication of studies). **Similarities between the EIA procedure and the AA procedure** include:

- **Screening** - Both EIA and AA involve screening of proposals to verify whether an assessment report is required or otherwise. The screening processes are however somewhat different.
- **Scoping** - Both EIA and AA involve a scoping stage where Terms of Reference for the assessment report are drawn up.
- **Assessment reports** - Both EIA and AA procedures involve the drafting of an assessment report that describes the project and assesses the likely impacts as a result of a proposed development. The AA is more focused than the EIA in that it deals only with impacts of proposals on Natura 2000 sites. Moreover, while the EIA report assesses and predicts the significance of a likely impact on the environment without concluding whether a development proposal should be approved or otherwise, the AA report is to provide a clear conclusion on whether a proposal will have an impact on Natura 2000 site or otherwise. Both assessments however are aimed for decision-makers to take an informed decision.



### 3.7 Water

[More information with regards to this section is available at - [www.mepa.org.mt/water](http://www.mepa.org.mt/water); [www.mepa.org.mt/soer2005-waters](http://www.mepa.org.mt/soer2005-waters); [www.mepa.org.mt/ter08-freshwaters](http://www.mepa.org.mt/ter08-freshwaters); [www.mra.org.mt/water\\_directorate.shtml](http://www.mra.org.mt/water_directorate.shtml); [www.sahha.gov.mt/pages.aspx?page=1055](http://www.sahha.gov.mt/pages.aspx?page=1055)];

Issues related to the use and conservation of water resources, types of land use as well as the treatment and re-use of sewage and waste-water, all have a direct impact on biodiversity, and terrestrial and aquatic ecosystems. The need for sustainable actions addressing these issues in an integrated manner has been recognised on a national level. [Malta's National Strategy for Sustainable Development](#) also underlines the crucial importance of **integrated management of water resources** at a water catchment district level.

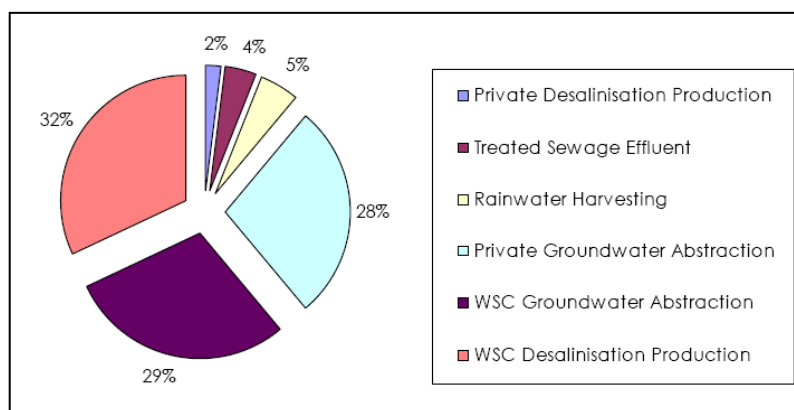
In Malta, **freshwater** essentially occurs either as surface water, flowing out from small springs or stored as temporary or permanent freshwater pools, or, as groundwater, stored as soil and subsurface moisture or in aquifers. **Annual rainfall** has averaged at 466.10 mm over a fifteen year span (1990 to 2005) ([NSO, 2006](#)). When compared to other Mediterranean countries, Malta has the lowest natural water resource per capita (less than 100 m<sup>3</sup> per year per inhabitant) and is hence considered below the extreme poverty threshold of 500 m<sup>3</sup> per year per inhabitant ([MED-EUWI WG on Groundwater, 2007](#)).

In Malta, the management of all practices, operations and activities relating to water is entrusted to the [Malta Resources Authority](#) (MRA) established through the Malta Resources Authority Act ([Act XXV of 2000](#) as amended). Activities carried out annually by this Authority are documented in their published [annual reports](#). The Directorate for Water Resources Regulation within MRA is focusing attention on the following three strategic policy areas with the objective of improving the sustainable management of water resources and ensuring more effective delivery of water services by putting good water-governance into practice:

- Resource development, protection and control
- Regulation of service providers
- Stakeholder consultation, public participation and data-base management.

On the other hand, the production and distribution of potable water is under the responsibility of the [Water Services Corporation](#) (WSC) established by the Water Services Corporation Act ([Act XXIII of 1991 as amended](#)). Activities carried out by this entity are also [annually reported](#). An **annual water production** of around 31,000,000 cubic metres is documented by the WSC.

An **estimated breakdown of all the water produced, collected and abstracted on the island by sector** is given in [Figure 16](#) (Source: [MRA Annual Report 2002-2003](#)).



**Figure 16 - Water Production by Sector (MRA, 2003)**

Although the **major source of potable water** comes from desalination, Malta also heavily relies on groundwater supply from aquifers, which are tapped both by private entities and by the WSC. Looking at water production and supply between 2002 and 2007 ([NSO, 2008](#)) reveals that on average 54.88% was generated by desalination plants while 45.12% of all water production in Malta came from groundwater. MRA ([Annual Report 2003-2004](#)) provide a breakdown of estimated full water demand from various economic sectors, that is, consumption of billed water, ground water abstraction, private desalinisation and rainwater harvesting. The agriculture sector is the major user of water resources in Malta followed by the domestic sector.

Considering the local scenario, the [sources of water pollution](#) are numerous, and their effects vary depending on the severity of the pollution source and its location.

The Directorate for Water Resources Regulation actively monitors the practices related to resource development aiming at improving the qualitative and quantitative status of all groundwater bodies as a renewable source of freshwater. MRA's [Annual Report 2003-2004](#) documents the groundwater chemical status by assessing the chloride concentration and nitrate concentration of groundwater abstracted from lower coralline limestone (LCL) and upper coralline limestone (UCL) aquifers in 2003. Severe **salinisation of groundwater** abstracted from several boreholes and also from certain pumping stations in the LCL is reported, reaching up to 1000mg/l. The bulk of groundwater abstracted from boreholes and pumping stations in the LCL falls in the 50-100mg nitrate/l range whereas as regards groundwater abstracted from the UCL, sampled groundwater predominantly contains very high levels of nitrate reaching up to 300mg/l. [MRA's Annual Report 2006-2007](#) documents an increasing trend in nitrate and chloride concentrations in groundwater. "Average nitrate concentrations are often exceeding the 50mg/l Groundwater Quality Standard, with values as high as five times this value being reported in the perched aquifer systems."

**Over-abstraction of aquifers** in the Maltese Islands is another burgeoning concern as evidenced by one of the key messages delivered by [Malta's 2005 State of the Environment Report](#). The latter documents that groundwater reserves are severely threatened by overexploitation, not to mention pollution. This concern is also mirrored in Malta's National Strategy for Sustainable Development, which in turn recommends that: 'Information on and awareness of the importance of groundwater and the risks posed to its integrity by over-exploitation and pollution need to be more widely disseminated. The "polluter pays principle", as well as the EU Environmental Liability Directive provisions, need to be more extensively used and enforced'. New legislation however has been enacted recently and addresses unauthorised drilling and abstraction:

- **Notification of Groundwater Sources Regulations, 2008** ([LN 254 of 2008](#) - as amended by LN 274 of 2008)
- **Borehole Drilling and Excavation Works within the Saturated Zone Regulations, 2008** ([LN 255 of 2008](#)) Regulation 4 states: "The drilling of a borehole or any form of excavation works carried out partly or totally within the saturated zone is prohibited, unless a permit to this effect is issued by the Authority."

"Solving over-abstraction problems will require reducing groundwater abstraction by different sectors - either by increasing water use efficiency or procuring alternative sources of water such as treated sewage effluents and rainwater" ([MRA Annual Report 2006-2007](#)). The Directorate for Water Resources Regulation has developed a new database system using proprietary software *Hydrogeoanalyst* which combines point data with GIS (spatial) data. It is envisaged that this data management tool will facilitate the determination and visualisation of the chemical status of the aquifers.

MRA have also drafted "[Water Policy for the Future](#)", which focuses on three main strategic objectives: efficiency in water use and maximisation of benefits; fair allocation of water resources across different sectors and environmental sustainability. The policy identifies ten key areas and for each, a set of strategic measures are being proposed. The key areas are:

- Supply of good quality water for human consumption;

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- Sustainable groundwater use;
- Reduction and management of flood-risk;
- Rainwater harvesting;
- Use of non-conventional sources;
- Water demand management;
- Effective and transparent regulation of the water industry;
- Protection of freshwater ecosystems;
- Efficient fair and equitable pricing;
- Public participation and stakeholder involvement;

MRA has participated in a number of EU-funded projects amongst which one can mention the Interreg III B Archimed Funded Project - [PRODIM](#) - Proactive Management of Water Systems to face drought and water scarcity in islands and coastal areas of the Mediterranean, and the Interreg III A Funded Project [INWATERMAN](#) - Sustainable management of water resources in an arid and semi-arid insular context and the use of treated sewage effluent.

Another noteworthy project implemented at a national level is the **MAP CAMP Malta Project - Integrated Water Management of the North-Western Region of Malta**. The objectives set out in this project included the following:

- To contribute to the sustainable management of national water resources
- To reduce dependency on expensive desalinated water
- To provide basic study for future projects namely groundwater polishing, reuse of treated sewage effluent and storm water

A set of recommendations were also developed in order to bring forth the achievement of these objectives.

**Water policy in the Maltese Islands** is essentially modelled on the requirements of the water-related EU directives including *inter alia*:

- Surface Water Abstraction Directive (75/440/EEC) - transposed by the **Quality required of Surface Water intended for the Abstraction of Drinking Water Regulations, 2001** ([LN 339 of 2001](#) as amended by LN 426 of 2007)
- Bathing Water Directive (76/160/EEC) and the new Bathing Water Directive (2006/7/EC) - transposed by the **Quality of Bathing Water Regulations, 2003** ([LN 380 of 2003](#)) and the **Management of Bathing Water Quality Regulations, 2008** ([LN 125 of 2008](#))
- Dangerous Substances Directive (76/464/EEC) - transposed by **Pollution Caused by Certain Dangerous Substances Discharged Into the Aquatic Environment Regulations, 2001** ([LN 213 of 2001](#)) and **Regulations for the Protection of Groundwater against Pollution caused by Certain Dangerous Substances, 2002** ([LN 203 of 2002](#))
- Freshwater Fish Directive (78/659/EEC) - transposed by the **Quality of Fresh Waters Supporting Fish Life (Protection and Improvement) Regulations, 2001** ([LN 342 of 2001](#))
- Urban Waste Water Directive (91/271/EEC) - transposed by the **Urban Waste Water Treatment Regulations, 2001** ([LN 340 of 2001](#) as amended by [LN 192 of 2004](#) and [LN 120 of 2005](#));
- Nitrates Directive (91/676/EEC) - transposed by the **Protection of Waters against Pollution Caused by Nitrates from Agricultural Sources Regulations, 2001** ([LN 343 of 2001](#) as amended by [LN 233 of 2004](#)) All of Malta is designated as a nitrate vulnerable zone under LN 233 of 2004.
- Water Framework Directive (WFD) (2000/60/EC) - transposed by the **Water Policy Framework Regulations, 2004** ([LN 194 of 2004](#));
- Groundwater Directive (2006/118/EC) - **Protection of Groundwater against Pollution and Deterioration Regulations, 2009** ([LN 108 of 2009](#))

Overseeing the implementation of these EC Directives falls under either the sole responsibility of one designated Competent Authority or else under conjoint competences of more than one designated CA as specified in the respective transposing national legislation. For instance, the **bathing water monitoring programme** is carried out jointly between the Health Inspectorate Services through the Environmental Health Unit within the [Department for Environmental Health](#) (DEH) (who carries out monitoring of microbiological parameters) and the Environment Protection Directorate (EPD) within the Malta Environment and Planning Authority (MEPA) (who carries out monitoring of physico-chemical parameters).

Looking specifically at the **Water Framework Directive**, implementation of this EC Directive and the corresponding LN 194 of 2004 is entrusted to two designated competent authorities (CA) in Malta:

- the Malta Environment and Planning Authority (MEPA) is the CA for coastal waters and for surface waters found in areas protected by scheduling declarations under the Development Planning Act, and other surface waters found in areas hosting protected species under the Environment Protection Act or the Filfla Nature Reserve Act or other areas of ecological and scientific importance according to provisions of the Development Planning Act or the Environment Protection Act; whereas,
- the Malta Resources Authority (MRA) is the CA responsible for inland water, namely groundwater.

[MEPA's portal on water](#) presents a stakeholder map, which illustrates the various organizations /entities and the role they play in the implementation of the multifaceted WFD. The Maltese Islands, including a one nautical mile buffer from the baseline, were designated as one **Water Catchment District** (equivalent to a **River Basin District**). Malta carried out its typology ([characterisation](#)) of both surface and groundwater bodies in compliance with Article 5 of the WFD.

Bearing in mind that protected areas require special protection or conservation of habitats and species that depend directly on those waters, a **national register** is available of protected areas that are covered by the WFD in Malta. The register consists of an inventory of protected area sites as outlined below:

- Waters used for the abstraction of drinking water
- Areas designated to protect economically significant aquatic species
- Recreational Waters
- Nutrient Sensitive Areas
- Areas designated for the protection of habitats or species

Measures involved in implementing the WFD are subject to public consultation, and necessary reports developed through the implementation process are also publicly available - see for instance [MRA's](#) and [MEPA's](#) websites respectively. There has been a joint initiative between the MRA and MEPA to create a series of web pages on the WFD hosted on the MEPA website. Active participation is also being sought during the different stages of implementation of the WFD. Various bilateral and multilateral meetings; workshops and seminars are organised to promote participation targeting different levels of stakeholders.

[Surface Water Quality Monitoring](#) is expected to improve in the next few years. Indeed, a comprehensive monitoring network has been set up. MEPA has carried out an exercise whereby it has consolidated all its present water quality monitoring requirements under the various regulations and formulated a **holistic, integrated water quality monitoring programme** which maximises resource utilization by combining the sampling and analysis for different waters at specific timeframes and for the different parameters required by legislation.

The WFD requires the establishment of a monitoring network which is representative of each groundwater body. Different approaches for establishing monitoring networks have been adopted in the Maltese River Basin District (RBD), in order to take into consideration the relative importance of

the groundwater bodies with particular reference to those water bodies which sustain freshwater ecosystems and those which are utilised as sources of 'water intended for human consumption' (Further details found in [MRA Annual Report 2006-2007](#)). An EU-Funded Twinning Light Project - [Development of Programme of Measures in Maltese Water Catchment District](#) was also implemented in 2007. The project focused on groundwater resources and aimed at identifying the least cost option for restoring the status of groundwater resources in line with the requirements of the Water Framework Directive. This project involved a number of tasks:

- Task 1 - Identification of the main water management issues
- Task 2 - Risk-assessment for inland water bodies (those falling under the responsibility of MRA)
- Task 3 - List and quantification of basic measures
- Task 4 - List and quantification of potential supplementary measures
- Task 5 - Programme of measures draft framework
- Task 6 - Cost assessment
- Task 7 - Efficiency assessment
- Task 8 - Cost-effectiveness analysis
- Task 9 - Draft programme of measures

Article 11 of the WFD requires Member States to draw a **programme of measures (PoM)** aimed at achieving good environmental status of all water bodies by 2015. Certain measures defined under the PoM have been developed with the aim of safeguarding terrestrial and freshwater biodiversity. The measures aim at the ecological restoration of natural valleys and the restoration of hydraulic balances within surface water bodies. The PoM also aims to strengthen the existing planning and environmental regulatory processes related to land and water use planning and management. Environmental policy integration is also another major aim.

#### Other Sources of Information:




- EU Commission (2007). *Accompanying document to the Communication from the Commission to the European Parliament and the Council 'Towards Sustainable Water Management in the European Union'* First stage in the implementation of the Water Framework Directive 2000/60/EC [COM (2007) 128 final] [SEC(2007) 363]
- MAP-CAMP Malta Project - Integrated Water Management of the North-West Region of Malta (Executive Summary)
- MED-EUWI WG on Groundwater (2007). *Mediterranean Groundwater Report - Technical report on groundwater management in the Mediterranean and the Water Framework Directive*
- NCS D (2006): Section 3.1.4 Freshwater, In: *National Sustainable Development Strategy*, page 18.
- NSO (2006). *Environmental Statistics 2006*, Valletta, Malta. 72pp.
- NSO (2008). *World Day for Water 2008*. News Release 45/2008.
- Sammut (2002). Section 5.4: Freshwater Resources. In: Axiak, V. and Sammut A. 2002. *The Coast and Freshwater Resources*. In: *State of the Environment Report for Malta, 2002*. Ministry for Home Affairs and the Environment. August 2002. 70 pp.




## 4.0 Conclusions

*This chapter provides an overview of the state of progress towards 2010 targets and the national contribution to the achievement of the goals of the CBD's Strategy Plan.*



### 4.1 Progress towards the 2010 targets

#### LEGEND:


	Goal/target being successfully attained		Ongoing work but goal/target not yet attained as further measures are necessary		Goal/target not being attained
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Goal	Target	Status	Comments
Goal 1 - Promote the conservation of the biological diversity of ecosystems, habitats and biomes	Target 1.1: At least 10% of each of the world's ecological regions effectively conserved		There is no similar national target set. However, about 20.5% of the Maltese land territory is designated, which is deemed adequate considering national issues of land constraints and high population density. <a href="#">[See also response to PoW Island Biodiversity Goal 1 and PoW PA of this report]</a>
	Target 1.2: Areas of particular importance to biodiversity protected		Sufficiency of sites forming part of the Natura 2000 network under the EC Habitats Directive has reached over 90% for terrestrial sites; efforts are being directed towards designating other MPAs. <a href="#">[See also responses to PoW PA of this report]</a>
Goal 2 - Promote the conservation of species diversity	Target 2.1: Restore, maintain, or reduce the decline of populations of species of selected taxonomic groups		A number of species are earmarked for <i>in situ</i> conservation (such as by way of prohibitions of killing, taking and trading; abatement of threats, which includes removal of invasive species and habitat restoration, etc.). Where deemed to be of added value, <i>in situ</i> efforts are supported by <i>ex situ</i> measures, namely with regard to the propagation of rare plant species. Nonetheless, more work is needed to cover other species especially marine taxonomic groups. Species Action Plans (SAPs) have been drafted for certain groups of marine taxa. Work on a dossier on wildlife exploitation, covering fauna of European Community Interest under the Habitats Directive, will help identify strategic directions for strengthening the implementation of a strict protection regime for animal species



			<p>in compliance with this Directive.  <a href="#">[See also response to PoW Island Biodiversity Goal 2 of this report]</a></p>
	<p>Target 2.2: Status of threatened species improved</p>		<p>Many species remain threatened - although species, including their habitats, are legally protected, other <i>in situ</i> measures help to curb threats. Managers of some protected areas have reported recovery of certain species. The status of birds also seems to be improving as recently highlighted in the <a href="#">2009 Rare Breeding Bird Report</a>. This report notes that almost half of all rare breeding species are increasing their distribution and several rare species are breeding on the islands for the first time in many years.</p> <p>When considering species of EU Community importance under the Habitats Directive, the status of 37 percent of species listed in this Directive is still unknown. Furthermore, 44 percent of species have a bad or inadequate conservation status.</p> <p>The MEPA commissioned studies on threatened groups of taxa did assess the status of other species, amongst which several are endangered. The reports of these studies also put forward recommendations on how to improve the conservation status of those species that remain threatened.  <a href="#">[See also response to PoW Island Biodiversity Goal 2 of this report]</a></p>
<p>Goal 3 - Promote the conservation of genetic diversity</p>	<p>Target 3.1: Genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife and other valuable species conserved, and associated indigenous and local knowledge maintained</p>		<p>Animal and plant genetic resources have been eroded or entirely lost when modern varieties and breeds were introduced. Some characterisation trials are being carried out for certain crop species of local origin. Interest has also increased with regard to autochthonous species. Malta's <a href="#">RDP 2007-2013</a> provides, under Axis II,:</p> <ul style="list-style-type: none"> <li>- support for the conservation of genetic resources in agriculture [The objective is to conserve and possibly reverse the trend of erosion of genetic resources in agriculture including plant species and varieties and livestock breeds],</li> <li>- support for the conservation of species in danger of genetic erosion [The aims are to (1) conserve and maintain biodiversity by preserving</li> </ul>

			<p>Maltese indigenous livestock breeds in danger of genetic erosion, in particular the Maltese Ox, by supporting the rearing and breeding of this particular breed; (2) to protect and maintain agricultural biodiversity by preserving those plant species that are in danger of genetic erosion, through support for their maintenance. The aims of this measure include the preservation of native varieties, the maintenance of habitats associated with endangered fauna and flora, and the conservation of genetic heritage to improve the agri-touristic potential of the island]</p> <p>[See also response to PoW Island Biodiversity Goal 3 of this report and <a href="#">Section 3.1</a> of this report]</p>
Goal 4 - Promote sustainable use and consumption	Target 4.1: Biodiversity-based products derived from sources that are sustainably managed, and production areas managed consistent with the conservation of biodiversity.	😊	<p>Sustainable agricultural and fisheries practices are being promoted. Although sustainable use is advocated by national legislation, the issuance of policy guidance would help to further promote sustainable practices.</p> <p>[See also response to PoW Island Biodiversity Goal 4 of this report and <a href="#">Sections 3.1 and 3.2</a>]</p>
	Target 4.2: Unsustainable consumption, of biological resources, or that impacts upon biodiversity, reduced	😊	<p>Sustainable use of biological resources (animal and plant) is advocated by subsidiary legislation on nature protection enacted under the EPA (see e.g. Regulation 27 on the Control of Exploited Species in <a href="#">LN 311 of 2006</a>, as amended).</p> <p>Sustainable consumption of other resources such as water is also being promoted.</p> <p>Malta is participating in efforts geared towards safeguarding fish stocks. Fishing restrictions are also applied in the 25 nm fisheries management zone (FMZ).</p> <p>[See also response to PoW Island Biodiversity Goal 4 of this report and <a href="#">Sections 3.1, 3.2, and 3.7</a>]</p>
	Target 4.3: No species of wild flora or fauna endangered by international trade	😊	<p>Malta acceded the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) on 17 April 1989 and the provisions of the Convention entered into force on 26 July 1989. The 'Trade in Species of Fauna and Flora Regulations, 2004' (<a href="#">LN 236 of 2004</a>)</p>

			<p>transposes Council Regulation (EC) No. 338/97 and its amendments thereby enforcing CITES at a national level. Trade of non-CITES listed species is regulated through the legal mandate of the EPA and subsidiary legislation enacted thereto. Currently, the CITES Management Authority is preparing a set of illustrated guidelines aimed at helping the private sector understand the restrictions and procedures involved in the trade of both CITES and non-CITES listed species. In addition to this, the CITES team provides assistance on CITES-related matters through telephone calls and electronic mails on a daily basis. CITES enforcement is locally being undertaken by the Customs Division as per Commission Regulation (EC) No. 865/2006, together with in-country controls (particularly on avifauna species) performed by the Police Department. Both departments liaise directly with the CITES Management Authority whenever they encounter animal-trade-related cases. Whenever CITES species are involved, both Customs and the CITES Management Authority follow the set procedures with respect to the necessary permits. The CITES Management Authority is in the process of establishing a local Compliance Committee in order to facilitate CITES compliance and reporting issues. More information can be obtained from <a href="#">MEPA's portal on CITES</a>.                  [See also response to PoW Island Biodiversity Goal 4 of this report]</p>
<p>Goal 5 - Pressures from habitat loss, land use change and degradation, and unsustainable water use, reduced</p>	<p>Target 5.1: Rate of loss and degradation of natural habitats decreased</p>		<p>Trends show that land conversion has increased over the years with coastal habitats being the most impacted by development (see SOER 2005 - <a href="#">Sub-report on Land</a>). Several tools are being applied to decrease habitat loss and degradation e.g. via regulation of land development (DPA), designation and management of protected areas (EPA), enforcement of relevant legislation under the EPA and DPA; Direct Action, Environment Assessments, Integrated Coastal Zone Management (ICZM), Structure Plan Policies, and Agri-Environment Measures under the RDP.                  [See Response to PoW Island Biodiversity Goal 5 of this report and <a href="#">Section 3.6</a> of this report]</p>

Goal 6. Control threats from invasive alien species.	Target 6.1: Pathways for major potential alien invasive species controlled.	☹️	<p>Deliberate introduction of potentially invasive species from non-EU countries is controlled in compliance with national and EU legislation. Proposals for introduction of new species undergo a form of a risk assessment procedure which is embedded in the implementation of the 'Trade in Species of Fauna and Flora Regulations, 2004'.</p> <p>[See also response to PoW Island Biodiversity Goal 6 of this report]</p>
	Target 6.2: Management plans in place for major alien species that threaten ecosystems, habitats or species.	☹️	<p>Actual management plans have not been developed. Nonetheless, a number of species are already being targeted for removal from protected areas - e.g. <i>Rattus spp.</i>, and major invasive plants - <i>Carpobrotus spp.</i>, <i>Acacia spp.</i>, <i>Arundo donax</i>, <i>Agave spp.</i>, <i>Opuntia spp.</i> and <i>Ricinus communis</i> to mention a few.</p> <p>Policy guidance on managing major plant invaders in Malta is being drafted.</p> <p>Measures for combating alien pests are also in place and published as <a href="#">legislation on plant health</a>. For instance, alien plant pests being targeted include the Red Palm Weevil which infests palm trees. Pest species that are found in Annex 1 and 2 of Council Directive 2000/29/EC together with EPPO A1 and A2 lists and EPPO Alert list are also targeted. MEPA's commissioned studies on alien flora and fauna have put forward recommendations for strengthening efforts to combat invasive species. Datasheets have also been prepared on alien plants and animals that are already present in the Maltese Islands, which should be considered with priority. Those requiring priority action have been identified.</p> <p>[See Response to PoW Island Biodiversity Goal 6 of this report]</p>
Goal 7. Address challenges to biodiversity from climate change, and pollution.	Target 7.1: Maintain and enhance resilience of the components of biodiversity to adapt to climate change	☹️	<p>Terrestrial ecological corridors are protected, where possible, and PAs are also accompanied with a buffer zone. Most terrestrial designated sites overlap with one another.</p> <p>There are various ongoing projects involving afforestation and aimed at increasing the number of trees which would serve as a sink for CO<sub>2</sub>.</p> <p>Research is needed on the effects of climate change on endemics, on important habitats as well as on</p>

			species with high habitat specificity. [See Response to PoW Island Biodiversity Goal 7 of this report]
	Target 7.2: Reduce pollution and its impacts on Biodiversity	☹️	Reduction of pollution is being addressed via implementation of EU-related Directives on <a href="#">waste</a> and <a href="#">water</a> and national legislation that transposes these Directives. Various <a href="#">monitoring studies</a> have also been carried to assess marine quality. Monitoring is also carried out in compliance with the Land-based Sources Protocol of the Barcelona Convention. Separation and recycling of waste is also being significantly promoted by <a href="#">WasteServ Malta</a> . [See also response to PoW Island Biodiversity Goal 7 of this report]
Goal 8. Maintain capacity of ecosystems to deliver goods and services and support livelihoods	Target 8.1: Capacity of ecosystems to deliver goods and services maintained.	☹️	Conservation efforts contribute towards maintaining the resilience of ecosystems to adapt to environmental change. For instance, there are ongoing efforts to conserve and restore sand dune systems. Risk from landslides is being addressed via the implementation of vegetation stabilisation (e.g. as done at <i>Magħtab</i> ). National organisations entrusted with the role of overseeing disaster preparedness, response and mitigation include the Marine and Storm Water Unit, and the Valley Management Unit, both under the <a href="#">Services Division</a> within MRRA. These units are involved in the implementation of marine and storm water infrastructural works, and the maintenance of valleys. Valley cleansing activities are carried out to control floods Enhanced resource mobilisation and capacity-building would better support the work of the Services Division and its respective Units. [See Response to PoW Island Biodiversity Goal 8 of this report]
	Target 8.2: Biological resources that support sustainable livelihoods, local food security and health care, especially of poor people maintained.	😊	The National Statistics Office carries out a <a href="#">Survey on Income and Living Conditions (SILC)</a> , which serves as a source of statistical data on income distribution, and aims to provide a complete set of indicators on poverty, social exclusion, pensions and material deprivation. The first survey was conducted in <a href="#">2005</a> [see also <a href="#">Press Release 80/2007</a> ] and is currently being conducted on an annual basis

			<p>(The <a href="#">2007</a> survey findings are also published).</p> <p>The <a href="#">Ministry for Social Policy</a> has also issued a National Action Plan on Poverty and Social Exclusion 2004-2006 and National Reports on Strategies for Social Protection and Social Inclusion for 2006-2008 and 2008-2010. These provide an assessment of the social situation in Malta and describe priority policy objectives. The national report for <a href="#">2008-2010</a> documents the following:</p> <p><i>“Malta’s long-term vision remains that of promoting and sustaining a better quality of life for all, particularly for those who are considered to be more vulnerable and therefore at greater risk of social exclusion and poverty.”</i> For the short term<sup>19</sup>, the strategy for social inclusion integrated in this report, aims to maintain the rate of those experiencing risk of poverty stable at 14.2%<sup>20</sup>. This goal is complemented by the medium term<sup>21</sup> target, to reduce the rate of people at risk of poverty and social exclusion from the present 14.2%. This strategy also aims to address a number of other issues of concern specific to the strategy’s priority objectives, through enhancing children’s social inclusion prospects, promoting active inclusion, and promoting equality of opportunities.</p>
Goal 9 Maintain socio-cultural diversity of indigenous and local communities	Target 9.1 Protect traditional knowledge, innovations and practices	😊	<p>There are various published works on Maltese folklore and traditional practices (including on what plants were used for their medicinal properties), amongst which one can mention the various books (published in Maltese) by Mr. Guido Lanfranco, which include for instance:</p> <p><i>“Duwa u Semm fil-#xejjex Maltin”</i> [1975]  <i>“#xejjex Medičinali u Oħrajn fil-G#zejjer Maltin”</i> [1993]  <i>“Medičina popolari ta’ l-Imgħoddi fil-G#zejjer Maltin”</i> [2001]  <i>“Drawwiet u tradizzjonijiet Maltin”</i> [2001]  <i>“Xogħol, Ġaħġiħ u Snajja’ li spiččaw”</i> [2003]  <i>“#ajjitna fl-Imgħoddi”</i> [2004]  <i>“Drawwiet u #ajja mill-istorja ta’ Malta”</i> [2005]  <i>“Bejn Storja u Drawwa”</i> [2007]</p>

<sup>19</sup> Short term is hereby defined in terms of the two year time frame covered within the current action plan.

<sup>20</sup> The poverty rate stood at 13.7% amongst males and 14.7% amongst females (Source: SILC 2005).




<sup>21</sup> Medium term is hereby defined in terms of time frames exceeding the two years.





			An ethnobotanical study is ongoing to conserve the knowledge on the traditional use of plants (and animals) that have been grossly replaced by modernisation.
	Target 9.2: Protect the rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their rights to benefit sharing	N/A	N/A
Goal 10. Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources	Target 10.1: All transfers of genetic resources are in line with the Convention on Biological Diversity, the International Treaty on Plant Genetic Resources for Food and Agriculture and other applicable agreements.	🟡	ABS requirements under the CBD are incorporated into domestic law via <a href="#">LN 160 of 2002</a> and <a href="#">LN 311 of 2006</a> , as amended. ITPGRFA was signed by Malta.
	Target 10.2: Benefits arising from the commercial and other utilization of genetic resources shared with the countries providing such resources.	🟡	Provisions for mutually agreed terms in line with the CBD are integrated in <a href="#">LN 311 of 2006</a> , as amended. Capacity-building is however needed to further develop Malta's ABS regime and administrative structure also in light of current negotiations of the International Regime on ABS, and any emerging new requirements.
Goal 11: Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention	Target 11.1: New and additional financial resources are transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with Article 20.	😊	Malta makes annual contributions to a number of multilateral environmental agreements to which it is a Party. Malta also contributes via EC funds to developing countries;
	Target 11.2: Technology is transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with its Article 20, paragraph 4.	😊	Malta contributes to technology transfer via EC external assistance for biodiversity

## 4.2 Progress towards the Goals and Objectives of the [CBD Strategic Plan](#)



### LEGEND:





	Goal/target being successfully attained		Ongoing work but goal/target not yet attained as further measures are necessary		Goal/target not being attained
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Goal	Target	Status	Comments
Goal 1: The Convention is fulfilling its leadership role in international biodiversity issues.	1.1 The Convention is setting the global biodiversity agenda.		Malta has incorporated the provisions of the CBD into national law via the 'Convention on Biological Diversity (Incorporation) Regulations, 2002' ( <a href="#">LN 160 of 2002</a> ) and also via the 'Flora, Fauna and Natural Habitats Protection Regulations, 2006' ( <a href="#">LN 311 of 2006</a> , as amended by <a href="#">LN 426 of 2007</a> and <a href="#">LN 162 of 2009</a> ). Various conservation measures are in place and which positively contribute to the objectives of the Convention on a national basis as documented throughout this Report.
	1.2 The Convention is promoting cooperation between all relevant international instruments and processes to enhance policy coherence.	N/A	N/A [target to be achieved at the Convention level]
	1.3 Other international processes are actively supporting implementation of the Convention, in a manner consistent with their respective frameworks.	N/A	N/A [target to be achieved at the Convention level]
	1.4 The Cartagena Protocol on Biosafety is widely implemented.		Malta implements the Protocol through the 'Deliberate Release into the Environment of Genetically Modified Organisms Regulations, 2002' ( <a href="#">LN 170 of 2002</a> ), the 'Contained Use of Genetically Modified Micro-organisms Regulations, 2008' ( <a href="#">LN 127 of 2008</a> ) and the 'Biosafety Co-ordinating Committee Regulations, 2002' ( <a href="#">LN 290 of 2002</a> ). Implementation of the advanced informed agreement (AIA) procedure takes place through the EU Comitology procedure for the marketing of GMOs in the EU and through EC Regulation 1946/2003 on the transboundary movement of genetically modified organisms, which



			is directly applicable.
	1.5 Biodiversity concerns are being integrated into relevant sectoral or cross-sectoral plans, programmes and policies at the regional and global levels.	☹️	Initiatives at integrating biodiversity concerns into sectoral and cross-sectoral policies, plans and programmes are ongoing [See <a href="#">Chapter 3 of this report</a> ] as evident in sectoral/ cross-sectoral policies/plans/ programmes such as the Rural Development Plan (RDP) for Malta, the Structure Plan for the Maltese Islands (and its review), the National Strategy for Sustainable Development (NSSD) and the National Reform Plan (NRP).
	1.6 Parties are collaborating at the regional and subregional levels to implement the Convention.	😊	Malta collaborates with other European and Mediterranean countries as well as with environmental organisations via participation in projects, discussion fora or capacity-building on issues related to the conservation of biodiversity. Collaboration in the past has been considered with, for instance, the United Kingdom, Austria, Italy, Greece, Israel, Algeria, Spain, Portugal, France, Tunisia, and also EC Member States in general. MEPA has participated in a number of regional projects (as mentioned throughout the 4NR) amongst which one can mention here the project entitled “Mediterranean Collaboration on Small Mediterranean Islands” under the PIM funding mechanism - <a href="#">Petites Iles de Méditerranée</a> . With the assistance of <a href="#">RAC/SPA</a> a number of seminars and awareness material on the importance of marine biodiversity have been held and developed, respectively.
Goal 2: Parties have improved financial, human, scientific, technical, and technological capacity to implement the Convention.	2.1 All Parties have adequate capacity for implementation of priority actions in national biodiversity strategy and action plans.	☹️	Sectors are benefiting from EU funds to strengthen capacity at implementing and enforcing legislation. Resource mobilisation is important to address any remaining capacity needs also noting inherent small island state-related constraints.
	2.2 Developing country Parties, in particular the least developed and the small island developing States amongst them, and other Parties with economies in transition, have sufficient resources available to implement the three objectives of	N/A	N/A

	<p>the Convention.</p> <p>2.3 Developing country Parties, in particular the least developed and the small island developing States amongst them, and other Parties with economies in transition, have increased resources and technology transfer available to implement the Cartagena Protocol on Biosafety.</p>	<p>N/A</p>	<p>N/A</p>
	<p>2.4 All Parties have adequate capacity to implement the Cartagena Protocol on Biosafety.</p>	<p>☹</p>	<p>In May 2004 Malta was able to initiate the process of developing a framework for the management of GMOs at national level - <i>i.e.</i> the National Biosafety Framework (NBF) - with the help of UNEP-GEF funding. This <a href="#">project</a> was completed in November 2006. The <a href="#">NBF</a> delves into the biosafety issues in Malta in terms of achievements made thus far (enactment of the relevant legislation, and the setting up of the administrative structure). It further highlights what issues remain to be addressed in the future.</p> <p>Measures are in place to ensure biosafety - permit requirements under LN 127/08 and LN 170/02, as well as risk assessment procedures.</p> <p>Representatives on the <a href="#">“Biosafety Co-ordination Committee” (BCC)</a> all possess a scientific background. BCC members are appointed for a period of 3 years. The main function of the BCC is to advise MEPA and the Minister responsible for the environment on environmental implications of GMOs. The BCC also serves as a forum for the various stakeholder Ministries represented in its membership, whereby they discuss information and experience related to the subject.</p> <p>Capacity-building in the form of training to MEPA staff has also been achieved. Nonetheless, when it comes to direct implementation there will always be the need for further investment in human resources and infrastructure.</p>
	<p>2.5 Technical and scientific cooperation is making a significant contribution to building capacity.</p>	<p>☹</p>	<p>Research in Malta is carried out by several entities, amongst which are, the University of Malta (UoM), environmental research and education institutions, NGOs, and environment</p>

			<p>consultancy agencies. Some institutions offer short courses on environmental issues as part of continuing professional development. Both scientific and social research is carried out. The mostly applied scientific methods are ecological surveys and laboratory experiments, whereas in the case of social research, methods mostly involve questionnaire-based surveys, observation, and sometimes even in-depth interviews. Biodiversity assessment is mostly carried out as ecological assessments aimed at identifying the biodiversity of a given area or else as broad-brush surveys or desk studies, as well as assessing potential impacts of proposed projects, plans or programmes.</p> <p>MEPA liaises with the Department of Biology within the UoM to identify biology dissertation topics, which through their implementation could generate additional scientific knowledge that can then support policy development. Such collaboration is also carried out between UoM and NGOs such as to identify dissertation-related activities within PAs. The Research and Innovation framework is a country priority however it needs to be promoted further. The strengthening of an integrated research structure is imperative together with supporting funding and personnel.</p>
<p>Goal 3: National biodiversity strategies and action plans and the integration of biodiversity concerns into relevant sectors serve as an effective framework for the implementation of the objectives of the Convention.</p>	<p>3.1 Every Party has effective national strategies, plans and programmes in place to provide a national framework for implementing the three objectives of the Convention and to set clear national priorities.</p>		<p>A comprehensive framework will be achieved via the NBSAP. The current framework is fragmentary but is in place via the EPA and subsidiary legislation there to, SOERs, NSSD, and the SAP-BIO Report on Coastal and Marine Biodiversity.</p>
	<p>3.2 Every Party to the Cartagena Protocol on Biosafety has a regulatory framework in place and functioning to implement the Protocol.</p>		<p>An administrative structure has been nationally set up to process viable GMO applications as per EU requirements. This structure consists of MEPA as the competent authority of the legislation on GMOs, and is aided by the BCC in the review of GMO applications. This committee was set up by the 'Biosafety Co-ordinating Committee Regulations, 2002' (<a href="#">LN 290 of 2002</a>). Administering the implementation and enforcement of GMO legislation in</p>




			Malta falls under the responsibility of a number of national entities having separate and defined roles depending on the subject area and the intended use of the particular GMO.
	3.3 Biodiversity concerns are being integrated into relevant national sectoral and cross-sectoral plans, programmes and policies.		Biodiversity concerns are to some extent integrated in sectoral and cross-sectoral policies such as fisheries, agriculture, land development and tourism. Further policy integration is warranted [See <a href="#">Chapter 3 of this report</a> ]
	3.4 The priorities in national biodiversity strategies and action plans are being actively implemented, as a means to achieve national implementation of the Convention, and as a significant contribution towards the global biodiversity agenda.		Progress in achieving priorities set in the NBSAP cannot be made at this stage seeing that the NBSAP is under development. Nonetheless, in view of this, progress in implementing recommendations put forward by other national documents - SOERs, NSSD, SAP-BIO etc., have been assessed, including progress in implementing the CBD PoW on Island Biodiversity. Gaps in implementation will be addressed by the NBSAP. [See <a href="#">Chapter 2 of this report</a> ]
Goal 4: There is a better understanding of the importance of biodiversity and of the Convention, and this has led to broader engagement across society in implementation.	4.1 All Parties are implementing a communication, education, and public awareness strategy and promoting public participation in support of the Convention.		Various CEPA activities have been undertaken on protected species and habitats - radio programmes, TV appearances, posters and leaflets, coasters, calendars, bookmarks. DVDs have also been produced. The Natura 2000 Communication Strategy will also help to address and bridge the information deficit in Malta, and propose a number of actions and activities over three years. MEPA is also currently updating its <a href="#">biodiversity portal</a> which acts as Malta's Clearing-House Mechanism (CHM).
	4.2 Every Party to the Cartagena Protocol on Biosafety is promoting and facilitating public awareness, education and participation in support of the Protocol.		The development of the Malta's <a href="#">NBF</a> as part of the <a href="#">UNEP-GEF funded project</a> , was accompanied by a number of awareness-raising activities (such as publication of information brochures on 'Contained Use: Genetically Modified Organisms' and 'Release in the Environment: Genetically Modified Organisms' and interviews on GMO issues aimed to inform the public; as well as training, <a href="#">consultation</a> and <a href="#">public awareness seminars</a> ). Indeed, one of the sub-objectives of the UNEP-GEF funded project was 'Promoting access to information for all stakeholders through publication of inventories and other outreach material';



			<p>A CD containing information on GMOs was distributed to the public, and a teacher's package incorporating an interactive DVD has been finalised. This interactive DVD contains a series of video clips featuring local comic actors, relating information about GMOs.</p> <p>Malta has also contributed the CBD Biosafety Clearing House through the development of its <a href="#">national Biosafety Clearing-House</a>.</p> <p><a href="#">MEPA's Portal on GMOs</a> provides additional information.</p>
	<p>4.3 Indigenous and local communities are effectively involved in implementation and in the processes of the Convention, at national, regional and international levels.</p>		<p>Local participation of communities is being advocated for the management of certain protected areas. The interest of school children in environmental issues is being raised via tours in protected areas and the Argotti Botanical Gardens, apart from NGO activities such as <i>EkoSkola</i> Children also participate when rehabilitated turtles are released back into the wild. Farmers are encouraged to adopt agri-environment activities. Further promotion and encouragement of community-based conservation is however desired.</p> <p>[See also <a href="#">Chapter 2 of this report</a>].</p>
	<p>4.4 Key actors and stakeholders, including the private sector, are engaged in partnership to implement the Convention and are integrating biodiversity concerns into their relevant sectoral and cross-sectoral plans, programmes and policies.</p>		<p>MEPA liaises with a number of entities to conserve local biodiversity. Additional initiatives to engage the private sector in biodiversity conservation efforts are warranted. Nonetheless there are some initiatives such as the eco-certification scheme targeting tourist accommodation establishments, the Blue Flag certification scheme and the financial support provided by local banks to conservation projects.</p> <p>The LEADER Programme under Malta's RDP 2007-2013 was characterised by the launch of several public-private partnerships like <i>Majjistral</i> Action Group, <i>Xlokk</i> Action Group, Gozo Action Group, and National Rural Development Agency (NRDA) formed by local councils and other entities of the region that work together to plan, propose a strategy and eventually implement projects under the LEADER initiative. Three Local Action Groups have been selected - Xlokk, Majjistral and Gozo from the established groups and accredited in order to implement their respective strategy. (<a href="#">MRRR Annual report 2008</a>)</p>

### 4.3 Overall Conclusions

Table 15 summarises the findings of the evaluation of progress made in achieving the CBD three objectives at a national level and in following up recommendations proposed by national strategic documents/policy. All in all, it can be concluded that there is significant ongoing work, but in the majority of cases, goals/targets have not yet been attained, as further measures are necessary.

Strategic Documents/Programmes of Work			
CBD PoW on Island Biodiversity	24%	67%	9%
CBD PoW of GSPC	23%	71%	6%
CBD PoW on PAs	12%	59%	29%
CBD Strategy Plan	33%	67%	0%
CBD 2010 Goals	30%	55%	15%
SOER	51%	41%	8%
NSSD	29%	71%	0%
SAP-BIO	14%	72%	14%
<b>AVERAGE VALUES</b>	<b>27%</b>	<b>63%</b>	<b>10%</b>

**Table 15 - Summary of the findings of the evaluation in progress made to achieve biodiversity-related recommendations/goals**

One of the activities undertaken to develop Malta's NBSAP was a questionnaire directed at a number of entities - NGOs, research and education institutions as well as environmental consultancy agencies. One of the questions posed was the following: "Which of the following measures should be implemented in order to address the 2010 target of reducing biodiversity loss as adopted by the Conference of the Parties to the Convention on Biological Diversity in 2002?" Responses are shown as percentages in Table 16.

MEASURES	1	2	3	4	5
strengthening enforcement through capacity building	0%	0%	0%	29%	71%
enhancing coordination and cooperation between relevant entities	0%	0%	0%	14%	86%
promoting local participation in conservation projects	0%	0%	0%	14%	86%
biodiversity monitoring	0%	0%	0%	14%	86%
tailor-made outreach activities in order to promote greater awareness and understanding of the importance of local biodiversity	0%	0%	14%	14%	71%
maintaining and restoring where required ecosystem integrity, and the provision of goods and services provided by biodiversity	0%	0%	0%	14%	86%
mobilising financial and technical resources for implementing national obligations	0%	0%	0%	14%	86%
mainstreaming biodiversity concerns into national policies, programmes and strategies of relevant public sectors	0%	0%	0%	29%	71%
incorporating considerations of biodiversity conservation into management practices	0%	0%	0%	29%	71%
increased sustainability of resource use	0%	0%	14%	29%	57%
establishing positive incentives for the conservation and sustainable use of biodiversity and removing negative incentives	0%	0%	0%	14%	86%

**Table 16 - Responses to the question - "Which of the following measures should be implemented in order to address the 2010 target of reducing biodiversity loss as adopted by the Conference of the Parties to the Convention on Biological Diversity in 2002 (1-not of concern; 2-low priority; 3-moderate priority; 4-high priority; 5-very high priority)?"**

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Although the number of responses was low, it was clear that respondents shared a common opinion that most of the identified measures are deemed of high priority. Such measures would also be addressed by the NBSAP.

Thus far, it is evident that constraints in resources have impeded effective implementation and enforcement. Nevertheless, a number of actions have already been identified and will be implemented, especially through EU (co-)funded projects. Implementation of such projects, in addition to the NBSAP, will assist in strengthening the effectiveness in bringing forth the CBD's objectives at a national level.

## 5.0 Appendices

### Appendix I - Information on the Reporting Party and Process of Preparation of the Fourth National Report

#### A. Reporting Party

Contracting Party	MALTA
<b>NATIONAL FOCAL POINT</b>	
Full name of the institution	Malta Environment and Planning Authority
Name and title of contact officer	Mr. Darrin T Stevens Unit Manager
Mailing address	Ecosystems Management Unit Environment Protection Directorate Malta Environment and Planning Authority P.O. Box 200, Marsa MRS 1000, Malta
Telephone	(+356) 2290 7101/7102
Fax	(+356) 2290 2295; (+356) 2122 8438 (Attn. Mr. Darrin T Stevens)
E-mail	<a href="mailto:darrin.stevens@mepa.org.mt">darrin.stevens@mepa.org.mt</a> <a href="mailto:cbd.malta@mepa.org.mt">cbd.malta@mepa.org.mt</a>
<b>Contact officer for national report</b>	
Full name of the institution	Malta Environment and Planning Authority
Name and title of contact officer	Ms. Lisa Schembri Gambin (Senior Environment Protection Officer) Ms. Marie Therese Gambin (Senior Environment Protection Officer)
Mailing address	Ecosystems Management Unit Environment Protection Directorate Malta Environment and Planning Authority P.O. Box 200, Marsa, MRS 1000, Malta
Telephone	(+356) 2290 7113
Fax	(+356) 2290 2295; (+356) 2122 8438 (Attn. Ms. Lisa Schembri Gambin, Ms. Marie Therese Gambin)
E-mail	<a href="mailto:lisa.schembri@mepa.org.mt">lisa.schembri@mepa.org.mt</a> <a href="mailto:marietherese.gambin@mepa.org.mt">marietherese.gambin@mepa.org.mt</a> <a href="mailto:cbd.malta@mepa.org.mt">cbd.malta@mepa.org.mt</a>
<b>SUBMISSION</b>	
Signature of officer responsible for submitting national report	
Date of submission	

## B. Process of preparation of national report

The process for preparing Malta's National Fourth Report (4NR) to the CBD was integrated with the ongoing process of developing Malta's NBSAP. Both processes were deemed complementary as they both address the same information needs. Information gathered via the NBSAP development process was indeed used to develop this report. Relevant stakeholders were consulted.

The initial consultation exercise which took place as part of the NBSAP process targeted governmental entities, NGOs, PA managers, as well as research and education institutions. The format used was either completion of a report form or else responding to a questionnaire-based survey. More in-depth consultation took place under the CBD 4NR process whereby tailor-made questions were directed to various entities, namely government departments and PA managers.

The following entities (arranged in alphabetical order), amongst others, were identified for consultation, either under the NBSAP development process, the 4NR development process, or both, depending on data needs:

- Argotti Botanic Gardens and University Herbarium (AHUM)
- Biological Conservation Research Foundation (BICREF)
- BirdLife Malta
- Centre for Environmental Education & Research (CEER)
- Conservation Research Biology Group within the University of Malta
- Customs Division
- Department of Biology within the University of Malta
- Department of Health Promotion and Disease Prevention
- Department of Information
- Din L-Art Helwa
- Environmental Consultation Agencies
- ECO - The Malta Ecological Foundation
- EneMalta Corporation
- Environment Health Unit
- Euro-Mediterranean Centre for Educational Research
- Euro-Mediterranean Centre on Insular Coastal Dynamics
- Flimkien Għal Ambjent Aħjar (FAA)
- Friends of the Earth (Malta)
- Gaia Foundation
- Genista Research Foundation
- Heritage Malta
- Institute for Environmental Studies
- Institute of Agriculture
- Institute of Islands and Small Island States
- International Environment Institute
- IOI-Malta Operational Centre
- Joint Office
- Land Registry
- Malta Bat Conservation Society (MBCS)
- Malta Centre for Fisheries Science (MCFS)
- Malta College of Arts, Science and Technology (MCAST)

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- Malta Council for Science and Technology (MCST)
- Malta Environment and Planning Authority (MEPA) - Planning Directorate and Environment Protection Directorate
- Malta Maritime Authority (MMA) (now part of Transport Malta)
- Malta Resources Authority (MRA) - Energy Directorate and Water Directorate
- Malta Standards Authority (MSA)
- Malta Tourism Authority (MTA)
- Malta Transport Authority (ADT) (now part of Transport Malta)
- Marine Rescue Team within Nature Trust Malta
- Mediterranean Institute - Section on Geography
- Ministry for Resources and Rural Affairs (MRRRA)
- Monitoring Unit, Malta Embellishment and Landscaping Project (MELP), Department of Agriculture
- National Statistics Office (NSO)
- National History Museum
- Nature Trust Malta (NTM)
- Parks, Afforestation and Rural Conservation Department (P.A.R.C.) within MRRRA
- Planning and Priorities Coordination Unit within OPM
- Plant Health Department (PHD) within MRRRA
- Ramblers Association (Malta)
- Paying Agency within MRRRA
- Rural Development and Aquaculture Division
- Tourism and Sustainable Development Unit (TSDU) within the Office of the Prime Minister
- Trade Services Directorate
- University of Malta
- Valley Management Unit within the Services Division (MRRRA)
- Agriculture and Fisheries Regulation Division (AFRD)
- WasteServ Malta Ltd
- Water Services Corporation (WSC)

Further consultation is foreseen under the NBSAP development process.

The Malta Environment and Planning Authority wishes to thank all those people who have dedicated their time to correspond under the NBSAP and 4NR processes.

The development of this report would have not been possible without the contribution of a number of people in particular the following: Ms Lisa Schembri Gambin (MEPA), Ms Marie Therese Gambin (MEPA), Mr. Darrin T Stevens (MEPA), and arranged in alphabetical order of surname: Mr. Joseph Abela Medici (MEPA), Ms Josianne Abela Vassallo (MEPA), Mr. Donald Aquilina (Paying Agency), Mr. Vince Attard (Nature Trust Malta), Ms Nadine Axisa (MEPA), Mr. Alfred E Baldacchino (Institute for Environmental Studies), Ms Odette Baldacchino Kerr (MEPA), Mr. Nicholas Barbara (AIS Environmental Ltd), Mr. Peter Paul Barbara (ADT), Architect Alex Borg (MEPA), Mr. Duncan Borg (MEPA), Ms Joanna Borg (MEPA), Dr. Joseph A Borg (Ecoserv Ltd), Ms Michelle Borg (MEPA), Dr. Joseph Buhagiar (AHUM), Mr. Alex Camilleri (MEPA), Dr. Marguerite Camilleri (MEPA), Mr. Sharlo Camilleri (Paying Agency), Ms Claudine Cardona (MEPA), Mr. Joseph Caruana (Paying Agency), Mr. Christopher Cousin (MEPA), Mr. Stefan De Marco (MRRRA - SWITCH Campaign), Ms Rachel Decelis (MEPA), Ms Josephine Deguara (OPM - TSDU); Dr. Mark Dimech (Malta Centre for Fisheries Sciences); Mr. John Neville Ebejer (P.A.R.C Department), Dr. Andreina Fenech Farrugia (Fisheries Control); Ms Karina Fiorini (OPM); Mr. Herman Galea (P.A.R.C Department), Mr. Oreste Galea (MEPA), Dr. Marica Gatt (PHD), Mr. Matthew Grima Connell (MEPA), Mr. Sergei Golovkin (MEPA), Mr. Jonathan Henwood



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(MEPA), Ms Monique Hili (MEPA), Mr. Franck Lauwers (MEPA), Mr. Richard Lia (MEPA), Ms Christina Mallia (MEPA), Mr. Frans Mallia (MEPA), Ms Marie Louise Mangion (OPM), Mr. Kevin Mercieca (MEPA), Mr. Michael Mercieca (MELP), Eng. Phyllis Micallef (MRA), Ms Carmen Mifsud (MEPA), Eng. Stephen Mifsud (MRA); Mr. Paul J Pace (CEER), Ms Susan Portelli (Fisheries Control); Ms Henriette Putzulu Caruana (WasteServ Malta Ltd), Dr. Andre Raine (BirdLife Malta); Ms Krista Rizzo (MRA), Ms Miraine Rizzo (MEPA), Dr. Yvette Rizzo (MEPA), Mr. George Said (NSO), Mr. Stephen Saliba (MEPA); Mr. Michael J Sant (MEPA), Ms. Sonya Sammut (OPM); Mr. Manuel Sapiano (MRA), Mr. Silvio Scicluna (MELP), Mr. Martin Seychell (MEPA), Ms Charlene Smith (MEPA); Ms Nadia Suda Lanzon (MEPA), Mr. Matthew Tabone (PHD), Mr Timothy Tabone (information on ongoing ethnobotanical study); Ms Amy Talbot (MEPA), Ms Flavia Zammit (MSA), Mr. Saviour Vassallo (MEPA), Dr. Adriana Vella (Conservation Biology Research Group, University of Malta), Ms Karen Vella (MEPA) and Mr. Peter Vella (Trade Services Directorate).

## Appendix II - Further Sources of Information

**N.B.** In addition to the sources of information listed hereunder, please also refer to all the hyperlinks provided throughout the entire report, as well as sources of further information given in Chapter 3 of this report.

### Information on Introduced Alien Species

1. Baldacchino, A.E. & Pizzuto, A. (Eds.) *Introduction of alien species of flora and fauna*. [Proceedings of a seminar held at Qawra, Malta, 5<sup>th</sup> March 1996], pp.5-7. Floriana, Malta: Environment Protection Department; 77pp.
2. Mifsud, D. (2008). Biological control in the Maltese Islands – past initiatives and future programmes. *EPPO Bulletin* Volume 27 Issue 1, Pages 77 - 84
3. Schembri, P.J., Deidun, A. & Muscat, G. (2006). A report on a study of the fouling assemblages within the Grand Harbour, Valletta, Malta, made in connection with Phase 1 of the PORTAL project. Msida, Malta: Marine Ecology Research Group, Department of Biology, University of Malta 10pp. [available from International Commission for the Scientific Exploration of the Mediterranean Sea (CIESM)]

### Information on Malta's State of the Environment

4. MEPA (2006). *State of the Environment for Malta 2005* [Online] Available at: [www.mepa.org.mt/soer2005-intro](http://www.mepa.org.mt/soer2005-intro); The SOER 2005 sub-report on biodiversity is available at: [www.mepa.org.mt/file.aspx?f=2132](http://www.mepa.org.mt/file.aspx?f=2132)
5. MEPA (2007). *State of the Environment Indicators 2006* [Online] Available at: [www.mepa.org.mt/soe2006-intro](http://www.mepa.org.mt/soe2006-intro) [Report compiled by MEPA in partnership with NSO]
6. MEPA (2008). *State of the Environment Indicators 2007* [Online] Available at: [www.mepa.org.mt/soe2007-intro](http://www.mepa.org.mt/soe2007-intro) [Report compiled by MEPA in partnership with NSO]
7. MEPA (2010). *State of the Environment Report for Malta 2008* [Online] Available at: <http://www.mepa.org.mt/ter> ; The SOER 2008 sub-report on biodiversity is available at: <http://www.mepa.org.mt/ter08-biodiversity>
8. Schembri, P.J., Baldacchino, A.E., Camilleri, A., Mallia, A., Rizzo, Y., Schembri, T., Stevens, D.T. & Tanti, C.M. (1999). State of the environment report for Malta 1998: Living resources, fisheries and agriculture. In: Axiak, V., Gauci, V., Mallia, A., Mallia, E., Schembri, P.J. & Vella, A.J. *State of the Environment Report for Malta 1998*, pp. 109-283. Project commissioned by the Environment Protection Department. Malta: Malta Council for Science and Technology.
9. Schembri, P.J., Baldacchino, A.E., Mallia, A., Schembri, T., Sant, M.J., Stevens, D.T. & Vella, S.J. (2002). *State of the Environment Report for Malta 2002: Natural Resources, Fisheries and Agriculture*. In: Axiak, V. (ed.) *State of the Environment Report for Malta 2002*, pp. 162-346. Project commissioned by the Environment Protection Department. Malta: Ministry of Home Affairs and the Environment.

### Information on Maltese Biodiversity and Natural Heritage

10. Borg, G. (1922). *Cultivation and Diseases of fruit trees in the Maltese Islands*. Malta: Government Printing Office, vii + 622pp.
11. Cassar, L.F., Conrad, E. & Schembri, P.J. (2008). The Maltese archipelago. In: Vogiatzakis, I.N., Pungetti, G. & Mannion, A.M. [eds] *Mediterranean island landscapes: natural and cultural approaches*. pp. 297-322. Heidelberg, Germany: Springer; xxxii + 369pp.
12. Gulia, G. (1856). *Repertorio Botanico Maltese*. Malta: Tipografia Laferla, v + 78pp. [In Italian]
13. Gulia, G. (1859). *Repertorio di Storia Naturale*. Malta: Tipografia Anglo-Maltese, iii + 246pp. [In Italian]
14. Giusti, F.; Manganelli, G. & Schembri, P.J. (1995). *The non-marine molluscs of the Maltese Islands*. [Museo Regionale di Scienze Naturali, Torino, Monografie 15]; Torino, Italy: Museo Regionale di Scienze Naturali; 607pp.
15. Lanfranco, E. (2000) *Is-Siġar f'Malta: l-użu, l-impatt u l-pajsaġġ*. In: Baldacchino, A.E. & Stevens, D.T. (eds). *Is-Siġar Maltin - l-użu u l-importanza [Maltese Trees - Their Use and Importance]*. Proceedings of a National Seminar, 24<sup>th</sup> Nov, 1998, Environment Protection Department: Floriana, Malta. 45-52pp.[In Maltese]

16. Lanfranco, E. (2005). A short note on Malta's Ecological Communities. Contribution to the 2005 State of the Environment Report. [Online] Available at: [http://www.mepa.org.mt/Environment/SOER/documents/Biodiversity/Background%20documents/A\\_short\\_note\\_on\\_Maltas\\_ecological\\_communities.pdf](http://www.mepa.org.mt/Environment/SOER/documents/Biodiversity/Background%20documents/A_short_note_on_Maltas_ecological_communities.pdf)
17. Lanfranco, G. (1993). *Ħxejjex Mediċinali u Oħrajn fil-Gżejjer Maltin* [Medicinal Herbs and Others in the Maltese Islands], Media Centre Print, Malta. [In Maltese] Reprinted in 2000.
18. Lanfranco, G. (2004). *Ħajjitna fl-Imġhoddi*. Wise Owl Publications, Malta, 128pp. [In Maltese]
19. Lanfranco, G. (2005). *Drawwiet u Ħajja mill-Istorja ta' Malta*. Wise Owl Publications, Malta, 168pp. [In Maltese]
20. MEPA Portal on Biodiversity (Clearing House Mechanism) [Online] Available at: [www.mepa.org.mt/biodiversity-intro](http://www.mepa.org.mt/biodiversity-intro)
21. Mifsud, C.R., Stevens, D.T. & Baldacchino, A.E. (2003). *Strategic Action Plan for the Conservation of Maltese Coastal and Marine Biodiversity, 2002-2003*. [Online] Available at: [www.mepa.org.mt/environment/publications/sap-bio.pdf](http://www.mepa.org.mt/environment/publications/sap-bio.pdf)
22. Pisani, G. (2000). *Id-Duwa tal-Madalena - Il-Ħxejjex u l-Frott fil-Medicina Popolari*. Mireva Publication, 110pp. [In Maltese]
23. Schembri, P.J. (1993). Physical geography and ecology of the Maltese Islands: a brief overview. In: Busuttill, S., Lerin, F. & Mizzi, L. (eds) *Malta: food, agriculture, fisheries and the environment*. [Options Méditerranéennes ser.B: Etudes et Recherches N°7] pp.27-39; Paris, France: CIHEAM; 192pp. [Online] Available at: [http://home.um.edu.mt/biology/PJS%20researches/CIHEAM\\_Physical\\_geography\\_&\\_ecology\\_of\\_the\\_Maltese\\_Islands\\_%281991%29.pdf](http://home.um.edu.mt/biology/PJS%20researches/CIHEAM_Physical_geography_&_ecology_of_the_Maltese_Islands_%281991%29.pdf)
24. Schembri, P.J. (1994). Natural Heritage. In: Frenzo, H. & Friggieri, O. (eds) *Malta culture and identity*. pp. 105-124; Valetta, Malta: Ministry of Youth and the Arts; ix + 272pp. [Online] Available at: [http://home.um.edu.mt/biology/PJS%20researches/Malta%27s\\_natural\\_heritage\\_%281994%29.pdf](http://home.um.edu.mt/biology/PJS%20researches/Malta%27s_natural_heritage_%281994%29.pdf)
25. Schembri, P.J. (1997). The Maltese Islands: climate, vegetation and landscape. *GeoJournal* 41(2): 115-125. [Online] Available at: [http://home.um.edu.mt/biology/PJS%20researches/Geojournal\\_-\\_Climate\\_vegetation\\_&\\_landscape\\_of\\_Malta\\_%281997%29.pdf](http://home.um.edu.mt/biology/PJS%20researches/Geojournal_-_Climate_vegetation_&_landscape_of_Malta_%281997%29.pdf)
26. Schembri, P.J. (2003). Current state of knowledge of the Maltese non-marine fauna. In: MEPA (2003) *Malta Environment and Planning Authority Annual report and accounts 2003*. pp. 33-65; Floriana, Malta: Malta Environment and Planning Authority; 92pp. [Online] Available at: [http://home.um.edu.mt/biology/PJS%20researches/Review\\_of\\_Maltese\\_fauna\\_%282003%29.pdf](http://home.um.edu.mt/biology/PJS%20researches/Review_of_Maltese_fauna_%282003%29.pdf)
27. Schembri, P.J., Lanfranco, E., Farrugia, P., Schembri, S. & Sultana, J. (1987). *Localities with Conservation Value in the Maltese Islands*. Malta: Environment Division, iii + 27pp.
28. Schembri, P.J. & Sultana, J. [eds] (1989). *Red Data Book for the Maltese Islands*. Valetta, Malta: Department of Information; viii + 142pp. + plates I-VIII.
29. Stevens, D.T., Lanfranco, E., Mallia, A. & Schembri, P.J. (1995). Biodiversity conservation and utilisation in the Maltese Islands. Paper presented at workshop on *Identifying and monitoring biodiversity and its utilisation in Commonwealth small island developing states*. Commonwealth Science Council, Valetta, Malta 30 October - 3 November 1995. [Online] Available at: [http://home.um.edu.mt/biology/PJS%20researches/Biodiversity\\_conservation\\_&\\_utilization\\_in\\_Malta\\_%281995%29.pdf](http://home.um.edu.mt/biology/PJS%20researches/Biodiversity_conservation_&_utilization_in_Malta_%281995%29.pdf)




#### Other Information

30. *Article 17 Reporting under the EC Habitats Directive (93/42/EEC)*. Malta: Ecosystems Management Unit, Environment Protection Directorate, Malta Environment & Planning Authority. [Online] Available at: <http://cdr.eionet.europa.eu/mt/eu/art17/>
31. Bertrand, J., Gil de Sola, L., Papaconstantinou, C., Relini, G. and Souplet, A. (2000). 'An international bottom trawl survey in the Mediterranean: the MEDITS programme'. In: *Demersal resources in the Mediterranean*. Co-ordinators J.A. Bertrand and G. Relini. IFREMER, Actes de Colloques 26: 76-93.
32. Camilleri, M. (2002). 'The fishing effort distribution of Demersal gear in Maltese waters and the relative abundance of Demersal resources in the area'. International workshop on stock

- assessment and production of Demersal resources. (SAMED); Rome. March 2002.
33. Camilleri, M. (2005). *Maltese fisheries and the sustainability of resources around the Maltese Islands*. PhD thesis. University of Plymouth.
  34. Coleiro, C. (2002). Breeding Birds Report. *Is-Simar Nature Reserve 2002 Report* :34
  35. Coleiro, C. (2003). Breeding Birds Report. *Is-Simar Nature Reserve 2003 Report* :29
  36. de Montmollin, B. & Strahm, W. (eds) (2005). *The Top 50 Mediterranean Island Plants: Wild plants at the brink of extinction, and what is needed to save them*. IUCN/SSC Mediterranean Islands Plant Specialist Group. IUCN, Gland, Switzerland and Cambridge, UK. x + 110 pp.
  37. Dimech, M., Camilleri, M., Borg, J.A., Smith, IP., Sciberras, M. & Schembri, P.J. (2007). The potential of fisheries reserves as a tool for biodiversity conservation. The case of the 25 Nautical Mile Fisheries Management Zone around Malta. In: Perez-Ruzafa, A., Hoffmann, E., Boncoeur, J., Garcia-Charton, J.A., Marcos, C., Salas, F., Sorensen, T.K. & Vestegaard, O. (eds) *European Symposium on Marine Protected Areas as a Tool for Fisheries Management and Ecosystem Conservation. Emerging science and interdisciplinary approaches*. Murcia, Spain 25-28 September 2007. Abstracts Book p.79; EMPAFISH and PROTECT projects, Editum, Murcia: 330 pp.
  38. EC Habitats Directive Article 17 Report - National Summary: MALTA. [Online] Available at: [http://circa.europa.eu/Public/irc/env/monnat/library?l=/habitats\\_reporting/reporting\\_2001-2007/ms-reports\\_summaries/national\\_sumarypdf\\_16/\\_EN\\_1.0\\_&a=d](http://circa.europa.eu/Public/irc/env/monnat/library?l=/habitats_reporting/reporting_2001-2007/ms-reports_summaries/national_sumarypdf_16/_EN_1.0_&a=d)
  39. G.A.S. s.r.l. (2002). *Baseline survey of the extent and character of *Posidonia oceanica* (L.) delile meadows in the territorial waters of the Maltese Islands*.
  40. MaLiRa Group, (2004). La campagna MEDITS 2004 nello Stretto di Sicilia (Mar Mediterraneo), Sub Area Geografica 15: rapporto finale. MaLiRA Group, IAMC-CNR, Sezione Territoriale di Mazara del Vallo (TP), Italia: 19pp. [In Italian]
  41. Maltese Soil Information System (2004). *Soil geographic database of the Maltese Islands*. National Soil Unit, Ministry for Rural Affairs and the Environment, Malta.
  42. Mosteiro, A. & Camilleri, M. (2005). *Pilot Study on Dolphin fish 2004 - Malta*. FAOCOPEMED.
  43. Sammut, S. (2005). State of the Environment Report for Malta 2005 - Background Report on Soil [Online] Available at: [www.mepa.org.mt/file.aspx?f=1821](http://www.mepa.org.mt/file.aspx?f=1821)
  44. Tanti, C., Role, A., Borg, C. & Calleja, I. (2002). Protection of Soil and Rural Landscapes in Northwest Malta. In: *MAP CAMP Project "MALTA" Final Integrated Project Document and Selected Thematic Documents*, Volume II. 2003, UNEP, Athens.

## Appendix III (A) - Progress towards Targets of the Global Strategy for Plant Conservation (GSPC)<sup>22</sup>

### LEGEND:

	Goal/target being successfully attained		Ongoing work but goal/target not yet attained as further measures are necessary		Goal/target not being attained
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### GSPC Target 1: A widely accessible working list of known plant species, as a step towards a complete world flora

#### Assessment of Overall Progress at a National Level -

#### Description of Progress

The [Red Data Book for the Maltese Islands](#) published in 1989 includes a red list of native and endemic Maltese flora. Detailed post-Linnaean research on Maltese flora dates back to the beginning of the 19<sup>th</sup> century. Research by Maltese and foreign botanists has been invaluable in the study of Maltese flora resulting in numerous published and unpublished works throughout the years, which all in all, do contribute towards a working list (rather than a definitive list), albeit fragmentary, of the flora of the Maltese Islands. A widely accessible and complete list of the Maltese flora is yet to be compiled and published. *Ad hoc* surveys by Maltese and foreign botanists result in new identifications or else in taxonomic revisions.

**Obstacles, Needs and Future priorities** - Work is ongoing on the setting up of a **National Database on Biodiversity**, which will also incorporate plant species. This will follow from an updated Red Lists for plants. A list of the alien flora recorded from the Maltese Islands is also being compiled, for eventual publication.

#### Information Sources

Important works include: (listed in order of date of publishing)

- Zerapha, S. (1827) *Flora Melitensis Thesaurus, Fasciculus Primo*. Malta: Regia Typographia, iv + 36pp. [in Latin]
- Zerapha, S. (1831) *Flora Melitensis Thesaurus, Fasciculus Alter*. Malta: Regia Typographia, 45pp. [in Latin]
- Grech Delicata, J.C. (1853) *Flora Melitensis sistens stirpes phanerogamas in Melita insulisque adjacentibus hucusque detectas, secundum systema Candolleum digestas*. Malta: xvi + 49pp. [in Latin]
- Caruana Gatto, A. (1913) Fauna and Flora of the Maltese Islands. *Daily Chronicle*, Eucharistic Congress Number: 8-9.
- Sommier, S. and Caruana Gatto, A. (1915) *Flora Melitensis Nova*. Firenze: Stabilimento Pellas, viii + 502 pp. [in Latin]
- Borg, G. (1927) *Descriptive flora of the Maltese Islands*. Malta: Government Printing Office, 846pp.
- Lanfranco, G. (1969) *Field guide to the wild flowers of Malta*. Valletta, Malta: Progress Press; viii + 83pp. + plates 1-65.
- Haslam, S.M., Sell, P.D. and Wolseley, P.A. (1977) *A flora of the Maltese Islands*. Msida, Malta: Malta University Press; 560pp.

<sup>22</sup> The 16 targets contained in the Global Strategy for Plant Conservation have been adopted by [Decision VI/9](#)

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- Lanfranco, E. (1987) Jewels of the Maltese Flora: plants endemic to the Maltese Islands. *Spectra*, New Lyceum Science Magazine (Malta) 5: 2-11.
- Lanfranco, E. (1989a) Il-pjanti vaskulari endemici tal-Gzejjer Maltin. In: Cortis, T. [ed.], *L-Identita' kulturali ta' Malta*. pp: 141-164; Valetta, Malta: Departiment ta' l-informazzjoni. [in Maltese]
- Lanfranco, E. (1989b) The flora. In: Schembri P.J. and Sultana J. [eds] (1989): *Red data book for the Maltese Islands*. pp. 5-70; Valletta, Malta: Department of Information; viii + 142pp. + plates I-VIII.
- Sultana, J. and Falzon, V. (ed.) (2002) *Wildlife of the Maltese Islands*. [2<sup>nd</sup> Edition], Birdlife Malta, Nature Trust Malta, Ta' Xbiex, Malta, 336 pp.
- Lanfranco, E. and Lanfranco, G. (2003) *Il-Flora Maltija*. [Sensiela 'Kullana Kulturali'] Il-Pjeta, Malta: Publikazzjonijiet Indipendenza. [In Maltese; Maltese Flora]
- Weber, H.C. (2004) *Wild Plants of Malta*. Publishers Enterprises Group (PEG) Ltd. 144pp.
- Weber, H.C. and Kendzior, B. (2006) *Flora of the Maltese Islands*. Margraf Publishers, 384pp.
- Bonett, G. and Attard, J. (2006) *The Maltese Countryside (Volume 1) - A Pictorial Guide to the Flora of the Maltese Islands*, PEG Ltd, 432pp.
- Borg, J.J., Lanfranco, E. and Sultana, J. (2007) *Nature in Gozo*. Birdlife Malta, 176pp.

### GSPC Target 2: A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels

#### Assessment of Overall Progress at a National Level - 😊

##### Description of Progress

The conservation status of endemic and native plants of Malta was initially formally carried out with the publishing of the [Red Data Book for the Maltese Islands \(1989\)](#). Additionally, an assessment of threatened flowering plants, comparing the percent of threatened species in 1998 with that in 2002, was undertaken via the SOER process. The [most recent assessment](#), dated 2008, is limited to plant species listed in the Annexes of the EC Habitats Directive and found in Malta (16 species) as part of the reporting obligations under Article 17 of this Directive [[See Chapter 1 of this report](#)]. The information-basis for updating the Red List for plants is in part available, and is supplemented by *ad hoc* field work.

**Obstacles, Needs and Future priorities** - Future priorities include the need to extend the assessment of conservation status to species of national importance, and, to update Plant Red Lists.

### GSPC Target 3: Development of models with protocols for plant conservation and sustainable use, based on research and practical experience

#### Assessment of Overall Progress at a National Level - 😊

##### Description of Progress -

**Research on plants** mainly focuses on identifying new species, recording the distribution of rare species and vegetation communities through *ad hoc* and planned ecological surveys and also noting threats. Data is also obtained via the carrying out of environmental impact assessments. The Biology Department within the University of Malta has always considered plant diversity as one of the major topics to be taken up by students following relevant degree courses. Some dissertations have also focused on the *in vitro* propagation of threatened plants. A [list of dissertations](#) is available on the website of the Department of Biology, UoM.

A baseline survey of the extent and character of *Posidonia oceanica* meadows in the territorial waters of the Maltese Islands has been carried out ([G.A.S. s.r.l. 2002](#)) as a [commissioned study](#).



When dealing with the safeguard of rare species, MEPA liaises with the Plant Health Department (PHD) in connection with *ex situ* conservation, and also the micropropagation of selected species, namely those that cannot be propagated by conventional methods or, species that would benefit from *in vitro* techniques to eliminate diseases. Propagated species include rare species; amongst these are the endemic orchids. The successful plantlets hence form part of reintroduction or reinforcement programmes. MEPA also liaises with the curator of the national botanical gardens at Argotti in relation to *ex situ* and *in situ* plant conservation.

**Obstacles, Needs and Future priorities** -Work is ongoing on developing guidelines for the removal of plant invaders and the restoration on plant communities. Work has also started on a habitats interpretation manual. A strategy on the sustainable exploitation of plant resources is required although the legal basis is laid out in national legislation.

**GSPC Target 4: At least 10 per cent of each of the world's ecological regions effectively conserved**

**Assessment of Overall Progress at a National Level** - 😊

**Description of Progress**

[See [Appendix III \(b\)](#) for information on Malta's Network on Protected Areas.]

The extent of terrestrial protected areas across the islands is quite extensive. The various terrestrial habitat types listed in Annex I of the Habitats Directive are well represented in Malta's contribution to the Natura 2000 network. To date there are three MPAs (with one being designated a marine SAC in the Natura 2000 Network); Malta is currently working to designate other areas.

It is appreciated that apart from increasing the **representation of different ecological regions in protected areas**, increasing the effectiveness of such areas as part of *in situ* conservation of biodiversity is crucial. In view of this, selected sites (part or whole protected areas) are afforded some form of management measures, either directly through legislation (as in the case of nature reserves) or through the setting up of dedicated management agreements and plans, as relevant, on a case-by-case basis.

**Obstacles, Needs and Future priorities** - The designation of additional marine sites and management of protected area are amongst the priority issues at present.

**GSPC Target 5: Protection of 50 per cent of the most important areas for plant diversity assured**

**Assessment of Overall Progress at a National Level** - 😊 (terrestrial) 😊 (marine)

**Description of Progress**

**Important areas for terrestrial plant diversity** are more or less known. Following from this, a relatively high extent of such areas have been included within protected areas. For instance, woodland remnants of high conservation value are covered by some form of protection. [Government Notice 269 of 1933](#) published under the provisions of the Antiquities (Preservation) Act (Act XI of 1925 as amended) protects all trees older than 200 years and declares them as “**trees of antiquarian importance**”. Various types of woodlands feature as habitat types in the classification presented in Annex I of the EC Habitats Directive, and in this respect, a high degree of those found in Malta now fall within Natura 2000 sites. Considering **endemic plant species**, it is known that the protected areas designated to date do indeed afford protection to a high extent of these species. Certainly, it can be stated that on land, the target of protecting 50% of the most important areas for plant diversity has been achieved. Actually, the percentage is deemed to be higher than 50%.

Other forms of conservation measures, apart from the designation of protected areas have also been considered. The “**Trees and Woodland Protection Regulations, 2001**” are undergoing a

repeat and replacement process to strengthen protection following from lessons learnt over the past years in implementing and enforcing the legislation - (see [GN 682 of 2008](#) - Trees and Woodland Protection Regulation 2008)

**Obstacles, Needs and Future priorities** - The protection of marine plant diversity will be addressed via the designation of additional marine protected areas.

**GSPC Target 6:** At least 30 per cent of production lands managed consistent with the conservation of plant diversity

Assessment of Overall Progress at a National Level - 😞

#### Description of Progress

**Production lands in Malta** refer to lands where the primary purpose is agriculture (including horticulture). Wood production is not practised and grazing is extremely rare and small scale. Being the main land user in the Maltese Islands reflects the importance that agriculture has for Malta's natural environment. Some 47.5% of land area in the Maltese Islands consists of "Agriculture with significant area of natural vegetation" [see [CORINE Land Cover data for 2006 in Section 1 of this report](#)]. A considerable amount of agricultural land is found within Natura 2000 sites in Malta. Therefore it is important to harmonise farming practices within such areas with the need to maintain or restore the conservation status of habitats and species of community importance at a favourable condition in line with the EC Nature Directives and transposing domestic legislation. In a national context, EAFRD's Axis II as considered in Malta's RDP 'intends to improve the environment and the countryside through encouraging the retention of agricultural activity and promotion of environmental friendly production methods in line with rural heritage'. **Agri-environment measures** are designed to encourage farmers to protect and enhance the environment on their farmland either by reducing environmental risks associated with modern farming and/or preserving nature and cultivated landscapes. Farmers receiving direct payments under the Common Agricultural Policy (CAP) are subject to cross-compliance requirements *i.e.* they are required to abide to selected statutory management requirements (SMRs) in the field of *inter alia* the environment. [See also [Section 3.1 of this report](#)]

**Obstacles, Needs and Future priorities** - Awareness raising on the positive contribution of agri-environment measures in conserving biodiversity in agroecosystems and, hence in ensuring agricultural productivity, is deemed crucial, as is the uptake of agri-environment measures by farmers.

**GSPC Target 7:** 60 per cent of the world's threatened species conserved *in situ*.

Assessment of Overall Progress at a National Level - 😊

**Description of Progress** - **Plant species of international importance**, that is plant species protected through international treaties and other instruments, normally in view of their threatened status, and which are native and found in the Maltese Islands, are protected through Maltese law. More than 60% of these species are conserved *in situ i.e.* populations of the species are effectively maintained in at least one protected area or through other *in situ* management measures. Such protected areas form part of the national ecological network and part of the EC Natura 2000 network.

**Obstacles, Needs and Future priorities** - Management of protected areas is one of the main priorities at present.

GSPC Target 8: 60 per cent of threatened plant species in accessible *ex situ* collections, preferably in the country of origin, and 10 per cent of them included in recovery and restoration programmes

#### Assessment of Overall Progress at a National Level - 🟡

##### Description of Progress

The Argotti Botanic Gardens currently houses six endemic species: *Tetraclinis articulata*; *Palaeocyanus crassifolius*; *Helichrysum melitense*; *Darniella melitense*; *Cremnophyton lanfrancoi* and *Hyoseris frutescens*. These specimens are cultivated directly in the ground and also kept as a nursery stock. A seed bank has been established at the Argotti Botanic Gardens, however seed collection and storage are still in the preliminary phases. The Argotti Botanic Gardens has also participated in an EU-funded project on the effect of climate on seed germination.

The [Plant Health Department](#) (PHD) is the national department responsible for regulating the **marketing of seeds** irrespective of their origin. Seeds of cereals, fodder plants and vegetables that are thought to belong to local varieties are being conserved and **characterisation trials** have been carried out in order to establish a morphological description of such varieties. In collaboration with MEPA, the PHD undertakes work on the ***in vitro* propagation** of critically endangered plant species, as well as selected rare species. For instance, currently wild orchids and one species of tulip are being micropropagated and at the same time conserved at the Tissue Culture Lab within the PHD. Also other indigenous plants had been in the past been propagated (*e.g. Cremnophyton lanfrancoi*, *Helichrysum melitense*, *Cratageus monogyna*, *Urginea pancration*, *Pyrus syriaca*, and *Pistacia terebinthus*) as part of conservation endeavours. Such *ex situ* measures are carried out in support of *in situ* measures that include for instance the **reinforcement of populations of endangered species in the wild** such as has been done for the critically endangered Thorny Burnet (*Sarcopoterium spinosum*) in collaboration with the Argotti Botanic Gardens, with the financial assistance of the [Environment Initiatives and Partnership Process \(EIPP\)](#).

**Obstacles, Needs and Future priorities** - Resource mobilisation would assist in the running of the seed bank- by recruiting additional personnel.

GSPC Target 9: 70 per cent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained

#### Assessment of Overall Progress at a National Level - 🟡

##### Description of Progress

The Plant Health Department regulates the marketing of seeds and other propagation material of the species covered by the national legislation and those that belong to conservation varieties. Growers in Malta, out of personal interest, maintain and conserve the **plant genetic resources** that they possess. Some growers have a cultural habit (and also out of personal interest) to retain indigenous seeds and plants for themselves *e.g.* for vegetables, cereals, fodder plants, fruit trees, *etc.* Details on the maintenance of Maltese varieties are not known since almost all of the plant material is not marketed but kept by the farmer to be used for the next growing season. However, the PHD has gathered and shall continue to gather information of local varieties as part of initiatives and projects that deal with conservation varieties, such as the marketing of local varieties of seeds of agricultural plants in Malta, the identification and collection of accessions of vines and peaches, identification, collection and sanitation of citrus.

The MRRA is also involved in the regeneration of a particular ancient variety of Maltese olive that is indigenous to the Maltese Islands. **Project Primo** aims at propagating the indigenous olive variety called *Tal-Bidni*, planting of *Tal-Bidni* olive orchards, and the establishment of an olive oil production industry. The [Annual Report for 2008](#) issued by the MRRA, reports production of around 1,000 *Tal-Bidni* olive trees during the year. *Tal-Bidni* olives were harvested from olive trees growing on farm grounds for the first time and an oil sample was obtained.

The Viticulture and Oenology Unit within the Department of Agriculture was granted a research programme under FP7 by the Malta Council for Science and Technology. The project, which deals with the identification of local vine varieties, will be carried out in conjunction with the University of Malta. It will mainly focus on the **Maltese indigenous varieties of vines** - the *Girgentina* and *Gellewża*.

**Obstacles, Needs and Future priorities** - The uptake of RDP agri-environment measures providing support to the conservation of agrobiodiversity and agriculture genetic resources is deemed very important. [See also response to Goal 3 of PoW on Island Biodiversity in [Chapter 2](#) of this report].

**GSPC Target 10:** [Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems](#)

**Assessment of Overall Progress at a National Level** - 😞

**Description of Progress** -

The finalisation of a commissioned study on *Alien Flora of the Maltese Islands* has generated the information basis on which alien plant species would classify as major invaders or as those species posing a threat to native biodiversity. Steps are underway to create a database on alien species. Domestic legislation includes provisions on the management of alien species. A list of tree species damaging biodiversity is integrated in the “Trees and Woodlands Protection Regulations”. The species in question cannot be propagated, planted, traded, sold, or exchanged unless authorised. A number of alien plants of concern are already being targeted for removal such as *Acacia* spp. *Ricinus communis*, *Opuntia* spp. *Agave* spp. and *Carpobrotus* spp.

The Plant Health Department follows [Council Directive 2000/29/EC](#) on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community, its amendments, and other Emergency and Control (long-term) measures that are issued after specific outbreaks of new pests in the territory of the Community. These are transposed into Maltese Legislation as [subsidiary legislation](#). As a contracting party to the International Plant Protection Convention (IPPC) and Article X of the same treaty, Malta is obliged to follow **International Standards for Phytosanitary Measures (ISPMs)** and is encouraged/obliged to follow EPPO standards whenever they are available. Pest species that are targeted include those found in Annex 1 and 2 of Council Directive 2000/29/EC. Species in EPPO A1 and A2 lists and EPPO Alert list are also targeted. Upon accession to the European Union Malta, [gained protected zone status](#) (i.e. pest not present in the whole territory or regions) for *Leptinotarsa decemlineata* (Colorado beetle) on potatoes. After accession, Malta gained a protected zone status for Citrus Tristeza Virus (CTV) on Citrus.

**Obstacles, Needs and Future priorities** - Effort to address other plant invaders will require mobilisation of resources, involvement and cooperation with relevant groups of stakeholders and discussions to arrive at the best possible economically and ecologically feasible options. Guidelines are currently being drafted to assist in counteracting the spread of extant terrestrial plant invaders in environmentally sensitive areas and in an ecological context.

**Target 11:** [No species of wild flora endangered by international trade](#)

**Assessment of Overall Progress at a National Level** - 😊

**Description of Progress**

The CITES Management Authority designated for Malta is the Environment Protection Directorate within the Malta Environment and Planning Authority. It is involved *inter alia* in the control of the import and export of flora, issuing conditions on import licences and inspections at points of entry,

as well as informing the public and trade community of the obligations arising from the CITES Regulations. The CITES Management Authority, in liaison with the Scientific Authority, and other entities, such as Customs, assures that no species of wild flora are endangered by international trade. The international trade of other selected species is controlled through national legislation. No person is allowed to keep, transport, sell or exchange by any method, import or export any specimen of flora listed in the schedules of relevant Regulations enacted under the EPA, unless the person is in possession of a permit issued by MEPA.

**Target 12: 30 per cent of plant-based products derived from sources that are sustainably managed**

**Assessment of Overall Progress at a National Level - 🟡**

**Description of Progress**

When considering wild plants that are harvested and managed for food one can mention Capers (*Capparis orientalis* and *C. spinosa*), Fennel (*Foeniculum vulgare*) and Rosemary (*Rosmarinus officinalis*). Other flowering species such as *Narcissus tazetta* are collected from the wild and sold. **Sustainable use of plants** that are directly exploited from the wild is promoted under the Flora, Fauna and Natural Protection Regulations, 2006 ([LN 311 of 2006](#), as amended). The Regulations integrate provisions that regulate the exploitation of a number of species that may become endangered if such activities are unsustainable and hence damaging to conservation status of the targeted species. Apart from the “Species of Community interest whose taking in the wild and exploitation may be subject to Management Measures” listed in the Habitats Directive; Malta extends such provisions to some 24 species. Threatened species that are strictly protected are essentially collected from the wild for *bona fide* studies and only when authorised by the competent authority, i.e. MEPA. In addition to protection afforded by LN 311 of 2006, *Thymus capitatus* is also covered by [GN 85 of 1932](#).

**Obstacles, Needs and Future priorities** - The issuance of policy guidance could further ensure that exploitation of plant species is carried out following sustainable practices.

**Target 13: The decline of plant resources, and associated indigenous and local knowledge innovations and practices that support sustainable livelihoods, local food security and health care, halted**

**Assessment of Overall Progress at a National Level - 🟡**

**Description of Progress**

A number of students undertaking undergraduate and postgraduate studies in the area of pharmacy at the University of Malta have studied **plants of medicinal and/or of aromatic value** for their [dissertations](#) .

An **ethnobotanic survey** is being undertaken by a local researcher, who has been gathering ethnobotanical data for 17 years and has started doing so systematically since 1996. This ongoing research consists of semi-structured interviews, including discussions, and participant observation. Most interviewees are farmers and/or herders, and sometimes fishermen and traditional healers. Since traditional knowledge has declined considerably during the past 50 years, informants are usually sought from among the pre-World War II generation. Aspects of biocultural knowledge discussed include: medicinal plants; folk concepts of disease; local cultivars of crops; plants in myth, legend and superstitions; vernacular names and ethnotaxonomy; traditional agricultural practices; traditional methods of pest control; role of plants in animal husbandry, e.g. use of plants for veterinary purposes and fodder; old methods of pest control; fibre crafts; etc. This research will culminate in the publication of a monograph on the ethnobotany of the Maltese Islands.

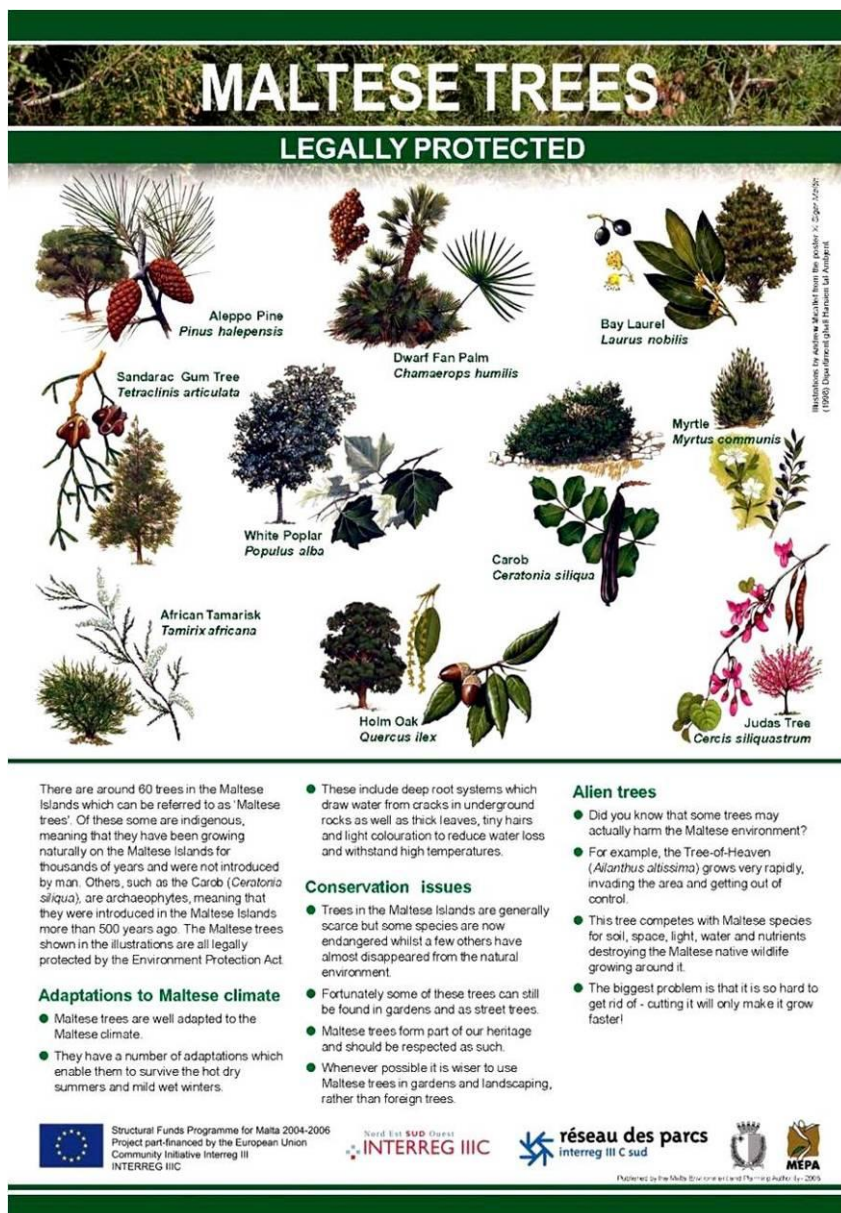


**Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes**

**Assessment of Overall Progress at a National Level - 😊**

**Description of Progress**

In Malta, education and awareness in relation to the environment has considerably increased during the last years. MEPA has published **outreach material** that includes for instance leaflets, posters, coasters, and bookmarks depicting protected biological diversity including plants. Of particular relevance are a set of posters that have been recently issued, including posters on specific protected sites which are mostly important for tree communities and, on specific groups of species (amongst them posters related to Maltese orchids and Maltese trees - **Figure 17**). These posters are being distributed in various events, such as seminars. A set of posters has also been distributed to all Local Councils. MEPA has also published calendars related to biodiversity. Whereas the one for 2007 included both flora and fauna species, that for 2008 focused specifically on trees and shrubs of the Maltese Islands. The calendars included one species per month, with a brief description on each species.



**Figure 17 - Poster on Protected trees in Malta**



The [biodiversity portal on the MEPA website](#) was set up in 2005. It includes reference to plant species in Malta, including details on the number of plant species, reference and documentation related to native and endemic species, and documentation on a *Posidonia oceanica* baseline survey. It is envisaged that further information will be included as part of ongoing efforts to revamp the website. The website content is in a manner that as much as possible appeals to various sectors of society.

Issues related to plants, including environmental education, have always been included in the State of the Environment Report which is published every 3 years. The 1998 and 2002 SOER formats were mainly aimed at the scientific community and policy-makers. The 2005 and 2008 versions of the SOER are more aimed towards policy-makers and the general public (few pages long, plus a small booklet with indicators, backed-up with further details through the MEPA website). Issues related to plants as addressed in the published state of the environment reports for Malta have included:

- Number of terrestrial and marine plant species in different groups, including number of endemic species and IUCN status of species (1998; 2002)
- Biogeographical importance of the Maltese biota: Case-study on flowering plants (1998)
- Trends in the conservation status of Maltese species: Case study on vascular flora (1998)
- The impact of alien species on important vegetation, including a case study on *Carpobrotus edulis* (2002)
- Overview on Malta's biodiversity (focussing on plant communities) and on the status of plants, also including details on the status of *Helichrysum melitense* and on *Posidonia oceanica* meadows (2005)
- Details on the mode of introduction of alien flora, indicating the threat they pose on native flora (2005)
- Exploitation of wildlife, including some plant species (2005)
- Status of native trees (2008)
- Status of endemic flora (2008)
- Status of the Maltese National Plant - Maltese Rock Centaury (2008)

Following the designation of Natura 2000 sites, a number of seminars were held, during which the importance of plant species within the sites was highlighted, mainly focusing on those plant species listed in the Annexes of the EC Habitats Directive. The seminars were mainly aimed to NGOs and other stakeholders (e.g. farmers, fishermen, tourism industry), and also to the general public.

[Educational tours of the Argotti Botanic Gardens](#) targeting primary and secondary school children are carried out as a joint initiative between the University of Malta and the Curriculum Department (Education Division). An annual audience of 1500 to 2000 school children is reported.

**Obstacles, Needs and Future priorities** - Although various aspects have been considered, especially during the last decade, it is acknowledged that further effort is necessary to promote education and awareness on plant diversity. Indeed, further awareness of the plant diversity of Malta will be provided through the publication of the National Database on Biodiversity which is currently being developed.

**Target 15:** The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this Strategy

#### Assessment of Overall Progress at a National Level - 🌱

##### Description of Progress

By and large, officials working in governmental departments have a scientific background (Diploma, BSc or MSc degree in biology or environment-related discipline). Staff within the Ecosystems Management Unit within MEPA has more than doubled since 2001. Additional training of staff has

either been achieved via a hands-on approach or else attained via attendance to twinning missions comprising mainly presentations on conservation issues and legislation coupled with field activities, or else in the form attendance to tailored courses both nationally and abroad.

An EU-funded Twinning Project "[Capacity Building at the Plant Health Department](#)" was carried out in 2003. Capacity building of the Plant Health Department has focused always on the regulatory aspect of the marketing of propagation material in Malta. Nonetheless, the activities mentioned above for GSPC target 9 on plant genetic resources have been and are being carried out using the same resources.

Training is also offered on a national level, by some local NGOs and a number of environmental institutions.

**Obstacles, Needs and Future priorities - Additional resource mobilisation would help to strengthen the capacity of [facilities in plant conservation](#).**

**Target 16: Networks for plant conservation activities established or strengthened at national, regional and international levels**

#### Assessment of Overall Progress at a National Level - 😊

##### Description of Progress

Some networks at a national level (both informal and those that are formally established via a committee) exist, the central ones being:

- Between MEPA and UoM - mainly in connection with research and taxonomy;
- Between MEPA and the Argotti Botanic Garden and University Herbarium - mainly in connection with plant conservation and reinforcement programmes; and
- Between MEPA and Plant Health Department - mainly in connection with the propagation of plant species (with relevant permits and guidance provided by MEPA accordingly)

A National Plant Protection Board has been set up in accordance with the [Plant Quarantine Act](#). This Board regularly reviews the state of plant quarantine in Malta and on the formulation of policies in this regard, and advises the Minister on any matters with which this Act is concerned. One of the matters addressed is the phytosanitary implications of importing any plant material, plant products, pests, beneficial organisms or soil.




The **Argotti Botanic Gardens** is a member of the European Consortium of Botanic Gardens, and also forms part of [GENMEDA](#) - a Mediterranean Network of Seed Banks.

For a number of years, meetings organised by the working groups of the [Biodiversity International](#) (formerly known as the International Plant Genetic Resources Institute - IPGRI) were attended by the Plant Health Department, MEPA and the Department of Agriculture, during which exchange of information on the activities being carried out on the identification, data collection and conservation of species was held. Each working group focused on a particular species or group of plants and various officials within the MRRRA and also University of Malta used to participate.

**Obstacles, Needs and Future priorities - Participation in networks and projects is currently limited in view of resource constraints. Networking is very important for inter-departmental communication, and in creating the mechanism to exchange information and know-how.**

## Appendix III (B) Progress towards Targets of the Programme of Work on Protected Areas (PoW PA)<sup>23</sup>

### LEGEND:

	Goal/target being successfully attained		Ongoing work but goal/target not yet attained as further measures are necessary		Goal/target not being attained or else target set by the PoW has expired and has not yet been fully achieved
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### Goal 1.1: To establish and strengthen national and regional systems of protected areas integrated into a global network as a contribution to globally agreed goals

Target: By 2010, terrestrially and 2012 in the marine area, a global network of comprehensive, representative and effectively managed national and regional protected area system is established as a contribution to (i) the goal of the Strategic Plan of the Convention and the World Summit on Sustainable Development of achieving a significant reduction in the rate of biodiversity loss by 2010; (ii) the Millennium Development Goals - particularly goal 7 on ensuring environmental sustainability; and (iii) the Global Strategy for Plant Conservation.

### Assessment of Overall Progress at a National Level -

#### Description of Progress

Major advancements have been made over the past years, to designate areas of high conservation value as protected areas in Malta. The **legal basis for designating protected areas** is provided by national subsidiary legislation enacted under the EPA and/or the DPA. Designation is done in compliance with the various multilateral environmental agreements, including the CBD, to which Malta is a Party. Some areas fall under more than one designation, thereby affording protection on multiple fronts.

Malta has designated various areas which can be considered as irreplaceable, areas under high threat, as well as areas that support a variety of threatened native species. The conservation needs of migratory species have also been taken into consideration, especially via the protection of various sites important for birds, these including wetlands (*e.g. L-Għadira* and *Is-Simar* which are important for migratory birds especially waders) and other coastal habitats (namely the cliffs which are important for bird colonies). **Representation of terrestrial habitat types in the national system of protected areas** can be said to be complete. About 20.5% of the land territory is designated. Designation of marine protected areas (MPA) has formally begun in 2005. Established MPAs to date, when considering *Rdum Majjiesa to Ras ir-Raheb*<sup>24</sup> and *id-Dwejra*<sup>25</sup>, cover an expanse of 1101.83ha (see [Figure 18](#) below). Gap analysis for ensuring representative PAs in the terrestrial (including inland water) environment was carried out under the Natura 2000 designation process - indeed [sufficiency of sites forming part of the Natura 2000 network](#) under the Habitats Directive has reached over 90% for terrestrial sites.

<sup>23</sup> This section of the report should be read in parallel with Chapter 2 - Responses to the Goals set under the PoW on Island Biodiversity

<sup>24</sup> Name in legislation: *Zona fil-baħar bejn Rdum Majjiesa u Ras ir-Raheb*

<sup>25</sup> Name in legislation: *Zona fil-baħar fl-inhawi tad-Dwejra, Ghawdex*

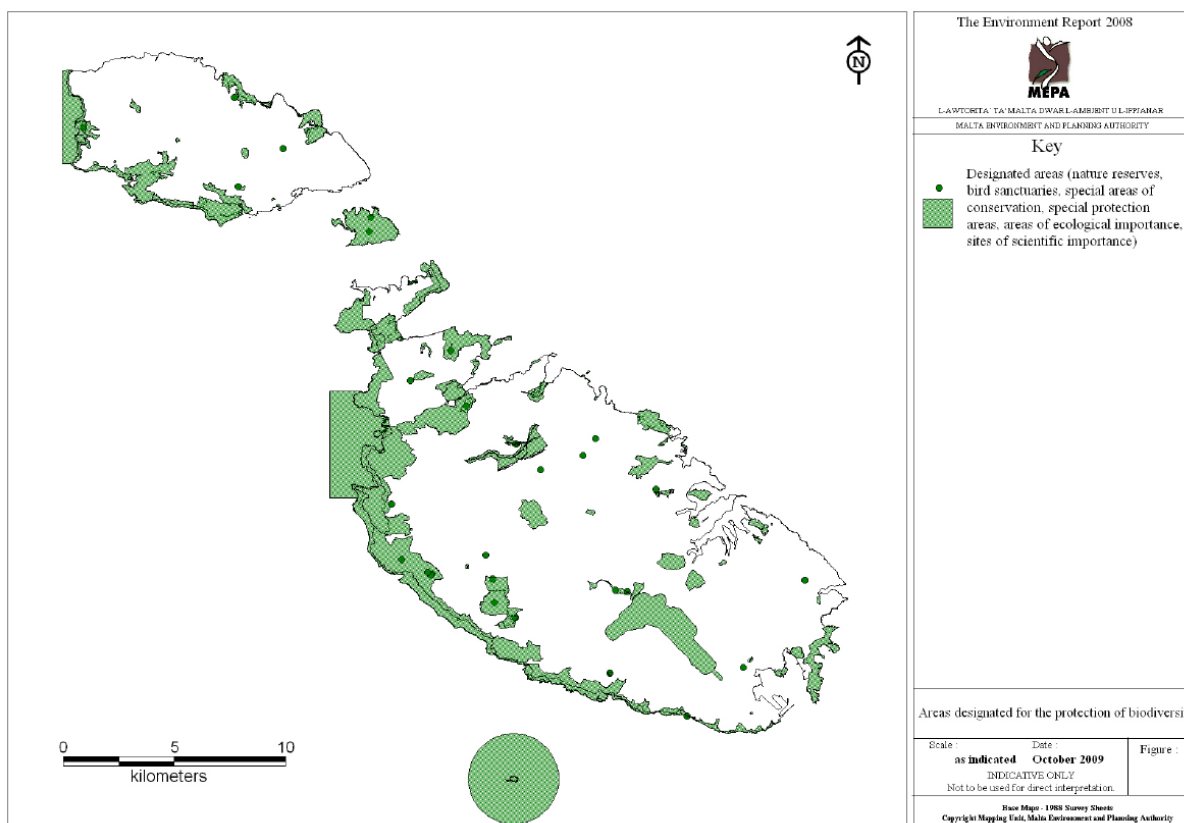


Figure 18 - Natural areas designated as protected areas (Source - [SOER 2008](#))

The designation of sites ranges from scheduled areas [see Section 3 on Land Use] to nature reserves; hence management aspects vary accordingly. The list of designated sites, including site boundaries, is compiled for the [Common Database on Protected Areas](#) (which is submitted through EIONET generally on an annual basis). MEPA internally maintains and updates the relevant list of designated sites, and relevant map/shape files. Maps for terrestrial PAs are available and readily accessible via MEPA's [MAP Server](#).

Efforts are now directed towards completing the MPA system in Malta. A “National Marine Protected Area Steering Committee” (MPASC) has been established in 2008. The aim of this committee is to standardise and coordinate management and enforcement measures in proposed MPAs, and is composed of key governmental stakeholders. A draft “National Marine Protected Area Strategy” (NMPAS) is currently under inter-governmental discussion, following which it will undergo public consultation. Through the management plans that are expected to be produced for MPAs, Malta should be aiming at achieving sustainable use of the marine environment with the involvement of stakeholders in the management of the areas.

Malta’s “National Ecological Network” is afforded legal status, through the “Flora, Fauna and Natural Habitats Protection Regulations, 2006” ([LN 311 of 2006](#), as amended). These regulations, issued under both the EPA and the DPA, also provide for land use management in protected areas, as well as the management of the protected area *per se*. Interim measures to protect highly threatened areas are addressed through the issuance of a conservation order under the DPA.

**Obstacles, Needs and Future priorities** - More work is needed to develop innovative types of governance of protected areas. MEPA has submitted an application to fund a project proposal through the EAFRD to establish a framework for the management of terrestrial Natura 2000 sites in the Maltese Islands and to increase awareness of Natura 2000 amongst the general public and stakeholders. This will pave the way for subsequent investment in the physical management of the

sites in the most economically advantageous way compatible with the relevant conservation objectives.

**Goal 1.2: To integrate protected areas into broader land- and seascapes and sectors so as to maintain ecological structure and function**

**Target: By 2015, all protected areas and protected area systems are integrated into the wider land- and seascape, and relevant sectors, by applying the ecosystem approach and taking into account ecological connectivity and the concept, where appropriate, of ecological networks.**

**Assessment of Overall Progress at a National Level - ☹**

**Description of Progress**

The main tool for **integrating terrestrial PAs into the broader landscapes** is through land use policies such as the Structure Plan for the Maltese Islands [[see section 3 on Land Use](#)], as well as the Rural Development Plan and implementation of its agri-environment measures and, also via cross-compliance obligations [[see section 3 on Agriculture & Rural Development](#)].

When considering the seascape, since the location of the main MPAs is adjacent to land protected areas, it is generally ensured that marine protected areas are also safeguarded from land-based activities that are in close proximity. Moreover, as a contracting party to the Barcelona Convention, Malta signed and ratified the **revised Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities**, which covers watersheds on the landward side of the Mediterranean. In effect the whole of Malta falls within the remit of the LBS protocol. Within the framework of the Strategic Action Programme (SAP) to address pollution from land-based activities, Malta has formulated the **“National Action Plan for the Protection of the Marine Environment from Land-Based Activities”**. The designated national authority for the coordination of this task is the Environment Protection Directorate within the Malta Environment and Planning Authority. One key objective for this action plan is to eliminate by the year 2025, discharges of contaminants from point sources, in conformity with the LBS Protocol. In order to be in a position to assess such progress in meeting this objective, the first phase in the formulation of the NAP was to prepare a **“National Baseline Budget” (BB)** of emissions and/or releases for the SAP targeted pollutants. The base year for this inventory of emissions or releases is the year 2003. In order to be in a position to compile the BB, A **“National Diagnostic Analysis” (NDA)** with baseline date relating to 2003, has been carried out based on information existing in 2004. This NDA identifies and assesses the national conditions and issues, including nature and severity of problems; contaminants and their sources; physical alterations and degradation of habitats; sources of degradation; and geographical areas of concern. The inventory and this assessment of the importance of the issues served as the basis for the elaboration of the NAP. Malta’s goals under this NAP are to:

- protect human health;
- reduce the degradation of the marine environment;
- remediate degraded areas;
- promote the conservation and sustainable use of coastal and marine resources; and
- maintain the productive capacity and biodiversity of the marine environment.

This NAP should serve to bring about a better collaborative approach in the shared responsibilities of those entities having jurisdiction on aspects affecting the protection of the coastal areas and the marine environment.

**Ecological corridors in Malta** essentially include traditionally built rubble walls, and natural features such as valley watercourses. Rubble walls are legally protected by the ‘Rubble Walls and Rural Structures (Conservation and Maintenance) Regulations, 1997’ ([LN 160 of 1997](#), as amended by [LN 169 of 2004](#)). Important valley watercourses are being addressed via the implementation of the EC Habitats Directive and the EC Water Framework Directive as well as related national legislation. The majority of protected areas that form part of the National Ecological Network also come along

with a “buffer zone”, which for instance covers agricultural land, apart from the fact that the boundaries of certain protected areas (under different designations) overlap.

A multidisciplinary approach is sought to protected area management. Efforts to restore certain degraded ecosystems are ongoing. *Ad hoc* interventions have sometimes been carried out depending on resources available. Some NGOs, as site managers, may also involve volunteers to monitor activities within and around the protected area they manage. Specific species within protected areas are also monitored. Various habitats within protected areas are targeted for restoration in order to reinforce natural processes. In certain cases, site managers also propagate stocks of indigenous tree and shrub species within their own nurseries. Propagated specimens are then planted on site as part of restoration efforts of the protected area. Positive recovery of certain habitats and increasing trends in populations of rare species are being noted by site managers. For instance, afforestation at the *Wied Għollieqa* Nature Reserve is resulting in the regeneration of a Mediterranean woodland as well as in the regeneration of riparian species. This has also contributed positively towards a marked increase in biodiversity and number of faunal species present on-site.

**Obstacles, Needs and Future priorities** - Same as for Goal 1.1. As afore-mentioned, MEPA has submitted an application for funds under the EAFRD for a [project proposal](#) to establish a framework for the management of terrestrial Natura 2000 sites in the Maltese Islands. The management plans, which would be prepared through this project, would include integrated plans, thereby taking into consideration the wider context of the protected area and not only the ecosystems therein.

**Goal 1.3: To establish and strengthen regional networks, transboundary protected areas (TBPAs) and collaboration between neighbouring protected areas across national boundaries**

**Target:** Establish and strengthen by 2010/2012 transboundary protected areas, other forms of collaboration between neighbouring protected areas across national boundaries and regional networks, to enhance the conservation and sustainable use of biological diversity, implementing the ecosystem approach, and improving international cooperation.

**Assessment of Overall Progress at a National Level** - 😊 (for strengthening regional PA networks) 🟡 (currently for designation of PAs in ABNJ, bearing in mind national contributions to regional ecological networks)

### Description of Progress

Malta is contributing towards regional networks of protected areas such as the EU Natura 2000 Network; the Council of Europe Emerald Network and the Pan-European Ecological Network. MEPA has also been involved in regional projects on protected areas such as the concluded [“MedPAN Project”](#) under EC Interreg IIIC Funding, which aimed to develop a Mediterranean network of marine protected areas with the intention of improving the management of MPAs and helping partners to set up new MPAs. This project is being continued via the proposed project [MEDPAN North](#). Another relevant project is that known as the [“Rete dei Parchi: Interreg IIIC Parks Network Project”](#). The latter was completed in 2008, and aimed at setting up, managing and promoting a network of protected natural areas in the Mediterranean region. The overall aim of this project was to identify common strategies for environmental management in protected areas, promoting new forms of co-operation between key players. The project was structured around four components: management and co-ordination; exchange of knowledge and experience; improvement and enhancement of the Network’s competences; and marketing management.

**Obstacles, Needs and Future priorities** - MEPA is closely following discussions on the development of protected areas in areas beyond national jurisdiction particularly through the UNEP Mediterranean Action Plan. The consideration of setting up MPAs in ABNJ has also been partly discussed during a meeting of the MPASC.



**Goal 1.4: To substantially improve site-based protected area planning and management**

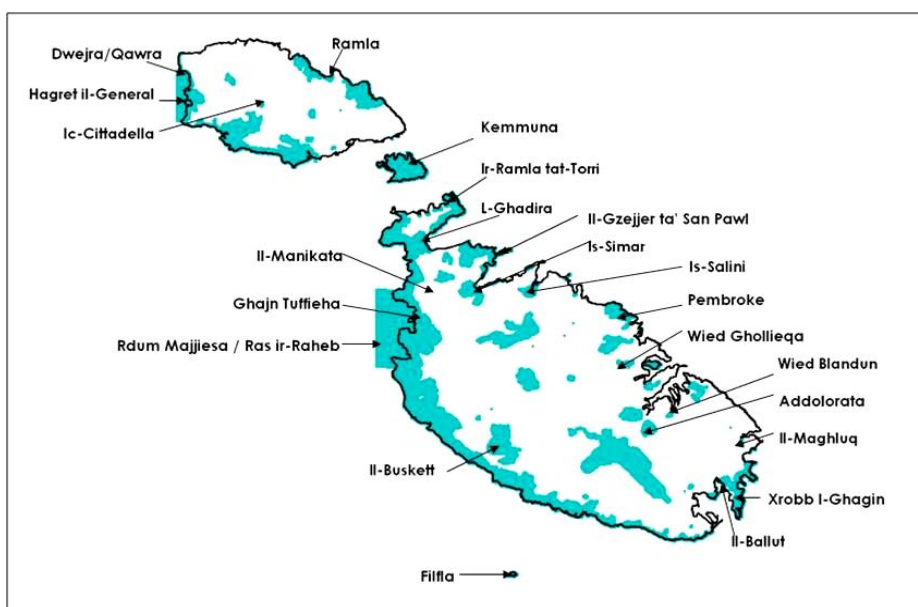
Target: All protected areas to have effective management in existence by 2012, using participatory and science-based site planning processes that incorporate clear biodiversity objectives, targets, management strategies and monitoring programmes, drawing upon existing methodologies and a long-term management plan with active stakeholder involvement.

**Assessment of Overall Progress at a National Level - 😞**

**Description of Progress**

[See also response to Goal 1.1 of the PoW on PAs in this Appendix]

Management of protected areas is either carried out through the implementation of a management plan which is drawn up specifically for a particular area in question or via other statutory, administrative or contractual measures (e.g. legislation). For the purposes of implementing such plans, MEPA, as the Competent Authority, may enter into a management agreement with owners, lessees or occupiers of land forming part of a protected area. Such agreements are commonly tripartite, as the Ministry responsible for the environment would also form part of this agreement. Areas covered by some form of management are shown mapped in Figure 19.



**Figure 19 - Areas undergoing some form of administrative, statutory or contractual management**  
**Source: MEPA (2008)**

A management framework and an action plan for two MPAs have been approved. These include measures on how to protect the areas from threat and how to enhance the marine environment, and also cover stakeholder involvement and, also propose a zonation scheme, whereby zones would range from a “no-entry & no-take” status to “entry-take” status. The drafted “**National Marine Protected Area Strategy**” (NMPAS) describes the process by which MPAs are selected. The process also gives importance to stakeholder involvement. The MPASC also provides and facilitates the involvement and identification of different stakeholders from the general public since the institutions forming part of the MPASC may ensure that the stakeholders whom they represent are also effectively consulted. The possibility of converting consumptive use of MPAs to non-consumptive use, whilst still generating income, is also being studied through consultations with these institutional stakeholders.

Established management plans are reviewed over a specified time frame, which is commonly five years. **Activities integral to management plans** include the conservation, management and monitoring of the ecosystems in the protected area, the rehabilitation of degraded areas, the

restoration or maintenance of habitats and species at a favourable conservation status and, the control of activities that may impact the ecology of the area.

**Capacity-building activities** have been carried out for PA managers in Malta through a workshop held in June 2008, during which obligations of the Habitats Directive vis-à-vis protected areas were highlighted. Site managers also participate in other capacity building training in cooperation with other countries.

**Obstacles, Needs and Future priorities** - Climate change adaptation issues are envisaged to be considered in the development of management plans under the proposed EAFRD project.

**Goal 1.5: [To prevent and mitigate the negative impacts of key threats to protected areas](#)**

**Target:** [By 2008, effective mechanisms for identifying and preventing, and/or mitigating the negative impacts of key threats to protected areas are in place.](#)

**Assessment of Overall Progress at a National Level - ☹️**

**Description of Progress**

**Environmental assessment** procedures have long been in place in Malta. Environmental impact assessments (EIA - in place since the 1990's) and strategic environmental assessments (SEA - in place since 2005) are carried out for projects and, plan and programmes, respectively, with the potential to have negative effects on protected areas, as applicable [[See Section 3.6 on Environmental Assessments](#)]. MEPA is the competent authority responsible for the environmental assessment of projects, whilst the SEA Audit Team within the Office of the Prime Minister (OPM) is the competent authority responsible for Strategic Environmental Assessment on plans and programmes. [Appropriate assessment \(AA - in place since 2003\)](#) under Article 6 of the EC Habitats Directive is also carried out in the context of Special Areas of Conservation (SAC) and Special Protection Areas (SPA). The AA is not a substitute for the EIA, nor *vice versa*. If the development qualifies for both AA and EIA, then both need to be carried out and submitted as free-standing documents (whilst striving to avoid any unproductive duplication of studies). Although there is no specific national guidance on environmental assessments and biodiversity, general EIA and SEA guidance documents are under preparation. [[See also response to Goal 5 of the PoW on Island Biodiversity in Chapter 2 of this Report](#)]

National approaches to liability and redress measures, incorporating the “polluter pays principle” are covered by the “[Prevention and Remedying of Environmental Damage Regulations, 2008](#)” ([LN 126 of 2008](#)). Prohibitions on exploitation/trade of resources from protected areas e.g. on endangered species are also covered by other subsidiary legislation. Measures for the rehabilitation and restoration of the ecological integrity of protected areas are included in management plans. Measures to address invasive alien species in protected areas are also ongoing.

**Obstacles, Needs and Future priorities** - Strengthening of enforcement to carry out compliance monitoring more effectively

**Goal 2.1: [To promote equity and benefit-sharing](#)**

**Target:** [Establish by 2008 mechanisms for the equitable sharing of both costs and benefits arising from the establishment and management of protected areas.](#)

**Assessment of Overall Progress at a National Level - 🚫 [in view of expired deadline]**

**Description of Progress**

National legislation allows for the application of statutory, administrative or contractual measures to manage protected areas. Contractual and legal mechanisms are the most commonly used

mechanisms to date in Malta. Currently management plans take into consideration socio-economic issues, though in a limited context.

PA/site managers involve local communities and the Government in the conservation of the protected area, accordingly. Community-based conservation is advocated by MEPA in PA management, and local communities are involved in areas where this is applicable. An example of community-based conservation is the [Garnija/Yelkouan Shearwater project](#) for *Rdum tal-Madonna*. This EU Life-funded project is a [partnership](#) of four governmental bodies in Malta and three conservation NGOs. Meetings within land users/owners may also be held, for instance when considering the protected area - *Wied Ghollieqa*.

**Obstacles, Needs and Future priorities** - More work is needed to develop innovative types of governance of PAs. Socio-economic value of protected areas will be considered in the management plans that will be prepared for the terrestrial Natura 2000 sites through the proposed EAFRD project.

**Goal 2.2: To enhance and secure involvement of indigenous and local communities and relevant stakeholders**

**Target:** Full and effective participation by 2008, of indigenous and local communities, in full respect of their rights and recognition of their responsibilities, consistent with national law and applicable international obligations, and the participation of relevant stakeholders, in the management of existing, and the establishment and management of new, protected areas

**Assessment of Overall Progress at a National Level** - [🟡 in view of expired deadline]

**Description of Progress**

In a number of protected areas namely *Għadira*, *Simar*, and *Rdum tal-Madonna*, local communities and land users are involved as stakeholders in the management planning process through an active participative approach. Locals are actively involved in the problem-solving process, and are encouraged to submit proposals for solutions, some of which may actually require them to take responsibility themselves. For instance, the management planning procedures for *Rdum tal-Madonna* Natura 2000 site have been conducted on the basis of a participatory approach. The Management Planning Core Team consists of representatives of all major stakeholder groups. This Core Team proposes potential management measures, and each member is responsible for ensuring that the stakeholder group they represent is consulted. They then return to the Core Team meeting with feedback from their group. The system works well, and should be adopted for other sites.

The “Freedom of Access to Information on the Environment Regulations, 2005” ([LN 116 of 2005](#)) in compliance with the Aarhus Convention, allow the general public to request environmental information from the competent authority and from those bodies or persons as the Minister responsible for the environment may so appoint. MEPA is also legally obliged to follow a **participatory approach in policy development**. A consultation process is normally implemented when new legislation is proposed, compliant with Article 10.1 of the EPA. Public hearings are also an integral part of EIA and SEA procedures.

**Obstacles, Needs and Future priorities** - It is envisaged that management planning for terrestrial Natura 2000 sites will take a participatory approach, through the proposed EAFRD project.

**Goal 3.1: To provide an enabling policy, institutional and socio-economic environment for protected areas**

**Target:** By 2008 review and revise policies as appropriate, including use of social and economic valuation and incentives, to provide a supportive enabling environment for more effective establishment and management of protected areas and protected areas systems.

**Assessment of Overall Progress at a National Level** - [🟡 in view of expired deadline and lack of social and economic valuation]

## Description of Progress

Protected areas are covered by a national legislative framework under the EPA (and in the case of SACs also under the DPA) and relevant subsidiary legislation thereto. Some individual protected areas are also governed by specific legislation (e.g. *Selmunett*, Filfla and Fungus Rock). An assessment of legislative and institutional gaps and barriers that impede the effective establishment and management of protected areas is being carried out as part of a “**Better Regulation Initiative**”.

It is important to note that Malta’s protected areas are limited in size and resources, as compared to protected areas in other countries, and thus **economic opportunities and markets** are inevitably limited. Nonetheless minor economic opportunities derived from protected areas are already being identified. For example at *Wied Ghollieqa*, carob syrup is made from carobs found on site and subsequently sold.

Certain site managers collaborate with the University of Malta, whereby students reading for BSc degrees carry out their dissertations on protected areas thereby collecting the required data as a baseline on which to elaborate conservation measures and assess the effectiveness and progress in achieving desired goals. Such data also assists in devising management plans. Site managers also offer **guided nature walks and educational activities within protected areas**. CEPA activities include public talks, press releases, articles, guided nature walks for all age groups, educational activities for students of all ages and other outdoor activities. Certain environmental NGOs also publish environmental booklets/journals targeting children and also adults. A peer reviewed Journal - the Central Mediterranean Naturalist - is also published nationally. NGOs also undertake joint activities with other NGOs and environmentally-friendly enterprises.

**Obstacles, Needs and Future priorities** - Economic valuation and resource accounting tools would help to identify the hidden and non-hidden economic benefits provided by protected areas at a national level. Management plans that will be prepared through the proposed EAFRD project would include a self-financing assessment to ensure financial sustainability.

### **Goal 3.2: To build capacity for the planning, establishment and management of protected areas**

**Target:** By 2010, comprehensive capacity building programmes and initiatives are implemented to develop knowledge and skills at individual, community and institutional levels, and raise professional standards.

## Assessment of Overall Progress at a National Level - 😊

### Description of Progress

A Twinning Project (Twinning Code: MT04-IB-EN-02) on the **Implementation of the Nature Protection *Aquis* in Malta** was concluded from October 2005 to March 2007. The project was funded through the EU Transitional Facility Programme for 2004 and was jointly implemented by Austria (Austrian Federal Environment Agency) and Malta (MEPA). The project consisted of a series of training workshops targeting MEPA staff, four half day workshops targeting various sectors (agriculture, marine, tourism), one national half-day seminar involving stakeholders, NGOs and the public in general; and also included the production of leaflets.

A structural funds project (ERDF) entitled “marine scientific surveys around Filfla for its conservation” was carried out in the period 2004 to 2006 through which important marine data was gathered for possible eventual protection.

Numerous projects were concluded under the MedPAN project (a network for MPA managers), one of which was a study to establish the Conservation status of Noble Pen Shell (*Pinna nobilis*) in the *Rdum Majjiesa to Ras ir-Raheb* MPA. A protocol for monitoring *Pinna nobilis* was in fact developed. Through this project, a number of posters on the marine environment were produced as well as a poster on the importance of *Pinna nobilis* and its legal status (Figure 20). The results of the project on the *Pinna nobilis* were presented in scientific fora.

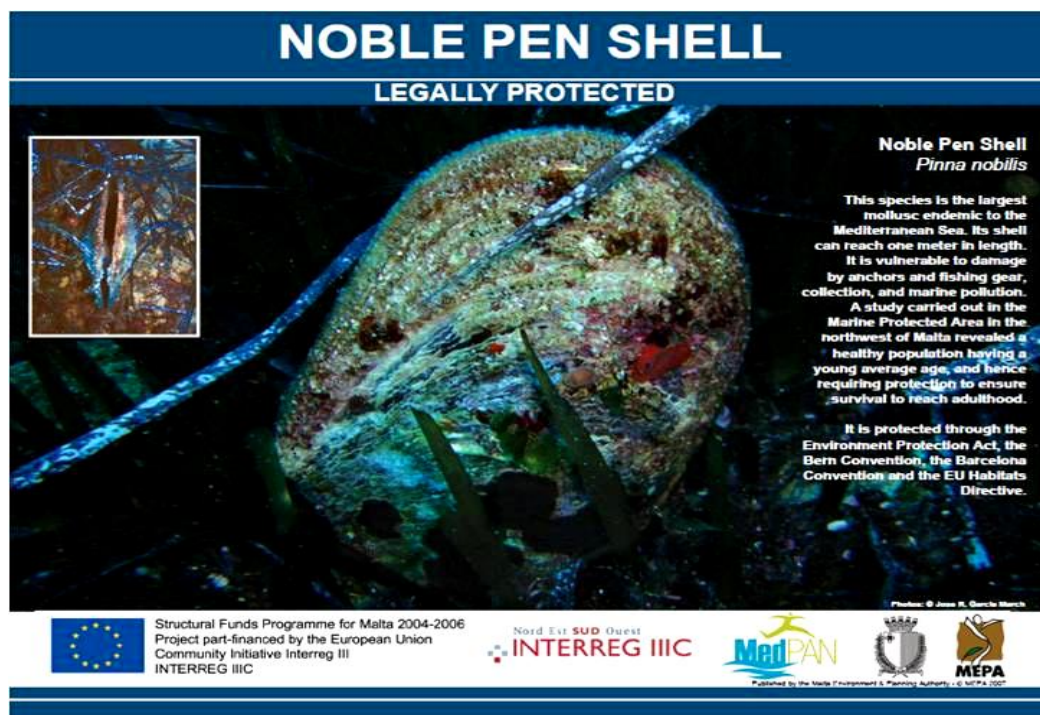


Figure 20 - Poster on *Pinna nobilis*

Another study, **MonItaMAL**<sup>26</sup> was concluded by the UoM on the *Rdum Majjiesa to Ras ir-Raheb* MPA, whereby through the actual water quality and fish censuses, as well as other research work, the efficiency of this MPA was again tested.

An [expert mission on the Marine Protected Area \(MPA\) Strategy and associated rolling plan for the Marine Special Area of Conservation \(SAC\) designations](#) was completed in 2009. This **collaboration project with Greece** provided direction on marine protected area nomenclature and habitat interpretation particularly in terms of the EC Nature Directives.

With the assistance of RAC/SPA, a number of **seminars on the importance of marine biodiversity** have been held. Numerous seminars and training sessions on protected species, and targeting NGOs and other departments, were held, e.g. training sessions on marine turtles, including the dissemination of leaflets and posters as well as the guidebook for fishermen on the right handling for turtles. MEPA, together with Fisheries and environmental NGOs, was involved in a number of media-broadcasted **turtles release programmes** and which were attended by the Minister for Resources and Rural Affairs. School children have also attended these events.

MEPA also carried out numerous PA events on the occasion of the local visit by the International Fund for Animal Welfare (IFAW) during a survey commissioned by ACCOBAMS & IFAW in the Mediterranean for the **survey of cetaceans and other protected species** like marine turtles. MEPA was also involved in a Mediterranean wide survey of cetaceans carried out in a joint project by ACCOBAMS and IFAW. MEPA also received training on the carrying out of such surveys.

The **knowledge base on certain groups of threatened and endemic taxa** (invertebrates; vertebrates, excluding birds and cetaceans) has been strengthened via a number of commissioned studies. The data gathered will help in developing a National Biodiversity Database as well as updated Red Data Lists. The conservation status of species of European Community importance has been assessed in compliance with Article 17 of the Habitats Directive. Such assessment serves as a baseline for monitoring species trends in future years.

<sup>26</sup> MonItaMal (Interreg IIIA Italy-Malta): Sviluppo di un sistema di monitoraggio della qualità ambientale: valutazione dei livelli di contaminazione nelle diverse matrici marine (acque, sedimenti, biota) e dei rischi per la biodiversità marina costiera



A report is submitted to MEPA by site managers to document the measures adopted and implemented in order to manage selected PAs and safeguard their integrity. Various initiatives have been adopted by site managers, such as propagating and selling plants, guided tours, and locally produced products.

**Obstacles, Needs and Future priorities** - Resource mobilisation would help to better equip site managers. The consultative role of local government can provide added value to the management of protected areas. Information exchange between the scientific community (including protected area managers) and policy makers could also be strengthened. Governance and further involvement of stakeholders and local groups is also important.

### **Goal 3.3: To develop, apply and transfer appropriate technologies for protected areas**

**Target:** By 2010 the development, validation, and transfer of appropriate technologies and innovative approaches for the effective management of protected areas is substantially improved, taking into account decisions of the Conference of the Parties on technology transfer and cooperation.

## Assessment of Overall Progress at a National Level - 😊

### Description of Progress

**Habitats mapping** has been carried out since 1995 leading to an inventory of areas of ecological importance (AEIs) and sites of scientific importance (SSIs) in connection with Article 46 of the DPA. Habitats mapping has also been carried out since 2002 as part of the selection of SACs and SPAs in connection with [LN 311 of 2006](#) (as amended) and [LN 79 of 2006](#) (as amended by [LN 39 of 2007](#); consolidated legislation available [here](#)), respectively. Identification and mapping of Tree Protected Areas has been done since 1999 and finalised in 2009. An exercise was also recently carried out to map the mediolittoral algal communities along the coastline of the Maltese archipelago. Furthermore, through a number of EIAs, other mapping exercises were also carried out for particular marine areas. A wetlands inventory is available and includes extant wetlands and the major tributaries.

Rapid assessments are carried out on an *ad hoc* basis. More in-depth assessments are carried out either as commissioned studies or as part of EIA/SEA procedures and appropriate assessment procedure.

MEPA has been involved in regional projects on protected areas such as the concluded [“MedPAN Project”](#) under EC Interreg IIC Funding and the [“Rete dei Parchi: Interreg IIC Parks Network Project”](#), which was completed in 2008.

**Obstacles, Needs and Future priorities** - Management of protected areas could be strengthened by investing in additional resources and by exploring innovative approaches to protected area management and increased networking.

### **Goal 3.4: To ensure financial sustainability of protected areas and national and regional systems of protected areas**

**Target:** By 2008, sufficient financial, technical and other resources to meet the costs to effectively implement and manage national and regional systems of protected areas are secured, including both from national and international sources, particularly to support the needs of developing countries and countries with economies in transition and small island developing states.

## Assessment of Overall Progress at a National Level - 😊

### Description of Progress

An overview of the financial resource needs required for protected area planning, establishment and management was obtained when the costs and benefits of implementing Natura 2000 were estimated in 2009. Updated information on EU funding support, which may be applied for financing



research on protected areas or other activities, as eligible, is provided by the various national bodies who are the Management Authorities for the different EU financing mechanisms in Malta.

MEPA contributes to nature protection and ecosystems management in various aspects, including co-financing of EU funded projects, assistance to non-governmental organisations, and employment of staff, biodiversity action plans and management agreements for protected areas. MEPA has also been involved in a number of externally funded projects aimed at i) establishment of protected areas ii) drafting of management plans and iii) implementation of management plans. Amongst relevant projects one can mention the following:

- EC SMAP MedMPA project coordinated by RAC/SPA
- EC ERDF Project on the Filfla candidate marine protected area
- EC LIFE Third Project on the Dwejra Special Area of Conservation
- EC Interreg IIIC MedPAN Project on establishing a network of marine protected areas amongst Mediterranean countries
- EC Interreg IIIC Parks Network Project on a network of terrestrial protected areas
- EC Transitional Funds Natura 2000 Twinning Project with Austria
- EU Life Project on the Yelkouan Shearwater

**Obstacles, Needs and Future priorities** - One of the planned activities of the [EAFRD proposed project](#) is to identify potential sources of funding (whether national, international, private sponsorships, etc.), once the management plans will be prepared.

### **Goal 3.5: [To strengthen communication, education and public awareness](#)**

**Target:** [By 2008 public awareness, understanding and appreciation of the importance and benefits of protected areas is significantly increased.](#)

## **Assessment of Overall Progress at a National Level - 😊**


### **Description of Progress**

A number of technical workshops and seminars were carried out targeting relevant stakeholders or the general public in relation to Natura 2000 and protected areas. Amongst these one can mention a national seminar on 'Natura 2000 and its implementation' held in March 2007, and a seminar on 'Marine Life and MPAs' held subsequently in April 2007.

Amongst the deliverables of the [Parks Network](#) project, which was financed by Interreg IIIC South Zone, was the production of a series of posters, which included four specifically on protected areas (*Il-Ballut tal-Wardija, Ir-Ramla l-Hamra, Coastal Cliffs and Wied il-Mizieb* - see [Figure 21, overleaf](#)).

# IL-BALLUT TAL-WARDIJA

## PROTECTED SITE



**Did you know?**

The Holm Oaks in the area are estimated to be 500 - 900 years old, possibly older and are amongst the oldest and largest trees in the Maltese Islands.

**Description**

- Il-Ballut tal-Wardiya lies in the limits of San Pawl il-Bahar and overlooks St Paul's Bay. This area benefits from a continual supply of freshwater from permanent springs in the area, especially the Ghajn Ballut spring.
- It is characterised by an oak forest remnant, that is, the remains of an old naturally growing forest of Holm Oaks (*Quercus ilex*).
- It is also characterised by a small coniferous woodland, based on Aleppo Pine trees (*Pinus halepensis*).
- Both woodlands are surrounded by agricultural land and garrigue.

**Ecology and importance**

- The holm oak forest remnant, which is in itself very rare and valuable, also houses a number of rare and threatened tree species, such as the Mediterranean Buckthorn (*Rhamnus alaternus*) and the Myrtle (*Myrtus communis*), as well as Olive trees (*Olea europaea*), the Lentisk (*Pistacia lentiscus*) and Carobs (*Ceratonia siliqua*), some of which are particularly old.
- The site is particularly rich in mushrooms, other fungi and lichens, most of which grow only in this or other forest remnants making them very rare and vulnerable and with a restricted distribution in the Maltese Islands.
- The fauna in the area is also peculiar and extremely vulnerable since it depends on the constant forest cover.


- It also consists of very rare and vulnerable invertebrates, including various endemic species, that is, species that can be found only in the Maltese Islands. Many species live embedded in the soil, leaf litter, in dead branches of trees or under the bark of trees and damp stones.
- The garrigue in the area, is very important for a number of rare, threatened and/or endemic flora including the endemic Maltese Pyramidal Orchid (*Anacamptis urvilleana*).

**Threats**

- The site is significantly threatened by uncontrolled fires on agricultural land which could destroy the old trees.
- It is also threatened by dumping of material and other illegal activities.



Aleppo Pine - *Pinus halepensis*




Holm Oak - *Quercus ilex*



Mediterranean Buckthorn - *Rhamnus alaternus*




Structural Funds Programme for Malta 2004-2006  
Project part-financed by the European Union  
Community Initiative Interreg III  
INTERREG III C



Nord Est SUD Ouest  
INTERREG III C



réseau des parcs  
interreg III C sud



MEPA

Published by the Malta Environment and Planning Authority - 2005

A Nature Reserve and a Special Area of Conservation of International Importance in terms of the Environment Protection Act and the EU Habitats Directive.

**Figure 21 - Poster prepared for Il-Ballut tal-Wardiya**

MEPA has been involved in a number of other externally funded projects. Amongst relevant projects one can mention the "[EC SMAP MedMPA project](#)" coordinated by RAC/SPA; the "[MedPAN Project](#)" (Mediterranean Coastal and Marine Protected Areas Network) and the "[EC ERDF Project on the Filfla candidate marine protected area](#)". Amongst the deliverables of these projects in question one can mention:

- a set of 3 concept posters introducing MPAs directed at the general public (Figure 22),
- a documentary on the *Rdum Majjiesa to Ras ir-Raheb* MPA produced on DVD,
- a DVD on the marine environment around the island of *Filfla*,
- for the MedMPA and the ERDF Filfla projects - public awareness seminars and also stakeholders meetings,
- a brochure and a leaflet on the importance of the marine biodiversity around the area of Filfla and on the findings of this research study;

- Numerous TV and radio spots on the MedMPA and the ERDF Filfla projects as well as the importance of marine biodiversity.



Figure 22 - MPA Concept Posters

Management plans of protected areas also contain an education and awareness-raising component. For instance, the management plans for the two local Ramsar Sites, *l-Ghadira* and *Is-Simar*, include a strong education and awareness-raising component. A well-developed educational programme for primary school-children is implemented in both sites, focussing on a practical hands-on learning approach, as well as a class-room follow-up component. Awareness-raising consists mainly of the use of mass-media to promote the sites’ “educational entertainment” value for families.

**Obstacles, Needs and Future priorities** - A tender for a three-year communication campaign on Natura 2000 is envisaged. A series of on-site information panels are being prepared which will eventually be set up in protected areas.

**Goal 4.1: To develop and adopt minimum standards and best practices for national and regional protected area systems**

**Target:** By 2008, standards, criteria, and best practices for planning, selecting, establishing, managing and governance of national and regional systems of protected areas are developed and adopted.

**Assessment of Overall Progress at a National Level** - 🚫 [In view of superseded deadline]

**Description of Progress**

A **good practice guidance document on the management of protected areas in the Mediterranean region** was produced as part of the **Parks Network** project financed by Interreg IIC South Zone. The said document also includes the relevant experience of Malta on site and species management. Further information is available at the **project’s website**.

**Obstacles, Needs and Future priorities** - System-level management effectiveness of protected areas is currently undergoing evaluation to establish standard procedures and improve current procedures.

**Goal 4.2: To evaluate and improve the effectiveness of protected areas management**



Target: By 2010, frameworks for monitoring, evaluating and reporting protected areas management effectiveness at sites, national and regional systems, and transboundary protected area levels adopted and implemented by Parties.

Assessment of Overall Progress at a National Level - 😊

#### Description of Progress

Protected area management is monitored on an annual basis and the monitoring results feed back into the management process. Site managers are required to submit a report that details progress made in managing protected area(s).

**Obstacles, Needs and Future priorities** - The new Management Plans for *L-Għadira*, *Is-Simar*, and *L-Rdum tal-Madonna* will comprise a management effectiveness evaluation programme, which will help guide management measures to improve efficiency and effectiveness of actions undertaken, based on the results achieved.

#### **Goal 4.3: To assess and monitor protected area status and trends**

Target: By 2010, national and regional systems are established to enable effective monitoring of protected-area coverage, status and trends at national, regional and global scales, and to assist in evaluating progress in meeting global biodiversity targets.

Assessment of Overall Progress at a National Level - 😊

#### Description of Progress -

**Monitoring of biodiversity in protected areas** is usually one of the management measures in the management plan. It contributes to the management effectiveness evaluation for the protected area. Moreover, the status and trends of species and habitats of European interest are assessed in compliance with the requirements of Article 17 of the Habitats Directive [see [Chapter 1 of this report](#)].

The MEPA MAP Server essentially serves as a GIS tool. Aerial photographs are taken of all the Maltese Islands over an intermittent basis. Such photos can also be used to track changes in habitat cover over the years.

**Obstacles, Needs and Future priorities** - Monitoring of terrestrial protected area coverage, status and trends will be strengthened by way of the [proposed EAFRD funded project](#).

#### **Goal 4.4: To ensure that scientific knowledge contributes to the establishment and effectiveness of protected areas and protected area systems**

Target: Scientific knowledge relevant to protected areas is further developed as a contribution to their establishment, effectiveness, and management.

Assessment of Overall Progress at a National Level - 😊

#### Description of Progress

**Scientific knowledge relevant to protected areas** is mainly acquired via commissioned studies and/or input by specialists or else as specific EU funded projects.

For instance, the project entitled "[Marine Scientific Surveys around Filfla for its Conservation](#)" was financed by the ERDF and was completed in 2006. The main aim of this project was to obtain accurate scientific data on the marine area around Filfla in order to be able to assess whether the marine area qualifies for designation as a marine potential Site of Community Importance (pSCI) in line with the EC Habitats Directive. The project involved the compilation of data through field

surveys, using various techniques, including diving and remote surveillance by submersibles. Collected data was analysed and presented in comprehensive reports on the status of marine biodiversity and habitats in the area. Leaflets, a booklet, and an educational video were also produced as part of this project with the intention of raising awareness amongst the general public and stakeholders. The results of this project fed into the NMPAS (see above). Besides this, the experience gained from this project shall serve as the blueprint for the drafting of management plans for other MPAS including the *Rdum Majjiesa to Ras ir-Raheb* MPA.

Apart from the above, over the past few years, MEPA has also received technical support related to protected areas, especially through participation in [internationally funded projects](#). Amongst these one can mention the following:

- EC SMAP MedMPA project coordinated by RAC/SPA - completed in 2005
- EC LIFE Third project on the Dwejra Special Area of Conservation - completed in 2007
- EC Transitional Funds Natura 2000 Twinning Project with Austria and Italy - completed in 2007
- EC Interreg IIIC MedPAN project on a network of marine protected areas - completed in 2008
- EC Interreg IIIC Parks Network Project on a network of terrestrial protected areas - completed in 2008
- Mission on the Marine Protected Area Strategy and designation of Special Area of Conservation - completed in 2009

The [University of Malta](#) is participating in the [EMPAFISH Project](#) (European Marine Protected Areas as tools for Fisheries management and conservation) under the 6<sup>th</sup> Framework Programme of the Commission of the European Communities (EU). One of the objectives is to investigate the potential of different regimes of protected areas as measures to protect sensitive and endangered species, habitats and ecosystems from the effects of fishing, using 20 case studies. The Maltese EMPAFISH case studies are the [Rdum Majjiesa to Ras ir-Raheb MPA](#) and [Malta's Fisheries Management Zone](#).

The Ecosystems Management Unit within MEPA and the Department of Biology (UoM) collaborate together to identify conservation and ecological research topics (such as biological surveying within protected areas) that can be undertaken as dissertations by students reading for a Bachelor or Masters of Science degrees in biology. Liaison also occurs with foreign students carrying out research overseas, as well as other research organisations.

Information on the protection of [important natural areas](#) is available online. Such areas can be protected via designation as: Areas of Ecological Importance; Sites of Scientific Importance; Bird Sanctuaries; Nature Reserves; Special Areas of Conservation (national importance); Special Areas of Conservation (international importance); Special Protection Areas; Ramsar Sites and/or Specially Protected Areas. An area can be covered by more than one designation. Some site managers provide information on protected areas on their websites, such as for example for [Għajn Tuffieħa and Ramla l-Hamra, Simar](#) and [Għadira](#). Information on parks such as the [Dwejra](#) Heritage Park and [Majjistral](#) Nature and History Park is also available online.

**Obstacles, Needs and Future priorities** - Interdisciplinary research is important to improve the understanding of the ecological, social and economic aspects of protected areas, including methods and techniques for valuation of goods and services from protected areas.